# CHAPTER

# 22

# AUTOFLIGHT

**CHAPTER 22**
**AUTOFLIGHT**

| Page | Date | COC |
|---|---|---|
| EFFECTIVE PAGES | | |
| 1 thru 6 | Jun 15/2009 | |
| 22-HOW TO USE THE FIM | | |
| 1 | Feb 10/2005 | |
| 2 | Feb 10/2005 | |
| 3 | Jun 10/2006 | |
| 4 | Oct 10/2006 | |
| 5 | Feb 10/2005 | |
| 6 | Feb 10/2005 | |
| 22-FAULT CODE INDEX | | |
| 101 | Feb 10/2005 | |
| 102 | Feb 10/2005 | |
| 103 | Feb 10/2005 | |
| 104 | Feb 10/2005 | |
| 105 | Feb 10/2005 | |
| 106 | Feb 10/2005 | |
| 107 | Feb 10/2005 | |
| 108 | Feb 10/2006 | |
| 22-MAINT MSG INDEX | | |
| R 101 | Jun 15/2009 | |
| O 102 | Jun 15/2009 | |
| 103 | Feb 10/2007 | |
| 104 | Feb 10/2007 | |
| 105 | Feb 10/2007 | |
| 106 | Feb 10/2007 | |
| 107 | Feb 10/2007 | |
| 108 | Feb 10/2007 | |
| 109 | Feb 10/2007 | |
| 110 | Feb 10/2007 | |
| 111 | Feb 10/2007 | |
| 112 | Feb 10/2007 | |
| 113 | Feb 10/2007 | |
| 114 | Oct 10/2007 | |
| 115 | Oct 10/2007 | |
| 116 | Oct 10/2007 | |
| 117 | Oct 10/2007 | |
| 118 | Oct 10/2007 | |
| 119 | Oct 10/2007 | |
| 120 | Oct 10/2007 | |

| Page | Date | COC |
|---|---|---|
| 22-MAINT MSG INDEX (cont) | | |
| 121 | Oct 10/2007 | |
| 122 | Oct 10/2007 | |
| 123 | Oct 10/2007 | |
| 124 | Oct 10/2007 | |
| 125 | Oct 10/2007 | |
| 126 | Oct 10/2007 | |
| 127 | Oct 10/2007 | |
| 128 | Oct 10/2007 | |
| 129 | Oct 10/2007 | |
| 130 | Oct 10/2007 | |
| 131 | Oct 10/2007 | |
| 132 | Oct 10/2007 | |
| 133 | Oct 10/2007 | |
| 134 | Oct 10/2007 | |
| 135 | Oct 10/2007 | |
| 136 | Oct 10/2007 | |
| 137 | Oct 10/2007 | |
| 138 | Oct 10/2007 | |
| 139 | Oct 10/2007 | |
| 140 | Oct 10/2007 | |
| 141 | Oct 10/2007 | |
| 142 | Oct 10/2007 | |
| 143 | Oct 10/2007 | |
| 144 | BLANK | |
| 22-11 TASKS | | |
| 201 | Jun 10/2007 | |
| 202 | Feb 15/2009 | |
| 203 | Oct 10/2007 | |
| 204 | Oct 15/2008 | |
| 205 | Feb 15/2009 | |
| 206 | Feb 15/2009 | |
| 207 | Feb 15/2009 | |
| 208 | Feb 15/2009 | |
| 209 | Feb 15/2009 | |
| 210 | Jun 10/2007 | |
| 211 | Jun 10/2007 | |
| 212 | Jun 10/2007 | |
| 213 | Oct 10/2007 | |
| 214 | Oct 10/2007 | |

| Page | Date | COC |
|---|---|---|
| 22-11 TASKS (cont) | | |
| 215 | Oct 10/2007 | |
| 216 | Oct 10/2007 | |
| 217 | Oct 10/2007 | |
| 218 | Oct 10/2007 | |
| 219 | Oct 10/2007 | |
| 220 | Oct 10/2007 | |
| 221 | Oct 10/2007 | |
| 222 | Oct 10/2007 | |
| 223 | Oct 10/2007 | |
| 224 | Oct 10/2007 | |
| 225 | Oct 10/2007 | |
| 226 | Oct 10/2007 | |
| 227 | Oct 10/2007 | |
| 228 | Oct 10/2007 | |
| 229 | Oct 10/2007 | |
| 230 | Oct 10/2007 | |
| 231 | Oct 10/2007 | |
| 232 | Oct 10/2007 | |
| 233 | Oct 10/2007 | |
| 234 | Oct 10/2007 | |
| 235 | Oct 10/2007 | |
| 236 | Oct 10/2007 | |
| 237 | Oct 10/2007 | |
| 238 | Oct 10/2007 | |
| 239 | Oct 10/2007 | |
| 240 | Oct 10/2007 | |
| 241 | Oct 10/2007 | |
| 242 | Jun 10/2007 | |
| 243 | Jun 10/2007 | |
| 244 | Jun 10/2007 | |
| 245 | Jun 10/2007 | |
| 246 | Jun 10/2007 | |
| 247 | Jun 10/2007 | |
| 248 | Jun 10/2007 | |
| 249 | Jun 10/2007 | |
| 250 | Jun 10/2007 | |
| 251 | Jun 10/2007 | |
| 252 | Jun 10/2007 | |
| 253 | Feb 15/2009 | |

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated

# 22-EFFECTIVE PAGES


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

CHAPTER 22
AUTOFLIGHT

| Page | Date | COC |
|---|---|---|
| 22-11 TASKS (cont) | | |
| 254 | Feb 15/2009 | |
| 255 | Feb 15/2009 | |
| 256 | Jun 10/2007 | |
| 257 | Jun 10/2007 | |
| 258 | Jun 10/2007 | |
| 259 | Jun 10/2007 | |
| 260 | Jun 10/2007 | |
| 261 | Jun 10/2007 | |
| 262 | Jun 10/2007 | |
| 263 | Jun 10/2007 | |
| 264 | Jun 10/2007 | |
| 265 | Jun 10/2007 | |
| 266 | Jun 10/2007 | |
| 267 | Jun 10/2007 | |
| 268 | Jun 10/2007 | |
| 269 | Jun 10/2007 | |
| 270 | Jun 10/2007 | |
| 271 | Feb 15/2009 | |
| 272 | Feb 15/2009 | |
| 273 | Feb 15/2009 | |
| 274 | Jun 10/2007 | |
| 275 | Jun 10/2007 | |
| 276 | Jun 10/2007 | |
| 277 | Jun 10/2007 | |
| 278 | Jun 10/2007 | |
| 279 | Jun 10/2007 | |
| 280 | Jun 10/2007 | |
| 281 | Jun 10/2007 | |
| 282 | Jun 10/2007 | |
| 283 | Jun 10/2007 | |
| 284 | Jun 10/2007 | |
| 285 | Jun 10/2007 | |
| 286 | Jun 10/2007 | |
| 287 | Jun 10/2007 | |
| 288 | Jun 10/2007 | |
| 289 | Jun 10/2007 | |
| 290 | Jun 10/2007 | |
| 291 | Jun 10/2007 | |
| 292 | Jun 10/2007 | |
| 22-11 TASKS (cont) | | |
| 293 | Jun 10/2007 | |
| 294 | Jun 10/2007 | |
| 295 | Jun 10/2007 | |
| 296 | Jun 10/2007 | |
| 297 | Jun 10/2007 | |
| O 298 | Jun 15/2009 | |
| O 298.1 | Jun 15/2009 | |
| O 298.2 | Jun 15/2009 | |
| O 298.3 | Jun 15/2009 | |
| O 298.4 | Jun 15/2009 | |
| 22-11 TASK SUPPORT | | |
| 301 | Jun 10/2007 | |
| 302 | Jun 10/2007 | |
| 303 | Jun 10/2007 | |
| 304 | Jun 10/2007 | |
| 305 | Jun 10/2007 | |
| 306 | Jun 10/2007 | |
| 307 | Jun 10/2007 | |
| 308 | Jun 10/2007 | |
| 309 | Jun 10/2007 | |
| 310 | Jun 10/2007 | |
| 311 | Jun 10/2007 | |
| 312 | Jun 10/2007 | |
| 313 | Jun 10/2007 | |
| 314 | Jun 10/2007 | |
| 315 | Jun 10/2007 | |
| 316 | Jun 10/2007 | |
| 317 | Jun 10/2007 | |
| 318 | Jun 10/2007 | |
| 319 | Jun 10/2007 | |
| 320 | Jun 10/2007 | |
| 321 | Jun 10/2007 | |
| 322 | Jun 10/2007 | |
| 323 | Jun 10/2007 | |
| 324 | Jun 10/2007 | |
| 325 | Jun 10/2007 | |
| 326 | Jun 15/2008 | |
| 22-12 TASKS | | |
| 201 | Feb 10/2005 | |
| 22-12 TASKS (cont) | | |
| 202 | Jun 10/2006 | |
| 203 | Feb 10/2005 | |
| 204 | Jun 10/2006 | |
| 205 | Feb 10/2005 | |
| 206 | Feb 10/2005 | |
| 207 | Jun 10/2006 | |
| 208 | Jun 10/2006 | |
| 209 | Jun 10/2006 | |
| 210 | Feb 10/2005 | |
| 211 | Feb 10/2005 | |
| 212 | Oct 10/2007 | |
| 213 | Jun 10/2006 | |
| 214 | Feb 10/2005 | |
| 215 | Feb 10/2005 | |
| 216 | Feb 10/2005 | |
| 217 | Feb 10/2005 | |
| 218 | Feb 10/2005 | |
| 219 | Feb 10/2005 | |
| 220 | Feb 10/2005 | |
| 221 | Jun 10/2005 | |
| 222 | Feb 10/2005 | |
| 223 | Feb 10/2005 | |
| 224 | Feb 10/2005 | |
| 225 | Jun 10/2005 | |
| 226 | Feb 10/2005 | |
| 227 | Feb 10/2005 | |
| 228 | Feb 10/2005 | |
| 229 | Feb 10/2005 | |
| 230 | Feb 10/2005 | |
| 231 | Jun 10/2006 | |
| 232 | Feb 10/2005 | |
| 233 | Feb 10/2005 | |
| 234 | Feb 10/2005 | |
| 235 | Feb 10/2005 | |
| 236 | Feb 10/2005 | |
| 237 | Feb 10/2005 | |
| 238 | Feb 10/2005 | |
| 239 | Feb 10/2005 | |
| 240 | Feb 10/2005 | |

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated

# 22-EFFECTIVE PAGES


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

CHAPTER 22
AUTOFLIGHT

| Page | Date | COC |
|---|---|---|
| 22-12 TASKS (cont) | | |
| 241 | Feb 10/2005 | |
| 242 | Jun 10/2007 | |
| 243 | Jun 10/2007 | |
| 244 | Jun 10/2007 | |
| 245 | Jun 10/2007 | |
| 246 | Jun 10/2007 | |
| 247 | Jun 10/2007 | |
| 248 | Jun 10/2007 | |
| 249 | Jun 10/2007 | |
| 250 | Jun 10/2007 | |
| 251 | Jun 10/2007 | |
| 252 | Jun 10/2007 | |
| 253 | Jun 10/2007 | |
| 254 | Jun 10/2007 | |
| 255 | Jun 10/2007 | |
| 256 | Jun 10/2007 | |
| 257 | Jun 10/2007 | |
| 258 | Jun 10/2007 | |
| 259 | Jun 10/2007 | |
| 260 | Jun 10/2007 | |
| 261 | Jun 10/2007 | |
| 262 | Jun 10/2007 | |
| 263 | Jun 10/2007 | |
| 264 | Jun 10/2007 | |
| 265 | Jun 10/2007 | |
| 266 | Jun 10/2007 | |
| 267 | Jun 10/2007 | |
| 268 | Jun 10/2007 | |
| 269 | Jun 10/2007 | |
| 270 | Jun 10/2007 | |
| 22-13 TASKS | | |
| 201 | Feb 10/2005 | |
| 202 | Feb 10/2005 | |
| 203 | Feb 10/2005 | |
| 204 | Feb 10/2005 | |
| 205 | Feb 10/2005 | |
| 206 | Feb 10/2005 | |
| 207 | Feb 10/2005 | |
| 208 | Feb 10/2005 | |
| 22-13 TASKS (cont) | | |
| 209 | Feb 10/2005 | |
| 210 | Feb 10/2005 | |
| 211 | Feb 10/2005 | |
| 212 | Feb 10/2005 | |
| 213 | Feb 10/2005 | |
| 214 | Feb 10/2005 | |
| 215 | Feb 10/2005 | |
| 216 | Feb 10/2005 | |
| 217 | Feb 10/2005 | |
| 218 | Feb 10/2005 | |
| 219 | Feb 10/2005 | |
| 220 | Feb 10/2005 | |
| 221 | Feb 10/2005 | |
| 222 | Feb 10/2005 | |
| 223 | Feb 10/2005 | |
| 224 | Feb 10/2005 | |
| 225 | Feb 10/2005 | |
| 226 | Feb 10/2005 | |
| 227 | Feb 10/2005 | |
| 228 | Jun 10/2007 | |
| 229 | Jun 10/2007 | |
| 230 | Jun 10/2007 | |
| 231 | Jun 10/2007 | |
| 232 | Jun 10/2007 | |
| 233 | Jun 10/2007 | |
| 234 | Jun 10/2007 | |
| 235 | Jun 10/2007 | |
| 236 | Jun 10/2007 | |
| 237 | Jun 10/2007 | |
| 238 | Jun 10/2007 | |
| 239 | Jun 10/2007 | |
| 240 | Jun 10/2007 | |
| 241 | Jun 10/2007 | |
| 242 | Jun 10/2007 | |
| 243 | Jun 10/2007 | |
| 244 | Jun 10/2007 | |
| 245 | Jun 10/2007 | |
| 246 | Jun 10/2007 | |
| 247 | Jun 10/2007 | |
| 22-13 TASKS (cont) | | |
| 248 | Feb 15/2009 | |
| 249 | Feb 15/2009 | |
| 250 | Feb 15/2009 | |
| 251 | Feb 15/2009 | |
| 252 | Jun 10/2007 | |
| 253 | Jun 10/2007 | |
| 254 | Jun 10/2007 | |
| 255 | Jun 10/2007 | |
| 256 | Jun 10/2007 | |
| 257 | Jun 10/2007 | |
| 258 | Jun 10/2007 | |
| 259 | Feb 15/2009 | |
| 260 | Feb 15/2009 | |
| 261 | Feb 15/2009 | |
| 262 | Feb 15/2009 | |
| 263 | Feb 15/2009 | |
| 264 | Feb 15/2009 | |
| 265 | Feb 15/2009 | |
| 266 | Feb 15/2009 | |
| 267 | Feb 15/2009 | |
| 268 | Feb 15/2009 | |
| 269 | Feb 15/2009 | |
| 270 | Feb 15/2009 | |
| 271 | Feb 15/2009 | |
| 272 | BLANK | |
| 22-14 TASKS | | |
| 201 | Feb 10/2005 | |
| 202 | Feb 10/2005 | |
| 203 | Feb 10/2005 | |
| 204 | Feb 10/2007 | |
| 205 | Feb 10/2007 | |
| 206 | Feb 15/2009 | |
| 207 | Feb 15/2009 | |
| 208 | Feb 10/2007 | |
| 209 | Feb 10/2007 | |
| 210 | Feb 10/2007 | |
| 211 | Oct 15/2008 | |
| 212 | Feb 10/2007 | |
| 213 | Feb 10/2007 | |

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated

# 22-EFFECTIVE PAGES


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

CHAPTER 22
AUTOFLIGHT

| Page | Date | COC |
|---|---|---|
| 22-14 TASKS (cont) | | |
| 214 | Feb 10/2007 | |
| 215 | Feb 10/2007 | |
| 216 | Feb 10/2007 | |
| 217 | Feb 10/2007 | |
| 218 | Feb 10/2007 | |
| 219 | Feb 10/2007 | |
| 220 | Feb 10/2007 | |
| 221 | Feb 10/2007 | |
| 222 | Feb 10/2007 | |
| 223 | Jun 10/2007 | |
| 224 | Jun 10/2007 | |
| 225 | Jun 10/2007 | |
| 226 | Jun 10/2007 | |
| 227 | Jun 10/2007 | |
| 228 | Jun 10/2007 | |
| 229 | Jun 10/2007 | |
| 230 | Jun 10/2007 | |
| 231 | Jun 10/2007 | |
| 232 | Jun 10/2007 | |
| 233 | Jun 10/2007 | |
| 234 | Jun 10/2007 | |
| 235 | Jun 10/2007 | |
| 236 | Jun 10/2007 | |
| 237 | Jun 10/2007 | |
| 238 | Jun 10/2007 | |
| 239 | Jun 10/2007 | |
| 240 | Jun 10/2007 | |
| 241 | Jun 10/2007 | |
| 242 | Jun 10/2007 | |
| 243 | Jun 10/2007 | |
| 244 | Jun 10/2007 | |
| 245 | Jun 10/2007 | |
| 246 | Jun 10/2007 | |
| 247 | Jun 10/2007 | |
| 248 | Jun 10/2007 | |
| 249 | Jun 10/2007 | |
| 250 | Jun 10/2007 | |
| 251 | Jun 10/2007 | |
| 252 | Jun 10/2007 | |
| 22-14 TASKS (cont) | | |
| 253 | Jun 10/2007 | |
| 254 | Jun 10/2007 | |
| 255 | Jun 10/2007 | |
| 256 | Jun 10/2007 | |
| 257 | Jun 10/2007 | |
| 258 | Jun 10/2007 | |
| 259 | Jun 10/2007 | |
| 260 | Jun 10/2007 | |
| 22-15 TASKS | | |
| 201 | Feb 15/2009 | |
| 202 | Feb 15/2009 | |
| 203 | Oct 10/2007 | |
| 204 | Oct 10/2007 | |
| 205 | Feb 15/2009 | |
| 206 | Feb 15/2009 | |
| 207 | Feb 15/2009 | |
| 208 | Feb 15/2009 | |
| 209 | Oct 10/2007 | |
| 210 | Oct 10/2007 | |
| 211 | Oct 10/2007 | |
| 212 | Oct 10/2007 | |
| 213 | Oct 10/2007 | |
| 214 | Oct 10/2007 | |
| 215 | Oct 10/2007 | |
| 216 | Oct 10/2007 | |
| 217 | Feb 15/2009 | |
| 218 | Oct 10/2007 | |
| 219 | Oct 10/2007 | |
| 220 | Oct 10/2007 | |
| 221 | Oct 10/2007 | |
| 222 | Oct 10/2007 | |
| 223 | Oct 10/2007 | |
| 224 | Oct 10/2007 | |
| 225 | Oct 10/2007 | |
| 226 | Oct 10/2007 | |
| 227 | Oct 10/2007 | |
| 228 | Oct 10/2007 | |
| 229 | Oct 10/2007 | |
| 230 | Oct 10/2007 | |
| 22-15 TASKS (cont) | | |
| 231 | Oct 10/2007 | |
| 232 | Oct 10/2007 | |
| 233 | Oct 10/2007 | |
| 234 | Oct 10/2007 | |
| 235 | Oct 10/2007 | |
| 236 | Oct 10/2007 | |
| 237 | Oct 10/2007 | |
| 238 | Oct 10/2007 | |
| 239 | Oct 10/2007 | |
| 240 | Oct 10/2007 | |
| 241 | Oct 10/2007 | |
| 242 | Oct 10/2007 | |
| 243 | Oct 10/2007 | |
| 244 | Oct 10/2007 | |
| 245 | Oct 10/2007 | |
| 246 | Oct 10/2007 | |
| 247 | Oct 10/2007 | |
| 248 | Oct 10/2007 | |
| 249 | Oct 10/2007 | |
| 250 | Oct 10/2007 | |
| 251 | Oct 10/2007 | |
| 252 | Oct 10/2007 | |
| 253 | Oct 10/2007 | |
| 254 | Oct 10/2007 | |
| 255 | Oct 10/2007 | |
| 256 | Oct 10/2007 | |
| 257 | Oct 10/2007 | |
| 258 | Oct 10/2007 | |
| 259 | Feb 15/2009 | |
| 260 | Oct 10/2007 | |
| 261 | Oct 10/2007 | |
| 262 | Oct 10/2007 | |
| 263 | Oct 10/2007 | |
| 264 | Oct 10/2007 | |
| 265 | Oct 10/2007 | |
| 266 | BLANK | |
| 22-16 TASKS | | |
| 201 | Feb 10/2005 | |
| 202 | Oct 10/2005 | |

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated

# 22-EFFECTIVE PAGES


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

CHAPTER 22
AUTOFLIGHT

| Page | Date | COC |
|---|---|---|
| 22-16 TASKS (cont) | | |
| 203 | Oct 10/2005 | |
| 204 | Oct 10/2005 | |
| 205 | Oct 10/2005 | |
| 206 | Oct 10/2005 | |
| 207 | Oct 10/2005 | |
| 208 | Oct 10/2005 | |
| 209 | Oct 10/2005 | |
| 210 | Oct 10/2005 | |
| 211 | Oct 10/2005 | |
| 212 | Oct 10/2005 | |
| 213 | Oct 10/2005 | |
| 214 | Oct 10/2005 | |
| 215 | Oct 10/2005 | |
| 216 | Feb 10/2005 | |
| 217 | Feb 10/2005 | |
| 218 | Feb 10/2005 | |
| 219 | Feb 10/2005 | |
| 220 | Feb 10/2005 | |
| 221 | Feb 10/2005 | |
| 222 | Feb 10/2005 | |
| 223 | Feb 10/2005 | |
| 224 | Jun 15/2008 | |
| 225 | Jun 15/2008 | |
| 226 | Jun 15/2008 | |
| 227 | Feb 15/2009 | |
| 228 | Feb 15/2009 | |
| 229 | Feb 15/2009 | |
| 230 | Feb 10/2007 | |
| 231 | Feb 10/2007 | |
| 232 | Feb 10/2007 | |
| 233 | Feb 10/2007 | |
| 234 | Feb 10/2007 | |
| 235 | Feb 10/2007 | |
| 236 | Feb 10/2007 | |
| 237 | Feb 10/2007 | |
| 238 | Feb 10/2007 | |
| 239 | Feb 10/2007 | |
| 240 | Feb 10/2007 | |
| 241 | Feb 10/2007 | |
| 22-16 TASKS (cont) | | |
| 242 | BLANK | |
| 22-17 TASKS | | |
| 201 | Feb 15/2009 | |
| 202 | Feb 15/2009 | |
| 203 | Feb 15/2009 | |
| 204 | Feb 15/2009 | |
| 205 | Feb 15/2008 | |
| 206 | Jun 10/2007 | |
| 207 | Oct 15/2008 | |
| 208 | Oct 15/2008 | |
| 209 | Oct 15/2008 | |
| 210 | Oct 15/2008 | |
| 211 | Oct 15/2008 | |
| 212 | Oct 15/2008 | |
| 213 | Oct 15/2008 | |
| 214 | Oct 15/2008 | |
| 215 | Oct 15/2008 | |
| 216 | Oct 15/2008 | |
| 217 | Oct 15/2008 | |
| 218 | BLANK | |
| 22-23 TASKS | | |
| 201 | Feb 10/2005 | |
| 202 | Feb 10/2005 | |
| 203 | Feb 10/2005 | |
| 204 | Feb 10/2005 | |
| 205 | Feb 10/2005 | |
| 206 | Jun 10/2005 | |
| 207 | Feb 10/2005 | |
| 208 | Feb 10/2005 | |
| 209 | Feb 10/2005 | |
| 210 | Oct 10/2005 | |
| 211 | Feb 10/2005 | |
| 212 | Oct 10/2005 | |
| 213 | Oct 10/2005 | |
| 214 | Oct 10/2005 | |
| 215 | Feb 10/2006 | |
| 216 | Oct 10/2005 | |
| R 217 | Jun 15/2009 | |
| 218 | Feb 10/2006 | |
| 22-23 TASKS (cont) | | |
| 219 | Feb 10/2006 | |
| 220 | Feb 10/2006 | |
| 221 | Feb 10/2006 | |
| 222 | BLANK | |
| 22-31 TASKS | | |
| 201 | Feb 15/2009 | |
| 202 | Feb 15/2009 | |
| 203 | Feb 15/2009 | |
| 204 | Feb 15/2009 | |
| 205 | Feb 10/2006 | |
| 206 | Feb 10/2007 | |
| 207 | Feb 10/2007 | |
| 208 | Feb 10/2007 | |
| 209 | Feb 10/2007 | |
| 210 | Feb 10/2007 | |
| 211 | Feb 10/2007 | |
| 212 | Feb 10/2007 | |
| 213 | Feb 10/2007 | |
| 214 | Feb 15/2009 | |
| 215 | Jun 10/2007 | |
| 216 | Feb 15/2009 | |
| 217 | Feb 15/2009 | |
| 218 | Jun 10/2007 | |
| 219 | Feb 15/2009 | |
| 220 | Feb 15/2009 | |
| 221 | Jun 10/2007 | |
| 222 | Feb 15/2009 | |
| 223 | Feb 15/2009 | |
| 224 | Feb 15/2009 | |
| 225 | Feb 15/2009 | |
| 226 | Feb 15/2009 | |
| 227 | Feb 15/2009 | |
| 228 | Feb 15/2009 | |
| 229 | Feb 15/2009 | |
| 230 | Jun 15/2008 | |
| 231 | Jun 15/2008 | |
| 232 | Feb 15/2009 | |
| 233 | Feb 15/2009 | |
| 234 | Jun 15/2008 | |

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated

# 22-EFFECTIVE PAGES


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

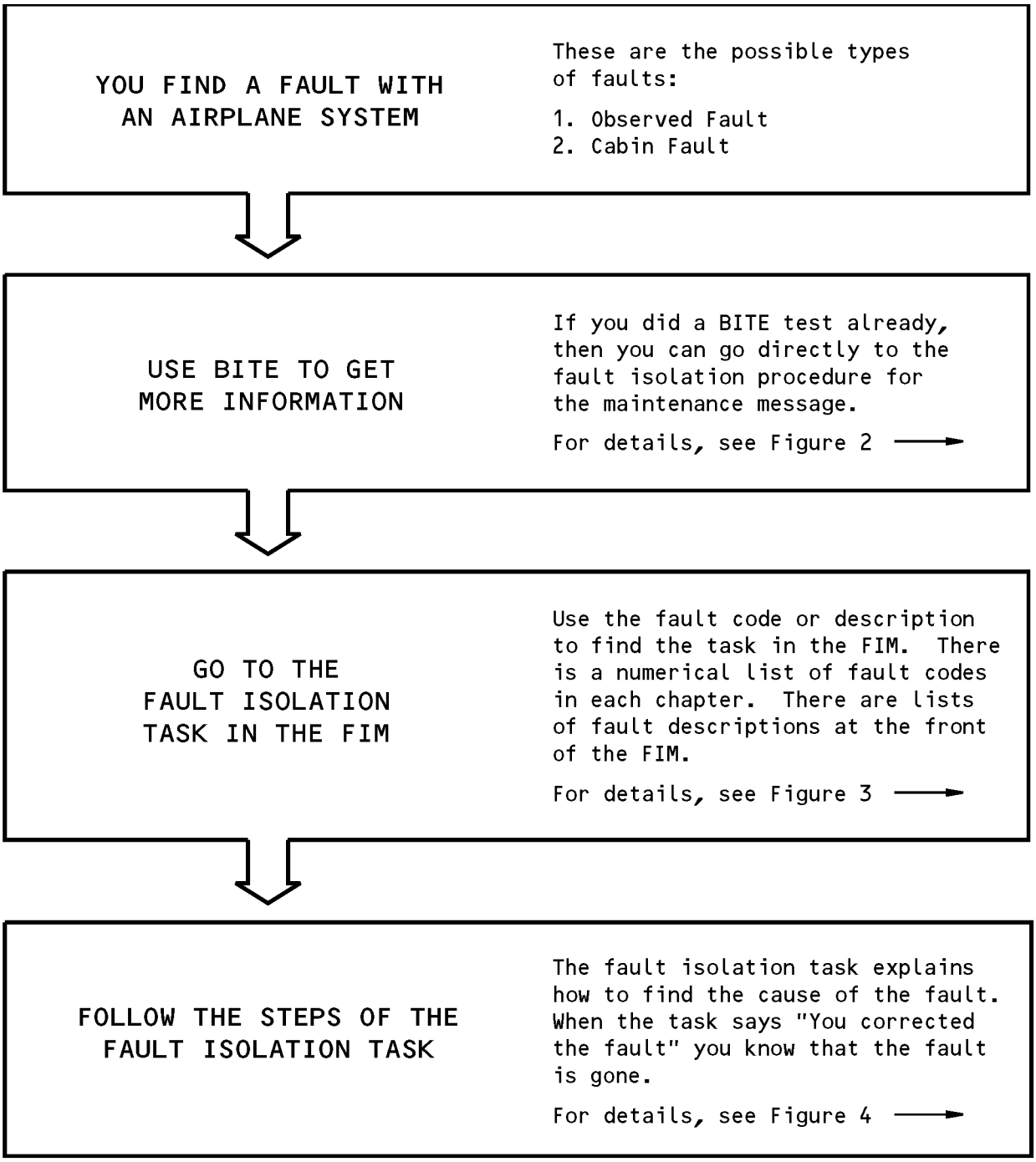
CHAPTER 22
AUTOFLIGHT

| Page | Date | COC |
|---|---|---|
| 22-31 TASKS (cont) | | |
| 235 | Feb 15/2009 | |
| 236 | Feb 15/2009 | |
| 237 | Jun 15/2008 | |
| 238 | Feb 15/2009 | |
| 239 | Feb 15/2009 | |
| 240 | Feb 15/2009 | |
| 241 | Feb 15/2009 | |
| 242 | Feb 15/2009 | |
| 243 | Feb 15/2009 | |
| 244 | Feb 15/2009 | |
| 245 | Jun 15/2008 | |
| 246 | Jun 15/2008 | |
| 247 | Feb 15/2009 | |
| 248 | Jun 15/2008 | |
| 249 | Jun 15/2008 | |
| 250 | Feb 15/2009 | |
| 251 | Feb 15/2009 | |
| 252 | Jun 15/2008 | |
| 253 | Feb 15/2009 | |
| 254 | Feb 15/2009 | |
| 255 | Feb 15/2009 | |
| 256 | Feb 15/2009 | |
| 257 | Feb 15/2009 | |
| 258 | Feb 15/2009 | |
| 259 | Feb 15/2009 | |
| 260 | Feb 15/2009 | |
| 261 | Jun 15/2008 | |
| 262 | Feb 15/2009 | |
| 263 | Jun 15/2008 | |
| 264 | Feb 15/2009 | |
| 265 | Feb 15/2009 | |
| 266 | Feb 15/2009 | |
| 267 | Feb 15/2009 | |
| 268 | Feb 15/2009 | |
| 269 | Feb 15/2009 | |
| 270 | Feb 15/2009 | |
| 271 | Feb 15/2009 | |
| 272 | Feb 15/2009 | |
| 273 | Feb 15/2009 | |
| 22-31 TASKS (cont) | | |
| 274 | Feb 15/2009 | |
| 275 | Feb 15/2009 | |
| 276 | Feb 15/2009 | |
| 277 | Feb 15/2009 | |
| 278 | Feb 15/2009 | |
| 279 | Feb 15/2009 | |
| 280 | Feb 15/2009 | |
| 281 | Feb 15/2009 | |
| 282 | Feb 15/2009 | |
| 283 | Feb 15/2009 | |
| 284 | Feb 15/2009 | |
| 285 | Feb 15/2009 | |
| 286 | Feb 15/2009 | |
| 287 | Feb 15/2009 | |
| 288 | BLANK | |
| 22-32 TASKS | | |
| 201 | Feb 15/2009 | |
| 202 | Feb 15/2009 | |
| 203 | Jun 10/2006 | |
| 204 | Jun 10/2006 | |
| 205 | Jun 10/2007 | |
| 206 | Jun 10/2006 | |
| 207 | Jun 10/2006 | |
| 208 | Jun 10/2006 | |
| 209 | Jun 10/2006 | |
| 210 | Jun 10/2006 | |
| 211 | Jun 10/2006 | |
| 212 | Feb 15/2009 | |
| 213 | Jun 10/2006 | |
| 214 | Jun 10/2006 | |
| 215 | Jun 10/2006 | |
| 216 | Jun 10/2006 | |
| 217 | Feb 15/2009 | |
| 218 | Feb 15/2009 | |
| 219 | Feb 15/2009 | |
| 220 | Feb 15/2009 | |
| 221 | Feb 15/2009 | |
| 222 | Feb 15/2009 | |
| 223 | Feb 15/2009 | |
| 22-32 TASKS (cont) | | |
| 224 | Feb 15/2009 | |
| 225 | Feb 15/2009 | |
| 226 | Feb 15/2009 | |
| 227 | Feb 15/2009 | |
| 228 | Feb 15/2009 | |
| 229 | Feb 15/2009 | |
| 230 | Feb 15/2009 | |
| 231 | Feb 15/2009 | |
| 232 | Feb 15/2009 | |
| 233 | Feb 15/2009 | |
| 234 | Feb 15/2009 | |
| 235 | Feb 15/2009 | |
| 236 | Feb 15/2009 | |
| 237 | Feb 15/2009 | |
| 238 | Feb 15/2009 | |

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated

# 22-EFFECTIVE PAGES

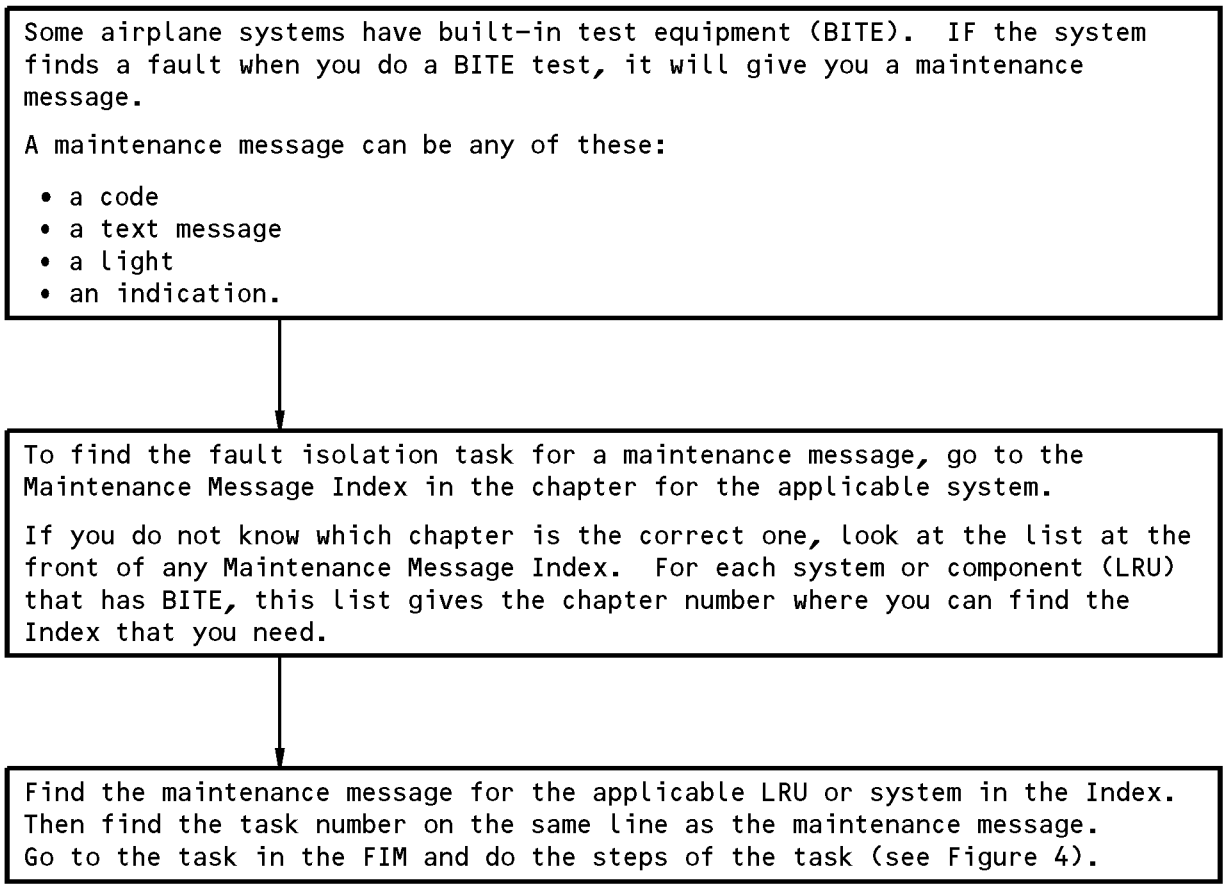

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details




Basic Fault Isolation Process
Figure 1



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details




Getting Fault Information from BITE
Figure 2



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| IF YOU HAVE: | THEN DO THIS TO FIND THE TASK IN THE FIM: |
|---|---|
| FAULT CODE | 1. The first two digits of the fault code are the FIM chapter that you need. Go to the Fault Code Index in that chapter and find the fault code. If the fault code starts with a letter, then go to the Cabin Fault Code Index at the front of the FIM.<br>2. Find the task number on the same line as the fault code. Go to the task in the FIM and do the steps in the task (see Figure 4). |
| OBSERVED FAULT DESCRIPTION | 1. Go to the Observed Fault List at the front of the FIM and find the best description for the fault.<br>2. Find the task number on the same line as the fault description. Go to the task in the FIM and do the steps of the task (see Figure 4). |
| CABIN FAULT DESCRIPTION | 1. Go to the Cabin Fault List at the front of the FIM and find the best description for the fault.<br>2. Find the task number on the same line as the fault description. Go to the task in the FIM and do the steps of the task (see Figure 4). |
| MAINTENANCE MESSAGE (FROM BITE) | 1. Go to the Maintenance Message Index in the chapter for the LRU (the front of each Index gives you the chapter number for all LRUs). Find the maintenance message in the Index.<br>2. Find the task number on the same line as the maintenance message. Go to the task in the FIM and do the steps in the task (see Figure 4). |

Finding the Fault Isolation Task in the FIM
Figure 3


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

ASSUMED CONDITIONS AT START OF TASK

- External electrical power is ON
- Hydraulic power and pneumatic power are OFF
- Engines are shut down
- No equipment in the system is deactivated

POSSIBLE CAUSES

- The list of possible causes has the most likely cause first and the least likely cause last.
- You can use the maintenance records of your airline to determine if the fault occurred before. Compare the list of possible causes to the past maintenance actions. This will help prevent repetition of the same maintenance actions.

INITIAL EVALUATION PARAGRAPH

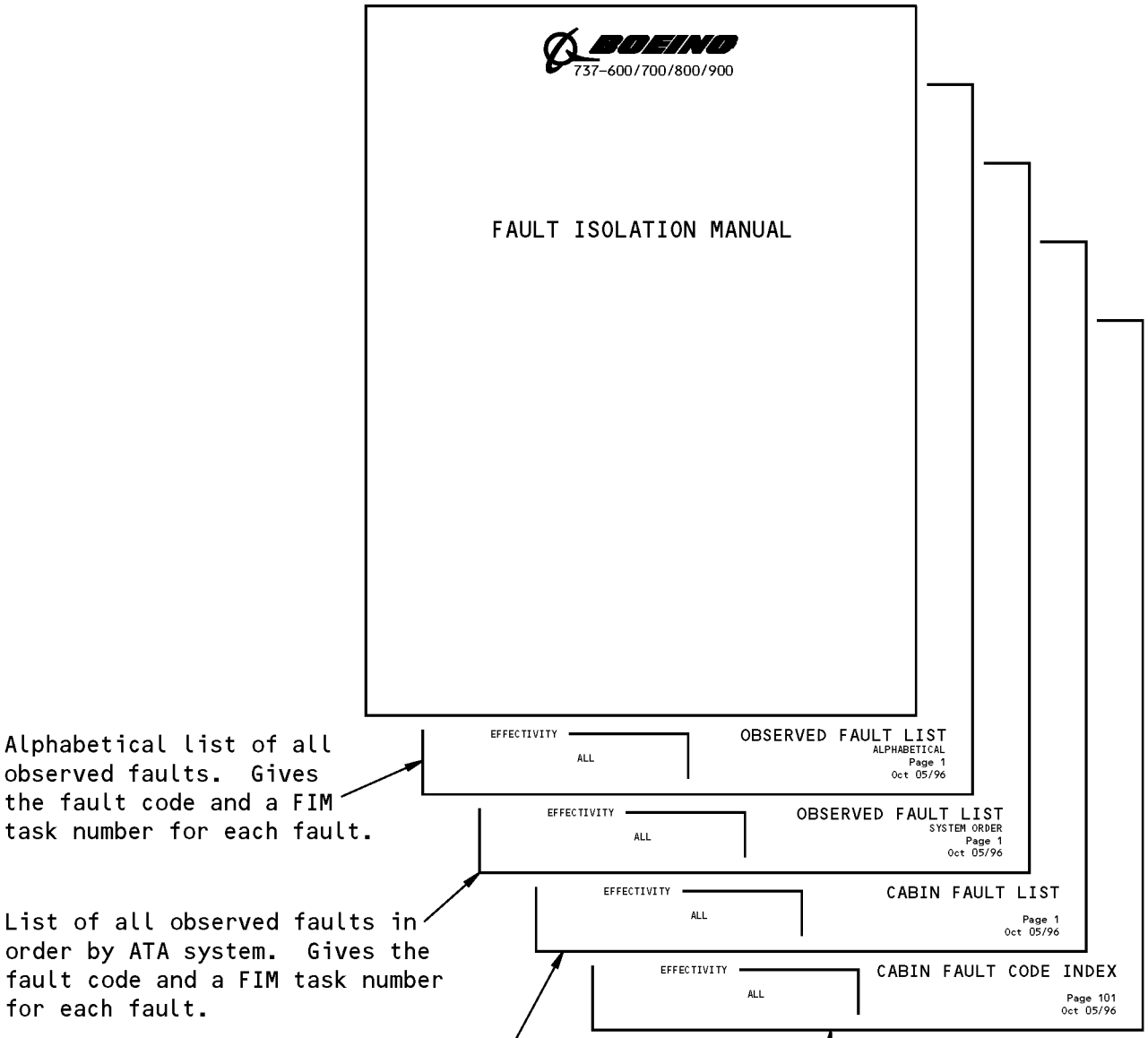
- The primary purpose of the Initial Evaluation paragraph at the start of the task is to help you find out if you can detect the fault right now:
  - If you cannot detect the fault right now, then the task cannot isolate the fault and the Initial Evaluation paragraph will say that there was an intermittent fault.
  - If you have an intermittent fault, you must use your judgement (and follow your airline's policy) to decide which maintenance action to take. Then monitor the airplane to see if the fault happens again on subsequent flights.
- The Initial Evaluation paragraph can also help you find out which Fault Isolation Procedure to use to isolate and correct the fault.

FAULT ISOLATION STEPS

- Do the steps of the task in the specified order. The "If ... then" statements that you see will guide you along the correct path.
- When you are at the endpoint of the path, the step says "...you corrected the fault." Complete the step and exit the procedure.

Doing the Fault Isolation Task
Figure 4

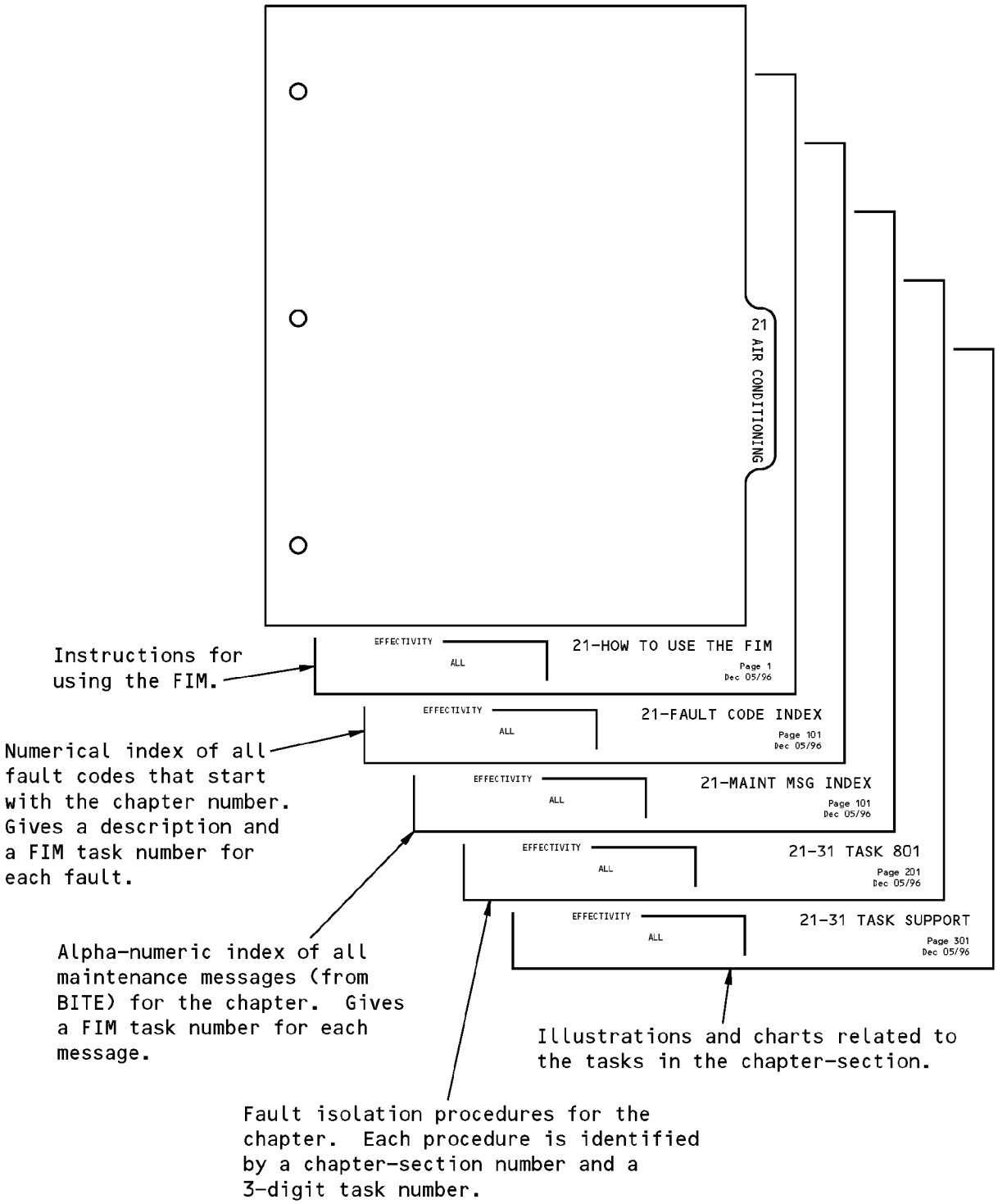

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details




Subjects at Front of FIM
Figure 5



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details




Subjects in Each FIM Chapter
Figure 6



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| FAULT CODE | FAULT DESCRIPTION | GO TO FIM TASK |
|---|---|---|
| 221 010 00 | Autopilot: A/P red warning annunciator light on steady. | 22-11 TASK 801 |
| 221 020 00 | Autopilot: A/P amber warning annunciator light on flashing, autopilot went to CWS mode. | 22-11 TASK 801 |
| 221 030 00 | MACH TRIM FAIL light: light on. | 22-11 TASK 801 |
| 221 040 00 | MACH TRIM FAIL light: light on when MASTER CAUTION switch is pushed. | 22-11 TASK 801 |
| 221 050 00 | SPEED TRIM FAIL light: light on. | 22-11 TASK 801 |
| 221 060 00 | SPEED TRIM FAIL light on: light on when MASTER CAUTION switch is pushed. | 22-11 TASK 801 |
| 221 070 00 | STAB OUT OF TRIM light: light on. | 22-11 TASK 801 |
| 221 080 00 | Autopilot: disengages automatically - CMD A engaged. | 22-11 TASK 801 |
| 221 090 00 | Autopilot: disengages automatically - CMD B engaged. | 22-11 TASK 801 |
| 221 100 00 | Autopilot: disengages automatically - CMD A or CMD B engaged. | 22-11 TASK 801 |
| 221 110 00 | Autopilot: disengages automatically - CWS A engaged. | 22-11 TASK 801 |
| 221 120 00 | Autopilot: disengages automatically - CWS B engaged. | 22-11 TASK 801 |
| 221 130 00 | Autopilot: disengages automatically - CWS A or CWS B engaged. | 22-11 TASK 801 |
| 221 140 00 | Autopilot: A and B disengage automatically while in dual mode. | 22-11 TASK 801 |
| 221 150 31 | Flight director: FD status does not show on the flight mode annunciator with F/D on - captain's. | 22-11 TASK 801 |
| 221 150 32 | Flight director: FD status does not show on the flight mode annunciator with F/D on - first officer's. | 22-11 TASK 801 |
| 221 150 48 | Flight director: FD status does not show on the flight mode annunciator with F/D on - captain's and first officer's. | 22-11 TASK 801 |
| 221 160 31 | Flight director: does not operate, FD status does not show on the flight mode annunciator, autopilot not on - captain's. | 22-11 TASK 801 |
| 221 160 32 | Flight director: does not operate, FD status does not show on the flight mode annunciator, autopilot not on - first officer's. | 22-11 TASK 801 |
| 221 160 48 | Flight director: does not operate, FD status does not show on the flight mode annunciator, autopilot not on - captain's and first officer's. | 22-11 TASK 801 |
| 221 170 31 | Flight director: FD flag shows on flight director display - captain's. | 22-11 TASK 801 |
| 221 170 32 | Flight director: FD flag shows on flight director display - first officer's. | 22-11 TASK 801 |
| 221 170 48 | Flight director: FD flag shows on flight director display - captain's and first officer's. | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| FAULT CODE | FAULT DESCRIPTION | GO TO FIM TASK |
|---|---|---|
| 221 180 00 | Autopilot: status does not show on the flight mode annunciator, switch lights are on. | 22-11 TASK 801 |
| 221 190 31 | Flight director: TO/GA pitch mode does not show on the flight mode annunciator for takeoff when TO/GA switch is pushed and F/D on - captain's. | 22-11 TASK 801 |
| 221 190 32 | Flight director: TO/GA pitch mode does not show on the flight mode annunciator for takeoff when TO/GA switch is pushed and F/D on - first officer's. | 22-11 TASK 801 |
| 221 190 48 | Flight director: TO/GA pitch mode does not show on the flight mode annunciator for takeoff when TO/GA switch is pushed and F/D on - captain's and first officer's. | 22-11 TASK 801 |
| 221 200 31 | Autopilot: TO/GA pitch mode does not show on the flight mode annunciator for go-around when TO/GA switch is pushed and F/D on - captain's. | 22-11 TASK 801 |
| 221 200 32 | Autopilot: TO/GA pitch mode does not show on the flight mode annunciator for go-around when TO/GA switch is pushed and F/D on - first officer's. | 22-11 TASK 801 |
| 221 200 48 | Autopilot: TO/GA pitch mode does not show on the flight mode annunciator for go-around when TO/GA switch is pushed and F/D on - captain's and first officer's. | 22-11 TASK 801 |
| 221 201 00 | Autopilot: NO AUTOLAND shows on the engine display. | 22-11 TASK 801 |
| 221 202 00 | Autopilot: NO LAND 3 shows on the engine display. | 22-11 TASK 801 |
| 221 203 00 | Autopilot: NLND3 LCH shows in DFCS BITE FAULT HISTORY. | 22-11 TASK 801 |
| 221 204 00 | Autopilot: NO ALND LCH shows in DFCS BITE FAULT HISTORY. | 22-11 TASK 801 |
| 221 205 00 | Autopilot: P MODE FAIL shows in DFCS BITE FAULT HISTORY. | 22-11 TASK 801 |
| 221 206 00 | Autopilot: R MODE FAIL shows in DFCS BITE FAULT HISTORY. | 22-11 TASK 801 |
| 221 207 00 | Autopilot: SPDTRM LCH shows in DFCS BITE FAULT HISTORY. | 22-11 TASK 801 |
| 221 210 31 | Flight director: pitch or roll mode does not engage or disengages automatically, flight command display goes out of view - captain's. | 22-11 TASK 801 |
| 221 210 32 | Flight director: pitch or roll mode does not engage or disengages automatically, flight command display goes out of view - first officer's. | 22-11 TASK 801 |
| 221 210 48 | Flight director: pitch or roll mode does not engage or disengages automatically, flight command display goes out of view - captain's and first officer's. | 22-11 TASK 801 |
| 221 220 00 | Autopilot: pitch or roll mode does not engage or disengages automatically, autopilot went to CWS mode - CMD A engaged. | 22-11 TASK 801 |
| 221 230 00 | Autopilot: pitch or roll mode does not engage or disengages automatically, autopilot went to CWS mode - CMD B engaged. | 22-11 TASK 801 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| FAULT CODE | FAULT DESCRIPTION | GO TO FIM TASK |
|---|---|---|
| 221 240 00 | Autopilot: pitch or roll mode does not engage or disengages automatically, autopilot went to CWS mode - CMD A or CMD B engaged. | 22-11 TASK 801 |
| 221 250 00 | Autopilot: does not keep pitch attitude - CWS A engaged. | 22-11 TASK 801 |
| 221 260 00 | Autopilot: does not keep pitch attitude - CWS B engaged. | 22-11 TASK 801 |
| 221 270 00 | Autopilot: does not keep pitch attitude - CWS A or CWS B engaged. | 22-11 TASK 801 |
| 221 280 00 | Autopilot: does not keep roll attitude - CWS A engaged. | 22-11 TASK 801 |
| 221 290 00 | Autopilot: does not keep roll attitude - CWS B engaged. | 22-11 TASK 801 |
| 221 300 00 | Autopilot: does not keep roll attitude - CWS A or CWS B engaged. | 22-11 TASK 801 |
| 221 310 00 | Autopilot: airplane has pitch oscillation (porpoises) during multi-channel approach. | 22-16 TASK 801 |
| 221 320 00 | Autopilot: airplane has pitch oscillation (porpoises) with any A/P engaged in CMD. | 22-16 TASK 801 |
| 221 330 00 | Autopilot: airplane does not go to set altitude with V/S, LVL CHG, or VNAV pitch mode set - CMD A engaged. | 22-11 TASK 801 |
| 221 340 00 | Autopilot: airplane does not go to set altitude with V/S, LVL CHG, or VNAV pitch mode set - CMD B engaged. | 22-11 TASK 801 |
| 221 350 00 | Autopilot: airplane does not go to set altitude with V/S, LVL CHG, or VNAV pitch mode set - CMD A or CMD B engaged. | 22-11 TASK 801 |
| 221 360 31 | Flight director: display does not move correctly to guide the airplane to the set altitude - captain's. | 22-11 TASK 801 |
| 221 360 32 | Flight director: display does not move correctly to guide the airplane to the set altitude - first officer's. | 22-11 TASK 801 |
| 221 360 48 | Flight director: display does not move correctly to guide the airplane to the set altitude - captain's and first officer's. | 22-11 TASK 801 |
| 221 370 00 | Autopilot: airplane does not go to the set heading or keep the set heading with HDG SEL roll mode set - CMD A engaged. | 22-11 TASK 801 |
| 221 380 00 | Autopilot: airplane does not go to the set heading or keep the set heading with HDG SEL roll mode set - CMD B engaged. | 22-11 TASK 801 |
| 221 390 00 | Autopilot: airplane does not go to the set heading or keep the set heading with HDG SEL roll mode set - CMD A or CMD B engaged. | 22-11 TASK 801 |
| 221 400 00 | Autopilot: airplane does not keep the set heading - CWS A engaged. | 22-11 TASK 801 |
| 221 410 00 | Autopilot: airplane does not keep the set heading - CWS B engaged. | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| FAULT CODE | FAULT DESCRIPTION | GO TO FIM TASK |
|---|---|---|
| 221 420 00 | Autopilot: airplane does not keep the set heading - CWS A or CWS B engaged. | 22-11 TASK 801 |
| 221 430 00 | Autopilot: airplane does not keep the set airspeed with MCP SPD (LVL CHG) pitch mode set - CMD A engaged. | 22-11 TASK 801 |
| 221 440 00 | Autopilot: airplane does not keep the set airspeed with MCP SPD (LVL CHG) pitch mode set - CMD B engaged. | 22-11 TASK 801 |
| 221 450 00 | Autopilot: airplane does not keep the set airspeed with MCP SPD (LVL CHG) pitch mode set - CMD A or CMD B engaged. | 22-11 TASK 801 |
| 221 460 00 | Autopilot: airplane does not keep the set course with VOR roll mode set - CMD A engaged. | 22-11 TASK 801 |
| 221 470 00 | Autopilot: airplane does not keep the set course with VOR roll mode set - CMD B engaged. | 22-11 TASK 801 |
| 221 480 00 | Autopilot: airplane does not keep the set course with VOR roll mode set - CMD A or CMD B engaged. | 22-11 TASK 801 |
| 221 490 00 | Autopilot: airplane does not keep the same altitude with ALT HLD pitch mode set - CMD A engaged. | 22-11 TASK 801 |
| 221 500 00 | Autopilot: airplane does not keep the same altitude with ALT HLD pitch mode set - CMD B engaged. | 22-11 TASK 801 |
| 221 510 00 | Autopilot: airplane does not keep the same altitude with ALT HLD pitch mode set - CMD A or CMD B engaged. | 22-11 TASK 801 |
| 221 520 00 | Autopilot: airplane does not go to the set vertical speed with V/S pitch mode set - CMD A engaged. | 22-11 TASK 801 |
| 221 530 00 | Autopilot: airplane does not go to the set vertical speed with V/S pitch mode set - CMD B engaged. | 22-11 TASK 801 |
| 221 540 00 | Autopilot: airplane does not go to the set vertical speed with V/S pitch mode set - CMD A or CMD B engaged. | 22-11 TASK 801 |
| 221 550 31 | Autopilot: does not disengage when disengage switch is pushed - captain's control column. | 22-13 TASK 809 |
| 221 550 32 | Autopilot: does not disengage when disengage switch is pushed - first officer's control column. | 22-13 TASK 809 |
| 221 560 00 | Autopilot: does not disengage when disengage switch is pushed - mode control panel. | 22-11 TASK 803 |
| 221 570 00 | Autopilot: does not disengage when CMD switch is pushed to off - CMD A engaged. | 22-11 TASK 803 |
| 221 580 00 | Autopilot: does not disengage when CMD switch is pushed to off - CMD B engaged. | 22-11 TASK 803 |
| 221 590 00 | Autopilot: does not disengage when CMD switch is pushed to off - CMD A or CMD B engaged. | 22-11 TASK 803 |
| 221 600 00 | Autopilot: does not disengage when CWS switch is pushed to off - CWS A engaged. | 22-11 TASK 803 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| FAULT CODE | FAULT DESCRIPTION | GO TO FIM TASK |
|---|---|---|
| 221 610 00 | Autopilot: does not disengage when CWS switch is pushed to off - CWS B engaged. | 22-11 TASK 803 |
| 221 620 00 | Autopilot: does not disengage when CWS switch is pushed to off - CWS A or CWS B engaged. | 22-11 TASK 803 |
| 221 630 00 | Autopilot: does not engage when CMD switch is pushed, switch lights do not come on and CMD status does not show on the flight mode annunciator - CMD A. | 22-11 TASK 801 |
| 221 640 00 | Autopilot: does not engage when CMD switch is pushed, switch lights do not come on and CMD status does not show on the flight mode annunciator - CMD B. | 22-11 TASK 801 |
| 221 650 00 | Autopilot: does not engage when CMD switch is pushed, switch lights do not come on and CMD status does not show on the flight mode annunciator - CMD A or CMD B. | 22-11 TASK 801 |
| 221 660 00 | Autopilot: does not engage when CWS switch is pushed, switch lights do not come on, CWS P and CWS R status do not show on the flight mode annunciator - CWS A. | 22-11 TASK 801 |
| 221 670 00 | Autopilot: does not engage when CWS switch is pushed, switch lights do not come on, CWS P and CWS R status do not show on the flight mode annunciator - CWS B. | 22-11 TASK 801 |
| 221 680 00 | Autopilot: does not engage when CWS switch is pushed, switch lights do not come on, CWS P and CWS R status do not show on the flight mode annunciator - CWS A or CWS B. | 22-11 TASK 801 |
| 221 690 00 | Autopilot: does not engage in dual mode, CMD A engages, CMD B does not engage, FLARE pitch mode does not show on the flight mode annunciator. | 22-11 TASK 801 |
| 221 700 00 | Autopilot: does not engage in dual mode, CMD B engages, CMD A does not engage, FLARE pitch mode does not show on the flight mode annunciator. | 22-11 TASK 801 |
| 221 710 00 | Autopilot: goes more than the set bank angle limit in HDG SEL or VOR - CMD A engaged. | 22-11 TASK 801 |
| 221 720 00 | Autopilot: goes more than the set bank angle limit in HDG SEL or VOR - CMD B engaged. | 22-11 TASK 801 |
| 221 730 00 | Autopilot: goes more than the set bank angle limit in HDG SEL or VOR - CMD A or CMD B engaged. | 22-11 TASK 801 |
| 221 740 00 | Autopilot: goes less than the normal bank angle with any A/P engaged in CMD. | 22-11 TASK 801 |
| 221 750 00 | Autopilot: airplane does not flare correctly during multi-channel approach, FLARE shows normal on the flight mode annunciator. | 22-11 TASK 801 |
| 221 760 00 | Autopilot: airplane roll is not smooth (jerky) with any A/P engaged in CMD. | 22-11 TASK 801 |
| 221 770 00 | Mode control panel: ALTITUDE window display does not change with altitude selector switch change. | 22-11 TASK 803 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| FAULT CODE | FAULT DESCRIPTION | GO TO FIM TASK |
|---|---|---|
| 221 780 00 | Mode control panel: ALTITUDE window display does not show. | 22-11 TASK 803 |
| 221 790 31 | Mode control panel: COURSE window display does not change with course selector switch change - captain's. | 22-11 TASK 803 |
| 221 790 32 | Mode control panel: COURSE window display does not change with course selector switch change - first officer's. | 22-11 TASK 803 |
| 221 800 31 | Mode control panel: COURSE window display does not show - captain's. | 22-11 TASK 803 |
| 221 800 32 | Mode control panel: COURSE window display does not show - first officer's. | 22-11 TASK 803 |
| 221 810 00 | Mode control panel: HEADING window display does not change with heading selector switch change. | 22-11 TASK 803 |
| 221 820 00 | Mode control panel: HEADING window display does not show. | 22-11 TASK 803 |
| 221 830 00 | Mode control panel: VERT SPEED window display does not change with vertical speed selector change. | 22-11 TASK 803 |
| 221 840 00 | Mode control panel: VERT SPEED window display does not show. | 22-11 TASK 803 |
| 221 860 00 | Mode control panel: lower switch light does not come on for all mode switches. | 22-11 TASK 803 |
| 221 870 00 | Mode control panel: one of the switch lights does not come on for one mode switch. | 22-11 TASK 803 |
| 221 880 00 | Mode control panel: upper switch light does not come on for all mode switches. | 22-11 TASK 803 |
| 221 890 00 | Mode control panel: IAS/MACH window display does not change with selector switch change. | 22-11 TASK 803 |
| 221 900 00 | Mode control panel: IAS/MACH window display does not show. | 22-11 TASK 803 |
| 221 910 00 | Stabilizer trim: unscheduled nose up - autopilot engaged in CMD A. | 22-11 TASK 801 |
| 221 920 00 | Stabilizer trim: unscheduled nose up - autopilot engaged in CMD B. | 22-11 TASK 801 |
| 221 930 00 | Stabilizer trim: unscheduled nose up - autopilot engaged in CMD A or CMD B. | 22-11 TASK 801 |
| 221 940 00 | Autopilot: control columns move when the autopilot engages. | 22-16 TASK 802 |
| 221 950 00 | Autopilot: control wheels move when the autopilot engages. | 22-16 TASK 803 |
| 221 960 00 | Autopilot: airplane does not align correctly with runway during approach. | 22-11 TASK 825 |
| 222 010 00 | YAW DAMPER light: does not go off with YAW DAMPER switch at ON. | 27-32 TASK 801 |
| 222 020 00 | Yaw damper: operation not normal. | 27-32 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| FAULT CODE | FAULT DESCRIPTION | GO TO FIM TASK |
|---|---|---|
| 222 030 00 | Yaw damper: disengaged automatically, YAW DAMPER light came on. | 27-32 TASK 801 |
| 223 010 31 | Autothrottle: selected target speed bug problem on the mach airspeed indicator - captain's. | 22-32 TASK 803 |
| 223 010 32 | Autothrottle: selected target speed bug problem on the mach airspeed indicator - first officer's. | 22-32 TASK 803 |
| 223 020 48 | Autothrottle: does not keep N1 limit in N1 mode - engine 1 and engine 2. | 22-32 TASK 801 |
| 223 020 51 | Autothrottle: does not keep N1 limit in N1 mode - engine 1. | 22-32 TASK 801 |
| 223 020 52 | Autothrottle: does not keep N1 limit in N1 mode - engine 2. | 22-32 TASK 801 |
| 223 030 48 | Autothrottle: does not keep set speed in SPEED mode - engine 1 and engine 2. | 22-32 TASK 801 |
| 223 030 51 | Autothrottle: does not keep set speed in SPEED mode - engine 1. | 22-32 TASK 801 |
| 223 030 52 | Autothrottle: does not keep set speed in SPEED mode - engine 2. | 22-32 TASK 801 |
| 223 040 48 | Autothrottle: engine N1 speed fluctuates, engine N1 speed is normal with autothrottle OFF - engine 1 and engine 2. | 22-32 TASK 801 |
| 223 040 51 | Autothrottle: engine N1 speed fluctuates, engine N1 speed is normal with autothrottle OFF - engine 1. | 22-32 TASK 801 |
| 223 040 52 | Autothrottle: engine N1 speed fluctuates, engine N1 speed is normal with autothrottle OFF - engine 2. | 22-32 TASK 801 |
| 223 050 00 | Autothrottle: status does not show on flight mode annunciator. | 22-32 TASK 807 |
| 223 060 48 | Autothrottle: thrust lever does not move forward when TO/GA switch is pushed - engine 1 and engine 2. | 22-32 TASK 804 |
| 223 060 51 | Autothrottle: thrust lever does not move forward when TO/GA switch is pushed - engine 1. | 22-32 TASK 804 |
| 223 060 52 | Autothrottle: thrust lever does not move forward when TO/GA switch is pushed - engine 2. | 22-32 TASK 804 |
| 223 070 48 | Autothrottle: does not go to full rated N1 when TO/GA switch is pushed a second time during go-around - engine 1 and engine 2. | 22-32 TASK 804 |
| 223 070 51 | Autothrottle: does not go to full rated N1 when TO/GA switch is pushed a second time during go-around - engine 1. | 22-32 TASK 804 |
| 223 070 52 | Autothrottle: does not go to full rated N1 when TO/GA switch is pushed a second time during go-around - engine 2. | 22-32 TASK 804 |
| 223 080 48 | Autothrottle: does not go to reduced N1 when TO/GA switch is pushed one time during go-around - engine 1 and engine 2. | 22-32 TASK 804 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| FAULT CODE | FAULT DESCRIPTION | GO TO FIM TASK |
|---|---|---|
| 223 080 51 | Autothrottle: does not go to reduced N1 when TO/GA switch is pushed one time during go-around - engine 1. | 22-32 TASK 804 |
| 223 080 52 | Autothrottle: does not go to reduced N1 when TO/GA switch is pushed one time during go-around - engine 2. | 22-32 TASK 804 |
| 223 090 00 | Autothrottle: status mode does not change automatically. | 22-32 TASK 807 |
| 223 100 48 | Autothrottle: thrust lever does not move back in RETARD mode - engine 1 and engine 2. | 22-32 TASK 802 |
| 223 100 51 | Autothrottle: thrust lever does not move back in RETARD mode - engine 1. | 22-32 TASK 802 |
| 223 100 52 | Autothrottle: thrust lever does not move back in RETARD mode - engine 2. | 22-32 TASK 802 |
| 223 110 00 | Autothrottle: does not automatically disengage after touchdown. | 22-32 TASK 806 |
| 223 120 00 | Autothrottle: A/T amber warning annunciator light on flashing. | 22-32 TASK 801 |
| 223 130 00 | Autothrottle: disengages automatically. | 22-32 TASK 806 |
| 223 140 51 | Autothrottle: does not disengage when disengage switch is pushed - engine 1 thrust lever. | 22-32 TASK 805 |
| 223 140 52 | Autothrottle: does not disengage when disengage switch is pushed - engine 2 thrust lever. | 22-32 TASK 805 |
| 223 150 00 | Autothrottle: overcontrols with A/T mode engaged. | 22-32 TASK 808 |
| 223 160 48 | Autothrottle: thrust lever problem - engine 1 and engine 2. | 22-32 TASK 808 |
| 223 160 51 | Autothrottle: thrust lever problem - engine 1. | 22-32 TASK 808 |
| 223 160 52 | Autothrottle: thrust lever problem - engine 2. | 22-32 TASK 808 |
| 223 170 00 | Autothrottle: does not arm, ARM light does not come on, ARM does not show on the flight mode annunciator. | 22-32 TASK 810 |
| 223 180 00 | Autothrottle: thrust levers are split, OK with autothrottle disengaged. | 22-32 TASK 811 |
| 223 190 00 | Autothrottle: does not disengage when thrust levers are split. | 22-32 TASK 811 |
| 223 200 00 | Autothrottle: mode does not change when mode switch is pushed. | 22-32 TASK 809 |
| 223 210 00 | Autothrottle: throttle resolver angle indication is blank during BITE interactive range check. | 22-32 TASK 813 |
| 223 220 00 | A/T LIMIT indication shows on autothrottle thrust mode display. | 22-32 TASK 815 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | SHORT NAME | CHAPTER |
|---|---|---|
| Air Data Inertial Reference System | ADIRS | 34 |
| Air Traffic Controller Transponder - 1 (Left) | ATC XPDR - 1 (L) | 34 |
| Air Traffic Controller Transponder - 2 (Right) | ATC XPDR - 2 (R) | 34 |
| Airborne Vibration Monitor System Signal Conditioner | AVM SIG COND | 77 |
| Antiskid Control Unit | ANTISKID | 32 |
| Automatic Direction Finder Receiver - 1 | ADF RECVR - 1 | 34 |
| Autothrottle System | A/T | 22 |
| Auxiliary Power Unit | APU | 49 |
| Auxiliary Power Unit Generator Control Unit | APU GCU | 24 |
| Bus Power Control Unit | BPCU | 24 |
| Cabin Pressure Controller | CAB PRESS CON | 21 |
| Cabin Temperature Controller | CAB TEMP CONT | 21 |
| Cargo Electronic Unit - Forward | CEU - FWD | 26 |
| Cargo Electronic Unit - Lower | CEU - LOWER | 26 |
| Cargo Electronic Unit - Main Aft | CEU - MAIN AFT | 26 |
| Cargo Electronic Unit - Main Forward | CEU - MAIN FWD | 26 |
| Common Display System | CDS | 31 |
| Compartment Overheat Detection Control Module | WING/BODY OHT | 26 |
| Digital Flight Control System | DFCS | 22 |
| Distance Measurement Equipment Interrogator | DME INTRROGTR | 34 |
| Electrical Meters, Battery, and Galley Power Module | P5-13 | 24 |
| Electronic Engine Controller - 1 | ENGINE - 1 | 73 |
| Electronic Engine Controller - 2 | ENGINE - 2 | 73 |
| Emergency Locator Transmitter | ELT | 23 |
| Engine Accessory Unit | ENG ACCY UNIT | 78 |
| Engine and Auxiliary Power Unit Fire Detection Control Module | ENG/APU FIRE | 26 |
| Flap/Slat Electronics Unit | FSEU | 27 |
| Flight Data Acquisition Unit | FDAU | 31 |
| Flight Management Computer System | FMCS | 34 |
| Fuel Quantity Indicating System | FQIS | 28 |
| Generator Control Unit - 1 | GCU - 1 | 24 |
| Generator Control Unit - 2 | GCU - 2 | 24 |
| Ground Proximity Computer | GROUND PROX | 34 |
| Head Up Display | HUD | 34 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | SHORT NAME | CHAPTER |
|---|---|---|
| High Frequency Transceiver | HF XCVR | 23 |
| Low Limit (35 Degree F) Controller - Left | 35 DEG CONT L | 21 |
| Low Limit (35 Degree F) Controller - Right | 35 DEG CONT R | 21 |
| Multi-Mode Receiver | MMR | 34 |
| Pack/Zone Temperature Controller - Left | PACK/ZN CON - L | 21 |
| Pack/Zone Temperature Controller - Right | PACK/ZN CON - R | 21 |
| Proximity Switch Electronics Unit | PSEU | 32 |
| Radio Altimeter Receiver/Transmitter | RADIO ALTIMTR | 34 |
| Stall Management Yaw Damper Computer - 1 | SMYD - 1 | 27 |
| Stall Management Yaw Damper Computer - 2 | SMYD - 2 | 27 |
| Traffic Alert and Collision Avoidance System Computer | TCAS COMPUTER | 34 |
| VHF Omnidirectional Ranging Marker Beacon Receiver | VOR/MKR RCVR | 34 |
| Very High Frequency Transceiver | VHF XCVR | 23 |
| Waste Tank Logic Control Module | WASTE TANK | 38 |
| Weather Radar Receiver/Transmitter | WEATHER RADAR | 34 |
| Window Heat Control Unit - Left Forward | WHCU - L FWD | 30 |
| Window Heat Control Unit - Left Side | WHCU - L SIDE | 30 |
| Window Heat Control Unit - Right Forward | WHCU - R FWD | 30 |
| Window Heat Control Unit - Right Side | WHCU - R SIDE | 30 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31001 ADIRU(ADC)-1 | 22-31 TASK 807 |
| A/T | 22-31004 ADIRU(IRU)-1 | 22-31 TASK 807 |
| A/T | 22-31005 ADIRU(IRU)-2 | 22-31 TASK 807 |
| A/T | 22-31011 ALPHA VANE-1 | 22-31 TASK 813 |
| A/T | 22-31012 ALPHA VANE-2 | 22-31 TASK 813 |
| A/T | 22-31017 ADIRU (ADC)-1 ALPHA VANE-1 | 22-11 TASK 806 |
| A/T | 22-31018 ADIRU (ADC)-2 ALPHA VANE-2 | 22-11 TASK 807 |
| A/T | 22-31024 ADIRU(ADC)-2 | 22-31 TASK 807 |
| A/T | 22-31035 ALPHA VANE-1, ALPHA VANE-2 | 22-31 TASK 813 |
| A/T | 22-31046 ASM 1 (J1A-C06,D05) | 22-31 TASK 805 |
| A/T | 22-31051 RADIO ALT-1 (J1B-B04,A04) | 22-31 TASK 809 |
| A/T | 22-31052 RADIO ALT-2 (J1B-B04,A04) | 22-31 TASK 809 |
| A/T | 22-31056 ASM 2 (J1B-C06,D05) | 22-31 TASK 805 |
| A/T | 22-31057 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31058 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31059 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31060 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31061 MCP | 22-31 TASK 804 |
| A/T | 22-31071 FMC-2 | 22-31 TASK 803 |
| A/T | 22-31072 THRUST RVSR | 22-31 TASK 801 |
| A/T | 22-31074 MCP | 22-31 TASK 804 |
| A/T | 22-31081 SMYDC-1 | 22-31 TASK 808 |
| A/T | 22-31082 SMYDC-2 | 22-31 TASK 808 |
| A/T | 22-31221 TOGA SW-1 | 22-13 TASK 810 |
| A/T | 22-31222 TOGA SW-2 | 22-13 TASK 811 |
| A/T | 22-31263 AFCS A/T CB | 22-31 TASK 810 |
| A/T | 22-31273 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31274 ASM 2 | 22-31 TASK 805 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31281 A/P DISC SW-1 (J1B-K07) | 22-13 TASK 809 |
| A/T | 22-31282 A/P DISC SW-2 (J1B-K07) | 22-13 TASK 809 |
| A/T | 22-31294 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31295 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31296 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31297 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31303 FCC-A | 22-14 TASK 801 |
| A/T | 22-31317 FCC-B | 22-14 TASK 801 |
| A/T | 22-31341 FCC-A SOP PARITY (J1A-K09) | 22-16 TASK 831 |
| A/T | 22-31343 FCC INCOMPATIBILITY | 22-16 TASK 831 |
| A/T | 22-31344 FCC-A S/W CONFIG | Reference Not Currently Available |
| A/T | 22-31351 ADC CAS > 60 OR CAS INV IRU-1 GS > 40 OR GS INV IRU-2 GS > 40 OR GS INV | 22-11 TASK 826 |
| A/T | 22-31353 FCC-B (J1B-E10, D10) | 22-15 TASK 825 |
| A/T | 22-31354 FCC-B (J1B-B10, A10) | 22-15 TASK 825 |
| A/T | 22-31359 RADIO ALT-2, FCC-B | 22-31 TASK 809 |
| A/T | 22-31360 FMC (NO FMC REQ) | 22-31 TASK 803 |
| A/T | 22-31361 MCP (A/P ENGAGED) (J1B-H01) | 22-11 TASK 817 |
| A/T | 22-31362 MCP (A/P ENGAGED) (J1A-H01) | 22-11 TASK 817 |
| A/T | 22-31363 AIR/GND SW INDICATES AIR MODE (J1A-B03) | 22-15 TASK 815 |
| A/T | 22-31376 ADIRU(ADC)-1 | 22-31 TASK 807 |
| A/T | 22-31377 ADIRU(ADC)-2 | 22-31 TASK 807 |
| A/T | 22-31378 ADIRU(IRU)-1 | 22-31 TASK 807 |
| A/T | 22-31379 ADIRU(IRU)-2 | 22-31 TASK 807 |
| A/T | 22-31385 RADIO ALT-1 (J1B-B04,A04) | 22-31 TASK 809 |
| A/T | 22-31388 FMC-1 | 22-31 TASK 803 |
| A/T | 22-31397 SMYDC-1 | 22-31 TASK 808 |
| A/T | 22-31398 SMYDC-2 | 22-31 TASK 808 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31399 ASM-1 (J1A-D05,C06) | 22-31 TASK 805 |
| A/T | 22-31400 ASM-2 (J1B-D05,C06) | 22-31 TASK 805 |
| A/T | 22-31401 FCC-A PROG PINS | 22-16 TASK 831 |
| A/T | 22-31410 EEC 1A | 22-31 TASK 806 |
| A/T | 22-31411 EEC 1B | 22-31 TASK 806 |
| A/T | 22-31412 EEC 2A | 22-31 TASK 806 |
| A/T | 22-31413 EEC 2B | 22-31 TASK 806 |
| A/T | 22-31425 RADIO ALT-2 (J1B-B04,A04) | 22-31 TASK 809 |
| A/T | 22-31453 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31454 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31501 ASM-1 (J1A-D05,C06) | 22-31 TASK 805 |
| A/T | 22-31502 ASM-2 (J1B-D05,C06) | 22-31 TASK 805 |
| A/T | 22-31511 EEC 1A | 22-31 TASK 806 |
| A/T | 22-31512 EEC 1B | 22-31 TASK 806 |
| A/T | 22-31513 EEC 2A | 22-31 TASK 806 |
| A/T | 22-31514 EEC 2B | 22-31 TASK 806 |
| A/T | 22-31515 EEC-1 | 22-31 TASK 806 |
| A/T | 22-31516 EEC-2 | 22-31 TASK 806 |
| A/T | 22-31517 FCC-A (J1A-A14,B14) | 22-31 TASK 805 |
| A/T | 22-31518 FCC-A (J1A-A09,B09) | 22-31 TASK 805 |
| A/T | 22-31519 FCC-A (J1B-A14,B14) | 22-31 TASK 806 |
| A/T | 22-31520 FCC-A (J1B-A09,B09) | 22-31 TASK 805 |
| A/T | 22-31523 FMC-1, EEC-1/-2 | 22-31 TASK 818 |
| A/T | 22-31524 TEMP INVERSN | 22-31 TASK 819 |
| A/T | 22-31525 BRAKE, ASM-1/-2, EEC-1/-2, TLA-1/-2 | 22-31 TASK 812 |
| A/T | 22-31531 EEC-1 (ENGINE RUNNING) Bite Entry | 22-11 TASK 801 |
| A/T | 22-31532 EEC-2 (ENGINE RUNNING) Bite Entry | 22-11 TASK 801 |
| A/T | 22-31538 FCC-A (J1B-F07) | 22-32 TASK 805 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31539 FCC-A (J1A-C09, J1B-F10) | 22-32 TASK 814 |
| A/T | 22-31540 FCC-A (J1B-E09, J1B-F10) | 22-32 TASK 814 |
| A/T | 22-31541 FCC-A (J1A-J12) | 22-32 TASK 810 |
| A/T | 22-31542 FCC-A (J1B-G09) | 22-31 TASK 802 |
| A/T | 22-31543 FCC-A (J1A-D11) | 22-31 TASK 802 |
| A/T | 22-31544 A/T DISENG THR LVR-1 (J1B-F07) | 22-32 TASK 805 |
| A/T | 22-31545 A/T DISENG THR LVR-2 (J1B-F07) | 22-32 TASK 805 |
| A/T | 22-31546 AUTO FLT STAT ANN-CAPT (J1B-B07) | 22-15 TASK 804 |
| A/T | 22-31547 AUTO FLT STAT ANN-F/O (J1B-B07) | 22-15 TASK 804 |
| A/T | 22-31578 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31579 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31580 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31581 ASM-2 | 22-31 TASK 805 |
| A/T | 22-31582 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31583 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31584 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31585 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31588 RADIO ALT-1, RADIO ALT-2 | 22-31 TASK 809 |
| A/T | 22-31590 FCC-A | 22-31 TASK 802 |
| A/T | 22-31610 MCP (J1B-K05,K04) | 22-31 TASK 804 |
| A/T | 22-31611 MCP (J1B-K05,K04) | 22-31 TASK 804 |
| A/T | 22-31671 ENGINE 1 N1 | 22-31 TASK 817 |
| A/T | 22-31672 ENGINE 2 N2 | 22-31 TASK 817 |
| A/T | 22-31673 TRA 1 | 22-31 TASK 817 |
| A/T | 22-31674 TRA 2 | 22-31 TASK 817 |
| A/T | 22-31675 ENGINE 1 N1 | 22-31 TASK 817 |
| A/T | 22-31676 ENGINE 2 N2 | 22-31 TASK 817 |
| A/T | 22-31677 TRA 1 | 22-31 TASK 817 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31678 TRA 2 | 22-31 TASK 817 |
| A/T | 22-31679 CREW OPERATION, ASM | 22-31 TASK 817 |
| A/T | 22-31680 CREW OPERATION FMC | 22-31 TASK 817 |
| A/T | 22-31681 CREW OPERATION, EEC | 22-32 TASK 804 |
| A/T | 22-31682 FCC-A | 22-31 TASK 802 |
| A/T | 22-31683 MANUAL THROTTLE ADJ | 22-31 TASK 819 |
| A/T | 22-31684 MANUAL THROTTLE ADJ | 22-31 TASK 819 |
| A/T | 22-31685 EEC 1 | 22-31 TASK 819 |
| A/T | 22-31686 EEC 2 | 22-31 TASK 819 |
| A/T | 22-31687 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31688 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31689 EEC 1, EEC 2 | 22-31 TASK 806 |
| A/T | 22-31690 ENGINE 1, ENGINE 2 | 22-31 TASK 806 |
| A/T | 22-31691 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31692 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31696 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31728 FMC SW CONFIG | 22-31 TASK 803 |
| A/T | 22-31729 CDS/DEU-1 (J1B-F09,F08) | 22-32 TASK 817 |
| A/T | 22-31742 FCC-A (J1A-C09,J1B-E09) | 22-32 TASK 814 |
| A/T | 22-31745 CDS/DEU-2 (J1B-F09,F08) | 22-32 TASK 817 |
| A/T | 22-31761 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31762 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31763 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31764 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31765 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31766 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31767 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31768 ASM 1 | 22-31 TASK 805 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31769 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31770 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31771 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31772 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31773 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31774 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31775 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31776 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31777 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31778 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31779 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31780 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31781 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31782 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31783 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31784 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31785 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31786 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31787 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31788 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31789 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31790 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31791 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31792 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31793 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31794 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31795 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31803 CREW OPERATION, ENGINE 1 | 22-31 TASK 806 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31804 CREW OPERATION, ENGINE 2 | 22-31 TASK 806 |
| A/T | 22-31805 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31822 FMC-2 | 22-31 TASK 803 |
| A/T | 28V POWER | 22-31 TASK 810 |
| A/T | 737 CONFIG | 22-31 TASK 811 |
| A/T | A/T BRAKE THROT SPLIT | 22-31 TASK 812 |
| A/T | A/T | 22-31 TASK 802 |
| A/T | ADIRU(ADC)-1 (J1B-E04,D04) | 22-31 TASK 807 |
| A/T | ADIRU(ADC)-2 (J1A-K04,J04) | 22-31 TASK 807 |
| A/T | ADIRU(IRU)-1 (J1B-K03,K02) | 22-31 TASK 807 |
| A/T | ADIRU(IRU)-2 (J1A-K03,K02) | 22-31 TASK 807 |
| A/T | ADIRU-AD 1 | 22-31 TASK 807 |
| A/T | ADIRU-AD 2 | 22-31 TASK 807 |
| A/T | ADIRU-IR 1 | 22-31 TASK 807 |
| A/T | ADIRU-IR 2 | 22-31 TASK 807 |
| A/T | ALPHA VANE-1 VANE DIFF | 22-31 TASK 813 |
| A/T | ALPHA VANE-2 VANE DIFF | 22-31 TASK 813 |
| A/T | ASM 1 | 22-31 TASK 805 |
| A/T | ASM 2 | 22-31 TASK 805 |
| A/T | ASM-1 THROT SPLIT | 22-31 TASK 812 |
| A/T | ASM-2 THROT SPLIT | 22-31 TASK 812 |
| A/T | EEC 1A | 22-31 TASK 806 |
| A/T | EEC 1B | 22-31 TASK 806 |
| A/T | EEC 2A | 22-31 TASK 806 |
| A/T | EEC 2B | 22-31 TASK 806 |
| A/T | EEC-1 TARGET MON | 22-31 TASK 818 |
| A/T | EEC-1 THROT SPLIT | 22-31 TASK 812 |
| A/T | EEC-1 | 22-31 TASK 806 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | EEC-1A (J1A-C04,B04) | 22-31 TASK 806 |
| A/T | EEC-1B (J1B-C04,B04) | 22-31 TASK 806 |
| A/T | EEC-2 TARGET MON | 22-31 TASK 818 |
| A/T | EEC-2 THROT SPLIT | 22-31 TASK 812 |
| A/T | EEC-2 | 22-31 TASK 806 |
| A/T | EEC-2A (J1A-J02,J01) | 22-31 TASK 806 |
| A/T | EEC-2B (J1B-C04,B04) | 22-31 TASK 806 |
| A/T | FMC (J1A-E04,D04) | 22-31 TASK 803 |
| A/T | FMC-1 (J1A-E04,D04) | 22-31 TASK 803 |
| A/T | FMC-1 TARGET MON | 22-31 TASK 818 |
| A/T | FMC-1 | 22-31 TASK 803 |
| A/T | FMC-2 (J1A-E04,D04) | 22-31 TASK 803 |
| A/T | FMC-2 | 22-31 TASK 803 |
| A/T | FMC | 22-31 TASK 803 |
| A/T | MAN THR ADJ | 22-31 TASK 819 |
| A/T | MANUAL THROTTLE ADJ | 22-31 TASK 819 |
| A/T | MCP (J1B-K05,K04) | 22-31 TASK 804 |
| A/T | MCP | 22-31 TASK 804 |
| A/T | RA 1 | 22-31 TASK 809 |
| A/T | RA 2 | 22-31 TASK 809 |
| A/T | RADIO ALT-1 (J1B-B04,A04) | 22-31 TASK 809 |
| A/T | RADIO ALT-2 (J1B-B04,A04) | 22-31 TASK 809 |
| A/T | SMYD 1 | 22-31 TASK 808 |
| A/T | SMYD 2 | 22-31 TASK 808 |
| A/T | SMYDC-1 (J1A-H04,G04) | 22-31 TASK 808 |
| A/T | SMYDC-2 (J1A-H04,G04) | 22-31 TASK 808 |
| A/T | T/O SET HI | 22-31 TASK 817 |
| A/T | T/O SET LO | 22-31 TASK 817 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | TARGET MON | 22-31 TASK 818 |
| A/T | TEMP INVERSN | 22-31 TASK 819 |
| A/T | THROT SPLIT | 22-31 TASK 812 |
| A/T | TLA-1 THROT SPLIT | 22-31 TASK 812 |
| A/T | TLA-2 THROT SPLIT | 22-31 TASK 812 |
| A/T | VANE DIFF | 22-31 TASK 813 |
| DFCS | 22-11001 ADIRU(ADC)-1 (J1B-E04,D04) | 22-11 TASK 810 |
| DFCS | 22-11002 ADIRU(ADC)-2 (J1B-E04,D04) | 22-11 TASK 810 |
| DFCS | 22-11003 ADIRU(IRU)-1 (J1A-K03,K02) | 22-11 TASK 806 |
| DFCS | 22-11004 ADIRU(IRU)-1 (J1B-K03,K02) | 22-11 TASK 806 |
| DFCS | 22-11005 ADIRU(IRU)-2 (J1A-K03,K02) | 22-11 TASK 807 |
| DFCS | 22-11006 ADIRU(IRU)-2 (J1B-K03,K02) | 22-11 TASK 807 |
| DFCS | 22-11007 ADM STATIC PRESS-1 | 22-15 TASK 811 |
| DFCS | 22-11008 ADM STATIC PRESS-2 | 22-15 TASK 811 |
| DFCS | 22-11009 ADM TOTAL PRESS-1 | 22-15 TASK 810 |
| DFCS | 22-11010 ADM TOTAL PRESS-2 | 22-15 TASK 810 |
| DFCS | 22-11011 ALPHA VANE-1 | 22-11 TASK 823 |
| DFCS | 22-11012 ALPHA VANE-2 | 22-11 TASK 824 |
| DFCS | 22-11013 EFIS CONT PANL-CPT | 22-15 TASK 812 |
| DFCS | 22-11014 EFIS CONT PANL-F/O | 22-15 TASK 812 |
| DFCS | 22-11015 IRS TRANSFER SW (J1A-G01) | 22-13 TASK 801 |
| DFCS | 22-11016 IRS TRANSFER SW (J1B-G01) | 22-13 TASK 801 |
| DFCS | 22-11017 ADIRU(ADC)-1, ALPHA VANE-1 | 22-11 TASK 801 |
| DFCS | 22-11018 ADIRU(ADC)-2, ALPHA VANE-2 | 22-11 TASK 801 |
| DFCS | 22-11019 ADIRU(ADC)-1, ADM STATIC PRESS-1 | 22-15 TASK 811 |
| DFCS | 22-11020 ADIRU(ADC)-2, ADM STATIC PRESS-2 | 22-11 TASK 801 |
| DFCS | 22-11021 ADM STATIC PRESS-1, EFIS CONT PANL-CPT, CDS/DEU-1 | 22-15 TASK 811 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11022 ADM STATIC PRESS-2, EFIS CONT PANL-F/O, CDS/DEU-2 | 22-11 TASK 801 |
| DFCS | 22-11023 ADIRU(ADC)-1 (J1A-K04,J04) | 22-17 TASK 803 |
| DFCS | 22-11024 ADIRU(ADC)-2 (J1A-K04,J04) | 22-17 TASK 803 |
| DFCS | 22-11025 ADIRU(IRU)-3 (J1B-G11,F11) | 22-11 TASK 801 |
| DFCS | 22-11026 CREW OPERATION, HDG REF SW | 22-11 TASK 801 |
| DFCS | 22-11027 ISFD (J1B-G11,F11) | 22-11 TASK 801 |
| DFCS | 22-11028 HDG REF SW (J1B-G03) | 22-11 TASK 801 |
| DFCS | 22-11029 ADIRU(IRU)-1, ADIRU(IRU)-2 | 22-11 TASK 801 |
| DFCS | 22-11030 ADIRU(IRU)-1, ADIRU(IRU)-3 | 22-11 TASK 801 |
| DFCS | 22-11031 A/T CMPTR (J1A-B04,A04) | 22-11 TASK 801 |
| DFCS | 22-11032 ADIRU(ADC)-1, ADM STATIC PRESS-1, ADM TOTAL PRESS-1 | 22-15 TASK 811 |
| DFCS | 22-11033 ADIRU(ADC)-2, ADM STATIC PRESS-2, ADM TOTAL PRESS-2 | 22-11 TASK 801 |
| DFCS | 22-11034 CREW OPERATION, IRS TRANSFER SW | 22-11 TASK 801 |
| DFCS | 22-11035 ALPHA VANE-1, ALPHA VANE-2 | 22-11 TASK 801 |
| DFCS | 22-11036 CREW OPERATION, AUTO SPD MODULE | 22-11 TASK 801 |
| DFCS | 22-11037 RADIO ALT-1, RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11038 ADIRU(IRU)-2, ADIRU(IRU)-3 | 22-11 TASK 801 |
| DFCS | 22-11039 ADIRU(IRU)-1, ISFD | 22-11 TASK 801 |
| DFCS | 22-11040 ADIRU(IRU)-2, ISFD | 22-11 TASK 801 |
| DFCS | 22-11041 DME-1 (J1B-H04,G04) | 22-12 TASK 808 |
| DFCS | 22-11042 DME-2 (J1B-H04,G04) | 22-12 TASK 808 |
| DFCS | 22-11043 PROX SW ELEX UNIT (J1B-J05) | 22-13 TASK 812 |
| DFCS | 22-11044 PROX SW ELEX UNIT (J1B-J05) | 22-13 TASK 812 |
| DFCS | 22-11045 FMC TRANSFER SW (J1A-E04,D04) | 22-16 TASK 833 |
| DFCS | 22-11047 PCWS XDUCER-1 (J1A-E02,E01) | 22-12 TASK 805 |
| DFCS | 22-11048 PCWS XDUCER-1 (J1B-E02,E01) | 22-12 TASK 805 |
| DFCS | 22-11049 PCWS XDUCER-2 (J1A-E02,E01) | 22-12 TASK 806 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11050 PCWS XDUCER-2 (J1B-E02,E01) | 22-12 TASK 806 |
| DFCS | 22-11051 RADIO ALT-1 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | 22-11052 RADIO ALT-2 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | 22-11053 RADIO ALT-1 (J1B-K11,J11) | 22-11 TASK 805 |
| DFCS | 22-11054 RADIO ALT-2 (J1B-K11,J11) | 22-11 TASK 805 |
| DFCS | 22-11055 RADIO ALT-3 (J1B-K11,J11) | 22-11 TASK 801 |
| DFCS | 22-11061 MCP | 22-11 TASK 816 |
| DFCS | 22-11062 MCP (J1A-A06,B06) | 22-11 TASK 817 |
| DFCS | 22-11063 MCP (J1A-K06,J06) | 22-11 TASK 817 |
| DFCS | 22-11064 FCC-A, MCP | 22-11 TASK 801 |
| DFCS | 22-11065 FCC-B, MCP | 22-11 TASK 801 |
| DFCS | 22-11066 MCP, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11067 MCP, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11068 MCP (J1A-F01) | 22-11 TASK 817 |
| DFCS | 22-11069 MCP (J1B-F01) | 22-11 TASK 817 |
| DFCS | 22-11071 FMC (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | 22-11073 FMC-2 (J1A-E04,D04) | 22-11 TASK 812 |
| DFCS | 22-11079 MLS ANT SW-1 (J1B-C09) | 22-11 TASK 801 |
| DFCS | 22-11080 MLS ANT SW-2 (J1B-C09) | 22-11 TASK 801 |
| DFCS | 22-11081 SMYDC-1 (J1A-H04,G04) | 22-15 TASK 801 |
| DFCS | 22-11082 SMYDC-2 (J1A-H04,G04) | 22-15 TASK 801 |
| DFCS | 22-11083 ELEV ACT-1, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11084 ELEV ACT-2, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11085 CREW OPERATION, VHF/NAV CONT PANL-1, VHF/NAV SW | 22-11 TASK 801 |
| DFCS | 22-11086 CREW OPERATION, VHF/NAV CONT PANL-2, VHF/NAV SW | 22-11 TASK 801 |
| DFCS | 22-11087 CREW OPERATION, ELEV PRESS SW-2, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11088 CREW OPERATION, ELEV PRESS SW-1, FCC-B | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11089 MMR/ILS RCVR-2, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11090 MMR/ILS RCVR-3, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11091 VHF/NAV CONT PANL-1 (J1A-D01) | 22-15 TASK 813 |
| DFCS | 22-11092 VHF/NAV CONT PANL-1 (J1B-K14) | 22-15 TASK 813 |
| DFCS | 22-11093 VHF/NAV CONT PANL-2 (J1A-D01) | 22-15 TASK 814 |
| DFCS | 22-11094 VHF/NAV CONT PANL-2 (J1B-K14) | 22-15 TASK 814 |
| DFCS | 22-11095 VHF/NAV SW (J1A-K12) | 22-13 TASK 803 |
| DFCS | 22-11096 VHF/NAV SW (J1B-A07) | 22-13 TASK 803 |
| DFCS | 22-11097 VHF/NAV SW (J1B-J01) | 22-13 TASK 803 |
| DFCS | 22-11098 VHF/NAV SW (J1B-J07) | 22-13 TASK 803 |
| DFCS | 22-11099 VOR RCVR-1 (J1B-H08,G08) | 22-11 TASK 804 |
| DFCS | 22-11100 VOR RCVR-2 (J1B-H08,G08) | 22-11 TASK 804 |
| DFCS | 22-11101 LOC ANT SW-1 (J1B-E03) | 22-13 TASK 802 |
| DFCS | 22-11102 LOC ANT SW-2 (J1B-E03) | 22-13 TASK 802 |
| DFCS | 22-11103 MMR/ILS RCVR-1 (J1A-H02,G02) | 22-11 TASK 808 |
| DFCS | 22-11104 MMR/ILS RCVR-1 (J1B-H02,G02) | 22-11 TASK 808 |
| DFCS | 22-11105 MMR/ILS RCVR-2 (J1A-H02,G02) | 22-11 TASK 809 |
| DFCS | 22-11106 MMR/ILS RCVR-2 (J1B-H02,G02) | 22-11 TASK 809 |
| DFCS | 22-11107 MMR/ILS RCVR-3 (J1A-H02,G02) | 22-11 TASK 801 |
| DFCS | 22-11108 LOC ANT SW-1, IFSAU | 22-11 TASK 801 |
| DFCS | 22-11109 LOC ANT SW-2, IFSAU | 22-11 TASK 801 |
| DFCS | 22-11110 CREW OPERATION VHF/NAV SW | Reference Not Currently Available |
| DFCS | 22-11111 CDS/DEU-1 (J1A-B02,A02) | 22-15 TASK 808 |
| DFCS | 22-11112 CDS/DEU-1 (J1A-B06,A06) | 22-15 TASK 808 |
| DFCS | 22-11113 CDS/DEU-1 (J1B-B02,A02) | 22-15 TASK 808 |
| DFCS | 22-11114 CDS/DEU-2 (J1B-B02,A02) | 22-15 TASK 809 |
| DFCS | 22-11115 CDS/DEU-2 (J1A-B06,A06) | 22-15 TASK 809 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11116 CDS/DEU-2 (J1A-B02,A02) | 22-15 TASK 809 |
| DFCS | 22-11117 FCC-B, MCP, ELEV ACT-2 | 22-11 TASK 801 |
| DFCS | 22-11118 FCC-A, MCP, ELEV ACT-1 | 22-11 TASK 801 |
| DFCS | 22-11119 ELEV POS SEN-1, NSS-1, ELEV ACT-1 | 22-11 TASK 801 |
| DFCS | 22-11120 ELEV POS SEN-2, NSS-2, ELEV ACT-2 | 22-11 TASK 801 |
| DFCS | 22-11121 ELEV ACT-1 (J1A-J15,H15,G15) | 22-12 TASK 810 |
| DFCS | 22-11122 ELEV ACT-2 (J1A-J15,H15,G15) | 22-12 TASK 810 |
| DFCS | 22-11123 ELEV DETENT SOLENOID-1 | 22-13 TASK 806 |
| DFCS | 22-11124 ELEV DETENT SOLENOID-2 | 22-13 TASK 807 |
| DFCS | 22-11125 ELEV POS SEN-1 (J1A-K13,J13,H13) | 22-12 TASK 812 |
| DFCS | 22-11126 ELEV POS SEN-2 (J1A-K13,J13,H13) | 22-12 TASK 812 |
| DFCS | 22-11127 ELEV PRESS SW-1 (J1A-B13) | 22-13 TASK 806 |
| DFCS | 22-11128 ELEV PRESS SW-1 (J1A-K01) | 22-13 TASK 806 |
| DFCS | 22-11129 ELEV PRESS SW-2 (J1A-B13) | 22-13 TASK 807 |
| DFCS | 22-11130 ELEV PRESS SW-2 (J1A-K01) | 22-13 TASK 807 |
| DFCS | 22-11131 FCC-A (J1A-D13) | 22-14 TASK 803 |
| DFCS | 22-11132 FCC-A (J1A-E15,D15) | 22-14 TASK 803 |
| DFCS | 22-11133 FCC-B (J1A-D13) | 22-14 TASK 803 |
| DFCS | 22-11134 FCC-B (J1A-E15,D15) | 22-14 TASK 803 |
| DFCS | 22-11135 NSS-1 (J1A-D12,C12) | 22-12 TASK 809 |
| DFCS | 22-11136 NSS-2 (J1A-D12,C12) | 22-12 TASK 809 |
| DFCS | 22-11137 PCWS XDUCER-1 (J1A-E02,E01) | 22-12 TASK 805 |
| DFCS | 22-11138 PCWS XDUCER-1 (J1B-E02,E01) | 22-12 TASK 805 |
| DFCS | 22-11139 PCWS XDUCER-2 (J1A-E02,E01) | 22-12 TASK 806 |
| DFCS | 22-11140 PCWS XDUCER-2 (J1B-E02,E01) | 22-12 TASK 806 |
| DFCS | 22-11141 AIL ACT-1 (J1B-J15,H15,G15) | 22-12 TASK 811 |
| DFCS | 22-11142 AIL ACT-2 (J1B-J15,H15,G15) | 22-12 TASK 811 |
| DFCS | 22-11143 AIL DETENT SOLENOID-1 | 22-13 TASK 804 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11144 AIL DETENT SOLENOID-2 | 22-13 TASK 805 |
| DFCS | 22-11145 AIL POS SEN-1 (J1B-K13,J13,H13) | 22-12 TASK 813 |
| DFCS | 22-11146 AIL POS SEN-2 (J1B-K13,J13,H13) | 22-12 TASK 813 |
| DFCS | 22-11147 AIL PRESS SW-1 (J1B-B13) | 22-13 TASK 804 |
| DFCS | 22-11148 AIL PRESS SW-1 (J1B-K01) | 22-13 TASK 804 |
| DFCS | 22-11149 AIL PRESS SW-2 (J1B-B13) | 22-13 TASK 805 |
| DFCS | 22-11150 AIL PRESS SW-2 (J1B-K01) | 22-13 TASK 805 |
| DFCS | 22-11151 FCC-A (J1B-D13) | 22-14 TASK 804 |
| DFCS | 22-11152 FCC-A (J1B-E15,D15) | 22-14 TASK 804 |
| DFCS | 22-11153 FCC-B (J1B-D13) | 22-14 TASK 804 |
| DFCS | 22-11154 FCC-B (J1B-E15,D15) | 22-14 TASK 804 |
| DFCS | 22-11155 RCWS XDUCER-1 (J1B-K06,J06) | 22-12 TASK 804 |
| DFCS | 22-11156 RCWS XDUCER-2 (J1B-K06,J06) | 22-12 TASK 804 |
| DFCS | 22-11157 SPOIL-4 POS SEN-1 (J1B-B12,A12) | 22-12 TASK 801 |
| DFCS | 22-11158 SPOIL-4 POS SEN-2 (J1B-B12,A12) | 22-12 TASK 801 |
| DFCS | 22-11159 SPOIL-9 POS SEN-1 (J1B-E12,D12) | 22-12 TASK 802 |
| DFCS | 22-11160 SPOIL-9 POS SEN-2 (J1B-E12,D12) | 22-12 TASK 802 |
| DFCS | 22-11161 COL SW MODULE M1201 | 22-15 TASK 821 |
| DFCS | 22-11162 COL SW MODULE M1201 (J1C-B02) | 22-13 TASK 808 |
| DFCS | 22-11163 COL SW MODULE M1201 (J1C-F02) | 22-13 TASK 808 |
| DFCS | 22-11164 COL SW MODULE M1201 (J1C-G02) | 22-15 TASK 819 |
| DFCS | 22-11165 COL SW MODULE M1201 (J1C-K03) | 22-15 TASK 818 |
| DFCS | 22-11166 FCC-A (J1C-G02) | 22-14 TASK 816 |
| DFCS | 22-11167 FCC-A (J1C-H03) | 22-14 TASK 818 |
| DFCS | 22-11168 FCC-A (J1C-K03) | 22-14 TASK 817 |
| DFCS | 22-11169 FCC-B (J1C-G02) | 22-14 TASK 816 |
| DFCS | 22-11170 FCC-B (J1C-H03) | 22-14 TASK 818 |
| DFCS | 22-11171 FCC-B (J1C-K03) | 22-14 TASK 817 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11172 ST FAIL ANN (J1C-H02) | 22-13 TASK 817 |
| DFCS | 22-11173 STAB POS SEN-1 (J1A-A13,A12) | 22-12 TASK 803 |
| DFCS | 22-11174 STAB POS SEN-2 (J1A-A13,A12) | 22-12 TASK 803 |
| DFCS | 22-11175 STAB TRIM CUTOUT RELAY | 22-13 TASK 813 |
| DFCS | 22-11176 STAB TRIM RLY (J1C-D03) | 22-13 TASK 818 |
| DFCS | 22-11177 PRI ELEC ACT-STAB TRIM | 22-11 TASK 801 |
| DFCS | 22-11178 STAB TRIM SERVO (J1A-A12,A13) | 22-12 TASK 803 |
| DFCS | 22-11179 STAB TRIM SERVO (J1C-A03) | 22-11 TASK 822 |
| DFCS | 22-11180 STAB TRIM SERVO (J1C-G02) | 22-15 TASK 819 |
| DFCS | 22-11181 STAB TRIM SERVO (J1C-K03) | 22-15 TASK 818 |
| DFCS | 22-11182 TRIM CUTOUT (J1C-B03) | 22-13 TASK 813 |
| DFCS | 22-11183 TRIM WARN ANN (J1C-D02) | 22-13 TASK 814 |
| DFCS | 22-11184 NSS-1, PRI ELEC ACT-STAB TRIM | 22-11 TASK 801 |
| DFCS | 22-11185 NSS-2, PRI ELEC ACT-STAB TRIM | 22-11 TASK 801 |
| DFCS | 22-11186 STAB TRIM CUTOUT RELAY, STAB LIMIT SW/ MODULE, PRI ELEC ACT-STAB TRIM, COL SW MODULE | 22-11 TASK 801 |
| DFCS | 22-11187 FCC-B, MCP, AIL ACT-2 | 22-11 TASK 801 |
| DFCS | 22-11188 FCC-A, MCP, AIL ACT-1 | 22-11 TASK 801 |
| DFCS | 22-11189 AIL POS SEN-1, AIL ACT-1 | 22-12 TASK 813 |
| DFCS | 22-11190 AIL POS SEN-2, AIL ACT-2 | 22-12 TASK 813 |
| DFCS | 22-11191 FCC-A (J1C-B01,A01) | 22-14 TASK 822 |
| DFCS | 22-11192 FCC-A (J1C-F03) | 22-14 TASK 821 |
| DFCS | 22-11193 FCC-A (J1C-G03) | 22-14 TASK 819 |
| DFCS | 22-11194 FCC-B (J1C-B01,A01) | 22-14 TASK 822 |
| DFCS | 22-11195 FCC-B (J1C-F03) | 22-14 TASK 821 |
| DFCS | 22-11196 FCC-B (J1C-G03) | 22-14 TASK 820 |
| DFCS | 22-11197 IFSAU | 22-12 TASK 816 |
| DFCS | 22-11198 IFSAU (J1C-C3) | 22-12 TASK 816 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11199 MACH TRIM 28 VDC (J1C-53) | 22-15 TASK 817 |
| DFCS | 22-11200 MT ACT (J1C-D04,E04) | 22-12 TASK 815 |
| DFCS | 22-11201 MT FAIL ANN (J1C-J03) | 22-13 TASK 816 |
| DFCS | 22-11202 MT POS SENS (J1C-E04,D04) | 22-13 TASK 815 |
| DFCS | 22-11203 NSS-1, MT ACT, STAB POS SEN-1 | 22-11 TASK 801 |
| DFCS | 22-11204 NSS-2, MT ACT, STAB POS SEN-2 | 22-11 TASK 801 |
| DFCS | 22-11205 FCC-A, IFSAU, MACH TRIM 28VDC | 22-11 TASK 801 |
| DFCS | 22-11206 FCC-B, IFSAU, MACH TRIM 28VDC | 22-11 TASK 801 |
| DFCS | 22-11207 MT ACT, IFSAU | 22-11 TASK 801 |
| DFCS | 22-11208 STAB TRIM RELAY | 22-13 TASK 818 |
| DFCS | 22-11209 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11210 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11211 FLAP POSN-1 (J1B-G06,F06,E06) | 22-12 TASK 807 |
| DFCS | 22-11212 FLAP POSN-2 (J1B-G06,F06,E06) | 22-12 TASK 807 |
| DFCS | 22-11213 FCC-A (J1B-G07) | 22-16 TASK 830 |
| DFCS | 22-11214 FCC-B (J1B-G07) | 22-16 TASK 830 |
| DFCS | 22-11215 FCC-A (J1A-J09) | 22-17 TASK 802 |
| DFCS | 22-11216 FCC-B (J1A-J09) | 22-17 TASK 802 |
| DFCS | 22-11217 FCC-A (J1B-J04) | 22-11 TASK 801 |
| DFCS | 22-11218 FCC-B (J1B-J04) | 22-11 TASK 801 |
| DFCS | 22-11221 TOGA SW-1 (J1A-F04) | 22-13 TASK 810 |
| DFCS | 22-11222 TOGA SW-2 (J1A-F04) | 22-13 TASK 811 |
| DFCS | 22-11223 FCC-A (J1A-C05) | 22-11 TASK 801 |
| DFCS | 22-11224 FCC-B (J1A-C05) | 22-11 TASK 801 |
| DFCS | 22-11225 FCC-A (J1B-E05) | 22-11 TASK 801 |
| DFCS | 22-11226 FCC-B (J1B-E05) | 22-11 TASK 801 |
| DFCS | 22-11227 A/P DISC SW-1 (J1B-D07) | 22-11 TASK 801 |
| DFCS | 22-11228 A/P DISC SW-2 (J1B-D07) | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11229 FCC-A (J1C-K05) | 22-11 TASK 801 |
| DFCS | 22-11230 FCC-B (J1C-K05) | 22-11 TASK 801 |
| DFCS | 22-11233 RUD ACTUATOR (J1B-K10,J10) | 22-17 TASK 804 |
| DFCS | 22-11234 RUD ACTUATOR (J1A-K09,J1B-K09) | 22-17 TASK 804 |
| DFCS | 22-11235 FCC | 22-11 TASK 801 |
| DFCS | 22-11236 RUD ACTUATOR (J1A-F11,G11) | 22-17 TASK 804 |
| DFCS | 22-11237 RUD ACTUATOR (J1B-K10,J10) | 22-17 TASK 804 |
| DFCS | 22-11238 RUD ACTUATOR (J1A-K09,J1B-K09) | 22-17 TASK 804 |
| DFCS | 22-11239 VHF/NAV CONT PANL-1 | 22-11 TASK 801 |
| DFCS | 22-11240 RUD ACTUATOR (J1A-F11,G11) | 22-17 TASK 804 |
| DFCS | 22-11241 VHF/NAV CONT PANL-2 | 22-11 TASK 801 |
| DFCS | 22-11242 RUD POS SEN (J1A-G09,G10,H09) | 22-17 TASK 805 |
| DFCS | 22-11243 RUD ACTUATOR, FCC-A | 22-17 TASK 804 |
| DFCS | 22-11244 RUD ACTUATOR, FCC-B | 22-17 TASK 804 |
| DFCS | 22-11245 RUD ACTUATOR, RUD POS SEN | 22-17 TASK 805 |
| DFCS | 22-11246 RUD ACTUATOR (J1B-H06,H07) | 22-17 TASK 804 |
| DFCS | 22-11247 RUD ACTUATOR (J1B-H06,H07) | 22-17 TASK 804 |
| DFCS | 22-11248 FCC-A (J1C-K04) | 22-11 TASK 801 |
| DFCS | 22-11249 FCC-B (J1C-K04) | 22-11 TASK 801 |
| DFCS | 22-11250 FCC-A (J1C-K01) | 22-12 TASK 815 |
| DFCS | 22-11251 AFCS ENG INTLK CB-1 (J1B-B03,F03) | 22-13 TASK 821 |
| DFCS | 22-11252 AFCS ENG INTLK CB-2 (J1B-B03,F03) | 22-13 TASK 822 |
| DFCS | 22-11253 MCP (J1A-B01) | 22-11 TASK 817 |
| DFCS | 22-11254 MCP (J1A-F13) | 22-11 TASK 817 |
| DFCS | 22-11255 MCP (J1A-H01) | 22-11 TASK 817 |
| DFCS | 22-11256 MCP (J1A-K14,H14) | 22-11 TASK 817 |
| DFCS | 22-11257 MCP (J1B-B01) | 22-11 TASK 817 |
| DFCS | 22-11258 MCP (J1B-D01) | 22-11 TASK 817 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11259 MCP (J1B-F13) | 22-11 TASK 817 |
| DFCS | 22-11260 MCP (J1B-H01) | 22-11 TASK 817 |
| DFCS | 22-11261 FCC-B (J1C-K01) | 22-12 TASK 815 |
| DFCS | 22-11262 CREW OPERATION, FMC | 22-11 TASK 801 |
| DFCS | 22-11264 RADIO ALT-1, RADIO ALT-3 | 22-11 TASK 801 |
| DFCS | 22-11265 RADIO ALT-2, RADIO ALT-3 | 22-11 TASK 801 |
| DFCS | 22-11266 CREW OPERATION FMC | Reference Not Currently Available |
| DFCS | 22-11270 RADIO ALT-1, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11271 REMOTE ELECTRONIC UNIT (J1C-K02) | 22-15 TASK 820 |
| DFCS | 22-11272 RADIO ALT-2, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11277 CREW OPERATION FMC | Reference Not Currently Available |
| DFCS | 22-11279 FMC CREW OPERATION | Reference Not Currently Available |
| DFCS | 22-11281 A/P DISC SW-1 (J1B-K07) | 22-13 TASK 809 |
| DFCS | 22-11282 A/P DISC SW-2 (J1B-K07) | 22-13 TASK 809 |
| DFCS | 22-11283 AURAL WARN UNIT | 22-11 TASK 801 |
| DFCS | 22-11284 AUTO FLT STAT ANN-CPT | 22-15 TASK 804 |
| DFCS | 22-11285 AUTO FLT STAT ANN-CPT (J1A-E05) | 22-15 TASK 804 |
| DFCS | 22-11286 AUTO FLT STAT ANN-CPT (J1B-B07) | 22-15 TASK 804 |
| DFCS | 22-11287 AUTO FLT STAT ANN-CPT (J1B-D07) | 22-15 TASK 804 |
| DFCS | 22-11288 AUTO FLT STAT ANN-CPT (J1B-G05) | 22-15 TASK 804 |
| DFCS | 22-11289 AUTO FLT STAT ANN-F/O | 22-15 TASK 804 |
| DFCS | 22-11290 AUTO FLT STAT ANN-F/O (J1A-E05) | 22-15 TASK 804 |
| DFCS | 22-11291 AUTO FLT STAT ANN-F/O (J1B-B07) | 22-15 TASK 804 |
| DFCS | 22-11292 AUTO FLT STAT ANN-F/O (J1B-D07) | 22-15 TASK 804 |
| DFCS | 22-11293 AUTO FLT STAT ANN-F/O (J1B-G05) | 22-15 TASK 804 |
| DFCS | 22-11298 FMC | 22-11 TASK 801 |
| DFCS | 22-11299 FCC-A | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11300 CREW OPERATION, 28 VDC POWER | 22-11 TASK 801 |
| DFCS | 22-11301 BATT BUS (J1C-54,58) | 22-15 TASK 802 |
| DFCS | 22-11302 BUS PWR CONT UNIT (J1C-A05,B05) | 22-15 TASK 803 |
| DFCS | 22-11303 FCC-A | 22-14 TASK 801 |
| DFCS | 22-11304 FCC-A (J1A-H14) | 22-14 TASK 802 |
| DFCS | 22-11305 FCC-A (J1A-K14) | 22-14 TASK 802 |
| DFCS | 22-11306 FCC-A (J1C-J02) | 22-14 TASK 805 |
| DFCS | 22-11307 FCC-A (J1B-E07) | 22-14 TASK 806 |
| DFCS | 22-11308 FCC-A (J1C-D02) | 22-14 TASK 807 |
| DFCS | 22-11309 FCC-A (J1C-H02) | 22-14 TASK 808 |
| DFCS | 22-11310 FCC-A (J1A-J03) | 22-14 TASK 809 |
| DFCS | 22-11311 FCC-A (J1B-J03) | 22-14 TASK 810 |
| DFCS | 22-11312 FCC-A (J1A-C01) | 22-14 TASK 811 |
| DFCS | 22-11313 FCC-A (J1C-K02) | 22-14 TASK 812 |
| DFCS | 22-11314 FCC-A (J1B-G05) | 22-14 TASK 813 |
| DFCS | 22-11315 FCC-A (J1C-J03) | 22-14 TASK 814 |
| DFCS | 22-11316 FCC-A (J1A-G03) | 22-14 TASK 825 |
| DFCS | 22-11317 FCC-B | 22-14 TASK 801 |
| DFCS | 22-11318 FCC-B (J1A-H14) | 22-14 TASK 802 |
| DFCS | 22-11319 FCC-B (J1A-K14) | 22-14 TASK 802 |
| DFCS | 22-11320 FCC-B (J1C-J02) | 22-14 TASK 805 |
| DFCS | 22-11321 FCC-B (J1B-E07) | 22-14 TASK 806 |
| DFCS | 22-11322 FCC-B (J1C-D02) | 22-14 TASK 807 |
| DFCS | 22-11323 FCC-B (J1C-H02) | 22-14 TASK 808 |
| DFCS | 22-11324 FCC-B (J1A-J03) | 22-14 TASK 809 |
| DFCS | 22-11325 FCC-B (J1B-J03) | 22-14 TASK 810 |
| DFCS | 22-11326 FCC-B (J1A-C01) | 22-14 TASK 811 |
| DFCS | 22-11327 FCC-B (J1C-K02) | 22-14 TASK 812 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11328 FCC-B (J1B-G05) | 22-14 TASK 813 |
| DFCS | 22-11329 FCC-B (J1C-J03) | 22-14 TASK 814 |
| DFCS | 22-11330 FCC-B (J1A-G03) | 22-14 TASK 825 |
| DFCS | 22-11331 WHEEL SPIN-1 (J1A-J10) | 22-13 TASK 819 |
| DFCS | 22-11332 WHEEL SPIN-2 (J1A-J10) | 22-13 TASK 820 |
| DFCS | 22-11333 IFSAU (J1C-G05,F05) | 22-16 TASK 834 |
| DFCS | 22-11334 MACH TRIM 115 VAC (J1C-A05,B05) | 22-16 TASK 835 |
| DFCS | 22-11335 FCC-A (J1C-D01) | 22-12 TASK 815 |
| DFCS | 22-11336 FCC-B (J1C-D01) | 22-12 TASK 815 |
| DFCS | 22-11337 FCC-A (J1A-B15,A15) | 22-16 TASK 828 |
| DFCS | 22-11338 FCC-B (J1A-B15,A15) | 22-16 TASK 828 |
| DFCS | 22-11339 FCC-A (J1B-B15,A15) | 22-16 TASK 829 |
| DFCS | 22-11340 FCC-B (J1B-B15,A15) | 22-16 TASK 829 |
| DFCS | 22-11341 FCC-A SOP PARITY (J1A-K08) | 22-16 TASK 831 |
| DFCS | 22-11342 FCC-B SOP PARITY (J1A-K08) | 22-16 TASK 831 |
| DFCS | 22-11343 FCC INCOMPATIBILITY | 22-16 TASK 831 |
| DFCS | 22-11344 FCC-A, S/W CONFIG | 22-11 TASK 801 |
| DFCS | 22-11345 FCC-B, S/W CONFIG | 22-11 TASK 801 |
| DFCS | 22-11347 FMC | 22-11 TASK 801 |
| DFCS | 22-11348 BUS PWR CONT UNIT (J1B-H14) | 22-15 TASK 803 |
| DFCS | 22-11349 AIL ACT-1 (J1B-J15,H15,G15) | 22-12 TASK 811 |
| DFCS | 22-11350 STANDBY PWR CONT UNIT (J1C-G01) | 22-11 TASK 801 |
| DFCS | 22-11351 ADC CAS > 60 OR CAS INV, IRU-1 GS > 40 OR GS INV, IRU-2 GS > 40 OR GS INV | 22-11 TASK 826 |
| DFCS | 22-11352 ADC CAS > 60 OR CAS INV, IRU-1 GS > 40 OR GS INV, IRU-2 GS > 40 OR GS INV | 22-11 TASK 826 |
| DFCS | 22-11353 FCC-B (J1B-E10,D10) | 22-15 TASK 825 |
| DFCS | 22-11354 FCC-B (J1B-B10,A10) | 22-15 TASK 825 |
| DFCS | 22-11355 FCC-A (J1B-E10,D10) | 22-15 TASK 825 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11356 FCC-A (J1B-B10,A10) | 22-15 TASK 825 |
| DFCS | 22-11358 FCC-B | 22-15 TASK 824 |
| DFCS | 22-11360 FMC (NO FMC REQ) (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | 22-11361 MCP (A/P ENGAGED) (J1B-H01) | 22-11 TASK 817 |
| DFCS | 22-11362 MCP (A/P ENGAGED) (J1A-H01) | 22-11 TASK 817 |
| DFCS | 22-11363 AIR/GND SW INDICATES AIR MODE (J1A-B03) | 22-15 TASK 815 |
| DFCS | 22-11364 AIR/GND SW INDICATES AIR MODE (J1A-B03) | 22-15 TASK 815 |
| DFCS | 22-11365 SQUAT SW (J1A-B03) | 22-15 TASK 815 |
| DFCS | 22-11366 AIL ACT-2 (J1B-J15,H15,G15) | 22-12 TASK 811 |
| DFCS | 22-11367 MMR/ILS RCVR-1 | 22-11 TASK 801 |
| DFCS | 22-11368 MMR/ILS RCVR-1 | 22-11 TASK 801 |
| DFCS | 22-11369 MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11370 MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11371 LOC BEAM | 22-11 TASK 801 |
| DFCS | 22-11372 CDS/DEU-1 | 22-11 TASK 801 |
| DFCS | 22-11373 CDS/DEU-2 | 22-11 TASK 801 |
| DFCS | 22-11374 CDS/DEU-1 | 22-11 TASK 801 |
| DFCS | 22-11375 CDS/DEU-2 | 22-11 TASK 801 |
| DFCS | 22-11376 ADIRU(ADC)-1 (J1B-E04,D04) | 22-11 TASK 810 |
| DFCS | 22-11377 ADIRU(ADC)-2 (J1A-K04,J04) | 22-17 TASK 803 |
| DFCS | 22-11378 ADIRU(IRU)-1 (J1B-K03,K02) | 22-11 TASK 806 |
| DFCS | 22-11379 ADIRU(IRU)-2 (J1A-K03,K02) | 22-11 TASK 807 |
| DFCS | 22-11380 ADIRU(IRU)-3 (J1B-G11,F11) | 22-11 TASK 801 |
| DFCS | 22-11381 ISFD (J1B-G11,F11) | 22-11 TASK 801 |
| DFCS | 22-11382 A/T CMPTR (J1A-B04,A04) | 22-11 TASK 801 |
| DFCS | 22-11383 DME-1 (J1B-H04,G04) | 22-12 TASK 808 |
| DFCS | 22-11384 DME-2 (J1B-H04,G04) | 22-12 TASK 808 |
| DFCS | 22-11385 RADIO ALT-1 (J1B-B04,A04) | 22-11 TASK 805 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11386 RADIO ALT-2 (J1B-K11,J11) | 22-11 TASK 805 |
| DFCS | 22-11387 RADIO ALT-1 | 22-11 TASK 801 |
| DFCS | 22-11388 FMC-1 (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | 22-11390 MMR/ILS RCVR-1 (J1B-H02,G02) | 22-11 TASK 808 |
| DFCS | 22-11391 MMR/ILS RCVR-2 (J1A-H02,G02) | 22-11 TASK 809 |
| DFCS | 22-11392 MMR/ILS RCVR-3 (J1A-H02,G02) | 22-11 TASK 801 |
| DFCS | 22-11393 CDS/DEU-1 (J1B-B02,A02) | 22-15 TASK 808 |
| DFCS | 22-11394 CDS/DEU-2 (J1A-B02,A02) | 22-15 TASK 809 |
| DFCS | 22-11395 VOR RCVR-1 (J1B-H08,G08) | 22-11 TASK 804 |
| DFCS | 22-11396 VOR RCVR-2 (J1B-H08,G08) | 22-11 TASK 804 |
| DFCS | 22-11397 SMYDC-1 (J1A-H04,G04) | 22-15 TASK 801 |
| DFCS | 22-11398 SMYDC-2 (J1A-H04,G04) | 22-15 TASK 801 |
| DFCS | 22-11401 FCC-A PROG PINS | 22-16 TASK 831 |
| DFCS | 22-11402 FCC-B PROG PINS | 22-16 TASK 831 |
| DFCS | 22-11405 DATA LOAD DISK, FCC-A S/W CONFIG | 22-11 TASK 801 |
| DFCS | 22-11406 DATA LOAD DISK, FCC-B S/W CONFIG | 22-11 TASK 801 |
| DFCS | 22-11407 DATA LOAD DISK, DATA LOADER | 22-11 TASK 801 |
| DFCS | 22-11408 DATA LOADER FCC-A | 22-11 TASK 801 |
| DFCS | 22-11409 DATA LOADER FCC-B | 22-11 TASK 801 |
| DFCS | 22-11414 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11415 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11416 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11417 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11418 FCC-A (J1C-G02,K03) | 22-11 TASK 801 |
| DFCS | 22-11419 FCC-B (J1C-G02,K03) | 22-11 TASK 801 |
| DFCS | 22-11420 ADIRU(ADC)-1 (J1A-K04,J04) | 22-17 TASK 803 |
| DFCS | 22-11421 ADIRU(ADC)-2 (J1B-E04,D04) | 22-11 TASK 810 |
| DFCS | 22-11422 ADIRU(IRU)-1 (J1A-K03,K02) | 22-11 TASK 806 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11423 ADIRU(IRU)-2 (J1B-K03,K02) | 22-11 TASK 807 |
| DFCS | 22-11424 RADIO ALT-1 (J1B-K11,J11) | 22-11 TASK 805 |
| DFCS | 22-11425 RADIO ALT-2 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | 22-11426 RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11427 MMR/ILS RCVR-1 (J1A-H02,G02) | 22-11 TASK 808 |
| DFCS | 22-11428 MMR/ILS RCVR-2 (J1B-H02,G02) | 22-11 TASK 809 |
| DFCS | 22-11429 CDS/DEU-1 (J1A-B02,A02) | 22-15 TASK 808 |
| DFCS | 22-11430 CDS/DEU-2 (J1B-B02,A02) | 22-15 TASK 809 |
| DFCS | 22-11433 ADIRU(IRU)-1 (J1B-K03,K02) | 22-11 TASK 806 |
| DFCS | 22-11434 ADIRU(IRU)-2 (J1A-K03,K02) | 22-11 TASK 807 |
| DFCS | 22-11437 ADIRU(IRU)-1 (J1A-K03,K02) | 22-11 TASK 806 |
| DFCS | 22-11438 ADIRU(IRU)-2 (J1B-K03,K02) | 22-11 TASK 807 |
| DFCS | 22-11439 ADIRU(IRU)-3 (J1B-G11,F11) | 22-11 TASK 801 |
| DFCS | 22-11440 ISFD | 22-11 TASK 801 |
| DFCS | 22-11441 MMR/ILS RCVR-1 | 22-11 TASK 801 |
| DFCS | 22-11442 MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11443 MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11444 MMR/ILS RCVR-1 | 22-11 TASK 801 |
| DFCS | 22-11445 MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11446 MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11447 RADIO ALT-1 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | 22-11448 RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11449 RADIO ALT-3 (J1B-K11,J11) | 22-11 TASK 801 |
| DFCS | 22-11450 RADIO ALT-1 | 22-11 TASK 801 |
| DFCS | 22-11451 RADIO ALT-2 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | 22-11452 RADIO ALT-3 (J1B-K11,J11) | 22-11 TASK 801 |
| DFCS | 22-11455 RADIO ALT-1 | 22-11 TASK 801 |
| DFCS | 22-11456 RADIO ALT-2 | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11460 AIL ACT-1 | 22-11 TASK 801 |
| DFCS | 22-11461 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11462 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11463 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11464 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11466 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11471 AIL PRESS SW-2, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11472 ELEV PRESS SW-2, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11473 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11474 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11475 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11476 MCP | 22-11 TASK 801 |
| DFCS | 22-11479 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11480 MCP, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11484 CDS/DEU-1 | 22-11 TASK 801 |
| DFCS | 22-11485 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11486 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11488 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11489 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11490 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11491 VHF/NAV CONT PANL-2 | 22-11 TASK 801 |
| DFCS | 22-11492 RADIO ALT-1, RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11493 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11494 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11495 CDS/DEU-2 | 22-11 TASK 801 |
| DFCS | 22-11496 CDS/DEU-1 | 22-11 TASK 801 |
| DFCS | 22-11497 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11498 FCC-A | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11499 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11505 AIL ACT-2 | 22-11 TASK 801 |
| DFCS | 22-11506 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11507 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11508 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11509 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11510 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11527 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11534 AIL PRESS SW-1, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11535 ELEV PRESS SW-1, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11536 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11537 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11539 FCC-A (J1A-C09,J1B-F10) | 22-11 TASK 801 |
| DFCS | 22-11540 FCC-A (J1B-E09, J1B-F10) | 22-32 TASK 814 |
| DFCS | 22-11548 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11549 CDS/DEU-1, CDS/DEU-2 | 22-11 TASK 801 |
| DFCS | 22-11550 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11551 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11552 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11553 CDS/DEU-2, CDS/DEU-1 | 22-11 TASK 801 |
| DFCS | 22-11557 CDS/DEU-2 | 22-11 TASK 801 |
| DFCS | 22-11558 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11559 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11560 VHF/NAV CONT PANL-1 | 22-11 TASK 801 |
| DFCS | 22-11561 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11562 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11563 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11564 VHF/NAV CONT PANL-2 | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11565 FCC-A, MCP | 22-11 TASK 801 |
| DFCS | 22-11566 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11567 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11568 ELEV ACT-1 | 22-12 TASK 810 |
| DFCS | 22-11569 ELEV ACT-2 | 22-12 TASK 810 |
| DFCS | 22-11570 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11571 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11572 DATALOAD SYS SEL SW (J1A-C10) | 22-11 TASK 801 |
| DFCS | 22-11573 DATALOAD SYS SEL SW (J1A-A11) | 22-11 TASK 801 |
| DFCS | 22-11574 DATALOAD SYS SEL SW (J1A-B11) | 22-11 TASK 801 |
| DFCS | 22-11575 DATALOAD SYS SEL SW (J1A-C11) | 22-11 TASK 801 |
| DFCS | 22-11576 VHF/NAV CONT PANL-1 | 22-11 TASK 801 |
| DFCS | 22-11577 VHF/NAV CONT PANL-2 | 22-11 TASK 801 |
| DFCS | 22-11586 FCC-B MCP | 22-11 TASK 801 |
| DFCS | 22-11587 MCP FCC-B | 22-11 TASK 801 |
| DFCS | 22-11591 CREW OPERATION, MCP | 22-11 TASK 801 |
| DFCS | 22-11592 FCC-A (J1A-E05) | 22-15 TASK 804 |
| DFCS | 22-11593 FCC-B (J1A-E05) | 22-15 TASK 804 |
| DFCS | 22-11594 FCC-A (J1B-H09) | 22-16 TASK 832 |
| DFCS | 22-11595 FCC-B (J1B-H09) | 22-16 TASK 832 |
| DFCS | 22-11606 RADIO ALT-3 (J1B-K11,J11) | 22-11 TASK 801 |
| DFCS | 22-11607 MCP (J1A-K06,J06) | 22-11 TASK 817 |
| DFCS | 22-11608 LNAV TRANSFER SW-1 (J1B-C01) | 22-11 TASK 801 |
| DFCS | 22-11609 LNAV TRANSFER SW-2 (J1B-C01) | 22-11 TASK 801 |
| DFCS | 22-11612 CREW OPERATION, IRS TRANSFER SW | 22-11 TASK 801 |
| DFCS | 22-11613 STAB POS SEN-1, STAB POS SEN-2 | 22-12 TASK 803 |
| DFCS | 22-11614 NSS-1, NSS-2 | 22-11 TASK 801 |
| DFCS | 22-11618 RADIO ALT-1 | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11619 RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11620 RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11621 RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11622 RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11623 RADIO ALT-3 | 22-11 TASK 801 |
| DFCS | 22-11624 RADIO ALT-1 | 22-11 TASK 801 |
| DFCS | 22-11625 MCP | 22-11 TASK 801 |
| DFCS | 22-11626 MCP | 22-11 TASK 801 |
| DFCS | 22-11627 MCP | 22-11 TASK 801 |
| DFCS | 22-11628 FCC-A | 22-15 TASK 824 |
| DFCS | 22-11629 RADIO ALT-3 | 22-11 TASK 801 |
| DFCS | 22-11632 RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11633 CREW OPERATION, ELEV PRESS SW-2, AIL PRESS SW-2, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11634 CREW OPERATION, ELEV PRESS SW-1, AIL PRESS SW-1, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11637 MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11638 MMR/ILS RCVR-1 | 22-11 TASK 801 |
| DFCS | 22-11639 MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11640 MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11641 LOC BEAM | 22-11 TASK 801 |
| DFCS | 22-11642 G/S BEAM | 22-11 TASK 801 |
| DFCS | 22-11643 MMR/ILS RCVR-1 | 22-11 TASK 801 |
| DFCS | 22-11644 MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11645 MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11646 PCWS XDUCER-1 (J1A-E02,E01) | 22-12 TASK 805 |
| DFCS | 22-11647 PCWS XDUCER-1 (J1B-E02,E01) | 22-12 TASK 805 |
| DFCS | 22-11648 PCWS XDUCER-2 (J1A-E02,E01) | 22-12 TASK 806 |
| DFCS | 22-11649 PCWS XDUCER-2 (J1B-E02,E01) | 22-12 TASK 806 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11650 RCWS XDUCER-1 (J1B-K06,J06) | 22-12 TASK 804 |
| DFCS | 22-11651 RCWS XDUCER-2 (J1B-K06,J06) | 22-12 TASK 804 |
| DFCS | 22-11652 FLAP POSN-1, FLAP POSN-2 | 22-11 TASK 801 |
| DFCS | 22-11653 MMR/ILS RCVR-1, MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11654 MMR/ILS RCVR-1, MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11655 MMR/ILS RCVR-2, MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11656 MMR/ILS RCVR-1, MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11657 MMR/ILS RCVR-1, MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11658 MMR/ILS RCVR-2, MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11659 MMR/ILS RCVR-1, LOC ANT SW-1 | 22-11 TASK 801 |
| DFCS | 22-11660 MMR/ILS RCVR-2, LOC ANT SW-2 | 22-11 TASK 801 |
| DFCS | 22-11663 SPOIL-4 POS SEN-1, SPOIL-4 POS SEN-2 | 22-12 TASK 801 |
| DFCS | 22-11664 SPOIL-9 POS SEN-1, SPOIL-9 POS SEN-2 | 22-12 TASK 802 |
| DFCS | 22-11665 FCC-A, RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11666 FCC-B, RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11667 FCC-A, FCC-B, RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11669 CREW OPERATION, MCP | 22-11 TASK 801 |
| DFCS | 22-11670 CREW OPERATION, MCP | 22-11 TASK 801 |
| DFCS | 22-11693 G/S BEAM | 22-11 TASK 801 |
| DFCS | 22-11694 RUD POS SEN | 22-17 TASK 805 |
| DFCS | 22-11695 RUD POS SEN | 22-17 TASK 805 |
| DFCS | 22-11697 FLAP POSN-1, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11698 FLAP POSN-2, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11699 ELEV POS SEN-1, ELEV POS SEN-2 | 22-11 TASK 801 |
| DFCS | 22-11703 CREW OPERATION, FCC-A, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11704 TOGA SW-1, TOGA SW-2 | 22-31 TASK 804 |
| DFCS | 22-11705 TOGA SW-1, TOGA SW-2 | 22-32 TASK 804 |
| DFCS | 22-11706 MCP, IFSAU | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11707 MCP, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11708 MCP, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11709 MCP, MCP CONFIG ERR | 22-11 TASK 801 |
| DFCS | 22-11713 MCP | 22-11 TASK 801 |
| DFCS | 22-11714 MCP | 22-11 TASK 801 |
| DFCS | 22-11732 CREW OPERATION, FCC | 22-11 TASK 801 |
| DFCS | 22-11733 ADIRU(ADC)-1, ADM TOTAL PRESS-1, ADM STATIC PRESS-1 | 22-15 TASK 811 |
| DFCS | 22-11734 ADIRU(ADC)-2, ADM TOTAL PRESS-2, ADM STATIC PRESS-2 | 22-15 TASK 811 |
| DFCS | 22-11737 ADM TOTAL PRESS-1, ADM TOTAL PRESS-2, ADM STATIC PRESS-1, ADM STATIC PRESS-2 | 22-15 TASK 811 |
| DFCS | 22-11738 ADM TOTAL PRESS-1, ADM TOTAL PRESS-2, ADM STATIC PRESS-1, ADM STATIC PRESS-2 | 22-15 TASK 811 |
| DFCS | 22-11739 ADIRU(ADC)-1, ADM STATIC PRESS-1, ADM TOTAL PRESS-1 | 22-15 TASK 811 |
| DFCS | 22-11740 ADIRU(ADC)-2, ADM STATIC PRESS-2, ADM TOTAL PRESS-2 | 22-15 TASK 811 |
| DFCS | 22-11746 MMR/ILS RCVR-3, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11747 MMR/ILS RCVR-2, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11748 CREW OPERATION, VHF/NAV CONT PANL-1, VHF/NAV CONT PANL-2 | 22-11 TASK 801 |
| DFCS | 22-11754 ADIRU(ADC)-1, ADM STATIC PRESS-1 | 22-15 TASK 811 |
| DFCS | 22-11755 ADIRU(ADC)-2, ADM STATIC PRESS-2 | 22-15 TASK 811 |
| DFCS | 22-11756 HDG REF SW (J1B-G03) | 22-11 TASK 801 |
| DFCS | 22-11757 CREW OPERATION, AIL PRESS SW-2, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11758 CREW OPERATION, AIL PRESS SW-1, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11759 CREW OPERATION | Reference Not Currently Available |
| DFCS | 22-11796 CREW OPERATION, BUS PWR CONT UNIT | 22-11 TASK 801 |
| DFCS | 22-11797 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11798 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11799 VHF/NAV CONT PANL-1 (J1A-C02) | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11800 VHF/NAV CONT PANL-1 (J1B-C02) | 22-11 TASK 801 |
| DFCS | 22-11801 VHF/NAV CONT PANL-2 (J1A-C02) | 22-11 TASK 801 |
| DFCS | 22-11802 VHF/NAV CONT PANL-2 (J1B-C02) | 22-11 TASK 801 |
| DFCS | 22-11805 CREW OPERATION, RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11810 CREW OPERATION, LNAV TRANSFER SW | 22-11 TASK 801 |
| DFCS | 22-11811 RUDDER ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11812 A/B INDEX (J1B-A05) | 22-16 TASK 827 |
| DFCS | 22-11821 CREW OPERATION, RADIO ALT-1, RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11822 FMC (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | 22-11823 CREW OPERATION, MCP | 22-11 TASK 801 |
| DFCS | 22-11827 SPOIL-4 POS SEN, SPOIL-9 POS SEN | 22-12 TASK 802 |
| DFCS | 22-11828 FCC A (J1A-B06,A06) | 22-11 TASK 801 |
| DFCS | 22-11829 FCC B (J1A-B06,A06) | 22-11 TASK 801 |
| DFCS | 22-11831 FEEL&CENTERING FRPLY | 22-11 TASK 828 |
| DFCS | 737-600 (J1A-B07,C07) | 22-15 TASK 822 |
| DFCS | 737-700 (J1A-B07,C07) | 22-15 TASK 822 |
| DFCS | 737-800 (J1A-B07,C07) | 22-15 TASK 822 |
| DFCS | A/B INDEX (J1B-A05) | 22-16 TASK 827 |
| DFCS | A/P DISC SW-1 (J1B-K07) | 22-13 TASK 809 |
| DFCS | A/P DISC SW-2 (J1B-K07) | 22-13 TASK 809 |
| DFCS | A/S WARN (J1A-E07) | 22-15 TASK 823 |
| DFCS | A/T CMPTR (J1A-B04,A04) | 22-11 TASK 813 |
| DFCS | ADIRU(ADC)-1 (J1A-K04,J04) | 22-17 TASK 803 |
| DFCS | ADIRU(ADC)-1 (J1B-E04,D04) | 22-11 TASK 810 |
| DFCS | ADIRU(ADC)-2 (J1A-K04,J04) | 22-17 TASK 803 |
| DFCS | ADIRU(ADC)-2 (J1B-E04,D04) | 22-11 TASK 810 |
| DFCS | ADIRU(IRU)-1 (J1A-K03,K02) | 22-11 TASK 806 |
| DFCS | ADIRU(IRU)-1 (J1B-K03,K02) | 22-11 TASK 806 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | ADIRU(IRU)-2 (J1A-K03,K02) | 22-11 TASK 807 |
| DFCS | ADIRU(IRU)-2 (J1B-K03,K02) | 22-11 TASK 807 |
| DFCS | ADM STATIC PRESS-1 | 22-15 TASK 811 |
| DFCS | ADM STATIC PRESS-2 | 22-15 TASK 811 |
| DFCS | ADM TOTAL PRESS-1 | 22-15 TASK 810 |
| DFCS | ADM TOTAL PRESS-2 | 22-15 TASK 810 |
| DFCS | AFCS ENG INTLK CB-1 (J1B-B03,F03) | 22-13 TASK 821 |
| DFCS | AFCS ENG INTLK CB-2 (J1B-B03,F03) | 22-13 TASK 822 |
| DFCS | AIL ACT-1 (J1B-J15,H15,G15) | 22-12 TASK 811 |
| DFCS | AIL ACT-2 (J1B-J15,H15,G15) | 22-12 TASK 811 |
| DFCS | AIL DETENT SOLENOID-1 | 22-13 TASK 804 |
| DFCS | AIL DETENT SOLENOID-2 | 22-13 TASK 805 |
| DFCS | AIL POS SEN-1 (J1B-K13,J13,H13) | 22-12 TASK 813 |
| DFCS | AIL POS SEN-2 (J1B-K13,J13,H13) | 22-12 TASK 813 |
| DFCS | AIL PRESS SW-1 (J1B-B13) | 22-13 TASK 804 |
| DFCS | AIL PRESS SW-1 (J1B-K01) | 22-13 TASK 804 |
| DFCS | AIL PRESS SW-2 (J1B-B13) | 22-13 TASK 805 |
| DFCS | AIL PRESS SW-2 (J1B-K01) | 22-13 TASK 805 |
| DFCS | AIRPLANE CONFIG 1 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG 2 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG 3 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG 4 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG 5 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG 6 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG 7 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG STD (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | ALPHA VANE-1 | 22-11 TASK 823 |
| DFCS | ALPHA VANE-2 | 22-11 TASK 824 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | ALT ALERT OPT 1 (J1A-A08,B08) | 22-15 TASK 823 |
| DFCS | ALT ALERT OPT 2 (J1A-A08,B08) | 22-15 TASK 823 |
| DFCS | ALT ALERT OPT 3 (J1A-A08,B08) | 22-15 TASK 823 |
| DFCS | ALT ALERT STD (J1A-A08,B08) | 22-15 TASK 823 |
| DFCS | AURAL WARN UNIT | 22-12 TASK 817 |
| DFCS | AUTO FLT STAT ANN-CPT (J1A-E05) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-CPT (J1B-B07) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-CPT (J1B-D07) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-CPT (J1B-G05) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-CPT | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-F/O (J1A-E05) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-F/O (J1B-B07) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-F/O (J1B-D07) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-F/O (J1B-G05) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-F/O | 22-15 TASK 804 |
| DFCS | BATT BUS (J1C- 54, 58) | 22-15 TASK 802 |
| DFCS | BATT BUS (J1C-54,55) | 22-15 TASK 802 |
| DFCS | BUS PWR CONT UNIT (J1B-H14) | 22-15 TASK 803 |
| DFCS | BUS PWR CONT UNIT (J1C-A05,B05) | 22-15 TASK 803 |
| DFCS | CDS/DEU-1 (J1A-B02,A02) | 22-15 TASK 808 |
| DFCS | CDS/DEU-1 (J1A-B06,A06) | 22-15 TASK 808 |
| DFCS | CDS/DEU-1 (J1B-B02,A02) | 22-15 TASK 808 |
| DFCS | CDS/DEU-2 (J1A-B02,A02) | 22-15 TASK 809 |
| DFCS | CDS/DEU-2 (J1A-B06,A06) | 22-15 TASK 809 |
| DFCS | CDS/DEU-2 (J1B-B02,A02) | 22-15 TASK 809 |
| DFCS | COL SW MODULE M1201 (J1C-B02) | 22-13 TASK 808 |
| DFCS | COL SW MODULE M1201 (J1C-F02) | 22-13 TASK 808 |
| DFCS | COL SW MODULE M1201 (J1C-G02) | 22-15 TASK 819 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | COL SW MODULE M1201 (J1C-K03) | 22-15 TASK 818 |
| DFCS | COL SW MODULE M1201 | 22-15 TASK 821 |
| DFCS | CROSS CHANNEL TEST FAIL | 22-15 TASK 825 |
| DFCS | CWS OVERRIDE (J1A-F08) | 22-15 TASK 823 |
| DFCS | CWS WARN (J1A-G08) | 22-15 TASK 823 |
| DFCS | DME-1 (J1B-H04,G04) | 22-12 TASK 808 |
| DFCS | DME-2 (J1B-H04,G04) | 22-12 TASK 808 |
| DFCS | DUAL CHAN (J1A-F07) | 22-15 TASK 823 |
| DFCS | EFIS CONT PANL-CPT | 22-15 TASK 812 |
| DFCS | EFIS CONT PANL-F/O | 22-15 TASK 812 |
| DFCS | ELEV ACT-1 (J1A-J15,H15,G15) | 22-12 TASK 810 |
| DFCS | ELEV ACT-2 (J1A-J15,H15,G15) | 22-12 TASK 810 |
| DFCS | ELEV DETENT SOLENOID-1 | 22-13 TASK 806 |
| DFCS | ELEV DETENT SOLENOID-2 | 22-13 TASK 807 |
| DFCS | ELEV POS SEN-1 (J1A-K13,J13,H13) | 22-12 TASK 812 |
| DFCS | ELEV POS SEN-2 (J1A-K13,J13,H13) | 22-12 TASK 812 |
| DFCS | ELEV PRESS SW-1 (J1A-B13) | 22-13 TASK 806 |
| DFCS | ELEV PRESS SW-1 (J1A-K01) | 22-13 TASK 806 |
| DFCS | ELEV PRESS SW-2 (J1A-B13) | 22-13 TASK 807 |
| DFCS | ELEV PRESS SW-2 (J1A-K01) | 22-13 TASK 807 |
| DFCS | FAA/JAA (J1A-G07) | 22-15 TASK 823 |
| DFCS | FCC INCOMPATIBILITY | 22-16 TASK 831 |
| DFCS | FCC-A (J1A-B15,A15) | 22-16 TASK 828 |
| DFCS | FCC-A (J1A-C01) | 22-14 TASK 811 |
| DFCS | FCC-A (J1A-D13) | 22-14 TASK 803 |
| DFCS | FCC-A (J1A-E05) | 22-15 TASK 804 |
| DFCS | FCC-A (J1A-E15,D15) | 22-14 TASK 803 |
| DFCS | FCC-A (J1A-G03) | 22-14 TASK 825 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | FCC-A (J1A-G11,F11) | 22-14 TASK 815 |
| DFCS | FCC-A (J1A-H11) | 22-14 TASK 815 |
| DFCS | FCC-A (J1A-H14) | 22-14 TASK 802 |
| DFCS | FCC-A (J1A-J03) | 22-14 TASK 809 |
| DFCS | FCC-A (J1A-J09) | 22-17 TASK 802 |
| DFCS | FCC-A (J1A-K11,J11) | 22-14 TASK 815 |
| DFCS | FCC-A (J1A-K14) | 22-14 TASK 802 |
| DFCS | FCC-A (J1B-B10,A10) | 22-15 TASK 825 |
| DFCS | FCC-A (J1B-B15,A15) | 22-16 TASK 829 |
| DFCS | FCC-A (J1B-D13) | 22-14 TASK 804 |
| DFCS | FCC-A (J1B-E07) | 22-14 TASK 806 |
| DFCS | FCC-A (J1B-E10,D10) | 22-15 TASK 825 |
| DFCS | FCC-A (J1B-E11) | 22-14 TASK 815 |
| DFCS | FCC-A (J1B-E15,D15) | 22-14 TASK 804 |
| DFCS | FCC-A (J1B-G05) | 22-14 TASK 813 |
| DFCS | FCC-A (J1B-G07) | 22-16 TASK 830 |
| DFCS | FCC-A (J1B-G11,F11) | 22-14 TASK 815 |
| DFCS | FCC-A (J1B-H09) | 22-16 TASK 832 |
| DFCS | FCC-A (J1B-J03) | 22-14 TASK 810 |
| DFCS | FCC-A (J1B-K11,J11) | 22-14 TASK 815 |
| DFCS | FCC-A (J1C-B01,A01) | 22-14 TASK 822 |
| DFCS | FCC-A (J1C-D01) | 22-12 TASK 815 |
| DFCS | FCC-A (J1C-D02) | 22-14 TASK 807 |
| DFCS | FCC-A (J1C-F03) | 22-14 TASK 821 |
| DFCS | FCC-A (J1C-G02) | 22-14 TASK 816 |
| DFCS | FCC-A (J1C-G03) | 22-14 TASK 819 |
| DFCS | FCC-A (J1C-H02) | 22-14 TASK 808 |
| DFCS | FCC-A (J1C-H03) | 22-14 TASK 818 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | FCC-A (J1C-J02) | 22-14 TASK 805 |
| DFCS | FCC-A (J1C-J03) | 22-14 TASK 814 |
| DFCS | FCC-A (J1C-K01) | 22-12 TASK 815 |
| DFCS | FCC-A (J1C-K02) | 22-14 TASK 812 |
| DFCS | FCC-A (J1C-K03) | 22-14 TASK 817 |
| DFCS | FCC-A PROG PINS | 22-16 TASK 831 |
| DFCS | FCC-A SOP PARITY (J1A-K08) | 22-15 TASK 823 |
| DFCS | FCC-A SOP PARITY (J1A-K08) | 22-16 TASK 831 |
| DFCS | FCC-A | 22-14 TASK 801 |
| DFCS | FCC-B (J1A-B15,A15) | 22-16 TASK 828 |
| DFCS | FCC-B (J1A-C01) | 22-14 TASK 811 |
| DFCS | FCC-B (J1A-D13) | 22-14 TASK 803 |
| DFCS | FCC-B (J1A-E05) | 22-15 TASK 804 |
| DFCS | FCC-B (J1A-E15,D15) | 22-14 TASK 803 |
| DFCS | FCC-B (J1A-G03) | 22-14 TASK 825 |
| DFCS | FCC-B (J1A-G11,F11) | 22-14 TASK 815 |
| DFCS | FCC-B (J1A-H11) | 22-14 TASK 815 |
| DFCS | FCC-B (J1A-H14) | 22-14 TASK 802 |
| DFCS | FCC-B (J1A-J03) | 22-14 TASK 809 |
| DFCS | FCC-B (J1A-J09) | 22-17 TASK 802 |
| DFCS | FCC-B (J1A-K11,J11) | 22-14 TASK 815 |
| DFCS | FCC-B (J1A-K14) | 22-14 TASK 802 |
| DFCS | FCC-B (J1B-B10,A10) | 22-15 TASK 825 |
| DFCS | FCC-B (J1B-B15,A15) | 22-16 TASK 829 |
| DFCS | FCC-B (J1B-D13) | 22-14 TASK 804 |
| DFCS | FCC-B (J1B-E07) | 22-14 TASK 806 |
| DFCS | FCC-B (J1B-E10,D10) | 22-15 TASK 825 |
| DFCS | FCC-B (J1B-E11) | 22-14 TASK 815 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | FCC-B (J1B-E15,D15) | 22-14 TASK 804 |
| DFCS | FCC-B (J1B-G05) | 22-14 TASK 813 |
| DFCS | FCC-B (J1B-G07) | 22-16 TASK 830 |
| DFCS | FCC-B (J1B-G11,F11) | 22-14 TASK 815 |
| DFCS | FCC-B (J1B-H09) | 22-16 TASK 832 |
| DFCS | FCC-B (J1B-J03) | 22-14 TASK 810 |
| DFCS | FCC-B (J1B-K11,J11) | 22-14 TASK 815 |
| DFCS | FCC-B (J1C-B01,A01) | 22-14 TASK 822 |
| DFCS | FCC-B (J1C-D01) | 22-12 TASK 815 |
| DFCS | FCC-B (J1C-D02) | 22-14 TASK 807 |
| DFCS | FCC-B (J1C-F03) | 22-14 TASK 821 |
| DFCS | FCC-B (J1C-G02) | 22-14 TASK 816 |
| DFCS | FCC-B (J1C-G03) | 22-14 TASK 820 |
| DFCS | FCC-B (J1C-H02) | 22-14 TASK 808 |
| DFCS | FCC-B (J1C-H03) | 22-14 TASK 818 |
| DFCS | FCC-B (J1C-J02) | 22-14 TASK 805 |
| DFCS | FCC-B (J1C-J03) | 22-14 TASK 814 |
| DFCS | FCC-B (J1C-K01) | 22-12 TASK 815 |
| DFCS | FCC-B (J1C-K02) | 22-14 TASK 812 |
| DFCS | FCC-B (J1C-K03) | 22-14 TASK 817 |
| DFCS | FCC-B PROG PINS | 22-16 TASK 831 |
| DFCS | FCC-B SOP PARITY (J1A-K08) | 22-16 TASK 831 |
| DFCS | FCC-B | 22-14 TASK 801 |
| DFCS | FLAP POSN-1 (J1B-G06,F06,E06) | 22-12 TASK 807 |
| DFCS | FLAP POSN-2 (J1B-G06,F06,E06) | 22-12 TASK 807 |
| DFCS | FMC (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | FMC (NO FMC REQ) (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | FMC TRANSFER SW (J1A-E04,D04) | 22-16 TASK 833 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | FMC-1 (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | FMC-2 (J1A-E04,D04) | 22-11 TASK 812 |
| DFCS | G/S BEFORE LOC (J1A-J07) | 22-15 TASK 823 |
| DFCS | GEAR UP SW-1 (J1B-J05) | 22-13 TASK 812 |
| DFCS | GEAR UP SW-2 (J1B-J05) | 22-13 TASK 812 |
| DFCS | HDG SEL TOGA (J1A-H06) | 22-15 TASK 823 |
| DFCS | IFSAU (J1C-C3) | 22-12 TASK 816 |
| DFCS | IFSAU (J1C-G05,F05) | 22-16 TASK 834 |
| DFCS | IFSAU | 22-12 TASK 816 |
| DFCS | IRS TRANSFER SW (J1A-G01) | 22-13 TASK 801 |
| DFCS | IRS TRANSFER SW (J1B-G01) | 22-13 TASK 801 |
| DFCS | ISFD (J1B-G11,F11) | 22-17 TASK 801 |
| DFCS | LOC ANT SW-1 (J1B-E03) | 22-13 TASK 802 |
| DFCS | LOC ANT SW-2 (J1B-E03) | 22-13 TASK 802 |
| DFCS | MACH TRIM 115 VAC (J1C-A05,B05) | 22-16 TASK 835 |
| DFCS | MACH TRIM 28 VDC (J1C-53) | 22-15 TASK 817 |
| DFCS | MCP (A/P ENGAGED) (J1A-H01) | 22-11 TASK 817 |
| DFCS | MCP (A/P ENGAGED) (J1B-H01) | 22-11 TASK 817 |
| DFCS | MCP (J1A-A06,B06) | 22-11 TASK 817 |
| DFCS | MCP (J1A-B01) | 22-11 TASK 817 |
| DFCS | MCP (J1A-F01) | 22-11 TASK 817 |
| DFCS | MCP (J1A-F13) | 22-11 TASK 817 |
| DFCS | MCP (J1A-H01) | 22-11 TASK 817 |
| DFCS | MCP (J1A-K06,J06) | 22-11 TASK 817 |
| DFCS | MCP (J1A-K14,H14) | 22-11 TASK 817 |
| DFCS | MCP (J1B-B01) | 22-11 TASK 817 |
| DFCS | MCP (J1B-D01) | 22-11 TASK 817 |
| DFCS | MCP (J1B-F01) | 22-11 TASK 817 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | MCP (J1B-F13) | 22-11 TASK 817 |
| DFCS | MCP (J1B-H01) | 22-11 TASK 817 |
| DFCS | MCP | 22-11 TASK 816 |
| DFCS | MMR/ILS RCVR-1 (J1A-H02,G02) | 22-11 TASK 808 |
| DFCS | MMR/ILS RCVR-1 (J1B-H02,G02) | 22-11 TASK 808 |
| DFCS | MMR/ILS RCVR-2 (J1A-H02,G02) | 22-11 TASK 809 |
| DFCS | MMR/ILS RCVR-2 (J1B-H02,G02) | 22-11 TASK 809 |
| DFCS | MT ACT (J1C-D04,E04) | 22-12 TASK 815 |
| DFCS | MT FAIL ANN (J1C-J03) | 22-13 TASK 816 |
| DFCS | MT POS SENS (J1C-E04,D04) | 22-13 TASK 815 |
| DFCS | NSS-1 (J1A-D12,C12) | 22-12 TASK 809 |
| DFCS | NSS-2 (J1A-D12,C12) | 22-12 TASK 809 |
| DFCS | PCWS XDUCER-1 (J1A-E02,E01) | 22-12 TASK 805 |
| DFCS | PCWS XDUCER-1 (J1B-E02,E01) | 22-12 TASK 805 |
| DFCS | PCWS XDUCER-2 (J1A-E02,E01) | 22-12 TASK 806 |
| DFCS | PCWS XDUCER-2 (J1B-E02,E01) | 22-12 TASK 806 |
| DFCS | PROX SW ELEX UNIT (J1B-J05) | 22-13 TASK 812 |
| DFCS | RADIO ALT-1 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | RADIO ALT-1 (J1B-K11,J11) | 22-11 TASK 805 |
| DFCS | RADIO ALT-2 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | RADIO ALT-2 (J1B-K11,J11) | 22-11 TASK 805 |
| DFCS | RCWS XDUCER-1 (J1B-K06,J06) | 22-12 TASK 804 |
| DFCS | RCWS XDUCER-2 (J1B-K06,J06) | 22-12 TASK 804 |
| DFCS | REMOTE ELECTRONIC UNIT (J1C-K02) | 22-15 TASK 820 |
| DFCS | RUD ACTUATOR (J1A-F11,G11) | 22-17 TASK 804 |
| DFCS | RUD ACTUATOR (J1A-K09,J1B-K09) | 22-17 TASK 804 |
| DFCS | RUD ACTUATOR (J1B-H06,H07) | 22-17 TASK 804 |
| DFCS | RUD ACTUATOR (J1B-K10,J10) | 22-17 TASK 804 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | RUD POS SEN (J1A-G09,G10,H09) | 22-17 TASK 805 |
| DFCS | SMYDC-1 (J1A-H04,G04) | 22-15 TASK 801 |
| DFCS | SMYDC-2 (J1A-H04,G04) | 22-15 TASK 801 |
| DFCS | SPD/ALT INTERVENTION (J1A-J08) | 22-15 TASK 823 |
| DFCS | SPOIL-4 POS SEN-1 (J1B-B12,A12) | 22-12 TASK 801 |
| DFCS | SPOIL-4 POS SEN-2 (J1B-B12,A12) | 22-12 TASK 801 |
| DFCS | SPOIL-9 POS SEN-1 (J1B-E12,D12) | 22-12 TASK 802 |
| DFCS | SPOIL-9 POS SEN-2 (J1B-E12,D12) | 22-12 TASK 802 |
| DFCS | SQUAT SW (J1A-B03) | 22-15 TASK 815 |
| DFCS | ST FAIL ANN (J1C-H02) | 22-13 TASK 817 |
| DFCS | STAB POS SEN-1 (J1A-A13,A12) | 22-12 TASK 803 |
| DFCS | STAB POS SEN-2 (J1A-A13,A12) | 22-12 TASK 803 |
| DFCS | STAB TRIM CUTOUT RELAY | 22-13 TASK 813 |
| DFCS | STAB TRIM RLY (J1C-D03) | 22-13 TASK 818 |
| DFCS | STAB TRIM SERVO (J1A-A12,A13) | 22-12 TASK 803 |
| DFCS | STAB TRIM SERVO (J1C-A03) | 22-11 TASK 822 |
| DFCS | STAB TRIM SERVO (J1C-G02) | 22-15 TASK 819 |
| DFCS | STAB TRIM SERVO (J1C-K03) | 22-15 TASK 818 |
| DFCS | STAB TRIM SERVO | 22-15 TASK 821 |
| DFCS | SYNCHRONIZATION | 22-15 TASK 824 |
| DFCS | TOGA SW-1 (J1A-F04) | 22-13 TASK 810 |
| DFCS | TOGA SW-2 (J1A-F04) | 22-13 TASK 811 |
| DFCS | TRIM CUTOUT (J1C-B03) | 22-13 TASK 813 |
| DFCS | TRIM WARN ANN (J1C-D02) | 22-13 TASK 814 |
| DFCS | UNDEFINED AIRPLANE (J1A-B07,C07) | 22-15 TASK 822 |
| DFCS | VHF/NAV CONT PANL-1 (J1A-D01) | 22-15 TASK 813 |
| DFCS | VHF/NAV CONT PANL-1 (J1B-K14) | 22-15 TASK 813 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | VHF/NAV CONT PANL-2 (J1A-D01) | 22-15 TASK 814 |
| DFCS | VHF/NAV CONT PANL-2 (J1B-K14) | 22-15 TASK 814 |
| DFCS | VHF/NAV SW (J1A-K12) | 22-13 TASK 803 |
| DFCS | VHF/NAV SW (J1B-A07) | 22-13 TASK 803 |
| DFCS | VHF/NAV SW (J1B-J01) | 22-13 TASK 803 |
| DFCS | VHF/NAV SW (J1B-J07) | 22-13 TASK 803 |
| DFCS | VOR RCVR-1 (J1B-H08,G08) | 22-11 TASK 804 |
| DFCS | VOR RCVR-2 (J1B-H08,G08) | 22-11 TASK 804 |
| DFCS | WHEEL SPIN-1 (J1A-J10) | 22-13 TASK 819 |
| DFCS | WHEEL SPIN-2 (J1A-J10) | 22-13 TASK 820 |
| DFCS | WINGS LEVEL TOGA (J1A-H06) | 22-15 TASK 823 |
| SMYD - 1 | 22-21001 SMYD YD fault | 22-23 TASK 801 |
| SMYD - 1 | 22-21002 YD 28VAC no power | 22-23 TASK 802 |
| SMYD - 1 | 22-21003 YD 28VDC no power | 22-23 TASK 803 |
| SMYD - 1 | 22-21004 YD LVDT error | 22-23 TASK 804 |
| SMYD - 1 | 22-21005 flap sig disagree | 22-23 TASK 806 |
| SMYD - 1 | 22-21006 YD servo loop | 22-23 TASK 809 |
| SMYD - 1 | 22-21007 no X-CH data | 22-23 TASK 807 |
| SMYD - 1 | 22-21008 X-CH invalid | 22-23 TASK 801 |
| SMYD - 1 | 22-21009 X-CH cmd disagree | 22-23 TASK 808 |
| SMYD - 2 | 22-22001 SMYD YD fault | 22-23 TASK 801 |
| SMYD - 2 | 22-22002 YD 28VAC no power | 22-23 TASK 802 |
| SMYD - 2 | 22-22003 YD 28VDC no power | 22-23 TASK 803 |
| SMYD - 2 | 22-22004 YD LVDT error | 22-23 TASK 805 |
| SMYD - 2 | 22-22005 flap sig disagree | 22-23 TASK 806 |
| SMYD - 2 | 22-22006 YD servo loop | 22-23 TASK 810 |
| SMYD - 2 | 22-22007 no X-CH data | 22-23 TASK 807 |
| SMYD - 2 | 22-22008 X-CH invalid | 22-23 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**801. Digital Flight Control System (DFCS) BITE Procedure**

A. General

(1) The DFCS BITE flowchart (Figure 201) is the guide for you to use the DFCS BITE. The DFCS BITE is based on the on-condition maintenance philosophy. The on-condition maintenance philosophy says that maintenance begins when the pilot reports a problem.

(2) You do the DFCS BITE tests from the control display unit (CDU). You use the FAULT REVIEW item on the DFCS BITE TEST MAIN MENU in this task.

(a) These are the items that you can use in the FAULT REVIEW menu:

1) CURRENT STATUS

2) FAULT HISTORY SORTED BY FLIGHT LEG

3) FAULT HISTORY SORTED BY FLIGHT DECK EFFECT

(3) Normal Sequence:

(a) From the pilot report (PIREP) or flight deck effect (FDE), you go to the FAULT HISTORY SORTED BY FLIGHT LEG or FAULT HISTORY SORTED BY FLIGHT DECK EFFECT to look for faults.

(b) If there are faults in the FAULT HISTORY SORTED BY FLIGHT LEG or FAULT HISTORY SORTED BY FLIGHT DECK EFFECT, then run the applicable LRU TESTS and correct the faults.

(c) If there are no faults in the FAULT HISTORY SORTED BY FLIGHT LEG or FAULT HISTORY SORTED BY FLIGHT DECK EFFECT, then continue to look for faults in the CURRENT STATUS. Do the Current Status Quick Test and the applicable additional test(s) in the CURRENT STATUS.

(4) The FAULT HISTORY SORTED BY FLIGHT LEG display shows faults occur in each flight leg (LEG).

(a) The display can show data from the last 40 flight legs (LEG 01 through LEG 40). The flight legs are shown with the flight leg that had the most recent fault at the top of the first page.

(b) Only the flight legs during which faults occurred will show. You can use the PREV PAGE and NEXT PAGE keys to see all the flight legs.

(c) When you push the line select key adjacent to the prompt for one of the flight legs, you will see more data. For each fault in the flight leg you will see this data:

1) The flight leg.

2) The flight deck effect.

3) The channel that had the fault.

4) The roll and pitch modes that were active when the fault occurred.

5) The fault message. Each fault message shows this fault data:

a) The maintenance monitor that found the fault.

**HAP 001-013, 015-026, 028-030**

NOTE: For a description of each maintenance monitor message, refer to the 22-11 Task Support pages in the Fault Isolation Manual.

**HAP ALL**

b) The failed (suspect) LRU.

c) The flight number.

d) The time, altitude, airspeed and the airplane mode that the fault occurred.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999**

e) The maintenance message number.

**HAP ALL**

f) LRU TESTS prompt.

NOTE: The LRU TESTS prompt will initiate the BITE Library tests that are associated with the fault.

(5) FAULT HISTORY SORTED BY FLIGHT DECK EFFECT display shows faults sorted by flight deck effect instead of flight leg.

(a) Once a flight deck effect is selected the fault data is the same data that shows in the FAULT HISTORY SORTED BY FLIGHT LEG display. You can use the PREV PAGE and NEXT PAGE keys to see all the faults that have occurred in the flight legs under that flight deck effect.

(b) These are the flight deck effect selections that you can make:

1) A/P DISC (Autopilot Disconnect)
2) ENG ATTMPT (Engage Attempt)
3) F/D BOV (Flight Director Bias out of view)
4) MODE REV (Mode Reversion)
5) SPEED TRIM
6) MACH TRIM
7) STAB TRIM
8) F/D FLAG (Flight Director Flag)
9) MISC (Miscellaneous)
10) GND FAULTS (Ground Faults)

(6) The CURRENT STATUS display will show any maintenance messages that are currently active.

(a) A maintenance message identifies a specific failure which is found by the DFCS BITE. The maintenance messages are usually abbreviations for line replaceable units (LRUs).

(b) The CURRENT STATUS item on the DFCS BITE TEST FAULT REVIEW menu contains these tests:

NOTE: For more detailed data about the library tests in the Current Status Quick Test and the additional tests, refer to the "Digital Flight Control System - Operational Test" in (AMM TASK 22-11-00-740-801).

1) Current Status Quick Test (Group 10)
2) Additional Tests:
   a) Autopilot (Group 11)
   b) Flight Director (Group 12)
   c) Mach Trim System (Group 13)
   d) Speed Trim System (Group 14)
   e) Altitude Alert (Group 15)

(c) The Current Status Quick Test comes before the additional tests. In each additional test, the interactive tests come before the surface tests. The sequence of the CURRENT STATUS test is as follows:

1) Current Status Quick Test
2) Additional test:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

a) Interactive tests

b) Surface tests

(d) The Current Status Quick Test contains a number of library tests. These library tests are automatic and they are referred to as autotests. The current status quick test quickly does a check on the DFCS interfaces.

(e) There are five additional tests. Each additional test contains a number of library tests. These library tests are interactive and/or surface tests.

1) The interactive tests are not automatic. You must do the instructions that show on the CDU display to complete the interactive tests.

2) The surface tests are not automatic and hydraulic power is necessary for the surface tests. You must do the instructions that show on the CDU display to complete the surface tests.

(f) If there are faults in the Current Status Quick Test (Group 10) or additional test (Group 11, 12, 13, 14 or 15), then correct the faults.

(7) Some selections that you often make when you do the BITE test are the CONTINUE, PREV MENU, EXIT prompts on the CDU display and the NEXT PAGE and PREV PAGE keys on the CDU keyboard.

(a) CONTINUE

1) If you push the LSK adjacent to CONTINUE, then the BITE will take you to the subsequent page of the test.

(b) PREV MENU

1) If you push the LSK adjacent to PREV MENU, then the BITE will take you to the previous selection page.

(c) EXIT

1) If you push the LSK adjacent to EXIT, then the BITE will take you out of BITE test and put the airplane back to its usual condition.

(d) NEXT PAGE or PREV PAGE key

1) If it is necessary to change page, then you push the NEXT PAGE or PREV PAGE key on the CDU keyboard. The BITE lets you change page when there is more than one screen page.

B. BITE Procedure

**HAP 001-013, 015-026, 028-030; AIRPLANES WITH 65-44891-1 THRU -7 FCM**

(1) Do these steps:

(a) Do the autopilot engage test.

1) Make sure the IRUs are aligned and in NAV mode.

2) Engage the autopilot channel A.

3) Make sure the autopilot engages.

4) Wait 10 seconds and make sure the autopilot stays engaged.

5) Disengage autopilot A.

6) Engage the autopilot channel B.

7) Make sure the autopilot engages.

8) Wait 10 seconds and make sure the autopilot stays engaged.

9) Disengage autopilot B.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) If either autopilot will not engage, or stay engaged, do this task: Flight Controls Hydraulic Module Test, AMM TASK 27-09-21-700-801.

**HAP ALL**

(2) Do the BITE procedure for the Digital Flight Control System (Figure 201 and Figure 202).

(a) If you are not at one of the DFCS BITE TEST displays, then do these steps:

1) Push the INIT REF function key.

2) If the POS INIT display shows, then push the line select key (LSK) next to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(b) Push the Line Select Key (LSK) adjacent to each of these prompts:

1) MAINT

2) DFCS

NOTE: If FCC-A SELFTEST FAIL, FCC-B SELFTEST FAIL or CROSS CHANNEL TEST FAIL message shows, then refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

3) FAULT REVIEW

4) FAULT HISTORY SORTED BY FLIGHT LEG or FAULT HISTORY SORTED BY FLIGHT DECK EFFECT

5) Make a selection for the applicable channel:

a) CHANNEL A

b) CHANNEL B

**HAP 038, 042-046, 048, 051-053, 104-999; AIRPLANES WITH CAT IIIb AND WITH COLLINS SOFTWARE P/N 831-5854-130/-140**

6) Push the LSK adjacent to NOLND3 LCH

7) If SUSPECT LRU shown MCP with a BITE message shown MCP A/P WARN FAIL with maintenance message number 22–11713 or 22–11714 appear singly or with maintenance message number 22–11303, they are nuisance messages and should be clear by reset latched fde.

a) Do this task Reset Latches Procedure, AMM TASK 22-11-00-700-802 and select ''NOLND3 LCH'' on the RESET FDE page.

**HAP ALL**

(c) Push the LSK adjacent to the flight deck effect or flight leg.

(d) If SUSPECT LRU(S) shows on the CDU display, then do these steps:

1) Make a record of the suspect LRUs that show on the CDU display.

NOTE: If there is more than one page of faults, you can use the NEXT PAGE or PREV PAGE key to change page.

2) Push the LSK adjacent to LRU TESTS.

3) Do the instructions that show on the CDU display to complete the LRU TESTS.

NOTE: The LRU TESTS can be an autotest, interactive test or surface test.

NOTE: The TEST PASSED or TEST FAILED shows after you complete the LRU TESTS.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

4) If TEST PASSED shows, then do these steps:

NOTE: When TEST PASSED shows, the DFCS BITE found no problem with the suspect LRUs. The problem could be an intermittent fault, or a fault that occurs only under flight conditions in the suspect LRUs that you recorded earlier.

a) Go to other applicable system BITE (For example: FMCS, A/T or CDS) or use a self-test of the applicable LRUs to do a check on the suspect LRUs that you recorded earlier.

5) If TEST FAILED shows, then push the LSK adjacent to TEST RESULTS.

a) Make a record of the channel (A, B, or A/B), suspect LRUs and the pin numbers that show on the CDU display.

NOTE: You can find the channel data adjacent to the INPUT/OUTPUT PINS that shows on the CDU display. Channel A is for the FCC-A and channel B is for the FCC-B. If there is no pin number for the suspect LRU, the channel data does not show.

**HAP 001-013, 015-026, 028-030**

NOTE: The maintenance monitor that triggered the fault message will be shown, followed by a list of suspect LRU(s). The suspect LRU list and interface pins are used as the maintenance message that determines the fault isolation task. The maintenance monitor message is shown only when fault history is run. If a ground test is run, only the suspect LRU list is shown.

**HAP 031-054, 101-999**

NOTE: The maintenance monitor that triggered the fault message will be shown, followed by a list of suspect LRU(s) and maintenance message number. The maintenance message number determines the fault isolation task.

**HAP ALL**

b) If it is necessary to do the test again, then do these steps:

c) Push the LSK adjacent to TEST DATA.

d) Push the LSK adjacent to RERUN.

**HAP 031-054, 101-999; AIRPLANES WITH COLLINS -101/-151 FCC AND WITH COLLINS OPS SOFTWARE P/N 831-5854-130**

6) If TEST FAILED shows with maintenance messages number 22–11209 and 22–11210, then do these steps:

a) Do a check of the time and altitude that the maintenance message number 22–11209 for channel A and maintenance message number 22–11210 for channel B are recorded.

b) If the maintenance message number 22–11209 for channel A and maintenance message number 22–11210 for channel B have the same recorded time and altitude, then ignore this failure.

NOTE: This is a nuisance fault.

c) If the maintenance message number 22–11209 for channel A and maintenance message number 22–11210 for channel B have the different recorded time and altitude, then continure.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999; AIRPLANES WITH COLLINS -101/-151 FCC AND WITH COLLINS OPS SOFTWARE P/N 831-5854-130 (Continued)**

**HAP 001-013, 015-026, 028-030**

7) If TEST FAILED shows with the Message Text '' FCC-A '' or '' FCC-B '' with Monitor Text '' FGN FAILS TO ENT TOGA '' or '' FGN DROPPED IN APP '', do the off side FCC BITE TEST to find the necessary troubleshooting task.

**HAP ALL**

8) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

(e) If NO FAULTS shows on the CDU display, then do these steps to do the Current Status Quick Test and the applicable additional test(s) in CURRENT STATUS:

1) Push the LSK adjacent to PREV MENU until the DFCS BITE TEST FAULT REVIEW menu shows.

2) Push the LSK adjacent to CURRENT STATUS.

NOTE: The STATUS AUTOTEST INITIALIZATION display shows.

(f) Autotest:

1) Do the instructions that show on the CDU display.

NOTE: If the initialization setup is correct, then the AUTOTEST IN PROGRESS shows on the CDU display.

2) If AUTOTEST PASSED shows on the CDU display, then the test is completed with no failure.

NOTE: Some autotests can be completed very fast and you cannot see the AUTOTEST PASSED message. The autotest is passed if you do not see the AUTOTEST FAILED message.

NOTE: When all the autotests are completed, the summary page shows AUTOTEST PASSED or AUTOTEST FAILED.

3) If AUTOTEST FAILED shows, then do the library test(s) that show on the CDU display.

a) Make a record of the channel (A, B, or A/B), suspect LRUs and the pin numbers that show on the CDU display.

NOTE: You can find the channel data adjacent to the INPUT/OUTPUT PINS that shows on the CDU display. Channel A is for the FCC-A and channel B is for the FCC-B. If there is no pin number for the suspect LRU, the channel data does not show.

**HAP 001-013, 015-026, 028-030**

NOTE: The maintenance monitor that triggered the fault message will be shown, followed by a list of suspect LRU(s). The suspect LRU list and interface pins are used as the maintenance message that determines the fault isolation task. The maintenance monitor message is shown only when fault history is run. If a ground test is run, only the suspect LRU list is shown.

**HAP 031-054, 101-999**

NOTE: The maintenance monitor that triggered the fault message will be shown, followed by a list of suspect LRU(s) and maintenance message number. The maintenance message number determines the fault isolation task.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

**HAP ALL**

b) If it is necessary to do the test again, then do these steps:

c) Push the LSK adjacent to TEST DATA.

d) Push the LSK adjacent to RERUN.

4) Refer to the table at the at the end of this task to find the fault isolation task for the applicable maintenance message.

(g) Additional Test:

NOTE: The additional test comes immediately after you complete the last autotest.

1) Make a selection for the applicable channel:

NOTE: The Current Status Additional Test menu shows after you make the selection. This menu lets you make the selection for the Autopilot, Flight Director, Mach Trim System, Speed Trim System or Alt Alert System.

a) CHANNEL A

b) CHANNEL B

c) CHANNEL A AND B

(h) Push the LSK adjacent to the applicable additional test:

1) AUTOPILOT

2) FLIGHT DIRECTOR

3) MACH TRIM SYSTEM

NOTE: There is no interactive test for the Mach Trim System test, thus the BITE goes directly to the surface test.

4) SPEED TRIM SYSTEM

5) ALT ALERT

NOTE: There is no surface test for the Alt Alert test.

(i) Interactive Test:

1) Do the instructions that show on the CDU display to complete all interactive tests.

2) If INTERACTIVE TEST PASSED shows on the CDU display, then the test is completed with no failure.

NOTE: After you complete the last interactive test, the summary page shows TEST FAILED or ALL TESTS PASSED.

3) If INTERACTIVE TEST FAILED shows on the CDU display, then do these steps:

**HAP 031-054, 101-999**

NOTE: If Interactive TEST FAIL show with only Fault Message 22–11540 display, ignore this fail message.

**HAP ALL**

a) Push the LSK adjacent to TEST RESULTS.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

b) Make a record of the channel (A, B, or A/B), suspect LRUs and the pin numbers that show on the CDU display.

NOTE: You can find the channel data adjacent to the INPUT/OUTPUT PINS that shows on the CDU display. Channel A is for the FCC-A and channel B is for the FCC-B. If there is no pin number for the suspect LRU, the channel data does not show.

**HAP 001-013, 015-026, 028-030**

NOTE: The maintenance monitor that triggered the fault message will be shown, followed by a list of suspect LRU(s). The suspect LRU list and interface pins are used as the maintenance message that determines the fault isolation task. The maintenance monitor message is shown only when fault history is run. If a ground test is run, only the suspect LRU list is shown.

**HAP 031-054, 101-999**

NOTE: The maintenance monitor that triggered the fault message will be shown, followed by a list of suspect LRU(s) and maintenance message number. The maintenance message number determines the fault isolation task.

**HAP ALL**

c) If it is necessary to do the test again, then do these steps:

d) Push the LSK adjacent to TEST DATA.

e) Push the LSK adjacent to RERUN.

4) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

(j) Surface Test:

**WARNING:** KEEP PERSONS AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES. THE AILERONS, ELEVATORS, RUDDER, FLAPS, SLATS, SPOILERS, STABILIZER AND NOSE GEAR CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

1) Do the instructions that show on the CDU display to complete all the surface tests.

2) If SURFACE TEST PASSED shows on the CDU display, then the test is completed with no failure.

NOTE: After you complete the last surface test, the summary page shows TEST FAILED or ALL TESTS PASSED.

3) If SURFACE TEST FAILED shows on the CDU display, then do these steps:

a) Push the LSK adjacent to TEST RESULTS.

b) Make a record of the channel (A, B, or A/B), suspect LRUs and the pin numbers that show on the CDU display.

NOTE: You can find the channel data adjacent to the INPUT/OUTPUT PINS that shows on the CDU display. Channel A is for the FCC-A and channel B is for the FCC-B. If there is no pin number for the suspect LRU, the channel data does not show.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 001-013, 015-026, 028-030**

NOTE: The maintenance monitor that triggered the fault message will be shown, followed by a list of suspect LRU(s). The suspect LRU list and interface pins are used as the maintenance message that determines the fault isolation task. The maintenance monitor message is shown only when fault history is run. If a ground test is run, only the suspect LRU list is shown.

**HAP 031-054, 101-999**

NOTE: The maintenance monitor that triggered the fault message will be shown, followed by a list of suspect LRU(s) and maintenance message number. The maintenance message number determines the fault isolation task.

**HAP ALL**

c) If it is necessary to do the test again, then do these steps:

d) Push the LSK adjacent to TEST DATA.

e) Push the LSK adjacent to RERUN.

4) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

**END OF TASK**

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11001 ADIRU(ADC)-1 (J1B-E04,D04) | 22-11 TASK 810 |
| DFCS | 22-11002 ADIRU(ADC)-2 (J1B-E04,D04) | 22-11 TASK 810 |
| DFCS | 22-11003 ADIRU(IRU)-1 (J1A-K03,K02) | 22-11 TASK 806 |
| DFCS | 22-11004 ADIRU(IRU)-1 (J1B-K03,K02) | 22-11 TASK 806 |
| DFCS | 22-11005 ADIRU(IRU)-2 (J1A-K03,K02) | 22-11 TASK 807 |
| DFCS | 22-11006 ADIRU(IRU)-2 (J1B-K03,K02) | 22-11 TASK 807 |
| DFCS | 22-11007 ADM STATIC PRESS-1 | 22-15 TASK 811 |
| DFCS | 22-11008 ADM STATIC PRESS-2 | 22-15 TASK 811 |
| DFCS | 22-11009 ADM TOTAL PRESS-1 | 22-15 TASK 810 |
| DFCS | 22-11010 ADM TOTAL PRESS-2 | 22-15 TASK 810 |
| DFCS | 22-11011 ALPHA VANE-1 | 22-11 TASK 823 |
| DFCS | 22-11012 ALPHA VANE-2 | 22-11 TASK 824 |
| DFCS | 22-11013 EFIS CONT PANL-CPT | 22-15 TASK 812 |
| DFCS | 22-11014 EFIS CONT PANL-F/O | 22-15 TASK 812 |
| DFCS | 22-11015 IRS TRANSFER SW (J1A-G01) | 22-13 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11016 IRS TRANSFER SW (J1B-G01) | 22-13 TASK 801 |
| DFCS | 22-11017 ADIRU(ADC)-1, ALPHA VANE-1 | 22-11 TASK 801 |
| DFCS | 22-11018 ADIRU(ADC)-2, ALPHA VANE-2 | 22-11 TASK 801 |
| DFCS | 22-11019 ADIRU(ADC)-1, ADM STATIC PRESS-1 | 22-15 TASK 811 |
| DFCS | 22-11020 ADIRU(ADC)-2, ADM STATIC PRESS-2 | 22-11 TASK 801 |
| DFCS | 22-11021 ADM STATIC PRESS-1, EFIS CONT PANL-CPT, CDS/ DEU-1 | 22-15 TASK 811 |
| DFCS | 22-11022 ADM STATIC PRESS-2, EFIS CONT PANL-F/O, CDS/ DEU-2 | 22-11 TASK 801 |
| DFCS | 22-11023 ADIRU(ADC)-1 (J1A-K04,J04) | 22-17 TASK 803 |
| DFCS | 22-11024 ADIRU(ADC)-2 (J1A-K04,J04) | 22-17 TASK 803 |
| DFCS | 22-11025 ADIRU(IRU)-3 (J1B-G11,F11) | 22-11 TASK 801 |
| DFCS | 22-11026 CREW OPERATION, HDG REF SW | 22-11 TASK 801 |
| DFCS | 22-11027 ISFD (J1B-G11,F11) | 22-11 TASK 801 |
| DFCS | 22-11028 HDG REF SW (J1B-G03) | 22-11 TASK 801 |
| DFCS | 22-11029 ADIRU(IRU)-1, ADIRU(IRU)-2 | 22-11 TASK 801 |
| DFCS | 22-11030 ADIRU(IRU)-1, ADIRU(IRU)-3 | 22-11 TASK 801 |
| DFCS | 22-11031 A/T CMPTR (J1A-B04,A04) | 22-11 TASK 801 |
| DFCS | 22-11032 ADIRU(ADC)-1, ADM STATIC PRESS-1, ADM TOTAL PRESS-1 | 22-15 TASK 811 |
| DFCS | 22-11033 ADIRU(ADC)-2, ADM STATIC PRESS-2, ADM TOTAL PRESS-2 | 22-11 TASK 801 |
| DFCS | 22-11034 CREW OPERATION, IRS TRANSFER SW | 22-11 TASK 801 |
| DFCS | 22-11035 ALPHA VANE-1, ALPHA VANE-2 | 22-11 TASK 801 |
| DFCS | 22-11036 CREW OPERATION, AUTO SPD MODULE | 22-11 TASK 801 |
| DFCS | 22-11037 RADIO ALT-1, RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11038 ADIRU(IRU)-2, ADIRU(IRU)-3 | 22-11 TASK 801 |
| DFCS | 22-11039 ADIRU(IRU)-1, ISFD | 22-11 TASK 801 |
| DFCS | 22-11040 ADIRU(IRU)-2, ISFD | 22-11 TASK 801 |
| DFCS | 22-11041 DME-1 (J1B-H04,G04) | 22-12 TASK 808 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11042 DME-2 (J1B-H04,G04) | 22-12 TASK 808 |
| DFCS | 22-11043 PROX SW ELEX UNIT (J1B-J05) | 22-13 TASK 812 |
| DFCS | 22-11044 PROX SW ELEX UNIT (J1B-J05) | 22-13 TASK 812 |
| DFCS | 22-11045 FMC TRANSFER SW (J1A-E04,D04) | 22-16 TASK 833 |
| DFCS | 22-11047 PCWS XDUCER-1 (J1A-E02,E01) | 22-12 TASK 805 |
| DFCS | 22-11048 PCWS XDUCER-1 (J1B-E02,E01) | 22-12 TASK 805 |
| DFCS | 22-11049 PCWS XDUCER-2 (J1A-E02,E01) | 22-12 TASK 806 |
| DFCS | 22-11050 PCWS XDUCER-2 (J1B-E02,E01) | 22-12 TASK 806 |
| DFCS | 22-11051 RADIO ALT-1 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | 22-11052 RADIO ALT-2 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | 22-11053 RADIO ALT-1 (J1B-K11,J11) | 22-11 TASK 805 |
| DFCS | 22-11054 RADIO ALT-2 (J1B-K11,J11) | 22-11 TASK 805 |
| DFCS | 22-11055 RADIO ALT-3 (J1B-K11,J11) | 22-11 TASK 801 |
| DFCS | 22-11061 MCP | 22-11 TASK 816 |
| DFCS | 22-11062 MCP (J1A-A06,B06) | 22-11 TASK 817 |
| DFCS | 22-11063 MCP (J1A-K06,J06) | 22-11 TASK 817 |
| DFCS | 22-11064 FCC-A, MCP | 22-11 TASK 801 |
| DFCS | 22-11065 FCC-B, MCP | 22-11 TASK 801 |
| DFCS | 22-11066 MCP, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11067 MCP, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11068 MCP (J1A-F01) | 22-11 TASK 817 |
| DFCS | 22-11069 MCP (J1B-F01) | 22-11 TASK 817 |
| DFCS | 22-11071 FMC (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | 22-11073 FMC-2 (J1A-E04,D04) | 22-11 TASK 812 |
| DFCS | 22-11079 MLS ANT SW-1 (J1B-C09) | 22-11 TASK 801 |
| DFCS | 22-11080 MLS ANT SW-2 (J1B-C09) | 22-11 TASK 801 |
| DFCS | 22-11081 SMYDC-1 (J1A-H04,G04) | 22-15 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11082 SMYDC-2 (J1A-H04,G04) | 22-15 TASK 801 |
| DFCS | 22-11083 ELEV ACT-1, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11084 ELEV ACT-2, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11085 CREW OPERATION, VHF/NAV CONT PANL-1, VHF/ NAV SW | 22-11 TASK 801 |
| DFCS | 22-11086 CREW OPERATION, VHF/NAV CONT PANL-2, VHF/ NAV SW | 22-11 TASK 801 |
| DFCS | 22-11087 CREW OPERATION, ELEV PRESS SW-2, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11088 CREW OPERATION, ELEV PRESS SW-1, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11089 MMR/ILS RCVR-2, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11090 MMR/ILS RCVR-3, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11091 VHF/NAV CONT PANL-1 (J1A-D01) | 22-15 TASK 813 |
| DFCS | 22-11092 VHF/NAV CONT PANL-1 (J1B-K14) | 22-15 TASK 813 |
| DFCS | 22-11093 VHF/NAV CONT PANL-2 (J1A-D01) | 22-15 TASK 814 |
| DFCS | 22-11094 VHF/NAV CONT PANL-2 (J1B-K14) | 22-15 TASK 814 |
| DFCS | 22-11095 VHF/NAV SW (J1A-K12) | 22-13 TASK 803 |
| DFCS | 22-11096 VHF/NAV SW (J1B-A07) | 22-13 TASK 803 |
| DFCS | 22-11097 VHF/NAV SW (J1B-J01) | 22-13 TASK 803 |
| DFCS | 22-11098 VHF/NAV SW (J1B-J07) | 22-13 TASK 803 |
| DFCS | 22-11099 VOR RCVR-1 (J1B-H08,G08) | 22-11 TASK 804 |
| DFCS | 22-11100 VOR RCVR-2 (J1B-H08,G08) | 22-11 TASK 804 |
| DFCS | 22-11101 LOC ANT SW-1 (J1B-E03) | 22-13 TASK 802 |
| DFCS | 22-11102 LOC ANT SW-2 (J1B-E03) | 22-13 TASK 802 |
| DFCS | 22-11103 MMR/ILS RCVR-1 (J1A-H02,G02) | 22-11 TASK 808 |
| DFCS | 22-11104 MMR/ILS RCVR-1 (J1B-H02,G02) | 22-11 TASK 808 |
| DFCS | 22-11105 MMR/ILS RCVR-2 (J1A-H02,G02) | 22-11 TASK 809 |
| DFCS | 22-11106 MMR/ILS RCVR-2 (J1B-H02,G02) | 22-11 TASK 809 |
| DFCS | 22-11107 MMR/ILS RCVR-3 (J1A-H02,G02) | 22-11 TASK 801 |
| DFCS | 22-11108 LOC ANT SW-1, IFSAU | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11109 LOC ANT SW-2, IFSAU | 22-11 TASK 801 |
| DFCS | 22-11110 CREW OPERATION VHF/NAV SW | Reference Not Currently Available |
| DFCS | 22-11111 CDS/DEU-1 (J1A-B02,A02) | 22-15 TASK 808 |
| DFCS | 22-11112 CDS/DEU-1 (J1A-B06,A06) | 22-15 TASK 808 |
| DFCS | 22-11113 CDS/DEU-1 (J1B-B02,A02) | 22-15 TASK 808 |
| DFCS | 22-11114 CDS/DEU-2 (J1B-B02,A02) | 22-15 TASK 809 |
| DFCS | 22-11115 CDS/DEU-2 (J1A-B06,A06) | 22-15 TASK 809 |
| DFCS | 22-11116 CDS/DEU-2 (J1A-B02,A02) | 22-15 TASK 809 |
| DFCS | 22-11117 FCC-B, MCP, ELEV ACT-2 | 22-11 TASK 801 |
| DFCS | 22-11118 FCC-A, MCP, ELEV ACT-1 | 22-11 TASK 801 |
| DFCS | 22-11119 ELEV POS SEN-1, NSS-1, ELEV ACT-1 | 22-11 TASK 801 |
| DFCS | 22-11120 ELEV POS SEN-2, NSS-2, ELEV ACT-2 | 22-11 TASK 801 |
| DFCS | 22-11121 ELEV ACT-1 (J1A-J15,H15,G15) | 22-12 TASK 810 |
| DFCS | 22-11122 ELEV ACT-2 (J1A-J15,H15,G15) | 22-12 TASK 810 |
| DFCS | 22-11123 ELEV DETENT SOLENOID-1 | 22-13 TASK 806 |
| DFCS | 22-11124 ELEV DETENT SOLENOID-2 | 22-13 TASK 807 |
| DFCS | 22-11125 ELEV POS SEN-1 (J1A-K13,J13,H13) | 22-12 TASK 812 |
| DFCS | 22-11126 ELEV POS SEN-2 (J1A-K13,J13,H13) | 22-12 TASK 812 |
| DFCS | 22-11127 ELEV PRESS SW-1 (J1A-B13) | 22-13 TASK 806 |
| DFCS | 22-11128 ELEV PRESS SW-1 (J1A-K01) | 22-13 TASK 806 |
| DFCS | 22-11129 ELEV PRESS SW-2 (J1A-B13) | 22-13 TASK 807 |
| DFCS | 22-11130 ELEV PRESS SW-2 (J1A-K01) | 22-13 TASK 807 |
| DFCS | 22-11131 FCC-A (J1A-D13) | 22-14 TASK 803 |
| DFCS | 22-11132 FCC-A (J1A-E15,D15) | 22-14 TASK 803 |
| DFCS | 22-11133 FCC-B (J1A-D13) | 22-14 TASK 803 |
| DFCS | 22-11134 FCC-B (J1A-E15,D15) | 22-14 TASK 803 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11135 NSS-1 (J1A-D12,C12) | 22-12 TASK 809 |
| DFCS | 22-11136 NSS-2 (J1A-D12,C12) | 22-12 TASK 809 |
| DFCS | 22-11137 PCWS XDUCER-1 (J1A-E02,E01) | 22-12 TASK 805 |
| DFCS | 22-11138 PCWS XDUCER-1 (J1B-E02,E01) | 22-12 TASK 805 |
| DFCS | 22-11139 PCWS XDUCER-2 (J1A-E02,E01) | 22-12 TASK 806 |
| DFCS | 22-11140 PCWS XDUCER-2 (J1B-E02,E01) | 22-12 TASK 806 |
| DFCS | 22-11141 AIL ACT-1 (J1B-J15,H15,G15) | 22-12 TASK 811 |
| DFCS | 22-11142 AIL ACT-2 (J1B-J15,H15,G15) | 22-12 TASK 811 |
| DFCS | 22-11143 AIL DETENT SOLENOID-1 | 22-13 TASK 804 |
| DFCS | 22-11144 AIL DETENT SOLENOID-2 | 22-13 TASK 805 |
| DFCS | 22-11145 AIL POS SEN-1 (J1B-K13,J13,H13) | 22-12 TASK 813 |
| DFCS | 22-11146 AIL POS SEN-2 (J1B-K13,J13,H13) | 22-12 TASK 813 |
| DFCS | 22-11147 AIL PRESS SW-1 (J1B-B13) | 22-13 TASK 804 |
| DFCS | 22-11148 AIL PRESS SW-1 (J1B-K01) | 22-13 TASK 804 |
| DFCS | 22-11149 AIL PRESS SW-2 (J1B-B13) | 22-13 TASK 805 |
| DFCS | 22-11150 AIL PRESS SW-2 (J1B-K01) | 22-13 TASK 805 |
| DFCS | 22-11151 FCC-A (J1B-D13) | 22-14 TASK 804 |
| DFCS | 22-11152 FCC-A (J1B-E15,D15) | 22-14 TASK 804 |
| DFCS | 22-11153 FCC-B (J1B-D13) | 22-14 TASK 804 |
| DFCS | 22-11154 FCC-B (J1B-E15,D15) | 22-14 TASK 804 |
| DFCS | 22-11155 RCWS XDUCER-1 (J1B-K06,J06) | 22-12 TASK 804 |
| DFCS | 22-11156 RCWS XDUCER-2 (J1B-K06,J06) | 22-12 TASK 804 |
| DFCS | 22-11157 SPOIL-4 POS SEN-1 (J1B-B12,A12) | 22-12 TASK 801 |
| DFCS | 22-11158 SPOIL-4 POS SEN-2 (J1B-B12,A12) | 22-12 TASK 801 |
| DFCS | 22-11159 SPOIL-9 POS SEN-1 (J1B-E12,D12) | 22-12 TASK 802 |
| DFCS | 22-11160 SPOIL-9 POS SEN-2 (J1B-E12,D12) | 22-12 TASK 802 |
| DFCS | 22-11161 COL SW MODULE M1201 | 22-15 TASK 821 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11162 COL SW MODULE M1201 (J1C-B02) | 22-13 TASK 808 |
| DFCS | 22-11163 COL SW MODULE M1201 (J1C-F02) | 22-13 TASK 808 |
| DFCS | 22-11164 COL SW MODULE M1201 (J1C-G02) | 22-15 TASK 819 |
| DFCS | 22-11165 COL SW MODULE M1201 (J1C-K03) | 22-15 TASK 818 |
| DFCS | 22-11166 FCC-A (J1C-G02) | 22-14 TASK 816 |
| DFCS | 22-11167 FCC-A (J1C-H03) | 22-14 TASK 818 |
| DFCS | 22-11168 FCC-A (J1C-K03) | 22-14 TASK 817 |
| DFCS | 22-11169 FCC-B (J1C-G02) | 22-14 TASK 816 |
| DFCS | 22-11170 FCC-B (J1C-H03) | 22-14 TASK 818 |
| DFCS | 22-11171 FCC-B (J1C-K03) | 22-14 TASK 817 |
| DFCS | 22-11172 ST FAIL ANN (J1C-H02) | 22-13 TASK 817 |
| DFCS | 22-11173 STAB POS SEN-1 (J1A-A13,A12) | 22-12 TASK 803 |
| DFCS | 22-11174 STAB POS SEN-2 (J1A-A13,A12) | 22-12 TASK 803 |
| DFCS | 22-11175 STAB TRIM CUTOUT RELAY | 22-13 TASK 813 |
| DFCS | 22-11176 STAB TRIM RLY (J1C-D03) | 22-13 TASK 818 |
| DFCS | 22-11177 PRI ELEC ACT-STAB TRIM | 22-11 TASK 801 |
| DFCS | 22-11178 STAB TRIM SERVO (J1A-A12,A13) | 22-12 TASK 803 |
| DFCS | 22-11179 STAB TRIM SERVO (J1C-A03) | 22-11 TASK 822 |
| DFCS | 22-11180 STAB TRIM SERVO (J1C-G02) | 22-15 TASK 819 |
| DFCS | 22-11181 STAB TRIM SERVO (J1C-K03) | 22-15 TASK 818 |
| DFCS | 22-11182 TRIM CUTOUT (J1C-B03) | 22-13 TASK 813 |
| DFCS | 22-11183 TRIM WARN ANN (J1C-D02) | 22-13 TASK 814 |
| DFCS | 22-11184 NSS-1, PRI ELEC ACT-STAB TRIM | 22-11 TASK 801 |
| DFCS | 22-11185 NSS-2, PRI ELEC ACT-STAB TRIM | 22-11 TASK 801 |
| DFCS | 22-11186 STAB TRIM CUTOUT RELAY, STAB LIMIT SW/ MODULE, PRI ELEC ACT-STAB TRIM, COL SW MODULE | 22-11 TASK 801 |
| DFCS | 22-11187 FCC-B, MCP, AIL ACT-2 | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11188 FCC-A, MCP, AIL ACT-1 | 22-11 TASK 801 |
| DFCS | 22-11189 AIL POS SEN-1, AIL ACT-1 | 22-12 TASK 813 |
| DFCS | 22-11190 AIL POS SEN-2, AIL ACT-2 | 22-12 TASK 813 |
| DFCS | 22-11191 FCC-A (J1C-B01,A01) | 22-14 TASK 822 |
| DFCS | 22-11192 FCC-A (J1C-F03) | 22-14 TASK 821 |
| DFCS | 22-11193 FCC-A (J1C-G03) | 22-14 TASK 819 |
| DFCS | 22-11194 FCC-B (J1C-B01,A01) | 22-14 TASK 822 |
| DFCS | 22-11195 FCC-B (J1C-F03) | 22-14 TASK 821 |
| DFCS | 22-11196 FCC-B (J1C-G03) | 22-14 TASK 820 |
| DFCS | 22-11197 IFSAU | 22-12 TASK 816 |
| DFCS | 22-11198 IFSAU (J1C-C3) | 22-12 TASK 816 |
| DFCS | 22-11199 MACH TRIM 28 VDC (J1C-53) | 22-15 TASK 817 |
| DFCS | 22-11200 MT ACT (J1C-D04,E04) | 22-12 TASK 815 |
| DFCS | 22-11201 MT FAIL ANN (J1C-J03) | 22-13 TASK 816 |
| DFCS | 22-11202 MT POS SENS (J1C-E04,D04) | 22-13 TASK 815 |
| DFCS | 22-11203 NSS-1, MT ACT, STAB POS SEN-1 | 22-11 TASK 801 |
| DFCS | 22-11204 NSS-2, MT ACT, STAB POS SEN-2 | 22-11 TASK 801 |
| DFCS | 22-11205 FCC-A, IFSAU, MACH TRIM 28VDC | 22-11 TASK 801 |
| DFCS | 22-11206 FCC-B, IFSAU, MACH TRIM 28VDC | 22-11 TASK 801 |
| DFCS | 22-11207 MT ACT, IFSAU | 22-11 TASK 801 |
| DFCS | 22-11208 STAB TRIM RELAY | 22-13 TASK 818 |
| DFCS | 22-11209 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11210 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11211 FLAP POSN-1 (J1B-G06,F06,E06) | 22-12 TASK 807 |
| DFCS | 22-11212 FLAP POSN-2 (J1B-G06,F06,E06) | 22-12 TASK 807 |
| DFCS | 22-11213 FCC-A (J1B-G07) | 22-16 TASK 830 |
| DFCS | 22-11214 FCC-B (J1B-G07) | 22-16 TASK 830 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11215 FCC-A (J1A-J09) | 22-17 TASK 802 |
| DFCS | 22-11216 FCC-B (J1A-J09) | 22-17 TASK 802 |
| DFCS | 22-11217 FCC-A (J1B-J04) | 22-11 TASK 801 |
| DFCS | 22-11218 FCC-B (J1B-J04) | 22-11 TASK 801 |
| DFCS | 22-11221 TOGA SW-1 (J1A-F04) | 22-13 TASK 810 |
| DFCS | 22-11222 TOGA SW-2 (J1A-F04) | 22-13 TASK 811 |
| DFCS | 22-11223 FCC-A (J1A-C05) | 22-11 TASK 801 |
| DFCS | 22-11224 FCC-B (J1A-C05) | 22-11 TASK 801 |
| DFCS | 22-11225 FCC-A (J1B-E05) | 22-11 TASK 801 |
| DFCS | 22-11226 FCC-B (J1B-E05) | 22-11 TASK 801 |
| DFCS | 22-11227 A/P DISC SW-1 (J1B-D07) | 22-11 TASK 801 |
| DFCS | 22-11228 A/P DISC SW-2 (J1B-D07) | 22-11 TASK 801 |
| DFCS | 22-11229 FCC-A (J1C-K05) | 22-11 TASK 801 |
| DFCS | 22-11230 FCC-B (J1C-K05) | 22-11 TASK 801 |
| DFCS | 22-11233 RUD ACTUATOR (J1B-K10,J10) | 22-17 TASK 804 |
| DFCS | 22-11234 RUD ACTUATOR (J1A-K09,J1B-K09) | 22-17 TASK 804 |
| DFCS | 22-11235 FCC | 22-11 TASK 801 |
| DFCS | 22-11236 RUD ACTUATOR (J1A-F11,G11) | 22-17 TASK 804 |
| DFCS | 22-11237 RUD ACTUATOR (J1B-K10,J10) | 22-17 TASK 804 |
| DFCS | 22-11238 RUD ACTUATOR (J1A-K09,J1B-K09) | 22-17 TASK 804 |
| DFCS | 22-11239 VHF/NAV CONT PANL-1 | 22-11 TASK 801 |
| DFCS | 22-11240 RUD ACTUATOR (J1A-F11,G11) | 22-17 TASK 804 |
| DFCS | 22-11241 VHF/NAV CONT PANL-2 | 22-11 TASK 801 |
| DFCS | 22-11242 RUD POS SEN (J1A-G09,G10,H09) | 22-17 TASK 805 |
| DFCS | 22-11243 RUD ACTUATOR, FCC-A | 22-17 TASK 804 |
| DFCS | 22-11244 RUD ACTUATOR, FCC-B | 22-17 TASK 804 |
| DFCS | 22-11245 RUD ACTUATOR, RUD POS SEN | 22-17 TASK 805 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11246 RUD ACTUATOR (J1B-H06,H07) | 22-17 TASK 804 |
| DFCS | 22-11247 RUD ACTUATOR (J1B-H06,H07) | 22-17 TASK 804 |
| DFCS | 22-11248 FCC-A (J1C-K04) | 22-11 TASK 801 |
| DFCS | 22-11249 FCC-B (J1C-K04) | 22-11 TASK 801 |
| DFCS | 22-11250 FCC-A (J1C-K01) | 22-12 TASK 815 |
| DFCS | 22-11251 AFCS ENG INTLK CB-1 (J1B-B03,F03) | 22-13 TASK 821 |
| DFCS | 22-11252 AFCS ENG INTLK CB-2 (J1B-B03,F03) | 22-13 TASK 822 |
| DFCS | 22-11253 MCP (J1A-B01) | 22-11 TASK 817 |
| DFCS | 22-11254 MCP (J1A-F13) | 22-11 TASK 817 |
| DFCS | 22-11255 MCP (J1A-H01) | 22-11 TASK 817 |
| DFCS | 22-11256 MCP (J1A-K14,H14) | 22-11 TASK 817 |
| DFCS | 22-11257 MCP (J1B-B01) | 22-11 TASK 817 |
| DFCS | 22-11258 MCP (J1B-D01) | 22-11 TASK 817 |
| DFCS | 22-11259 MCP (J1B-F13) | 22-11 TASK 817 |
| DFCS | 22-11260 MCP (J1B-H01) | 22-11 TASK 817 |
| DFCS | 22-11261 FCC-B (J1C-K01) | 22-12 TASK 815 |
| DFCS | 22-11262 CREW OPERATION, FMC | 22-11 TASK 801 |
| DFCS | 22-11264 RADIO ALT-1, RADIO ALT-3 | 22-11 TASK 801 |
| DFCS | 22-11265 RADIO ALT-2, RADIO ALT-3 | 22-11 TASK 801 |
| DFCS | 22-11266 CREW OPERATION FMC | Reference Not Currently Available |
| DFCS | 22-11270 RADIO ALT-1, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11271 REMOTE ELECTRONIC UNIT (J1C-K02) | 22-15 TASK 820 |
| DFCS | 22-11272 RADIO ALT-2, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11277 CREW OPERATION FMC | Reference Not Currently Available |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11279 FMC CREW OPERATION | Reference Not Currently Available |
| DFCS | 22-11281 A/P DISC SW-1 (J1B-K07) | 22-13 TASK 809 |
| DFCS | 22-11282 A/P DISC SW-2 (J1B-K07) | 22-13 TASK 809 |
| DFCS | 22-11283 AURAL WARN UNIT | 22-11 TASK 801 |
| DFCS | 22-11284 AUTO FLT STAT ANN-CPT | 22-15 TASK 804 |
| DFCS | 22-11285 AUTO FLT STAT ANN-CPT (J1A-E05) | 22-15 TASK 804 |
| DFCS | 22-11286 AUTO FLT STAT ANN-CPT (J1B-B07) | 22-15 TASK 804 |
| DFCS | 22-11287 AUTO FLT STAT ANN-CPT (J1B-D07) | 22-15 TASK 804 |
| DFCS | 22-11288 AUTO FLT STAT ANN-CPT (J1B-G05) | 22-15 TASK 804 |
| DFCS | 22-11289 AUTO FLT STAT ANN-F/O | 22-15 TASK 804 |
| DFCS | 22-11290 AUTO FLT STAT ANN-F/O (J1A-E05) | 22-15 TASK 804 |
| DFCS | 22-11291 AUTO FLT STAT ANN-F/O (J1B-B07) | 22-15 TASK 804 |
| DFCS | 22-11292 AUTO FLT STAT ANN-F/O (J1B-D07) | 22-15 TASK 804 |
| DFCS | 22-11293 AUTO FLT STAT ANN-F/O (J1B-G05) | 22-15 TASK 804 |
| DFCS | 22-11298 FMC | 22-11 TASK 801 |
| DFCS | 22-11299 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11300 CREW OPERATION, 28 VDC POWER | 22-11 TASK 801 |
| DFCS | 22-11301 BATT BUS (J1C-54,58) | 22-15 TASK 802 |
| DFCS | 22-11302 BUS PWR CONT UNIT (J1C-A05,B05) | 22-15 TASK 803 |
| DFCS | 22-11303 FCC-A | 22-14 TASK 801 |
| DFCS | 22-11304 FCC-A (J1A-H14) | 22-14 TASK 802 |
| DFCS | 22-11305 FCC-A (J1A-K14) | 22-14 TASK 802 |
| DFCS | 22-11306 FCC-A (J1C-J02) | 22-14 TASK 805 |
| DFCS | 22-11307 FCC-A (J1B-E07) | 22-14 TASK 806 |
| DFCS | 22-11308 FCC-A (J1C-D02) | 22-14 TASK 807 |
| DFCS | 22-11309 FCC-A (J1C-H02) | 22-14 TASK 808 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11310 FCC-A (J1A-J03) | 22-14 TASK 809 |
| DFCS | 22-11311 FCC-A (J1B-J03) | 22-14 TASK 810 |
| DFCS | 22-11312 FCC-A (J1A-C01) | 22-14 TASK 811 |
| DFCS | 22-11313 FCC-A (J1C-K02) | 22-14 TASK 812 |
| DFCS | 22-11314 FCC-A (J1B-G05) | 22-14 TASK 813 |
| DFCS | 22-11315 FCC-A (J1C-J03) | 22-14 TASK 814 |
| DFCS | 22-11316 FCC-A (J1A-G03) | 22-14 TASK 825 |
| DFCS | 22-11317 FCC-B | 22-14 TASK 801 |
| DFCS | 22-11318 FCC-B (J1A-H14) | 22-14 TASK 802 |
| DFCS | 22-11319 FCC-B (J1A-K14) | 22-14 TASK 802 |
| DFCS | 22-11320 FCC-B (J1C-J02) | 22-14 TASK 805 |
| DFCS | 22-11321 FCC-B (J1B-E07) | 22-14 TASK 806 |
| DFCS | 22-11322 FCC-B (J1C-D02) | 22-14 TASK 807 |
| DFCS | 22-11323 FCC-B (J1C-H02) | 22-14 TASK 808 |
| DFCS | 22-11324 FCC-B (J1A-J03) | 22-14 TASK 809 |
| DFCS | 22-11325 FCC-B (J1B-J03) | 22-14 TASK 810 |
| DFCS | 22-11326 FCC-B (J1A-C01) | 22-14 TASK 811 |
| DFCS | 22-11327 FCC-B (J1C-K02) | 22-14 TASK 812 |
| DFCS | 22-11328 FCC-B (J1B-G05) | 22-14 TASK 813 |
| DFCS | 22-11329 FCC-B (J1C-J03) | 22-14 TASK 814 |
| DFCS | 22-11330 FCC-B (J1A-G03) | 22-14 TASK 825 |
| DFCS | 22-11331 WHEEL SPIN-1 (J1A-J10) | 22-13 TASK 819 |
| DFCS | 22-11332 WHEEL SPIN-2 (J1A-J10) | 22-13 TASK 820 |
| DFCS | 22-11333 IFSAU (J1C-G05,F05) | 22-16 TASK 834 |
| DFCS | 22-11334 MACH TRIM 115 VAC (J1C-A05,B05) | 22-16 TASK 835 |
| DFCS | 22-11335 FCC-A (J1C-D01) | 22-12 TASK 815 |
| DFCS | 22-11336 FCC-B (J1C-D01) | 22-12 TASK 815 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11337 FCC-A (J1A-B15,A15) | 22-16 TASK 828 |
| DFCS | 22-11338 FCC-B (J1A-B15,A15) | 22-16 TASK 828 |
| DFCS | 22-11339 FCC-A (J1B-B15,A15) | 22-16 TASK 829 |
| DFCS | 22-11340 FCC-B (J1B-B15,A15) | 22-16 TASK 829 |
| DFCS | 22-11341 FCC-A SOP PARITY (J1A-K08) | 22-16 TASK 831 |
| DFCS | 22-11342 FCC-B SOP PARITY (J1A-K08) | 22-16 TASK 831 |
| DFCS | 22-11343 FCC INCOMPATIBILITY | 22-16 TASK 831 |
| DFCS | 22-11344 FCC-A, S/W CONFIG | 22-11 TASK 801 |
| DFCS | 22-11345 FCC-B, S/W CONFIG | 22-11 TASK 801 |
| DFCS | 22-11347 FMC | 22-11 TASK 801 |
| DFCS | 22-11348 BUS PWR CONT UNIT (J1B-H14) | 22-15 TASK 803 |
| DFCS | 22-11349 AIL ACT-1 (J1B-J15,H15,G15) | 22-12 TASK 811 |
| DFCS | 22-11350 STANDBY PWR CONT UNIT (J1C-G01) | 22-11 TASK 801 |
| DFCS | 22-11351 ADC CAS > 60 OR CAS INV, IRU-1 GS > 40 OR GS INV, IRU-2 GS > 40 OR GS INV | 22-11 TASK 826 |
| DFCS | 22-11352 ADC CAS > 60 OR CAS INV, IRU-1 GS > 40 OR GS INV, IRU-2 GS > 40 OR GS INV | 22-11 TASK 826 |
| DFCS | 22-11353 FCC-B (J1B-E10,D10) | 22-15 TASK 825 |
| DFCS | 22-11354 FCC-B (J1B-B10,A10) | 22-15 TASK 825 |
| DFCS | 22-11355 FCC-A (J1B-E10,D10) | 22-15 TASK 825 |
| DFCS | 22-11356 FCC-A (J1B-B10,A10) | 22-15 TASK 825 |
| DFCS | 22-11358 FCC-B | 22-15 TASK 824 |
| DFCS | 22-11360 FMC (NO FMC REQ) (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | 22-11361 MCP (A/P ENGAGED) (J1B-H01) | 22-11 TASK 817 |
| DFCS | 22-11362 MCP (A/P ENGAGED) (J1A-H01) | 22-11 TASK 817 |
| DFCS | 22-11363 AIR/GND SW INDICATES AIR MODE (J1A-B03) | 22-15 TASK 815 |
| DFCS | 22-11364 AIR/GND SW INDICATES AIR MODE (J1A-B03) | 22-15 TASK 815 |
| DFCS | 22-11365 SQUAT SW (J1A-B03) | 22-15 TASK 815 |
| DFCS | 22-11366 AIL ACT-2 (J1B-J15,H15,G15) | 22-12 TASK 811 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11367 MMR/ILS RCVR-1 | 22-11 TASK 801 |
| DFCS | 22-11368 MMR/ILS RCVR-1 | 22-11 TASK 801 |
| DFCS | 22-11369 MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11370 MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11371 LOC BEAM | 22-11 TASK 801 |
| DFCS | 22-11372 CDS/DEU-1 | 22-11 TASK 801 |
| DFCS | 22-11373 CDS/DEU-2 | 22-11 TASK 801 |
| DFCS | 22-11374 CDS/DEU-1 | 22-11 TASK 801 |
| DFCS | 22-11375 CDS/DEU-2 | 22-11 TASK 801 |
| DFCS | 22-11376 ADIRU(ADC)-1 (J1B-E04,D04) | 22-11 TASK 810 |
| DFCS | 22-11377 ADIRU(ADC)-2 (J1A-K04,J04) | 22-17 TASK 803 |
| DFCS | 22-11378 ADIRU(IRU)-1 (J1B-K03,K02) | 22-11 TASK 806 |
| DFCS | 22-11379 ADIRU(IRU)-2 (J1A-K03,K02) | 22-11 TASK 807 |
| DFCS | 22-11380 ADIRU(IRU)-3 (J1B-G11,F11) | 22-11 TASK 801 |
| DFCS | 22-11381 ISFD (J1B-G11,F11) | 22-11 TASK 801 |
| DFCS | 22-11382 A/T CMPTR (J1A-B04,A04) | 22-11 TASK 801 |
| DFCS | 22-11383 DME-1 (J1B-H04,G04) | 22-12 TASK 808 |
| DFCS | 22-11384 DME-2 (J1B-H04,G04) | 22-12 TASK 808 |
| DFCS | 22-11385 RADIO ALT-1 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | 22-11386 RADIO ALT-2 (J1B-K11,J11) | 22-11 TASK 805 |
| DFCS | 22-11387 RADIO ALT-1 | 22-11 TASK 801 |
| DFCS | 22-11388 FMC-1 (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | 22-11390 MMR/ILS RCVR-1 (J1B-H02,G02) | 22-11 TASK 808 |
| DFCS | 22-11391 MMR/ILS RCVR-2 (J1A-H02,G02) | 22-11 TASK 809 |
| DFCS | 22-11392 MMR/ILS RCVR-3 (J1A-H02,G02) | 22-11 TASK 801 |
| DFCS | 22-11393 CDS/DEU-1 (J1B-B02,A02) | 22-15 TASK 808 |
| DFCS | 22-11394 CDS/DEU-2 (J1A-B02,A02) | 22-15 TASK 809 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11395 VOR RCVR-1 (J1B-H08,G08) | 22-11 TASK 804 |
| DFCS | 22-11396 VOR RCVR-2 (J1B-H08,G08) | 22-11 TASK 804 |
| DFCS | 22-11397 SMYDC-1 (J1A-H04,G04) | 22-15 TASK 801 |
| DFCS | 22-11398 SMYDC-2 (J1A-H04,G04) | 22-15 TASK 801 |
| DFCS | 22-11401 FCC-A PROG PINS | 22-16 TASK 831 |
| DFCS | 22-11402 FCC-B PROG PINS | 22-16 TASK 831 |
| DFCS | 22-11405 DATA LOAD DISK, FCC-A S/W CONFIG | 22-11 TASK 801 |
| DFCS | 22-11406 DATA LOAD DISK, FCC-B S/W CONFIG | 22-11 TASK 801 |
| DFCS | 22-11407 DATA LOAD DISK, DATA LOADER | 22-11 TASK 801 |
| DFCS | 22-11408 DATA LOADER FCC-A | 22-11 TASK 801 |
| DFCS | 22-11409 DATA LOADER FCC-B | 22-11 TASK 801 |
| DFCS | 22-11414 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11415 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11416 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11417 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11418 FCC-A (J1C-G02,K03) | 22-11 TASK 801 |
| DFCS | 22-11419 FCC-B (J1C-G02,K03) | 22-11 TASK 801 |
| DFCS | 22-11420 ADIRU(ADC)-1 (J1A-K04,J04) | 22-17 TASK 803 |
| DFCS | 22-11421 ADIRU(ADC)-2 (J1B-E04,D04) | 22-11 TASK 810 |
| DFCS | 22-11422 ADIRU(IRU)-1 (J1A-K03,K02) | 22-11 TASK 806 |
| DFCS | 22-11423 ADIRU(IRU)-2 (J1B-K03,K02) | 22-11 TASK 807 |
| DFCS | 22-11424 RADIO ALT-1 (J1B-K11,J11) | 22-11 TASK 805 |
| DFCS | 22-11425 RADIO ALT-2 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | 22-11426 RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11427 MMR/ILS RCVR-1 (J1A-H02,G02) | 22-11 TASK 808 |
| DFCS | 22-11428 MMR/ILS RCVR-2 (J1B-H02,G02) | 22-11 TASK 809 |
| DFCS | 22-11429 CDS/DEU-1 (J1A-B02,A02) | 22-15 TASK 808 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11430 CDS/DEU-2 (J1B-B02,A02) | 22-15 TASK 809 |
| DFCS | 22-11433 ADIRU(IRU)-1 (J1B-K03,K02) | 22-11 TASK 806 |
| DFCS | 22-11434 ADIRU(IRU)-2 (J1A-K03,K02) | 22-11 TASK 807 |
| DFCS | 22-11437 ADIRU(IRU)-1 (J1A-K03,K02) | 22-11 TASK 806 |
| DFCS | 22-11438 ADIRU(IRU)-2 (J1B-K03,K02) | 22-11 TASK 807 |
| DFCS | 22-11439 ADIRU(IRU)-3 (J1B-G11,F11) | 22-11 TASK 801 |
| DFCS | 22-11440 ISFD | 22-11 TASK 801 |
| DFCS | 22-11441 MMR/ILS RCVR-1 | 22-11 TASK 801 |
| DFCS | 22-11442 MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11443 MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11444 MMR/ILS RCVR-1 | 22-11 TASK 801 |
| DFCS | 22-11445 MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11446 MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11447 RADIO ALT-1 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | 22-11448 RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11449 RADIO ALT-3 (J1B-K11,J11) | 22-11 TASK 801 |
| DFCS | 22-11450 RADIO ALT-1 | 22-11 TASK 801 |
| DFCS | 22-11451 RADIO ALT-2 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | 22-11452 RADIO ALT-3 (J1B-K11,J11) | 22-11 TASK 801 |
| DFCS | 22-11455 RADIO ALT-1 | 22-11 TASK 801 |
| DFCS | 22-11456 RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11460 AIL ACT-1 | 22-11 TASK 801 |
| DFCS | 22-11461 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11462 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11463 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11464 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11466 FCC-A | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11471 AIL PRESS SW-2, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11472 ELEV PRESS SW-2, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11473 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11474 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11475 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11476 MCP | 22-11 TASK 801 |
| DFCS | 22-11479 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11480 MCP, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11484 CDS/DEU-1 | 22-11 TASK 801 |
| DFCS | 22-11485 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11486 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11488 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11489 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11490 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11491 VHF/NAV CONT PANL-2 | 22-11 TASK 801 |
| DFCS | 22-11492 RADIO ALT-1, RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11493 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11494 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11495 CDS/DEU-2 | 22-11 TASK 801 |
| DFCS | 22-11496 CDS/DEU-1 | 22-11 TASK 801 |
| DFCS | 22-11497 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11498 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11499 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11505 AIL ACT-2 | 22-11 TASK 801 |
| DFCS | 22-11506 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11507 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11508 FCC-B | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11509 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11510 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11527 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11534 AIL PRESS SW-1, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11535 ELEV PRESS SW-1, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11536 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11537 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11539 FCC-A (J1A-C09,J1B-F10) | 22-11 TASK 801 |
| DFCS | 22-11540 FCC-A (J1B-E09, J1B-F10) | 22-32 TASK 814 |
| DFCS | 22-11548 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11549 CDS/DEU-1, CDS/DEU-2 | 22-11 TASK 801 |
| DFCS | 22-11550 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11551 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11552 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11553 CDS/DEU-2, CDS/DEU-1 | 22-11 TASK 801 |
| DFCS | 22-11557 CDS/DEU-2 | 22-11 TASK 801 |
| DFCS | 22-11558 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11559 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11560 VHF/NAV CONT PANL-1 | 22-11 TASK 801 |
| DFCS | 22-11561 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11562 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11563 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11564 VHF/NAV CONT PANL-2 | 22-11 TASK 801 |
| DFCS | 22-11565 FCC-A, MCP | 22-11 TASK 801 |
| DFCS | 22-11566 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11567 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11568 ELEV ACT-1 | 22-12 TASK 810 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11569 ELEV ACT-2 | 22-12 TASK 810 |
| DFCS | 22-11570 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11571 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11572 DATALOAD SYS SEL SW (J1A-C10) | 22-11 TASK 801 |
| DFCS | 22-11573 DATALOAD SYS SEL SW (J1A-A11) | 22-11 TASK 801 |
| DFCS | 22-11574 DATALOAD SYS SEL SW (J1A-B11) | 22-11 TASK 801 |
| DFCS | 22-11575 DATALOAD SYS SEL SW (J1A-C11) | 22-11 TASK 801 |
| DFCS | 22-11576 VHF/NAV CONT PANL-1 | 22-11 TASK 801 |
| DFCS | 22-11577 VHF/NAV CONT PANL-2 | 22-11 TASK 801 |
| DFCS | 22-11586 FCC-B MCP | 22-11 TASK 801 |
| DFCS | 22-11587 MCP FCC-B | 22-11 TASK 801 |
| DFCS | 22-11591 CREW OPERATION, MCP | 22-11 TASK 801 |
| DFCS | 22-11592 FCC-A (J1A-E05) | 22-15 TASK 804 |
| DFCS | 22-11593 FCC-B (J1A-E05) | 22-15 TASK 804 |
| DFCS | 22-11594 FCC-A (J1B-H09) | 22-16 TASK 832 |
| DFCS | 22-11595 FCC-B (J1B-H09) | 22-16 TASK 832 |
| DFCS | 22-11606 RADIO ALT-3 (J1B-K11,J11) | 22-11 TASK 801 |
| DFCS | 22-11607 MCP (J1A-K06,J06) | 22-11 TASK 817 |
| DFCS | 22-11608 LNAV TRANSFER SW-1 (J1B-C01) | 22-11 TASK 801 |
| DFCS | 22-11609 LNAV TRANSFER SW-2 (J1B-C01) | 22-11 TASK 801 |
| DFCS | 22-11612 CREW OPERATION, IRS TRANSFER SW | 22-11 TASK 801 |
| DFCS | 22-11613 STAB POS SEN-1, STAB POS SEN-2 | 22-12 TASK 803 |
| DFCS | 22-11614 NSS-1, NSS-2 | 22-11 TASK 801 |
| DFCS | 22-11618 RADIO ALT-1 | 22-11 TASK 801 |
| DFCS | 22-11619 RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11620 RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11621 RUD ACTUATOR | 22-17 TASK 804 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11622 RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11623 RADIO ALT-3 | 22-11 TASK 801 |
| DFCS | 22-11624 RADIO ALT-1 | 22-11 TASK 801 |
| DFCS | 22-11625 MCP | 22-11 TASK 801 |
| DFCS | 22-11626 MCP | 22-11 TASK 801 |
| DFCS | 22-11627 MCP | 22-11 TASK 801 |
| DFCS | 22-11628 FCC-A | 22-15 TASK 824 |
| DFCS | 22-11629 RADIO ALT-3 | 22-11 TASK 801 |
| DFCS | 22-11632 RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11633 CREW OPERATION, ELEV PRESS SW-2, AIL PRESS SW-2, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11634 CREW OPERATION, ELEV PRESS SW-1, AIL PRESS SW-1, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11637 MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11638 MMR/ILS RCVR-1 | 22-11 TASK 801 |
| DFCS | 22-11639 MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11640 MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11641 LOC BEAM | 22-11 TASK 801 |
| DFCS | 22-11642 G/S BEAM | 22-11 TASK 801 |
| DFCS | 22-11643 MMR/ILS RCVR-1 | 22-11 TASK 801 |
| DFCS | 22-11644 MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11645 MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11646 PCWS XDUCER-1 (J1A-E02,E01) | 22-12 TASK 805 |
| DFCS | 22-11647 PCWS XDUCER-1 (J1B-E02,E01) | 22-12 TASK 805 |
| DFCS | 22-11648 PCWS XDUCER-2 (J1A-E02,E01) | 22-12 TASK 806 |
| DFCS | 22-11649 PCWS XDUCER-2 (J1B-E02,E01) | 22-12 TASK 806 |
| DFCS | 22-11650 RCWS XDUCER-1 (J1B-K06,J06) | 22-12 TASK 804 |
| DFCS | 22-11651 RCWS XDUCER-2 (J1B-K06,J06) | 22-12 TASK 804 |
| DFCS | 22-11652 FLAP POSN-1, FLAP POSN-2 | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11653 MMR/ILS RCVR-1, MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11654 MMR/ILS RCVR-1, MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11655 MMR/ILS RCVR-2, MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11656 MMR/ILS RCVR-1, MMR/ILS RCVR-2 | 22-11 TASK 801 |
| DFCS | 22-11657 MMR/ILS RCVR-1, MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11658 MMR/ILS RCVR-2, MMR/ILS RCVR-3 | 22-11 TASK 801 |
| DFCS | 22-11659 MMR/ILS RCVR-1, LOC ANT SW-1 | 22-11 TASK 801 |
| DFCS | 22-11660 MMR/ILS RCVR-2, LOC ANT SW-2 | 22-11 TASK 801 |
| DFCS | 22-11663 SPOIL-4 POS SEN-1, SPOIL-4 POS SEN-2 | 22-12 TASK 801 |
| DFCS | 22-11664 SPOIL-9 POS SEN-1, SPOIL-9 POS SEN-2 | 22-12 TASK 802 |
| DFCS | 22-11665 FCC-A, RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11666 FCC-B, RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11667 FCC-A, FCC-B, RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11669 CREW OPERATION, MCP | 22-11 TASK 801 |
| DFCS | 22-11670 CREW OPERATION, MCP | 22-11 TASK 801 |
| DFCS | 22-11693 G/S BEAM | 22-11 TASK 801 |
| DFCS | 22-11694 RUD POS SEN | 22-17 TASK 805 |
| DFCS | 22-11695 RUD POS SEN | 22-17 TASK 805 |
| DFCS | 22-11697 FLAP POSN-1, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11698 FLAP POSN-2, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11699 ELEV POS SEN-1, ELEV POS SEN-2 | 22-11 TASK 801 |
| DFCS | 22-11703 CREW OPERATION, FCC-A, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11704 TOGA SW-1, TOGA SW-2 | 22-31 TASK 804 |
| DFCS | 22-11705 TOGA SW-1, TOGA SW-2 | 22-32 TASK 804 |
| DFCS | 22-11706 MCP, IFSAU | 22-11 TASK 801 |
| DFCS | 22-11707 MCP, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11708 MCP, FCC-B | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11709 MCP, MCP CONFIG ERR | 22-11 TASK 801 |
| DFCS | 22-11713 MCP | 22-11 TASK 801 |
| DFCS | 22-11714 MCP | 22-11 TASK 801 |
| DFCS | 22-11732 CREW OPERATION, FCC | 22-11 TASK 801 |
| DFCS | 22-11733 ADIRU(ADC)-1, ADM TOTAL PRESS-1, ADM STATIC PRESS-1 | 22-15 TASK 811 |
| DFCS | 22-11734 ADIRU(ADC)-2, ADM TOTAL PRESS-2, ADM STATIC PRESS-2 | 22-15 TASK 811 |
| DFCS | 22-11737 ADM TOTAL PRESS-1, ADM TOTAL PRESS-2, ADM STATIC PRESS-1, ADM STATIC PRESS-2 | 22-15 TASK 811 |
| DFCS | 22-11738 ADM TOTAL PRESS-1, ADM TOTAL PRESS-2, ADM STATIC PRESS-1, ADM STATIC PRESS-2 | 22-15 TASK 811 |
| DFCS | 22-11739 ADIRU(ADC)-1, ADM STATIC PRESS-1, ADM TOTAL PRESS-1 | 22-15 TASK 811 |
| DFCS | 22-11740 ADIRU(ADC)-2, ADM STATIC PRESS-2, ADM TOTAL PRESS-2 | 22-15 TASK 811 |
| DFCS | 22-11746 MMR/ILS RCVR-3, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11747 MMR/ILS RCVR-2, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11748 CREW OPERATION, VHF/NAV CONT PANL-1, VHF/NAV CONT PANL-2 | 22-11 TASK 801 |
| DFCS | 22-11754 ADIRU(ADC)-1, ADM STATIC PRESS-1 | 22-15 TASK 811 |
| DFCS | 22-11755 ADIRU(ADC)-2, ADM STATIC PRESS-2 | 22-15 TASK 811 |
| DFCS | 22-11756 HDG REF SW (J1B-G03) | 22-11 TASK 801 |
| DFCS | 22-11757 CREW OPERATION, AIL PRESS SW-2, FCC-A | 22-11 TASK 801 |
| DFCS | 22-11758 CREW OPERATION, AIL PRESS SW-1, FCC-B | 22-11 TASK 801 |
| DFCS | 22-11759 CREW OPERATION | Reference Not Currently Available |
| DFCS | 22-11796 CREW OPERATION, BUS PWR CONT UNIT | 22-11 TASK 801 |
| DFCS | 22-11797 FCC-A | 22-11 TASK 801 |
| DFCS | 22-11798 FCC-B | 22-11 TASK 801 |
| DFCS | 22-11799 VHF/NAV CONT PANL-1 (J1A-C02) | 22-11 TASK 801 |
| DFCS | 22-11800 VHF/NAV CONT PANL-1 (J1B-C02) | 22-11 TASK 801 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | 22-11801 VHF/NAV CONT PANL-2 (J1A-C02) | 22-11 TASK 801 |
| DFCS | 22-11802 VHF/NAV CONT PANL-2 (J1B-C02) | 22-11 TASK 801 |
| DFCS | 22-11805 CREW OPERATION, RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11810 CREW OPERATION, LNAV TRANSFER SW | 22-11 TASK 801 |
| DFCS | 22-11811 RUDDER ACTUATOR | 22-17 TASK 804 |
| DFCS | 22-11812 A/B INDEX (J1B-A05) | 22-16 TASK 827 |
| DFCS | 22-11821 CREW OPERATION, RADIO ALT-1, RADIO ALT-2 | 22-11 TASK 801 |
| DFCS | 22-11822 FMC (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | 22-11823 CREW OPERATION, MCP | 22-11 TASK 801 |
| DFCS | 22-11827 SPOIL-4 POS SEN, SPOIL-9 POS SEN | 22-12 TASK 802 |
| DFCS | 22-11828 FCC A (J1A-B06,A06) | 22-11 TASK 801 |
| DFCS | 22-11829 FCC B (J1A-B06,A06) | 22-11 TASK 801 |
| DFCS | 22-11831 FEEL&CENTERING FRPLY | 22-11 TASK 828 |
| DFCS | 737-600 (J1A-B07,C07) | 22-15 TASK 822 |
| DFCS | 737-700 (J1A-B07,C07) | 22-15 TASK 822 |
| DFCS | 737-800 (J1A-B07,C07) | 22-15 TASK 822 |
| DFCS | A/B INDEX (J1B-A05) | 22-16 TASK 827 |
| DFCS | A/P DISC SW-1 (J1B-K07) | 22-13 TASK 809 |
| DFCS | A/P DISC SW-2 (J1B-K07) | 22-13 TASK 809 |
| DFCS | A/S WARN (J1A-E07) | 22-15 TASK 823 |
| DFCS | A/T CMPTR (J1A-B04,A04) | 22-11 TASK 813 |
| DFCS | ADIRU(ADC)-1 (J1A-K04,J04) | 22-17 TASK 803 |
| DFCS | ADIRU(ADC)-1 (J1B-E04,D04) | 22-11 TASK 810 |
| DFCS | ADIRU(ADC)-2 (J1A-K04,J04) | 22-17 TASK 803 |
| DFCS | ADIRU(ADC)-2 (J1B-E04,D04) | 22-11 TASK 810 |
| DFCS | ADIRU(IRU)-1 (J1A-K03,K02) | 22-11 TASK 806 |
| DFCS | ADIRU(IRU)-1 (J1B-K03,K02) | 22-11 TASK 806 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | ADIRU(IRU)-2 (J1A-K03,K02) | 22-11 TASK 807 |
| DFCS | ADIRU(IRU)-2 (J1B-K03,K02) | 22-11 TASK 807 |
| DFCS | ADM STATIC PRESS-1 | 22-15 TASK 811 |
| DFCS | ADM STATIC PRESS-2 | 22-15 TASK 811 |
| DFCS | ADM TOTAL PRESS-1 | 22-15 TASK 810 |
| DFCS | ADM TOTAL PRESS-2 | 22-15 TASK 810 |
| DFCS | AFCS ENG INTLK CB-1 (J1B-B03,F03) | 22-13 TASK 821 |
| DFCS | AFCS ENG INTLK CB-2 (J1B-B03,F03) | 22-13 TASK 822 |
| DFCS | AIL ACT-1 (J1B-J15,H15,G15) | 22-12 TASK 811 |
| DFCS | AIL ACT-2 (J1B-J15,H15,G15) | 22-12 TASK 811 |
| DFCS | AIL DETENT SOLENOID-1 | 22-13 TASK 804 |
| DFCS | AIL DETENT SOLENOID-2 | 22-13 TASK 805 |
| DFCS | AIL POS SEN-1 (J1B-K13,J13,H13) | 22-12 TASK 813 |
| DFCS | AIL POS SEN-2 (J1B-K13,J13,H13) | 22-12 TASK 813 |
| DFCS | AIL PRESS SW-1 (J1B-B13) | 22-13 TASK 804 |
| DFCS | AIL PRESS SW-1 (J1B-K01) | 22-13 TASK 804 |
| DFCS | AIL PRESS SW-2 (J1B-B13) | 22-13 TASK 805 |
| DFCS | AIL PRESS SW-2 (J1B-K01) | 22-13 TASK 805 |
| DFCS | AIRPLANE CONFIG 1 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG 2 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG 3 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG 4 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG 5 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG 6 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG 7 (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | AIRPLANE CONFIG STD (J1A-C08,D08,E08) | 22-15 TASK 823 |
| DFCS | ALPHA VANE-1 | 22-11 TASK 823 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | ALPHA VANE-2 | 22-11 TASK 824 |
| DFCS | ALT ALERT OPT 1 (J1A-A08,B08) | 22-15 TASK 823 |
| DFCS | ALT ALERT OPT 2 (J1A-A08,B08) | 22-15 TASK 823 |
| DFCS | ALT ALERT OPT 3 (J1A-A08,B08) | 22-15 TASK 823 |
| DFCS | ALT ALERT STD (J1A-A08,B08) | 22-15 TASK 823 |
| DFCS | AURAL WARN UNIT | 22-12 TASK 817 |
| DFCS | AUTO FLT STAT ANN-CPT (J1A-E05) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-CPT (J1B-B07) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-CPT (J1B-D07) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-CPT (J1B-G05) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-CPT | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-F/O (J1A-E05) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-F/O (J1B-B07) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-F/O (J1B-D07) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-F/O (J1B-G05) | 22-15 TASK 804 |
| DFCS | AUTO FLT STAT ANN-F/O | 22-15 TASK 804 |
| DFCS | BATT BUS (J1C- 54, 58) | 22-15 TASK 802 |
| DFCS | BATT BUS (J1C-54,55) | 22-15 TASK 802 |
| DFCS | BUS PWR CONT UNIT (J1B-H14) | 22-15 TASK 803 |
| DFCS | BUS PWR CONT UNIT (J1C-A05,B05) | 22-15 TASK 803 |
| DFCS | CDS/DEU-1 (J1A-B02,A02) | 22-15 TASK 808 |
| DFCS | CDS/DEU-1 (J1A-B06,A06) | 22-15 TASK 808 |
| DFCS | CDS/DEU-1 (J1B-B02,A02) | 22-15 TASK 808 |
| DFCS | CDS/DEU-2 (J1A-B02,A02) | 22-15 TASK 809 |
| DFCS | CDS/DEU-2 (J1A-B06,A06) | 22-15 TASK 809 |
| DFCS | CDS/DEU-2 (J1B-B02,A02) | 22-15 TASK 809 |
| DFCS | COL SW MODULE M1201 (J1C-B02) | 22-13 TASK 808 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | COL SW MODULE M1201 (J1C-F02) | 22-13 TASK 808 |
| DFCS | COL SW MODULE M1201 (J1C-G02) | 22-15 TASK 819 |
| DFCS | COL SW MODULE M1201 (J1C-K03) | 22-15 TASK 818 |
| DFCS | COL SW MODULE M1201 | 22-15 TASK 821 |
| DFCS | CROSS CHANNEL TEST FAIL | 22-15 TASK 825 |
| DFCS | CWS OVERRIDE (J1A-F08) | 22-15 TASK 823 |
| DFCS | CWS WARN (J1A-G08) | 22-15 TASK 823 |
| DFCS | DME-1 (J1B-H04,G04) | 22-12 TASK 808 |
| DFCS | DME-2 (J1B-H04,G04) | 22-12 TASK 808 |
| DFCS | DUAL CHAN (J1A-F07) | 22-15 TASK 823 |
| DFCS | EFIS CONT PANL-CPT | 22-15 TASK 812 |
| DFCS | EFIS CONT PANL-F/O | 22-15 TASK 812 |
| DFCS | ELEV ACT-1 (J1A-J15,H15,G15) | 22-12 TASK 810 |
| DFCS | ELEV ACT-2 (J1A-J15,H15,G15) | 22-12 TASK 810 |
| DFCS | ELEV DETENT SOLENOID-1 | 22-13 TASK 806 |
| DFCS | ELEV DETENT SOLENOID-2 | 22-13 TASK 807 |
| DFCS | ELEV POS SEN-1 (J1A-K13,J13,H13) | 22-12 TASK 812 |
| DFCS | ELEV POS SEN-2 (J1A-K13,J13,H13) | 22-12 TASK 812 |
| DFCS | ELEV PRESS SW-1 (J1A-B13) | 22-13 TASK 806 |
| DFCS | ELEV PRESS SW-1 (J1A-K01) | 22-13 TASK 806 |
| DFCS | ELEV PRESS SW-2 (J1A-B13) | 22-13 TASK 807 |
| DFCS | ELEV PRESS SW-2 (J1A-K01) | 22-13 TASK 807 |
| DFCS | FAA/JAA (J1A-G07) | 22-15 TASK 823 |
| DFCS | FCC INCOMPATIBILITY | 22-16 TASK 831 |
| DFCS | FCC-A (J1A-B15,A15) | 22-16 TASK 828 |
| DFCS | FCC-A (J1A-C01) | 22-14 TASK 811 |
| DFCS | FCC-A (J1A-D13) | 22-14 TASK 803 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | FCC-A (J1A-E05) | 22-15 TASK 804 |
| DFCS | FCC-A (J1A-E15,D15) | 22-14 TASK 803 |
| DFCS | FCC-A (J1A-G03) | 22-14 TASK 825 |
| DFCS | FCC-A (J1A-G11,F11) | 22-14 TASK 815 |
| DFCS | FCC-A (J1A-H11) | 22-14 TASK 815 |
| DFCS | FCC-A (J1A-H14) | 22-14 TASK 802 |
| DFCS | FCC-A (J1A-J03) | 22-14 TASK 809 |
| DFCS | FCC-A (J1A-J09) | 22-17 TASK 802 |
| DFCS | FCC-A (J1A-K11,J11) | 22-14 TASK 815 |
| DFCS | FCC-A (J1A-K14) | 22-14 TASK 802 |
| DFCS | FCC-A (J1B-B10,A10) | 22-15 TASK 825 |
| DFCS | FCC-A (J1B-B15,A15) | 22-16 TASK 829 |
| DFCS | FCC-A (J1B-D13) | 22-14 TASK 804 |
| DFCS | FCC-A (J1B-E07) | 22-14 TASK 806 |
| DFCS | FCC-A (J1B-E10,D10) | 22-15 TASK 825 |
| DFCS | FCC-A (J1B-E11) | 22-14 TASK 815 |
| DFCS | FCC-A (J1B-E15,D15) | 22-14 TASK 804 |
| DFCS | FCC-A (J1B-G05) | 22-14 TASK 813 |
| DFCS | FCC-A (J1B-G07) | 22-16 TASK 830 |
| DFCS | FCC-A (J1B-G11,F11) | 22-14 TASK 815 |
| DFCS | FCC-A (J1B-H09) | 22-16 TASK 832 |
| DFCS | FCC-A (J1B-J03) | 22-14 TASK 810 |
| DFCS | FCC-A (J1B-K11,J11) | 22-14 TASK 815 |
| DFCS | FCC-A (J1C-B01,A01) | 22-14 TASK 822 |
| DFCS | FCC-A (J1C-D01) | 22-12 TASK 815 |
| DFCS | FCC-A (J1C-D02) | 22-14 TASK 807 |
| DFCS | FCC-A (J1C-F03) | 22-14 TASK 821 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | FCC-A (J1C-G02) | 22-14 TASK 816 |
| DFCS | FCC-A (J1C-G03) | 22-14 TASK 819 |
| DFCS | FCC-A (J1C-H02) | 22-14 TASK 808 |
| DFCS | FCC-A (J1C-H03) | 22-14 TASK 818 |
| DFCS | FCC-A (J1C-J02) | 22-14 TASK 805 |
| DFCS | FCC-A (J1C-J03) | 22-14 TASK 814 |
| DFCS | FCC-A (J1C-K01) | 22-12 TASK 815 |
| DFCS | FCC-A (J1C-K02) | 22-14 TASK 812 |
| DFCS | FCC-A (J1C-K03) | 22-14 TASK 817 |
| DFCS | FCC-A PROG PINS | 22-16 TASK 831 |
| DFCS | FCC-A SOP PARITY (J1A-K08) | 22-15 TASK 823 |
| DFCS | FCC-A SOP PARITY (J1A-K08) | 22-16 TASK 831 |
| DFCS | FCC-A | 22-14 TASK 801 |
| DFCS | FCC-B (J1A-B15,A15) | 22-16 TASK 828 |
| DFCS | FCC-B (J1A-C01) | 22-14 TASK 811 |
| DFCS | FCC-B (J1A-D13) | 22-14 TASK 803 |
| DFCS | FCC-B (J1A-E05) | 22-15 TASK 804 |
| DFCS | FCC-B (J1A-E15,D15) | 22-14 TASK 803 |
| DFCS | FCC-B (J1A-G03) | 22-14 TASK 825 |
| DFCS | FCC-B (J1A-G11,F11) | 22-14 TASK 815 |
| DFCS | FCC-B (J1A-H11) | 22-14 TASK 815 |
| DFCS | FCC-B (J1A-H14) | 22-14 TASK 802 |
| DFCS | FCC-B (J1A-J03) | 22-14 TASK 809 |
| DFCS | FCC-B (J1A-J09) | 22-17 TASK 802 |
| DFCS | FCC-B (J1A-K11,J11) | 22-14 TASK 815 |
| DFCS | FCC-B (J1A-K14) | 22-14 TASK 802 |
| DFCS | FCC-B (J1B-B10,A10) | 22-15 TASK 825 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | FCC-B (J1B-B15,A15) | 22-16 TASK 829 |
| DFCS | FCC-B (J1B-D13) | 22-14 TASK 804 |
| DFCS | FCC-B (J1B-E07) | 22-14 TASK 806 |
| DFCS | FCC-B (J1B-E10,D10) | 22-15 TASK 825 |
| DFCS | FCC-B (J1B-E11) | 22-14 TASK 815 |
| DFCS | FCC-B (J1B-E15,D15) | 22-14 TASK 804 |
| DFCS | FCC-B (J1B-G05) | 22-14 TASK 813 |
| DFCS | FCC-B (J1B-G07) | 22-16 TASK 830 |
| DFCS | FCC-B (J1B-G11,F11) | 22-14 TASK 815 |
| DFCS | FCC-B (J1B-H09) | 22-16 TASK 832 |
| DFCS | FCC-B (J1B-J03) | 22-14 TASK 810 |
| DFCS | FCC-B (J1B-K11,J11) | 22-14 TASK 815 |
| DFCS | FCC-B (J1C-B01,A01) | 22-14 TASK 822 |
| DFCS | FCC-B (J1C-D01) | 22-12 TASK 815 |
| DFCS | FCC-B (J1C-D02) | 22-14 TASK 807 |
| DFCS | FCC-B (J1C-F03) | 22-14 TASK 821 |
| DFCS | FCC-B (J1C-G02) | 22-14 TASK 816 |
| DFCS | FCC-B (J1C-G03) | 22-14 TASK 820 |
| DFCS | FCC-B (J1C-H02) | 22-14 TASK 808 |
| DFCS | FCC-B (J1C-H03) | 22-14 TASK 818 |
| DFCS | FCC-B (J1C-J02) | 22-14 TASK 805 |
| DFCS | FCC-B (J1C-J03) | 22-14 TASK 814 |
| DFCS | FCC-B (J1C-K01) | 22-12 TASK 815 |
| DFCS | FCC-B (J1C-K02) | 22-14 TASK 812 |
| DFCS | FCC-B (J1C-K03) | 22-14 TASK 817 |
| DFCS | FCC-B PROG PINS | 22-16 TASK 831 |
| DFCS | FCC-B SOP PARITY (J1A-K08) | 22-16 TASK 831 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | FCC-B | 22-14 TASK 801 |
| DFCS | FLAP POSN-1 (J1B-G06,F06,E06) | 22-12 TASK 807 |
| DFCS | FLAP POSN-2 (J1B-G06,F06,E06) | 22-12 TASK 807 |
| DFCS | FMC (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | FMC (NO FMC REQ) (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | FMC TRANSFER SW (J1A-E04,D04) | 22-16 TASK 833 |
| DFCS | FMC-1 (J1A-E04,D04) | 22-11 TASK 811 |
| DFCS | FMC-2 (J1A-E04,D04) | 22-11 TASK 812 |
| DFCS | G/S BEFORE LOC (J1A-J07) | 22-15 TASK 823 |
| DFCS | GEAR UP SW-1 (J1B-J05) | 22-13 TASK 812 |
| DFCS | GEAR UP SW-2 (J1B-J05) | 22-13 TASK 812 |
| DFCS | HDG SEL TOGA (J1A-H06) | 22-15 TASK 823 |
| DFCS | IFSAU (J1C-C3) | 22-12 TASK 816 |
| DFCS | IFSAU (J1C-G05,F05) | 22-16 TASK 834 |
| DFCS | IFSAU | 22-12 TASK 816 |
| DFCS | IRS TRANSFER SW (J1A-G01) | 22-13 TASK 801 |
| DFCS | IRS TRANSFER SW (J1B-G01) | 22-13 TASK 801 |
| DFCS | ISFD (J1B-G11,F11) | 22-17 TASK 801 |
| DFCS | LOC ANT SW-1 (J1B-E03) | 22-13 TASK 802 |
| DFCS | LOC ANT SW-2 (J1B-E03) | 22-13 TASK 802 |
| DFCS | MACH TRIM 115 VAC (J1C-A05,B05) | 22-16 TASK 835 |
| DFCS | MACH TRIM 28 VDC (J1C-53) | 22-15 TASK 817 |
| DFCS | MCP (A/P ENGAGED) (J1A-H01) | 22-11 TASK 817 |
| DFCS | MCP (A/P ENGAGED) (J1B-H01) | 22-11 TASK 817 |
| DFCS | MCP (J1A-A06,B06) | 22-11 TASK 817 |
| DFCS | MCP (J1A-B01) | 22-11 TASK 817 |
| DFCS | MCP (J1A-F01) | 22-11 TASK 817 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | MCP (J1A-F13) | 22-11 TASK 817 |
| DFCS | MCP (J1A-H01) | 22-11 TASK 817 |
| DFCS | MCP (J1A-K06,J06) | 22-11 TASK 817 |
| DFCS | MCP (J1A-K14,H14) | 22-11 TASK 817 |
| DFCS | MCP (J1B-B01) | 22-11 TASK 817 |
| DFCS | MCP (J1B-D01) | 22-11 TASK 817 |
| DFCS | MCP (J1B-F01) | 22-11 TASK 817 |
| DFCS | MCP (J1B-F13) | 22-11 TASK 817 |
| DFCS | MCP (J1B-H01) | 22-11 TASK 817 |
| DFCS | MCP | 22-11 TASK 816 |
| DFCS | MMR/ILS RCVR-1 (J1A-H02,G02) | 22-11 TASK 808 |
| DFCS | MMR/ILS RCVR-1 (J1B-H02,G02) | 22-11 TASK 808 |
| DFCS | MMR/ILS RCVR-2 (J1A-H02,G02) | 22-11 TASK 809 |
| DFCS | MMR/ILS RCVR-2 (J1B-H02,G02) | 22-11 TASK 809 |
| DFCS | MT ACT (J1C-D04,E04) | 22-12 TASK 815 |
| DFCS | MT FAIL ANN (J1C-J03) | 22-13 TASK 816 |
| DFCS | MT POS SENS (J1C-E04,D04) | 22-13 TASK 815 |
| DFCS | NSS-1 (J1A-D12,C12) | 22-12 TASK 809 |
| DFCS | NSS-2 (J1A-D12,C12) | 22-12 TASK 809 |
| DFCS | PCWS XDUCER-1 (J1A-E02,E01) | 22-12 TASK 805 |
| DFCS | PCWS XDUCER-1 (J1B-E02,E01) | 22-12 TASK 805 |
| DFCS | PCWS XDUCER-2 (J1A-E02,E01) | 22-12 TASK 806 |
| DFCS | PCWS XDUCER-2 (J1B-E02,E01) | 22-12 TASK 806 |
| DFCS | PROX SW ELEX UNIT (J1B-J05) | 22-13 TASK 812 |
| DFCS | RADIO ALT-1 (J1B-B04,A04) | 22-11 TASK 805 |
| DFCS | RADIO ALT-1 (J1B-K11,J11) | 22-11 TASK 805 |
| DFCS | RADIO ALT-2 (J1B-B04,A04) | 22-11 TASK 805 |

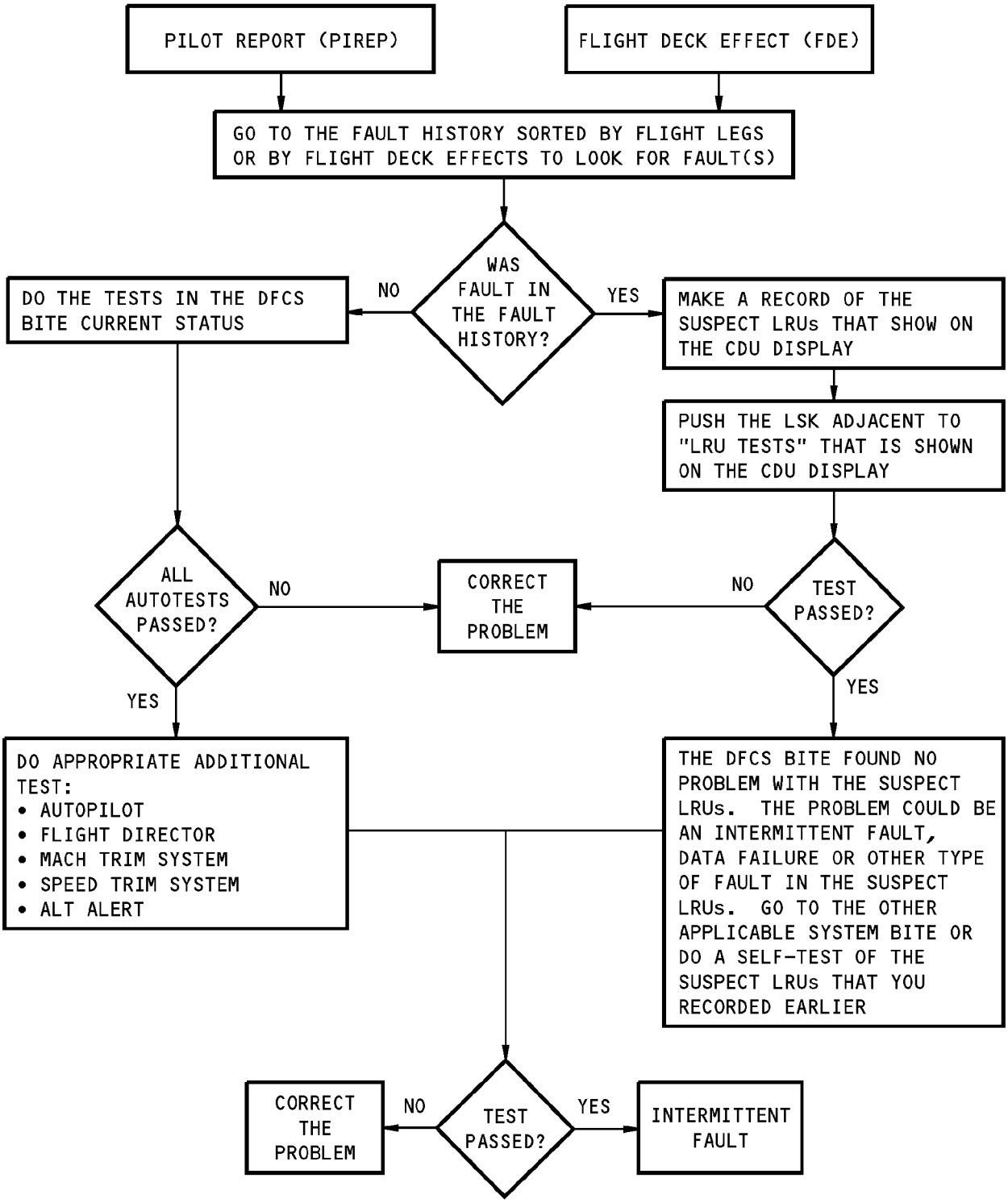

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | RADIO ALT-2 (J1B-K11,J11) | 22-11 TASK 805 |
| DFCS | RCWS XDUCER-1 (J1B-K06,J06) | 22-12 TASK 804 |
| DFCS | RCWS XDUCER-2 (J1B-K06,J06) | 22-12 TASK 804 |
| DFCS | REMOTE ELECTRONIC UNIT (J1C-K02) | 22-15 TASK 820 |
| DFCS | RUD ACTUATOR (J1A-F11,G11) | 22-17 TASK 804 |
| DFCS | RUD ACTUATOR (J1A-K09,J1B-K09) | 22-17 TASK 804 |
| DFCS | RUD ACTUATOR (J1B-H06,H07) | 22-17 TASK 804 |
| DFCS | RUD ACTUATOR (J1B-K10,J10) | 22-17 TASK 804 |
| DFCS | RUD ACTUATOR | 22-17 TASK 804 |
| DFCS | RUD POS SEN (J1A-G09,G10,H09) | 22-17 TASK 805 |
| DFCS | SMYDC-1 (J1A-H04,G04) | 22-15 TASK 801 |
| DFCS | SMYDC-2 (J1A-H04,G04) | 22-15 TASK 801 |
| DFCS | SPD/ALT INTERVENTION (J1A-J08) | 22-15 TASK 823 |
| DFCS | SPOIL-4 POS SEN-1 (J1B-B12,A12) | 22-12 TASK 801 |
| DFCS | SPOIL-4 POS SEN-2 (J1B-B12,A12) | 22-12 TASK 801 |
| DFCS | SPOIL-9 POS SEN-1 (J1B-E12,D12) | 22-12 TASK 802 |
| DFCS | SPOIL-9 POS SEN-2 (J1B-E12,D12) | 22-12 TASK 802 |
| DFCS | SQUAT SW (J1A-B03) | 22-15 TASK 815 |
| DFCS | ST FAIL ANN (J1C-H02) | 22-13 TASK 817 |
| DFCS | STAB POS SEN-1 (J1A-A13,A12) | 22-12 TASK 803 |
| DFCS | STAB POS SEN-2 (J1A-A13,A12) | 22-12 TASK 803 |
| DFCS | STAB TRIM CUTOUT RELAY | 22-13 TASK 813 |
| DFCS | STAB TRIM RLY (J1C-D03) | 22-13 TASK 818 |
| DFCS | STAB TRIM SERVO (J1A-A12,A13) | 22-12 TASK 803 |
| DFCS | STAB TRIM SERVO (J1C-A03) | 22-11 TASK 822 |
| DFCS | STAB TRIM SERVO (J1C-G02) | 22-15 TASK 819 |
| DFCS | STAB TRIM SERVO (J1C-K03) | 22-15 TASK 818 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| DFCS | STAB TRIM SERVO | 22-15 TASK 821 |
| DFCS | SYNCHRONIZATION | 22-15 TASK 824 |
| DFCS | TOGA SW-1 (J1A-F04) | 22-13 TASK 810 |
| DFCS | TOGA SW-2 (J1A-F04) | 22-13 TASK 811 |
| DFCS | TRIM CUTOUT (J1C-B03) | 22-13 TASK 813 |
| DFCS | TRIM WARN ANN (J1C-D02) | 22-13 TASK 814 |
| DFCS | UNDEFINED AIRPLANE (J1A-B07,C07) | 22-15 TASK 822 |
| DFCS | VHF/NAV CONT PANL-1 (J1A-D01) | 22-15 TASK 813 |
| DFCS | VHF/NAV CONT PANL-1 (J1B-K14) | 22-15 TASK 813 |
| DFCS | VHF/NAV CONT PANL-2 (J1A-D01) | 22-15 TASK 814 |
| DFCS | VHF/NAV CONT PANL-2 (J1B-K14) | 22-15 TASK 814 |
| DFCS | VHF/NAV SW (J1A-K12) | 22-13 TASK 803 |
| DFCS | VHF/NAV SW (J1B-A07) | 22-13 TASK 803 |
| DFCS | VHF/NAV SW (J1B-J01) | 22-13 TASK 803 |
| DFCS | VHF/NAV SW (J1B-J07) | 22-13 TASK 803 |
| DFCS | VOR RCVR-1 (J1B-H08,G08) | 22-11 TASK 804 |
| DFCS | VOR RCVR-2 (J1B-H08,G08) | 22-11 TASK 804 |
| DFCS | WHEEL SPIN-1 (J1A-J10) | 22-13 TASK 819 |
| DFCS | WHEEL SPIN-2 (J1A-J10) | 22-13 TASK 820 |
| DFCS | WINGS LEVEL TOGA (J1A-H06) | 22-15 TASK 823 |

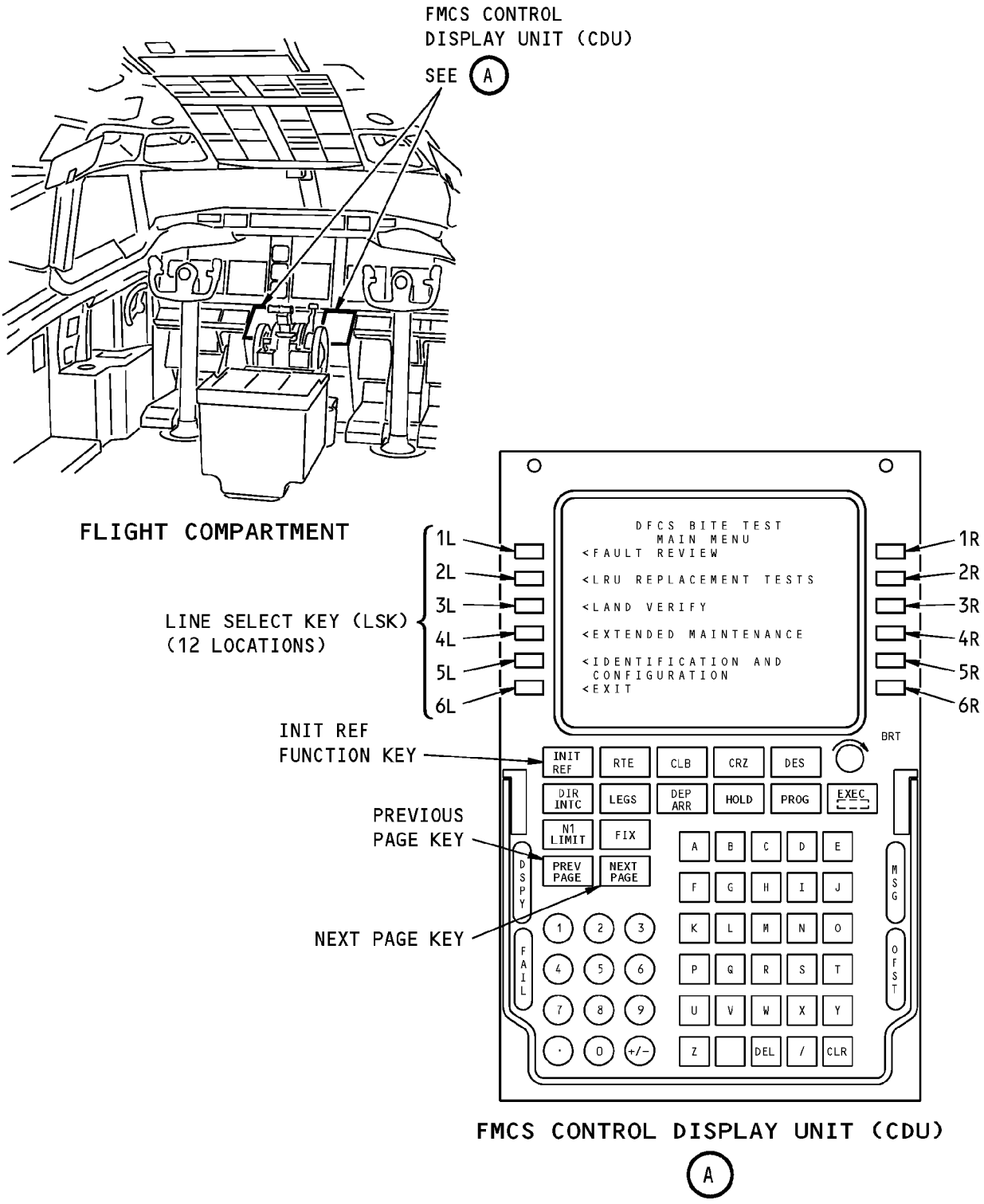

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details




DFCS BITE Flowchart
Figure 201 / 22-11-00-990-803



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details




DFCS BITE Test Main Menu
Figure 202 / 22-11-00-990-804



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**802. LRU Replacement Test**

A. General

(1) You do the digital flight control system (DFCS) LRU replacement test from the control display unit (CDU). You use the LRU REPLACEMENT TEST item on the DFCS BITE TEST MAIN MENU in this task.

(2) These are the LRU replacement tests in the LRU REPLACEMENT TEST menu that you can use in this task:

(a) ADIRU (Air Data Inertial Reference Unit)

(b) A/T (Autothrottle)

(c) DME (Distance Measuring Equipment)

(d) LRRA (Low Range Radio Altimeter)

(e) FCC (Flight Control Computer)

(f) LNAV (Lateral Navigation)

(g) MCP (Mode Control Panel)

(h) FMC (Flight Management Computer)

(i) SMYDC (Stall Management Yaw Damper Computer)

(j) VOR (VHF Omnidirectional Receiver)

(k) MMR/ILS (Multi-Mode Receiver/Instrument Landing System)

(l) CDS (Common Display System)

(m) ISFD (Integrated Standby Flight Display)

(n) PITCH SENS (Pitch Position Sensors)

(o) ROLL SENS (Roll Position Sensors)

(p) STAB SENS (Stabilizer Position Sensors)

(q) MACH TRIM

(r) FLAP SENS

(s) YAW SENS

(t) MLS (Microwave Landing System)

NOTE: If MLS is installed.

(u) GPS (Global Positioning System)

NOTE: If GPS is installed.

(3) Each LRU replacement test contains a number of library tests. The library test can be an autotest, interactive test or surface test.

(4) If there are autotests and interactive tests (or surface tests) in the LRU replacement test, the autotests come before the interactive tests (or surface tests).

(a) The autotest is automatic.

(b) The interactive test is not automatic. You must do the instructions that show on the CDU display to complete the interactive test.

(c) The surface test is not automatic and hydraulic power is necessary for the surface test. You must do the instructions that show on the CDU display to complete the surface test.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(5) Some selections that you often make when you do the BITE test are the CONTINUE, PREV MENU, EXIT prompts on the CDU display and the NEXT PAGE and PREV PAGE keys on the CDU keyboard.

(a) CONTINUE

1) If you push the LSK adjacent to CONTINUE, then the BITE will take you to the subsequent page of the test.

(b) PREV MENU

1) If you push the LSK adjacent to PREV MENU, then the BITE will take you to the previous selection page.

(c) EXIT

1) If you push the LSK adjacent to EXIT, then the BITE will take you out of BITE test and put the airplane back to its usual condition.

(d) NEXT PAGE or PREV PAGE key

1) If it is necessary to change page, then you push the NEXT PAGE or PREV PAGE key on the CDU keyboard. The BITE lets you change page when there is more than one screen page.

B. Procedure

(1) If you are not at one of the DFCS BITE TEST displays, then do these steps:

(a) Push the INIT REF function key.

(b) If the POS INIT display shows, then push the line select key (LSK) next to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(2) Push the Line Select Key (LSK) adjacent to each of these prompts:

(a) MAINT

(b) DFCS

NOTE: If FCC-A SELFTEST FAIL, FCC-B SELFTEST FAIL or CROSS CHANNEL TEST FAIL message shows, then refer to the table at the beginning of this chapter to find the fault isolation task for the maintenance message.

(c) LRU REPLACEMENT TEST

(d) Make a selection for the applicable channel:

1) CHANNEL A

2) CHANNEL B

3) CHANNEL A AND B

(e) Push the LSK adjacent to the applicable LRU test.

NOTE: Use the NEXT PAGE or PREV PAGE key to change page if it is necessary.

(f) Autotest:

1) Do the instructions that show on the CDU display.

NOTE: If the initialization setup is correct, AUTOTEST IN PROGRESS will show on the CDU display.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) If AUTOTEST PASSED shows on the CDU display, then the test is completed with no failure.

NOTE: Some autotests can be completed very fast and you cannot see the AUTOTEST PASSED message. The autotest passed if you do not see the AUTOTEST FAILED message.

NOTE: When all the autotests are completed, the summary page shows AUTOTEST PASSED or AUTOTEST FAILED.

3) If AUTOTEST FAILED shows, then do the library test(s) that shows on the CDU display.

4) Make a record of the channel (A, B, or A/B), suspect LRUs and the pin numbers that show on the CDU display.

NOTE: You can find the channel data adjacent to the INPUT/OUTPUT PINS that shows on the CDU display. Channel A is for the FCC-A and channel B is for the FCC-B. If there is no pin number for the suspect LRU, the channel data does not show.

NOTE: Each suspect LRU is referred to as a maintenance message.

a) If it is necessary to do the test again, then do these steps:

b) Push the LSK adjacent to TEST DATA.

c) Push the LSK adjacent to RERUN.

5) Refer to the table at the beginning of this chapter to find the fault isolation task for the maintenance message.

(g) Interactive Test:

1) Do the instructions that show on the CDU display to complete all the interactive tests.

2) If INTERACTIVE TEST PASSED shows on the CDU display, then the test is completed with no failure.

NOTE: After you complete the last interactive test, the summary page shows TEST FAILED or ALL TESTS PASSED.

3) If INTERACTIVE TEST FAILED shows on the CDU display, then do these steps:

a) Push the LSK adjacent to TEST RESULTS.

b) Make a record of the channel (A, B, or A/B), suspect LRUs and the pin numbers that show on the CDU display.

NOTE: You can find the channel data adjacent to the INPUT/OUTPUT PINS that shows on the CDU display. Channel A is for the FCC-A and channel B is for the FCC-B. If there is no pin number for the suspect LRU, the channel data does not show.

NOTE: Each suspect LRU is referred to as a maintenance message.

c) If it is necessary to do the test again, then do these steps:

d) Push the LSK adjacent to TEST DATA.

e) Push the LSK adjacent to RERUN.

4) Refer to the table at the beginning of this chapter to find the fault isolation task for the maintenance message.

(h) Surface Test:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**WARNING:** KEEP PERSONS AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES. THE AILERONS, ELEVATORS, RUDDER, FLAPS, SLATS, SPOILERS, STABILIZER AND NOSE GEAR CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

1) Do the instructions that show on the CDU display to complete all the surface tests.
2) If SURFACE TEST PASSED shows on the CDU display, then the test is completed with no failure.

   NOTE: After you complete the last surface test, the summary page shows TEST FAILED or ALL TESTS PASSED.

3) If SURFACE TEST FAILED shows on the CDU display, then do these steps:
   a) Push the LSK adjacent to TEST RESULTS.
   b) Make a record of the channel (A, B, or A/B), suspect LRUs and the pin numbers that show on the CDU display.

      NOTE: You can find the channel data adjacent to the INPUT/OUTPUT PINS that shows on the CDU display. Channel A is for the FCC-A and channel B is for the FCC-B. If there is no pin number for the suspect LRU, the channel data does not show.

      NOTE: Each suspect LRU is referred to as a maintenance message.

   c) If it is necessary to do the test again, then do these steps:
   d) Push the LSK adjacent to TEST DATA.
   e) Push the LSK adjacent to RERUN.
4) Refer to the table at the beginning of this chapter to find the fault isolation task for the maintenance message.

**——————— END OF TASK ———————**

## 803. Mode Control Panel Tests

A. General

(1) You do the digital flight control system (DFCS) mode control panel tests from the control display unit (CDU). You use the MCP TESTS item on the DFCS BITE TEST EXTENDED MAINTENANCE menu in this task.

(2) There are two types of tests in the extended maintenance MCP TESTS. The quick test (autotest) and the interactive test. When you do the MCP TESTS, the autotests come before the interactive tests.
   (a) The autotest is automatic.
   (b) The interactive test is not automatic. You must do the instructions that show on the CDU display to complete the interactive test.

(3) Some selections that you often make when you do the BITE test are the CONTINUE, PREV MENU, EXIT prompts on the CDU display and the NEXT PAGE and PREV PAGE keys on the CDU keyboard.
   (a) CONTINUE
      1) If you push the LSK adjacent to CONTINUE, then the BITE will take you to the subsequent page of the test.
   (b) PREV MENU


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) If you push the LSK adjacent to PREV MENU, then the BITE will take you to the previous selection page.

(c) EXIT

1) If you push the LSK adjacent to EXIT, then the BITE will take you out of BITE test and put the airplane back to its usual condition.

(d) NEXT PAGE or PREV PAGE key

1) If it is necessary to change page, then you push the NEXT PAGE or PREV PAGE key on the CDU keyboard. The BITE lets you change page when there is more than one screen page.

B. Procedure

(1) If you are not at one of the DFCS BITE TEST displays, then do these steps:

(a) Push the INIT REF function key.

(b) If the POS INIT display shows, then push the line select key (LSK) next to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(2) Push the Line Select Key (LSK) adjacent to each of these prompts:

(a) MAINT

(b) DFCS

NOTE: If FCC-A SELFTEST FAIL, FCC-B SELFTEST FAIL or CROSS CHANNEL TEST FAIL message shows, then refer to table at the beginning of the chapter to find the fault isolation task for the applicable maintenance message.

(c) FAULT REVIEW

(d) EXTENDED MAINTENANCE

(e) MCP TESTS

(f) Make a selection for the applicable channel:

1) CHANNEL A

2) CHANNEL B

3) CHANNEL A AND B

(g) Autotest:

1) Do the instructions that show on the CDU display.

NOTE: If the initialization setup is correct, AUTOTEST IN PROGRESS will show on the CDU display.

2) If AUTOTEST PASSED shows on the CDU display, then the test is completed with no failure.

NOTE: Some autotests can be completed very fast and you cannot see the AUTOTEST PASSED message. The autotest passed if you do not see the AUTOTEST FAILED message.

NOTE: When all the autotests are completed, the summary page shows AUTOTEST PASSED or AUTOTEST FAILED.

3) If AUTOTEST FAILED shows, then do the library test(s) that shows on the CDU display.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

4) Make a record of the channel (A, B, or A/B), suspect LRUs and the pin numbers that show on the CDU display.

NOTE: You can find the channel data adjacent to the INPUT/OUTPUT PINS that shows on the CDU display. Channel A is for the FCC-A and channel B is for the FCC-B. If there is no pin number for the suspect LRU, the channel data does not show.

NOTE: Each suspect LRU is referred to as a maintenance message.

a) If it is necessary to do the test again, then do these steps:

b) Push the LSK adjacent to TEST DATA.

c) Push the LSK adjacent to RERUN.

5) Refer to the table at the beginning of this chapter to find the fault isolation task for the maintenance message.

(h) Interactive Test:

1) Do the instructions that show on the CDU display to complete all the interactive tests.

2) If INTERACTIVE TEST PASSED shows on the CDU display, then the test is completed with no failure.

NOTE: After you complete the last interactive test, the summary page shows TEST FAILED or ALL TESTS PASSED.

3) If INTERACTIVE TEST FAILED shows on the CDU display, then do these steps:

a) Push the LSK adjacent to TEST RESULTS.

b) Make a record of the channel (A, B, or A/B), suspect LRUs and the pin numbers that show on the CDU display.

NOTE: You can find the channel data adjacent to the INPUT/OUTPUT PINS that shows on the CDU display. Channel A is for the FCC-A and channel B is for the FCC-B. If there is no pin number for the suspect LRU, the channel data does not show.

NOTE: Each suspect LRU is referred to as a maintenance message.

c) If it is necessary to do the test again, then do these steps:

d) Push the LSK adjacent to TEST DATA.

e) Push the LSK adjacent to RERUN.

4) Refer to the table at the beginning of this chapter to find the fault isolation task for the maintenance message.

**———————— END OF TASK ————————**

## 804. VOR/MKR Receiver Output Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) VOR RCVR-1 (J1B-H08, G08)

(b) VOR RCVR-2 (J1B-H08, G08)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) VOR RCVR-1 (J1B-H08, G08): The flight control computer A (FCC-A) receives invalid data or no data from the VOR/MKR receiver-1 during the ground test.

(3) VOR RCVR-2 (J1B-H08, G08): The flight control computer B (FCC-B) receives invalid data or no data from the VOR/MKR receiver-2 during the ground test.

B. Possible Causes

(1) VOR/MKR receiver-1, M1724

(2) VOR/MKR receiver-2, M1725

(3) Wiring problem

(4) Flight control computer A, M1875

(5) Flight control computer B, M1786

C. Related Data

(1) (SSM 22-11-16)

(2) (SSM 34-51-11)

(3) (SSM 34-51-21)

(4) (WDM 34-51-11)

(5) (WDM 34-51-21)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: VOR/Marker Beacon Receiver BITE Procedure, 34-51 TASK 801.

(a) If there is a fault message, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the VOR/MKR receiver-1, M1724. To remove it, do this task: VOR/MKR Receiver Removal, AMM TASK 34-51-01-000-801.

(c) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D3623B at the E1-2 shelf (WDM 34-51-11).

| D10135B | | D3623B |
|---|---|---|
| pin H8 | - - - - - - - - - - - - - - - - - - | pin A4 |
| pin G8 | - - - - - - - - - - - - - - - - - - | pin B4 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the VOR/MKR receiver-1, M1724. To install it, do this task: VOR/MKR Receiver Installation, AMM TASK 34-51-01-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the VOR/MKR receiver-1, M1724. To install it, do this task: VOR/MKR Receiver Installation, AMM TASK 34-51-01-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the VOR/MKR receiver-2, M1724. To remove it, do this task: VOR/MKR Receiver Removal, AMM TASK 34-51-01-000-801.

(c) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D3625B at the E1-4 shelf (WDM 34-51-21).

| D10137B | | D3625B |
|---|---|---|
| pin H8 | - - - - - - - - - - - - - - - - - - | pin A4 |
| pin G8 | - - - - - - - - - - - - - - - - - - | pin B4 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the VOR/MKR receiver-2, M1725. To install it, do this task: VOR/MKR Receiver Installation, AMM TASK 34-51-01-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the VOR/MKR receiver-2, M1725. To install it, do this task: VOR/MKR Receiver Installation, AMM TASK 34-51-01-400-801.

(4) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the VOR test.

(c) If the maintenance message does not show, then you corrected the fault.

**—————— END OF TASK ——————**

**805. Radio Altimeter Output Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) RADIO ALT-1 (J1B-B04,A04)

(b) RADIO ALT-2 (J1B-B04,A04)

(c) RADIO ALT-1 (J1B-K11,J11)

(d) RADIO ALT-2 (J1B-K11,J11)

(2) RADIO ALT-1 (J1B-B04,A04): The flight control computer A (FCC-A) receives invalid data or no data from the radio altimeter transceiver-1 during the ground test.

(3) RADIO ALT-2 (J1B-B04,A04): The flight control computer B (FCC-B) receives invalid data or no data from the radio altimeter transceiver-2 during the ground test.

(4) RADIO ALT-1 (J1B-K11,J11): The flight control computer B (FCC-B) receives invalid data or no data from the radio altimeter transceiver-1 during the ground test.

(5) RADIO ALT-2 (J1B-K11,J11): The flight control computer A (FCC-A) receives invalid data or no data from the radio altimeter transceiver-2 during the ground test.

B. Possible Causes

(1) Radio altimeter transceiver-1, M1735

(2) Radio altimeter transceiver-2, M1736

(3) Wiring problem

(4) Flight control computer A, M1875

(5) Flight control computer B, M1876

C. Related Data

(1) (SSM 22-11-16)

(2) (SSM 34-33-11)

(3) (SSM 34-33-21)

(4) (WDM 34-33-11)

(5) (WDM 34-33-21)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: Low Range Radio Altimeter (LRRA) BITE Procedure, 34-33 TASK 801.

(a) If there is a fault message, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message, then continue.

(2) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If there is a fault message, then continue.

(3) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If there is a fault message, then continue.

(4) If the maintenance message is on radio altimeter tranceiver-1, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

**HAP 031-054, 101-999**

(b) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

**HAP ALL**

(c) Remove the radio altimeter transceiver-1, M1735. To remove it, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Removal, AMM TASK 34-33-21-000-801.

(d) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D3667B at the E3-1 shelf (WDM 34-33-11).

| D10135B | | D3667B |
|---|---|---|
| pin B4 | - - - - - - - - - - - - - - - - - - | pin B2 |
| pin A4 | - - - - - - - - - - - - - - - - - - | pin B3 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999**

(e) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D3667B at the E3-1 shelf (WDM 34-33-11).

| D10137B | | D3667B |
|---|---|---|
| pin K11 | - - - - - - - - - - - - - - - - - | pin B2 |
| pin J11 | - - - - - - - - - - - - - - - - - | pin B3 |

**HAP ALL**

(f) If you find a problem with the wiring, then do this step:

1) Repair the wiring.

(g) Re-install radio altimeter transceiver-1, M1735. To install it, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Installation, AMM TASK 34-33-21-400-801.

(h) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

**HAP 031-054, 101-999**

(i) Re-install the FCC-B, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

**HAP ALL**

(j) Do the Repair Confirmation at the end of this task.

**HAP 031-054, 101-999**

1) If the maintenance message shows, then replace the FCC-A, M1875, or FCC-B, M1876, that was not replaced earlier in this task.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

**HAP ALL**

(5) If the maintenance message is on radio altimeter transceiver-2, then do this check of the wiring:

**HAP 031-054, 101-999**

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

**HAP ALL**

(b) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(c) Remove the radio altimeter transceiver-2, M1736. To remove it, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Removal, AMM TASK 34-33-21-000-801.

(d) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D3669B at the E3-2 shelf (WDM 34-33-21).

| D10137B | | D3669B |
|---|---|---|
| pin B4 | - - - - - - - - - - - - - - - - - | pin B2 |
| pin A4 | - - - - - - - - - - - - - - - - - | pin B3 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999**

(e) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D3669B at the E3-2 shelf (WDM 34-33-11).

| D10135B | | D3669B |
|---|---|---|
| pin K11 | - - - - - - - - - - - - - - - - - | pin B2 |
| pin J11 | - - - - - - - - - - - - - - - - - | pin B3 |

**HAP ALL**

(f) If you find a problem with the wiring, then do this step:

1) Repair the wiring.

(g) Re-install radio altimeter transceiver-2, M1736. To install it, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Installation, AMM TASK 34-33-21-400-801.

**HAP 031-054, 101-999**

(h) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

**HAP ALL**

(i) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(j) Do the Repair Confirmation at the end of this task.

**HAP 031-054, 101-999**

1) If the maintenance message shows, then replace the FCC-A, M1875, or FCC-B, M1876, that was not replaced earlier in this task.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

**HAP ALL**

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the LRRA test.

(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 806. ADIRU (IRU) - L Output Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) ADIRU(IRU)-1 (J1B-K03, K02)

(b) ADIRU(IRU)-1 (J1A-K03, K02)

(2) ADIR(IRU)-1 (J1B-K03, K02): The flight control computer A receives invalid data or no data from the ADIRU-L during the ground test.

(3) ADIR(IRU)-1 (J1A-K03, K02): The flight control computer B receives invalid data or no data from the ADIRU-L during the ground test.

B. Possible Causes

(1) ADIRU-L, M1749

(2) Wiring problem

(3) Flight control computer A (FCC-A), M1875

(4) Flight control computer B (FCC-B), M1876

C. Related Data

(1) (SSM 22-11-52)

(2) (SSM 34-21-13)

(3) (WDM 34-21-13)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) If there is a fault message, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the ADIRU-L, M1749. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D3687B at the E5-2 shelf (WDM 34-21-13).

| D10135B | | D3687B |
|---|---|---|
| pin K3 | - - - - - - - - - - - - - - - - - - | pin E5 |
| pin K2 | - - - - - - - - - - - - - - - - - - | pin E6 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.
3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the ADIRU-L, M1749. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D3687B at the E5-2 shelf (WDM 34-21-13).

| D10137A | | D3687B |
|---|---|---|
| pin K3 | - - - - - - - - - - - - - - - - - - | pin C10 |
| pin K2 | - - - - - - - - - - - - - - - - - - | pin C11 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.
3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

(4) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ADIRU test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**807. ADIRU(IRU)-R Output Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) ADIRU(IRU)-2 (J1A-K03, K02)

(b) ADIRU(IRU)-2 (J1B-K03, K02)

(2) ADIRU(IRU)-2 (J1A-K03, K02): The flight control computer A (FCC-A) receives invalid data or no data from the ADIRU-R during the ground test.

(3) ADIRU(IRU)-2 (J1B-K03, K02): The flight control computer B (FCC-B) receives invalid data or no data from the ADIRU-R during the ground test.

B. Possible Causes

(1) ADIRU-R, M1752

(2) Wiring problem

(3) Flight control computer A (FCC-A), M1875

(4) Flight control computer B (FCC-B), M1876

C. Related Data

(1) (SSM 22-11-52)

(2) (SSM 34-21-23)

(3) (WDM 34-21-23)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) If there is a fault message, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the ADIRU-R, M1752. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D3693B at the E5-2 shelf (WDM 34-21-23).

| D10135A | | D3693B |
|---|---|---|
| pin K3 | - - - - - - - - - - - - - - - - - - | pin C10 |
| pin K2 | - - - - - - - - - - - - - - - - - - | pin C11 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the ADIRU-R, M1752. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D3693B at the E5-2 shelf (WDM 34-21-23).

| D10137B | | D3693B |
|---|---|---|
| pin K3 | - - - - - - - - - - - - - - - - - - | pin E5 |
| pin K2 | - - - - - - - - - - - - - - - - - - | pin E6 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

(4) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ADIRU test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

## 808. MMR/ILS Receiver No. 1 Output Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) MMR/ILS RCVR-1 (J1B-H02, G02)

(b) MMR/ILS RCVR-1 (J1A-H02, G02)

(2) MMR/ILS RCVR-1 (J1B-H02, G02): The flight control computer A (FCC-A) receives invalid data or no data from the No. 1 instrument landing system receiver during the ground test.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) MMR/ILS RCVR-1 (J1A-H02, G02): The flight control computer B (FCC-B) receives invalid data or no data from the No. 1 instrument landing system receiver during the ground test.

B. Possible Causes

(1) MMR/ILS receiver M2104/M1728 (No. 1)

(2) Wiring problem

(3) Flight control computer A (FCC-A), M1875

(4) Flight control computer B (FCC-A), M1876

C. Related Data

(1) (SSM 22-11-16)

(2) (SSM 34-31-11)

(3) (WDM 34-31-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: ILS or Multi-Mode Receiver BITE Procedure, 34-31 TASK 801.

(a) If there is a fault message, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the MMR/ILS receiver, M2104/M1728 (No. 1). To remove it, do this task: Receiver for ILS - Removal, AMM TASK 34-31-42-000-801.

(c) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D10719B at the E1-2 shelf (WDM 34-31-11).

| D10135B | | D10719B |
|---|---|---|
| pin H2 | - - - - - - - - - - - - - - - - - - | pin A1 |
| pin G2 | - - - - - - - - - - - - - - - - - - | pin B1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the MMR/ILS receiver, M2104/M1728 (No. 1). To install it, do this task: Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the MMR/ILS receiver, M2104/M1728 (No. 1). To install it, do this task: Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the MMR/ILS receiver, M2104/M1728 (No. 1). To remove it, do this task: Receiver for ILS - Removal, AMM TASK 34-31-42-000-801.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D10719B at the E1-2 shelf (WDM 34-31-11).

| **D10137A** | | **D10719B** |
|---|---|---|
| pin H2 | - - - - - - - - - - - - - - - - - - | pin A1 |
| pin G2 | - - - - - - - - - - - - - - - - - - | pin B1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the MMR/ILS receiver, M2104/M1728 (No. 1). To install it, do this task: Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the MMR/ILS receiver, M2104/M1728 (No. 1). To install it, do this task: Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

(4) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Make the selection for the MMR/ILS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**809. MMR/ILS Receiver No. 2 Output Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) MMR/ILS RCVR-2 (J1A-H02, G02)

(b) MMR/ILS RCVR-2 (J1B-H02, G02)

(2) MMR/ILS RCVR-2 (J1A-H02, G02): The flight control computer A (FCC-A) receives invalid data or no data from the No. 2 instrument landing system receiver during the ground test.

(3) MMR/ILS RCVR-2 (J1B-H02, G02): The flight control computer B (FCC-B) receives invalid data or no data from the No. 2 instrument landing system receiver during the ground test.

B. Possible Causes

(1) MMR/ILS receiver, M2105/M1729 (No. 2)

(2) Wiring problem

(3) Flight control computer A (FCC-A), M1875

(4) Flight control computer B (FCC-B), M1876

C. Related Data

(1) (SSM 22-11-16)

(2) (SSM 34-31-21)

(3) (WDM 34-31-21)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: ILS or Multi-Mode Receiver BITE Procedure, 34-31 TASK 801.

(a) If there is a fault message, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the MMR/ILS receiver, M2105/M1729 (No. 2). To remove it, do this task: Receiver for ILS - Removal, AMM TASK 34-31-42-000-801.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D10721B at the E1-4 shelf (WDM 34-31-21).

| D10135A | | D10721B |
|---|---|---|
| pin H2 | - - - - - - - - - - - - - - - - - - | pin A1 |
| pin G2 | - - - - - - - - - - - - - - - - - - | pin B1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the MMR/ILS receiver, M2105/M1729 (No. 2). To install it, do this task: Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the MMR/ILS receiver, M2105/M1729 (No. 2). To install it, do this task: Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the MMR/ILS receiver, M2105/M1729 (No. 2). To remove it, do this task: Receiver for ILS - Removal, AMM TASK 34-31-42-000-801.

(c) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D10721B at the E1-4 shelf (WDM 34-31-21).

| D10137B | | D10721B |
|---|---|---|
| pin H2 | - - - - - - - - - - - - - - - - - - | pin A1 |
| pin G2 | - - - - - - - - - - - - - - - - - - | pin B1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the MMR/ILS receiver, M2105/M1729 (No. 2). To install it, do this task: Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the MMR/ILS receiver, M2105/M1729 (No. 2). To install it, do this task: Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

(4) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the MMR/ILS test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**810. ADIRU(ADC) Output Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) ADIRU(ADC)-1 (J1B-E04, D04)

(b) ADIRU(ADC)-2 (J1B-E04, D04)

(2) ADIRU(ADC)-1 (J1B-E04, D04): The flight control computer A (FCC-A) receives invalid data or no data from the ADIRU-L during the ground test.

(3) ADIRU(ADC)-2 (J1B-E04, D04): The flight control computer B (FCC-B) receives invalid data or no data from the ADIRU-R during the ground test.

B. Possible Causes

(1) ADIRU-L, M1749

(2) ADIRU-R, M1752

(3) Wiring problem

(4) Flight control computer A (FCC-A), M1875

(5) Flight control computer B (FCC-B), M1876

C. Related Data

(1) (SSM 22-11-52)

(2) (SSM 34-21-14)


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) (SSM 34-21-24)

(4) (WDM 34-21-14)

(5) (WDM 34-21-24)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) If there is a fault message, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the ADIRU-L, M1749. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D3687A at the E5-2 shelf (WDM 34-21-14).

| D10135B | | D3687A |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin A3 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin B3 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the ADIRU-R, M1752. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D3693A at the E5-2 shelf (WDM 34-21-24).

| D10137B | | D3693A |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin A3 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin B3 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

(4) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ADIRU test.

(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 811. Flight Management Computer (FMC-1) Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FMC-1 (J1A-E04, D04)

(b) FMC (J1A-E04, D04)

NOTE: Use this FIM task when you see this message and the FMC source select switch is in the BOTH ON L position. Go to the FIM task for FMC-2 problems if you see this message and the FMC source select switch is in the BOTH ON R position.

(c) FMC (NO FMC REQ) (J1A-E04, D04)

NOTE: Use this FIM task when you see this message and the FMC source select switch is in the BOTH ON L position. Go to the FIM task for FMC-2 problems if you see this message and the FMC source select switch is in the BOTH ON R position.

(2) The flight control computer A (FCC-A) or FCC-B receives invalid data or no data from the No. 1 flight management computer during the ground test.

B. Possible Causes

(1) Flight management computer (FMC-1), M1175

(2) Wiring problem

(3) Flight control computer A (FCC-A), M1875

(4) Flight control computer B (FCC-B), M1876

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| A | 6 | C01017 | FMCS CMPTR 1 |

D. Related Data

(1) (SSM 22-11-52)

(2) (SSM 34-61-14)

(3) (WDM 34-61-14)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F. Fault Isolation Procedure

(1) Do this check on the FMC:

(a) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| A | 6 | C01017 | FMCS CMPTR 1 |

(b) Make sure that the FMC VALID light on the front panel of the FMC comes on.

(c) If the FMC VALID light on the front panel of the FMC does not come on, then do these steps:

1) Replace the FMC-1, M1175.

These are the tasks:

FMCS Computer Removal, AMM TASK 34-61-02-000-801,

FMCS Computer Installation, AMM TASK 34-61-02-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the FMC VALID light on the front panel of the FMC comes on, then continue.

(2) Do this task: Flight Management Computer System BITE Procedure, 34-61 TASK 801.

(a) If there is a fault message for the FMC, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message for the FMC, then continue.

(3) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the FMC-1, M1175. To remove it, do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801.

(c) Make sure that the FMCS transfer switch on the P5 panel is in the BOTH ON L or NORM position.

(d) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D2179A at the E5-2 shelf (WDM 34-61-14).

| **D10135A** | | **D2179A** |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin G9 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin H9 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FMC-1, M1175. To install it, do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install the FMC-1, M1175. To install it, do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801.

(4) If the maintenance message is on channel B, then do this check of the wiring:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the FMC-1, M1175. To remove it, do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801.

(c) Make sure that the FMCS transfer switch on the P5 panel is in the BOTH ON L or NORM position.

(d) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D2179A at the E5-2 shelf (WDM 34-61-14).

| D10137A | | D2179A |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin G9 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin H9 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FMC-1, M1175. To install it, do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install the FMC-1, M1175. To install it, do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801.

(5) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(6) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FMC test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 037-054, 101-999**

## 812. Flight Management Computer (FMC-2) Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FMC-2 (J1A-E04, D04)

(b) FMC (J1A-E04, D04)

(c) FMC (NO FMC REQ) (J1A-E04, D04)

(2) The flight control computer A (FCC-A) or FCC-B receives invalid data or no data from the No. 2 flight management computer during the ground test.

B. Possible Causes

(1) Flight management computer (FMC-2), M1632

(2) Wiring problem

(3) Flight control computer A (FCC-A), M1875

(4) Flight control computer B (FCC-B), M1876

C. Related Data

(1) (SSM 22-11-52)

(2) (SSM 34-61-14)

(3) (WDM 34-61-14)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: Flight Management Computer System BITE Procedure, 34-61 TASK 801.

(a) If there is a fault message for FMC-2, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message for FMC-2, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Remove FMC-2, M1632. To remove it, do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801.

(c) Make sure that the FMCS transfer switch on the P5 panel is in the BOTH ON R or NORM position.

(d) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D3261A at the E5-2 shelf (WDM 34-61-14).

| D10135A | | D3261A |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin G9 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin H9 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FMC-2, M1632. To install it, do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then do this step:

1) Re-install the FMC-2, M1632. To install it, do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove FMC-2, M1632. To remove it, do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801.

(c) Make sure that the FMCS transfer switch on the P5 panel is in the BOTH ON R or NORM position.

(d) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D3261A at the E5-2 shelf (WDM 34-61-14).

| D10137A | | D3261A |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin G9 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin H9 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FMC-2, M1632. To install it, do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801.

3) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install FMC-2, M1632. To install it, do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801.

(4) If the maintenance message is on channel A, then replace the FCC-A, M1875.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 037-054, 101-999 (Continued)**

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FMC test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**HAP 001-013, 015-026, 028-030**

**813. A/T Computer Output Problem - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) A/T CMPTR (J1A-B04,A04)

(2) The flight control computer A (FCC-A) or FCC-B receives invalid data or no data from the autothrottle (A/T) computer during the ground test.

B. Possible Causes

(1) Autothrottle computer, M917

(2) Wiring problem

(3) Flight control computer A (FCC-A), M1875

(4) Flight control computer B (FCC-B), M1876

C. Related Data

(1) (SSM 22-31-52)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) (WDM 22-31-52)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If the maintenance message A/T shows on the CURRENT STATUS page, then do the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

2) If the Repair Confirmation is not OK, then continue.

(b) If the maintenance message A/T does not show on the CURRENT STATUS page, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the A/T computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D10009A at the E1-1 shelf (WDM 22-31-52).

| D10135A | | D10009A |
|---|---|---|
| pin B4 | - - - - - - - - - - - - - - - - - - | pin C10 |
| pin A4 | - - - - - - - - - - - - - - - - - - | pin D10 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the A/T computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

(f) Re-install the A/T computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Remove the A/T computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D10009A at the E1-1 shelf (WDM 22-31-52).

| D10137A | | D10009A |
|---|---|---|
| pin B4 | - - - - - - - - - - - - - - - - - - | pin C10 |
| pin A4 | - - - - - - - - - - - - - - - - - - | pin D10 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the A/T computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

(f) Re-install the A/T computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

(4) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the A/T test.

(c) If the maintenance message does not show, then you corrected the fault.

**HAP ALL**

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 816. Mode Control Panel Internal Problem - Fault Isolation

A. Description

(1) This task is for maintenance message: MCP

(2) The mode control panel has an internal problem.

B. Possible Causes

(1) Mode Control Panel, M198

(2) Flight control computer A (FCC-A), M1875.

(3) Flight control computer B (FCC-B), M1876.

C. Initial Evaluation

(1) Do this task: Mode Control Panel Tests, 22-11 TASK 803.

(a) Make the selection for the channel A or B.

(b) Make the selection for the MCP TESTS.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Replace the mode control panel.

These are the tasks:

DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801,

DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not OK, then continue.

(2) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(3) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

E. Repair Confirmation

(1) Do this task: Mode Control Panel Tests, 22-11 TASK 803.

(a) Make the selection for the channel A or B.

(b) Make the selection for the MCP TESTS.

(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 817. Mode Control Panel Problem - Fault Isolation

A. Description

(1) This task is for maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) MCP (J1A-K06, J06)

(b) MCP (J1A-B01)

(c) MCP (J1A-H01)

(d) MCP (J1B-D01)

(e) MCP (J1B-B01)

(f) MCP (J1B-H01)

(g) MCP (J1B-F13)

(h) MCP (J1A-A06, B06)

(i) MCP (J1A-F13)

(j) MCP (J1A-K14, H14)

(k) MCP (J1A-F01)

(l) MCP (J1B-F01)

(m) MCP (A/P ENGAGED) J1B-H01

(n) MCP (A/P ENGAGED) J1A-H01

(2) The flight control computer A (FCC-A) or FCC-B receives incorrect data from the mode control panel during the ground test.

B. Possible Causes

(1) Mode control panel, M198

(2) Flight control computer A (FCC-A), M1875.

(3) Flight control computer B (FCC-B), M1876.

(4) Wiring problem

C. Related Data

(1) (SSM 22-11-11)

(2) (SSM 22-11-31)

(3) (SSM 22-12-31)

(4) (SSM 22-12-41)

(5) (SSM 22-11-51)

(6) (WDM 22-11-11)

(7) (WDM 22-11-31)

(8) (WDM 22-12-31)

(9) (WDM 22-12-41)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(10) (WDM 22-11-51)

D. Initial Evaluation

(1) Do this task: Mode Control Panel Tests, 22-11 TASK 803.

(a) Make the selection for the channels A and B.

(b) Make the selection for the MCP TESTS.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Replace the mode control panel.

These are the tasks:

DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801,

DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(2) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) In the list below, find the pin numbers and connectors of the FCC-A or FCC-B and the MCP for the applicable maintenance message.

NOTE: This data will be used for the wiring check in the next step.

| MAINT MESSAGE | FCC | | MCP | WDM REFERENCE |
|---|---|---|---|---|
| MCP (J1A-K06, J06) | FCC-A (M1875) | | MCP (M198) | WDM 22-11-51 |
| | D10135A | | D299 | |
| | pin K06 | – | pin 18 | |
| | pin J06 | – | pin 17 | |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| MAINT MESSAGE | FCC | | MCP | WDM REFERENCE |
|---|---|---|---|---|
| | FCC-B (M1876) | | MCP (M198) | WDM 22-11-51 |
| | D10137A | | D1815 | |
| | pin K06 | – | pin 18 | |
| | pin J06 | – | pin 17 | |
| MCP (J1A-B01) | FCC-A (M1875) | | MCP (M198) | WDM 22-11-11 |
| | D10135A | | D1815 | |
| | pin B1 | – | pin 37 | |
| | FCC-B (M1876) | | MCP (M198) | WDM 22-11-11 |
| | D10137A | | D299 | |
| | pin B1 | – | pin 37 | |
| MCP (J1A-H01) OR | FCC-A (M1875) | | MCP (M198) | WDM 22-11-11 |
| | D10135A | | D1815 | |
| | pin H1 | – | pin 43 | |
| MCP (A/P ENGAGED) J1A-H01 | FCC-B (M1876) | | MCP (M198) | WDM 22-11-11 |
| | D10137A | | D299 | |
| | pin H1 | – | pin 43 | |
| MCP (J1B-D01) | FCC-A (M1875) | | MCP (M198) | WDM 22-11-11 |
| | D10135B | | D299 | |
| | pin D1 | – | pin 34 | |
| | FCC-B (M1876) | | MCP (M198) | WDM 22-11-11 |
| | D10137B | | D1815 | |
| | pin D1 | – | pin 34 | |
| MCP (J1B-B01) | FCC-A (M1875) | | MCP (M198) | WDM 22-11-11 |
| | D10135B | | D299 | |
| | pin B1 | – | pin 37 | |
| | FCC-B (M1876) | | MCP (M198) | WDM 22-11-11 |
| | D10137B | | D1815 | |
| | pin B1 | – | pin 37 | |
| MCP (J1B-H01) OR | FCC-A (M1875) | | MCP (M198) | WDM 22-11-11 |
| | D10135B | | D299 | |
| | pin H1 | – | pin 43 | |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| MAINT MESSAGE | FCC | | MCP | WDM REFERENCE |
|---|---|---|---|---|
| MCP (A/P ENGAGED) J1B-H01 | FCC-B (M1876) | | MCP (M198) | WDM 22-11-11 |
| | D10137B | | D1815 | |
| | pin H1 | – | pin 43 | |
| MCP3 (J1B-F13) | FCC-A (M1875) | | MCP (M198) | WDM 22-11-31 |
| | D10135B | | D299 | |
| | pin F13 | – | pin 4 | |
| | FCC-B (M1876) | | MCP (M198) | WDM 22-11-31 |
| | D10137B | | D1815 | |
| | pin F13 | – | pin 4 | |
| MCP (J1A-A06, B06) | FCC-A (M1875) | | MCP (M198) | WDM 22-11-51 |
| | D10135A | | D299 | |
| | pin A6 | – | pin 32 | |
| | pin B6 | – | pin 33 | |
| | FCC-B (M1876) | | MCP (M198) | WDM 22-11-51 |
| | D10137A | | D1815 | |
| | pin A6 | – | pin 32 | |
| | pin B6 | – | pin 33 | |
| MCP (J1A-F13) | FCC-A (M1875) D10135A | | MCP (M198) D299 | WDM 22-12-31 |
| | pin F13 | – | pin 16 | |
| | FCC-B (M1876) | | MCP (M198) | WDM 22-12-41 |
| | D10137A | | D1815 | |
| | pin F13 | – | pin 16 | |
| MCP (J1A-K14, H14) | FCC-A (M1875) | | MCP (M198) | WDM 22-11-11 |
| | D10135A | | D299 | |
| | pin K14 | – | pin 52 | |
| | pin H14 | – | pin 28 | |
| | FCC-B (M1876) | | MCP (M198) | WDM 22-11-11 |
| | D10137A | | D1815 | |
| | pin K14 | – | pin 52 | |
| | pin H14 | – | pin 28 | |
| MCP (J1A-F01) | FCC-A (M1875) | | MCP (M198) | WDM 22-11-11 |
| | D10135A | | D1815 | |
| | pin F1 | – | pin 23 | |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| MAINT MESSAGE | FCC | | MCP | WDM REFERENCE |
|---|---|---|---|---|
| | FCC-B (M1876) | | MCP (M198) | WDM 22-11-11 |
| | D10137A | | D299 | |
| | pin F1 | – | pin 23 | |
| MCP (J1B-F01) | FCC-A (M1875) | | MCP (M198) | WDM 22-11-11 |
| | D10135B | | D299 | |
| | pin F1 | – | pin 23 | |
| | FCC-B (M1876) | | MCP (M198) | WDM 22-11-11 |
| | D10137B | | D1815 | |
| | pin F1 | – | pin 23 | |

(5) Do this check of the wiring:

(a) Remove the MCP, M198. To remove it, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801.

(b) Remove the applicable FCC, M1875 or M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(c) Do a wiring check between the specified pins of the MCP connectors and the applicable FCC connectors.

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

3) Re-install the applicable FCC, M1875 or M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do this task: Mode Control Panel Tests, 22-11 TASK 803.

(a) Make the selection for the channels A and B.

(b) Make the selection for the MCP TESTS.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**820. FCC Exchange Check**

A. General

(1) This task is used to exchange locations of the A and B FCCs and is intended to be used together with the fault isolation procedures.

B. Procedure

(1) If the maintenance message is on channel A, then do this exchange check FCC-A:

(a) Put a tag that reads "SUSPECT" on the FCC-A, M1875.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Put a tag that reads "OK" on the FCC-B, M1876.

(c) Exchange the locations of the FCC-A, M1875 and the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

NOTE: Make sure you do the installation test for each FCC.

(d) For each FCC, do the Repair Confirmation at the end of the fault isolation task, for the applicable maintenance message.

(e) If the Repair Confirmation is satisfactory for the FCC-A and FCC-B, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the FCC-A, M1875 location or in the FCC tagged "SUSPECT".

1) If it is your airline's policy, return the FCCs to their original locations.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

NOTE: The FCC tagged "OK" goes in the FCC-B, M1876 rack location. The FCC tagged "SUSPECT" goes in the FCC-A, M1875 rack location.

2) Remove the tags from the FCCs.

(f) If the Repair Confirmation is satisfactory for the FCC-A, and the Repair Confirmation is not satisfactory for the FCC-B, then do these steps:

1) Replace the FCC tagged "SUSPECT".

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

NOTE: If it is your airline's policy, you must return the FCC tagged "OK" to its original location.

2) Do the Repair Confirmation at the end of the fault isolation task for the applicable maintenance message.

3) Remove the tags from the FCCs.

(g) If the Repair Confirmation is not satisfactory for the FCC-A, and the Repair Confirmation is satisfactory for the FCC-B, then continue.

NOTE: The fault is not in the FCC tagged "SUSPECT".

1) If it is your airline's policy, return the FCCs to their original locations.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

NOTE: The FCC tagged "OK" goes in the FCC-A, M1875 rack location. The FCC tagged "SUSPECT" goes in the FCC-B, M1876 rack location.

2) Remove the tags from the FCCs.

3) Continue with the fault isolation procedure for the applicable maintenance message.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) If the maintenance message is on channel B, do this exchange check FCC-B:

(a) Put a tag that reads "SUSPECT" on the FCC-B, M1876.

(b) Put a tag that reads "OK" on the FCC-A, M1875.

(c) Exchange the locations of the FCC-A, M1875 and the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

NOTE: Make sure you do the installation test for each FCC.

(d) For each FCC, do the Repair Confirmation at the end of the fault isolation task for the applicable maintenance message.

(e) If the Repair Confirmation is satisfactory for the FCC-A and FCC-B, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the FCC-A, M1875 location or in the FCC tagged "SUSPECT".

1) If it is your airline's policy, return the FCCs to their original locations.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

NOTE: The FCC tagged "OK" goes in the FCC-A, M1875 rack location. The FCC tagged "SUSPECT" goes in the FCC-B, M1876 rack location.

2) Remove the tags from the FCCs.

(f) If the Repair Confirmation is satisfactory for the FCC-B, and the Repair Confirmation is not satisfactory for the FCC-A, then do these steps:

1) Replace the FCC tagged "SUSPECT".

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

NOTE: If it is your airline's policy, you must return the FCC tagged "OK" to its original location.

2) Do the Repair Confirmation at the end of the fault isolation task.

3) Remove the tags from the FCCs.

(g) If the Repair Confirmation is not satisfactory for the FCC-A, and the Repair Confirmation is satisfactory for the FCC-B, then do these steps:

NOTE: The fault is not in the FCC tagged "SUSPECT".

1) If it is your airline's policy, return the FCCs to their original locations.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

NOTE: The FCC tagged "OK" goes in the FCC-A, M1875 rack location. The FCC tagged "SUSPECT" goes in the FCC-B, M1876 rack location.

2) Remove the tags from the FCCs.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Continue with the fault isolation procedure for the applicable maintenance message.

—————— END OF TASK ——————

**821. Stab Trim Servo Loop Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) STAB TRIM SERVO (J1A-A12)

(b) STAB TRIM SERVO (J1A-A13)

(c) STAB TRIM SERVO

(d) COL SW MODULE M1201

(2) The FCC detects a problem with the stab trim servo motor and stab position sensor loop.

B. Possible Causes

(1) Stabilizer position sensor, M1192

(2) Stabilizer trim motor, M1659

(3) Stab nose down limit switch, S145

(4) Stab trim cutout relay, R384

(5) Column switching module, M1201

(6) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(7) Wiring problem

C. Related Data

(1) (SSM 22-12-31)

(2) (WDM 22-12-31)

(3) (SSM 22-13-11)

(4) (WDM 22-13-11)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the STAB SENS test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the fault is not in the FCC, and the maintenance message still shows, continue.

(2) Do this task: Stabilizer Position Sensor Problem - Fault Isolation, 22-12 TASK 803.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If the maintenance message is not shown on the CDU, continue.

(3) Do this task: FCC, Stab Trim Up Problem - Fault Isolation, 22-15 TASK 819.

(a) Do the Repair Confirmation at the end of this task.

(4) Do this task: FCC, Stab Trim Down Problem - Fault Isolation, 22-15 TASK 818.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the STAB SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**

**822. Flaps Down Speed Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) STAB TRIM SERVO (J1A-A03)

(2) The FCC does not receive the flap down stab trim speed signal from the stab trim servo motor during the ground test.

B. Possible Causes

(1) Stabilizer trim servo motor, M1659

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Related Data

(1) (SSM 22-13-11)

(2) (WDM 22-13-11)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the STAB SENS test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message is shown, continue.

(2) Do this check for power at the servo motor, M1659:

(a) Disconnect connector D381 from the servo motor, M1659.

(b) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

(c) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(d) Do a check for 28 VDC between pin 14 of connector D381 and structure ground.

(e) If you do not find 28 VDC at pin 14, do these steps:

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Do a wiring check between these pins of connector D381 at servo motor and shelf and connector D2209A at the E1-1 shelf (WDM 22-13-11).

| D381 | | D2209A |
|---|---|---|
| pin 14 | - - - - - - - - - - - - - - - - - - | pin 2 |

4) If you find a problem with the wiring, do these steps:

a) Repair the wiring.

b) Do the Repair Confirmation at the end of this task.

5) If you did not find a problem with the wiring, replace the IFSAU, M1474.

These are the tasks:

Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801,

Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

a) Do the Repair Confirmation at the end of this task.

(f) If you found 28 VDC at pin 14, continue.

(3) If the maintenance message is on channel A, then do this check of the wiring between the FCC-A and the stab trim servo motor:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the servo motor. To remove it, do this task: Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801.

(c) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D381 at the servo motor (WDM 22-13-11):


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10135C | | D381 |
|---|---|---|
| pin A03 | - - - - - - - - - - - - - - - - - | pin 13 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the servo motor. To install it, do this task: Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the servo motor. To install it, do this task: Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801.

2) Install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the Repair Confirmation at the end of this task.

(4) If the maintenance message is on channel B, then do this check of the wiring between the FCC-B and the column switching module:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the column switching module, M1201. To remove it, do this task: Column Cutout Switch Removal, AMM TASK 27-41-51-000-801.

(c) Remove the servo motor. To remove it, do this task: Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801.

(d) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D2257 at STAB 206, WL 200, RBL 15 (WDM 22-13-11):

| D10137C | | D381 |
|---|---|---|
| pin A03 | - - - - - - - - - - - - - - - - - | pin 13 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the servo motor. To install it, do this task: Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Re-install the servo motor. To install it, do this task: Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801.

a) Do the Repair Confirmation at the end of this task.

(5) Replace the stabilizer trim motor, M1659.

These are the tasks:

Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801,



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the STAB SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**823. Alpha Vane-1 Output Problems - Fault Isolation**

A. Description

(1) This task is for maintenance message: ALPHA VANE-1.

(2) The flight control computer A (FCC-A) receives invalid data or no data for angle of attack from the ADIRU-L. The left angle of attack sensor is ALPHA VANE-1.

B. Possible Causes

(1) Angle of Attack Left Sensor (AOA-L), T433

(2) Air Data Inertial Reference Unit Left (ADIRU-L), M1749

(3) Flight Control Computer A (FCC-A), M1875

(4) Wiring Problem

C. Related Data

(1) (SSM 22-11-52)

(2) (SSM 34-21-12)

(3) (SSM 34-21-14)

(4) (WDM 34-21-12)

(5) (WDM 34-21-14)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for channel A.

(b) Make the selection for the ADIRU test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Replace the left angle of attack sensor, T433.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

These are the tasks:

Angle of Attack Sensor Removal, AMM TASK 34-21-05-000-801,

Angle of Attack Sensor Installation, AMM TASK 34-21-05-400-801.

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for channel A.

2) Make the selection for the ADIRU test.

(c) If the maintenance message does not show, then you corrected the fault.

(d) If the maintenance message shows, then continue.

(2) Do this check of the ADIRU. To do the check, do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) Do the FIM tasks for the maintenance messages shown.

(b) Do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for channel A.

2) Make the selection for the ADIRU test.

3) If the maintenance message does not show, then you corrected the fault.

4) If the maintenance message shows, then continue.

(3) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(4) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the ADIRU-L, M1749. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(b) Disconnect connector D10015 from the AOA-L Sensor, T433.

(c) Do a wiring check between these pins of connector D3687A at the E5-2 shelf and connector D10015 of the AOA-L Sensor, T433 (WDM 34-21-12).

| D3687A | | D10015 |
|---|---|---|
| pin J7 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin H7 | - - - - - - - - - - - - - - - - - - | pin 4 |
| pin K7 | - - - - - - - - - - - - - - - - - - | pin 5 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-connect the connector D10015 to the AOA-L Sensor, T433.

4) Do this task: LRU Replacement Test, 22-11 TASK 802.

a) Make the selection for the channel A.

b) Make the selection for the ADIRU test.

c) If the maintenance message does not show, then you corrected the fault.

d) If the maintenance message shows, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D10015 to the AOA-L Sensor, T433.

2) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(f) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D3687A at the E5-2 shelf (WDM 34-21-14).

| D10135B | | D3687A |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin A3 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin B3 |

(g) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do this task: LRU Replacement Test, 22-11 TASK 802.

a) Make the selection for the channel A.

b) Make the selection for the ADIRU test.

c) If the maintenance message does not show, then you corrected the fault.

d) If the maintenance message shows, then continue.

(h) If you do not find a problem with the wiring, then there was an intermittent fault.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ADIRU test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

## 824. Alpha Vane-2 Output Problems - Fault Isolation

A. Description

(1) This task is for maintenance message: ALPHA VANE-2.

(2) The flight control computer B (FCC-B) receives invalid data or no data for angle of attack from the ADIRU-R. The right angle of attack sensor is ALPHA VANE-2.

B. Possible Causes

(1) Angle of Attack Right Sensor (AOA-R), T437

(2) Air Data Inertial Reference Unit Right (ADIRU-R), M1752

(3) Flight Control Computer B (FCC-B), M1876



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(4) Wiring Problem

C. Related Data

(1) (SSM 22-11-52)

(2) (SSM 34-21-22)

(3) (SSM 34-21-24)

(4) (WDM 34-21-22)

(5) (WDM 34-21-24)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for channel B.

(b) Make the selection for the ADIRU test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Replace the right angle of attack sensor, T437.

These are the tasks:

Angle of Attack Sensor Removal, AMM TASK 34-21-05-000-801,

Angle of Attack Sensor Installation, AMM TASK 34-21-05-400-801.

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for channel B.

2) Make the selection for the ADIRU test.

(c) If the maintenance message does not show, then you corrected the fault.

(d) If the maintenance message shows, then continue.

(2) Do this check of the ADIRU. To do the check, do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) Do the FIM tasks for the maintenance messages shown.

(b) Do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channel B.

2) Make the selection for the ADIRU test.

3) If the maintenance message does not show, then you corrected the fault.

4) If the maintenance message shows, then continue.

(3) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(4) If the maintenance message is on channel B, then do this check of the wiring:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Remove the ADIRU-R, M1752. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(b) Disconnect connector D10017 from the AOA-R Sensor, T437.

(c) Do a wiring check between these pins of connector D3693A at the E5-2 shelf and connector D10017 of the AOA-R Sensor, T437 (WDM 34-21-12).

| D3693A | | D10017 |
|---|---|---|
| pin H7 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin J7 | - - - - - - - - - - - - - - - - - - | pin 4 |
| pin K7 | - - - - - - - - - - - - - - - - - - | pin 5 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-connect the connector D10017 to the AOA-R Sensor, T437.

4) Do this task: LRU Replacement Test, 22-11 TASK 802.

a) Make the selection for the channel B.

b) Make the selection for the ADIRU test.

c) If the maintenance message does not show, then you corrected the fault.

d) If the maintenance message shows, then continue.

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D10017 to the AOA-R Sensor, T437.

2) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(f) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D3693A at the E5-2 shelf (WDM 34-21-24).

| D10137B | | D3693A |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin A3 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin B3 |

(g) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do this task: LRU Replacement Test, 22-11 TASK 802.

a) Make the selection for the channel B.

b) Make the selection for the ADIRU test.

c) If the maintenance message does not show, then you corrected the fault.

d) If the maintenance message shows, then continue.

(h) If you do not find a problem with the wiring, then there was an intermittent fault.

F. Repair Confirmation

(1) Do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ADIRU test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**825. Airplane Alignment Problems During Autoland Approach - Fault Isolation**

A. Description

(1) This task is for fault code 221 960 00.

(2) The airplane is not aligned properly with the runway during an autoland. The localizer was not biased out of view, and the autopilot did not disconnect.

B. Possible Causes

(1) A line replaceable unit (LRU) that has an interface with the digital flight control system (DFCS).

(2) Conditions external to the airplane.

C. Fault Isolation Procedure

(1) Do this task: Land Verify Test, AMM TASK 22-11-00-700-801.

(2) Do these steps:

(a) If a maintenance message shows, refer to the 22-Maintenance Message Index to find the applicable fault isolation task.

1) Do the fault isolation task.

(b) If a maintenance message does not show, then there was one of these:

1) An intermittant fault.

2) An airplane alignment problem caused by conditions external to the airplane.

NOTE: If the problem occurs on the next flight, it may be caused by conditions external to the airplane. If you think it is necessary, download the data from the flight data recorder to examine the problem in more detail. To download the data from the flight data recorder, (AMM TASK 31-31-00-970-803).

D. Repair Confirmation

(1) Do this task: Land Verify Test, AMM TASK 22-11-00-700-801.

(2) If no maintenance messages show, then you corrected the fault.

**——————— END OF TASK ———————**

**826. Master FCC cannot enter BITE**

A. Description

(1) The following message is displayed on the CDU whenever the FCC is unable to enter BITE:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) DFCS BITE INOP CHECK FCC OR INTERFACE

NOTE: The DFCS BITE INOP - CHECK FCC OR INTERFACE message may only appear momentarily.

B. Possible Causes

(1) FCC-A

(2) FCC-B

(3) FMC

(4) MCP

(5) Wiring

C. Related Data

(1) SSM 22-11-51

(2) SSM 22-11-52

(3) WDM 22-11-51

D. Initial Evaluation

(1) Do the DFCS BITE test on the CDU:

(a) Push the INIT/REF pushbutton on the CDU.

(b) Push the CDU LSK 6R next to the MAINT prompt.

(c) Push the CDU LSK 2L from the Maint BITE Index screen. The FMC sends a request to the FCC to enter DFCS BITE mode.

(2) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message shows on the CDU, then do these steps:

NOTE: The DFCS BITE INOP - CHECK FCC OR INTERFACE message may only appear momentarily.

(2) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

(a) Do the DFCS BITE test on the CDU.

(b) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message shows on the CDU, then do the Fault Isolation Procedure for FCC-A.

NOTE: The DFCS BITE INOP - CHECK FCC OR INTERFACE message may only appear momentarily.

(3) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |
| D | 2 | C01045 | AFCS SYS A FCC DC |

(a) Do the DFCS BITE test on the CDU

(b) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message shows on the the CDU, then do the Fault Isolation Procedure - FCC-B.

NOTE: The DFCS BITE INOP - CHECK FCC OR INTERFACE message may only appear momentarily.

(4) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |
| D | 2 | C01045 | AFCS SYS A FCC DC |

(5) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message does not show on the CDU and you are able to enter BITE, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Fault Isolation - FCC-A:

(2) Do the wiring check between the FMC-1, M1175 and FCC-A, M1875:

(a) Remove the FCC-A, M1875. Do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801

(b) Remove the FMC-1, M1175. Do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801

(c) Do the following continuity check:

| **FMC-1** | | **FCC-A** |
|---|---|---|
| **D2179A** | | **D10135A** |
| G9 | - - - - - - - - - - - - - - - - - - - - | E4 |
| H9 | - - - - - - - - - - - - - - - - - - - - | D4 |

(3) If you find a problem with wiring, then do these steps:

(a) Repair the wiring.

(b) Re-install the FCC-A, M1875. Do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801

(c) Re-install the FMC-1, M1175. Do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801

(d) Do the DFCS BITE test on the CDU.

(e) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message does not show on the CDU, then you corrected the fault.

(f) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message shows on the CDU, then continue.

NOTE: The DFCS BITE INOP - CHECK FCC OR INTERFACE message may only appear momentarily.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(4) Do the wiring check between the mode control panel (MCP), M198, and FMCs:

(a) Remove the MCP, M198. Do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801

(b) Remove the FMC-1, M1175. Do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801

(c) Remove the FMC-2, M1632. Do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801

(d) Do the following continuity check:

| **M198** | | **M1175** |
|---|---|---|
| **D301** | | **D2179A** |
| pin 2 | - - - - - - - - - - - - - - - - - - | pin G7 |
| pin 1 | - - - - - - - - - - - - - - - - - - | pin H7 |

| **M198** | | **M1632** |
|---|---|---|
| **D301** | | **D3261A** |
| pin 2 | - - - - - - - - - - - - - - - - - - | pin G7 |
| pin 1 | - - - - - - - - - - - - - - - - - - | pin H7 |

(5) If you find a problem with wiring, then do these steps:

(a) Repair the wiring.

(b) Re-install the MCP, M198. Do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801

(c) Re-install the FMC-1, M1175. Do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801

(d) Re-install the FMC-2, M1632. Do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801

(e) Do the DFCS BITE test on the CDU.

(f) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message does not show on the CDU, then you corrected the fault.

(g) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message shows on the CDU, then continue.

NOTE: The DFCS BITE INOP - CHECK FCC OR INTERFACE message may only appear momentarily.

(6) Do the wiring check between FCC-A, M1875, and MCP, M198

(a) Remove FCC-A, M1875. Do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801

(b) Remove MCP, M198. Do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801

(c) Do the following continuity check:

| **M1875** | | **M198** |
|---|---|---|
| **D10135A** | | **D299** |
| pin B6 | - - - - - - - - - - - - - - - - - - | pin 33 |
| pin A6 | - - - - - - - - - - - - - - - - - - | pin 32 |

(7) If you find the a problem with the wiring, then do these steps:

(a) Repair the wiring.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Re-install the FCC-A, M1875. Do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801

(c) Re-install the MCP, M198. Do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801

(d) Do the DFCS BITE test on the CDU.

(e) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message does not show on the CDU, then you corrected the fault.

(f) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message shows on the CDU, then continue.

NOTE: The DFCS BITE INOP - CHECK FCC OR INTERFACE message may only appear momentarily.

(8) Do the following task: FCC, Squat Switch Problem - Fault Isolation, 22-15 TASK 815

(a) Do the DFCS BITE test on the CDU.

(b) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message does not show on the CDU and you are able to enter BITE, then you corrected the fault.

(9) Fault Isolation - FCC-B:

(10) Do the wiring check between the FMC-1, M1175 and FCC-B, M1876:

(a) Remove the FCC-B, M1876. Do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801

(b) Remove the FMC-1, M1175. Do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801

(c) Do the following continuity check:

| **M1175** | | **M1876** |
|---|---|---|
| **D2179A** | | **D10137A** |
| pin G9 | - - - - - - - - - - - - - - - - - - | pin E4 |
| pin H9 | - - - - - - - - - - - - - - - - - - | pin D4 |

(11) If you find a problem with wiring, then do these steps:

(a) Repair the wiring.

(b) Re-install the FCC-B, M1876. Do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801

(c) Re-install the FMC-1, M1175. Do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801

(d) Do the DFCS BITE test on the CDU.

(e) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message does not show on the CDU, then you corrected the fault.

(f) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message shows on the CDU, then continue.

NOTE: The DFCS BITE INOP - CHECK FCC OR INTERFACE message may only appear momentarily.

(12) Do the wiring check between the mode control panel (MCP), M198, and FMCs:

(a) Remove the MCP, M198. Do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801

(b) Remove the FMC-1, M1175. Do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) Remove the FMC-2, M1632. Do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801

(d) Do the following continuity check:

| | | |
|---|---|---|
| **M198** | | **M1175** |
| **D301** | | **D2179A** |
| pin 2 | - - - - - - - - - - - - - - - - - - | pin G7 |
| pin 1 | - - - - - - - - - - - - - - - - - - | pin H7 |

| | | |
|---|---|---|
| **M198** | | **M1632** |
| **D301(J102)** | | **D3261A** |
| pin 2 | - - - - - - - - - - - - - - - - - - | pin G7 |
| pin 1 | - - - - - - - - - - - - - - - - - - | pin H7 |

(13) If you find a problem with wiring, then do these steps:

(a) Repair the wiring.

(b) Re-install the MCP, M198. Do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801

(c) Re-install the FMC-1, M1175. Do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801

(d) Re-install the FMC-2, M1632. Do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801

(e) Do the DFCS BITE test on the CDU.

(f) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message does not show on the CDU, then you corrected the fault.

(g) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message shows on the CDU, then continue.

NOTE: The DFCS BITE INOP - CHECK FCC OR INTERFACE message may only appear momentarily.

(14) Do the following task: FCC, Squat Switch Problem - Fault Isolation, 22-15 TASK 815

(a) Do the DFCS BITE test on the CDU.

(b) If the DFCS BITE INOP - CHECK FCC OR INTERFACE message does not show on the CDU and you are able to enter BITE, then you corrected the fault.

**———————— END OF TASK ————————**

## 827. ADIRU Data Invalid

A. Description

(1) This task is for the following messages:

(a) 22-11351 ADC CAS > 60 OR CAS INV, IRU-1 GS > 40 OR GS INV, IRU-2 GS > 40 OR GS INV (FCC-A)

(b) 22-11352 ADC CAS > 60 OR CAS INV, IRU-1 GS > 40 OR GS INV, IRU-2 GS > 40 OR GS INV (FCC-B)

B. Possible Causes

(1) ADIRU-1

(2) ADIRU-2

(3) Wiring


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Related Data

(1) SSM 22-11-52

(2) WDM 34-21-13

(3) WDM 34-21-14

(4) WDM 34-21-23

(5) WDM 34-21-24

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: If CONDITIONS INHIBITING BITE ENTRY FOR FCC CHANNEL is displayed, pull circuit breakers for failed channel to determine BITE status for opposite channel.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) If there is a fault message, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message, then continue.

(2) Do this task: ADIRU(ADC) Output Problem - Fault Isolation, 22-11 TASK 810

(a) Repair any faults and do the Repair Confirmation at the end of this task.

(3) Do this task: ADIRU (IRU) - L Output Problem - Fault Isolation, 22-11 TASK 806

(a) Repair any faults and do the Repair Confirmation at the end of this task.

(4) Do this task: ADIRU(IRU)-R Output Problem - Fault Isolation, 22-11 TASK 807

(a) Repair any faults and do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Repair Cofirmation.

(a) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

1) If BITE entry conditions are satisfied, then the DFCS BITE TEST MAIN MENU will be displayed.

**———————— END OF TASK ————————**

**HAP 031-054, 101-999; AIRPLANES WITH COLLINS FCC SOFTWARE P/N 831-5854-140**

**828. Neutral Shift Sensor Problem - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

22–11831 FEEL AND CENTERING FRPLY

(a) FEEL AND CENTERING FRPLY: Excessive freeplay in Neutral Shift Sensor installation.

B. Possible Causes

(1) Torque Tube



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) Aileron Feel and Centering Unit

C. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test or Land Verify test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Do this task:Elevator Centering Unit Test, AMM TASK 22-11-00-820-812.

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message does show, then continue.

(b) If RERUN does not show on the CDU display, then do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) <RUN SELECT LIBRARY TESTS

c) DUAL STAB 'CHANNEL' 35>

d) EXECUTE

2) If the maintenance message does not show, then you corrected the fault.

3) If the maintenance message does show, then continue.

(2) Do these steps:

(a) Make these selections on the CDU:

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) <RUN SELECT LIBRARY TESTS

c) DUAL STAB 'CHANNEL' 35>

d) EXECUTE

(b) Make sure the Neutral Shift Position for the FCC-A and FCC-B shown on the CDU are between the limits listed on the table below:

| TEST CONDITION CODE | FCC CHANNEL | NEUTRAL SHIFT POSITION |
|---|---|---|
| S157 | FCC-A | NSS DIFF * -0.25/ +0.25 |
| S160 | FCC-B | NSS DIFF * -0.25/ +0.25 |
| s163 | FCC-A | NSS DIFF * -0.50/ +0.50 |
| S167 | FCC-B | NSS DIFF * -0.50/ +0.50 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| TEST CONDITION CODE | FCC CHANNEL | NEUTRAL SHIFT POSITION |
|---|---|---|
| S201 | FCC-A | NSS DIFF * -0.25/ +0.25 |
| S204 | FCC-B | NSS DIFF * -0.25/ +0.25 |
| S207 | FCC-A | NSS DIFF * -0.50/ +0.50 |
| S211 | FCC-B | NSS DIFF * -0.50/ +0.50 |

(c) If the value is not in the limit, do these steps.

1) Replace the elevator neutral shift sensor. Do these tasks:

Elevator Neutral Shift Sensor Removal, AMM TASK 22-11-14-000-801

Elevator Neutral Shift Sensor Installation, AMM TASK 22-11-14-400-801.

(d) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(e) If the maintenance message does show, then continue.

(f) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) <RUN SELECT LIBRARY TESTS

c) DUAL STAB 'CHANNEL' 35>

d) EXECUTE

e) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message does show, then continue.

(3) Do the check of the elevator centering unit test. Do this task:

Elevator Centering Unit Test, AMM TASK 22-11-00-820-812

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) <CHANNEL A and B

b) <RUN SELECT LIBRARY TESTS

c) DUAL STAB 'CHANNEL' 35>

d) EXECUTE

e) If the maintenance message does not show, then you corrected the fault.

(4) Replace the elevator feel and centering unit. Do these tasks:

Elevator Feel and Centering Unit Removal, AMM TASK 27-31-64-000-801

Elevator Feel and Centering Unit Installation, AMM TASK 27-31-64-400-801


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) <CHANNEL A and B

b) <RUN SELECT LIBRARY TESTS

c) DUAL STAB 'CHANNEL' 35>

d) EXECUTE

e) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1. **The table below shows all maintenance monitor messages that are found under Fault History sorted by Flight Deck Effect (FDE). Each maintenance monitor message is shown followed by the library test number, the maintenance message, and a description of the fault.**

   FDE: F/D FLAG

   The flight director (F/D) flag on the DCS screen shows when the FCC does not operate. The F/D flag is shows whenever the FCC is not energized, when it goes through a powerup test, or if it has an internal fault. The maintenance monitor looks at the FCC F/D flag driver output to record internal FCC faults. The internal faults can occur either at powerup, when one of the powerup tests fail, or a fault can occur any time when the continuous monitoring test fails. Internal faults are recorded by the maintenance monitor at all times, whether the aircraft is on the ground or in the air, as long as the FCC is energized. If a fault occurs on the ground, then the BITE shows the fault as a ground fault (GND fault) and does not show the F/D flag. When an FCC failure occurs, you can see many flight deck effects (F/D flag, A/P-Disc, etc.), but because the F/D flag is the highest priority flight deck effect, the maintenance monitor will record only the cause of the internal fault.

| FAIL MESSAGE | LRU TEST | MAINT MESSAGE | DESCRIPTION |
|---|---|---|---|
| P2 LCL P SPM<br>P2 FGN P SPM<br>P2 LCL R SPM<br>P2 FGN R SPM | 71 | FCC | THE SURFACE POSITION MONITORS ARE REQUIRED TO RUN AT POWER UP. THE TEST CONFIRMS THAT THE SURFACE POSITION MONITORS IN THEIR ENGAGE LOGIC ARE WORKING CORRECTLY. THE TEST CONSISTS OF STIMULATING AND MONITORING FOR BOTH PASS AND FAIL CONDITIONS OF THE SURFACE POSITION MONITORS. |
| P2 AIL CMD MON | 71 | FCC | THE AILERON COMMAND MONITORS ARE TESTED BY CPU 1 STIMULATING AND MONITORING CPU 2. |
| P2 ELV CMD MON | 71 | FCC | THE ELEVATOR COMMAND MONITORS ARE TESTED BY CPU 1 STIMULATING AND MONITORING CPU 2. |
| .3G LIMIT TST | 71 | FCC | THIS CHECKS THE PITCH CRUISE GAIN SCHEDULE IN CPU 2 TO INSURE IT LIMITS THE PITCH COMMAND RATE. CPU 1 STIMULATES CPU 2 AND MONITORS THE PITCH COMMAND RATE. |
| P2 INRACTV TST RDY | 71 | FCC | THIS MESSAGE IS SET IF CPU 1 DOES NOT RESPOND TO CPU 2'S INDICATION THAT IT IS READY FOR THE INTERACTIVE TESTS. |
| P2 INTACTV TST CMPL | 71 | FCC | THIS MESSAGE IS SET IF THE INTERACTIVE TESTS BETWEEN CPU 1 AND CPU 2 ARE NOT COMPLETED IN THE ALOTTED TIME. |
| P2 STABTRM DELAY TST | 71 | FCC | THIS MESSAGE IS SET BY CPU 1 IF CPU 2 DOES NOT COMPLETE THE STAB TRIM TEST WITHIN 1 SECOND. |
| P2 HB MON | 71 | FCC | THIS MESSAGE IS SET BY CPU 1 IF CPU 2 HEARTBEAT MONITOR TEST IS NOT COMPLETE WITHIN 200 msec. |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | MAINT MESSAGE | DESCRIPTION |
|---|---|---|---|
| P2 LONGTERM PWRUP CMPL | 71 | FCC | THIS MESSAGE SET BY CPU 1 IF CPU 2 DOES NOT COMPLETE ITS LONGTERM INITIALIZATION WITHIN 1 SECOND OF CPU 1. |
| P2 E AIL LIM MON FAIL | 71 | FCC | THE AILERON FORCE LIMIT MONITOR TEST CHECKS THE CPU 2 MONITOR BY A BACK CONTACT CHECK OF THE RELAY CONTROLLED BY THE MONITOR IN THE TEST OF THE AP/SOLENOID ENGAGE LOW OUTPUT. |
| CPU TST | 71 | FCC | THIS MESSAGE IS SET IF ANY PROCESSOR ONE TEST FAILS OR IF A PROCESSOR ONE TEST IS INCOMPLETE. |
| ROM CRC | 71 | FCC | NOT USED. |
| INNER LOOP CHECKSUM | 71 | FCC | THE INTERLOOP PROGRAM MEMORY TEST CONSISTS OF A CHECKSUM TEST ON THE ACTIVE INTERLOOP PROGRAM ROM FOR BOTH THE CPU 1 AND CPU 2 PROCESSORS THE MESSAGE IS SET BY CPU 1 IF THE CHECKSUM OF 10 msec LOOP PROGRAM ROM FAILS. |
| RAM TST | 71 | FCC | THIS CHECKS THE INNTER AND OUTER LOOP RAM EXCLUDING DMA AND POWER DOWN TABLE. THE RAM MEMORY TEST VERIFIES THE INTEGRITY OF RAM MEMORY WITHOUT PERMANENTLY CHANGING THE CONTENTS OF ANY LOCATION. |
| SERIAL WRAP | 71 | FCC | THIS FAULT DETECTS THE SERIAL OUTPUT WRAP DATA FOR THE 50 OR 100 msec FRAMES. |
| ANALOG WRAP | 71 | FCC | ANALOG OUTPUT WRAP DATA FAULT 10, 50 OR 100 msec FRAMES. |
| XCHAN DISC WRAP FAIL | 71 | FCC | |
| ANALOG RAMP | 71 | FCC | THE ANALOG WRAP TEST CHECKS THE SYSTEMS ANALOG I/O CIRCUITRY TO PERFORM D/A AND A/D CONVERSIONS OVER THE POSSIBLE ANALOG SIGNAL RANGE. |
| POWER SUPPLY | 71 | FCC | |
| STIMS NOT ZEROED | 71 | FCC | THIS CHECKS THAT THE STIM INPUTS ARE ZERO WHEN CPU 1 AND CPU 2 ARE ACTIVELY MONITORING THE A/P. |
| DMA WRITE PROTECT | 71 | FCC | THIS TEST VERIFIES THAT THE DMA WRITE PROTECTIONS MECHANISM PREVENTS CPU 1 AND CPU 2 FROM WRITING INTO UNAUTHORIZED DMA AREAS. TESTS BY TRYING TO WRITE INTO BLOCKS 1, 3 AND 4. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | MAINT MESSAGE | DESCRIPTION |
|---|---|---|---|
| DMA ACCESS ERROR | 71 | FCC | SET IF HARDWARE DETECTS DMA ACCESS OR PARITY ERROR. |
| INV INTERRUPT | 71 | FCC | INVALID UNUSED INTERRUPT CAUSED BY DEFECTIVE HARDWARE ON A PROCESSOR CARD. |
| PR 2 50M STACK OVFL | 71 | FCC | SET WHEN A PRIORITY 2 TASK IS SUSPENDED BY THE EXECUTIVE AND THE STACK HAS EXCEDED THE PRIORITY LEVEL'S ALOTTED SPACE. |
| PR3 100 M STACK OVFL | 71 | FCC | SET WHEN A PRIORITY 3 TASK IS SUSPENDED BY THE EXECUTIVE AND THE STACK HAS EXCEDED THE PRIORITY LEVEL'S ALOTTED SPACE. |
| PR 4 BKGND STACK OVFL | 71 | FCC | SET WHEN A PRIORITY 1 TASK IS SUSPENDED BY THE EXECUTIVE AND THE STACK HAS EXCEDED THE PRIORITY LEVEL 'S ALOTTED SPACE. |
| PR 1 10M TASK TICKET<br>PR 2 50M TASK TICKET<br>PR 3 100 M TASK TICKET | 71 | FCC | THE TICKET CHECK WILL BE USED TO INSURE THAT ALL CONDITIONS MONITORED IN THE PROGRAM ARE CALLED AT THEIR CORRECT ITERATION RATE. MESSAGE SET WHEN A PRIORITY TASK IS COMPLETED AND THE TASK TICKET IS INCOMPLETE. |
| EXCESS TIME 10M FRAME<br>EXCESS TIME 50M FRAME<br>EXCESS TIME 100M FRAME | 71 | FCC | THE HARDWARE GENERATES A REAL TIME CLOCK INTERRUPT EVERY 10 msec THIS INTERRUPT WILL BE USED TO MAINTAIN THE SYSTEM TIME BY INCRIMINATING THE SYSTEM SYSTEM COUNTER AT EACH INTERRUPT. MESSAGE IS SET WHEN THE TASK IS SET TO RUN AND THE TASK IS CURRENTLY SUSPENDED. |
| INCMPL PWR UP | CB | BPCU | POWER ON FOR LESS THAN 10 msec WHEN A POWER DOWN OCCURRED. |
| INCMPL PWR DOWN | 71 | FCC | POWER DOWN NOT COMPLETE PRIOR TO SHORT-TERM POWER UP. |
| RESTART FAIL | 71 | FCC | THIS MONITOR CHECKS THE ACCESSORY RESTART BIT FOR SETTING ON A SHORT-TERM POWER UP OR INCONSISTENT RESTART TIMER. |
| SHORT TERM INIT CHKSUM | CB | BAT BUS | THIS DETECTS A FAILURE OF THE SHORT-TERM POWER UP REGISTER RESTORATION CHECK SUM. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | MAINT MESSAGE | DESCRIPTION |
|---|---|---|---|
| PWRUP RAM TST | 71 | FCC | THE RAM TEST CONFIRMS THAT EACH RAM LOCATION IS ADDRESSABLE AND THAT EACH RAM BIT CAN BE TOGGLED. |
| PWRUP ROM TST | 71 | FCC | THE ROM TEST CONFIRMS THAT THE PROGRAM EPROM HAS NOT BEEN ALTERED. |
| PWRUP DMA RAM TST | 71 | FCC | THE DMA TEST CHECKS THE OPERATION OF THE DMA CONTROLLER CPU GOVERNER AND DMA RAM PARITY CHECK. FORCES ACCESS AIR AND PARITY TO TEST THE DETECTION CIRCUITRY. |
| PWRUP PWR SUPPY TST | 71 | FCC | TESTS THE 5 VOLT MONITOR CIRCUITRY BY SIMULATING A SHORT-TERM POWER OUTAGE. |
| PWRUP HEARTBEAT TST | 71 | FCC | THIS TEST IS USED TO CONFIRM THAT THE HEARTBEAT MONITOR IS WORKING CORRECTLY. IT TESTS THE HEARTBEAT MONITOR BY PULSING THE HEARBEAT OUTSIDE THE HEARTBEAT WINDOW AND VERIFYING THE ENGAGE SOLENOID HIGH GOES FALSE. |
| PWRUP ENGA LOGIC TST | 71 | FCC | THIS TEST IS USED TO TEST THE ABILITY TO DISENGAGE THE AUTOPILOT BY THE ENGAGE LOGIC FOR BOTH THE HIGH AND LOW ENGAGE SOLENOID DRIVERS. |
| PWRUP SOP PARITY | 71 | FCC | THE PROGRAM PIN PARITY TEST CHECKS THE FCC PROGRAM PINS FOR AN ODD PARITY SETTING. |
| PWRUP PG 0 ROM CRC<br>PWRUP PC 1 ROM CRC | 71 | FCC | THE ROM TEST CONFIRMS THAT THE PROGRAM EPROM HAS NOT BEEN ALTERED. MESSAGE IS SET IF ROM PAGE 1/2 FAILS CRC TEST. |
| PWRUP DMA UPDATE | 71 | FCC | THE LONG-TERM POWER INTERRUPT RECOVERY CONSISTS OF INITIALIZING THE DMA CONTROLLER. THIS MESSAGE IS SET IF THE DMA DID NOT UPDATE AFTER BEING CLEARED. |
| PR 4 BKGND TASK TICKET | 71 | FCC | THE TICKET CHECK WILL BE USED TO INSURE THAT ALL CONDITIONS MONITORED IN THE PROGRAM ARE CALLED AT THEIR CORRECT ITERATION RATE. MESSAGE SET WHEN A PRIORITY TASK IS COMPLETED AND THE TASK TICKET IS INCOMPLETE. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | MAINT MESSAGE | DESCRIPTION |
|---|---|---|---|
| EXCESS TIME BKGRND | 71 | FCC | THE HARDWARE GENERATES A REAL TIME CLOCK INTERRUPT EVERY 10 msec THIS INTERRRUPT WILL BE USED TO MAINTAIN THE SYSTEM TIME BY INCRIMINATING THE SYSTEM COUNTER AT EACH INTERRUPT. MESSAGE IS SET WHEN THE TASK IS SET TO RUN AND THE TASK IS CURRENTLY SUSPENDED. |
| INVLD WRT PROTECT REQ | 71 | FCC | SET WHEN AN INVALID DMA OR RAM WRITE PROTECT REQUEST IS RECEIVED. |
| 100M DISC WRAP | 71 | FCC | THE DISCRETE WRAP AROUND MONITORS TESTS THAT THE DISCRETE DATA I/O CIRCUITRY IS FUNCTIONING PROPERLY. |
| X-DROP DUE TO FGN FCC | 71 | FCC | WHEN THE X-DROP TEST BIT IS SET TO ONE DURING DUAL CHANNEL OPERATION, BOTH AUTOPILOT CHANNELS WILL BE DISENGAGED. WHEN IT IS SET, X-DROP WILL GO TO LOW TO INDICATE THAT THE CROSS CHANNEL DISENGAGE HARDWARE IS FUNCTIONING PROPERLY. |
| R LVDT MON | 31 | FCC | THIS MONITOR IS USED TO DETECT OPENS IN THE ROLL LVDT CIRCUITRY. |
| NEUTRAL SHIFT MON | 32 | FCC | SET WHEN AN UNREASONABLE RATE OF CHANGE IN THE NEUTRAL SHIFT SIGNAL IS DETECTED. |
| P LVDT MON | 30 | FCC | THIS MONITOR IS USED TO DETECT OPENS IN THE PITCH LVDT CIRCUITRY. |
| FCC A/C COMPATIBILITY | 71 | FCC | MESSAGE IS SET IF LOCAL FCC P/N IS NOT IN THE LOCAL ROM TABLE OR IF FCC PROGRAM PINS ARE NOT COMPATIBLE WITH THE FCC P/N. |
| MAINT MEMORY INV | 71 | FCC | |
| PWRUP RCVR TST | 71 | FCC | |
| DMA ACCESS TST TIME | 71 | FCC | |
| P A/P ACT MON | 30 | FCC | MESSAGE IS SET AS A RESULT OF AN ERROR SIGNAL OF GREATER THAN 4 DEGREES BETWEEN THE PITCH COMMAND AND THE A/P PITCH ACTUATOR. |
| R A/P ACT MON | 31 | FCC | MESSAGE IS SET AS A RESULT OF AN ERROR SIGNAL OF GREATER THAN 4 DEGREES BETWEEN THE AILERON COMMAND AND THE A/P AILERON ACTUATOR. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | MAINT MESSAGE | DESCRIPTION |
|---|---|---|---|
| P CMD MON | 71 | FCC | A DIFFERENCE OF 2 DEGREES/SECOND OR GREATER OCCURRED BETWEEN THE ACTIVE PROCESSOR'S ELEVATOR COMMAND (CPU 1) AND THE MODEL PROCESSOR'S ELEVATOR COMMAND (CPU). TRAPPED BY CPU 1. |
| R CMD MON | 71 | FCC | A DIFFERENCE OF 2 DEGREES/SECOND OR GREATER OCCURRED BETWEEN THE ACTIVE PROCESSOR'S AILERON COMMAND (CPU 1) AND THE MODEL PROCESSOR'S AILERON COMMAND (CPU). TRAPPED BY CPU 1. |
| P SPM MON | 71 | FCC | SET IF LOCAL OR FOREIGN A/P PITCH ACTUATORS DO NOT AGREE WITH THEIR RESPECTIVE SURFACE POSITIONS. |
| R SPM MON | 71 | FCC | SET IF LOCAL OR FOREIGN A/P ROLL ACTUATORS DO NOT AGREE WITH THEIR RESPECTIVE SURFACE POSITIONS. |
| A/P MON | 71 | FCC | THIS MONITOR WILL BE SET IF ITEMS REQUIRED FOR DUAL CHANNEL OPERATION SUCH AS AAM AND SPM CHECKS DO NOT PASS. |
| LNGTRM PWRUP NO DISENG | 71 | FCC | MESSAGE SET IF LOCAL CMD OR CWS NOT SET TO LOW. |
| PWRUP INVLD CONFIG | 71 | FCC | THE PROGRAM PIN INVALID TEST CHECKS THE FCC PROGRAM PINS FOR INVALID COMBINATIONS. THE ILS DEVIATION AND THE ADI BAR GRADIENT KEYS ARE CHECKED FOR INVALID CONFIGURATION. |
| INV DMA INT ERROR | 71 | FCC | SET IF DMA INTERRUPT CONTROL WORD DOES NOT SHOW ANY VALID DMA INTERRUPTS PENDING. |
| PR 1 10M STACK OVFLW | 71 | FCC | SET WHEN A PRIORITY 1 TASK IS SUSPENDED BY THE EXECUTIVE AND THE STACK HAS EXCEEDED THE PRIORITY LEVEL'S ALOTTED SPACE. |
| BITE RTC INTERVAL/CRC | 71 | FCC | MESSAGE IS SET IF BITE REAL TIME CLOCK INTERVAL TEST OR CRC'S FAIL. |
| DUAL W/O FLARE < 350 | 71 | LRRA INPUT MISCOMARE FGN DETENT PRESSURE FCC | THIS MONITOR WILL BE SET IF BOTH CHANNELS ARE IN COMMAND AND THE R/A IS LESS THAN 350' AND THE FLARE ARM LOGIC IS NOT SET DURING APPROACH. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | MAINT MESSAGE | DESCRIPTION |
|---|---|---|---|
| P2-P1 STAB DELAY TST | 71 | FCC | THE STABILIZER DELAY TEST VERIFIES THAT THE DELAY MODUAL IN CPU 1 IS WORKING CORRECTLY. CPU 1 SETS THE TRIM UP OR DOWN COMMAND SOONER THAN 3 SECONDS. |
| P2 DMA UPDATE | 71 | FCC | THIS TEST CHECKS THAT THE DMA MEMORY DISCRETE INPUT LOCATIONS WERE UPDATED DURING THE INITIAL PART OF THE LONG-TERM POWERUP. |
| P2-P1 IN-LINE TST | 71 | FCC | THIS MONITOR IS SET IF CPU 1 IS NOT READY FOR INTERACTIVE TESTING AFTER 10 SECONDS. |
| P2-P1 INTERACTIVE TST | 71 | FCC | THIS MONITOR WILL BE SET IF CPU 1 DOES NOT COMPLETE THE INTERACTIVE TEST SERIES. |
| P2-P1 .3G TST TIME | 71 | FCC | THIS MONITOR WILL BE SET IF CPU 1 DOES NOT COMPLETE THE .3G TEST IN 10 SECONDS. |
| P2-P1 FLARE ARM | 71 | FCC | THIS MONITOR CHECKS THAT THE FLARE ARM ENABLE CANNOT BE TOGGLED BY CPU 1. |
| P2 A/P DISENG TST | 71 | FCC | THIS TEST CHECKS THE ABILITY OF CPU 2 TO DISENGAGE THE A/P. |
| P2 PROC | 71 | FCC | MESSAGE SET IF THE CPU 2 PROCESSOR FAILS IN ANY OF ITS INSTRUCTION AND REGISTER SET SELF TEST EXERCISES. |
| P2 PWRUP/INTR | 71 | FCC | THIS FAULT WILL BE SET IF CPU 1 DOES NOT COMPLETE THE SHORT-TERM POWER UP TEST WITHIN 5 SECONDS OF CPU 2. |
| P2 PWR MON TST TIME | 71 | FCC | |
| P2-P1 P F/D COMP<br>P2-P1 R F/D COMP | 71 | FCC | CPU 2 APPLIES A 3.1 DEGREE ERROR BETWEEN THE FOREIGN AND LOCAL PITCH/ROLL COMMAND AND CHECKS THAT CPU 1 BIASES THE PITCH/ROLL BAR OUT OF VIEW. |
| P2-P1 DMA TST TIME | 71 | FCC | |
| P2 PROC RAM | 71 | FCC | THIS FAULT IS SET IF ANY ADDRESS IN THE RAM FAILS A READ/WRITE TEST. |
| P2 PROC EPROM | 71 | FCC | THIS FAULT IS SET IF THE CRC OF THE APPLICATION PROGRAM EPROM FOR CPU 2 FAILS DURING THE POWER UP TEST. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | MAINT MESSAGE | DESCRIPTION |
|---|---|---|---|
| P2 HEARTBEAT | 71 | FCC | THIS TEST CHECKS IF THE HEARTBEAT IS PULSED OUTSIDE THE ALLOWABLE HEARTBEAT WINDOW. THE ENGAGE SOLENOID DISCRETE DROPS. |
| P2 ENGAGE TEST | 71 | FCC | THIS TEST CHECKS THAT THE CPU 2 A/P MONITOR VALID AND ENGAGE LOGIC IS WORKING PROPERLY. |
| P2 PWR DN | 71 | FCC | CPU 2 DID NOT COMPLETE ITS POWER DOWN BEFORE A SHORT-TERM POWER UP. |
| P2 PWR ON STATUS WD | 71 | FCC | A SHORT-TERM INTERRUPT IS EXECUTED BY CPU 2 WITH CPU 1'S POWER OUT FLAG SET GREATER THAN ONE SECOND. |
| P2 PWR ON RESTART | 71 | FCC | A SHORT-TERM INTERRUPT IS EXECUTED BY CPU 2 WITH CPU 1'S RESTART FLAG IS SET. |
| P2 PWR ON TIMER | 71 | FCC | CPU 2 POWER UP TIMER IS LESS THAN 20 msec AND A SHORT-TERM INTERRUPT IS NOT ISSUED. |
| P2-P1 LCL PSPM<br>P2-P1 FGN PSPM<br>P2-P1 LCL RSPM<br>P2-P1 FGN RSPM | 71 | FCC | THE SURFACE POSITION MONITORS ARE REQUIRED TO RUN AT POWER UP. THE TEST CONFIRMS THAT THE SURFACE POSITION MONITORS IN THEIR ENGAGE LOGIC ARE WORKING CORRECTLY. THE TEST CONSISTS OF STIMULATING AND MONITORING FOR BOTH PASS AND FAIL CONDITIONS OF THE SURFACE POSITION MONITORS. CPU 1 SPM OUTPUT IS COMPARED TO CPU 2 SPM OUTPU. |
| P2-P1 ELEV AAM | 71 | FCC | THIS TEST CHECKS THE ELEVATOR COMMAND AND ACTUATOR RESPONSE. THE CPU 1 ELEVATOR COMMAND IS STIMULATED AND THE ACTUATOR RESPONSE AS SEEN BY CPU 2. |
| P2-P1 RCVR TEST TIME | 71 | FCC | |
| P2 DMA ACCESS TEST | 71 | FCC | |
| P2-P1 AIL AAM | 71 | FCC | THIS TEST CHECKS THE AILERON COMMAND AND ACTUATOR RESPONSE. THE CPU 1 AILERON COMMAND IS STIMULATED AND THE ACTUATOR RESPONSE AS SEEN BY CPU 2 IS CHECKED. |
| P2-P1 ELEV CMD MON<br>P2-P1 AIL CMD MON | 71 | FCC | THE COMMAND MONITOR IS TESTED BY STIMMING CPU 1 AND COMPARING THE POSITION ERRORS WITH CPU 2 POSITION ERRORS. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | MAINT MESSAGE | DESCRIPTION |
|---|---|---|---|
| P2 DMA WRITE PROTECT | 71 | FCC | THIS TEST TESTS THE DMA WRITE PROTECT BY ATTEMPTING TO WRITE INTO BLOCKS 2 AND 3. |
| P2 PWR SUPPLY 15VDC | 71 | FCC | TESTS THE 15 VDC POWER SUPPLY WITHIN PLUS OR MINUS 1.5 VDC. |
| P2 CPU SELFTEST | 71 | FCC | MESSAGE SET WHEN THE CPU 2 INTERNAL TEST FAILS. |
| P2 STIM LOC 0 | 71 | FCC | MESSAGE SET IF ANY STIM LOCATION IS NOT ZERO. |
| P2 POWER 15VDC | 71 | FCC | TESTS THE 15 VDC POWER SUPPLY WITHIN PLUS OR MINUS 1.5 VDC. |
| P2 A/P WARN ANN | 71 | FCC | |
| P2 FLARE ENG ANN | 71 | FCC | |
| P2 R/A < 10 FEET (B) | 71 | FCC | |
| P2 FLARE ARM ENABLE | 71 | FCC | |
| P2 RAM TST | 71 | FCC | |
| P2 EPROM TST | 71 | FCC | SET BY CPU 2 IF CHECK SUM OF INTERLOOP PROGRAM ROM FAILS. |
| P2 ELEV CMD WRAP TST | 71 | FCC | MESSAGE SET IF ELEVATOR COMMAND WRAP FAILS. |
| P2 TICKET CHECK FAIL | 71 | FCC | SET IF ANY TICKET CHECK FAILS. |
| P2 R SPM TRIP P2 P SPM TRIP | 71 | FCC | THIS FAULT BIT WILL SET IF THE PITCH/ROLL ACTUATOR POSITIONS DIFFER BY MORE THAN 6 OR 9 DEG/SEC FROM THE SURFACE POSITION INDICATION (DEPENDENT ON ALITITUDE) |
| P2 P CMD MON TRIP<br>P2 R CMD MON TRIP | 71 | FCC | A DIFFERENCE OF 2 DEGREES/SECOND OR GREATER OCCURRED BETWEEN THE ACTIVE PROCESSOR'S COMMAND (CPU 1) AND THE MODEL PROCESSOR'S COMMAND CPU 2. THE COMMAND MONITORS ARE DESIGNED TO DETECT HARDWARE/SOFTWARE FAULTS RESULTING IN ERRONIOUS SERVO COMMANDS DURING DUAL CHANNEL OPERATION. |
| P2 DUAL W/O FLARE < 350 | 71 | FCC | IN DUAL COMMAND BELOW 350' WITHOUT BEING IN FLARE ARM ENABLE OR G/A FROM CPU 2. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | MAINT MESSAGE | DESCRIPTION |
|---|---|---|---|
| P2 FLARE W/O GS-G/A | 71 | FCC | CPU 2 PITCH FLARE VALID WITHOUT GLIDESCOPE ENGAGED OR GO-AROUND SELECTED. |
| P2 FLARE W/O AOC-G/A | 71 | FCC | CPU 2 ROLL FLARE VALID WITHOUT APPROACH ON COURSE OR GO-AROUND MODE. |
| P2 P ATT MON TRIP | 1 | ADIRU | CPU 2 SELECTED IRS PITCH ATTITUDE INVALID IN DUAL OR SINGLE CHANNEL ENGAGE. |
| P2 P ATT RATE MON TRIP | 1 | ADIRU | CPU 2 SELECTED IRS PITCH ATTITUDE RATE INVALID IN DUAL OR SINGLE CHANNEL ENGAGE. |
| P2 VERT ACCEL MON TRIP | 1 | ADIRU | CPU 2 SELECTED IRS VERTICAL ACCELERATION INVALID IN DUAL OR SLAVED G/S ENGAGE. |
| P2 LONG ACCEL MON TRIP | 1 | ADIRU | CPU 2 SELECTED IRS LONGITUDINAL ACCELERATION INVALID IN DUAL. |
| P2 FLT PATH ACCEL MON | 1 | ADIRU | CPU 2 SELECTED IRS FLIGHT PATH ACCELERATION INVALID IN DUAL. |
| P2 ELEC AIL LIM MON | 31 | FCC | THE AILERON FORCE LIMIT MONITOR MONITORS THE AILERON ACT POS FOR A POSSIBLE ROLL HARDOVER. |
| P2 R ATT MON TRIP | 1 | ADIRU | |
| P2 R ATT RATE MON TRIP | 1 | ADIRU | |
| P2 AIL QUAD MON | 31 | AIL ACT | |

FDE: AUTOPILOT DISC

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| BOTH R/A INV IN DUAL | 7 | LRRA | BOTH FOREIGN AND LOCAL RADIO ALTIMETERS WERE INVALID DURING DUAL APPROACH CAUSING AN A/P DISCONNECT. |
| ELV ACT PRESS INV | 30 | ELV ACT PRESS SWITCH | ELEVATOR ACTUATOR DID NOT PRESSURIZE WITHIN 3.5 SECONDS AFTER A/P ENGAGED TO COMMAND. |
| AIL ACT PRESS INV | 31 | AIL ACT PRESS SWITCH | AILERON ACTUATOR DID NOT PRESSURIZE WITHIN 3.5 SECONDS AFTER A/P ENGAGED TO COMMAND. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| 50M DISC WRAP [1] | 71 | FCC | ONE OR MORE OF THE 50M DISCRETE WRAP-AROUNDS FAILED. THE DISCRETE WRAP-AROUND MONITORS TEST THAT THE DISCRETE DATA I/O CIRCUITRY IS FUNCTIONING PROPERLY. |
| ELV SYNC INV > 4 SEC | 30 | ELEV POS SEN NSS ELEV ACT | ELEVATOR ACT AND SURFACE POSITION ARE NOT IN SYNCH WITHIN 4 SEC AFTER SINGLE CHANNEL ENGAGED OR OCCURRENCE OF DUEL CHANNEL CONTROL. (NO HYD PRESSURE WHEN ATTEMPTING TO ENGAGE). |
| AIL SYNC INV > 4 SEC | 31 | AIL POS SENSOR AIL ACT ACT | AILERON ACT AND SURFACE POSITION ARE NOT IN SYNCH WITHIN 4 SEC AFTER SINGLE CHANNEL ENGAGED OR OCCURRENCE OF DUEL CHANNEL CONTROL. (NO HYD PRESSURE WHEN ATTEMPTING TO ENGAGE). |
| AIL ACT DET WRAP INV | 31 | FCC | DISCRETE OUTPUT FROM AUTOPILOT TO AUTOPILOT ACT. |
| R LVDT MON | 31 | AIL ACT | THE LVDT MONITORS DETECT FAILURES RESULTING IN ERRONEOUS ROLE ACTUATOR POSITION INDICATIONS CAUSED BY OPENS IN THE LVDT CIRCUITRY. IF 2X < 1.3 VOLTS, THE FAULT IS SET. |
| NEUTRAL SHIFT MON | 32 | NSS/STAB TRIM SERVO M255 M255 | THE NEUTRAL SHIFT MONITOR IS DESIGNED TO DETECT HARDOVERS BY MONITORING THE NEUTRAL SHIFT RATE (NEUTRAL SHIFT RATE EXCEEDED 1 DEGREE/SECOND). |
| P LVDT MON | 30 | ELV ACT | THE LVDT MONITORS DETECT FAILURES RESULTING IN ERRONEOUS PITCH ACTUATOR POSITION INDICATIONS CAUSED BY OPENS IN THE LVDT CIRCUITRY. IF 2X < 1.3 VOLTS, THE FAULT IS SET. |
| AUTO STAB TRIM CUTOUT | 32 | TRIM CUTOUT | STABILIZER TRIM CUTOUT SWITCH ACTUATED. |
| MAIN ELECT TRIM | 32 | STAB TRIM RELAY | MAIN ELECTRIC TRIM SWITCH ACTUATED. |
| TRIM FLAP INTRLK | 71 | FCC | AUTOPILOT STABILIZER TRIM SPEED SELECTION DISAGREES WITH FLAP POSITION. |
| FLAP SYNCHRO | 34 | | |
| STAB MOTOR | 32 | | |
| SIMULTANEOUS UP/DN | 32 | FCC | AUTOPILOT TRIM SERVO RECEIVING BOTH UP AND DOWN TRIM COMMANDS AT THE SAME TIME. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| IRS P ANGLE INV | 1 | ADIRU | IRS PITCH ANGLE INVALID. |
| IRS R ANGLE INV | 1 | ADIRU | IRS ROLL ANGLE INVALID. |
| IRS P RATE INV | 1 | ADIRU | IRS PITCH RATE INVALID. |
| IRS R RATE INV | 1 | ADIRU | IRS ROLL RATE INVALID. |
| CAS/ALT INV | 1 | ADIRU ADM STATIC | COMPUTED AIR SPEED AND UNCORRECTED BARO AITITUDE INVALID. |
| 400 HZ PWR INV | CB | BPCU | |
| AFCS ENGAGE INTLK | CB | AFCS ENG INTLK | |
| MCP DATA INV | 16 | MCP | LOSS OF DATA INPUTS FROM THE MCP. |
| SMC FLAP POS INV | 22 | SMYD | |
| PITCH SENSOR EXCIT INV | 21 | FCC | |
| ROLL SENSOR EXCIT INV | 21 | FCC | |
| 10 SEC LOC INV | 24 | MMR/ILS RCVR | LOCALIZER DISCRETE INVALID. |
| 4.5 SEC G/S INV | 24 | MMR/ILS RCVR | GLUIDE SLOPE RECEOVER DISCRETE INVALID FOR > 4.5 SECS IN APPROACH ABOVE 60'. |
| BARO CORR ALT INV | 1 | ADIRU EFIS CP DEU | INVALID SELECTED BARO CORRECTED ALTITUDE WHILE NOT CONTROLLING TO THE GLUIDE SLOPE BEAM OR DURING DUAL APPROACH. |
| AUTOTUNE IN APP | 24 | VHF/NAV CONT | AN AUTOTUNE OCCURRED DURING APPROACH. |
| FGN FCC DROPD IN APP | 71 | FCC | IF FOREIGN CHANNEL DETECTS A FAILURE AND DISENGAGES DURING A DUAL APPROACH, THE CHANNEL MUST DISENGAGE THIS MESSAGE WILL BE DISPLAYED BY LOCAL CHANNEL. |
| VS, VERT-LONG ACCEL INV | 1 | ADIRU | SELECTED BODY LONGITUDINAL ACCELERA-TION, SELECTED VERTICAL ACCELERATION OR INERTIAL VERTICAL SPEED INVALID WHILE IN G/A OR APPR. |
| IAT ACCEL INV | 1 | ADIRU | IRS LATERAL ACCELERATION WENT INVALID CAUSING A PITCH OR ROLL SPM TRIP DURING DUAL CONTROL OR IRS INVALID AFTER LOCALIZER CAPTURE. |
| IRS FGN GND SPD INV | 1 | ADIRU | |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| IRS MAG TRACK INV | 1 | ADIRU | SELECTED IRU MAG TRACK ANGLE INVALID IN LOCALIZER CAPTURE AND NOT IN AOC, VOR CAPTURE OR A/P. |
| R/A INV IN APP | 7 | LRRA | RADIO ALTITUDE INVALID FOR MORE THAN 2 SECONDS IN GLUIDE SLOPE OR LOCALIZER CONTROL (SINGLE CHANNEL). |
| BEAM ANOMALY DET | 24 | MMR/ILS RCVR | A LOCALIZER DEVIATION OF .3 DEGREES IN A LOCALIZER DEVIATION RATE OF GREATER THAN .13 DEGREES/SEC WAS DETECTED FOR MORE THAN 10 SECONDS. |
| NO FWD LOC ANT IN APP | 35 | LOC ANT RELAY IFSAU | NO FORWARD ANTENNA IN APPROACH. ANTENNA DID NOT SWITCH FROM REAR TO FRONT WHEN LCL APP WAS ENGAGED. |
| IRS FLT PATH ACC INV | 1 | ADIRU | IRU FLIGHT PATH ACCELERATION INVALID. |
| IRS LCL GND SPD INV | 1 | ADIRU | |
| IRS TRUE TRACK INV | 1 | ADIRU | |
| ALPHA FLOOR PERF LIMIT | 22 | SMYD | LOSS OF AOA DATA FROM SMYD. |
| LOC TUNE MISCOMP | 24 | VHF/NAV CONT PNL | |
| TRIM SENSORS INVALID | 32 | NSS MT ACT STAB POS SENSOR | |
| 100M DISC WRAP [1] | 71 | FCC | ONE OR MORE OF THE 100M DISCRETE WRAP-AROUNDS FAILED. THE DISCRETE WRAP-AROUND MONITORS TEST THAT THE DISCRETE DATA I/O CIRCUITRY IS FUNCTIONING PROPERLY. |
| P2 A/P WARN ANN [2] | 71 | FCC | CPU 2'S AUTOPILOT MONITOR VALID DISCRETE OUTPUT DISAGREES WITH ITS WRAP-AROUND. |
| P2 FLARE ENG ANN [2] | 71 | FCC | CPU 2'S FLARE ENGAGE DISCRETE OUTPUT DISAGREES WITH ITS WRAP-AROUND. |
| P2 R/A < 10 FEET (B) [2] | 71 | FCC | |
| | | | |
| P2 FLARE ARM ENBLE [2] | 71 | FCC | CPU 2'S FLARE ARM ENABLE DISCRETE OUTPUT DISAGREES WITH ITS WRAP- AROUND. |
| P A/P ACT MON | 30 | ELEV ACT | A DIFFERENCE OF 10 DEGREES/SECONDS OR GREATER OCCURRED BETWEEN THE ELEVATOR ACTUATOR COMMAND AND THE ELEVATOR ACTUATOR POSITION. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| R A/C ACT MON | 31 | AIL ACT | A DIFFERENCE OF 10 DEGREES/SECONDS OR GREATER OCCURRED BETWEEN THE AILERON ACTUATOR COMMAND AND THE ACTUATOR POSITION. |
| P CMD MON | 71 | FCC | A DIFFERENCE OF 10 DEGREES/SECONDS OR GREATER OCCURRED BETWEEN THE ACTIVE PROCESSOR'S ELEVATOR COMMAND (CPU 1) AND THE MODEL PROCESSOR'S ELEVATOR COMMAND (CPU). TRAPPED BY CPU 1. |
| R CMD MON | 71 | FCC | A DIFFERENCE OF 2 DEGREES/SECONDS OR GREATER OCCURRED BETWEEN THE ACTIVE PROCESSOR'S AILERON COMMAND (CPU 1) AND THE MODEL PROCESSOR'S WILL GO TO LOW TO INDICATE THAT THE AILERON COMMAND (CPU). TRAPPED BY CPU 1. |
| DUAL W/O FLARE H < 350 | 71 | LRRA INPUT MISCOMARE FGN DETENT PRESSURE FCC | THIS MONITOR WILL BE SET IF BOTH CHANNELS ARE IN COMMAND AND THE R/A IS LESS THAN 350' AND THE FLARE ARM LOGIC IS NOT SET. |
| TAS INV | 1 | ADIRU STATIC ADM | SELECTED MAG HEADING INVALID WHILE IN HEADING HOLD. |
| IRS MAG HDG INV | 1 | ADIRU | IRS MAG HEADING WENT INVALID CAUSING A ROLL SPM DURING DUAL CONTROL. |
| IRS TRUE HDG INV | 1 | ADIRU | TRUE AIR SPEED WENT INVALID WHILE IN HEADING HOLD. |
| G/S BEAM ANOMALY DET | 24 | MMR/ILS RCVR | LOSS OF G/S ANOMALY FOR MORE THAN 1 SECOND. |
| P2 P CMD MON TRIP P2 R CMD MON TRIP | 71 | FCC | A DIFFERENCE OF 2 DEGREES/SECOND OR GREATER OCCURRED BETWEEN THE ACTIVE PROCESSOR'S COMMAND (CPU 1) AND THE AND THE MODEL PROCESSOR'S COMMAND (CPU 2). TRAPPED BY CPU 2, THE COMMAND MONITORS ARE DESIGNED TO DETECT HARDWARE/SOFTWARE FAULTS RESULTING IN ERRONIOUS SERVO COMMANDS DURING DUAL CHANNEL OPERATION. |
| P2 DUAL W/O FLARE < 350' | 71 | FCC | IN DUAL COMMAND BELOW 350' WITHOUT BEING IN FLARE ARM ENAGBLE OR G/A FROM CPU 2. |
| P2 FLARE W/O GS-G/A | 71 | FCC | CPU 2 PITCH FLARE VALID WITHOUT GLIDE SCOPE ENGAGED OR GO-AROUND SELECTED. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| P2 FLARE W/O AOC-G/A | 71 | FCC | CPU 2 ROLL FLARE VALID WITHOUT APPROACH ON COURSE OR GO-AROUND MODE. |
| P2 P ATT MON TRIP | 1 | ADIRU | CPU 2 SELECTED IRS PITCH ATTITUDE INVALID IN DUAL OR SINGLE CHANNEL ENGAGE. |
| P2 P ATT RATE MON TRIP | 1 | ADIRU | CPU 2 SELECTED IRS PITCH ATTITUDE RATE INVALID IN DUAL OR SINGLE CHANNEL ENGAGE. |
| P2 VERT ACCEL MON TRIP | 1 | ADIRU | CPU 2 SELECTED IRS VERTICAL ACCELERATION INVALID IN DUAL OR SLAVED G/S ENGAGE. |
| P2 LONG ACCEL MON TRIP | 1 | ADIRU | CPU 2 SELECTED IRS LONGITUDINAL ACCELERATION INVALID IN DUAL. |
| P2 FLT PATH ACCEL MON | 1 | ADIRU | CPU 2 SELECTED IRS FLIGHT PATH ACCELERATION INVALID IN DUAL. |
| P2 ELEC AIL LIM MON | 31 | FCC | THE AILERON FORCE LIMIT MONITOR MONITORS THE AILERON ACT POS FOR A POSSIBLE ROLL HARDOVER. |
| P2 R ATT MON TRIP | 1 | ADIRU | |
| P2 R ATT RATE MON TRIP | 1 | ADIRU | |
| P2 AIL QUAD MON | 31 | AIL ACT | |
| LOC DEV INV | 24 | MMR/ILS<br>MMR/GLS | |
| COMPUTED A/S INV | 1 | ADIRU | COMPUTED AIRSPEED WENT INVALID CAUSING A PITCH OR ROLL SPM TRIP DURING DUAL. |
| RADIO ALT INV | 7 | LRRA | R/A WAS INVALID DURING PITCH OR ROLL SRM TRIP CAUSING DUAL A/P DISCONNECT. |
| G/S DEV INV | 24 | MMR/ILS | |
| R SPM APP | | | |
| P SPM APP | | | |
| R SPM TOGA | | | |
| P SPM TOGA | | | |

FDE: MACH TRIM



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| MACH INV/OUT OF RANGE | 1 | LRRA ADM'S | MACH SIGNAL INVALID. |
| 26 VAC INV | CB | BPCU | 26 VOLT AC 400 HZ INVALID. |
| MT CMD MON | 33 | MT ACT | MACH TRIM FEEDBACK DOES NOT CORRESPOND WITH COMMAND SIGNAL. |
| MT SELECT STATUS | 71 33 | FCC IFSAU | MACH TRIM SELECT FROM FCC DISAGREES WITH SELECT RELAY. |
| MT DISCRETE | 33 | FCC | MACH TRIM ACT BRAKE RELEASE MONITOR FAILED, SELECT RELAY DISAGREES WITH COMMAND, OR MACH TRIM DISCRETE WRAP FAILURE. |
| BOTH MT CMD MON | 33 | MT ACT IFSAU | BOTH MT CMD RESPONSE MONITORS INDICATED FAILED CONDITION. |
| TRIM SENSORS INVALID | 32 33 | NSS MT ACT STAB POS SENSOR | |
| SEL N1 ENG INV | 25 | CDS/DEU | |
| SMC FLAP POS INV | 22 | SMYD | |
| FLAPS XY INV | 34 | FLAP POS SENSOR | |
| FLAPS YZ INV | 34 | FLAP POS SENSOR | |
| 400 HZ PWR INV | CB | BPCU | |

FDE: MISC

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| HOLDOVER PWR | CB | BATT BUS | THIS IS A MON OF AIRPLANE BATTERY BUS INPUT TO THE FCC. THE BATTERY BUS IS USED TO PROVIDE BACKUP PWR TO THE RAM CIRCUITS. LOSS OF BATTERY BUS BACKUP WILL SET THIS MESSAGE PWR FROM C.B. AFCS A/B FCC DC. |
| | | | NOTE: IF the messages were recorded on the ground (squat with airplane speed less than 45 knots), they are nuisance messages and may be ignored. |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| MCP SEL ALT WRAP | 55 | MCP FCC | THE FCC TAKES THE ALTITUDE WINDOW WRAP FROM THE MCP INPUT AND COMPARES IT WITH THE FCC ALTITUDE WINDOW OUTPUT. IF THERE IS A DIFFERENCE THE MONITOR WILL TRIP WITHIN 5 SEC. |
| | | | NOTE: IF the messages were recorded on the ground (squat with airplane speed less than 45 knots), they are nuisance messages and may be ignored. |
| MCP SEL ALT COUNTER | 55 | FCC | THE FCC TAKES THE MCP LOCAL ALTITUDE PRESENT VALUE AND COMPARES IT WITH THE THE PAST VALUE. IF A CHANGE HAS OCCURRED THIS MONITOR WILL SET. |
| | | | NOTE: IF the messages were recorded on the ground (squat with airplane speed less than 45 knots), they are nuisance messages and may be ignored. |
| MCP ALT KNOB MOTION | 55 | MCP | WITHOUT DETECTING AN ALTITUDE KNOB MOTION AND A CHANGE IN THE ACCUMULATOR DATA. |
| SPD INT INCOMPTBLE A/P | 18 | FMC | THIS FAULT IS STORED AFTER A SPEED INTERVENTION VNAV RESET HAS OCCURRED AND PITCH F/D HAS NOT BOV WITHIN 800msec. |
| SPD INT INCOMPTBLE F/D | 18 | FMC | THIS FAULT IS STORED AFTER A SPEED INTERVENTION VNAV RESET HAS OCCURRED AND THE MCP HAS NOT REVERTED TO PCWS WITHIN 800msec. |
| ALT REF MON INV | 55 | FCC MCP | THE MCP-FCC ALTITUDE REF MON COMPARES THE MCP ALTITUDE VALUE FROM THE FCC WITH THE INPUT RESOLVER ALTITUDE. |
| INPUT SENSOR INV | 55 | MCP | THE ALTITUDE INPUT SENSORS ARE MONITORED FOR POSITION. THE FINE SENSOR SHOULD BE 16 TIMES GREATER THAN THE COURSE SENSOR. IF NOT THIS FAULT IS SET. |
| BYTE SELECT INV | 55 | MCP | THE MOST SIGNIFICANT BYTE OF THE FINE ALTITUDE INFORMATION SHALL BE COMPARED TO THE LEAST SIGNIFICANT BYTE OF THE FINE ALTITUDE INFORMATION AND THE SAME WITH THE COURSE ALTITUDE INFORATION. IF BOTH THE FINE AND COURSE BYTES MATCH, THE OUTPUT SHALL BE FALSE. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| FCC ACTIVITY INV | 57 | FCC MCP | AS EACH VALID WORD IS RECEIVED FROM MCP, THE FCC ACTIVITY MONITOR SET A BIT IN ITS FLAG WORD. AFTER 200msec ALL THE FLAG BITS CORRESPONDING TO THE INPUT WORDS SHOULD BE SET, IF SO, THE FCC ACTIVITY IS VALID AND THE ACTIVITY MONITOR IS VALID. IF NOT, FCC ACTIVITY IS DECLARED INVALID AND THE FCC ACTIVITY MONITOR VALID IS RESET. |

FDE: P - MODE REVERSION

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| IRS P ANGLE INV | 1 | ADIRU | IRS PITCH ANGLE INVALID FROM ADIRU. |
| IRS BODY LONG ACCEL | 1 | ADIRU | LONGITUDINAL ACCELERATION INVLAID FROM ADIRU. |
| IRS V/S INV | 1 | ADIRU | |
| IRS VERT ACCEL INV | 1 | ADIRU | VERTICAL ACCELERATION INVLAID FROM ADIRU. |
| IRS R ANGLE INV | 1 | ADIRU | IRS ROLL ANGLE INVALID FROM ADIRU. |
| COMPUTED A/S INV | 1 | ADIRU | COMPUTED AIRSPEED INVALID FROM ADIRU |
| TAS INV | 1 | ADIRU ADM'S | TRUE AIRSPEED INVALID FROM ADIRU. ALTITUDE. |
| UNCORR BARO ALT INV | 1 | ADIRU ADM'S EFIS CNTRL PNL DEU | UNCORRECTED BARO INVALID FROM ADIRU. |
| BARO CORR ALT INV | 1 | ADIRU ADM'S EFIS CNTRL PNL DEU | BARO CORRECTED ALT INVALID |
| STATIC PRESS INV | 1 | ADIRU ADM | STATIC PRESSURE IS INVALID FROM ADIRU OR ADM. |
| MACH INV | 1 | ADIRU ADM'S | MACH SIGNAL INVALID FROM ADIRU. |
| MCP DATA INV | 16 | MCP | LOSS OF DATA INPUTS FROM MCP. |
| ALPHA FLOOR FERF LIMIT | 22 | SMYD | AOA DATA INVALID FROM SMYD. |
| FMC TARGET V/S | 18 | FMC | FMC TARGET VERTICAL SPEED INVALID. |
| FMC DISCRETE WORD | 18 | FMC | FMC DISCRETE WORD INVALID. |
| FMC TARGET ALT | 18 | FMC | FMC TARGET ALTITUDE IS INVALID. |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| FMC TARGET A/S | 18 | FMC | FMC TARGET AIRSPEED IS INVALID. |
| FMC MACH | 18 | FMC | MACH COMMAND SIGNAL IS INVALID. |
| 400 HZ PWR INV | CB | BPCU | |
| SPD INT INCOMPATIBLE | 18 | FMC | THE FMC TARGET SPEED FROM THE FMC DOES NOT MATCH THE WINDOW VALUE ON THE MCP. THE FMC WILL DROP OUT OF VNAV. |
| MIN OP SPD INVALID | 22 | SMYD | |

FDE: R-CWS MODE REVERSION

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| IRS MAG HDG INV | 1 | ADIRU | MAGNETIC HEADING INVALID. |
| IRS R ANGLE INV | 1 | ADIRU | IRS ROLL ANGLE INVALID FROM ADIRU. |
| IRS R RATE INV | 1 | ADIRU | IRS ROLL RATE INVALID. |
| BARO CORR ALT INV | 1 | ADIRU ADM'S EFISU CNTRL PNLRU DEU | BARO CORRECTED ALT INVALID. |
| TAS INV | 1 | ADIRU ADM'S | TRUE AIRSPEED INVLAID FROM ADIRU. |
| LOC DEV INV | 24 | MMR/ILS MMR/GLS | |
| FMC LNAV INV | 18 | FMC | LNAV ALTERNATE STEERING SIGNAL INVALID. |
| LOC NOT TUNED | 24 | VHF CONT PNL | LOCALIZER NOT TUNED TO CORRECT FREQ. |
| MCP DATA INV | 16 | MCP | LOSS OF DATA INPUTS FROM MCP. |
| ANCDU LNAV INV | 11 | ANCDU | THE LATERAL NAVIGATION INPUT FROM THE ANCDU IS INVALID. |
| IRS TRUE TRACK INV | 1 | ADIRU | |
| IRS TRUE HDG INV | 1 | ADIRU | TRUE AIRSPEED WENT INVALID WHILE IN HEADING HOLD. |
| IRS MAG TRACK INV | 1 | ADIRU | SELECTED IRS MAG TRACK ANGLE INVALID IN LOCALIZER CAPTURE AND NOT IN AOC, VOR CAPTURE OR A/P. |
| LOC DEV INV | 72 73 | MMR/MLS MMR/GLS | |
| VOR INVALID | 23 | VOR RCVR | VOR INVALID. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

FDE: SPEED TRIM

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| LCL N1 ENG 1(2) INV | 25 | CDS/DEU | NOTE: If the messages were recorded on the ground (squat with airplane speed less than 45 knots), they are nuisance messages and may be ignored. |
| FGN N1 ENG 1(2) INV | 25 | CDS/DEU | |
| TRM CMD RESPSE MON | 32 | TRM CUTOUT STAB TRIM SERVO COL ACTD MODULE M1201 | COMMAND TO TRIM SERVO WITH NO RESPONSE. |
| COMPUTED A/S INV | 1 | ADIRU ADM STATIC | COMPUTED AIRSPEED WENT INVALID. |
| AOA INV | 1 | ADIRU | |
| STAB POS SEN INV | | STAB POS SENSOR | |
| PITCH SEN EXCIT INV | 21 | FCC | |
| STAB TRIM CLUTCH WRAP | 71 | FCC | STAB TRIM CLUTCH WRAP-AROUND DISAGREES WITH ITS OUTPUT. |
| SIMULTANEOUS UP/DN | 32 | FCC | AUTOPILOT TRIM SERVO RECEIVING BOTH UP AND DOWN TRIM COMMANDS AT THE SAME TIME.LD. |
| SQUAT SW INPUT INV | 70 | SQUAT SW | DISCRETE INPUT FROM SQUAT SW INVALID |
| IRS V/S INV | 1 | ADIRU | INERTIAL VERTICAL SPEED INVALID. |
| | | | NOTE: If the messages were recorded on the ground (squat with airplane speed less than 45 45 knots), they are nuisance messages and may be ignored. |
| MACH INV | 1 | ADIRU ADM STATIC | MACH SIGNAL INPUT INVALID. |

FDE: STAB OUT OF TRIM



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| TRIM CMD RSPNSE MON | 32 | TRIM CUTOUT STAB TRIM SERVO COL SW MODULE | COMMAND TO TRIM SERVO WITH NO RESPONSE. INPUT FROM STAB POSITION SENSOR. |
| TRIM ELEV MON | 71 | FCC | DIFFERENCE BETWEEN ELEVATOR ACTUATOR AND ELEVATOR SURFACE POSITION WAS GREATER THAN 3 DEGREES FOR 10 SECONDS. INPUTS FROM ELEV POSITION, ELEV LVDT AND NSS. |
| P2 ELV ACT NOT TRIMMED | 71 | FCC | CPU 2 ELEVATOR ACT 5 DEGREES FOR MORE THAN 10 SECONDS. INPUTS FROM STAB POSITION, ELEV LVDT, ELEV POSITION AND NSS. |

FDE: TOGA PBOV

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| IRS P ANGLE INV | 1 | ADIRU | IRS PITCH ANGLE INVALID FROM ADIRU. |
| IRS BODY LONG ACCEL | 1 | ADIRU | LONGITUDINAL ACCELERATION INVALID FROM ADIRU. |
| IRS VERT ACCEL INV | 1 | ADIRU | VERTICAL ACCELERATION INVALID FROM ADIRU. |
| IRS P RATE INV | 1 | ADIRUC | IRS PITCH RATE INVALID. |
| COMPUTED A/S INV | 1 | ADIRU | COMPUTED AIRSPEED INVALID FROM ADIRU |
| TAS INV | 1 | ADIRU ADM'S | TRUE AIRSPEED INVALID FROM ADIRU. |
| RADIO ALT INV | 7 | LRRA | LOW RANGE RADIO ALT INVALID. |
| 400 HZ PWR INV | CB | BPCU | |
| PITCH F/D COMP | | | |
| MCP DATA INV | 16 | MCP | LOSS OF DATA INPUTS FROM MCP. |
| IRS FLT PATH ACC INV | 1 | ADIRU | FLIGHT PATH ACCELERATION INVALID. |
| FGN FAILS TO ENG TOGA | | FCC-B | FOREIGN CHANNEL FAILED TO ENGAGE TOGA. |
| LCL DEU REVERSION | 25 | CDS/DEU | |
| FGN DEU REVERSION | 25 | CDS/DEU | |
| AOA INV | 1 | ADIRU ALPHA VANE | |

FDE: APP PBOV


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| IRS V/S INV | 1 | ADIRU | VERTICAL SPEED INVALID FROM ADIRU. |
| IRS VERT ACCEL INV | 1 | ADIRU | VERTICAL ACCELERATION INVALID FROM ADIRU. |
| IRS P RATE INV | 1 | ADIRU | IRS PITCH RATE INVALID. |
| G/S DEV INV | 24 | MMR/ILS | |
| LOC NOT TUNED | 24 | VHF CONT PNL | LOCALIZER NOT TUNED TO CORRECT FREQ. |
| RADIO ALT INV | 7 | LRRA | LOW RANGE RADIO ALT INVALID. |
| IRS P ANGLE INV | 1 | ADIRU | IRS PITCH ANGLE INVALID FROM ADIRU. |
| 400 HZ PWR INV | CB | BPCU | |
| AUTOTUNE IN APP | 23 | VHF CONT PNL | AUTOTUNE OCCURRED WHILE IN APPROACH |
| PITCH F/D COMP | | | |
| MCP DATA INV | 16 | MCP | LOSS OF DATA INPUTS FROM MCP |
| G/S DEV INV | 72 73 | MMR/MLS<br>MMR/GLS | |
| DEU REVERSION | 25 | CDS/DEU | |

FDE: CRZ RBOV

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| IRS MAG HDG INV | 1 | ADIRU | MAGNETIC HEADING INVALID. |
| IRS R ANGLE INV | 1 | ADIRU | IRS ROLL ANGLE INVALID FROM ADIRU. |
| IRS R RATE INV | 1 | ADIRU | IRS ROLL RATE INVALID. |
| BARO CORR ALT INV | 1 | ADIRU ADM'S<br>EFIS CNTRL PNL DEU | BARO CORRECTED ALT INVALID. |
| TAS INV | 1 | ADIRU ADM'S | TRUE AIRSPEED INVALID FROM ADIRU. |
| LOC DEV INV | 24 | MMR/ILS<br>MMR/GLS | |
| FMC LNAV INV | 18 | FMC | LNAV ALTERNATE STEERING SIGNAL INVALID. |
| MCP DATA INV | 16 | MCP | LOSS OF DATA INPUTS FROM MCP. |
| ANCDU LNAV INV | 11 | ANCDU | THE LATERAL NAVIGATION INPUT FROM THE ANCDU IS INVALID. |
| IRS TRUE TRACK INV | 1 | ADIRU | |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| IRS TRUE HDG INV | 1 | ADIRU | TRUE AIRSPEED WENT INVALID WHILE IN HEADING HOLD. |
| IRS MAG TRACK INV | 1 | ADIRU | SELECTED IRS MAG TRACK ANGLE INVALID IN LOCALIZER CAPTURE AND NOT IN AOC, VOR CAPTURE OR A/P. |
| LOC DEV INV | 72 73 | MMR/MLS<br>MMR/GLS | |
| VOR INVALID | 23 | VOR RCVR | VOR INVALID. |

FDE: APP RBOV

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| LOC DEV INV | 72 73 | MMR/MLS<br>MMR/GLS<br>MMR/ILS | |
| IRS R ANGLE INV | 1 | ADIRU | IRS ROLL ANGLE INVALID FROM ADIRU. |
| LOC NOT TUNED | 24 | VHF CONT PNL | LOCALIZER NOT TUNED TO CORRECT FREQ. |
| RADIO ALT INV | 7 | LRRA | LOW RANGE RADIO ALT INVALID. |
| IRS R RATE INV | 1 | ADIRU | IRS ROLL RATE INVALID. |
| IRS LAT ACCEL INV | 1 | ADIRU | LATERAL ACCELERATION INVALID. |
| AUTOTUNE IN APP | 23 | VHF CONT PNL | AUTOTUNE OCCURRED WHILE IN APPROACH. |
| ROLL F/D COMP | | | THE ROLL COMMAND BETWEEN FCC A AND FCC B DISAGREES BY MORE THAN 3 DEGREES FOR A PERIOD OF 8 SEC. |
| MCP DATA INV | 16 | MCP | LOSS OF DATA INPUTS FROM MCP. |
| DEU REVERSION | 25 | CDS/DEU | |

FDE: CRZ PBOV

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| IRS P ANGLE INV | 1 | ADIRU | IRS PITCH ANGLE INVALID FROM ADIRU. |
| IRS BODY LONG ACCEL | 1 | ADIRU | LONGITUDINAL ACCELERATION INVALID FROM ADIRU. |
| IRS V/S INV | 1 | ADIRU | |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| IRS VERT ACCEL INV | 1 | ADIRU | VERTICAL ACCELERATION IVALID FROM ADIRU. |
| IRS R ANGLE INV | 1 | ADIRU | IRS ROLL ANGLE INVALID FROM ADIRU. |
| COMPUTED A/S INV | 1 | ADIRU ADM'S | COMPUTED AIRSPEED INVALID FROM ADIRU |
| TAS INV | 1 | ADIRU ADM'S | TRUE AIRSPEED INVALID FROM ADIRU. |
| UNCORR BARO ALT INV | 1 | ADIRU ADM'S EFIS CNTRL PNL DEU | UNCORRECTED BARO INVALID FROM ADIRU. |
| BARO CORR ALT INV | 1 | ADIRU ADM'S EFIS CNTRL PNL DEU | BARO CORRECTED ALT INVALID. |
| STATIC PRESS INV | 1 | ADIRU ADM | STATIC PRESSURE IS INVALID FROM ADIRU OR ADM. |
| MACH INV | 1 | ADIRU ADM'S | MACH SIGNAL INVALID FROM ADIRU. |
| MCP DATA INV | 16 | MCP | LOSS OF DATA INPUTS FROM MCP. |
| ALPHA FLOOR FERF LIMIT | 22 | SMYD | AOA DATA INVALID FROM SMYD. |
| FMC TARGET V/S | 18 | FMC | FMC TARGET VERTICAL SPEED INVALID. |
| FMC DISCRETE WORD | 18 | FMC | FMC DISCRETE WORD INVALID. |
| FMC TARGET ALT | 18 | FMC | FMC TARGET ALTITUDE IS INVALID. |
| FMC TARGET A/S | 18 | FMC | FMC TARGET AIRSPEED IS INVALID. |
| FMC MACH | 18 | FMC | MACH COMMAND SIGNAL IS INVALID. |
| 400 HZ PWR INV | CB | BPCU | |
| SPD INT INCOMPATIBLE | 18 | FMC | THE FMC TARGET SPEED FROM THE FMC DOES NOT MATCH THE WINDOW VALUE ON THE MCP. THE FMC WILL DROP OUT OF VNAV. |
| MIN OP SPD INVALID | 22 | SMYD | |

FDE: ENG ATT

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| BOTH R/A INV IN DUAL | 7 | LRRA | BOTH FOREIGN AND LOCAL RADIO ALTIMETERS WERE INVALID DURING DUAL APPROACH CAUSING A A/P DISCONNECT. |
| ELV ACT PRESS INV | 30 | ELV ACT PRESS SWITCH | ELEVATOR ACTUATOR DID NOT PRESSURIZE WITHIN 3.5 SECONDS AFTER A/P ENGAGED TO COMMAND. |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| AIL ACT PRESS INV | 31 | AIL ACT PRESS SWITCH | AILERON ACTUATOR DID NOT PRESSURIZE WITHIN 3.5 SECONDS AFTER A/P ENGAGED TO COMMAND. |
| 50M DISC WRAP [1] | 71 | FMC | ONE OR MORE OF THE 50M DISCRETE WRAP-AROUNDS FAILED. THE DISCRETE WRAP-AROUND MONITORS TEST THAT THE DISCRETE DATA I/O CIRCUITRY IS FUCTIONING PROPERLY. |
| COLUMN FORCE APPLIED | 30 | PCWS XDCR | A FORCE ON THE COLUMN EXCEEDED 5 LBS WITHIN 5 OR MORE ENGAGE ATTEMPTS. THE FORCE DETECTION WILL PROVIDE 10% HYSTERESIS. |
| WHEEL FORCE APPLIED | 31 | PCWS XDCR | A FORCE ON THE COLUMN EXCEEDED 3 LBS WITHIN 5 OR MORE ENGAGE ATTEMPTS. THE FORCE DETECTION WILL PROVIDE 17% HYSTERESIS. |
| ENGAGE TEST | 58 | MCP | THE ENGAGE TEST CONSISTS OF A CHECK OF THE ENGAGE SOLENOID ENABLE HIGH- WRAP. WHEN THE WRAP IS SET TRUE, IT IS TESTED TO INSURE IT CAN GO TO THE LOW CONDITION. IF IT FAILS, ENGAGEMENT IS DISABLED UNTIL A LONG- TERM PWR UP IS EXECUTED. |
| 100M DISC WRAP [1] | 71 | FCC | ONE OR MORE OF THE 100M DISCRETE WRAP-AROUNDS FAILED. THE DISCRETE WRAP-AROUND MONITORS, TEST THAT THE DISCRETE DATA I/O CIRCUITRY IS FUNCTIONING PROPERLY. |
| P2 A/P WARN ANN [2] | 71 | FCC | CPU 2'S AUTOPILOT MONITOR VALID DISCRETE OUTPUT DISAGREES WITH ITS WRAP-AROUND. |
| P2 FLARE ENG ANN [2] | 71 | FCC | CPU 2'S FLARE ENGAGE DISCRETE OUTPUT DISAGREES WITH ITS WRAP-AROUND. |
| R LVDT MON | 31 | AIL ACT | THE LVDT MONITORS DETECT FAILURES RESULTING IN ERRONEOUS ROLL ACTUATOR POSITION INDICATIONS CAUSED BY OPENS IN THE LVDT CIRCUITRY. IF 2X < 1.3 VOLTS, THE FAULT IS SET. |
| NEUTRAL SHIFT MON | 32 | NSS | THE NEUTRAL SHIFT MONITOR IS DESIGNED TO DETECT HARDOVERS BY MONITORING THE NEUTRAL SHIFT RATE (NEUTRAL SHIFT RATE EXCEEDED 1 DEGREE/SECOND). |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FAIL MESSAGE | LRU TEST | FAILED LRU | DESCRIPTION |
|---|---|---|---|
| P LVDT MON | 30 | ELV ACT | THE LVDT MONITORS DETECT FAILURES RESULTING IN ERRONEOUS PITCH ACTUATOR POSITION INDICATIONS CAUSED BY OPENS IN THE LVDT CIRCUITRY. IF 2X < 1.3 VOLTS, THE FAULT IS SET. |
| AUTO STAB TRIM CUTOUT | 32 | TRM CUTOUT | STABILIZER TRIM CUTOUT SWITCH ACTUATED. |
| MAIN ELECT TRIM | 32 | STAB TRIM RELAY | MAIN ELECTRIC TRIM SWITCH ACTUATED. |
| TRIM FLAP INTRLK | 71 | FCC | AUTOPILOT STABILIZER TRIM SPEED SELECTION DISAGREES WITH FLAP POSITION. |
| FLAP SYNCHRO | 34 | | |
| STAB MOTOR | 32 | | |
| SIMULTANEOUS UP/DN TRM | 32 | FCC | AUTOPILOT TRIM SERVO RECEIVING BOTH UP AND DOWN TRIM COMMANDS AT THE SAME TIME. |
| IRS P ANGLE INV | 1 | ADIRU | IRS PITCH ANGLE INVALID. |
| IRS R ANGLE INV | 1 | ADIRU | IRS ROLL ANGLE INVALID. |
| IRS P RATE INV | 1 | ADIRU | IRS PITCH RATE INVALID. |
| IRS R RATE INV | 1 | ADIRU | IRS ROLL RATE INVALID. |
| CAS/ALT INV | 1 | ADIRU ADM STATIC | COMPUTED AIRSPEED AND UNCORRECTED BARO ALTITUDE INVALID. |
| 400 HZ PWR INV (B) [2] | CB | BPCU | |
| AFCS ENGAGE INTLK | CB | AFCS ENG INTLK | |
| MCP DATA INV | 16 | MCP | LOSS OF DATA INPUTS FROM THE MCP. |
| SMC FLAP POS INV | 22 | SYMD | |
| DEU REVERSION | 25 | CDS/DEU | |
| PITCH SENSOR EXCIT INV | 21 | FCC | |
| ROLL SENSOR EXCIT INV | 21 | FCC | |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 801. Spoiler 4 Position Sensor Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) SPOIL-4 POS SEN-1 (J1B-B12, A12)

(b) SPOIL-4 POS SEN-2 (J1B-B12, A12)

(2) SPOIL-4 POS SEN-1 (J1B-B12, A12): The flight control computer A (FCC-A) receives incorrect data from the spoiler No. 4 position sensor during the ground test.

(3) SPOIL-4 POS SEN-2 (J1B-B12, A12): The flight control computer B (FCC-B) receives incorrect data from the spoiler No. 4 position sensor during the ground test.

B. Possible Causes

(1) Spoiler No. 4 position sensor, M931

(2) Flight control computer A (FCC-A), M1875

(3) Flight control computer B (FCC-B), M1876

(4) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

D. Related Data

(1) (SSM 22-11-31)

(2) (WDM 22-11-31)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If the maintenance messages shows, then continue.

(2) Do the SPOILER rigging test. To do it, do this task: Aileron Rigging Test, AMM TASK 22-11-00-820-803.

NOTE: To do the SPOILER rigging test only, make the selection for the SPOILER on the AILERON RIGGING menu.

(a) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(b) If the values for the A side and B side are not between the limits, then continue.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).

(3) Do the adjustment for the spoiler No. 4 position sensor, M931. To do it, do this task: Spoiler Position Sensor Adjustment, AMM TASK 22-11-27-820-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do these steps:

(a) Disconnect the spoiler No. 4 position sensor connector, D1695.

NOTE: You can find the spoiler No. 4 position sensor (M931) on the left wing spoiler No. 4. There are two connectors for the spoiler No. 4 position sensor. The connector D1695 is for the FCC-A.

(b) Do a resistance check between pins 1 and 2 of the spoiler No. 4 position sensor, M931.

(c) If the resistance is not 18.9-23.1 ohms, do these steps:

1) Replace the spoiler No. 4 position sensor, M931.

These are the tasks:

Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 18.9-23.1 ohms, then continue.

(e) Do a resistance check between pins 4 and 5 of the spoiler No. 4 position sensor, M931.

(f) If the resistance is not 6.75-8.25 ohms, do these steps:

1) Replace the spoiler No. 4 position sensor, M931.

These are the tasks:

Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.

2) Do the Repair Confirmation at the end of this task.

(g) If the resistance is 6.75-8.25 ohms between the pins, then continue.

(h) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1695.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1695, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1695 at STA W355, WL P5, LBL LRS (WDM 22-11-31).

| D10135B | | D1695 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1695.

c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(k) If there is 14V AC (±2) between pins 2 and 1 of the connector D1695, then continue.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(l) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1695 at STA W355, WL P5, LBL LRS (WDM 22-11-31).

| D10135B | | D1695 |
|---|---|---|
| pin B12 | - - - - - - - - - - - - - - - - | pin 4 |
| pin A12 | - - - - - - - - - - - - - - - - | pin 5 |

(m) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1695.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(n) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do these steps:

(a) Disconnect the spoiler No. 4 position sensor connector, D1699.

NOTE: You can find the spoiler No. 4 position sensor (M931) on the left wing spoiler No. 4. There are two connectors for the spoiler No. 4 position sensor. The connector D1699 is for the FCC-B.

(b) Do a resistance check between pins 1 and 2 of the spoiler No. 4 position sensor, M931.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) If the resistance is not 18.9-23.1 ohms, do these steps:

1) Replace the spoiler No. 4 position sensor, M931.

These are the tasks:

Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 18.9-23.1 ohms, then continue.

(e) Do a resistance check between pins 4 and 5 of the spoiler No. 4 position sensor, M931.

(f) If the resistance is not 6.75-8.25 ohms, do these steps:

1) Replace the spoiler No. 4 position sensor, M931.

These are the tasks:

Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.

2) Do the Repair Confirmation at the end of this task.

(g) If the resistance is 6.75-8.25 ohms between the pins, then continue.

(h) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1699.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1699, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1699 at STA W355, WL P5, LBL LRS (WDM 22-11-31).

| **D10137B** | | **D1699** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1699.

c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(k) If there is 14V AC (±2) between pins 2 and 1 of the connector D1699, then continue.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(l) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1699 at STA W355, WL P5, LBL LRS (WDM 22-11-31).

| D10137B | | D1699 |
|---|---|---|
| pin B12 | - - - - - - - - - - - - - - - - - | pin 4 |
| pin A12 | - - - - - - - - - - - - - - - - - | pin 5 |

(m) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1699.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(n) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) Replace the spoiler No. 4 position sensor, M931.

These are the tasks:

Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.

(a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ROLL SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**802. Spoiler 9 Position Sensor Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) SPOIL-9 POS SEN-1 (J1B-E12, D12)

(b) SPOIL-9 POS SEN-2 (J1B-E12, D12)

(2) SPOIL-9 POS SEN-1 (J1B-E12, D12): The flight control computer A (FCC-A) receives incorrect data from the spoiler No. 9 position sensor during the ground test.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) SPOIL-9 POS SEN-2 (J1B-E12, D12): The flight control computer B (FCC-B) receives incorrect data from the spoiler No. 9 position sensor during the ground test.

B. Possible Causes

(1) Spoiler No. 9 position sensor, M930

(2) Flight control computer A (FCC-A), M1875

(3) Flight control computer B (FCC-B), M1876

(4) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

D. Related Data

(1) (SSM 22-11-31)

(2) (WDM 22-11-31)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do the SPOILER rigging test. To do it, do this task: Aileron Rigging Test, AMM TASK 22-11-00-820-803.

NOTE: To do the SPOILER rigging test only, make the selection for the SPOILER on the AILERON RIGGING menu.

(a) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(b) If the values for the A side and B side are not between the limits, then continue.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) Do the adjustment for the spoiler No. 9 position sensor, M930. To do it, do this task: Spoiler Position Sensor Adjustment, AMM TASK 22-11-27-820-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do these steps:

(a) Disconnect the spoiler No. 9 position sensor connector, D1697.

NOTE: You can find the spoiler No. 9 position sensor (M930) on the right wing spoiler No. 9. There are two connectors for the spoiler No. 9 position sensor. The connector D1697 is for the FCC-A.

(b) Do a resistance check between pins 1 and 2 of the spoiler No. 9 position sensor, M930.

(c) If the resistance is not 18.9-23.1 ohms, do these steps:

1) Replace the spoiler No. 9 position sensor, M930.

These are the tasks:

Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 18.9-23.1 ohms, then continue.

(e) Do a resistance check between pins 4 and 5 of the spoiler No. 9 position sensor, M930.

(f) If the resistance is not 6.75-8.25 ohms, do these steps:

1) Replace the spoiler No. 9 position sensor, M930.

These are the tasks:

Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.

2) Do the Repair Confirmation at the end of this task.

(g) If the resistance is 6.75-8.25 ohms between the pins, then continue.

(h) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1697.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1697, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1697 at STA W355, WL P5, RBL RRS (WDM 22-11-31).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10135B | | D1697 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect the connector, D1697.
   c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
   d) Do the Repair Confirmation at the end of this task.

(k) If there is 14V AC (±2) between pins 2 and 1 of the connector D1697, then continue.
   1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(l) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1697 at STA W355, WL P5, RBL RRS (WDM 22-11-31).

| D10135B | | D1697 |
|---|---|---|
| pin E12 | - - - - - - - - - - - - - - - - - - | pin 4 |
| pin D12 | - - - - - - - - - - - - - - - - - - | pin 5 |

(m) If you find a problem with the wiring, then do these steps:
   1) Repair the wiring.
   2) Re-connect the connector, D1697.
   3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
   4) Do the Repair Confirmation at the end of this task.

(n) If you do not find a problem with the wiring, then continue.
   1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do these steps:
   (a) Disconnect the spoiler No. 9 position sensor connector, D1701.

   NOTE: You can find the spoiler No. 9 position sensor (M930) on the right wing spoiler No. 9. There are two connectors for the spoiler No. 9 position sensor. The connector D1701 is for the FCC-B.

   (b) Do a resistance check between pins 1 and 2 of the spoiler No. 9 position sensor, M930.
   (c) If the resistance is not 18.9-23.1 ohms, do these steps:
      1) Replace the spoiler No. 9 position sensor, M930.

      These are the tasks:

      Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

      Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.
      2) Do the Repair Confirmation at the end of this task.
   (d) If the resistance is 18.9-23.1 ohms, then continue.
   (e) Do a resistance check between pins 4 and 5 of the spoiler No. 9 position sensor, M930.
   (f) If the resistance is not 6.75-8.25 ohms, do these steps:
      1) Replace the spoiler No. 9 position sensor, M930.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

These are the tasks:

Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.

2) Do the Repair Confirmation at the end of this task.

(g) If the resistance is 6.75-8.25 ohms between the pins, then continue.

(h) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1701.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1701, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1701 at STA W355, WL P5, RBL RRS (WDM 22-11-31).

| D10137B | | D1701 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1701.

c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(k) If there is 14V AC (±2) between pins 2 and 1 of the connector D1701, then continue.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(l) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1701 at STA W355, WL P5, RBL RRS (WDM 22-11-31).

| D10137B | | D1701 |
|---|---|---|
| pin E12 | - - - - - - - - - - - - - - - - - - | pin 4 |
| pin D12 | - - - - - - - - - - - - - - - - - - | pin 5 |

(m) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1701.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(n) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) Replace the spoiler No. 9 position sensor, M930.

These are the tasks:

Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.

(a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ROLL SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**803. Stabilizer Position Sensor Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) STAB POS SEN-1 (J1A-A13, A12)

(b) STAB POS SEN-2 (J1A-A13, A12)

(c) STAB TRIM SERVO (J1A-A12, A13)

(2) STAB POS SEN-1 (J1A-A13, A12): The flight control computer A (FCC-A) receives incorrect data from the stabilizer position sensor A during the ground test.

(3) STAB POS SEN-2 (J1A-A13, A12): The flight control computer B (FCC-B) receives incorrect data from the stabilizer position sensor B during the ground test.

(4) STAB TRIM SERVO (J1A-A12, A13): An FCC detects a problem in the stab trim servo loop.

B. Possible Causes

(1) Stabilizer position sensor A, M1192

(2) Stabilizer position sensor B, M1193

(3) Flight control computer A (FCC-A), M1875

(4) Flight control computer B (FCC-B), M1876.

(5) Wiring problem



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

D. Related Data

(1) (SSM 22-12-31)

(2) (SSM 22-12-41)

(3) (WDM 22-12-31)

(4) (WDM 22-12-41)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do this task: Stabilizer Rigging Test, AMM TASK 22-11-00-820-805.

(a) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(b) If the values for the A side and B side are not between the limits, then continue.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).

(3) Do the adjustment for the stabilizer position sensor, M1192 or M1193. To do it, do this task: Stabilizer Position Sensor Adjustment, AMM TASK 22-11-31-820-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Disconnect the stabilizer position sensor A connector, D2205.

NOTE: You can find the stabilizer position sensor A (M1192) on the aft bulkhead station 1156. The stabilizer position sensor A is a dual synchro position sensor and it has two connectors (D2205 and D1249). The connector D2205 is for the FCC-A and the connector D1249 is for the digital flight data acquisition unit.

(b) Do a resistance check between pins 1 and 2 of the stabilizer position sensor, M1192.

(c) If the resistance is not 18.9-23.1 ohms, do these steps:

1) Replace the stabilizer position sensor, M1192.

These are the tasks:

Stabilizer Position Sensor Removal, AMM TASK 22-11-31-000-801,

Stabilizer Position Sensor Installation, AMM TASK 22-11-31-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 18.9-23.1 ohms, then continue.

(e) Do a resistance check between pins 4 and 5 of the stabilizer position sensor, M1192.

(f) If the resistance is not 6.75-8.25 ohms, do these steps:

1) Replace the stabilizer position sensor, M1192.

These are the tasks:

Stabilizer Position Sensor Removal, AMM TASK 22-11-31-000-801,

Stabilizer Position Sensor Installation, AMM TASK 22-11-31-400-801.

2) Do the Repair Confirmation at the end of this task.

(g) If the resistance is 6.75-8.25 ohms between the pins, then continue.

(h) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D2205.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D2205, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D2205 at STA 1164, WL 268, LBL 8 (WDM 22-12-31).

| **D10135A** | | **D2205** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D2205.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(k) If there is 14V AC (±2) between pins 2 and 1 of the connector D2205, then continue.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(l) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D2205 at STA 1164, WL 268, LBL 8 (WDM 22-12-31).

| D10135A | | D2205 |
|---|---|---|
| pin A13 | - - - - - - - - - - - - - - - - - | pin 5 |
| pin A12 | - - - - - - - - - - - - - - - - - | pin 4 |

(m) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D2205.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(n) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do these steps:

(a) Disconnect the stabilizer position sensor B connector, D2207.

NOTE: You can find the stabilizer position sensor B (M1193) on the aft bulkhead station 1156. The stabilizer position sensor B is a single synchro position sensor and it has only one connector.

(b) Do a resistance check between pins 1 and 2 of the stabilizer position sensor, M1193.

(c) If the resistance is not 18.9-23.1 ohms, do these steps:

1) Replace the stabilizer position sensor, M1193.

These are the tasks:

Stabilizer Position Sensor Removal, AMM TASK 22-11-31-000-801,

Stabilizer Position Sensor Installation, AMM TASK 22-11-31-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 18.9-23.1 ohms, then continue.

(e) Do a resistance check between pins 4 and 5 of the stabilizer position sensor, M1193.

(f) If the resistance is not 6.75-8.25 ohms, do these steps:

1) Replace the stabilizer position sensor, M1193.

These are the tasks:

Stabilizer Position Sensor Removal, AMM TASK 22-11-31-000-801,

Stabilizer Position Sensor Installation, AMM TASK 22-11-31-400-801.

2) Do the Repair Confirmation at the end of this task.

(g) If the resistance is 6.75-8.25 ohms between the pins, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(h) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D2207.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D2207, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D2207 at STA 1164, WL 268, RBL 8 (WDM 22-12-41).

| D10137A | | D2207 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D2207.

c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(k) If there is 14V AC (±2) between pins 2 and 1 of the connector D2207, then continue.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(l) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D2207 at STA 1164, WL 268, RBL 8 (WDM 22-12-41).

| D10137A | | D2207 |
|---|---|---|
| pin A13 | - - - - - - - - - - - - - - - - - | pin 4 |
| pin A12 | - - - - - - - - - - - - - - - - - | pin 5 |

(m) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D2207.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(n) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) If the maintenance message is on channel A, then replace the stabilizer position sensor A, M1192.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

These are the tasks:

Stabilizer Position Sensor Removal, AMM TASK 22-11-31-000-801,

Stabilizer Position Sensor Installation, AMM TASK 22-11-31-400-801.

(a) Do the Repair Confirmation at the end of this task.

(7) If the maintenance message is on channel B, then replace the stabilizer position sensor B, M1193.

These are the tasks:

Stabilizer Position Sensor Removal, AMM TASK 22-11-31-000-801,

Stabilizer Position Sensor Installation, AMM TASK 22-11-31-400-801.

(a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the STAB SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**804. Roll CWS Force Transducer Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) RCWS XDUCER-1 (J1B-K06, J06)

(b) RCWS XDUCER-2 (J1B-K06, J06)

(2) RCWS XDUCER-1 (J1B-K06, J06): The flight control computer A (FCC-A) receives incorrect data from the roll force transducer during the ground test.

(3) RCWS XDUCER-2 (J1B-K06, J06): The flight control computer B (FCC-B) receives incorrect data from the roll force transducer during the ground test.

B. Possible Causes

(1) Roll force transducer, M221

(2) Flight control computer A (FCC-A), M1875

(3) Flight control computer B (FCC-B), M1876

(4) Wiring problem



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

D. Related Data

(1) (SSM 22-11-11)

(2) (SSM 22-11-31)

(3) (WDM 22-11-11)

(4) (WDM 22-11-31)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do this task: Roll Control Wheel Steering Rigging Test, AMM TASK 22-11-00-820-807.

(a) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(b) If the values for the A side and B side are not between the limits, then continue.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).

(3) Do the adjustment for the roll force transducer, M221. To do it, do this task: Roll Force Transducer Adjustment, AMM TASK 22-11-11-820-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do these steps:

(a) Disconnect the roll force transducer connector, D397.

NOTE: You can find the roll force transducer (M221) on the aileron drum at the bottom of the captain's control wheel. The roll force transducer has two connectors. The connector D397 is for the FCC-A and the connector D1713 is for the FCC-B.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Do a continuity check between the pins shown below, at the roll force transducer, M221.

| D397 | | D397 |
|---|---|---|
| pin 1 | - - - - - - - - - - - - - - - - - - | pin 4 |

(c) If there is an open circuit, do these steps;

1) Replace the roll force transducer, M221.

These are the tasks:

Roll Force Transducer Removal, AMM TASK 22-11-11-000-801,

Roll Force Transducer Installation, AMM TASK 22-11-11-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If there is continuity between the above pins, then continue.

(e) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |

(f) Do a check for 26V AC (±3) between pins 4 and 1 of the connector D397.

NOTE: The 26V AC (±3) comes from the integrated flight system access unit (IFSAU). If there is a IFSAU failure, then correct the IFSAU problem first before you do this check.

(g) If there is not 26V AC (±3) between pins 4 and 1 of the connector D397, then do these steps:

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a wiring check between pin 2 of connector D2209A at the E1-1 shelf and pin 4 of connector D397 at STA 215, WL 196, LBL 24 (WDM 22-11-11).

a) Make sure that pin 5 of connector D397 is connected to chassis ground.

b) Make sure that pin 1 of connector D397 is connected to AC ground.

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D397.

c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

d) Do the Repair Confirmation at the end of this task.

(h) If there is 26V AC (±3) between pins 4 and 1 of the connector D397, then continue.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(i) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D397 at STA 215, WL 196, LBL 24 (WDM 22-11-31).

| D10135B | | D397 |
|---|---|---|
| pin K6 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin J6 | - - - - - - - - - - - - - - - - - - | pin 3 |

(j) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D397.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(k) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do these steps:

(a) Disconnect the roll force transducer connector, D1713.

NOTE: You can find the roll force transducer (M221) on the aileron drum at the bottom of the captain's control wheel. The roll force transducer has two connectors. The connector D397 is for the FCC-A and the connector D1713 is for the FCC-B.

(b) Do a continuity check between the pins shown below, at the roll force transducer, M221.

| D1713 | | D1713 |
|---|---|---|
| pin 1 | - - - - - - - - - - - - - - - - - - | pin 4 |

(c) If there is an open circuit, do these steps;

1) Replace the roll force transducer, M221.

These are the tasks:

Roll Force Transducer Removal, AMM TASK 22-11-11-000-801,

Roll Force Transducer Installation, AMM TASK 22-11-11-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If there is continuity between the above pins, then continue.

(e) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

(f) Do a check for 26V AC (±3) between pins 4 and 1 of the connector D1713.

NOTE: The 26V AC (±3) comes from the integrated flight system access unit (IFSAU). If there is a IFSAU failure, then correct the IFSAU problem first before you do this check.

(g) If there is not 26V AC (±3) between pins 4 and 1 of the connector D1713, then do these steps:

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a wiring check between pin 2 of connector D2209B at the E1-1 shelf and pin 4 of connector D1713 at STA 215, WL 196, LBL 24 (WDM 22-11-11).

a) Make sure that pin 5 of connector D1713 is connected to chassis ground.

b) Make sure that pin 1 of connector D1713 is connected to AC ground.

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1713.

c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

d) Do the Repair Confirmation at the end of this task.

(h) If there is 26V AC (±3) between pins 4 and 1 of the connector D1713, then continue.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(i) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1713 at STA 215, WL 196, LBL 24 (WDM 22-11-31).

| D10137B | | D1713 |
|---|---|---|
| pin K6 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin J6 | - - - - - - - - - - - - - - - - - - | pin 3 |

(j) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1713.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(k) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) Replace the roll force transducer, M221.

These are the tasks:

Roll Force Transducer Removal, AMM TASK 22-11-11-000-801,

Roll Force Transducer Installation, AMM TASK 22-11-11-400-801.

(a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ROLL SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**805. Pitch CWS Force Transducer (Captain's) Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) PCWS XDUCER-1 (J1A-E02, E01)

(b) PCWS XDUCER-1 (J1A-E02, E01)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) PCWS XDUCER-1 (J1B-E02, E01): The flight control computer A (FCC-A) receives incorrect data from the captain's pitch force transducer during the ground test.

(3) PCWS XDUCER-1 (J1A-E02, E01): The flight control computer B (FCC-B) receives incorrect data from the captain's pitch force transducer during the ground test.

B. Possible Causes

(1) Captain's pitch force transducer, M219

(2) Flight control computer A (FCC-A), M1875

(3) Flight control computer B (FCC-B), M1876

(4) Wiring problem

(5) Elevator Cable Rigging

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

D. Related Data

(1) (SSM 22-11-11)

(2) (SSM 22-12-31)

(3) (SSM 22-12-41)

(4) (WDM 22-11-11)

(5) (WDM 22-12-31)

(6) (WDM 22-12-41)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do this task: Pitch Control Wheel Steering Rigging Test, AMM TASK 22-11-00-820-806.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(b) If the values for the A side and B side are not between the limits, then verify that the elevator cables and shoulder bolts are rigged correctly. To verify this, do this task: Elevator Control Cables EA and EB and Pitch Force Transducers - Adjustment, AMM TASK 27-31-00-820-801.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).

(c) If the cable rigging is OK then continue.

(3) Do the adjustment for the captain's pitch force transducer, M219. To do it, do this task: Pitch Force Transducer Adjustment (DFCS BITE Test), AMM TASK 22-11-92-820-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do these steps:

(a) Disconnect the captain's pitch force transducer connector, D383.

NOTE: You can find the captain's force transducer (M219) on the quadrant assembly at the bottom of the captain's control column. The captain's pitch force transducer has two connectors. The connector D383 is for the FCC-A and the connector D1673 is for the FCC-B.

(b) Do a continuity check between the pins shown below, at the captain's pitch force transducer, M219.

| **D383** | | **D383** |
|---|---|---|
| pin 1 | - - - - - - - - - - - - - - - - - - | pin 4 |

(c) If there is an open circuit, do these steps;

1) Replace the captain's pitch force transducer, M219.

These are the tasks:

Pitch Force Transducer Removal, AMM TASK 22-11-92-000-801,

Pitch Force Transducer Installation, AMM TASK 22-11-92-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If there is continuity between the above pins, then continue.

(e) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |

(f) Do a check for 26V AC (±3) between pins 1 and 4 of the connector D383.

NOTE: The 26V AC (±3) comes from the integrated flight system access unit (IFSAU). If there is a IFSAU failure, then correct the IFSAU problem first before you do this check.

(g) If there is not 26V AC (±3) between pins 1 and 4 of the connector D383, then do these steps:

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Do a wiring check between pin 2 of connector D2209A at the E1-1 shelf and pin 1 of connector D383 at STA 215, WL 190, LBL 15 (WDM 22-11-11).
   a) Make sure that pin 5 of connector D383 is connected to chassis ground.
   b) Make sure that pin 4 of connector D383 is connected to AC ground.
3) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect the connector, D383.
   c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.
   d) Do the Repair Confirmation at the end of this task.

(h) If there is 26V AC (±3) between pins 1 and 4 of the connector D383, then continue.
1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(i) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D383 at STA 215, WL 190, LBL 15 (WDM 22-12-31).

| D10135B | | D383 |
|---|---|---|
| pin E2 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin E1 | - - - - - - - - - - - - - - - - - - | pin 3 |

(j) If you find a problem with the wiring, then do these steps:
1) Repair the wiring.
2) Re-connect the connector, D383.
3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(k) If you do not find a problem with the wiring, then continue.
1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do these steps:
(a) Disconnect the captain's pitch force transducer connector, D1673.

NOTE: You can find the captain's force transducer (M219) on the quadrant assembly at the bottom of the captain's control column. The captain's pitch force transducer has two connectors. The connector D383 is for the FCC-A and the connector D1673 is for the FCC-B.

(b) Do a continuity check between the pins shown below, at the captain's pitch force transducer, M219.

| D1673 | | D1673 |
|---|---|---|
| pin 1 | - - - - - - - - - - - - - - - - - - | pin 4 |

(c) If there is an open circuit, do these steps;
1) Replace the captain's pitch force transducer, M219.

These are the tasks:

Pitch Force Transducer Removal, AMM TASK 22-11-92-000-801,

Pitch Force Transducer Installation, AMM TASK 22-11-92-400-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Do the Repair Confirmation at the end of this task.

(d) If there is continuity between the above pins, then continue.

(e) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

(f) Do a check for 26V AC (±3) between pins 1 and 4 of the connector D1673.

NOTE: The 26V AC (±3) comes from the integrated flight system access unit (IFSAU). If there is a IFSAU failure, then correct the IFSAU problem first before you do this check.

(g) If there is not 26V AC (±3) between pins 1 and 4 of the connector D1673, then do these steps:

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a wiring check between pin 2 of connector D2209B at the E1-1 shelf and pin 1 of connector D1673 at STA 215, WL 190, LBL 15 (WDM 22-11-11).

a) Make sure that pin 5 of connector D1673 is connected to chassis ground.

b) Make sure that pin 4 of connector D1673 is connected to AC ground.

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1673.

c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

d) Do the Repair Confirmation at the end of this task.

(h) If there is 26V AC (±3) between pins 1 and 4 of the connector D1673, then continue.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(i) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1673 at STA 215, WL 190, LBL 15 (WDM 22-12-41).

| **D10137A** | | **D1673** |
|---|---|---|
| pin E2 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin E1 | - - - - - - - - - - - - - - - - - - | pin 3 |

(j) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1673.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(k) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) Replace the captain's pitch force transducer, M219.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

These are the tasks:

Pitch Force Transducer Removal, AMM TASK 22-11-92-000-801,

Pitch Force Transducer Installation, AMM TASK 22-11-92-400-801.

(a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the PITCH SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

## 806. Pitch CWS Force Transducer (First Officer's) Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) PCWS XDUCER-2 (J1A-E02, E01)

(b) PCWS XDUCER-2 (J1B-E02, E01)

(2) PCWS XDUCER-2 (J1A-E02, E01): The flight control computer A (FCC-A) receives incorrect data from the first officer's pitch force transducer during the ground test.

(3) PCWS XDUCER-2 (J1B-E02, E01): The flight control computer B (FCC-B) receives incorrect data from the first officer's pitch force transducer during the ground test.

B. Possible Causes

(1) First officer's pitch force transducer, M220

(2) Flight control computer A (FCC-A), M1875

(3) Flight control computer B (FCC-B), M1876

(4) Wiring problem

(5) Elevator Cable Rigging

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

D. Related Data

(1) (SSM 22-11-11)

(2) (SSM 22-12-31)

(3) (SSM 22-12-41)

(4) (WDM 22-11-11)

(5) (WDM 22-12-31)

(6) (WDM 22-12-41)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do this task: Pitch Control Wheel Steering Rigging Test, AMM TASK 22-11-00-820-806.

(a) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(b) If the values for the A side and B side are not between the limits, then verify that the elevator cables and shoulder bolts are rigged correctly. To verify this, do this task: Elevator Control Cables EA and EB and Pitch Force Transducers - Adjustment, AMM TASK 27-31-00-820-801.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).

(c) If the cable rigging is OK then continue.

(3) Do the adjustment for the first officer's pitch force transducer, M220. To do it, do this task: Pitch Force Transducer Adjustment (DFCS BITE Test), AMM TASK 22-11-92-820-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Disconnect the first officer's pitch force transducer connector, D385.

NOTE: You can find the first officer's force transducer (M220) on the quadrant assembly at the bottom of the first officer's control column. The first officer's pitch force transducer has two connectors. The connector D385 is for the FCC-A and the connector D1675 is for the FCC-B.

(b) Do a continuity check between the pins shown below, at the first officer's pitch force transducer, M219.

| D385 | | D385 |
|---|---|---|
| pin 1 | - - - - - - - - - - - - - - - - - - | pin 4 |

(c) If there is an open circuit, do these steps;

1) Replace the first officer's pitch force transducer, M219.

These are the tasks:

Pitch Force Transducer Removal, AMM TASK 22-11-92-000-801,

Pitch Force Transducer Installation, AMM TASK 22-11-92-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If there is continuity between the above pins, then continue.

(e) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |

(f) Do a check for 26V AC (±3) between pins 4 and 1 of the connector D385.

NOTE: The 26V AC (±3) comes from the integrated flight system access unit (IFSAU). If there is a IFSAU failure, then correct the IFSAU problem first before you do this check.

(g) If there is not 26V AC (±3) between pins 4 and 1 of the connector D385, then do these steps:

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a wiring check between pin 2 of connector D2209A at the E1-1 shelf and pin 4 of connector D385 at STA 215, WL 190, RBL 15 (WDM 22-11-11).

a) Make sure that pin 5 of connector D385 is connected to chassis ground.

b) Make sure that pin 1 of connector D385 is connected to AC ground.

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D385.

c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

d) Do the Repair Confirmation at the end of this task.

(h) If there is 26V AC (±3) between pins 4 and 1 of the connector D385, then continue.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(i) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D385 at STA 215, WL 190, RBL 15 (WDM 22-12-31).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10135A | | D385 |
|---|---|---|
| pin E2 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin E1 | - - - - - - - - - - - - - - - - - - | pin 3 |

(j) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D385.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(k) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do these steps:

(a) Disconnect the first officer's pitch force transducer connector, D1675.

NOTE: You can find the first officer's force transducer (M220) on the quadrant assembly at the bottom of the first officer's control column. The first officer's pitch force transducer has two connectors. The connector D385 is for the FCC-A and the connector D1675 is for the FCC-B.

(b) Do a continuity check between the pins shown below, at the first officer's pitch force transducer, M219.

| D1675 | | D1675 |
|---|---|---|
| pin 1 | - - - - - - - - - - - - - - - - - - | pin 4 |

(c) If there is an open circuit, do these steps;

1) Replace the first officer's pitch force transducer, M219.

These are the tasks:

Pitch Force Transducer Removal, AMM TASK 22-11-92-000-801,

Pitch Force Transducer Installation, AMM TASK 22-11-92-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If there is continuity between the above pins, then continue.

(e) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

(f) Do a check for 26V AC (±3) between pins 4 and 1 of the connector D1673.

NOTE: The 26V AC (±3) comes from the integrated flight system access unit (IFSAU). If there is a IFSAU failure, then correct the IFSAU problem first before you do this check.

(g) If there is not 26V AC (±3) between pins 4 and 1 of the connector D1675, then do these steps:

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Do a wiring check between pin 2 of connector D2209B at the E1-1 shelf and pin 4 of connector D1675 at STA 215, WL 190, RBL 15 (WDM 22-11-11).
   a) Make sure that pin 5 of connector D1675 is connected to chassis ground.
   b) Make sure that pin 1 of connector D1675 is connected to AC ground.
3) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect the connector, D1675.
   c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.
   d) Do the Repair Confirmation at the end of this task.

(h) If there is 26V AC (±3) between pins 4 and 1 of the connector D1675, then continue.
1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(i) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1675 at STA 215, WL 190, RBL 15 (WDM 22-12-41).

| D10137B | | D1675 |
|---|---|---|
| pin E2 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin E1 | - - - - - - - - - - - - - - - - - - | pin 3 |

(j) If you find a problem with the wiring, then do these steps:
1) Repair the wiring.
2) Re-connect the connector, D1675.
3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(k) If you do not find a problem with the wiring, then continue.
1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) Replace the first officer's pitch force transducer, M220.

These are the tasks:

Pitch Force Transducer Removal, AMM TASK 22-11-92-000-801,

Pitch Force Transducer Installation, AMM TASK 22-11-92-400-801.

(a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:
(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.
1) If the maintenance message does not show, then you corrected the fault.
(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.
1) Make the selection for the channels A and B.
2) Make the selection for the PITCH SENS test.
(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 807. Flap Position Transmitter Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FLAP POSN-1 (J1B-G06, F06, E06)

(b) FLAP POSN-2 (J1B-G06, F06, E06)

(2) FLAP POSN-1 (J1B-G06, F06, E06): The flight control computer A (FCC-A) receives incorrect data from the left flap position transmitter during the ground test.

(3) FLAP POSN-2 (J1B-G06, F06, E06): The flight control computer B (FCC-B) receives incorrect data from the right flap position transmitter during the ground test.

B. Possible Causes

(1) Left flap position transmitter, T427

(2) Right flap position transmitter, T428

(3) Flight control computer A (FCC-A), M1875

(4) Flight control computer B (FCC-B), M1876

(5) Wiring Problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

D. Related Data

(1) (SSM 22-11-11)

(2) (SSM 22-12-31)

(3) (SSM 22-12-41)

(4) (WDM 22-11-11)

(5) (WDM 22-12-31)

(6) (WDM 22-12-41)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do this task: Flaps Rigging Test, AMM TASK 22-11-00-820-804.

(a) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(b) If the values for the A side and B side are not between the limits, then continue.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).

(3) If the maintenance message is on channel A, then do these steps:

(a) Disconnect the left flap position transmitter connector, D275.

NOTE: You can find the left flap position transmitter on the outboard end of the transmission No. 1.

(b) Do a continuity check between the pins shown below, at the flap position transmitter, T427.

| **D275** | | **D275** |
|---|---|---|
| pin 9 | - - - - - - - - - - - - - - - - - - | pin 10 |
| pin 12 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin 12 | - - - - - - - - - - - - - - - - - - | pin 14 |
| pin 13 | - - - - - - - - - - - - - - - - - - | pin 14 |

(c) If there is an open circuit, do these steps;

1) Replace the flap position transmitter, T427.

These are the tasks:

Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801,

Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If there is continuity between the above pins, then continue.

(e) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(f) Do a check for 26V AC (±3) from pin 9 of the connector D275 to structure ground.

NOTE: The 26V AC (±3) comes from the integrated flight system access unit (IFSAU). If there is a IFSAU failure, then correct the IFSAU problem first before you do this check.

(g) If there is not 26V AC (±3) between pin 9 of the connector D275 to structure ground, then do these steps:

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a wiring check between pin 2 of connector D2209A at the E1-1 shelf and pin 9 of connector D275 at STA W 450, WL P1, LBL LRS (WDM 22-11-11).

a) Make sure that pin 10 of connector D275 is connected to ground.

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D275.

c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

d) Do the Repair Confirmation at the end of this task.

(h) If there is 26V AC (±3) between pin 9 of the connector D275 to structure ground, then continue.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(i) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D275 at STA W450, WL P1, LBL LRS (WDM 22-12-31).

| D10135B | | D275 |
|---|---|---|
| pin F6 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin G6 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin E6 | - - - - - - - - - - - - - - - - - - | pin 14 |

(j) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D275.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(k) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(4) If the maintenance message is on channel B, then do these steps:

(a) Disconnect the right flap position transmitter connector, D229.

NOTE: You can find the right flap position transmitter on the outboard end of the transmission No. 8.

(b) Do a continuity check between the pins shown below, at the flap position transmitter, T428.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D229 | | D229 |
|---|---|---|
| pin 9 | - - - - - - - - - - - - - - - - - - | pin 10 |
| pin 12 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin 12 | - - - - - - - - - - - - - - - - - - | pin 14 |
| pin 13 | - - - - - - - - - - - - - - - - - - | pin 14 |

(c) If there is an open circuit, do these steps;

1) Replace the flap position transmitter, T428.

These are the tasks:

Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801,

Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If there is continuity between the above pins, then continue.

(e) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

(f) Do a check for 26V AC (±3) from pin 9 of the connector D229 to structure ground.

NOTE: The 26V AC (±3) comes from the integrated flight system access unit (IFSAU). If there is a IFSAU failure, then correct the IFSAU problem first before you do this check.

(g) If there is not 26V AC (±3) from pin 9 of the connector D229 to structure ground, then do these steps:

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a wiring check between pin 2 of connector D2209B at the E1-1 shelf and pin 9 of connector D229 at STA W450, WL P1, RBL RRS (WDM 22-11-11).

a) Make sure that pin 10 of connector D229 is connected to ground.

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D229.

c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

d) Do the Repair Confirmation at the end of this task.

(h) If there is 26V AC (±3) from pin 9 of the connector D229 to structure ground, then continue.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(i) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D229 at STA W450, WL P1, RBL RRS (WDM 22-12-41).

| D10137B | | D229 |
|---|---|---|
| pin F6 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin G6 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin E6 | - - - - - - - - - - - - - - - - - - | pin 14 |

(j) If you find a problem with the wiring, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Repair the wiring.
2) Re-connect the connector, D229.
3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(k) If you do not find a problem with the wiring, then continue.
1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel A, then replace the flap position transmitter, T427.
These are the tasks:
Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801,
Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801.
(a) Do the Repair Confirmation at the end of this task.

(6) If the maintenance message is on channel B, then replace the flap position transmitter, T428.
These are the tasks:
Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801,
Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801.
(a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:
(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.
1) If the maintenance message does not show, then you corrected the fault.
(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.
1) Make the selection for the channels A and B.
2) Make the selection for the ROLL SENS test.
(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

## 808. DME Output Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) DME-1 (J1B-H04, G04)
(b) DME-2 (J1B-H04, G04)

(2) DME-1 (J1B-H04, G04): The flight control computer A (FCC-A) receives invalid data or no data from the distance measuring equipment -1 during the ground test.

(3) DME-2 (J1B-H04, G04): The flight control computer B (FCC-B) receives invalid data or no data from the distance measuring equipment -2 during the ground test.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

B. Possible Causes

(1) Distance measuring equipment-1 (DME-1), M164

(2) Distance measuring equipment-2 (DME-2), M165

(3) Flight control computer A (FCC-A), M1875

(4) Flight control computer B (FCC-B), M1876

(5) Wiring problem

C. Related Data

(1) (SSM 22-11-52)

(2) (SSM 22-55-11)

(3) (SSM 22-55-21)

(4) (WDM 34-55-11)

(5) (WDM 34-55-21)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: DME Interrogator BITE Procedure, 34-55 TASK 801.

(a) If there is a fault message, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the DME-1, M164. To remove it, do this task: DME Interrogator Removal, AMM TASK 34-55-21-000-801.

(c) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D161B at the E1-2 shelf (WDM 34-55-11).

| D10135B | | D161B |
|---|---|---|
| pin H4 | - - - - - - - - - - - - - - - - - - | pin G3 |
| pin G4 | - - - - - - - - - - - - - - - - - - | pin H3 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the DME-1, M164. To install it, do this task: DME Interrogator Installation, AMM TASK 34-55-21-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you find a problem with the wiring, then continue.

1) Re-install the DME-1, M164. To install it, do this task: DME Interrogator Installation, AMM TASK 34-55-21-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the DME-2, M165. To remove it, do this task: DME Interrogator Removal, AMM TASK 34-55-21-000-801.

(c) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D169B at the E1-5 shelf (WDM 34-55-21).

| D10137B | | D169B |
|---|---|---|
| pin H4 | - - - - - - - - - - - - - - - - - - | pin G3 |
| pin G4 | - - - - - - - - - - - - - - - - - - | pin H3 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the DME-2, M165. To install it, do this task: DME Interrogator Installation, AMM TASK 34-55-21-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you find a problem with the wiring, then continue.

1) Re-install the DME-2, M165. To install it, do this task: DME Interrogator Installation, AMM TASK 34-55-21-400-801.

(4) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Make the selection for the channels A and B.

2) Make the selection for the DME test.

(c) If the maintenance message does not show, then you corrected the fault.

—————— END OF TASK ——————

**809. Elevator Neutral Shift Sensor Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) NSS-1 (J1A-D12, C12)

(b) NSS-2 (J1A-D12, C12)

(2) NSS-1 (J1A-D12, C12): The flight control computer A (FCC-A) receives incorrect data from the elevator neutral shift sensor during the ground test.

(3) NSS-2 (J1A-D12, C12): The flight control computer B (FCC-B) receives incorrect data from the elevator neutral shift sensor during the ground test.

B. Possible Causes

(1) Elevator neutral shift sensor, M958

(2) Flight control computer A (FCC-A), M1875

(3) Flight control computer B (FCC-B), M1876

(4) Wiring problem

C. Related Data

(1) (SSM 22-12-31)

(2) (SSM 22-12-41)

(3) (WDM 22-12-31)

(4) (WDM 22-12-41)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) Do the ELEV RIG rigging test. To do it, do this task: Elevator Rigging Test, AMM TASK 22-11-00-820-802.

NOTE: To do the ELEV RIG rigging test only, make the selection for the ELEV RIG on the ELEVATOR RIGGING menu.

(a) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(b) If the values for the A side and B side are not between the limits, then continue.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).

(3) Do the adjustment for the elevator neutral shift sensor, M958. To do it, do this task: Elevator Neutral Shift Sensor Adjustment, AMM TASK 22-11-14-820-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do these steps:

(a) Disconnect the elevator neutral shift sensor connector, D1829.

NOTE: You can find the neutral shift sensor (M958) on the aft bulkhead station 1156. You can get access to the elevator neutral shift sensor through the Tailcone Access Door, 318BR. There are two connectors for the elevator neutral shift sensor. The connector D1829 is for the FCC-A.

(b) Do a resistance check between pins 1 and 2 of the neutral shift sensor, M958.

(c) If the resistance is not 18.9-23.1 ohms, do these steps:

1) Replace the neutral shift sensor, M958.

These are the tasks:

Elevator Neutral Shift Sensor Removal, AMM TASK 22-11-14-000-801,

Elevator Neutral Shift Sensor Installation, AMM TASK 22-11-14-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 18.9-23.1 ohms, then continue.

(e) Do a resistance check between pins 4 and 5 of the neutral shift sensor, M958.

(f) If the resistance is not 6.75 and 8.25 ohms, do these steps:

1) Replace the neutral shift sensor, M958.

These are the tasks:

Elevator Neutral Shift Sensor Removal, AMM TASK 22-11-14-000-801,

Elevator Neutral Shift Sensor Installation, AMM TASK 22-11-14-400-801.

2) Do the Repair Confirmation at the end of this task.

(g) If the resistance is 6.75 and 8.25 ohms between the pins, then continue.

(h) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1829.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1829, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1829 at STA 1161, WL 268, LBL 8 (WDM 22-12-31).

| D10135A | | D1829 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1829.

c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(k) If there is 14V AC (±2) between pins 2 and 1 of the connector D1829, then continue.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(l) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1829 at STA 1161, WL 268, LBL 8 (WDM 22-12-31).

| D10135A | | D1829 |
|---|---|---|
| pin D12 | - - - - - - - - - - - - - - - - | pin 5 |
| pin C12 | - - - - - - - - - - - - - - - - | pin 4 |

(m) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1829.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(n) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do these steps:

(a) Disconnect the elevator neutral shift sensor connector, D1677.

NOTE: You can find the elevator neutral shift sensor (M958) on the aft bulkhead station 1156. You can get access to the elevator neutral shift sensor through the Tailcone Access Door, 318BR. There are two connectors for the elevator neutral shift sensor. The connector D1677 is for the FCC-B



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Do a resistance check between pins 1 and 2 of the neutral shift sensor, M958.

(c) If the resistance is not 18.9-23.1 ohms, do these steps:

1) Replace the neutral shift sensor, M958.

These are the tasks:

Elevator Neutral Shift Sensor Removal, AMM TASK 22-11-14-000-801,

Elevator Neutral Shift Sensor Installation, AMM TASK 22-11-14-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 18.9-23.1 ohms, then continue.

(e) Do a resistance check between pins 4 and 5 of the neutral shift sensor, M958.

(f) If the resistance is not 6.75 and 8.25 ohms, do these steps:

1) Replace the neutral shift sensor, M958.

These are the tasks:

Elevator Neutral Shift Sensor Removal, AMM TASK 22-11-14-000-801,

Elevator Neutral Shift Sensor Installation, AMM TASK 22-11-14-400-801.

2) Do the Repair Confirmation at the end of this task.

(g) If the resistance is 6.75 and 8.25 ohms between the pins, then continue.

(h) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1677.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1677, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1677 at STA 1161, WL 268, LBL 8 (WDM 22-12-41).

| **D10137A** | | **D1677** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1677.

c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(k) If there is 14V AC (±2) between pins 2 and 1 of the connector D1677, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(l) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1677 at STA 1611, WL 268, LBL 8 (WDM 22-12-41).

| D10137A | | D1677 |
|---|---|---|
| pin D12 | - - - - - - - - - - - - - - - - - | pin 5 |
| pin C12 | - - - - - - - - - - - - - - - - - | pin 4 |

(m) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1677.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(n) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) Replace the elevator neutral shift sensor, M958.

These are the tasks:

Elevator Neutral Shift Sensor Removal, AMM TASK 22-11-14-000-801,

Elevator Neutral Shift Sensor Installation, AMM TASK 22-11-14-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the PITCH SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**810. A/P Elevator Actuator Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) ELEV ACT-1 (J1A-J15, H15, G15)

(b) ELEV ACT-2 (J1A-J15, H15, G15)

(2) ELEV ACT-1 (J1A-J15, H15, G15): The flight control computer A (FCC-A) receives incorrect data from the autopilot elevator actuator A during the ground test.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) ELEV ACT-2 (J1A-J15, H15, G15): The flight control computer B (FCC-B) receives incorrect data from the autopilot elevator actuator B during the ground test.

B. Possible Causes

(1) A/P elevator actuator A, M1020

(2) A/P elevator actuator B, M1022

(3) Flight control computer A (FCC-A), M1875

(4) Flight control computer B (FCC-B), M1876

(5) Wiring problem

C. Related Data

(1) (SSM 22-12-31)

(2) (SSM 22-12-41)

(3) (WDM 22-12-31)

(4) (WDM 22-12-41)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do these rigging checks for the A/P elevator actuators:

(a) Do the ELEV RIG rigging test. To do it, do this task: Elevator Rigging Test, AMM TASK 22-11-00-820-802.

NOTE: To do the ELEV RIG rigging test only, make the selection for the ELEV RIG on the ELEVATOR RIGGING menu.

(b) Do the ELEV AUTH DUAL rigging tests. To do it, do this task: Elevator Rigging Test, AMM TASK 22-11-00-820-802.

NOTE: To do the ELEV AUTH DUAL rigging test only, make the selection for the ELEV AUTH DUAL on the ELEVATOR RIGGING menu.

(c) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(d) If the values for the A side and B side are not between the limits, then continue.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).

(3) Do this task: Autopilot Elevator Actuator Adjustment, AMM TASK 22-11-26-820-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do these steps:

(a) Disconnect the A/P elevator actuator A connector, D1681.

NOTE: You can find the A/P elevator actuator A (M1020) on the aft bulkhead station 1156. You can get access to the A/P elevator actuator through the Tailcone Access Door, 318BR. .

(b) Do a continuity check between the pins shown below at the A/P elevator actuator A, M1020.

| D1681 | | D1681 |
|---|---|---|
| pin 9 | - - - - - - - - - - - - - - - - - - | pin 10 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin 12 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin 6 | - - - - - - - - - - - - - - - - - - | pin 5 |
| pin 7 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin 1 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin 21 | - - - - - - - - - - - - - - - - - - | pin 22 |

(c) If there is an open circuit, do these steps;

1) If you find open circuit from pin 6 to pin 5, or pin 7 to pin 8, replace the transfer valves.

Do these tasks:Valve Removal, AMM TASK 22-11-12-000-801Valve Installation, AMM TASK 22-11-12-400-801

2) If you find open circuit from pin 1 to pin 2, replace the arm solenoid.

Do these tasks:Valve Removal, AMM TASK 22-11-12-000-801Valve Installation, AMM TASK 22-11-12-400-801

3) If you find open circuit from pin 21 to pin 22, replace the detent solenoid.

Do these tasks:Valve Removal, AMM TASK 22-11-12-000-801Valve Installation, AMM TASK 22-11-12-400-801

4) If you find open circuit from pin 9 to pin 10, or pin 11 to pin 13, or 12 to pin 13, replace the A/P elevator actuator A, M1020.

Do these tasks:Autopilot Elevator Actuator Removal, AMM TASK 22-11-26-000-801Autopilot Elevator Actuator Installation, AMM TASK 22-11-26-400-801

5) Do the Repair Confirmation at the end of this task.

(d) If there is continuity between the above pins, then continue.

(e) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

(f) Do a check for 14V AC (±2) between pins 10 and 9 of the connector D1681.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(g) If there is not 14V AC (±2) between pins 10 and 9 of the connector D1681, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 10 or pin 9 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1681 at STA 1165, WL 758, LBL 7 (WDM 22-12-31).

| D10135A | | D1681 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 10 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 9 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1681.

c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(h) If there is 14V AC (±2) between pins 10 and 9 of the connector D1681, then continue.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(i) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1681 at STA 1165, WL 278, LBL 7 (WDM 22-12-31).

| D10135A | | D1681 |
|---|---|---|
| pin J15 | - - - - - - - - - - - - - - - - - - | pin 11 |
| pin H15 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin G15 | - - - - - - - - - - - - - - - - - - | pin 12 |

(j) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1681.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(k) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do these steps:

(a) Disconnect the A/P elevator actuator B connector, D1687.

NOTE: You can find the A/P elevator actuator B (M1022) on the aft bulkhead station 1156. You can get access to the A/P elevator actuator through theTailcone Access Door, 318BR. .

(b) Do a continuity check between the pins shown below at the A/P elevator actuator B, M1022.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D1687 | | D1687 |
|---|---|---|
| pin 9 | - - - - - - - - - - - - - - - - - - | pin 10 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin 12 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin 6 | - - - - - - - - - - - - - - - - - - | pin 5 |
| pin 7 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin 1 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin 21 | - - - - - - - - - - - - - - - - - - | pin 22 |

(c) If there is an open circuit, do these steps;

1) If you find open circuit from pin 6 to pin 5, or pin 7 to pin 8, replace the transfer valves.

   Do these tasks:Valve Removal, AMM TASK 22-11-12-000-801Valve Installation, AMM TASK 22-11-12-400-801

2) If you find open circuit from pin 1 to pin 2, replace the arm solenoid.

   Do these tasks:Valve Removal, AMM TASK 22-11-12-000-801Valve Installation, AMM TASK 22-11-12-400-801

3) If you find open circuit from pin 21 to pin 22, replace the detent solenoid.

   Do these tasks:Valve Removal, AMM TASK 22-11-12-000-801Valve Installation, AMM TASK 22-11-12-400-801

4) If you find open circuit from pin 9 to pin 10, or pin 11 to pin 13, or pin 12 to pin 13, replace the A/P elevator actuator B, M1022.

   Do these tasks:Autopilot Elevator Actuator Removal, AMM TASK 22-11-26-000-801Autopilot Elevator Actuator Installation, AMM TASK 22-11-26-400-801

5) Do the Repair Confirmation at the end of this task.

(d) If there is continuity between the above pins, then continue.

(e) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(f) Do a check for 14V AC (±2) between pins 10 and 9 of the connector D1687.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(g) If there is not 14V AC (±2) between pins 10 and 9 of the connector D1687, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 10 or pin 9 to structure ground.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1687 at STA 1161, WL 287, LBL 7 (WDM 22-12-41).

| D10137A | | D1687 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 10 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 9 |

3) If you find a problem with the wiring, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

a) Repair the wiring.

b) Re-connect the connector, D1687.

c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(h) If there is 14V AC (±2) between pins 10 and 9 of the connector D1687, then continue.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(i) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1687 at STA 1611, WL 287, LBL 7 (WDM 22-12-41).

| D10137A | | D1687 |
|---|---|---|
| pin J15 | - - - - - - - - - - - - - - - - - - | pin 11 |
| pin H15 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin G15 | - - - - - - - - - - - - - - - - - - | pin 12 |

(j) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1687.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(k) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) If the maintenance message is on channel A, then replace the A/P elevator actuator A, M1020.

These are the tasks:

Autopilot Elevator Actuator Removal, AMM TASK 22-11-26-000-801,

Autopilot Elevator Actuator Installation, AMM TASK 22-11-26-400-801.

(a) Do the Repair Confirmation at the end of this task.

(7) If the maintenance message is on channel B, the replace the A/P elevator actuator B, M1022.

These are the tasks:

Autopilot Elevator Actuator Removal, AMM TASK 22-11-26-000-801,

Autopilot Elevator Actuator Installation, AMM TASK 22-11-26-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the PITCH SENS test.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) If the maintenance message does not show, then you corrected the fault.

—————— END OF TASK ——————

**811. A/P Aileron Actuator Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) AIL ACT-1 (J1B-J15, H15, G15)

(b) AIL ACT-2 (J1B-J15, H15, G15)

(2) AIL ACT-1 (J1B-J15, H15, G15): The flight control computer A (FCC-A) receives incorrect data from the autopilot aileron actuator A during the ground test.

(3) AIL ACT-2 (J1B-J15, H15, G15): The flight control computer B (FCC-B) receives incorrect data from the autopilot aileron actuator B during the ground test.

B. Possible Causes

(1) A/P aileron actuator A, M943

(2) A/P aileron actuator B, M1024

(3) Flight control computer A (FCC-A), M1875

(4) Flight control computer B (FCC-B), M1876

(5) Wiring problem

C. Related Data

(1) (SSM 22-11-31)

(2) (WDM 22-11-31)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do the COMPLETE AIL RIG rigging test. To do it, do this task: Aileron Rigging Test, AMM TASK 22-11-00-820-803.

(a) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) If the values for the A side and B side are not between the limits, then continue.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).

(3) Do this task: Autopilot Aileron Actuator Adjustment, AMM TASK 22-11-25-820-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do these steps:

(a) Disconnect the A/P aileron actuator A connector, D1827.

NOTE: You can find the A/P aileron actuator A (M943) in the left main landing gear wheel well, outboard of the power control units for the ailerons.

(b) Do a continuity check between these pins of the A/P aileron actuator A, M943.

| D1827 | | D1827 |
|---|---|---|
| pin 9 | - - - - - - - - - - - - - - - - - - | pin 10 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin 12 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin 6 | - - - - - - - - - - - - - - - - - - | pin 5 |
| pin 7 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin 1 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin 21 | - - - - - - - - - - - - - - - - - - | pin 22 |

(c) If there is an open circuit, do these steps;

1) If you find open circuit from pin 6 to pin 5, or pin 7 to pin 8, replace the transfer valves.

Do these tasks:Valve Removal, AMM TASK 22-11-12-000-801Valve Installation, AMM TASK 22-11-12-400-801

2) If you find open circuit from pin 1 to pin 2, replace the arm solenoid.

Do these tasks:Valve Removal, AMM TASK 22-11-12-000-801Valve Installation, AMM TASK 22-11-12-400-801

3) If you find open circuit from pin 21 to pin 22, replace the detent solenoid.

Do these tasks:Valve Removal, AMM TASK 22-11-12-000-801Valve Installation, AMM TASK 22-11-12-400-801

4) If you find open circuit from pin 9 to pin 10, or pin 11 to pin 13, or 12 to pin 13, replace the A/P aileron actuator A, M943.

Do these tasks:Autopilot Aileron Actuator Removal, AMM TASK 22-11-25-000-801Autopilot Aileron Actuator Installation, AMM TASK 22-11-25-400-801

(d) If there is continuity between the above pins, then continue.

(e) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

(f) Do a check for 14V AC (±2) between pins 9 and 10 of the connector D1827.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(g) If there is not 14V AC (±2) between pins 9 and 10 of the connector D1827, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 9 or pin 10 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1827 at STA 670, WL 193, LBL 40 (WDM 22-11-31).

| D10135B | | D1827 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 9 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 10 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1827.

c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(h) If there is 14V AC (±2) between pins 9 and 10 of the connector D1827, then continue.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(i) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1827 at STA 670, WL 193, LBL 40 (WDM 22-11-31).

| D10135B | | D1827 |
|---|---|---|
| pin J15 | - - - - - - - - - - - - - - - - - - | pin 11 |
| pin G15 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin H15 | - - - - - - - - - - - - - - - - - - | pin 13 |

(j) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1827.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(k) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do these steps:

(a) Disconnect the A/P aileron actuator B connector, D1691.

NOTE: You can find the A/P aileron actuator B (M1024) in the left main landing gear wheel well, outboard of the power control units for the ailerons.

(b) Do a continuity check between these pins of the A/P aileron actuator B, M1024.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D1691 | | D1691 |
|---|---|---|
| pin 9 | - - - - - - - - - - - - - - - - - - | pin 10 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin 12 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin 6 | - - - - - - - - - - - - - - - - - - | pin 5 |
| pin 7 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin 1 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin 21 | - - - - - - - - - - - - - - - - - - | pin 22 |

(c) If there is an open circuit, do these steps;

1) If you find open circuit from pin 6 to pin 5, or pin 7 to pin 8, replace the transfer valves.

Do these tasks:Valve Removal, AMM TASK 22-11-12-000-801Valve Installation, AMM TASK 22-11-12-400-801

2) If you find open circuit from pin 1 to pin 2, replace the arm solenoid.

Do these tasks:Valve Removal, AMM TASK 22-11-12-000-801Valve Installation, AMM TASK 22-11-12-400-801

3) If you find open circuit from pin 21 to pin 22, replace the detent solenoid.

Do these tasks:Valve Removal, AMM TASK 22-11-12-000-801Valve Installation, AMM TASK 22-11-12-400-801

4) If you find open circuit from pin 9 to pin 10, or pin 11 to pin 13, or pin 12 to pin 13, replace the A/P aileron actuator B, M1024.

Do these tasks:Autopilot Aileron Actuator Removal, AMM TASK 22-11-25-000-801Autopilot Aileron Actuator Installation, AMM TASK 22-11-25-400-801

(d) If there is continuity between the above pins, then continue.

(e) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(f) Do a check for 14V AC (±2) between pins 9 and 10 of the connector D1691.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(g) If there is not 14V AC (±2) between pins 9 and 10 of the connector D1691, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 9 or pin 10 to structure ground.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1691 at STA 670, WI 193, LBL 50 (WDM 22-11-31).

| D10137B | | D1691 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 9 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 10 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

b) Re-connect the connector, D1691.

c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(h) If there is 14V AC (±2) between pins 9 and 10 of the connector D1691, then continue.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(i) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1691 at STA 670, WL 193, LBL 50 (WDM 22-11-31).

| D10137B | | D1691 |
|---|---|---|
| pin J15 | - - - - - - - - - - - - - - - - - - | pin 11 |
| pin G15 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin H15 | - - - - - - - - - - - - - - - - - - | pin 13 |

(j) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1691.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(k) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) If the maintenance message is on channel A, then replace the A/P aileron actuator A, M943.

These are the tasks:

Autopilot Aileron Actuator Removal, AMM TASK 22-11-25-000-801,

Autopilot Aileron Actuator Installation, AMM TASK 22-11-25-400-801.

(a) Do the Repair Confirmation at the end of this task.

(7) If the maintenance message is on channel B, then replace the A/P aileron actuator B, M1024.

These are the tasks:

Autopilot Aileron Actuator Removal, AMM TASK 22-11-25-000-801,

Autopilot Aileron Actuator Installation, AMM TASK 22-11-25-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ROLL SENS test.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) If the maintenance message does not show, then you corrected the fault.

—————— END OF TASK ——————

**812. Elevator Position Sensor Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) ELEV POS SEN-1 (J1A-K13, J13, H13)

(b) ELEV POS SEN-2 (J1A-K13, J13, H13)

(2) ELEV POS SENS-1 (J1A-K13, J13, H13): The flight control computer A (FCC-A) receives incorrect data from the elevator position sensor during the ground test.

(3) ELEV POS SENS-2 (J1A-K13, J13, H13): The flight control computer B (FCC-B) receives incorrect data from the elevator position sensor during the ground test.

B. Possible Causes

(1) Elevator position sensor, M929

(2) Flight control computer A (FCC-A), M1875

(3) Flight control computer B (FCC-B), M1876

(4) Wiring problem

C. Related Data

(1) (SSM 22-12-31)

(2) (SSM 22-12-41)

(3) (WDM 22-12-31)

(4) (WDM 22-12-41)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do these rigging checks for the elevator position sensor:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Do the ELEV RIG rigging test. To do it, do this task: Elevator Rigging Test, AMM TASK 22-11-00-820-802.

NOTE: To do the ELEV RIG rigging test only, make the selection for the ELEV RIG on the ELEVATOR RIGGING menu.

(b) Do the ELEV AUTH DUAL rigging tests. To do it, do this task: Elevator Rigging Test, AMM TASK 22-11-00-820-802.

NOTE: To do the ELEV AUTH DUAL rigging test only, make the selection for the ELEV AUTH DUAL on the ELEVATOR RIGGING menu.

(c) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(d) If the values for the A side and B side are not between the limits, then continue.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).

(3) Do this task: Elevator Position Sensor Adjustment, AMM TASK 22-11-30-820-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do these steps:

(a) Disconnect the elevator position sensor connector, D1711.

NOTE: The elevator position sensor (M929) is on the aft bulkhead station 1156. You can get access to the position sensor through the Tailcone Access Door, 318BR. There are two connectors for the elevator position sensor. The connector for the FCC-A is D1711.

(b) Do a resistance check between pins 1 and 2 of the elevator position sensor, M929.

(c) If the resistance is not 18.9-23.1 ohms, do these steps:

1) Replace the elevator position sensor, M929.

These are the tasks:

Elevator Position Sensor Removal, AMM TASK 22-11-30-000-801,

Elevator Position Sensor Installation, AMM TASK 22-11-30-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 18.9-23.1 ohms, then continue.

(e) Do a resistance check between pins 3 and 4, pins 3 and 5, and pins 4 and 5 of the elevator position sensor, M929.

(f) If the resistance is not 6.75 and 8.25 ohms, do these steps:

1) Replace the elevator position sensor, M929.

These are the tasks:

Elevator Position Sensor Removal, AMM TASK 22-11-30-000-801,

Elevator Position Sensor Installation, AMM TASK 22-11-30-400-801.

2) Do the Repair Confirmation at the end of this task.

(g) If the resistance is 6.75 and 8.25 ohms between the pins, then continue.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(h) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1711.

NOTE: You only see 7V AC (±2) if you measure from pin 2 to structure ground or from pin 1 to structure ground.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1711, then do these steps:

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1711 at STA 1158 in the aft bulkhead area (WDM 22-12-31).

| D10135A | | D1711 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

a) Repair the wiring.

b) Re-connect the connector, D1711.

c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(k) If there is 14V AC (±2) between pins 2 and 1 of the connector D1711, then continue.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(l) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1711 at STA 1158 in the aft bulkhead area (WDM 22-12-31).

| D10135A | | D1711 |
|---|---|---|
| pin K13 | - - - - - - - - - - - - - - - - - | pin 4 |
| pin J13 | - - - - - - - - - - - - - - - - - | pin 5 |
| pin H13 | - - - - - - - - - - - - - - - - - | pin 3 |

(m) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the elevator position sensor connector, D1711.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(n) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Disconnect the elevator position sensor connector, D1679.

NOTE: The elevator position sensor (M929) is on the aft bulkhead station 1156. You can get access to the position sensor through the Tailcone Access Door, 318BR. There are two sensors for the elevator position sensor. The connector for FCC-B is D1679.

(b) Do a resistance check between pins 1 and 2 of the elevator position sensor, M929.

(c) If the resistance is not 18.9-23.1 ohms, do these steps:

1) Replace the elevator position sensor, M929.

These are the tasks:

Elevator Position Sensor Removal, AMM TASK 22-11-30-000-801,

Elevator Position Sensor Installation, AMM TASK 22-11-30-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 18.9-23.1 ohms, then continue.

(e) Do a resistance check between pins 3 and 4, pins 3 and 5, and pins 4 and 5 of the elevator position sensor, M929.

(f) If the resistance is not 6.75 and 8.25 ohms, do these steps:

1) Replace the elevator position sensor, M929.

These are the tasks:

Elevator Position Sensor Removal, AMM TASK 22-11-30-000-801,

Elevator Position Sensor Installation, AMM TASK 22-11-30-400-801.

2) Do the Repair Confirmation at the end of this task.

(g) If the resistance is 6.75 and 8.25 ohms between the pins, then continue.

(h) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1679.

NOTE: You only see 7V AC (±2) if you measure from pin 2 to structure ground or from pin 1 to structure ground.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1679, then do these steps:

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first, before you do this check.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1679 at STA 1158 in the aft bulkhead area (WDM 22-12-41).

| D10137A | | D1679 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

a) Repair the wiring.

b) Re-connect the elevator position sensor connector, D1679.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(k) If there is 14V AC (±2) between pins 2 and 1 of the connector D1679, then continue.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(l) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1679 at STA 1158 in the aft bulkhead are (WDM 22-12-41).

| D10137A | | D1679 |
|---|---|---|
| pin K13 | - - - - - - - - - - - - - - - - - | pin 4 |
| pin J13 | - - - - - - - - - - - - - - - - - | pin 5 |
| pin H13 | - - - - - - - - - - - - - - - - - | pin 3 |

(m) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1679.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(n) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) Replace the elevator position sensor, M929.

These are the tasks:

Elevator Position Sensor Removal, AMM TASK 22-11-30-000-801,

Elevator Position Sensor Installation, AMM TASK 22-11-30-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(7) Do this task:FCC, Column Switching Module Problem - Fault Isolation, 22-13 TASK 808

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then do this task: LRU Replacement Test, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the PITCH SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 813. Aileron Position Sensor Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) AIL POS SEN-1 (J1B-K13, J13, H13)

(b) AIL POS SEN-2 (J1B-K13, J13, H13)

(2) AIL POS SENS-1 (J1B-K13, J13, H13): The flight control computer A (FCC-A) receives incorrect data from the aileron position sensor during the ground test.

(3) AIL POS SENS-2 (J1B-K13, J13, H13): The flight control computer B (FCC-B) receives incorrect data from the aileron position sensor during the ground test.

(4) The flight control computer B (FCC-B) does not receive data from the aileron position sensor.

B. Possible Causes

(1) Aileron position sensor, M937

(2) Flight control computer A (FCC-A), M1875

(3) Flight control computer B (FCC-B), M1876

(4) Wiring problem

C. Related Data

(1) (SSM 22-11-31)

(2) (WDM 22-11-31)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do the COMPLETE AIL RIG rigging test. To do it, do this task: Aileron Rigging Test, AMM TASK 22-11-00-820-803.

(a) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(b) If the values for the A side and B side are not between the limits, then continue.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) Do this task: Aileron Position Sensor Adjustment, AMM TASK 22-11-29-820-801.
   (a) Do the Repair Confirmation at the end of this task.
   (b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do these steps:
   (a) Disconnect the aileron position sensor connector, D1709.

      NOTE: The aileron position sensor connector (M937) is on the forward wall of the main landing gear wheel well, adjacent to the autopilot aileron actuators. There are two connectors for the aileron position sensor. The connector D 1709 is for the FCC-A.

   (b) Do a resistance check between pins 1 and 2 of the aileron position sensor, M937.
   (c) If the resistance is not 18.9-23.1 ohms, do these steps:
      1) Replace the aileron position sensor, M937.

         These are the tasks:

         Aileron Position Sensor Removal, AMM TASK 22-11-29-000-801,

         Aileron Position Sensor Installation, AMM TASK 22-11-29-400-801.
      2) Do the Repair Confirmation at the end of this task.
   (d) If the resistance is 18.9-23.1 ohms, then continue.
   (e) Do a resistance check between pins 3 and 4, pins 3 and 5, and pins 4 and 5 of the aileron position sensor, M937.
   (f) If the resistance is not 6.75 and 8.25 ohms, do these steps:
      1) Replace the aileron position sensor, M937.

         These are the tasks:

         Aileron Position Sensor Removal, AMM TASK 22-11-29-000-801,

         Aileron Position Sensor Installation, AMM TASK 22-11-29-400-801.
      2) Do the Repair Confirmation at the end of this task.
   (g) If the resistance is 6.75 and 8.25 ohms between the pins, then continue.
   (h) Make sure that this circuit breaker is closed:

      CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

   (i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1709.

      NOTE: You only see 7V AC (±2) if you measure from pin 2 to structure ground or from pin 1 to structure ground.

   (j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1709, then do these steps:

      NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first, then do this wiring check.

      1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
   (k) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1709 at STA 666, WL 187, LBL 20 (WDM 22-11-31).


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10135B | | D1709 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - - | pin 1 |

(l) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
3) Re-connect the aileron position sensor connector, D1709.
4) Do the Repair Confirmation at the end of this task.

(m) If there is 14V AC (±2) between pins 2 and 1 of the connector D1709, then continue.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(n) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1709 at STA 666, WL 187, LBL 20 (WDM 22-11-31).

| D10135B | | D1709 |
|---|---|---|
| pin K13 | - - - - - - - - - - - - - - - - - | pin 4 |
| pin J13 | - - - - - - - - - - - - - - - - - | pin 5 |
| pin H13 | - - - - - - - - - - - - - - - - - | pin 3 |

(o) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-connect the connector, D1709.
3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(p) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do these steps:

(a) Disconnect the aileron position sensor connector, D1707.

NOTE: The aileron position sensor connector (M937) is on the forward wall of the main landing gear wheel well, adjacent to the autopilot aileron actuators. There are two connectors for the aileron position sensor. The connector D 1707 is for the FCC-B.

(b) Do a resistance check between pins 1 and 2 of the aileron position sensor, M937.

(c) If the resistance is not 18.9-23.1 ohms, do these steps:

1) Replace the aileron position sensor, M937.

These are the tasks:

Aileron Position Sensor Removal, AMM TASK 22-11-29-000-801,

Aileron Position Sensor Installation, AMM TASK 22-11-29-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 18.9-23.1 ohms, then continue.

(e) Do a resistance check between pins 3 and 4, pins 3 and 5, and pins 4 and 5 of the aileron position sensor, M937.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(f) If the resistance is not 6.75 and 8.25 ohms, do these steps:

1) Replace the aileron position sensor, M937.

These are the tasks:

Aileron Position Sensor Removal, AMM TASK 22-11-29-000-801,

Aileron Position Sensor Installation, AMM TASK 22-11-29-400-801.

2) Do the Repair Confirmation at the end of this task.

(g) If the resistance is 6.75 and 8.25 ohms between the pins, then continue.

(h) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1707.

NOTE: You only see 7V AC (±2) if you measure from pin 2 to structure ground or from pin 1 to structure ground.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1707, then do these steps:

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first, then do this wiring check.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(k) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1707 at STA 666, WL 187, LBL 20 (WDM 22-11-31).

| **D10137B** | | **D1707** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - - | pin 1 |

(l) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-connect the aileron position sensor connector, D1707.

4) Do the Repair Confirmation at the end of this task.

(m) If there is 14V AC (±2) between pins 2 and 1 of the connector D1707, then continue.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(n) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1707 at STA 666, WL 187, LBL 20 (WDM 22-11-31).

| **D10137B** | | **D1707** |
|---|---|---|
| pin K13 | - - - - - - - - - - - - - - - - - | pin 4 |
| pin J13 | - - - - - - - - - - - - - - - - - | pin 5 |
| pin H13 | - - - - - - - - - - - - - - - - - | pin 3 |

(o) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Re-connect the connector, D1707.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(p) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) Replace the aileron position sensor, M937.

These are the tasks:

Aileron Position Sensor Removal, AMM TASK 22-11-29-000-801,

Aileron Position Sensor Installation, AMM TASK 22-11-29-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ROLL SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**815. Mach Trim Actuator Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) FCC-A (J1C-D01)

(b) FCC-A (J1C-K01)

(c) FCC-B (J1C-K01)

(d) MT ACT (J1C-D04, E04)

(2) The flight control computers (FCC-A or FCC-B) receive incorrect mach trim position from the mach trim actuator.

B. Possible Causes

(1) Mach trim actuator, M414

(2) Integrated flight systems accessory unit (IFSAU), M1474

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 4 | C00456 | AFCS SYS A MACH TRIM AC |
| D | 4 | C00457 | AFCS SYS A MACH TRIM DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 2 | C01064 | AFCS SYS B MACH TRIM DC |
| C | 1 | C01037 | AFCS SYS B MACH TRIM AC |

D. Related Data

(1) (SSM 22-18-11)

(2) (WDM 22-18-11)

E. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the MACH TRIM test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Replace the mach trim actuator, M414.

These are the tasks:

Mach Trim Actuator Removal, AMM TASK 22-11-24-000-801,

Mach Trim Actuator Installation, AMM TASK 22-11-24-400-801.

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the MACH TRIM test.

(c) If the maintenance message does not show, then you corrected the fault.

(d) If the maintenance message shows, then continue.

(2) Replace the IFSAU, M1474.

These are the tasks:

Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801,

Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the MACH TRIM test.

(c) If the maintenance message does not show, then you corrected the fault.

(d) If the maintenance message shows, then continue.

(3) Do a check of FCC A and FCC B. To do the check, do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance message does not show, then there was an intermittent fault.

(d) If the maintenance message shows, then continue.

(4) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(5) Do this wiring check:

(a) Disconnect connector D545 from the mach trim actuator, M414

(b) Do a continuity check between these pins of the mach trim actuator, M414.

| D545 | | D545 |
|---|---|---|
| pin 23 | - - - - - - - - - - - - - - - - - - | pin 24 |
| pin 25 | - - - - - - - - - - - - - - - - - - | pin 26 |
| pin 3 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin 1 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin 13 |

(c) If there is an open circuit, do these steps;

1) Replace the mach trim actuator, M414.

These are the tasks:

Mach Trim Actuator Removal, AMM TASK 22-11-24-000-801,

Mach Trim Actuator Installation, AMM TASK 22-11-24-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If there is continuity between the above pins, then continue.

(6) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D545 of the mach trim actuator, M414 (WDM 22-18-11):

| D10135C | | D545 |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin 26 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin 25 |

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-connect connector D545 to the mach trim actuator, M414.

4) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

a) If the maintenance message does not show, then you corrected the fault.

5) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

a) Make the selection for the channels A and B.

b) Make the selection for the MACH TRIM test.

6) If the maintenance message does not show, then you corrected the fault.

(d) If you do not find a problem with the wiring, then continue.

(e) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(f) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(g) Do a wiring check between these pins of connector D2209A at the E1-1 shelf and connector D545 of the mach trim actuator, M414 (WDM 22-18-11):

| D2209A | | D545 |
|---|---|---|
| pin 61 | - - - - - - - - - - - - - - - - - - | pin 24 |
| pin 62 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin 56 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin 58 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin 59 | - - - - - - - - - - - - - - - - - - | pin 3 |

(h) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

3) Re-connect connector D545 to the mach trim actuator, M414.

4) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

a) If the maintenance message does not show, then you corrected the fault.

5) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

a) Make the selection for the channels A and B.

b) Make the selection for the MACH TRIM test.

6) If the maintenance message does not show, then you corrected the fault.

(i) If you do not find a problem with the wiring, then continue.

(j) Re-connect connector D545 to the mach trim actuator, M414.

(k) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(l) Do a wiring check between these pins of connector D10135C and connector D2209A at the E1-1 shelf (WDM 22-18-11):



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10135C | | D2209A |
|---|---|---|
| pin D1 | - - - - - - - - - - - - - - - - - - | pin 45 |
| pin F3 | - - - - - - - - - - - - - - - - - - | pin 46 |
| pin K1 | - - - - - - - - - - - - - - - - - - | pin 40 |
| pin B1 | - - - - - - - - - - - - - - - - - - | pin 42 |
| pin A1 | - - - - - - - - - - - - - - - - - - | pin 43 |

(m) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
3) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.
4) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.
   a) If the maintenance message does not show, then you corrected the fault.
5) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.
   a) Make the selection for the channels A and B.
   b) Make the selection for the MACH TRIM test.
6) If the maintenance message does not show, then you corrected the fault.

(7) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D545 of the mach trim actuator, M414 (WDM 22-18-11):

| D10137C | | D545 |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin 26 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin 25 |

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
3) Re-connect connector D545 to the mach trim actuator, M414.
4) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.
   a) If the maintenance message does not show, then you corrected the fault.
5) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.
   a) Make the selection for the channels A and B.
   b) Make the selection for the MACH TRIM test.
6) If the maintenance message does not show, then you corrected the fault.

(d) If you do not find a problem with the wiring, then continue.

(e) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(f) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(g) Do a wiring check between these pins of connector D2209A at the E1-1 shelf and connector D545 of the mach trim actuator, M414 (WDM 22-18-11):

| D2209A | | D545 |
|---|---|---|
| pin 61 | - - - - - - - - - - - - - - - - - - | pin 24 |
| pin 62 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin 56 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin 58 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin 59 | - - - - - - - - - - - - - - - - - - | pin 3 |

(h) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.
3) Re-connect connector D545 to the mach trim actuator, M414.
4) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.
   a) If the maintenance message does not show, then you corrected the fault.
5) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.
   a) Make the selection for the channels A and B.
   b) Make the selection for the MACH TRIM test.
6) If the maintenance message does not show, then you corrected the fault.

(i) If you do not find a problem with the wiring, then continue.

(j) Re-connect connector D545 to the mach trim actuator, M414.

(k) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(l) Do a wiring check between these pins of connector D10137C and connector D2209B at the E1-1 shelf (WDM 22-18-11).

| D10137C | | D2209A |
|---|---|---|
| pin D1 | - - - - - - - - - - - - - - - - - - | pin 45 |
| pin F3 | - - - - - - - - - - - - - - - - - - | pin 46 |
| pin K1 | - - - - - - - - - - - - - - - - - - | pin 40 |
| pin B1 | - - - - - - - - - - - - - - - - - - | pin 42 |
| pin A1 | - - - - - - - - - - - - - - - - - - | pin 43 |
| pin G3 | - - - - - - - - - - - - - - - - - - | pin 55 |

(m) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
3) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.
4) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.
   a) If the maintenance message does not show, then you corrected the fault.
5) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

a) Make the selection for the channels A and B.

b) Make the selection for the MACH TRIM test.

6) If the maintenance message does not show, then you corrected the fault.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the MACH TRIM test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**816. Mach Trim Select Status from IFSAU Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) IFSAU

(b) IFSAU (J1C-C3)

(2) The flight control computers (FCC-A or FCC-B) receive incorrect Mach Trim Select Status from the Integrated Flight Systems Accessory Unit (IFSAU).

B. Possible Causes

(1) Integrated Flight Systems Accessory Unit (IFSAU), M1474

(2) Flight Control Computer, M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring Problem

C. Related Data

(1) (SSM 22-18-11)

(2) (WDM 22-18-11)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the MACH TRIM test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Replace the IFSAU, M1474.

These are the tasks:

Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801,

Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the MACH TRIM test.

(c) If the maintenance message does not show, then you corrected the fault.

(d) If the maintenance message shows, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(3) If the maintenance message is on channel A, do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(c) Do a wiring check between these pins of connector D10135C and connector D2209A at the E1-1 shelf (WDM 22-18-11).

| **D10135C** | | **D2209A** |
|---|---|---|
| pin C3 | - - - - - - - - - - - - - - - - - - | pin 41 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

4) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

a) If the maintenance message does not show, then you corrected the fault.

5) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

a) Make the selection for the channels A and B.

b) Make the selection for the MACH TRIM test.

6) If the maintenance message does not show, then you corrected the fault.

7) If the maintenance message shows, then continue.

(e) If you do not find a problem with the wiring, then there was an intermittent fault.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(4) If the maintenance message is on channel B, do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(c) Do a wiring check between these pins of connector D10137C and connector D2209B at the E1-4 shelf (WDM 22-18-11).

| D10137C | | D2209B |
|---|---|---|
| pin C3 | - - - - - - - - - - - - - - - - - - | pin 41 |
| pin G3 | - - - - - - - - - - - - - - - - - - | pin 55 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

4) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

a) If the maintenance message does not show, then you corrected the fault.

5) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

a) Make the selection for the channels A and B.

b) Make the selection for the MACH TRIM test.

6) If the maintenance message does not show, then you corrected the fault.

(e) If you do not find a problem with the wiring, then there was an intermittent fault.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

**——————— END OF TASK ———————**

## 817. Autopilot Disengage Warning Horn Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message: AURAL WARN UNIT

(2) The autopilot warning horn did not operate when the autopilot disengaged.

B. Possible Causes

(1) Digital flight control system mode selector panel (DFCS MCP), M198

(2) Aural warning module, M315

(3) Wiring Problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |

D. Related Data

(1) (SSM 22-14-11)

(2) (WDM 22-14-11)

(3) (SSM 31-51-11)

(4) (WDM 31-51-11)

E. Initial Evaluation

(1) Do this check of the aural warning module:

(a) Make sure that DFCS BITE TEST MAIN MENU shows on the CDU.

(b) If you are not at the DFCS BITE TEST MAIN MENU page, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to DFCS.

5) When the DFCS self-test is complete, make sure that the DFCS BITE TEST MAIN MENU shows on the CDU.

(c) Push the LSK adjacent to EXTENDED MAINTENANCE.

(d) Push the LSK adjacent to BITE LIBRARY TEST.

(e) Push the LSK adjacent to CHANNEL A AND B.

(f) Push the LSK adjacent to RUN SELECT LIBRARY TESTS.

(g) Push and release the NEXT PAGE key on the CDU until 62 DISENG WARN shows on the CDU.

(h) Push the LSK adjacent to 62 DISENG WARN.

(i) Push the LSK adjacent to EXECUTE.

(j) Do the instructions on the CDU.

(k) If the maintenance message shows, then do the Fault Isolation Procedure below.

(l) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Replace the mode control panel.

These are the tasks:

DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801,

DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

(a) Do the check of the aural warning module again.

(b) If the check of the aural warning module is satisfactory, then you corrected the fault. Do this step to complete the task:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Get out of DFCS BITE (22-11 TASK 801).

(c) If the check of the aural warning module is not satisfactory, then continue.

(2) Replace the aural warning module, M315.

NOTE: The aural warning module is located in the P9 panel below the first officer's flight management computer control display unit (FMC CDU).

(a) Do the check of the aural warning module again.

(b) If the check of the aural warning module is satisfactory, then you corrected the fault. Do this step to complete the task:

1) Get out of DFCS BITE (22-11 TASK 801).

(c) If the check of the aural warning module is not satisfactory, then continue.

(3) Do this check of the wiring:

(a) Remove the DFCS MCP, M198. To remove it, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801.

(b) Remove the aural warning module, M315.

(c) Do a wiring check between these pins of connector D299 on the P7 panel and connector D940 in the P9 panel (WDM 22-14-11).

| D299 | | D940 |
|---|---|---|
| pin 48 | - - - - - - - - - - - - - - - - - - - | pin 4 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the DFCS MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

3) Re-install the aural warning module, M315.

4) Do the check of the aural warning module again.

5) If the aural warning module is satisfactory, then you corrected the fault. Do this step to complete the task:

a) Get out of DFCS BITE (22-11 TASK 801).

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 801. IRS Transfer Switch Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) IRS TRANSFER SW (J1A-G01)

(b) IRS TRANSFER SW (J1B-G01)

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(c) IRS TRANSFER SW (J1A-G01): Flight control computer A (FCC-A) or flight control computer B (FCC-B) or both flight control computers receives no input from the IRS transfer switch-FGN (position 2-Both on R) during the ground test.

(d) IRS TRANSFER SW (J1B-G01): Flight control computer A (FCC-A) or flight control computer B (FCC-B) or both flight control computers receives no input from the IRS transfer switch-LCL (position 1-Both on L) during the ground test.

B. Possible Causes

(1) P5-28 instrument switching module

(2) Wiring problem

(3) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-11-14)

(2) (SSM 34-21-15)

(3) (WDM 34-21-15)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Replace the P5-28 instrument switching module.

These are the tasks:

Instrument Switching Module Removal, AMM TASK 31-62-14-000-801,

Instrument Switching Module Installation, AMM TASK 31-62-14-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) If the maintenance message IRS TRANSFER SWITCH (J1A-G01) shows and the fault is on Channel A, then do this check of the wiring:

(a) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D1817 at the P5-28 instrument switching module.

(c) Do a wiring check between this pin of connector D10135A at the E1-1 shelf and connector D1817 at the P5-28 instrument switching module (WDM 34-21-15):

| D10135A | | D1817 |
|---|---|---|
| pin G1 | - - - - - - - - - - - - - - - - - - | pin 40 |

(d) Make sure that pin 39 of connector D1817 has continuity to electrical ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D1817.

3) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

(4) If the fault is on Channel B, then do this check of the wiring:

(a) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D553 at the P5-28 instrument switching module.

(c) Do a wiring check between this pin of connector D10137A at the E1-4 shelf and connector D553 at the P5-28 instrument switching module (WDM 34-21-15):

| D10137A | | D553 |
|---|---|---|
| pin G1 | - - - - - - - - - - - - - - - - - - | pin 43 |

(d) Make sure that pin 44 of connector D553 has continuity to electrical ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D553.

3) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message IRS TRANSFER SWITCH (J1B-G01) shows and the fault is on Channel A, then do this check of the wiring:

(a) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D553 from the instrument switching module located on the P5-28 panel.

(c) Do a wiring check between this pin of connector D10135B at the E1-1 shelf and connector D553 at the P5-28 instrument switching module (WDM 34-21-15):

| D10135B | | D553 |
|---|---|---|
| pin G1 | - - - - - - - - - - - - - - - - - - | pin 40 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) Make sure that pin 41 of connector D553 has continuity to electrical ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D553.

3) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

(6) If the fault is on Channel B, then do this check of the wiring:

(a) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D1817 from the instrument switching module located on the P5-28 panel.

(c) Do a wiring check between this pin of connector D10137B at the E1-4 shelf and connector D1817 at the P5-28 instrument switching module (WDM 34-21-15):

| D10137B | | D1817 |
|---|---|---|
| pin G1 | - - - - - - - - - - - - - - - - - - | pin 37 |

(d) Make sure that pin 36 of connector D1817 has continuity to electrical ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D1817.

3) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for channel A and B.

2) Make the selection for the ADIRU test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**802. LOC Ant Switch Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) LOC ANT SW-1 (J1B-E03)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) LOC ANT SW-2 (J1B-E03)

(2) LOC ANT SW-1 (J1B-E03): The flight control computer A (FCC-A) receives invalid input from the LOC ANT switch relay 1 during the ground test.

(3) LOC ANT SW-2 (J1B-E03): The flight control computer B (FCC-B) receives invalid input from the LOC ANT switch relay 2 during the ground test.

B. Possible Causes

(1) LOC ANT switch relay, R315 (relay 1) or R316 (relay 2)

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Integrated Flight System Accessory Unit (IFSAU), M1474

(4) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C01376 | RADIO NAVIGATION NAV SNSR DC-1 |
| D | 2 | C01045 | AFCS SYS A FCC DC |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| A | 10 | C01377 | RADIO NAVIGATION NAV SNSR DC-2 |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

D. Related Data

(1) (SSM 22-11-18)

(2) (WDM 22-11-14)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the applicable Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

G. Fault Isolation Procedure - Maintenance Message Channel A

(1) Do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the integrated flight system accessory unit (IFSAU), M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(c) Disconnect connector D2119 from the LOC ANT SW RLY 1, R315.

NOTE: The LOC ANT SW RLY 1 is located on the E1 rack in the Electronic Equipment Area.

(d) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D2119 removed from R315 at STA 306, WL 180, RBL 21:

| D10135B | | D2119 |
|---|---|---|
| pin E3 | - - - - - - - - - - - - - - - - - - | pin A |

1) If you find a problem with the wiring, then repair the wiring.

(e) Do a check for continuity between pin C of connector D2119 (removed from R315) and ground.

1) If there is no continuity, then repair the wiring.

(f) Do a wiring check between these pins of connector D235A at the E1-1 shelf and connector D2119 removed from R315 at STA 306, WL 180, RBL 21:

| D235A | | D2119 |
|---|---|---|
| pin 73 | - - - - - - - - - - - - - - - - - - | pin E |

1) If you find a problem with the wiring, then repair the wiring.

(g) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D235A at the E1-1 shelf:

| D10135B | | D235A |
|---|---|---|
| pin E7 | - - - - - - - - - - - - - - - - - - | pin 79 |

1) If you find a problem with the wiring, then repair the wiring.

(h) Close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C01376 | RADIO NAVIGATION NAV SNSR DC-1 |

(i) Do a check for 28 VDC at connector D235A pin 117.

(j) Open this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C01376 | RADIO NAVIGATION NAV SNSR DC-1 |

(k) If 28 VDC was not present, then do the step that follows:

1) Repair the wiring from the above listed circuit breaker or replace the circuit breaker if required.

(l) Re-connect the connector, D2119.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(m) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(n) Re-install the integrated flight system accessory unit, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(o) If you repaired any of the wiring listed above, then do these steps:

1) Do the Repair Confirmation at the end of this task.

(p) If you did not repair any of the wiring listed above, then continue.

(2) Replace the LOC ANT SW RLY 1, R315.

These are the tasks:

Localizer Antenna Switch Removal, AMM TASK 34-31-72-000-801,

Localizer Antenna Switch Installation, AMM TASK 34-31-72-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) Replace the IFSAU, M1474.

These are the tasks:

Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801,

Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(a) Do the Repair Confirmation at the end of this task.

H. Fault Isolation Procedure - Maintenance Message Channel B

(1) Do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the integrated flight system accessory unit (IFSAU), M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(c) Disconnect connector D2127 from the LOC ANT SW RLY 2, R316.

NOTE: The LOC ANT SW RLY 2 is located on the E1 rack in the Electronic Equipment Area.

(d) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D2127 removed from R316 at STA 300, WL 178, RBL 22:

| D10137B | | D2127 |
|---|---|---|
| pin E3 | - - - - - - - - - - - - - - - - - - | pin A |

1) If you find a problem with the wiring, then repair the wiring.

(e) Do a check for continuity between pin C of connector D2127 (removed from R316) and ground.

1) If there is no continuity, then repair the wiring.

(f) Do a wiring check between these pins of connector D235B at the E1-1 shelf and connector D2127 removed from R316 at STA 300, WL 178, RBL 22:

| D235B | | D2127 |
|---|---|---|
| pin 73 | - - - - - - - - - - - - - - - - - - | pin E |

1) If you find a problem with the wiring, then repair the wiring.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(g) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D235B at the E1-1 shelf:

| D10137B | | D235B |
|---|---|---|
| pin E7 | - - - - - - - - - - - - - - - - - - | pin 79 |

1) If you find a problem with the wiring, then repair the wiring.

(h) Close this circuit breaker:

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| A | 10 | C01377 | RADIO NAVIGATION NAV SNSR DC-2 |

(i) Do a check for 28 VDC at connector D235B pin 12.

(j) Open this circuit breaker:

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| A | 10 | C01377 | RADIO NAVIGATION NAV SNSR DC-2 |

(k) If 28 VDC was not present, then do the step that follows:

1) Repair the wiring from the above listed circuit breaker or replace the circuit breaker if required.

(l) Re-connect the connector, D2127.

(m) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(n) Re-install the integrated flight system accessory unit, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(o) If you repaired any of the wiring listed above, then do these steps:

1) Do the Repair Confirmation at the end of this task.

(p) If you did not repair any of the wiring listed above, then continue.

(2) Replace the LOC ANT SW RLY 2, R316.

These are the tasks:

Localizer Antenna Switch Removal, AMM TASK 34-31-72-000-801,

Localizer Antenna Switch Installation, AMM TASK 34-31-72-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) Replace the IFSAU, M1474.

These are the tasks:

Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801,

Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(a) Do the Repair Confirmation at the end of this task.

I. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the MMR/ILS test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**803. VHF/NAV Switch Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) VHF/NAV SW (J1B-A07)

(b) VHF/NAV SW (J1B-J07)

(c) VHF/NAV SW (J1B-J01)

(d) VHF/NAV SW (J1A-K12)

(2) VHF/NAV SW (J1B-A07), (J1B-J07), (J1B-J01), (J1A-K12): Flight control computer A (FCC-A) or flight control computer B (FCC-B) or both flight control computers receives invalid input from the VHF NAV Switch on the P5-28 module during the ground test.

B. Possible Causes

(1) Instrument switching module, P5-28

(2) NAV control panel, P8-25 (left) or P8-26 (right)

(3) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

D. Related Data

(1) (SSM 22-11-14)

(2) (SSM 34-51-41)

(3) (WDM 22-11-14)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(2) Replace the instrument switching module, P5-28.

These are the tasks:

Instrument Switching Module Removal, AMM TASK 31-62-14-000-801,

Instrument Switching Module Installation, AMM TASK 31-62-14-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) If the maintenance message is on channel A, then do this wiring check:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the NAV control panel-L, P8-25. To remove it, do this task: Navigation Control Panel Removal, AMM TASK 34-31-52-000-801.

(c) Remove the instrument switching module, P5-28. To remove it, do this task: Instrument Switching Module Removal, AMM TASK 31-62-14-000-801.

(d) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D263 removed from the NAV control panel:

| **D10135B** | | **D263** |
|---|---|---|
| pin J1 | - - - - - - - - - - - - - - - - - - | pin 31 |

1) If you find a problem with the wiring, then repair the wiring.

(e) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D263 removed from the NAV control panel:

| **D10135A** | | **D263** |
|---|---|---|
| pin K12 | - - - - - - - - - - - - - - - - - | pin 31 |

1) If you find a problem with the wiring, then repair the wiring.

(f) Do a wiring check between these pins of connector D263 removed from the NAV control panel and connector D553 removed from the instrument switching module:

| **D263** | | **D553** |
|---|---|---|
| pin 15 | - - - - - - - - - - - - - - - - - - | pin 30 |

1) If you find a problem with the wiring, then repair the wiring.

(g) Do a check for continuity between pins 28 and 29 of connector D553 (removed from P5-28) and ground.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) If there is no continuity, then repair the wiring.

(h) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D553 removed from the instrument switching module:

| D10135B | | D553 |
|---|---|---|
| pin J7 | - - - - - - - - - - - - - - - - - - | pin 27 |
| pin A7 | - - - - - - - - - - - - - - - - - - | pin 27 |

1) If you find a problem with the wiring, then repair the wiring.

(i) Re-install the instrument switching module, P5-28. To install it, do this task: Instrument Switching Module Installation, AMM TASK 31-62-14-400-801.

(j) Re-install the NAV control panel-L, P8-25. To install it, do this task: Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

(k) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(l) If you repaired any of the wiring listed above, then do the step that follows:

1) Do the Repair Confirmation at the end of this task.

(m) If you did not repair any of the wiring listed above, then continue.

(4) If the maintenance message is on channel B, then do this wiring check:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the NAV control panel-R, P8-26. To remove it, do this task: Navigation Control Panel Removal, AMM TASK 34-31-52-000-801.

(c) Remove the instrument switching module, P5-28. To remove it, do this task: Instrument Switching Module Removal, AMM TASK 31-62-14-000-801.

(d) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D265 removed from the NAV control panel:

| D10137B | | D265 |
|---|---|---|
| pin J1 | - - - - - - - - - - - - - - - - - - | pin 31 |

1) If you find a problem with the wiring, then repair the wiring.

(e) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D265 removed from the NAV control panel:

| D10137A | | D265 |
|---|---|---|
| pin K12 | - - - - - - - - - - - - - - - - - | pin 31 |

1) If you find a problem with the wiring, then repair the wiring.

(f) Do a wiring check between these pins of connector D265 removed from the NAV control panel and connector D1817 removed from the instrument switching module:

| D265 | | D1817 |
|---|---|---|
| pin 15 | - - - - - - - - - - - - - - - - - - | pin 13 |

1) If you find a problem with the wiring, then repair the wiring.

(g) Do a check for continuity between pins 14 and 15 of connector D1817 (removed from P5-28) and ground.

1) If there is no continuity, then repair the wiring.

(h) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1817 removed from the instrument switching module:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10137B | | D1817 |
|---|---|---|
| pin J7 | - - - - - - - - - - - - - - - - - - | pin 16 |
| pin A7 | - - - - - - - - - - - - - - - - - - | pin 16 |

1) If you find a problem with the wiring, then repair the wiring.

(i) Re-install the instrument switching module, P5-28. To install it, do this task: Instrument Switching Module Installation, AMM TASK 31-62-14-400-801.

(j) Re-install the NAV control panel-R, P8-26. To install it, do this task: Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

(k) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(l) If you repaired any of the wiring listed above, then do the step that follows:

1) Do the Repair Confirmation at the end of this task.

(m) If you did not repair any of the wiring listed above, then continue.

(5) If the maintenance message is on channel A, then replace the NAV control panel-L, P8-25.

These are the tasks:

Navigation Control Panel Removal, AMM TASK 34-31-52-000-801,

Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

(a) Do the Repair Confirmation at the end of this task.

(6) If the maintenance message is on channel B, then replace the NAV control panel-R, P8-26.

These are the tasks:

Navigation Control Panel Removal, AMM TASK 34-31-52-000-801,

Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

(a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the VOR test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**804. Aileron Autopilot Pressure Switch-1 Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) AIL PRESS SW-1 (J1B-K01)

(b) AIL PRESS SW-1 (J1B-B13)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) AIL DETENT SOLENOID-1

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(d) AIL PRESS SW-1 (J1B-K01) and AIL DETENT SOLENOID-1: Flight control computer B (FCC-B) receives invalid input from HYD PRESS SW AIL ACTR - A during the ground test.

(e) AIL PRESS SW-1 (J1B-B13) and AIL DETENT SOLENOID-1: Flight control computer A (FCC-A) receives invalid input from HYD PRESS SW AIL ACTR - A during the ground test.

B. Possible Causes

(1) Aileron autopilot actuator-A hydraulic pressure switch, S774

(2) Aileron autopilot actuator-A, M943

(3) Wiring problem

(4) Flight control computer A (FCC), M1875 (FCC-A) or M1876 (FCC-B)

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

D. Related Data

(1) (SSM 22-11-12)

(2) (SSM 22-11-31)

(3) (WDM 22-11-12)

(4) (WDM 22-11-31)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(2) Do this check of the aileron autopilot actuator-A hydraulic pressure switch:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Disconnect connector D1863 from the aileron autopilot actuator-A hydraulic pressure switch.

NOTE: The aileron autopilot actuator-A hydraulic pressure switch is located on the aileron autopilot actuator-A, which is located in the left main landing gear wheel well on the forward bulkhead.

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

(c) Do a check for 28 VDC between pin 2 of connector D1863 and A/P electrical ground (WDM 22-11-12).

(d) If there is not 28 VDC at pin 2 of connector D1863, then do these steps:

1) Disconnect connector D4073P from D4073J at the E1-1 shelf.

2) Do a continuity check between these pins of connector D1863 and connector D4073P:

| **D1863** | | **D4073P** |
|---|---|---|
| pin 2 | - - - - - - - - - - - - - - - - - - | pin A2 |

3) If you do not have continuity, then do these steps:

a) Repair the wiring.

b) Re-connect connector D1863.

c) Re-connect connector D4073P.

d) Do the Repair Confirmation at the end of this task.

(e) If there is 28 VDC at pin 2 of connector D1863, then continue.

(3) Replace the aileron autopilot actuator-A hydraulic pressure switch, S774.

These are the tasks:

Hydraulic Pressure Switch Removal, AMM TASK 22-11-40-000-801,

Hydraulic Pressure Switch - Installation, AMM TASK 22-11-40-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) Do this check of the aileron autopilot actuator-A:

(a) Disconnect connector D1827 from the aileron autopilot actuator-A.

NOTE: The aileron autopilot actuator-A is located in the left main landing gear wheel well on the forward bulkhead.

(b) Do a resistance check between pins 21 and 22 on the aileron autopilot actuator-A connector D1827 (WDM 22-11-31).

(c) If the resistance is not 60 to 85 ohms, then do these steps:

1) Replace the aileron autopilot actuator-A, M943.

These are the tasks:

Autopilot Aileron Actuator Removal, AMM TASK 22-11-25-000-801,

Autopilot Aileron Actuator Installation, AMM TASK 22-11-25-400-801.

2) Do the Repair Confirmation at the end of this task.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) If the resistance is 60 to 85 ohms, then continue.

1) Re-connect connector D1827.

(5) If the maintenance messages AIL PRESS SW-1 (J1B-K01) and AIL DETENT SOLENOID-1 show and the fault is on Channel B, then do these wiring checks:

(a) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D1863 at the aileron autopilot actuator-A hydraulic pressure switch.

(c) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1863 (WDM 22-11-12):

| D10137B | | D1863 |
|---|---|---|
| pin K1 | - - - - - - - - - - - - - - - - - - | pin 1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D1863.

3) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

(f) Do these wiring checks between the aileron autopilot actuator-A and FCC-A.

1) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Disconnect connector D1827 at the aileron autopilot actuator-A.

3) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1827, (WDM 22-11-31):

| D10135B | | D1827 |
|---|---|---|
| pin D13 | - - - - - - - - - - - - - - - - | pin 21 |

4) Make sure that pin 22 of connector D1827 has continuity to electrical ground.

5) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D1827.

c) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

6) If you do not find a problem with the wiring, then continue.

a) Re-connect connector D1827.

(6) If the maintenance messages AIL PRESS SW-1 (J1B-B13) and AIL DETENT SOLENOID-1 show and the fault is on Channel A, then do these wiring checks:

(a) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D1863 at the aileron autopilot actuator-A hydraulic pressure switch.

(c) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1863 (WDM 22-11-12):



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10135B | | D1863 |
|---|---|---|
| pin B13 | - - - - - - - - - - - - - - - - - | pin 1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D1863.

3) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D1863.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for channel A and B.

2) Make the selection for the ROLL SENS test.

(c) If the maintenance messages do not show, then you corrected the fault.

**——————— END OF TASK ———————**

**805. Aileron Autopilot Pressure Switch-2 Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) AIL PRESS SW-2 (J1B-B13)

(b) AIL PRESS SW-2 (J1B-K01)

(c) AIL DETENT SOLENOID-2

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(d) AIL PRESS SW-2 (J1B-B13) and AIL DETENT SOLENOID-2: Flight control computer B (FCC-B) receives no input from HYD PRESS SW AIL ACTR - B during the ground test.

(e) AIL PRESS SW-2 (J1B-K01) and AIL DETENT SOLENOID-2: Flight control computer A (FCC-A) receives no input from HYD PRESS SW AIL ACTR - B during the ground test.

B. Possible Causes

(1) Aileron autopilot actuator-B hydraulic pressure switch, S772

(2) Aileron autopilot actuator-B, M1024

(3) Wiring problem

(4) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

D. Related Data

(1) (SSM 22-11-12)

(2) (SSM 22-11-31)

(3) (WDM 22-11-12)

(4) (WDM 22-11-31)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(2) Do this check of the aileron autopilot actuator-B hydraulic pressure switch:

(a) Disconnect connector D1859 from the aileron autopilot actuator-B hydraulic pressure switch.

NOTE: The aileron autopilot actuator-B hydraulic pressure switch is located on the aileron autopilot actuator-B, which is located in the left main landing gear wheel well on the forward bulkhead.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(c) Do a check for 28 VDC between pin 2 of connector D1859 and A/P electrical ground (WDM 22-11-12).

(d) If there is not 28 VDC at pin 2 of connector D1859, then do these steps:

1) Disconnect connector D4077J from D4077P at the E1-4 shelf.

2) Do a continuity check between these pins of connector D1859 and connector D4077J:

| **D1859** | | **D4077J** |
|---|---|---|
| pin 2 | - - - - - - - - - - - - - - - - - - | pin 20 |

3) If you do not have continuity, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

a) Repair the wiring.

b) Re-connect connector D1859.

c) Re-connect connector D4077J.

d) Do the Repair Confirmation at the end of this task.

(e) If there is 28 VDC at pin 2 of connector D1859, then continue.

(3) Replace the aileron autopilot actuator-B hydraulic pressure switch, S772.

These are the tasks:

Hydraulic Pressure Switch Removal, AMM TASK 22-11-40-000-801,

Hydraulic Pressure Switch - Installation, AMM TASK 22-11-40-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) Do this check of the aileron autopilot actuator-B:

(a) Disconnect connector D1691 from the aileron autopilot actuator-B.

NOTE: The aileron autopilot actuator-B is located in the left main landing gear wheel well on the forward bulkhead.

(b) Do a resistance check between pins 21 and 22 on the aileron autopilot actuator-B connector D1691 (WDM 22-11-31).

(c) If the resistance is not 60 to 85 ohms, then do these steps:

1) Replace the aileron autopilot actuator-A, M1024.

These are the tasks:

Autopilot Aileron Actuator Removal, AMM TASK 22-11-25-000-801,

Autopilot Aileron Actuator Installation, AMM TASK 22-11-25-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 60 to 85 ohms, then continue.

1) Re-connect connector D1691.

(5) If the maintenance messages AIL PRESS SW-2 (J1B-B13) and AIL DETENT SOLENOID-2 show and the fault is on Channel A, then do these wiring checks:

(a) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D1859 at the aileron autopilot actuator-B hydraulic pressure switch.

(c) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1859 (WDM 22-11-12):

| D10135B | | D1859 |
|---|---|---|
| pin K1 | - - - - - - - - - - - - - - - - - - | pin 1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D1859.

3) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Re-connect connector D1859.

(f) Do these wiring checks between the aileron autopilot actuator-B and FCC-B.

1) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Disconnect connector D1691 at the aileron autopilot actuator-B.

3) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1691 (WDM 22-11-31):

| D10137B | | D1691 |
|---|---|---|
| pin D13 | - - - - - - - - - - - - - - - - | pin 21 |

4) Make sure that pin 22 of connector D1691 has continuity to electrical ground.

5) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D1691.

c) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

6) If you do not find a problem with the wiring, then continue.

a) Re-connect connector D1691.

(6) If the maintenance messages AIL PRESS SW-2 (J1B-K01) and AIL DETENT SOLENOID-2 show and the fault is on Channel B, then do these wiring checks:

(a) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D1859 at the aileron autopilot actuator-B hydraulic pressure switch.

(c) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1859 (WDM 22-11-12):

| D10137B | | D1859 |
|---|---|---|
| pin B13 | - - - - - - - - - - - - - - - - | pin 1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D1859.

3) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D1859.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for channel A and B.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Make the selection for the ROLL SENS test.

(c) If the maintenance messages do not show, then you corrected the fault.

**———————— END OF TASK ————————**

**806. Elevator Autopilot Pressure Switch-1 Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) ELEV PRESS SW-1 (J1A-K01)

(b) ELEV PRESS SW-1 (J1A-B13)

(c) ELEV DETENT SOLENOID-1

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(d) ELEV PRESS SW-1 (J1A-K01) and ELEV DETENT SOLENOID-1: Flight control computer B (FCC-B) receives no input from HYD PRESS SW ELEV ACTR - A during the ground test.

(e) ELEV PRESS SW-1 (J1A-B13) and ELEV DETENT SOLENOID-1: Flight control computer A (FCC-A) receives no input from HYD PRESS SW ELEV ACTR - A during the ground test.

B. Possible Causes

(1) Elevator autopilot actuator-A hydraulic pressure switch, S771

(2) Elevator autopilot actuator-A, M1020

(3) Wiring problem

(4) Flight control computer (FCC-A), M1875 (FCC-A) or M1876 (FCC-B)

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

D. Related Data

(1) (SSM 22-11-12)

(2) (SSM 22-12-31)

(3) (WDM 22-11-12)

(4) (WDM 22-12-31)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(2) Do this check of the elevator autopilot actuator-A hydraulic pressure switch:

(a) Disconnect connector D1861 from the elevator autopilot actuator-A hydraulic pressure switch.

NOTE: The elevator autopilot actuator-A hydraulic pressure switch is located on the elevator autopilot actuator-A, which is located in the tailcone, behind access door 318BR.

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

(c) Do a check for 28 VDC between pin 2 of connector D1861 and A/P electrical ground (WDM 22-11-12).

(d) If there is not 28 VDC at pin 2 of connector D1861, then do these steps:

1) Disconnect connector D4079P from D4079J at the E1-1 shelf.

2) Do a continuity check between these pins of connector D1861 and connector D4079P:

| **D1861** | | **D4079P** |
|---|---|---|
| pin 2 | - - - - - - - - - - - - - - - - - - | pin A2 |

3) If you do not have continuity, then do these steps:

a) Repair the wiring.

b) Re-connect connector D1861.

c) Re-connect connector D4079P.

d) Do the Repair Confirmation at the end of this task.

(e) If there is 28 VDC at pin 2 of connector D1861, then continue.

(3) Replace the elevator autopilot actuator-A hydraulic pressure switch, S771.

These are the tasks:

Hydraulic Pressure Switch Removal, AMM TASK 22-11-40-000-801,

Hydraulic Pressure Switch - Installation, AMM TASK 22-11-40-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) Do this check of the elevator autopilot actuator-A:

(a) Disconnect connector D1681 from the elevator autopilot actuator-A.

NOTE: The elevator autopilot actuator-A is located in the tailcone, behind access door 318BR.

(b) Do a resistance check between pins 21 and 22 on the elevator autopilot actuator-A connector D1681 (WDM 22-11-31).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) If the resistance is not 60 to 85 ohms, then do these steps:

1) Replace the elevator autopilot actuator-A, M1020.

These are the tasks:

Autopilot Elevator Actuator Removal, AMM TASK 22-11-26-000-801,

Autopilot Elevator Actuator Installation, AMM TASK 22-11-26-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 60 to 85 ohms, then continue.

1) Re-connect connector D1681.

(5) If the maintenance messages ELEV PRESS SW-1 (J1A-K01) and ELEV DETENT SOLENOID-1 show and the fault is on Channel B, then do these wiring checks:

(a) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D1861 at the elevator autopilot actuator-A hydraulic pressure switch.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1861 (WDM 22-11-12):

| D10137A | | D1861 |
|---|---|---|
| pin K1 | - - - - - - - - - - - - - - - - - - | pin 1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D1861.

3) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

(f) Do these wiring checks between the elevator autopilot actuator-A and FCC-A.

1) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Disconnect connector D1681 at the elevator autopilot actuator-A.

3) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1681 (WDM 22-12-31):

| D10135A | | D1681 |
|---|---|---|
| pin D13 | - - - - - - - - - - - - - - - - | pin 21 |

4) Make sure that pin 22 of connector D1681 has continuity to electrical ground.

5) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D1681.

6) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

7) Do the Repair Confirmation at the end of this task.

(g) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D1681.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(6) If the maintenance messages ELEV PRESS SW-1 (J1A-B13) and ELEV DETENT SOLENOID-1 show and the fault is on Channel A, then do these wiring checks:

(a) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D1861 at the elevator autopilot actuator-A hydraulic pressure switch.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1861 (WDM 22-11-12):

| **D10135A** | | **D1861** |
|---|---|---|
| pin B13 | - - - - - - - - - - - - - - - - - | pin 1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D1861.

3) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D1861.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for channel A and B.

2) Make the selection for the PITCH SENS test.

(c) If the maintenance messages do not show, then you corrected the fault.

**——————— END OF TASK ———————**

## 807. Elevator Autopilot Pressure Switch-2 Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) ELEV PRESS SW-2 (J1A-B13)

(b) ELEV PRESS SW-2 (J1A-K01)

(c) ELEV DETENT SOLENOID-2

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(d) ELEV PRESS SW-2 (J1A-B13) and ELEV DETENT SOLENOID-2: Flight control computer B (FCC-B) receives no input from HYD PRESS SW ELEV ACTR - B during the ground test.

(e) ELEV PRESS SW-2 (J1A-K01) and ELEV DETENT SOLENOID-2: Flight control computer A (FCC-A) receives no input from HYD PRESS SW ELEV ACTR - B during the ground test.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

B. Possible Causes

(1) Elevator autopilot actuator-B hydraulic pressure switch, S773

(2) Elevator autopilot actuator-B, M1022

(3) Wiring problem

(4) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

D. Related Data

(1) (SSM 22-11-12)

(2) (SSM 22-12-41)

(3) (WDM 22-11-12)

(4) (WDM 22-12-41)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(2) Do this check of the elevator autopilot actuator-B hydraulic pressure switch:

(a) Disconnect connector D1857 from the elevator autopilot actuator-B hydraulic pressure switch.

NOTE: The elevator autopilot actuator-B hydraulic pressure switch is located on the elevator autopilot actuator-B, which is located in the tailcone, behind access door 318BR.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(c) Do a check for 28 VDC between pin 2 of connector D1857 and A/P electrical ground (WDM 22-11-12).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) If there is not 28 VDC at pin 2 of connector D1857, then do these steps:

1) Disconnect connector D4081J from D4081P at the E1-4 shelf.

2) Do a continuity check between these pins of connector D1857 and connector D4081J:

| D1857 | | D4081J |
|---|---|---|
| pin 2 | - - - - - - - - - - - - - - - - - - | pin 2 |

3) If you do not have continuity, then do these steps:

a) Repair the wiring.

b) Re-connect connector D1857.

c) Re-connect connector D4081J.

d) Do the Repair Confirmation at the end of this task.

(e) If there is 28 VDC at pin 2 of connector D1857, then continue.

(3) Replace the elevator autopilot actuator-B hydraulic pressure switch, S773.

These are the tasks:

Hydraulic Pressure Switch Removal, AMM TASK 22-11-40-000-801,

Hydraulic Pressure Switch - Installation, AMM TASK 22-11-40-400-801.

(a) Re-connect connector D1857.

(b) Do the Repair Confirmation at the end of this task.

(c) If the Repair Confirmation is not satisfactory, then continue.

(4) Do this check of the elevator autopilot actuator-B:

(a) Disconnect connector D1687 from the elevator autopilot actuator-B.

NOTE: The elevator autopilot actuator-B is located in the tailcone, behind access door 318BR.

(b) Do a resistance check between pins 21 and 22 on the elevator autopilot actuator-B connector D1687 (WDM 22-12-41).

(c) If the resistance is not 60 to 85 ohms, then do these steps:

1) Replace the elevator autopilot actuator-B, M1022.

These are the tasks:

Autopilot Elevator Actuator Removal, AMM TASK 22-11-26-000-801,

Autopilot Elevator Actuator Installation, AMM TASK 22-11-26-400-801.

2) Re-connect connector D1687.

3) Do the Repair Confirmation at the end of this task.

(d) If the resistance is 60 to 85 ohms, then continue.

1) Re-connect connector D1687.

(5) If the maintenance messages ELEV PRESS SW-2 (J1A-B13) and ELEV DETENT SOLENOID-2 show and the fault is on Channel A, then do these wiring checks:

(a) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D1857 at the elevator autopilot actuator-B hydraulic pressure switch.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1857 (WDM 22-11-12):



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10135A | | D1857 |
|---|---|---|
| pin K1 | - - - - - - - - - - - - - - - - - - | pin 1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-connect connector D1857.
3) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D1857.

(f) Do these wiring checks between the elevator autopilot actuator-B and FCC-B.

1) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
2) Disconnect connector D1687 at the elevator autopilot actuator-B.
3) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1687 (WDM 22-12-41):

| D10137A | | D1687 |
|---|---|---|
| pin D13 | - - - - - - - - - - - - - - - - | pin 21 |

4) Make sure that pin 22 of connector D1687 has continuity to electrical ground.
5) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect connector D1687.
   c) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
   d) Do the Repair Confirmation at the end of this task.
6) If you do not find a problem with the wiring, then continue.
   a) Re-connect connector D1687.

(6) If the maintenance messages ELEV PRESS SW-2 (J1A-K01) and ELEV DETENT SOLENOID-2 show and the fault is on Channel B, then do these wiring checks:

(a) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D1857 at the elevator autopilot actuator-B hydraulic pressure switch.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1857 (WDM 22-11-12):

| D10137A | | D1857 |
|---|---|---|
| pin B13 | - - - - - - - - - - - - - - - - | pin 1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-connect connector D1857.
3) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D1857.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for channel A and B.

2) Make the selection for the PITCH SENS test.

(c) If the maintenance messages do not show, then you corrected the fault.

**——————— END OF TASK ———————**

**808. FCC, Column Switching Module Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) COL SW MODULE M1201 (J1C-BO2)

(b) COL SW MODULE M1201 (J1C-F02)

(2) The FCC did not receive the column switching module signal as expected.

B. Possible Causes

(1) Column switching module, M1201

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

(4) Elevator rigging

C. Related Data

(1) (SSM 22-13-11)

(2) (WDM 22-13-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Replace the column switching module, M1201.

These are the tasks:

Column Cutout Switch Removal, AMM TASK 27-41-51-000-801,



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Column Cutout Switch Installation, AMM TASK 27-41-51-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(2) If the fail message is on channel A, then do this wiring check:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the column switching module, M1201. To remove it, do this task: Column Cutout Switch Removal, AMM TASK 27-41-51-000-801.

(c) For input pin J1C-B02;

1) Do this wiring check between these pins of connector D10135C at the E1-1 shelf and connector D2257 at the column switching module.

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C.

| D10135C | | D2257 |
|---|---|---|
| pin B2 | - - - - - - - - - - - - - - - - - | pin 16 |

(d) For input pin J1C-F02;

1) Do this wiring check between these pins of connector D10135C at the E1-1 shelf and connector D2257 at the column switching module.

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C.

| D10135C | | D2257 |
|---|---|---|
| pin F2 | - - - - - - - - - - - - - - - - - | pin 22 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the column switching module, M1201. To install it, do this task: Column Cutout Switch Installation, AMM TASK 27-41-51-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Re-install the column switching module, M1201. To install it, do this task: Column Cutout Switch Installation, AMM TASK 27-41-51-400-801.

(3) If the fail message is on channel B, then do this wiring check:

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the column switching module, M1201. To remove it, do this task: Column Cutout Switch Removal, AMM TASK 27-41-51-000-801.

(c) For input pin J1C-B02;



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Do this wiring check between these pins of connector D10137C at the E1-1 shelf and connector D2257 at the column switching module.

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C.

| D10137C | | D2257 |
|---|---|---|
| pin B2 | - - - - - - - - - - - - - - - - - | pin 14 |

(d) For input pin J1C-F02;

1) Do this wiring check between these pins of connector D10137C at the E1-4 shelf and connector D2257 at the column switching module.

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C.

| D10137C | | D2257 |
|---|---|---|
| pin F2 | - - - - - - - - - - - - - - - - - | pin 24 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the column switching module, M1201. To install it, do this task: Column Cutout Switch Installation, AMM TASK 27-41-51-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Re-install the column switching module, M1201. To install it, do this task: Column Cutout Switch Installation, AMM TASK 27-41-51-400-801.

(4) Do the check of the Elevator,these are the tasks:

Elevator Rigging Test, AMM TASK 22-11-00-820-802

Elevator Control Cables EA and EB and Pitch Force Transducers - Adjustment, AMM TASK 27-31-00-820-801

(a) Do the Repair Confirmation at the end of this task.

(5) Replace the FCC, M1875 or M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < RUN SELECT LIBRARY TESTS

c) SPEED/STAB TRIM 32 >

d) EXECUTE

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**809. Autopilot Disengage Switch Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) A/P DISC SW 1 (J1B-K07)

(b) A/P DISC SW 2 (J1B-K07)

(2) A/P DISC SW 1 (J1B-K07), A/P DISC SW 2 (J1B-K07): Flight control computer A (FCC-A) or flight control computer B (FCC-B) or both flight control computers receives invalid input from the CAPT A/P DISENGAGE SW, S231, or F/O A/P DISENGAGE SW, S232 during the ground test.

B. Possible Causes

(1) CAPT A/P DISENGAGE SW, S231

(2) F/O A/P DISENGAGE SW, S232

(3) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

D. Related Data

(1) (SSM 22-11-12)

(2) (WDM 22-11-12)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure - Maintenance Message Channel A

(1) Do this initial check of the disengage switches and associated wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

(c) Do this check for 28 VDC between pin K7 of connector D10135B for FCC-A and structure ground:.

1) Push and release the CAPT A/P DISENGAGE SW, S231 located on the captains control column.

NOTE: Use two people to do this step, one person should watch the voltmeter while the other pushes the switch.

a) Make sure there is 0 VDC at pin K7 of D10135B when the CAPT A/P DISENGAGE SW was pushed.

b) Make sure there is 28 VDC at pin K7 of D10135B when the CAPT A/P DISENGAGE SW was released.

2) Push and release the F/O A/P DISENGAGE SW, S232 located on the first officers control column.

NOTE: Use two people to do this step, one person should watch the voltmeter while the other pushes the switch.

a) Make sure there is 0 VDC at pin K7 of D10135B when the F/O A/P DISENGAGE SW was pushed.

b) Make sure there is 28 VDC at pin K7 of D10135B when the F/O A/P DISENGAGE SW was released.

(d) If this check is satisfactory, then do these steps:

1) Replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Do the Repair Confirmation at the end of this task.

(e) If this check is not satisfactory, then continue.

(2) Do this check of the wiring:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(b) Remove the medallion and approach plate from the captains control column and the first officers control column.

(c) Get access to the terminal block for the disengage switch.

(d) Do a wiring check between these pins of connector D10135B on the E1-1 rack and the terminal block for the captain's A/P disengage switch, S231 on the captain's control column:

| **D10135B** | | **S231** |
|---|---|---|
| pin K7 | - - - - - - - - - - - - - - - - - - | pin 5 |

(e) Do a wiring check between these pins of the terminal block for the fist officers A/P disengage switch, S232 on the first officer's control column and the terminal block for the captains A/P disengage switch, S231 on the captain's control column:

| **S231** | | **S232** |
|---|---|---|
| pin 4 | - - - - - - - - - - - - - - - - - - | pin 4 |

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Install the terminal block cover and the medallion and approach plate on the captains control column and the first officer's control column.
3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

5) Do the Repair Confirmation at the end of this task.

(g) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(h) Do this continuity check from pin 4 to pin 5 of the captain's A/P disengage switch, S231:

1) Make sure there is continuity.
2) Push the captain's A/P disengage switch, S231.
3) Make sure there is no continuity.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(i) If you find a problem with the captain's A/P disengage switch, S231, then do these steps:

1) Replace the captain's A/P disengage switch, S231.

These are the tasks:

Autopilot Disengage Switch Removal, AMM TASK 22-11-41-000-801,

Autopilot Disengage Switch Installation, AMM TASK 22-11-41-400-801.

2) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

3) Do the Repair Confirmation at the end of this task.

(j) If you do not find a problem with the captain's A/P disengage switch, S231, then do these steps:

1) Replace the first officer's A/P disengage switch, S232.

These are the tasks:

Autopilot Disengage Switch Removal, AMM TASK 22-11-41-000-801,

Autopilot Disengage Switch Installation, AMM TASK 22-11-41-400-801.

2) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

3) Do the Repair Confirmation at the end of this task.

G. Fault Isolation Procedure - Maintenance Message Channel B

(1) Do this initial check of the disengage switches and associated wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(c) Do this check for 28 VDC between pin K7 of connector D10137B for FCC-B and structure ground.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Push and release the CAPT A/P DISENGAGE SW, S231 located on the captains control column.

NOTE: Use two people to do this step, one person should watch the voltmeter while the other pushes the switch.

a) Make sure there is 0 VDC at pin K7 of D10137B when the CAPT A/P DISENGAGE SW was pushed.

b) Make sure there is 28 VDC at pin K7 of D10137B when the CAPT A/P DISENGAGE SW was released.

2) Push and release the F/O A/P DISENGAGE SW, S232 located on the first officers control column.

NOTE: Use two people to do this step, one person should watch the voltmeter while the other pushes the switch.

a) Make sure there is 0 VDC at pin K7 of D10137B when the F/O A/P DISENGAGE SW was pushed.

b) Make sure there is 28 VDC at pin K7 of D10137B when the F/O A/P DISENGAGE SW was released.

(d) If this check is satisfactory, then do these steps:

1) Replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Do the Repair Confirmation at the end of this task.

(e) If this check is not satisfactory, then continue.

(2) Do this check of the wiring:

(a) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(b) Remove the medallion and approach plate from the captains control column and the first officers control column.

(c) Get access to the terminal block for the disengage switch.

(d) Do a wiring check between these pins of connector D10137B on the E1-1 rack and the terminal block for the captain's A/P disengage switch, S231 on the captain's control column:

| **D10137B** | | **S231** |
|---|---|---|
| pin K7 | - - - - - - - - - - - - - - - - - - | pin 1 |

(e) Do a wiring check between these pins of the terminal block for the fist officer's A/P disengage switch, S232 on the first officer's control column and the terminal block for the captains A/P disengage switch, S231 on the captain's control column:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| S231 | | S232 |
|---|---|---|
| pin 2 | - - - - - - - - - - - - - - - - - - | pin 2 |

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Install the terminal block cover and the medallion and approach plate on the captain's control column and the first officer's control column.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

5) Do the Repair Confirmation at the end of this task.

(g) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(h) Do this continuity check from pin 1 to pin 2 of the captain's A/P disengage switch, S231:

1) Make sure there is continuity.

2) Push the captain's A/P disengage switch, S231.

3) Make sure there is no continuity.

(i) If you find a problem with the captain's A/P disengage switch, S231, then do these steps:

1) Replace the captain's A/P disengage switch, S231.

These are the tasks:

Autopilot Disengage Switch Removal, AMM TASK 22-11-41-000-801,

Autopilot Disengage Switch Installation, AMM TASK 22-11-41-400-801.

2) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

3) Do the Repair Confirmation at the end of this task.

(j) If you do not find a problem with the captain's A/P disengage switch, S231, then do these steps:

1) Replace the first officer's A/P disengage switch, S232.

These are the tasks:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Autopilot Disengage Switch Removal, AMM TASK 22-11-41-000-801,

Autopilot Disengage Switch Installation, AMM TASK 22-11-41-400-801.

2) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

3) Do the Repair Confirmation at the end of this task.

H. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: Mode Control Panel Tests, 22-11 TASK 803.

1) Make the selection for the channels A and B.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

## 810. TOGA Switch-1 Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) TOGA SW-1 (J1A-F04).

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(b) TOGA SW-1 (J1A-F04): Flight control computer A (FCC-A) or flight control computer B (FCC-B) or both flight control computers receives invalid input from the TOGA Switch-1 during the ground test.

B. Possible Causes

(1) Takeoff go-around switch (thrust lever 1), S786

(2) Wiring Problem

(3) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-11-14)

(2) (WDM 22-11-14)


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this check of the TO/GA switch:

(a) Make sure that the A/T BITE TEST index shows on the CDU.

(b) If you are not at the A/T BITE TEST index, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to A/T.

5) Make sure that the A/T BITE TEST index shows on the CDU.

(c) Push the LSK adjacent to INTERACTIVE.

(d) Push the LSK adjacent to INPUT DISCRETES.

(e) Read the instructions on the CDU.

(f) Push the NEXT PAGE key.

(g) Push and hold the TO/GA switch on thrust lever number 1.

1) Make sure that the CDU indication adjacent to TOGA changes from NOT PRESSED to PRESSED.

(h) Release the TO/GA switch on thrust lever number 1.

1) Make sure that the CDU indication adjacent to TOGA changes from PRESSED to NOT PRESSED.

(i) If the TO/GA switch is not satisfactory, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(3) If the maintenance message TOGA SW-1 (J1A-F04) shows and the fault is on Channel A, then do these checks of the wiring:

(a) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect the captain's takeoff go-around switch, S786 connector D8313P from D8313J, at the connection point on the control stand.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D8313P at the control stand (WDM 22-11-14):



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10135A | | D8313P |
|---|---|---|
| pin F4 | - - - - - - - - - - - - - - - - - - | pin 1 |

(d) Make sure that pin 2 of connector D8313P has continuity to electrical ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D8313P.

3) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

5) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message TOGA SW-1 (J1A-F04) shows and the fault is on Channel B, then do these checks of the wiring:

(a) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect the captain's takeoff go-around switch, S786 connector D8315P from D8315J, at the connection point on the control stand.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D8315P at the control stand (WDM 22-11-14):

| D10137A | | D8315P |
|---|---|---|
| pin F4 | - - - - - - - - - - - - - - - - - - | pin 1 |

(d) Make sure that pin 2 of connector D8315P has continuity to electrical ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D8315P.

3) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

5) If the Repair Confirmation is not satisfactory, then continue.

(5) Replace the TOGA Switch-1.

These are the tasks:

Takeoff/Go-Around Switch Removal, AMM TASK 22-11-39-000-801,

TOGA Switch Installation, AMM TASK 22-11-39-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

a) <CHANNEL A AND B

b) <RUN SELECT LIBRARY TESTS

c) DUAL STAB 35>

d) <EXECUTE

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**811. TOGA Switch-2 Problem - Fault Isolation**

A. Description

(1) This task is for maintenance message:

(a) TOGA SW-2 (J1A-F04).

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(b) TOGA SW-2 (J1A-F04): Flight control computer A (FCC-A) or flight control computer B (FCC-B) or both flight control computers receives invalid data or no data from the TOGA Switch-2 during the ground test.

B. Possible Causes

(1) Takeoff go-around switch (thrust lever 2), S787

(2) Wiring problem

(3) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-11-14)

(2) (WDM 22-11-14)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this check of the TO/GA switch:

(a) Make sure that the A/T BITE TEST index shows on the CDU.

(b) If you are not at the A/T BITE TEST index, then do these steps:

1) Push the INIT REF function key on the CDU.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to A/T.

5) Make sure that the A/T BITE TEST index shows on the CDU.

(c) Push the LSK adjacent to INTERACTIVE.

(d) Push the LSK adjacent to INPUT DISCRETES.

(e) Read the instructions on the CDU.

(f) Push the NEXT PAGE key.

(g) Push and hold the TO/GA switch on thrust lever number 2.

1) Make sure that the CDU indication adjacent to TOGA changes from NOT PRESSED to PRESSED.

(h) Release the TO/GA switch on thrust lever number 2.

1) Make sure that the CDU indication adjacent to TOGA changes from PRESSED to NOT PRESSED.

(i) If the TO/GA switch is not satisfactory, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(3) If the maintenance message TOGA SW-2 (J1A-F04) shows and the fault is on Channel A, then do these wiring checks:

(a) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect the first officer's takeoff go-around switch, S787 connector D8313P from D8313J, at the connection point on the control stand.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D8313P at the control stand (WDM 22-11-14):

| D10135A | | D8313P |
|---|---|---|
| pin F4 | - - - - - - - - - - - - - - - - - - | pin 11 |

(d) Make sure that pin 12 of connector D8313P has continuity to electrical ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D8313P.

3) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

5) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message TOGA SW-2 (J1A-F04) shows and the fault is on Channel B, then do these wiring checks:

(a) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Disconnect the first officer's takeoff go-around switch, S787 connector D8315P from D8315J, at the connection point on the control stand.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D8315P at the control stand (WDM 22-11-14):

| D10137A | | D8315P |
|---|---|---|
| pin F4 | - - - - - - - - - - - - - - - - - - | pin 11 |

(d) Make sure that pin 12 of connector D8315P has continuity to electrical ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D8315P.

3) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

5) If the Repair Confirmation is not satisfactory, then continue.

(5) Replace the TOGA Switch-2.

These are the tasks:

Takeoff/Go-Around Switch Removal, AMM TASK 22-11-39-000-801,

TOGA Switch Installation, AMM TASK 22-11-39-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) <RUN SELECT LIBRARY TESTS

c) DUAL STAB 35>

d) <EXECUTE

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**812. Gear Up Switch Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) GEAR UP SW 1 (J1B-J05)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) GEAR UP SW 2 (J1B-J05)

(c) PROX SW ELEX UNIT (J1B-J05)

(2) GEAR UP SW 1 (J1B-J05): The flight control computer A (FCC-A) receives invalid data or no data from the proximity switch electronics unit, M2061 during the ground test.

(3) GEAR UP SW 2 (J1B-J05): The flight control computer B (FCC-B) receives invalid data or no data from the proximity switch electronics unit, M2061 during the ground test.

B. Possible Causes

(1) Proximity switch electronics unit (PSEU), M2061

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

F/O Electrical System Panel, P6-3

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01399 | PSEU PRI |
| D | 2 | C01400 | PSEU ALTN |

D. Related Data

(1) (SSM 22-11-12)

(2) (WDM 22-11-12)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure - Maintenance Message Channel A

(1) Do this initial check of the PSEU (gear down switch) and associated wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01399 | PSEU PRI |
| D | 2 | C01400 | PSEU ALTN |

(c) Do a check for continuity between D10135B pin J5 and ground.

(d) If there is continuity between pin J5 of D10135B and ground, then do these steps:

1) Replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Do the Repair Confirmation at the end of this task.

(e) If there is not continuity between pin J5 of D10135B and ground, then continue.

(2) Do this check of the wiring:

(a) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01399 | PSEU PRI |
| D | 2 | C01400 | PSEU ALTN |

(b) Disconnect connector D10982 from the PSEU, M2061.

NOTE: You get access to the PSEU, M2061, through the forward access door 112A.

(c) Do a wiring check between these pins of connector D10135B on the E1-1 rack and connector D10982 removed from the PSEU:

| **D10135B** | **D10982** |
|---|---|
| pin J5 - - - - - - - - - - - - - - - - - - - | pin 10 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D10982 to the PSEU, M2061.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01399 | PSEU PRI |
| D | 2 | C01400 | PSEU ALTN |

5) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(3) Replace the PSEU, M2061.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

These are the tasks:

Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801,

Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

(a) Do the Repair Confirmation at the end of this task.

G. Fault Isolation Procedure - Maintenance Message Channel B

(1) Do this initial check of the PSEU (gear down switch) and associated wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01399 | PSEU PRI |
| D | 2 | C01400 | PSEU ALTN |

(c) Do a check for continuity between D10137B pin J5 and ground.

(d) If there is continuity between pin J5 of D10137B and ground, then do these steps:

1) Replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Do the Repair Confirmation at the end of this task.

(e) If there is not continuity between pin J5 of D10137B and ground, then continue.

(2) Do this check of the wiring:

(a) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01399 | PSEU PRI |
| D | 2 | C01400 | PSEU ALTN |

(b) Disconnect connector D10984 from the PSEU, M2061.

NOTE: You get access to the PSEU, M2061, through the Forward Access Door 112A.

(c) Do a wiring check between these pins of connector D10137B on the E1-4 rack and connector D10984 removed from the PSEU:

| D10137B | | D10984 |
|---|---|---|
| pin J5 | - - - - - - - - - - - - - - - - - - | pin 10 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D10984 to the PSEU, M2061.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

4) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01399 | PSEU PRI |
| D | 2 | C01400 | PSEU ALTN |

5) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(3) Replace the PSEU, M2061.

These are the tasks:

Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801,

Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

(a) Do the Repair Confirmation at the end of this task.

H. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the DME test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

## 813. Stab Trim Cutout Relay Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) STAB TRIM CUTOUT RELAY

(b) TRIM CUTOUT (J1C-B03)

(2) An FCC does not detect the stab trim cutout relay when you switch it to cutout.

B. Possible Causes

(1) Stab trim cutout relay, R384

(2) Wiring problem

(3) A/P trim cutout switch, S149

C. Related Data

(1) (SSM 22-13-11)

(2) (WDM 22-13-11)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(2) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(2) Do this check for power at the stab trim cutout relay:

(a) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(b) Make sure A/P trim cutout switch is in the NORMAL position.

(c) Remove the right lower side panel on the P8 control stand.

(d) Disconnect connector D2485 from the stab trim cutout relay, R384.

(e) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

(f) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(g) Do a check for 28 VDC between pin X1 of connector D2485 and structure ground.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(h) If there is 28 VDC at pin X1, then do these steps:

1) Do a check for continuity at pin X2 of connector D2485 and structure ground.
2) If there is continuity, then replace the A/P trim cutout switch, S149.
3) If there is no continuity, then continue.
4) Put the A/P trim cutout switch in the CUTOUT position.
5) Do a check for continuity at pin X2 of connector D2485 and structure ground.
6) If there is no continuity, then replace the A/P trim cutout switch, S149.
7) If there is continuity, then replace the cutout relay, R384.
8) Do the Repair Confirmation at the end of this task.
9) If the Repair Confirmation is not satisfactory, then continue.
10) Remove the appropriate FCC, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
11) Do a wiring check between this pin of connector D10135C (or D10137C for FCC B) at the E1-1 shelf, and connector D2485 at the P8 control stand.

| D10135C (D10137C) | | D2485 |
|---|---|---|
| pin B3 | - - - - - - - - - - - - - - - - - | pin B2 |

12) If you find a problem with the wiring, then repair the wiring.
13) Re-connect connector D2485.
14) Re-install the right lower side panel on the P8 control stand.
15) Re-install the appropriate FCC, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
16) Do the Repair Confirmation at the end of this task.

(i) If you do not find 28 VDC at pin X1, then continue.

(3) Do this check for power at the integrated flight accessory unit (IFSAU):

(a) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(b) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(c) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

(d) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(e) Do a check for 28 VDC between pin 121 of D2209A and structure ground.

(f) If there is 28 VDC at the pin, then do these steps.

1) Repair the wiring between pin 121 of D2209A and pin X1 of D2485.

2) Re-connect connector D2485.

3) Re-install the right lower side panel on the P8 control stand.

4) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

5) Do the Repair Confirmation at the end of this task.

(g) If you do not find 28 VDC at pin 121, then do these steps:

1) Replace the IFSAU, M1474.

These are the tasks:

Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801,

Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

2) Re-connect connector D2485.

3) Re-install the right lower side panel on the P8 control stand.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) <RUN SELECT LIBRARY TESTS

c) SPEED/STAB TRIM 32>

d) EXECUTE

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

## 814. STAB TRIM WARN Light Problem - Fault Isolation

A. Description

(1) This task is for the maintenance message: TRIM WARN ANN (J1C-D02)

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) TRIM WARN ANN (J1C-D02): During ground test the FCC sets the STAB TRIM WARN signal high and then low. The CDU prompts the operator during the test, "IS THE STAB OUT OF TRIM WARN ANN ON/OFF", if the operator answers "NO" to either question, the FCC sets the flag for this message.

B. Possible Causes

(1) Lamp

(2) STAB TRIM WARN light, L4

(3) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

D. Related Data

(1) (SSM 22-13-11)

(2) (SSM 22-14-12)

(3) (SSM 33-18-21)

(4) (WDM 22-13-11)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Reset the following circuit breaker.

NOTE: Resetting this circuit breaker is resetting the internal STM logic.

(1) Open circuit breaker for at least 10 seconds.

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C00849 | AFCS STABILIZER TRIM |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(1) Close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C00849 | AFCS STABILIZER TRIM |

(2) Do a Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) check for Flight Deck Effect Fault Stab Trim.

(a) If no fault message show, then there was an intermittent fault.

(b) If fault message shows, continue.

(3) Do a check of the lamps in the STAB TRIM WARN light, L4 located on the P1-3 panel:

(a) If any of the lamps need to be replaced, do this task: Indicator Light - Lamp Replacement, AMM TASK 33-18-00-960-801.

1) Do the Repair Confirmation at the end of this task.

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If none of the lamps need to be replaced, then continue.

(4) Replace the STAB TRIM WARN light, L4 located on the P1-3 panel, do this task: Indicator Light - Light Assembly Replacement, AMM TASK 33-18-00-960-802.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(5) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(6) If the maintenance message is on channel A, then do this wiring check:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the integrated flight system accessory unit, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(c) Disconnect connector D895 from the captain's main instrument panel, P1-3.

NOTE: The P1-3 panel is installed in the flight compartment. The connectors are installed on the rear of the panel.

(d) Do a wiring check between these pins of connector D10135C on the E1-1 rack and connector D895 removed from the P1-3 panel:

| **D10135C** | | **D895** |
|---|---|---|
| pin D2 | - - - - - - - - - - - - - - - - - - | pin 10 |

1) If you find a problem with the wiring, then repair the wiring.

(e) Do a wiring check between these pins of connector D10135C on the E1-1 rack and connector D2209A on the E1-1 rack:

| **D10135C** | | **D2209A** |
|---|---|---|
| pin D2 | - - - - - - - - - - - - - - - - - - | pin 72 |

1) If you find a problem with the wiring, then repair the wiring.

(f) Re-connect connector D895 to the captain's main instrument panel, P1-3.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(g) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(h) Re-install the integrated flight system accessory unit, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(i) Do the Repair Confirmation at the end of this task.

(7) If the maintenance message is on channel B, then do this wiring check:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the integrated flight system accessory unit, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(c) Disconnect connector D423 from the captain's main instrument panel, P1-3.

NOTE: The P1-3 panel is installed in the flight compartment. The connectors are installed on the rear of the panel.

(d) Do a wiring check between these pins of connector D10137C on the E1-4 rack and connector D423 removed from the P1-3 panel:

| D10137C | | D423 |
|---|---|---|
| pin D2 | - - - - - - - - - - - - - - - - - - | pin 29 |

1) If you find a problem with the wiring, then repair the wiring.

(e) Do a wiring check between these pins of connector D10137C on the E1-4 rack and connector D2209B on the E1-1 rack:

| D10137C | | D2209B |
|---|---|---|
| pin D2 | - - - - - - - - - - - - - - - - - - | pin 72 |

1) If you find a problem with the wiring, then repair the wiring.

(f) Re-connect connector D423 to the captain's main instrument panel, P1-3.

(g) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(h) Re-install the integrated flight system accessory unit, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(i) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the STAB SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 815. Mach Trim Position Sensor Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) MT POS SENS (J1C-E04)

(b) MT POS SENS (J1C-D04)

(2) MT POS SENS (J1C-E04), (J1C-D04): Flight control computer A (FCC-A) or flight control computer B (FCC-B) or both flight control computers receives invalid input from the position sensor in the Mach Trim Actuator, M414 during the ground test.

B. Possible Causes

(1) Mach trim acuator, M414

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Integrated Flight System Accessory Unit (IFSAU), M1474

(4) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 4 | C00456 | AFCS SYS A MACH TRIM AC |
| D | 2 | C01045 | AFCS SYS A FCC DC |
| D | 4 | C00457 | AFCS SYS A MACH TRIM DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 2 | C01064 | AFCS SYS B MACH TRIM DC |
| B | 3 | C01046 | AFCS SYS B FCC DC |
| C | 1 | C01037 | AFCS SYS B MACH TRIM AC |

D. Related Data

(1) (SSM 22-18-11)

(2) (WDM 22-18-11)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F. Fault Isolation Procedure

(1) Do the MACH TRIM RIGGING TEST:

(a) From the CDU use the Line Select Key (LSK) and select the items that follow:

1) INDEX
2) MAINT
3) DFCS
4) EXTENDED MAINTENANCE
5) RIGGING
6) MACH TRIM
7) Do the maintenance instructions that show on the CDU display to complete the test.

(b) After the MACH TRIM RIGGING TEST is completed, do these steps:

1) Do the Repair Confirmation at the end of this task.
2) If the Repair Confirmation is not satisfactory, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(3) Do this wiring check:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(c) Remove the IFSAU, M1474. To remove it,

These are the tasks:

Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801,

Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(d) Disconnect connector D545 from the mach trim actuator, M414 (STA 1164 WL 276 RBL 0).

NOTE: You get access to the mach trim actuator, M414, through the tailcone access door.

(e) Close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 4 | C00456 | AFCS SYS A MACH TRIM AC |

(f) Do a check for 115 VAC at connector D10135C pins A5 and B5.

(g) Open this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 4 | C00456 | AFCS SYS A MACH TRIM AC |

(h) If 115 VAC was not present, then do the step that follows:

1) Repair the wiring from the above listed circuit breaker or replace the circuit breaker if required.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(i) Close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 4 | C00457 | AFCS SYS A MACH TRIM DC |

(j) Do a check for 28 VDC at connector D10135C pin 53.

(k) Open this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 4 | C00457 | AFCS SYS A MACH TRIM DC |

(l) If 28 VDC was not present, then do the step that follows:

1) Repair the wiring from the above listed circuit breaker or replace the circuit breaker if required.

(m) Close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 1 | C01037 | AFCS SYS B MACH TRIM AC |

(n) Do a check for 115 VAC at connector D10137C pins A5 and B5.

(o) Open this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 1 | C01037 | AFCS SYS B MACH TRIM AC |

(p) If 115 VAC was not present, then do the step that follows:

1) Repair the wiring from the above listed circuit breaker or replace the circuit breaker if required.

(q) Close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 2 | C01064 | AFCS SYS B MACH TRIM DC |

(r) Do a check for 28 VDC at connector D10137C pin 53 and connector D2209B pin 39.

(s) Open this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 2 | C01064 | AFCS SYS B MACH TRIM DC |

(t) If 28 VDC was not present, then do the step that follows:

1) Repair the wiring from the above listed circuit breaker or replace the circuit breaker if required.

(u) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D545 removed from the mach trim actuator, M414:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10135C | | D545 |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin 26 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin 25 |

1) If you find a problem with the wiring, then repair the wiring.

(v) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D545 removed from the mach trim actuator, M414:

| D10137C | | D545 |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin 26 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin 25 |

1) If you find a problem with the wiring, then repair the wiring.

(w) Do a wiring check between these pins of connector D2209A at the E1-1 shelf and connector D545 removed from the mach trim actuator, M414:

| D2209A | | D545 |
|---|---|---|
| pin 61 | - - - - - - - - - - - - - - - - - - | pin 24 |
| pin 58 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin 59 | - - - - - - - - - - - - - - - - - - | pin 3 |

1) If you find a problem with the wiring, then repair the wiring.

(x) Do a check for continuity between pin 23 of connector D545 (removed from M414) and ground.

1) If there is no continuity, then repair the wiring.

(y) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D2209A at the E1-1 shelf:

| D10135C | | D2209A |
|---|---|---|
| pin D1 | - - - - - - - - - - - - - - - - - - | pin 45 |
| pin B1 | - - - - - - - - - - - - - - - - - - | pin 42 |
| pin A1 | - - - - - - - - - - - - - - - - - - | pin 43 |

1) If you find a problem with the wiring, then repair the wiring.

(z) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D2209B at the E1-1 shelf:

| D10137C | | D2209B |
|---|---|---|
| pin D1 | - - - - - - - - - - - - - - - - - - | pin 45 |
| pin B1 | - - - - - - - - - - - - - - - - - - | pin 42 |
| pin A1 | - - - - - - - - - - - - - - - - - - | pin 43 |

1) If you find a problem with the wiring, then repair the wiring.

(aa) Re-connect connector D545 to the mach trim actuator, M414.

(ab) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(ac) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(ad) Re-install the integrated flight system accessory unit, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(ae) If you repaired any of the wiring listed above, then do these steps:

1) Do the Repair Confirmation at the end of this task.

(af) If you did not repair any of the wiring listed above, then continue.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(4) Replace the mach trim actuator, M414.

These are the tasks:

Mach Trim Actuator Removal, AMM TASK 22-11-24-000-801,

Mach Trim Actuator Installation, AMM TASK 22-11-24-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(5) Replace the IFSAU, M1474.

These are the tasks:

Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801,

Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the MACH TRIM test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**816. MACH TRIM FAIL Light Problem - Fault Isolation**

A. Description

(1) This task is for the maintenance message: MT FAIL ANN (J1C-J03)

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(2) MT FAIL ANN (J1C-J03): During ground test the FCC sets the MACH TRIM WARN signal low and then high. The CDU prompts the operator during the test, "IS THE MACH TRIM FAIL ANN (P5-3) ON/OFF", if the operator answers "NO" to either question, the FCC sets the flag for this message.

B. Possible Causes

(1) Lamp

(2) MACH TRIM FAIL light

(3) Flight controls module, P5-3

(4) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(5) Wiring problem



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

D. Related Data

(1) (SSM 22-18-11)

(2) (WDM 22-18-11)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do a check of the lamps in the MACH TRIM FAIL Light located on the P5-3 panel:

(a) If any of the lamps need to be replaced, do this task: Indicator Light - Lamp Replacement, AMM TASK 33-18-00-960-801.

1) Do the Repair Confirmation at the end of this task.

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If none of the lamps need to be replaced, then continue.

(2) Replace the MACH TRIM FAIL light located on the P5-3 panel, do this task: Indicator Light - Light Assembly Replacement, AMM TASK 33-18-00-960-802.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) Replace the flight controls module, P5-3.

These are the tasks:

Flight Controls Panel Removal, AMM TASK 27-09-45-000-801,

Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(5) If the maintenance message is on channel A, then do this wiring check:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D630 from the flight controls module, P5-3.

NOTE: The P5-3 panel is installed on the P5 overhead panel in the flight compartment.

(c) Do a wiring check between these pins of connector D10135C on the E1-1 rack and connector D630 removed from the P5-3 panel:

| D10135C | D630 |
|---|---|
| pin J3 | pin 2 |

1) If you find a problem with the wiring, then repair the wiring.

(d) Re-connect connector D630 to the flight controls module, P5-3.

(e) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(f) Do the Repair Confirmation at the end of this task.

(6) If the maintenance message is on channel B, then do this wiring check:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D624 from the flight controls module, P5-3.

NOTE: The P5-3 panel is installed on the P5 overhead panel in the flight compartment.

(c) Do a wiring check between these pins of connector D10137C on the E1-4 rack and connector D624 removed from the P5-3 panel:

| D10137C | D624 |
|---|---|
| pin J3 | pin 36 |

1) If you find a problem with the wiring, then repair the wiring.

(d) Re-connect connector D624 to the flight controls module, P5-3.

(e) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(f) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the MACH TRIM test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 817. SPEED TRIM FAIL Light Problem - Fault Isolation

A. Description

(1) This task is for the maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) ST FAIL ANN (J1C-H02)

(2) ST FAIL ANN (J1C-H02): During ground test the FCC sets the SPD TRIM WARN signal low and then high. The CDU prompts the operator during the test, "IS THE SPD TRIM FAIL ANN (P5-3) ON/OFF", if the operator answers "NO" to either question, the FCC sets the flag for this message.

B. Possible Causes

(1) Lamp

(2) SPEED TRIM FAIL light

(3) Flight controls module, P5-3

(4) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(5) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

D. Related Data

(1) (SSM 22-13-11)

(2) (WDM 22-13-11)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

**HAP 001-013, 015-026, 028-030; AIRPLANES WITH HONEYWELL FCC AND OPS SOFTWARE P/N 10-62038-705**

(a) If these maintenance messages are shown during the DFCS BITE, then do these steps:

1) Do this check for nuisance messages:

a) Do a check for these message under ''SPEED TRIM'':



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

<1> LCL N 1 ENG 1 INV

<2> IRU V/S INV

b) Do a check for these messages under ''MISC'':

<1> HOLDOVER PWR

<2> MCP SEL ALT WRAP

<3> MCP SEL ALT COUNTER

c) If you find the above messages, then ignore this failure.

d) if you did not find the above messages, then continue.

**HAP ALL; AIRPLANES WITHOUT HONEYWELL FCC SOFTWARE P/N 10-62038-705**

(b) If the maintenance message shows, then do the Fault Isolation Procedure below.

(c) If the maintenance message does not show, then there was an intermittent fault.

**HAP ALL**

F. Fault Isolation Procedure

(1) Reset the following circuit breaker.

NOTE: Resetting this circuit breaker is resetting the internal STM logic.

(1) Open circuit breaker for at least 10 seconds.

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C00849 | AFCS STABILIZER TRIM |

(1) Close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C00849 | AFCS STABILIZER TRIM |

(2) Do a Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801)check for Flight Deck Effect Fault Speed Trim.

(a) If no fault message show, then there was an intermittent fault.

(b) If fault message shows, continue.

(3) Do a check of the lamps in the SPEED TRIM FAIL light located on the P5-3 panel:

(a) If any of the lamps need to be replaced, do this task: Indicator Light - Lamp Replacement, AMM TASK 33-18-00-960-801.

1) Do the Repair Confirmation at the end of this task.

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If none of the lamps need to be replaced, then continue.

(4) Replace the SPEED TRIM FAIL light located on the P5-3 panel, do this task: Indicator Light - Light Assembly Replacement, AMM TASK 33-18-00-960-802.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(5) Replace the flight controls module, P5-3,

These are the tasks:

Flight Controls Panel Removal, AMM TASK 27-09-45-000-801,

Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(6) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(7) If the maintenance message is on channel A, then do this wiring check:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D630 from the flight controls module, P5-3.

NOTE: The P5-3 panel is installed on the P5 overhead panel in the flight compartment.

(c) Do a wiring check between these pins of connector D10135C on the E1-1 rack and connector D630 removed from the P5-3 panel:

| D10135C | | D630 |
|---|---|---|
| pin H2 | - - - - - - - - - - - - - - - - - - | pin 1 |

1) If you find a problem with the wiring, then repair the wiring.

(d) Re-connect connector D630 to the flight controls module, P5-3.

(e) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(f) Do the Repair Confirmation at the end of this task.

(8) If the maintenance message is on channel B, then do this wiring check:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D624 from the flight controls module, P5-3.

NOTE: The P5-3 panel is installed on the P5 overhead panel in the flight compartment.

(c) Do a wiring check between these pins of connector D10137C on the E1-4 rack and connector D624 removed from the P5-3 panel:

| D10137C | | D624 |
|---|---|---|
| pin H2 | - - - - - - - - - - - - - - - - - - | pin 38 |

1) If you find a problem with the wiring, then repair the wiring.

(d) Re-connect connector D624 to the flight controls module, P5-3.

(e) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(f) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the STAB SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**818. Stab Trim Relay Problem - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

(a) STAB TRIM RELAY (J1C-D03)

(2) An FCC does not receive 28 VDC power from the ENGAGE INTERLINK circuit breakers.

B. Possible Causes

(1) Main ELEX stab trim relay, R64

(2) Wiring problem

C. Related Data

(1) (SSM 22-13-11)

(2) (WDM 22-13-11)

D. Initial Evaluation

(1) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(2) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

NOTE: If the INTERACTIVE TEST 32 shows TEST FAILED and only maintenance messages 22-11176 and 22-11216 show on the CDU display, ignore this failure. This is a nuisance fault.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this check for power at the FCC-A or FCC-B:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Remove the applicable FCC, M1875 or M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

(c) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(d) Make sure that the trim cutout switches are in the NORMAL position.

(e) Do a check for 28 VDC between pin D3 of connector D10135C (FCC-A) or 10137C (FCC-B), and structure ground.

(f) If there is 28 VDC at the pin, then do these steps:

1) Replace the applicable FCC, M1875 or M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Do the Repair Confirmation at the end of this task.

(g) If you do not find 28 VDC at the pin, then continue.

(2) Do this check for power at the main ELEX stab trim relay R64:

(a) Do a check for 28 VDC between pin 14 at the relay and structure ground.

(b) If there is 28 VDC at the pin, then do these steps:

1) Replace the main ELEX stab trim relay, R64, at the P8 control stand.

2) Re-install the applicable FCC, M1875 or M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the Repair Confirmation at the end of this task.

(c) If you do not find 28 VDC at the pin, then do these steps:

1) Replace the IFSAU, M1474.

These are the tasks:

Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801,

Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

2) Do the repair confirmation at the end of this task.

3) If the Repair Confirmation is not satisfactory, then do these steps:

a) Repair the wiring from the IFSAU to the relay, or from the relay to the applicable FCC.

b) Do the repair confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < RUN SELECT LIBRARY TESTS

c) SPEED/STAB TRIM 32 >

d) EXECUTE

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**819. Wheel Spin Switch-1 Problem - Fault Isolation**

A. Description

(1) This task is for maintenance message:

(a) WHEEL SPIN-1 (J1A-J10)

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(b) WHEEL SPIN-1 (J1A-J10): Flight control computer A (FCC-A) receives no input from the AUTOMATIC SPEEDBRAKE MODULE during the ground test.

B. Possible Causes

(1) Automatic speedbrake module, M980

(2) Wiring problem

(3) Flight control computer A (FCC- A), M1875

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

D. Related Data

(1) (SSM 22-11-12)

(2) (WDM 22-11-12)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(2) Do this check of the wheel spin switch, which is located inside the automatic speedbrake module, M980:

(a) Remove the automatic speedbrake module. To remove it, do this task: Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801.

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

(c) Do a check for 28 VDC between pin 56 of connector D2586B and A/P electrical ground (WDM 22-11-12).

(d) If there is not 28 VDC at pin 56 of connector D2586B, then do these steps:

1) Disconnect connector D41125P from D41125J at the E1-1 shelf.

2) Do a continuity check between these pins of connector D2586B and connector D41125P:

| D2586B | | D41125P |
|---|---|---|
| pin 56 | - - - - - - - - - - - - - - - - - - | pin A11 |

3) If there is not continuity, then do these steps:

a) Repair the wiring.

b) Re-install the automatic speedbrake module. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

c) Re-connect connector D41125P.

d) Do the Repair Confirmation at the end of this task.

(e) If there is 28 VDC at pin 56 of connector D2586B, then continue.

1) Re-connect connector D41125P.

(3) Install a new automatic speedbrake module, M980, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) Do these wiring checks between the automatic speedbrake module, M980, and FCC-A.

(a) Remove the automatic speedbrake module. To remove it, do this task: Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801.

(b) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(c) Do a wiring check between these pins of connector D10135A on the E1-1 shelf and connector D2586B on the E4-2 shelf (WDM 22-11-12):

| D10135A | | D2586B |
|---|---|---|
| pin J10 | - - - - - - - - - - - - - - - - - - | pin 55 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the automatic speedbrake module. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Re-install the automatic speedbrake module. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for channel A and B.

2) Make the selection for the FCC LRU Replacement test.

(c) If the maintenance messages do not show, then you corrected the fault.

**———————— END OF TASK ————————**

**820. Wheel Spin Switch-2 Problem - Fault Isolation**

A. Description

(1) This task is for maintenance message:

(a) WHEEL SPIN-2 (J1A-J10)

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(b) WHEEL SPIN-2 (J1A-J10): Flight control computer B (FCC-B) receives no input from the AUTOMATIC SPEEDBRAKE MODULE during the ground test.

B. Possible Causes

(1) Automatic speedbrake module, M980

(2) Wiring problem

(3) Flight control computer B (FCC-B), M1876



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

D. Related Data

(1) (SSM 22-11-12)

(2) (WDM 22-11-12)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(2) Do this check of the wheel spin switch, which is located inside the automatic speedbrake module, M980:

(a) Remove the automatic speedbrake module. To remove it, do this task: Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(c) Do a check for 28 VDC between pin 55 of connector D2586A and A/P electrical ground (WDM 22-11-12).

(d) If there is not 28 VDC at pin 55 of connector D2586A, then do these steps:

1) Disconnect connector D40490J from D40490P at the E1-4 shelf.

2) Do a continuity check between these pins of connector D2586A and connector D40490J:

| **D2586A** | **D40490J** |
|---|---|
| pin 55 - - - - - - - - - - - - - - - - - - | pin 10 |

3) If there is no continuity, then do these steps:

a) Repair the wiring.

b) Re-install the automatic speedbrake module. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

c) Re-connect connector D40490J.

d) Do the Repair Confirmation at the end of this task.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(e) If there is 28 VDC at pin 55 of connector D2586A, then continue.

1) Re-connect connector D40490J.

(3) Install a new automatic speedbrake module, M980, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) Do these wiring checks between the automatic speedbrake module, M980, and FCC-B:

(a) Remove the automatic speedbrake module. To remove it, do this task: Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801.

(b) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(c) Do a wiring check between these pins of connector D10137A on the E1-4 shelf and connector D2586A on the E4-2 shelf (WDM 22-11-12):

| D10137A | | D2586A |
|---|---|---|
| pin J10 | - - - - - - - - - - - - - - - - - - | pin 53 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the automatic speedbrake module. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Re-install the automatic speedbrake module. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for channel A and B.

2) Make the selection for the FCC LRU Replacement test.

(c) If the maintenance messages do not show, then you corrected the fault.

**——————— END OF TASK ———————**

**821. AFCS Engage Interlock-1 Problem - Fault Isolation**

A. Description

(1) This task is for maintenance message:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) AFCS ENG INTLK CB-1 (J1B-F03)

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(b) AFCS ENG INTLK CB-1 (J1B-F03): Flight control computer A (FCC-A) has no 28 VDC on the ENGAGE INTLK input during the ground test.

B. Possible Causes

(1) AFCS system A engage interlock circuit breaker, C1048

(2) Wiring problem

(3) Flight control computer A (FCC-A), M1875

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

D. Related Data

(1) (SSM 22-11-12)

(2) (WDM 22-11-12)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(2) Do this check of the engage interlock input on FCC-A:

(a) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

(c) Do a check for 28 VDC between pin F3 of connector D10135B and A/P electrical ground (WDM 22-11-12).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) If there is not 28 VDC at pin F3 of connector D10135B, then do these steps:

1) Disconnect connector D41803P from D41803J at the P18 load control center-left.

2) Do a check for 28 VDC between pin 3 of connector D41803J and A/P electrical ground.

3) If there is not 28 VDC at pin 3 of connector D41803J, then do these steps:

a) Replace the circuit breaker (C1048):

a) This is the circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

b) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

c) Reconnect connector D41803P to D41803J at the P18 load control center-left.

d) Do the Repair Confirmation at the end of this task.

4) If there is 28 VDC at pin 3 of connector D41803J, then do a continuity check between these pins of connector D41803P and connector D10135B on the E1-1 shelf.

| D41803P | | D10135B |
|---|---|---|
| pin 3 | - - - - - - - - - - - - - - - - - - | pin F3 |

5) If there is not continuity between pin 3 of connector D41803P and pin F3 of connector D10135B, then do these steps:

a) Repair the wiring.

b) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

c) Re-connect connector D41803P.

d) Do the Repair Confirmation at the end of this task.

(e) If there is 28 VDC at pin F3 of connector D10135B, then continue.

1) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for channel A and B.

2) Make the selection for the FCC LRU Replacement test.

(c) If the maintenance messages do not show, then you corrected the fault.

**———————— END OF TASK ————————**

## 822. AFCS Engage Interlock-2 Problem - Fault Isolation

A. Description

(1) This task is for maintenance message:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) AFCS ENG INTLK CB-2 (J1B-F03)

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(b) AFCS ENG INTLK CB-2 (J1B-F03): Flight control computer B (FCC-B) has no 28 VDC on the ENGAGE INTLK input during the ground test.

B. Possible Causes

(1) AFCS system B engage interlock circuit breaker, C716

(2) Wiring problem

(3) Flight control computer B (FCC-B), M1876

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

D. Related Data

(1) (SSM 22-11-12)

(2) (WDM 22-11-12)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(2) Do this check of the engage interlock input on FCC-B:

(a) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(c) Do a check for 28 VDC between pin F3 of connector D10137B and A/P electrical ground (WDM 22-11-12).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) If there is not 28 VDC at pin F3 of connector D10137B, then do these steps:

1) Disconnect connector D46065P from D46065J at the P6 load control center-right.

2) Do a check for 28 VDC between pin 12 of connector D46065J and A/P electrical ground.

3) If there is not 28 VDC at pin 12 of connector D46065J, then do these steps:

a) Replace this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

b) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

c) Re-connect connector D46065P to D46065J at the P6 load control center-right.

d) Do the Repair Confirmation at the end of this task.

4) If there is 28 VDC at pin 12 of connector D46065J, then do a continuity check between these pins of connector D46065P and connector D10137B on the E1-4 shelf.

| **D46065P** | | **D10137B** |
|---|---|---|
| pin 12 | - - - - - - - - - - - - - - - - - - | pin F3 |

5) If there is not continuity between pin 12 of connector D46065P and pin F3 of connector D10137B, then do these steps:

a) Repair the wiring.

b) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

c) Re-connect connector D46065P.

d) Do the Repair Confirmation at the end of this task.

(e) If there is 28 VDC at pin F3 of connector D10137B, then continue.

1) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for channel A and B.

2) Make the selection for the FCC LRU Replacement test.

(c) If the maintenance messages do not show, then you corrected the fault.

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**801. FCC Internal Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) FCC-A

(b) FCC-B

(2) FCC-A: Flight control computer A internal problem.

(3) FCC-B: Flight control computer B internal problem.

B. Possible Causes

(1) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

C. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Replace the applicable FCC, M1875 or M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

E. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**802. FCC Engage Solenoid Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1A-H14)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) FCC-A (J1A-K14)

(c) FCC-B (J1A-H14)

(d) FCC-B (J1A-K14)

(2) FCC-A (J1A-H14), FCC-A (J1A-K14): FCC-A does not receive the engage A solenoid Lo or Hi wrap signal during the ground test.

(3) FCC-B (J1A-H14), FCC-B (J1A-K14): FCC-B does not receive the engage A solenoid Lo or Hi wrap signal during the ground test.

B. Possible Causes

(1) Mode control panel, M198

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Related Data

(1) (SSM 22-11-11)

(2) (WDM 22-11-11)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Replace the mode control panel, M198.

These are the tasks:

DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801,

DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the mode control panel, M198. To remove it, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D299 at the P7 glareshield panel (WDM 22-11-11).

| D10135A | | D299 |
|---|---|---|
| pin H14 | - - - - - - - - - - - - - - - - - | pin 28 |
| pin K14 | - - - - - - - - - - - - - - - - - | pin 52 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the mode control panel, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(4) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the mode control panel, M198. To remove it, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1815 at the P7 glareshield panel (WDM 22-11-11).

| D10137A | | D1815 |
|---|---|---|
| pin H14 | - - - - - - - - - - - - - - - - - | pin 28 |
| pin K14 | - - - - - - - - - - - - - - - - - | pin 52 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the mode control panel, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**803. FCC Elevator Actuator Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1A-E15, D15)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) FCC-A (J1A-D13)

(c) FCC-B (J1A-E15, D15)

(d) FCC-B (J1A-D13)

(2) FCC-A (J1A-E15, D15): FCC-A pitch valve amplifier output problem during the ground test.

(3) FCC-A (J1A-D13): FCC-A does not receive the elevator actuator detent wrap signal during the ground test.

(4) FCC-B (J1A-E15, D15): FCC-B pitch valve amplifier output problem during the ground test.

(5) FCC-B (J1A-D13): FCC-B does not receive the elevator actuator detent wrap signal during the ground test.

B. Possible Causes

(1) A/P elavator actuator, M1020 (actuator A) or M1022 (actuator B)

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Integrated flight system accessory unit (IFSAU), M1474

(4) Wiring problem

C. Related Data

(1) (SSM 22-12-31)

(2) (SSM 22-12-41)

(3) (WDM 22-12-31)

(4) (WDM 22-12-41)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance messages 22–11132 or 22–11134 shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do these rigging checks for the A/P elevator actuators:

(a) Do the ELEV RIG rigging test. To do it, do this task: Elevator Rigging Test, AMM TASK 22-11-00-820-802.

NOTE: To do the ELEV RIG rigging test only, make the selection for the ELEV RIG on the ELEVATOR RIGGING menu.

(b) Do the ELEV AUTH DUAL rigging tests. To do it, do this task: Elevator Rigging Test, AMM TASK 22-11-00-820-802.

NOTE: To do the ELEV AUTH DUAL rigging test only, make the selection for the ELEV AUTH DUAL on the ELEVATOR RIGGING menu.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(d) If the values for the A side and B side are not between the limits, then continue.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).

(3) Do the adjustment for the A/P elevator actuators. To do it, do this task: Autopilot Elevator Actuator Adjustment, AMM TASK 22-11-26-820-801.

(a) Do this task: Autopilot Elevator Actuator Test, AMM TASK 22-11-26-710-801.

(b) Do the Repair Confirmation at the end of this task.

(c) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect the A/P elevator actuator A connector, D1681.

NOTE: You can find the A/P elevator actuator A (M1020) on the aft bulkhead station 1156. You can get access to the A/P elevator actuator through the Tailcone Access Door, 318BR..

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1681 at STA 1165, WL 278, LBL 7 (WDM 22-12-31).

| D10135A | | D1681 |
|---|---|---|
| pin E15 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin D15 | - - - - - - - - - - - - - - - - - - | pin 5 |
| pin D13 | - - - - - - - - - - - - - - - - - - | pin 21 |

(d) Make sure that pin 22 of D1681 is connected to ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1681.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect the A/P elevator actuator B connector, D1687.

NOTE: You can find the A/P elevator actuator B (M1022) on the aft bulkhead station 1156. You can get access to the A/P elevator actuator through the Tailcone Access Door, 318BR..

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1687 at STA 1161, WL 278, LBL 7 (WDM 22-12-41).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10137A | | D1687 |
|---|---|---|
| pin E15 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin D15 | - - - - - - - - - - - - - - - - - - | pin 5 |
| pin D13 | - - - - - - - - - - - - - - - - - - | pin 21 |

(d) Make sure that pin 22 of D1687 is connected to ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1687.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) Do the wiring check of the IFSAU.

(a) Do these steps.

(a) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

(a)

Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 031-054, 101-999** | | | |
| A | 3 | C01631 | AFCS INTLK 2 |

(a)

Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 001-013, 015-026, 028-030** | | | |
| 1) BMake sure that pin 121 of D10716 | | | AFCS SYS B ENGAGE INTLK |

(b)

Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| A | 3 | C01631 | AFCS INTLK 2 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b)

Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 001-013, 015-026, 028-030** | | | |
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(b) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

1) Make sure that pin 121 of D2209A is 28V.

(c) If pin 121 of D2209A is not 28V, replace the IFSAU.

Do these Task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801 Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801

1) Do the Repair Confirmation at the end of this task.

(d) If you do not find a problem with the IFSAU wiring, then continue.

1)

Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 031-054, 101-999** | | | |
| A | 3 | C01631 | AFCS INTLK 2 |

1)

Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 001-013, 015-026, 028-030** | | | |
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(7) If the maintenance message is on channel A, then replace the A/P elevator actuator A, M1020.

These are the tasks:

Autopilot Elevator Actuator Removal, AMM TASK 22-11-26-000-801,

Autopilot Elevator Actuator Installation, AMM TASK 22-11-26-400-801.

(a) Do the Repair Confirmation at the end of this task.

(8) If the maintenance message is on channel B, then replace the A/P elevator actuator B, M1022.

These are the tasks:

Autopilot Elevator Actuator Removal, AMM TASK 22-11-26-000-801,

Autopilot Elevator Actuator Installation, AMM TASK 22-11-26-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**—————— END OF TASK ——————**

**804. FCC Aileron Actuator Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1B-E15, D15)

(b) FCC-A (J1B-D13)

(c) FCC-B (J1B-E15, D15)

(d) FCC-B (J1B-D13)

(2) FCC-A (J1B-E15, D15): FCC-A roll valve amplifier output problem during the ground test.

(3) FCC-A (J1B-D13): FCC-A does not receive the aileron actuator detent wrap signal during the ground test.

(4) FCC-B (J1B-E15, D15): FCC-B roll valve amplifier output problem during the ground test.

(5) FCC-B (J1B-D13): FCC-B does not receive the aileron actuator detent wrap signal during the ground test.

B. Possible Causes

(1) A/P aileron actuator, M943 (actuator A) or M1024 (actuator B)

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Related Data

(1) (SSM 22-11-31)

(2) (WDM 22-11-31)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do the COMPLETE AIL RIG rigging test. To do it, do this task: Aileron Rigging Test, AMM TASK 22-11-00-820-803.

(a) If the values for the A side and B side are between the limits, then do the Repair Confirmation at the end of this task.

(b) If the values for the A side and B side are not between the limits, then continue.

NOTE: The value shows on the A side is for channel A (FCC-A); The value shows on the B side is for channel B (FCC-B).

(3) Do the adjustment for the A/P aileron actuators. To do it, do this task: Autopilot Aileron Actuator Adjustment, AMM TASK 22-11-25-820-801.

(a) Do this task: Autopilot Aileron Actuator Test, AMM TASK 22-11-25-710-801.

(b) Do the Repair Confirmation at the end of this task.

(c) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect the A/P aileron actuator A connector, D1827.

NOTE: You can find the A/P aileron actuator A (M943) in the left main landing gear wheel well, outboard of the power control units for the ailerons.

(c) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1827 at STA 670, WL 193, LBL 40 (WDM 22-11-31):

| D10135B | | D1827 |
|---|---|---|
| pin E15 | - - - - - - - - - - - - - - - - - - | pin 5 |
| pin D15 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin D13 | - - - - - - - - - - - - - - - - - - | pin 21 |

(d) Make sure that pin 22 of D1827 is connected to ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1827.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Disconnect the A/P aileron actuator B connector, D1619.

NOTE: You can find the A/P aileron actuator B (M1024) in the left main landing gear wheel well, outboard of the power control units for the ailerons.

(c) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1619 at STA 670, WL 193, LBL 50 (WDM 22-11-31):

| D10137B | | D1619 |
|---|---|---|
| pin E15 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin D15 | - - - - - - - - - - - - - - - - - - | pin 5 |
| pin D13 | - - - - - - - - - - - - - - - - - - | pin 21 |

(d) Make sure that pin 22 of D1619 is connected to ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1619.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) If the maintenance message is on channel A, then replace the A/P aileron actuator A, M943.

These are the tasks:

Autopilot Aileron Actuator Removal, AMM TASK 22-11-25-000-801,

Autopilot Aileron Actuator Installation, AMM TASK 22-11-25-400-801.

(a) Do the Repair Confirmation at the end of this task.

(7) If the maintenance message is on channel B, then replace the A/P aileron actuator B, M1024.

These are the tasks:

Autopilot Aileron Actuator Removal, AMM TASK 22-11-25-000-801,

Autopilot Aileron Actuator Installation, AMM TASK 22-11-25-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**—————— END OF TASK ——————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**805. FCC Flap Down Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1C-J02)

(b) FCC-B (J1C-J02)

(2) FCC-A (J1C-J02): FCC-A does not receive the flap down wrap signal during the ground test.

(3) FCC-B (J1C-J02): FCC-B does not receive the flap down wrap signal during the ground test.

B. Possible Causes

(1) Left elevator stab solenoid valve, V160

(2) Stab trim motor, M1659

(3) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring Problem

C. Related Data

(1) (SSM 22-13-11)

(2) (SSM 27-31-11)

(3) (WDM 22-13-11)

(4) (WDM 27-31-11)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the STAB SENS test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring between the FCC-A and stab trim motor:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect the connector D381 from the stabilizer trim servo, M1659.

NOTE: You can get access to the stabilizer trim motor through the Access Door to Aft Unpressurized Compartment, 311AL..

(c) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D381 at STA 1075, WL 232, RBL 4 (WDM 22-13-11):



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10135C | D381 |
|---|---|
| pin J2 | pin 12 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-connect connector D381.
3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
2) Re-connect the connector D381.

(3) If the maintenance message is on channel B, then do this check of the wiring between the FCC-B and stab trim motor:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect the connector D381 from the stabilizer trim servo, M1659.

NOTE: You can get access to the stabilizer trim motor through the Access Door to Aft Unpressurized Compartment, 311AL..

(c) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D381 at STA 1075, WL 232, RBL 4 (WDM 22-13-11):

| D10137C | D381 |
|---|---|
| pin J2 | pin 12 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-connect the connector D381.
3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
2) Re-connect the connector D381.

(4) Do this check of the wiring for the left elevator tab solenoid valve:

(a) Disconnect the connector D10531 from the left elevator tab solenoid valve, V160 (WDM 27-33-11).

(b) Do a wiring check between pin 1 of connector D10531 and the splice SP506 at STAB 1065 (approximately) (WDM 27-33-11).

(c) Make sure that pin 2 of D10531 is connected to ground.

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-connect connector D10531.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

(5) Replace the left elevator tab solenoid valve, V160 (WDM 27-31-11).

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(6) Replace the stab trim motor, M1659.

These are the tasks:

Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801,

Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the STAB SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

## 806. FCC MMR/ILS Inhibit Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1B-E07)

(b) FCC-B (J1B-E07)

(2) FCC-A (J1B-E07): FCC-A does not receive the MMR/ILS test inhibit/antenna warp signal during the ground test.

(3) FCC-B (J1B-E07): FCC-B does not receive the MMR/ILS test inhibit/antenna warp signal during the ground test.

B. Possible Causes

(1) Integrated flight system accessory unit (IFSAU), M1474

(2) Localizer antenna switch relay, R315 (relay 1) or R316 (relay 2)

(3) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C01376 | RADIO NAVIGATION NAV SNSR DC-1 |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| A | 10 | C01377 | RADIO NAVIGATION NAV SNSR DC-2 |

D. Related Data

(1) (SSM 22-11-18)

(2) (SSM 34-51-41)

(3) (WDM 34-51-41)

E. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance message shows, then do the applicable Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure - Maintenance Message Channel A

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do this voltage check at the IFSAU:

(a) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C01376 | RADIO NAVIGATION NAV SNSR DC-1 |

(c) Do a check of 28V DC between pin 117 of the connector D235A for the IFSAU and structure ground.

(d) If there is not 28V DC between pin 117 of the D235A and structure ground, then do these steps:

1) Do a wiring check between these pins of connector D235A and connector D41807P at the left load control center (P18 panel) (WDM 34-51-41):

| **D235A** | | **D41807P** |
|---|---|---|
| pin 117 | - - - - - - - - - - - - - - - - - | pin 4 |

2) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

b) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

c) Do the Repair Confirmation at the end of this task.

(e) If there is 28V DC between pin 117 of the D253A and structure ground, then continue.

(3) Replace the IFSAU, M1474.

These are the tasks:

Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801,

Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) Replace the localizer antenna switch relay 1, R315.

These are the tasks:

Localizer Antenna Switch Removal, AMM TASK 34-31-72-000-801,

Localizer Antenna Switch Installation, AMM TASK 34-31-72-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(5) Do this check of the wiring between the FCC-A and the IFSAU:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(c) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D235A at the E1-1 shelf (WDM 34-51-41):

| **D10135B** | | **D235A** |
|---|---|---|
| pin E7 | - - - - - - - - - - - - - - - - - - | pin 79 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(6) Do this check of the wiring between the IFSAU and the localizer antenna switch relay 1:

(a) Disconnect the connector D2119 from the localizer antenna relay 1, R315.

(b) Do a wiring check between these pins of connector D235A at the E1-1 shelf and connector D2119 at STA 306, WL 180, RBL 21 (WDM 34-51-41):

| **D235A** | | **D2119** |
|---|---|---|
| pin 73 | - - - - - - - - - - - - - - - - - - | pin E |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector D2119.

3) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

4) Do the Repair Confirmation at the end of this task.

(d) If you do not find a problem with the wiring, then continue.

1) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(7) Do this check of the wiring between the localizer antenna switch relay 1 and the FCC-A:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D2119 at STA 306, WL 180, RBL 21 (WDM 34-51-41):

| D10135B | | D2119 |
|---|---|---|
| pin K14 | - - - - - - - - - - - - - - - - - - | pin D |
| pin E3 | - - - - - - - - - - - - - - - - - - | pin A |

(c) Make sure that pin C of D2119 is connected to ground.

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector D2119.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

G. Fault Isolation Procedure - Maintenance Message Channel B

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do this voltage check at the IFSAU:

(a) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| A | 10 | C01377 | RADIO NAVIGATION NAV SNSR DC-2 |

(3) Do a check for 28V DC between pin 12 of the connector D235B for the IFSAU and structure ground.

(a) If there is not 28V DC between pin 12 of the D235B and the structure ground, then do these steps:

1) Do a wiring check between these pins of connector D235B andconnector D46065P at the right load control center (P6 panel) (WDM 34-51-41):

| D235B | | D46065P |
|---|---|---|
| pin 12 | - - - - - - - - - - - - - - - - - - | pin 5 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.
   c) Do the Repair Confirmation at the end of this task.

(b) If there is 28V DC between pin 12 of the D235B and the structure ground, then continue.

(4) Replace the IFSAU, M1474.

These are the tasks:

Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801,

Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(5) Replace the localizer antenna switch relay 2, R316.

These are the tasks:

Localizer Antenna Switch Removal, AMM TASK 34-31-72-000-801,

Localizer Antenna Switch Installation, AMM TASK 34-31-72-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(6) Do this check of the wiring between the FCC-B and the IFSAU:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801

(c) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D235B at the E1-1 shelf (WDM 34-51-41):

| **D10137B** | | **D235B** |
|---|---|---|
| pin E7 | - - - - - - - - - - - - - - - - - - | pin 79 |

(d) If you find a problem with the wiring, then do these steps:
   1) Repair the wiring.
   2) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.
   3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
   4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.
   1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(7) Do this check of the wiring between the IFSAU and the localizer antenna switch relay 2:

(a) Disconnect the connector D2127 from the localizer antenna relay 2, R316.

(b) Do a wiring check between these pins of connector D235B at the E1-1 shelf and connector D2127 at STA 319, WL 175, RBL 21 (WDM 34-51-41):



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D235B | | D2127 |
|---|---|---|
| pin 73 | - - - - - - - - - - - - - - - - - - | pin E |

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector D2127.

3) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

4) Do the Repair Confirmation at the end of this task.

(d) If you do not find a problem with the wiring, then continue.

1) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(8) Do this check of the wiring between the localizer antenna switch relay 2 and the FCC-B:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D2127 at STA 319, WL 175, RBL 21 (WDM 34-51-41):

| D10137B | | D2127 |
|---|---|---|
| pin K14 | - - - - - - - - - - - - - - - - - | pin D |
| pin E3 | - - - - - - - - - - - - - - - - - | pin A |

(c) Make sure that pin C of D2127 is connected to ground.

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector D2127.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

H. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 807. FCC Stab Trim Warning Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1C-D02)

(b) FCC-B (J1C-D02)

(2) FCC-A (J1C-D02): FCC-A does not receive the stab trim warn wrap signal during the ground test.

(3) FCC-B (J1C-D02): FCC-B does not receive the stab trim warn wrap signal during the ground test.

B. Possible Causes

(1) Stab trim warn light, L4

(2) Annunciation and dimming module, M469

(3) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

D. Related Data

(1) (SSM 22-11-12)

(2) (SSM 22-13-11)

(3) (SSM 33-18-21)

(4) (WDM 22-11-12)

(5) (WDM 22-13-11)

(6) (WDM 33-18-21)

E. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the STAB SENS test.

(c) If the maintenance message shows, then do the applicable Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F. Fault Isolation Procedure - Maintenance Message Channel A

(1) Do this check of the STAB OUT OF TRIM warning light on the captain's instrument panel:
  (a) Push and hold the STAB OUT OF TRIM warning light.
  (b) Make sure that the STAB OUT OF TRIM warning light comes on.
  (c) Release the STAB OUT OF TRIM warning light.
  (d) Make sure that the STAB OUT OF TRIM warning light goes off.
  (e) If the STAB OUT OF TRIM warning light does not operate correctly, then do these steps:
    1) Replace the STAB OUT OF TRIM warning light, L4.
    2) Do the Repair Confirmation at the end of this task.
  (f) If the STAB OUT OF TRIM warning light operates correctly, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.
  (a) If the maintenance messages shows, then continue.

(3) Replace the annunciation and dimming module, M469 (WDM 33-18-21).
  (a) Do the Repair Confirmation at the end of this task.
  (b) If the Repair Confirmation is not satisfactory, then continue.

(4) Do this voltage check at the annunciation and dimming module:
  (a) Remove the annunciation and dimming module, M469 (WDM 33-18-21).
  (b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

  (c) Do a check for 28V DC between pin 7 of the connector D1344 and structure ground (WDM 33-18-21).
  (d) If there is not 28V DC, then do these steps:
    1) Do a wiring check between these pins of the connector D1344 and connector D41803P at the left load control center on the P18 panel (WDM 22-11-12) and (WDM 33-18-21):

| **D1344** | | **D41803P** |
|---|---|---|
| pin 7 | - - - - - - - - - - - - - - - - - - | pin 3 |

    2) If you find a problem with the wiring, then do these steps:
      a) Repair the wiring.
      b) Re-install the annunciation and dimming module, M469 (WDM 33-18-21).
      c) Do the Repair Confirmation at the end of this task.
  (e) If there is 28V DC, then continue.

(5) Do this check of the wiring between the annunciation and dimming module and the captain's main instrument panel:
  (a) Do a wiring check between these pins of connector D1344 and connector D423 at the captain's main instrument panel (WDM 33-18-21):

| **D1344** | | **D423** |
|---|---|---|
| pin 8 | - - - - - - - - - - - - - - - - - - | pin 28 |

  (b) If you find a problem with the wiring, then do these steps:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Repair the wiring.
2) Re-install the annunciation and dimming module, M469 (WDM 33-18-21).
3) Do the Repair Confirmation at the end of this task.

(c) If you do not find a problem with the wiring, then continue.
1) Re-install the annunciation and dimming module, M469 (WDM 33-18-21).

(6) Do this check of the wiring between the FCC-A and the captain's main instrument panel:
(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
(b) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D423 at the captain main instrument panel (WDM 22-13-11):

| D10135C | | D423 |
|---|---|---|
| pin D2 | - - - - - - - - - - - - - - - - - - | pin 29 |

(c) If you find a problem with the wiring, then do these steps:
1) Repair the wiring.
2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
3) Do the Repair Confirmation at the end of this task.

G. Fault Isolation Procedure - Maintenance Message Channel B

(1) Do this check of the STAB OUT OF TRIM warning light on the captain's instrument panel:
(a) Push and hold the STAB OUT OF TRIM warning light.
(b) Make sure that the STAB OUT OF TRIM warning light comes on.
(c) Release the STAB OUT OF TRIM warning light.
(d) Make sure that the STAB OUT OF TRIM warning light goes off.
(e) If the STAB OUT OF TRIM warning light does not operate correctly, then do these steps:
1) Replace the STAB OUT OF TRIM warning light, L4.
2) Do the Repair Confirmation at the end of this task.
(f) If the STAB OUT OF TRIM warning light operates correctly, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.
(a) If the maintenance messages shows, then continue.

(3) Replace the annunciation and dimming module, M469 (WDM 33-18-21).
(a) Do the Repair Confirmation at the end of this task.
(b) If the Repair Confirmation is not satisfactory, then continue.

(4) Do this voltage check at the annunciation and dimming module:
(a) Remove the annunciation and dimming module, M469 (WDM 33-18-21).
(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(c) Do a check for 28V DC between pin 47 of the connector D2866 and structure ground (WDM 33-18-21).


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) If there is not 28V DC, then do these steps:

1) Do a wiring check between these pins of the connector D2866 and connector D46065P at the right load control center on the P6 panel (WDM 22-11-12) and (WDM 33-18-21):

| D2866 | | D46065P |
|---|---|---|
| pin 47 | - - - - - - - - - - - - - - - - - - | pin 12 |

2) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install the annunciation and dimming module, M469 (WDM 33-18-21).

c) Do the Repair Confirmation at the end of this task.

(e) If there is 28V DC, then continue.

(5) Do this check of the wiring between the annunciation and dimming module and the captain's main instrument panel:

(a) Do a wiring check between these pins of connector D2866 and connector D895 at the captain's main instrument panel (WDM 33-18-21):

| D2866 | | D895 |
|---|---|---|
| pin 46 | - - - - - - - - - - - - - - - - - - | pin 3 |

(b) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the annunciation and dimming module, M469 (WDM 33-18-21).

3) Do the Repair Confirmation at the end of this task.

(c) If you do not find a problem with the wiring, then continue.

1) Re-install the annunciation and dimming module, M469 (WDM 33-18-21).

(6) Do this check of the wiring between the FCC-B and the captain's main instrument panel:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D895 at the captain main instrument panel (WDM 22-13-11):

| D10137C | | D895 |
|---|---|---|
| pin D2 | - - - - - - - - - - - - - - - - - - | pin 10 |

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the Repair Confirmation at the end of this task.

H. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Make the selection for the STAB SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**808. FCC Speed Trim Warning Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1C-H02)

(b) FCC-B (J1C-H02)

(2) FCC-A (J1C-H02): FCC-A does not receive the speed trim warn wrap signal during the ground test.

(3) FCC-B (J1C-H02): FCC-B does not receive the speed trim warn wrap signal during the ground test.

B. Possible Causes

(1) Speed trim fail light

(2) Flight controls panel (P5-3)

(3) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem

C. Related Data

(1) (SSM 22-13-11)

(2) (WDM 22-13-11)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the STAB SENS test.

**HAP 001-013, 015-026, 028-030; AIRPLANES WITH HONEYWELL FCC AND OPS SOFTWARE P/N 10-62038-705**

(c) If these maintenance messages are shown during the DFCS BITE, then do these steps:

1) Do this check for nuisance messages:

a) Do a check for these message under ''SPEED TRIM'':

<1> LCL N 1 ENG 1 INV

<2> IRU V/S INV

b) Do a check for these messages under ''MISC'':

<1> HOLDOVER PWR

<2> MCP SEL ALT WRAP

<3> MCP SEL ALT COUNTER



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

c) If you find the above messages, then ignore this failure.

d) if you did not find the above messages, then continue.

**HAP ALL; AIRPLANES WITHOUT HONEYWELL FCC SOFTWARE P/N 10-62038-705**

(d) If the maintenance message shows, then do the Fault Isolation Procedure below.

(e) If maintenance message does not show, then there was an intermittent fault.

**HAP ALL**

E. Fault Isolation Procedure

(1) Do this check of the SPEED TRIM FAIL warning light on the flight controls panel (P5-3):

(a) Push and hold the SPEED TRIM FAIL warning light.

(b) Make sure that the SPEED TRIM FAIL warning light comes on.

(c) Release the SPEED TRIM FAIL warning light.

(d) Make sure that the SPEED TRIM FAIL warning light goes off.

(e) If the SPEED TRIM FAIL warning light does not operate correctly, then do these steps:

1) Replace the SPEED TRIM FAIL warning light.

2) Do the Repair Confirmation at the end of this task.

(f) If the SPEED TRIM FAIL warning light operates correctly, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(3) Replace the flight controls panel.

These are the tasks:

Flight Controls Panel Removal, AMM TASK 27-09-45-000-801,

Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the flight controls panel (P5-3). To remove it, do this task: Flight Controls Panel Removal, AMM TASK 27-09-45-000-801.

(c) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D630 at the P5-3 panel (WDM 22-13-11):

| D10135C | | D630 |
|---|---|---|
| pin H2 | - - - - - - - - - - - - - - - - - - | pin 1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-install the flight controls panel (P5-3). To re-install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

4) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the flight controls panel (P5-3). To remove it, do this task: Flight Controls Panel Removal, AMM TASK 27-09-45-000-801.

(c) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D624 at the P5-3 panel (WDM 22-13-11):

| D10137C | | D624 |
|---|---|---|
| pin H2 | - - - - - - - - - - - - - - - - - - | pin 38 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the flight controls panel (P5-3). To re-install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the STAB SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**809. FCC R/A < 10 (A) ft Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1A-J03)

(b) FCC-B (J1A-J03)

(2) FCC-A (J1A-J03): FCC-A does not receive the R/A < 10 (A) ft wrap signal during the ground test.

(3) FCC-B (J1A-J03): FCC-B does not receive the R/A < 10 (A) ft wrap signal during the ground test.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

B. Possible Causes

(1) R/A < 10 FT B relay, R709 or R/A < 10 FT A relay, R710

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Related Data

(1) (SSM 78-34-11)

(2) (SSM 78-34-21)

(3) (WDM 78-34-11)

(4) (WDM 78-34-21)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance message shows, then do the applicable Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure - Maintenance Message Channel A

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Replace the R/A < 10 FT B relay, R709 (WDM 78-34-11).

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) Do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the R/A < 10 FT B relay, R709 (WDM 78-34-11).

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D10571 at the J22 junction box (WDM 78-34-11):

| D10135A | | D10571 |
|---|---|---|
| pin J3 | - - - - - - - - - - - - - - - - - - | pin D1 |

(d) Make sure that pin D2 of D10571 is connected to ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the R/A < 10 FT B relay, R709 (WDM 78-34-11).

4) Do the Repair Confirmation at the end of this task.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F. Fault Isolation Procedure - Maintenance Message Channel B

(1) Replace the R/A < 10 FT A relay, R710 (WDM 78-34-21).

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(2) Do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the R/A < 10 FT A relay, R710 (WDM 78-34-21).

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D10573 at the J20 junction box (WDM 78-34-21):

| D10137A | | D10573 |
|---|---|---|
| pin J3 | - - - - - - - - - - - - - - - - - - | pin D1 |

(d) Make sure that pin D2 of D10573 is connected to ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the R/A < 10 FT A relay, R710 (WDM 78-34-21).

4) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**

**810. FCC R/A < 10 (B) ft Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1B-J03)

(b) FCC-B (J1B-J03)

(2) FCC-A (J1B-J03): FCC-A does not receive the R/A < 10 (B) ft wrap signal during the ground test.

(3) FCC-B (J1B-J03): FCC-B does not receive the R/A < 10 (B) ft wrap signal during the ground test.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

B. Possible Causes

(1) R/A < 10 FT B relay, R709 or R/A < 10 FT A relay, R710

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

D. Related Data

(1) (SSM 22-11-75)

(2) (SSM 27-62-11)

(3) (WDM 22-11-75)

(4) (WDM 27-62-11)

E. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance message shows, then do the applicable Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure - Maintenance Message Channel A

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Replace the R/A < 10 FT A relay, R710 (WDM 27-62-11).

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) Do a check for 28V DC at the R/A < 10FT A relay:

(a) Remove the R/A < 10 FT A relay, R710 (WDM 27-62-11).

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) Do a check for 28V DC between pin X1 of the connector D10573 and structure ground (WDM 27-62-11).

(d) If there is not 28V DC, then do these steps:

1) Do a wiring check between these pins of connector D10573 at the J20 junction box and connector D41803P at the left load control center (P18 panel) (WDM 22-11-12):

| D10573 | | D41803P |
|---|---|---|
| pin X1 | - - - - - - - - - - - - - - - - - | pin 3 |

2) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install the R/A < 10 FT A relay, R710 (WDM 27-62-11).

c) Do the Repair Confirmation at the end of this task.

(e) If there is 28V DC, then continue.

(4) Do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D10573 at the J20 junction box (WDM 27-62-11):

| D10135B | | D10573 |
|---|---|---|
| pin J3 | - - - - - - - - - - - - - - - - - - | pin X2 |

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the R/A < 10 FT A relay, R710 (WDM 27-62-11).

4) Do the Repair Confirmation at the end of this task.

G. Fault Isolation Procedure - Maintenance Message Channel B

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Replace the R/A < 10 FT B relay, R709 (WDM 27-62-11).

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) Do a check for 28V DC (±4) at the R/A < 10 FT B relay:

(a) Remove the R/A < 10 FT B relay, R709 (WDM 27-62-11).

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(c) Do a check for 28V DC between pin X1 of the connector D10571 and structure ground (WDM 27-62-11).

(d) If there is not 28V DC, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Do a wiring check between these pins of connector D10571 at the J22 junction box and connector D46065P at the right load control center (P6 panel) (WDM 22-11-12):

| D10571 | | D46065P |
|---|---|---|
| pin X1 | - - - - - - - - - - - - - - - - - | pin 12 |

2) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-install the R/A < 10 FT B relay, R709 (WDM 27-62-11).
   c) Do the Repair Confirmation at the end of this task.

(e) If there is 28V DC, then continue.

(4) Do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D10571 at the J22 junction box (WDM 27-62-11):

| D10137B | | D10571 |
|---|---|---|
| pin J3 | - - - - - - - - - - - - - - - - - - | pin X2 |

(c) If you find a problem with the wiring, then do these steps:
   1) Repair the wiring.
   2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
   3) Re-install the R/A < 10 FT B relay, R709 (WDM 27-62-11).
   4) Do the Repair Confirmation at the end of this task.

H. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.
   1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.
   1) Make the selection for the channels A and B.
   2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

## 811. FCC R/A < 800 ft Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1A-C01)

(b) FCC-B (J1A-C01)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) FCC-A (J1A-C01): FCC-A does not receive the R/A < 800 ft wrap signal during the ground test.

(3) FCC-B (J1A-C01): FCC-B does not receive the R/A < 800 ft wrap signal during the ground test.

B. Possible Causes

(1) Proximity switch electronic unit (PSEU), M2061

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Related Data

(1) (WDM 22-11-75)

(2) (SSM 27-62-21)

(3) (WDM 27-62-21)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance message shows, then do the applicable Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Replace the PSEU, M2061.

These are the tasks:

Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801,

Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) If the maintenance message is on channel A, do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the PSEU, M2061. To remove it, do this task: Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D10986 at the PSEU (WDM 27-62-21):

| **D10135A** | | **D10986** |
|---|---|---|
| pin C1 | - - - - - - - - - - - - - - - - - - | pin 4 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-install the PSEU, M2061. To install it, do this task: Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

4) Do the Repair Confirmation at the end of this task.

(4) If the maintenance message is on channel B, do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the PSEU, M2061. To remove it, do this task: Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D10986 at the PSEU (WDM 27-62-21):

| D10137A | | D10986 |
|---|---|---|
| pin C1 | - - - - - - - - - - - - - - - - - - | pin 12 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the PSEU, M2061. To install it, do this task: Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

## 812. FCC Alt Alert Aural Warn Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1C-K02)

(b) FCC-B (J1C-K02)

(2) FCC-A (J1C-K02): FCC-A does not receive the altitude alert aural warn wrap signal during the ground test.

(3) FCC-B (J1C-K02): FCC-B does not receive the altitude alert aural warn wrap signal during the ground test.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

B. Possible Causes

(1) Remote electronic unit, M1353

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Related Data

(1) (SSM 22-14-11)

(2) (WDM 22-14-11)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance message shows, then do the applicable Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure - Maintenance Message Channel A

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Replace the remote electronic unit, M1353.

These are the tasks:

Remote Electronics Unit (REU) Removal, AMM TASK 23-51-01-000-801,

Remote Electronics Unit (REU) Installation, AMM TASK 23-51-01-000-802.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) Do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the remote electronic unit, M1353. To remove it, do this task: Remote Electronics Unit (REU) Removal, AMM TASK 23-51-01-000-801.

(c) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D2501A at the E3-2 shelf (WDM 22-14-11):

| **D10135C** | | **D2501A** |
|---|---|---|
| pin K2 | - - - - - - - - - - - - - - - - - - | pin F10 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the remote electronic unit, M1353. To install it, do this task: Remote Electronics Unit (REU) Removal, AMM TASK 23-51-01-000-801.

4) Do the Repair Confirmation at the end of this task.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F. Fault Isolation Procedure - Maintenance Message Channel B

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Replace the remote electronic unit, M1353.

These are the tasks:

Remote Electronics Unit (REU) Removal, AMM TASK 23-51-01-000-801,

Remote Electronics Unit (REU) Installation, AMM TASK 23-51-01-000-802.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) Do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the remote electronic unit, M1353. To remove it, do this task: Remote Electronics Unit (REU) Removal, AMM TASK 23-51-01-000-801.

(c) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D2501A at the E3-2 shelf (WDM 22-14-11):

| D10137C | | D2501A |
|---|---|---|
| pin K2 | - - - - - - - - - - - - - - - - - - | pin F10 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the remote electronic unit, M1353. To install it, do this task: Remote Electronics Unit (REU) Removal, AMM TASK 23-51-01-000-801.

4) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 813. FCC Airspeed Warning Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1B-G05)

(b) FCC-B (J1B-G05)

(2) FCC-A (J1B-G05): FCC-A does not receive the airspeed warn wrap signal during the ground test.

(3) FCC-B (J1B-G05): FCC-B does not receive the airspeed warn wrap signal during the ground test.

B. Possible Causes

(1) A/T P/RST warning light

(2) Autoflight status annunciator, N170 (captain's) or N171 (first officer's)

(3) Flight control computer A (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |

D. Related Data

(1) (SSM 22-14-11)

(2) (WDM 22-14-11)

E. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance message shows, then do the applicable Fault Isolation Procedure below.

(d) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure - Maintenance Message Channel A

(1) Do this check of the A/T P/RST warning light on the captain's autoflight status annunciator:

(a) Push and hold the TEST switch in the position 1.

(b) Make sure that the A/T P/RST warning light comes on (amber steady).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) Release the TEST switch to the center position.

(d) Make sure that the A/T P/RST warning light goes off.

(e) Push and hold the TEST switch in the position 2.

(f) Make sure that the A/T P/RST warning light comes on (red steady).

(g) Release the TEST switch to the center position.

(h) Make sure that the A/T P/RST warning light goes off.

(i) If the A/T P/RST warning light does not operate correctly, then do these steps:

1) Replace the A/T P/RST warning light.

2) Do the Repair Confirmation at the end of this task.

(j) If the A/T P/RST warning light operates correctly, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(3) Replace the captain's autoflight status annunciator, N170.

These are the tasks:

Annunciator Removal, AMM TASK 22-11-32-000-801,

Annunciator Installation, AMM TASK 22-11-32-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) Do this check of 28V DC for the captain's autoflight status annunciator:

(a) Remove the captain's autoflight status annunciator, N170. To remove it, do this task: Annunciator Removal, AMM TASK 22-11-32-000-801.

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |

(c) Do a check for 28V DC between pin 14 of the connector D2435 at the P1 panel and the structure ground (WDM 22-14-11).

(d) If there is not 28V DC, then do these steps:

1) Do a wiring check between these pins of connector D2435 at the P1 panel and connector D41807P at the left load control center (P18 Panel) (WDM 22-14-11):

| **D2435** | | **D41807P** |
|---|---|---|
| pin 14 | - - - - - - - - - - - - - - - - - - | pin 3 |

2) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install the captain's autoflight status annunciator, N170. To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.

c) Do the Repair Confirmation at the end of this task.

(e) If there is 28V DC (±4), then continue.

(5) Do this check of the wiring between the FCC-A and the captain's autoflight status annunciator:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D2435 at the P1 panel (WDM 22-14-11):

| D10135B | | D2435 |
|---|---|---|
| pin G5 | - - - - - - - - - - - - - - - - - - | pin 9 |

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the captain's autoflight status annunciator, N170. To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.

4) Do the Repair Confirmation at the end of this task.

G. Fault Isolation Procedure - Maintenance Message Channel B

(1) Do this check of the A/T P/RST warning light on the first officer's autoflight status annunciator:

(a) Push and hold the TEST switch in the position 1.

(b) Make sure that the A/T P/RST warning light comes on (amber steady).

(c) Release the TEST switch to the center position.

(d) Make sure that the A/T P/RST warning light goes off.

(e) Push and hold the TEST switch in the position 2.

(f) Make sure that the A/T P/RST warning light comes on (red steady).

(g) Release the TEST switch to the center position.

(h) Make sure that the A/T P/RST warning light goes off.

(i) If the A/T P/RST warning light does not operate correctly, then do these steps:

1) Replace the A/T P/RST warning light.

2) Do the Repair Confirmation at the end of this task.

(j) If the A/T P/RST warning light operates correctly, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(3) Replace the first officer's autoflight status annunciator, N171.

These are the tasks:

Annunciator Removal, AMM TASK 22-11-32-000-801,

Annunciator Installation, AMM TASK 22-11-32-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) Do this check of 28V DC (±4) for the first officer's autoflight status annunciator:

(a) Remove the first officer's autoflight status annunciator, N171. To remove it, do this task: Annunciator Removal, AMM TASK 22-11-32-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |

(c) Do a check for 28V DC (±4) between pin 14 of the connector D2439 at the P3 panel and the structure ground (WDM 22-14-11).

(d) If there is not 28V DC, then do these steps:

1) Do a wiring check between these pins of connector D2439 at the P3 panel and connector D46061P at the right load control center (P6 Panel) (WDM 22-14-11):

| D2439 | | D46061P |
|---|---|---|
| pin 14 | - - - - - - - - - - - - - - - - - - | pin 28 |

2) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install the first officer's autoflight status annunciator, N171. To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.

c) Do the Repair Confirmation at the end of this task.

(e) If there is 28V DC, then continue.

(5) Do this check of the wiring between the FCC-B and the first officer's autoflight status annunciator:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D2439 at the P3 panel (WDM 22-14-11):

| D10137B | | D2439 |
|---|---|---|
| pin G5 | - - - - - - - - - - - - - - - - - - | pin 9 |

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the first officer's autoflight status annunciator, N171. To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.

4) Do the Repair Confirmation at the end of this task.

H. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 814. FCC Mach Trim Warning Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1C-J03)

(b) FCC-B (J1C-J03)

(2) FCC-A (J1C-J03): FCC-A does not receive the Mach trim warn wrap signal during the ground test.

(3) FCC-B (J1C-J03): FCC-B does not receive the Mach trim warn wrap signal during the ground test.

B. Possible Causes

(1) Mach trim fail light

(2) Flight controls panel (P5-3)

(3) Flight control computer A (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem

C. Related Data

(1) (SSM 22-18-11)

(2) (WDM 22-18-11)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the MACH TRIM test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this check of the MACH TRIM FAIL warning light on the flight controls panel (P5-3):

(a) Push and hold the MACH TRIM FAIL warning light.

(b) Make sure that the MACH TRIM FAIL warning light comes on.

(c) Release the MACH TRIM FAIL warning light.

(d) Make sure that the MACH TRIM FAIL warning light goes off.

(e) If the MACH TRIM FAIL warning light does not operate correctly, then do these steps:

1) Replace the MACH TRIM FAIL warning light.

2) Do the Repair Confirmation at the end of this task.

(f) If the MACH TRIM FAIL warning light operates correctly, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) Replace the flight controls panel.

These are the tasks:

Flight Controls Panel Removal, AMM TASK 27-09-45-000-801,

Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the flight controls panel (P5-3). To remove it, do this task: Flight Controls Panel Removal, AMM TASK 27-09-45-000-801.

(c) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D630 at the P5-3 panel (WDM 22-18-11):

| D10135C | | D630 |
|---|---|---|
| pin J3 | - - - - - - - - - - - - - - - - - - | pin 2 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the flight controls panel (P5-3). To re-install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

4) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the flight controls panel (P5-3). To remove it, do this task: Flight Controls Panel Removal, AMM TASK 27-09-45-000-801.

(c) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D624 at the P5-3 panel (WDM 22-18-11):

| D10137C | | D624 |
|---|---|---|
| pin J3 | - - - - - - - - - - - - - - - - - - | pin 36 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the flight controls panel (P5-3). To re-install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the MACH TRIM test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**815. FCC Input or Output Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1A-K11, J11)

(b) FCC-A (J1A-G11, F11)

(c) FCC-A (J1A-H11)

(d) FCC-A (J1B-K11, J11)

(e) FCC-A (J1B-G11, F11)

(f) FCC-A (J1B-E11)

(g) FCC-B (J1A-K11, J11)

(h) FCC-B (J1A-G11, F11)

(i) FCC-B (J1A-H11)

(j) FCC-B (J1B-K11, J11)

(k) FCC-B (J1B-G11, F11)

(l) FCC-B (J1B-E11)

(2) FCC-A (J1A-K11, J11), FCC-A (J1A-G11, F11), FCC-A (J1A-H11), FCC-A (J1B-K11, J11), FCC-A (J1B-G11, F11), FCC-A (J1B-E11): FCC-A has input or output problem during the ground test.

(3) FCC-B (J1A-K11, J11), FCC-B (J1A-G11, F11), FCC-B (J1A-H11), FCC-B (J1B-K11, J11), FCC-B (J1B-G11, F11), FCC-B (J1B-E11): FCC-B has input or output problem during the ground test.

B. Possible Causes

(1) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(2) Wiring problem

C. Related Data

(1) (SSM 22-11-31)

(2) (SSM 22-12-31)

(3) (SSM 22-12-41)

(4) (WDM 22-11-31)

(5) (WDM 22-12-31)

(6) (WDM 22-12-41)


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) Do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

(a) Make these selections on the CDU:

1) CHANNEL A AND B

2) RUN SELECT LIBRARY TESTS

3) DUAL STAB

NOTE: You can use the NEXT PAGE or PREV PAGE key to change page if it is necessary.

4) EXECUTE

(b) If the maintenance message shows, then do the Fault Isolation Procedure below.

(c) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D10137B at the E1-4 shelf (WDM 22-11-11), (WDM 22-11-31), (WDM 22-12-41):

| **D10135A** | | **D10137B** |
|---|---|---|
| pin H11 | - - - - - - - - - - - - - - - - - | pin H11 |

| **D10135A** | | **D10137B** |
|---|---|---|
| pin G11 | - - - - - - - - - - - - - - - - - | pin G11 |
| pin F11 | - - - - - - - - - - - - - - - - - | pin F11 |

| **D10135A** | | **D10137B** |
|---|---|---|
| pin K11 | - - - - - - - - - - - - - - - - - | pin K11 |
| pin J11 | - - - - - - - - - - - - - - - - - | pin J11 |

(d) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D10137A at the E1-4 shelf (WDM 22-11-11), (WDM 22-11-31), (WDM 22-12-31):

| **D10135B** | | **D10137A** |
|---|---|---|
| pin E11 | - - - - - - - - - - - - - - - - - | pin E11 |

| **D10135B** | | **D10137A** |
|---|---|---|
| pin G11 | - - - - - - - - - - - - - - - - - | pin G11 |
| pin F11 | - - - - - - - - - - - - - - - - - | pin F11 |

| **D10135B** | | **D10137A** |
|---|---|---|
| pin K11 | - - - - - - - - - - - - - - - - - | pin K11 |
| pin J11 | - - - - - - - - - - - - - - - - - | pin J11 |

(e) If you find a problem with the wiring, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Repair the wiring
2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D10135B at the E1-1 shelf (WDM 22-11-11), (WDM 22-11-31), (WDM 22-12-31):

| D10137A | | D10135B |
|---|---|---|
| pin H11 | - - - - - - - - - - - - - - - - | pin H11 |

| D10137A | | D10135B |
|---|---|---|
| pin G11 | - - - - - - - - - - - - - - - - | pin G11 |
| pin F11 | - - - - - - - - - - - - - - - - | pin F11 |

| D10137A | | D10135B |
|---|---|---|
| pin K11 | - - - - - - - - - - - - - - - - | pin K11 |
| pin J11 | - - - - - - - - - - - - - - - - | pin J11 |

(d) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D10135A at the E1-1 shelf (WDM 22-11-11), (WDM 22-11-31), (WDM 22-12-41):

| D10137B | | D10135A |
|---|---|---|
| pin E11 | - - - - - - - - - - - - - - - - | pin E11 |

| D10137B | | D10135A |
|---|---|---|
| pin G11 | - - - - - - - - - - - - - - - - | pin G11 |
| pin F11 | - - - - - - - - - - - - - - - - | pin F11 |

| D10137B | | D10135A |
|---|---|---|
| pin K11 | - - - - - - - - - - - - - - - - | pin K11 |
| pin J11 | - - - - - - - - - - - - - - - - | pin J11 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

(a) Make these selections on the CDU:

1) CHANNEL A AND B



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) RUN SELECT LIBRARY TESTS

3) DUAL STAB

NOTE: You can use the NEXT PAGE or PREV PAGE key to change page if it is necessary.

4) EXECUTE

(b) If maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**816. FCC Stab Trim Up Wrap Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1C-G02)

(b) FCC-B (J1C-G02)

(2) FCC-A (J1C-G02): FCC-A does not receive the stab trim up wrap signal during the ground test.

(3) FCC-B (J1C-G02): FCC-B does not receive the stab trim up wrap signal during the ground test.

B. Possible Causes

(1) Stabilizer trim motor, M1659

(2) Stab nose up limit switch, S144

(3) Stab trim cutout relay, R384

(4) Column switching module, M1201

(5) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(6) Wiring problem

C. Related Data

(1) (SSM 22-13-11)

(2) (WDM 22-13-11)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the STAB SENS test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do this task: FCC, Stab Trim Up Problem - Fault Isolation, 22-15 TASK 819.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the STAB SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**

**817. FCC Stab Trim Down Wrap Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1C-K03)

(b) FCC-B (J1C-K03)

(2) FCC-A (J1C-K03): FCC-A does not receive the stab trim down wrap signal during the ground test.

(3) FCC-B (J1C-K03): FCC-B does not receive the stab trim down wrap signal during the ground test.

B. Possible Causes

(1) Stabilizer trim motor, M1659

(2) Stab nose down limit switch, S145

(3) Stab trim cutout relay, R384

(4) Column switching module, M1201

(5) Flight control computer (FCA), M1875 (FCC-A) or M1876 (FCC-B)

(6) Wiring problem

C. Related Data

(1) (SSM 22-13-11)

(2) (WDM 22-13-11)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the STAB SENS test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Do this task: FCC, Stab Trim Down Problem - Fault Isolation, 22-15 TASK 818.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the STAB SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**818. FCC Stab Trim Clutch Wrap Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1C-H03)

(b) FCC-B (J1C-H03)

(2) FCC-A (J1C-H03): FCC-A does not receive the stab trim clutch wrap signal during the ground test.

(3) FCC-B (J1C-H03): FCC-B does not receive the stab trim clutch wrap signal during the ground test.

B. Possible Causes

(1) Column switching module, M1201

(2) Stabilizer trim motor, M1659

(3) Autopilot cutout switch, S149

(4) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(5) Wiring problem

C. Related Data

(1) (SSM 22-13-11)

(2) (WDM 22-13-11)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the STAB SENS test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring between the FCC-A and the column switching module:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the column switching module, M1201. To remove it, do this task: Column Cutout Switch Removal, AMM TASK 27-41-51-000-801.

(c) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D2257 at STAB 206, WL 200, RBL 15 (WDM 22-13-11):

| **D10135C** | | **D2257** |
|---|---|---|
| pin H03 | - - - - - - - - - - - - - - - - - | pin 19 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring

2) Re-install the column switching module, M1201. To install it, do this task: Column Cutout Switch Installation, AMM TASK 27-41-51-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring between the FCC-B and the column switching module:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the column switching module, M1201. To remove it, do this task: Column Cutout Switch Removal, AMM TASK 27-41-51-000-801.

(c) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D2257 at STAB 206, WL 200, RBL 15 (WDM 22-13-11):

| **D10137C** | | **D2257** |
|---|---|---|
| pin H03 | - - - - - - - - - - - - - - - - - | pin 19 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Re-install the column switching module, M1201. To install it, do this task: Column Cutout Switch Installation, AMM TASK 27-41-51-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(4) Do this check of the wiring between the column switching module and the stab trim motor:

(a) Disconnect the connector D381 from the stabilizer trim motor, M1659.

NOTE: You can get access to the stabilizer trim motor through the Access Door to Aft Unpressurized Compartment, 311AL..

(b) Make sure that the A/P cutout switch on the control stand (panel 8) is in the NORMAL position.

(c) Do a wiring check between these pins of connector D2257 at the STA 206, WL 200, RBL 15 and connector D381 at STA 1075, WL 232, RBL 4 (WDM 22-13-11)

| D2257 | | D381 |
|---|---|---|
| pin 23 | - - - - - - - - - - - - - - - - - - | pin 4 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring

2) Re-install the column switching module, M1201. To install it, do this task: Column Cutout Switch Installation, AMM TASK 27-41-51-400-801.

3) Re-connect the connector D381.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D381.

(5) Replace the column switching module, M1201.

These are the tasks:

Column Cutout Switch Removal, AMM TASK 27-41-51-000-801,

Column Cutout Switch Installation, AMM TASK 27-41-51-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(6) Replace the stabilizer trim motor, M1659.

These are the tasks:

Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801,

Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(7) Replace the A/P cutout switch, S149.

These are the tasks:

Stabilizer Trim Cutout Switch Removal, AMM TASK 27-41-91-000-801,



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Stabilizer Trim Cutout Switch Installation, AMM TASK 27-41-91-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the STAB SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**819. FCC-A, Mach Trim Select Problem - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

(a) FCC-A (J1C-G03)

(2) This maintenance message detects this problem:

(a) The Flight control computer A (FCC-A) does not detect the mach trim select line.

B. Possible Causes

(1) Flight control computer A (FCC-A), M1875

C. Related Data

(1) (SSM 22-18-11)

(2) (WDM 22-18-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Replace FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) <RUN SELECT LIBRARY TESTS

c) MACH TRIM 33>

d) EXECUTE

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**820. FCC-B, Mach Trim Select Problem - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

(a) FCC-B (J1C-G03)

(2) This maintenance message detects this problem:

(a) The flight control computer B (FCC-B) does not detect the mach trim select line.

B. Possible Causes

(1) Flight control computer B (FCC-B), M1876

(2) IFSAU, M1474

(3) Wiring problem

C. Related Data

(1) (SSM 22-18-11)

(2) (WDM 22-18-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Replace FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

1) If the Repair Confirmation is not satisfactory, then continue.

(2) Replace the IFSAU, M1474.

These are the tasks:

Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801,

Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(a) Do the Repair Confirmation at the end of this task.

1) If the Repair Confirmation is not satisfactory, then continue.

(3) Do this check of the wiring:

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(c) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D2209B at the E1-1 shelf:

| **D2209B** | **D10137C** |
|---|---|
| pin 41 | pin G3 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) <RUN SELECT LIBRARY TESTS

c) MACH TRIM 33>

d) EXECUTE

(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 821. Mach Trim Brake Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) FCC-A (J1C-F03)

(b) FCC-B (J1C-F03)

(2) This maintenance message detects these problems:

(a) The flight control computer A (FCC-A) does not detect the mach trim brake line.

(b) The flight control computer B (FCC-B) does not detect the mach trim brake line.

B. Possible Causes

(1) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(2) IFSAU, M1474

(3) Wiring problem

C. Related Data

(1) (SSM 22-18-11)

(2) (WDM 22-18-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Replace the applicable FCC, M1875 or M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

1) If the Repair Confirmation is not satisfactory, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D545 from the mach trim actuator, M414.

NOTE: You can get access to the mach trim actuator through the Tailcone Access Door, 318BR..

(c) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D545 in the tailcone:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D545 | | D10135C |
|---|---|---|
| pin 13 | - - - - - - - - - - - - - - - - - - | pin F3 |

(d) If you find a problem with the wiring, then do these steps:

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a wiring check from these pins of connector D545 at the mach trim actuator and connector D2209A at the IFSAU:

| D545 | | D2209A |
|---|---|---|
| pin 13 | - - - - - - - - - - - - - - - - - - | pin 62 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

d) Re-connect connector D545.

e) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then do these steps;

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a wiring check from these pins of connector D10135C at the FCC and connector D2209A at the IFSAU:

| D10135C | | D2209A |
|---|---|---|
| pin F3 | - - - - - - - - - - - - - - - - - - | pin 46 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

d) Re-connect connector D545.

e) Do the Repair Confirmation at the end of this task.

4) If you do not find a problem with the wiring, then continue.

a) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

b) Re-connect connector D545.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove FCC-B, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D545 from the mach trim actuator, M414.

NOTE: You can get access to the mach trim actuator through the Tailcone Access Door, 318BR..



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D545 in the tailcone:

| D545 | | D10137C |
|---|---|---|
| pin 13 | - - - - - - - - - - - - - - - - - - | pin F3 |

(d) If you find a problem with the wiring, then do these steps:

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a wiring check from these pins of connector D545 at the mach trim actuator and connector D2209A at the IFSAU:

| D545 | | D2209A |
|---|---|---|
| pin 13 | - - - - - - - - - - - - - - - - - - | pin 62 |

3) If you find a problemwith the wiring, then do these steps:

a) Repair the wiring.

b) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

d) Re-connect connector D545.

e) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then do these steps;

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a wiring check from these pins of connector D10137C at the FCC and connector D2209A at the IFSAU:

| D10137C | | D2209A |
|---|---|---|
| pin F3 | - - - - - - - - - - - - - - - - - - | pin 46 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

d) Re-connect connector D545.

e) Do the Repair Confirmation at the end of this task.

4) If you do not find a problem with the wiring, then continue.

a) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

b) Re-connect connector D545.

(4) Install a new IFSAU. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(a) Do the Repair Confirmation at the end of this task.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) <RUN SELECT LIBRARY TESTS

c) MACH TRIM 33>

d) EXECUTE

(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**

**822. Mach Trim Drive Motor Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) FCC-A (J1C-B01, A01)

(b) FCC-B (J1C-B01, A01)

(2) This maintenance message detects these problems:

(a) The flight control computer A (FCC-A) does not detect the mach trim drive motor line.

(b) The flight control computer B (FCC-B) does not detect the mach trim drive motor line.

B. Possible Causes

(1) Flight control computer A (FCC-A), M1875

(2) Flight control computer B (FCC-B), M1876

(3) IFSAU, M1474

(4) Wiring problem

C. Related Data

(1) (SSM 22-18-11)

(2) (WDM 22-18-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Fault Isolation Procedure

(1) Replace the applicable FCC, M1875 or M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

1) If the Repair Confirmation is not satisfactory, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D545 from the mach trim actuator, M414.

NOTE: You can get access to the mach trim actuator through the Tailcone Access Door, 318BR..

(c) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D545 in the tailcone:

| D545 | | D10135C |
|---|---|---|
| pin 6 | - - - - - - - - - - - - - - - - - - | pin B1 |
| pin 3 | - - - - - - - - - - - - - - - - - - | pin A1 |

(d) If you find a problem with the wiring, then do these steps:

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a wiring check between these pins of connector D545 at the mach trim actuator and connector D2209A at the IFSAU:

| D545 | | D2209A |
|---|---|---|
| pin 6 | - - - - - - - - - - - - - - - - - - | pin 58 |
| pin 3 | - - - - - - - - - - - - - - - - - - | pin 59 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

d) Re-connect connector D545.

e) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then do these steps;

1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

2) Do a wiring check between these pins of connector D10135C at the FCC and connector D2209A at the IFSAU:

| D10135C | | D2209A |
|---|---|---|
| pin B1 | - - - - - - - - - - - - - - - - - | pin 42 |
| pin A1 | - - - - - - - - - - - - - - - - - | pin 43 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
   c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.
   d) Re-connect connector D545.
   e) Do the Repair Confirmation at the end of this task.
4) If you do not find a problem with the wiring, then continue.
   a) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
   b) Re-connect connector D545.

(3) If the maintenance message is on channel B, then do this check of the wiring:
   (a) Remove FCC-B, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
   (b) Disconnect connector D545 from the mach trim actuator, M414.

   NOTE: You can get access to the mach trim actuator through the Tailcone Access Door, 318BR..

   (c) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D545 in the tailcone:

| D545 | | D10137C |
|---|---|---|
| pin 6 | - - - - - - - - - - - - - - - - - - | pin B1 |
| pin 3 | - - - - - - - - - - - - - - - - - - | pin A1 |

   (d) If you find a problem with the wiring, then do these steps:
      1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.
      2) Do a wiring check between these pins of connector D545 at the mach trim actuator and connector D2209B at the IFSAU:

| D545 | | D2209B |
|---|---|---|
| pin 6 | - - - - - - - - - - - - - - - - - - | pin 58 |
| pin 3 | - - - - - - - - - - - - - - - - - - | pin 59 |

      3) If you find a problem with the wiring, then do these steps:
         a) Repair the wiring.
         b) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
         c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.
         d) Re-connect connector D545.
         e) Do the Repair Confirmation at the end of this task.
   (e) If you do not find a problem with the wiring, then do these steps;
      1) Remove the IFSAU, M1474. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Do a wiring check between these pins of connector D10137C at the FCC and connector D2209B at the IFSAU:

| D10137C | | D2209B |
|---|---|---|
| pin B1 | - - - - - - - - - - - - - - - - - | pin 42 |
| pin A1 | - - - - - - - - - - - - - - - - - | pin 43 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

c) Re-install the IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

d) Re-connect connector D545.

e) Do the Repair Confirmation at the end of this task.

4) If you do not find a problem with the wiring, then continue.

a) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

b) Re-connect connector D545.

(4) Install a new IFSAU. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) <RUN SELECT LIBRARY TESTS

c) MACH TRIM 33>

d) EXECUTE

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**825. FCC R/A < 200 ft Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1A-G03)

(b) FCC-B (J1A-G03)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) FCC-A (J1A-G03): FCC-A does not receive the R/A < 200 ft wrap signal during the ground test.

(3) FCC-B (J1A-G03): FCC-B does not receive the R/A < 200 ft wrap signal during the ground test.

B. Possible Causes

(1) Proximity switch electronic unit (PSEU), M2061

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Related Data

(1) (WDM 22-11-75)

(2) (WDM 32-64-21)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance message shows, then do the applicable Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Replace the PSEU, M2061.

These are the tasks:

Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801,

Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) If the maintenance message is on channel A, do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the PSEU, M2061. To remove it, do this task: Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D10982 at the PSEU (WDM 32-64-21):

| **D10135A** | | **D10982** |
|---|---|---|
| pin G3 | - - - - - - - - - - - - - - - - - - | pin 43 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-install the PSEU, M2061. To install it, do this task: Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

4) Do the Repair Confirmation at the end of this task.

(4) If the maintenance message is on channel B, do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the PSEU, M2061. To remove it, do this task: Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D10984 at the PSEU (WDM 32-64-21):

| D10137A | | D10984 |
|---|---|---|
| pin G3 | - - - - - - - - - - - - - - - - - - | pin 43 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the PSEU, M2061. To install it, do this task: Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 801. SMYD Computer Output Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) SMYD-1 (J1A-H04)

(b) SMYD-1 (J1A-G04)

(c) SMYD-2 (J1A-H04)

(d) SMYD-2 (J1A-G04)

(2) SMYD-1: The flight control computer A (FCC-A) receives invalid data or no data from the SMYD-1 computer during the ground test.

(3) SMYD-2: The flight control computer B (FCC-B) receives invalid data or no data from the SMYD-2 computer during the ground test.

B. Possible Causes

**HAP 031-054, 101-999**

(1) IRU

**HAP ALL**

(2) Stall management yaw damper computer, M1747 (SMYD-1) or M1748 (SMYD-2)

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem

C. Related Data

(1) (SSM 22-11-52)

(2) (WDM 27-32-12)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

**HAP 038, 042-046, 048, 051-053, 104-999**

(1) Do this task Reset Latches Procedure, AMM TASK 22-11-00-700-802 and select ''NOLND3 LCH'' on the RESET FDE page if message 22-11081 or 22-11082 are the only messages found in Fault Review under the NO LAND 3 LCH flight deck effect.

(a) Do the Repair Confirmation at the end of this task:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) If the maintenance message does not show in the DFCS BITE, then you corrected the fault.
2) If the maintenance message shows in the DFCS BITE, then continue.

**HAP 031-054, 101-999**

(2) If test fail with maintenance message 22–11397 and/or 22–11398, then do these steps.
   (a) Align the IRU, this is the task:
   AMM TASK 34-21-00-820-802 or AMM TASK 34-21-00-820-801
   (b) RERUN the library test.
      1) Do the Repair Confirmation at the end of this task:
         a) If the maintenance message does not show in the DFCS BITE, then you corrected the fault.
         b) If the maintenance message shows in the DFCS BITE, then continue.

**HAP ALL**

(3) Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.
   (a) If a maintenance message shows on the SMYD, then go to the applicable fault isolation task for the maintenance message.
      1) Do the Repair Confirmation at the end of this task:
         a) If the SMYD maintenance message does not show in the DFCS BITE, then you corrected the fault.
         b) If the SMYD maintenance message shows in the DFCS BITE, then continue.
   (b) If no maintenance messages show on the SMYD, then continue.

(4) Do this task: FCC Exchange Check, 22-11 TASK 820.
   (a) If the maintenance messages shows, then continue.

(5) For a SMYD-1, FCC-A problem, do this check of the wiring:
   (a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
   (b) Remove the SMYD-1 computer, M1747. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.
   (c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D3683A at the E3-2 shelf (SSM 22-11-52).

| D10135A | | D3683B |
|---|---|---|
| pin H4 | - - - - - - - - - - - - - - - - - - | pin 95 |
| pin G4 | - - - - - - - - - - - - - - - - - - | pin 94 |

   (d) If you find a problem with the wiring, then do these steps:
      1) Repair the wiring.
      2) Re-install the SMYD-1 computer, M1724. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.
      3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
      4) Do the Repair Confirmation at the end of this task.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(6) For a SMYD-2, FCC-B problem, do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the SMYD-2 computer, M1748. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D3685A at the E3-2 shelf (SSM 22-11-52).

| D10137A | | D3685A |
|---|---|---|
| pin H4 | - - - - - - - - - - - - - - - - - - | pin 95 |
| pin G4 | - - - - - - - - - - - - - - - - - - | pin 94 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD-2 computer, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) SMYDC >

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**802. FCC has a Battery Bus Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) BATT BUS (J1C-54)

(b) BATT BUS (J1C-55)

(c) BATT BUS (J1C-54,58)

(2) The FCC-A or FCC-B does not detect 28 VDC from the HOT BAT BUS.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

B. Possible Causes

(1) These circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |

(2) Wiring problem

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |

D. Related Data

(1) (SSM 22-14-11)

(2) (WDM 22-14-11)

E. Initial Evaluation

(1) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |

(2) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F. Fault Isolation Procedure

(1) Do this check for power at FCC-A or FCC-B:

(a) If the maintenance message is on channel A, then do these steps;

1) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |

**HAP 001-013, 015-026, 028-030**

4) Do a check for 28 VDC between pins 54, 55 of connector D10135C and structure ground:

**HAP 031-054, 101-999**

5) Do a check for 28 VDC between pin 54 of connector D10135C and structure ground:

**HAP ALL**

(b) If the maintenance message is on channel B, then do these steps;

1) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |

**HAP 001-013, 015-026, 028-030**

4) Do a check for 28 VDC between pins 54, 55 of connector D10137C and structure ground:

**HAP 031-054, 101-999**

5) Do a check for 28 VDC between pin 54 of connector D10137C and structure ground:

**HAP ALL**

(c) If there is 28 VDC at the pins, then do these steps:

1) Install a new FCC. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If there is not 28 VDC at the pin, then continue.

(2) If the fail message is on channel A, then do these steps;

(a) Disconnect connector D41807P from the P18-1 circuit breaker panel.

(b) Do a check for 28 VDC power at pin 3 of D41807J.

(c) If you do not find 28 VDC at pin 3, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Replace the following circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |

2) Re-connect connector D41807P to the P18-1 circuit breaker panel.

3) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the repair confirmation at the end of this task.

(d) If you find 28 VDC at pin 3 of D41807J, then continue.

**HAP 001-013, 015-026, 028-030**

(e) Do a continuity check between these pins of connector D41807P at the P18-1 panel and connector D10135C for FCC-A:

| D41807P | | D10135C |
|---|---|---|
| pin 3 | - - - - - - - - - - - - - - - - - - | pin 54 |
| pin 3 | - - - - - - - - - - - - - - - - - - | pin 55 |

**HAP 031-054, 101-999**

(f) Do a continuity check between these pins of connector D41807P at the P18-1 panel and connector D10135C for FCC-A (WDM 22-14-11):

| D41807P | | D10135C |
|---|---|---|
| pin 3 | - - - - - - - - - - - - - - - - - - | pin 54 |

**HAP ALL**

(g) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |

3) Re-connect connector D41807P to the P18-1 circuit breaker panel.

4) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

5) Do the Repair Confirmation at the end of this task.

(3) If the fail message is on channel B, then do these steps;

(a) Disconnect connector D46061P from the P18-1 circuit breaker panel.

(b) Do a check for 28 VDC power at pin 28 of D46061P.

(c) If you do not find 28 VDC at pin 28, then do these steps:

1) Replace the following circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |

2) Re-connect connector D46061P to the P6 circuit breaker panel.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(d) If you find 28 VDC at pin 28 of D46061P, then continue.

**HAP 001-013, 015-026, 028-030**

(e) Do a continuity check between these pins of connector D46061J at the P18-1 panel and connector D10137C for FCC-B:

| D46061P | D10137C |
|---|---|
| pin 28 | pin 54 |
| pin 28 | pin 55 |

**HAP 031-054, 101-999**

(f) Do a continuity check between these pins of connector D46061J at the P18-1 panel and connector D10137C for FCC-B (WDM 22-14-11):

| D46061P | D10137C |
|---|---|
| pin 28 | pin 54 |

**HAP ALL**

(g) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |

3) Re-connect connector D46061P to the P6 circuit breaker panel.

4) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

5) Do the Repair Confirmation at the end of this task.

**HAP 031-054, 101-999**

(4) If the fail message is on channel A, then do these steps;

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a check for ground at pin 58 of connector D10135C (WDM 22-11-11)

(c) If you do not find a ground at pin 58, then do these steps:

1) Repair the wiring.

2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the repair confirmation at the end of this task.

(5) If the fail message is on channel B, then do these steps;

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a check for ground at pin 58 of connector D10137C (WDM 22-11-11)

(c) If you do not find a ground at pin 58, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Repair the wiring.
2) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
3) Do the repair confirmation at the end of this task.

**HAP ALL**

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < FCC

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**803. FCC, BPCU Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) BUS PWR CONT UNIT (J1C-A05)

(b) BUS PWR CONT UNIT (J1C-B05)

(c) BUS PWR CONT UNIT (J1B-H14)

(2) The FCC-A or FCC-B does not detect the bus power control unit (BPCU).

B. Possible Causes

(1) Bus power control unit (BPCU), G15

(2) Wiring problem

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-11-11)

(2) (WDM 22-11-11)


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: Bus Power Control Unit BITE Procedure, 24-41 TASK 801.

(a) If a BPCU maintenance message shows, then go to the applicable fault isolation task for the maintenance message.

1) Do the Repair Confirmation at the end of this task.

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If you did not find a BPCU maintenance message, then continue.

(2) If the maintenance message is on channel A, then do these steps;

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the BPCU, G15. To remove it, do this task: BPCU Removal, AMM TASK 24-41-21-000-801.

(c) Do a wiring check between this pin of connector D10135B at the E1-1 shelf, and connector D10898B at the E4-2 shelf.

| **D10135B** | | **D10898B** |
|---|---|---|
| pin H14 | - - - - - - - - - - - - - - - - - - | pin 65 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the BPCU, G15. To install it, do this task: BPCU Installation, AMM TASK 24-41-21-400-801.

3) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the BPCU, G15. To install it, do this task: BPCU Installation, AMM TASK 24-41-21-400-801.

(3) If the maintenance message is on channel B, then do these steps;

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the BPCU, G15. To remove it, do this task: BPCU Removal, AMM TASK 24-41-21-000-801.

(c) Do a wiring check between this pin of connector D10137B at the E1-4 shelf, and connector D10898B at the E4-2 shelf.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10137B | | D10898B |
|---|---|---|
| pin H14 | - - - - - - - - - - - - - - - - - | pin 52 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the BPCU, G15. To install it, do this task: BPCU Installation, AMM TASK 24-41-21-400-801.

3) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the BPCU, G15. To install it, do this task: BPCU Installation, AMM TASK 24-41-21-400-801.

(4) Install a new FCC, M1875 or M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < FCC

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**804. Auto Flight Status Annunciator Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) AUTO FLT STAT ANN-CPT

(b) AUTO FLT STAT ANN-CPT (J1A-E05)

(c) AUTO FLT STAT ANN-CPT (J1B-B07)

(d) AUTO FLT STAT ANN-CPT (J1B-D07)

(e) AUTO FLT STAT ANN-F/O

(f) AUTO FLT STAT ANN-F/O (J1A-E05)

(g) AUTO FLT STAT ANN-F/O (J1B-B07)

(h) AUTO FLT STAT ANN-F/O (J1B-D07)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(i) FCC-A (J1A-E05)

(j) FCC-B (J1A-E05)

(2) FCC-A: The flight control computer A (FCC-A) does not detect the captain's autoflight status annunciator (ASA) during the ground test.

(3) FCC-B: The flight control computer B (FCC-B) does not detect the first officer's autoflight status annunciator (ASA) during the ground test.

B. Possible Causes

(1) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(2) Autoflight status annunciator (ASA), N170 (captain's) or N171 (first officer's)

(3) Wiring problem

C. Related Data

(1) (SSM 22-14-11)

(2) (WDM 22-14-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Install a new ASA, N170 or N171. To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(2) Replace the applicable FCC, M1875 or M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the captain's ASA, N170. To remove it, do this task: Annunciator Removal, AMM TASK 22-11-32-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) Do a wiring check between these pins shown on the CDU at FCC-A connector D10135A or D10135B and connector D2435 (WDM 22-14-11):

NOTE: If no pins are shown on the CDU, then check all the pins shown below.

| D10135A | | D2435 |
|---|---|---|
| pin E5 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin E5 | - - - - - - - - - - - - - - - - - - | pin 8 |

| D10135B | | D2435 |
|---|---|---|
| pin D7 | - - - - - - - - - - - - - - - - - - | pin 11 |
| pin G5 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin B7 | - - - - - - - - - - - - - - - - - - | pin 12 |

(d) If you find a problem with the wiring, then do this step:

1) Repair the wiring.

(e) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(f) Re-install the captaian's ASA, N170. To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.

(g) Do the Repair Confirmation at the end of this task.

(4) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the first officer's ASA, N171. To remove it, do this task: Annunciator Removal, AMM TASK 22-11-32-000-801.

(c) Do a wiring check between these pins shown on the CDU at the FCC-B connector D10137A and connector D2439:

NOTE: If no pins are shown on the CDU, then check all the pins shown below.

| D10137A | | D2439 |
|---|---|---|
| pin E5 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin E5 | - - - - - - - - - - - - - - - - - - | pin 8 |

| D10137B | | D2439 |
|---|---|---|
| pin D7 | - - - - - - - - - - - - - - - - - - | pin 11 |
| pin G5 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin B7 | - - - - - - - - - - - - - - - - - - | pin 12 |

(d) If you find a problem with the wiring, then do this step:

1) Repair the wiring.

(e) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(f) Re-install the first officer's ASA, N171. To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.

(g) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < FCC

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**808. CDS/DEU-1 Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) CDS/DEU-1 (J1A-A2)

(b) CDS/DEU-1 (J1A-A6)

(c) CDS/DEU-1 (J1A-B2)

(d) CDS/DEU-1 (J1A-B6)

(e) CDS/DEU-1 (J1B-A2)

(f) CDS/DEU-1 (J1B-B2)

(2) This maintenance message detects these problems:

NOTE: The pins listed on the CDU indicate which fault you have.

(a) FCC-A: The flight control computer A (FCC-A) does not detect the display electronics unit-1 (DEU-1).

NOTE: Pins J1B-B2 and J1B-A2

(b) FCC-B: The flight control computer B (FCC-B) does not detect the display electronics unit-1 (DEU-1).

NOTE: Pins J1A-B2 and J1A-A2

(c) FCC-A: The display electronics unit-1 (DEU-1) does not receive commands from the flight control computer A (FCC-A).

NOTE: Pins J1A-B6 and J1A-A6

(d) FCC-B: The display electronics unit-1 (DEU-1) does not receive commands from the flight control computer B (FCC-B).

NOTE: Pins J1A-B6 and J1A-A6

B. Possible Causes

(1) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(2) Display electronics unit (DEU-1), M1808

(3) Wiring problem



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Related Data

(1) (SSM 22-11-51)

(2) (SSM 22-11-52)

(3) (WDM 22-11-51)

(4) (WDM 31-62-15)

(5) (WDM 31-62-25)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: CDS BITE Procedure, 31-62 TASK 801.

(a) If an FCC related CDS maintenance message shows, then go to the applicable fault isolation task for the maintenance message.

1) Do the Repair Confirmation at the end of this task.

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If an FCC related CDS maintenance message does not show, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(3) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove DEU-1, M1808. To remove it, do this task: Display Unit Removal, AMM TASK 31-62-11-000-801.

(c) For input pins J1B-B02 and J1B-A02;

1) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D3973D at the E3-1 shelf (WDM 31-62-15):

| D10135B | | D3973D |
|---|---|---|
| pin A2 | - - - - - - - - - - - - - - - - - | pin B15 |
| pin B2 | - - - - - - - - - - - - - - - - - | pin A15 |

(d) For output pins J1A-B06 and J1B-A06;

1) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D3973A at the E3-1 shelf (WDM 31-62-15):

| D10135A | | D3973A |
|---|---|---|
| pin A6 | - - - - - - - - - - - - - - - - - | pin D12 |
| pin B6 | - - - - - - - - - - - - - - - - - | pin C12 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install DEU-1, M1808. To install it, do this task: Display Unit Installation, AMM TASK 31-62-11-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(4) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove DEU-1, M1808. To remove it, do this task: Display Unit Removal, AMM TASK 31-62-11-000-801.

(c) For input pins J1B-B02 AND J1B-A02;

1) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D3973D at the E3-1 shelf (WDM 31-62-15):

| D10137A | | D3973D |
|---|---|---|
| pin A2 | - - - - - - - - - - - - - - - - - | pin B15 |
| pin B2 | - - - - - - - - - - - - - - - - - | pin A15 |

(d) For output pins J1A-B06 AND J1B-A06;

1) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D3973D at the E3-1 shelf (WDM 31-62-15):

| D10137A | | D3973A |
|---|---|---|
| pin A6 | - - - - - - - - - - - - - - - - - | pin D12 |
| pin B6 | - - - - - - - - - - - - - - - - - | pin C12 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install DEU-1, M1808. To install it, do this task: Display Unit Installation, AMM TASK 31-62-11-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) Install a new DEU-1, M1808. To install it, do this task: Display Unit Installation, AMM TASK 31-62-11-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(6) Replace the applicable FCC, M1875 or M1876.

These are the tasks:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < CDS

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**809. CDS/DEU-2 Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) CDS/DEU-2 (J1A-A2)

(b) CDS/DEU-2 (J1A-A6)

(c) CDS/DEU-2 (J1A-B2)

(d) CDS/DEU-2 (J1A-B6)

(e) CDS/DEU-2 (J1B-A2)

(f) CDS/DEU-2 (J1B-B2)

(2) This maintenance message detects these problems:

NOTE: The pins listed on the CDU indicate which fault you have.

(a) FCC-A: The flight control computer A (FCC-A) does not detect the display electronics unit-2 (DEU-2).

NOTE: Pins J1B-B2 and J1B-A2

(b) FCC-B: The flight control computer B (FCC-B) does not detect the display electronics unit-2 (DEU-2).

NOTE: Pins J1A-B2 and J1A-A2

(c) FCC-A: The display electronics unit-2 (DEU-2) does not receive commands from the flight control computer A (FCC-A).

NOTE: Pins J1A-B6 and J1A-A6



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) FCC-B: The display electronics unit-2 (DEU-2) does not receive commands from the flight control computer B (FCC-B).

NOTE: Pins J1A-B6 and J1A-A6

B. Possible Causes

(1) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(2) Display electronics unit (DEU-2), M1809

(3) Wiring problem

C. Related Data

(1) (SSM 22-11-51)

(2) (SSM 22-11-52)

(3) (WDM 22-11-51)

(4) (WDM 31-62-15)

(5) (WDM 31-62-25)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

**HAP 031-054, 101-999; AIRPLANES WITH COLLINS FCC SOFTWARE P/N 831-5854-140**

NOTE: If the library test 61 shows TEST FAILED for channel B only and only maintenance message 22-11115 shows on the CDU display, then ignore this failure. This is a nuisance fault.

**HAP ALL**

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: CDS BITE Procedure, 31-62 TASK 801.

(a) If an FCC related CDS maintenance message shows, then go to the applicable fault isolation task for the maintenance message.

1) Do the Repair Confirmation at the end of this task.

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If an FCC related CDS maintenance message does not show, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(3) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Remove DEU-2, M1809. To remove it, do this task: Display Unit Removal, AMM TASK 31-62-11-000-801.

(c) For input pins J1B-B02 and J1B-A02;

1) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D3975D at the E3-1 shelf (WDM 31-62-15):

| D10135A | | D3975D |
|---|---|---|
| pin A2 | - - - - - - - - - - - - - - - - - | pin B15 |
| pin B2 | - - - - - - - - - - - - - - - - - | pin A15 |

(d) For output pins J1A-B06 and J1B-A06;

1) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D3975A at the E3-1 shelf (WDM 31-62-15):

| D10135A | | D3975A |
|---|---|---|
| pin A6 | - - - - - - - - - - - - - - - - - | pin D12 |
| pin B6 | - - - - - - - - - - - - - - - - - | pin C12 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install DEU-2, M1809. To install it, do this task: Display Unit Installation, AMM TASK 31-62-11-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(4) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove DEU-2, M1809. To remove it, do this task: Display Unit Removal, AMM TASK 31-62-11-000-801.

(c) For input pins J1B-B02 AND J1B-A02;

1) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D3975D at the E3-1 shelf (WDM 31-62-15):

| D10137B | | D3975D |
|---|---|---|
| pin A2 | - - - - - - - - - - - - - - - - - | pin B15 |
| pin B2 | - - - - - - - - - - - - - - - - - | pin A15 |

(d) For output pins J1A-B06 AND J1B-A06;

1) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D3975D at the E3-1 shelf (WDM 31-62-15):

| D10137A | | D3975D |
|---|---|---|
| pin A6 | - - - - - - - - - - - - - - - - - | pin D12 |
| pin B6 | - - - - - - - - - - - - - - - - - | pin C12 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install DEU-2, M1809. To install it, do this task: Display Unit Installation, AMM TASK 31-62-11-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) Install a new DEU-2, M1809. To install it, do this task: Display Unit Installation, AMM TASK 31-62-11-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(6) Replace the applicable FCC, M1875 or M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < CDS

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

## 810. ADM Pitot Pressure Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) ADM TOTAL PRESS-1

(b) ADM TOTAL PRESS-2

(2) Maintenance message ADM TOTAL PRESS-1 detects this problem:

(a) FCC-A receives invalid data from the air data module (ADM) - left pitot pressure.

(3) Maintenance message ADM TOTAL PRESS-2 detects this problem:

(a) FCC-B receives invalid data from the air data module (ADM) - left pitot pressure.

B. Possible Causes

(1) ADM - pitot pressure, M1750 (left) or M1753 (right)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-11-52)

(2) (SSM 34-21-12)

(3) (WDM 34-21-12)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) If an ADIRU maintenance message shows, then go to the applicable fault isolation task for the maintenance message.

1) Do the Repair Confirmation at the end of this task.

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If an ADIRU maintenance message does not show, then continue.

(2) If the maintenance message is on channel A, then do this exchange check ADM TOTAL PRESS-1:

(a) Put a tag that reads "SUSPECT" on the ADM TOTAL PRESS-1, M1750.

(b) Put a tag that reads "OK" on the ADM TOTAL PRESS-2, M1753.

(c) Exchange the locations of the ADM TOTAL PRESS-1, M1750 and the ADM TOTAL PRESS-2, M1753.

These are the tasks:

Pitot Air Data Module Removal, AMM TASK 34-21-04-000-801,

Pitot Air Data Module Installation, AMM TASK 34-21-04-400-801.

NOTE: Make sure you do the installation test for each ADM.

(d) Do the Repair Confirmation at the end of the this task.

(e) If the Repair Confirmation is satisfactory for the FCC-A and FCC-B, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the ADM TOTAL PRESS-1, M1750.

1) If it is your airline's policy, return the ADM TOTAL PRESS Modules to their original locations.

These are the tasks:

Pitot Air Data Module Removal, AMM TASK 34-21-04-000-801,



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Pitot Air Data Module Installation, AMM TASK 34-21-04-400-801.

NOTE: The ADM tagged "OK" goes in the ADM TOTAL PRESS-2, M1753 rack location. The ADM tagged "SUSPECT" goes in the ADM TOTAL PRESS-1, M1750 rack location.

2) Remove the tags from the ADMs.

(f) If the Repair Confirmation is satisfactory for the ADM TOTAL PRESS-1, and the Repair Confirmation is not satisfactory for the ADM TOTAL PRESS-2, then do these steps:

1) Replace the ADM tagged "SUSPECT".

These are the tasks:

Pitot Air Data Module Removal, AMM TASK 34-21-04-000-801,

Pitot Air Data Module Installation, AMM TASK 34-21-04-400-801.

NOTE: If it is your airline's policy, you must return the ADM tagged "OK" to its original location.

2) Do the Repair Confirmation at the end of the fault isolation task for the applicable maintenance message.

3) Remove the tags from the ADMs.

(g) If the Repair Confirmation is not satisfactory for the ADM TOTAL PRESS-1, and the Repair Confirmation is satisfactory for the ADM TOTAL PRESS-2, then continue.

NOTE: The fault is not in the ADM tagged "SUSPECT".

1) If it is your airline's policy, return the ADMs to their original locations.

These are the tasks:

Pitot Air Data Module Removal, AMM TASK 34-21-04-000-801,

Pitot Air Data Module Installation, AMM TASK 34-21-04-400-801.

NOTE: The ADM tagged "OK" goes in the ADM TOTAL PRESS-2, M1753 rack location. The FCC tagged "SUSPECT" goes in the ADM TOTAL PRESS-1, M1750 rack location.

2) Remove the tags from the ADMs.

3) Continue with the fault isolation procedure for the applicable maintenance message.

(3) If the maintenance message is on channel B, then do this exchange check ADM TOTAL PRESS-2:

(a) Put a tag that reads "SUSPECT" on the ADM TOTAL PRESS-2, M1753.

(b) Put a tag that reads "OK" on the ADM TOTAL PRESS-1, M1750.

(c) Exchange the locations of the ADM TOTAL PRESS-1, M1750 and the ADM TOTAL PRESS-2, M1753.

These are the tasks:

Pitot Air Data Module Removal, AMM TASK 34-21-04-000-801,

Pitot Air Data Module Installation, AMM TASK 34-21-04-400-801.

NOTE: Make sure you do the installation test for each ADM.

(d) Do the Repair Confirmation at the end of the this task.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(e) If the Repair Confirmation is satisfactory for the FCC-A and FCC-B, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the ADM TOTAL PRESS-2, M1753.

1) If it is your airline's policy, return the ADM TOTAL PRESS Modules to their original locations.

These are the tasks:

Pitot Air Data Module Removal, AMM TASK 34-21-04-000-801,

Pitot Air Data Module Installation, AMM TASK 34-21-04-400-801.

NOTE: The ADM tagged "OK" goes in the ADM TOTAL PRESS-1, M1750 rack location. The ADM tagged "SUSPECT" goes in the ADM TOTAL PRESS-2, M1753 rack location.

2) Remove the tags from the ADMs.

(f) If the Repair Confirmation is satisfactory for the ADM TOTAL PRESS-2, and the Repair Confirmation is not satisfactory for the ADM TOTAL PRESS-1, then do these steps:

1) Replace the ADM tagged "SUSPECT".

These are the tasks:

Pitot Air Data Module Removal, AMM TASK 34-21-04-000-801,

Pitot Air Data Module Installation, AMM TASK 34-21-04-400-801.

NOTE: If it is your airline's policy, you must return the ADM tagged "OK" to its original location.

2) Do the Repair Confirmation at the end of the fault isolation task for the applicable maintenance message.

3) Remove the tags from the ADMs.

(g) If the Repair Confirmation is not satisfactory for the ADM TOTAL PRESS-2, and the Repair Confirmation is satisfactory for the ADM TOTAL PRESS-1, then continue.

NOTE: The fault is not in the ADM tagged "SUSPECT".

1) If it is your airline's policy, return the ADMs to their original locations.

These are the tasks:

Pitot Air Data Module Removal, AMM TASK 34-21-04-000-801,

Pitot Air Data Module Installation, AMM TASK 34-21-04-400-801.

NOTE: The ADM tagged "OK" goes in the ADM TOTAL PRESS-2, M1753 rack location. The FCC tagged "SUSPECT" goes in the ADM TOTAL PRESS-1, M1750 rack location.

2) Remove the tags from the ADMs.

3) Continue with the fault isolation procedure for the applicable maintenance message.

(4) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(5) For maintenance message ADM TOTAL PRESS-1, do this check of the wiring:

(a) Remove the ADM TOTAL PRESS-1, M1750. To remove it, do this task: Pitot Air Data Module Removal, AMM TASK 34-21-04-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Remove the left ADIRU, M1749. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) Do a wiring check between these pins shown at the ADM connector D3689, and ADIRU connector D3687A:

| D3689 | | D3687A |
|---|---|---|
| pin 7 | - - - - - - - - - - - - - - - - - - | pin D10 |
| pin 8 | - - - - - - - - - - - - - - - - - - | pin E10 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the left ADIRU, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-install the ADM TOTAL PRESS-1, M1750. To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then do these steps:

1) Re-install the left ADIRU, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

2) Re-install the ADM TOTAL PRESS-1, M1750. To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.

3) Do the Repair Confirmation at the end of this task.

(6) For maintenance message ADM TOTAL PRESS-2, do this check of the wiring:

(a) Remove the ADM TOTAL PRESS-2, M1753. To remove it, do this task: Pitot Air Data Module Removal, AMM TASK 34-21-04-000-801.

(b) Remove the right ADIRU, M1752. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) Do a wiring check between these pins shown at the ADM connector D3695, and ADIRU connector D3693A:

| D3695 | | D3693A |
|---|---|---|
| pin 7 | - - - - - - - - - - - - - - - - - - | pin D10 |
| pin 8 | - - - - - - - - - - - - - - - - - - | pin E10 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the right ADIRU, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-install the ADM TOTAL PRESS-2, M1753. To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you find a problem with the wiring, then do these steps:

1) Re-install the right ADIRU, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

2) Re-install the ADM TOTAL PRESS-2, M1753. To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.

3) Do the Repair Confirmation at the end of this task.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < ADIRU

(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**

**811. ADM Static Pressure Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) ADM STATIC PRESS-1

(b) ADM STATIC PRESS-2

(2) Maintenance message ADM STATIC PRESS-1 detects this problem:

(a) FCC-A receives invalid data from the air data module (ADM) - left static pressure.

(3) Maintenance message ADM STATIC PRESS-2 detects this problem:

(a) FCC-B receives invalid data from the Air Data Module (ADM) - Left Static Pressure.

B. Possible Causes

(1) ADM - static pressure, M1750 (left) or M1753 (right)

(2) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Related Data

(1) (SSM 22-11-52)

(2) (SSM 34-21-12)

(3) (WDM 34-21-12)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Fault Isolation Procedure

(1) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) If an ADIRU maintenance message shows, then go to the applicable fault isolation task for the maintenance message.

1) Do the Repair Confirmation at the end of this task.

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If an ADIRU maintenance message does not show, then continue.

(2) If the maintenance message is on channel A, then do this exchange check ADM STATIC PRESS-1:

(a) Put a tag that reads "SUSPECT" on the ADM STATIC PRESS-1, M1751.

(b) Put a tag that reads "OK" on the ADM STATIC PRESS-2, M1754.

(c) Exchange the locations of the ADM STATIC PRESS-1, M1751 and the ADM STATIC PRESS-2, M1754.

These are the tasks:

Static Air Data Module Removal, AMM TASK 34-21-04-000-802,

Static Air Data Module Installation, AMM TASK 34-21-04-400-802.

NOTE: Make sure you do the installation test for each ADM.

(d) Do the Repair Confirmation at the end of the this task.

(e) If the Repair Confirmation is satisfactory for the FCC-A and FCC-B, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the ADM STATIC PRESS-1, M1751.

1) If it is your airline's policy, return the ADM STATIC PRESS Modules to their original locations.

These are the tasks:

Static Air Data Module Removal, AMM TASK 34-21-04-000-802,

Static Air Data Module Installation, AMM TASK 34-21-04-400-802.

NOTE: The ADM tagged "OK" goes in the ADM STATIC PRESS-2, M1754 rack location. The ADM tagged "SUSPECT" goes in the ADM STATIC PRESS-1, M1751 rack location.

2) Remove the tags from the ADMs.

(f) If the Repair Confirmation is satisfactory for the ADM STATIC PRESS-1, and the Repair Confirmation is not satisfactory for the ADM STATIC PRESS-2, then do these steps:

1) Replace the ADM tagged "SUSPECT".

These are the tasks:

Static Air Data Module Removal, AMM TASK 34-21-04-000-802,

Static Air Data Module Installation, AMM TASK 34-21-04-400-802.

NOTE: If it is your airline's policy, return the ADM tagged "OK" to its original location.

2) Do the Repair Confirmation at the end of the fault isolation task for the applicable maintenance message.

3) Remove the tags from the ADMs.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(g) If the Repair Confirmation is not satisfactory for the ADM STATIC PRESS-1, and the Repair Confirmation is satisfactory for the ADM STATIC PRESS-2, then continue.

NOTE: The fault is not in the ADM tagged "SUSPECT".

1) If it is your airline's policy, return the ADMs to their original locations.

These are the tasks:

Static Air Data Module Removal, AMM TASK 34-21-04-000-802,

Static Air Data Module Installation, AMM TASK 34-21-04-400-802.

NOTE: The ADM tagged "OK" goes in the ADM STATIC PRESS-2, M1754 rack location. The FCC tagged "SUSPECT" goes in the ADM STATIC PRESS-1, M1751 rack location.

2) Remove the tags from the ADMs.

3) Continue with the fault isolation procedure for the applicable maintenance message.

(3) If the maintenance message is on channel B, then do this exchange check ADM STATIC PRESS-2:

(a) Put a tag that reads "SUSPECT" on the ADM STATIC PRESS-2, M1754.

(b) Put a tag that reads "OK" on the ADM STATIC PRESS-1, M1751.

(c) Exchange the locations of the ADM STATIC PRESS-1, M1751 and the ADM STATIC PRESS-2, M1754.

These are the tasks:

Static Air Data Module Removal, AMM TASK 34-21-04-000-802,

Static Air Data Module Installation, AMM TASK 34-21-04-400-802.

NOTE: Make sure you do the installation test for each ADM.

(d) Do the Repair Confirmation at the end of the this task.

(e) If the Repair Confirmation is satisfactory for the FCC-A and FCC-B, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the ADM STATIC PRESS-2, M1754.

1) If it is your airline's policy, return the ADM STATIC PRESS Modules to their original locations.

These are the tasks:

Static Air Data Module Removal, AMM TASK 34-21-04-000-802,

Static Air Data Module Installation, AMM TASK 34-21-04-400-802.

NOTE: The ADM tagged "OK" goes in the ADM STATIC PRESS-1, M1751 rack location. The ADM tagged "SUSPECT" goes in the ADM STATIC PRESS-2, M1754 rack location.

2) Remove the tags from the ADMs.

(f) If the Repair Confirmation is satisfactory for the ADM STATIC PRESS-2, and the Repair Confirmation is not satisfactory for the ADM STATIC PRESS-1, then do these steps:

1) Replace the ADM tagged "SUSPECT".

These are the tasks:

Static Air Data Module Removal, AMM TASK 34-21-04-000-802,



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Static Air Data Module Installation, AMM TASK 34-21-04-400-802.

NOTE: If it is your airline's policy, you must return the ADM tagged "OK" to its original location.

2) Do the Repair Confirmation at the end of the fault isolation task for the applicable maintenance message.

3) Remove the tags from the ADMs.

(g) If the Repair Confirmation is not satisfactory for the ADM STATIC PRESS-2, and the Repair Confirmation is satisfactory for the ADM STATIC PRESS-1, then continue.

NOTE: The fault is not in the ADM tagged "SUSPECT".

1) If it is your airline's policy, return the ADMs to their original locations.

These are the tasks:

Static Air Data Module Removal, AMM TASK 34-21-04-000-802,

Static Air Data Module Installation, AMM TASK 34-21-04-400-802.

NOTE: The ADM tagged "OK" goes in the ADM STATIC PRESS-2, M1754 rack location. The FCC tagged "SUSPECT" goes in the ADM STATIC PRESS-1, M1751 rack location.

2) Remove the tags from the ADMs.

3) Continue with the fault isolation procedure for the applicable maintenance message.

(4) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(5) For maintenance message ADM STATIC PRESS-1, do this check of the wiring:

(a) Remove the ADM STATIC PRESS-1, M1751. To remove it, do this task: Static Air Data Module Removal, AMM TASK 34-21-04-000-802.

(b) Remove the left ADIRU, M1749. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) Do a wiring check between these pins shown at the ADM connector D3691, and ADIRU connector D3687A:

| D3691 | | D3687A |
|---|---|---|
| pin 7 | - - - - - - - - - - - - - - - - - - | pin D9 |
| pin 8 | - - - - - - - - - - - - - - - - - - | pin E9 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the left ADIRU, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-install the ADM STATIC PRESS-1, M1751. To install it, do this task: Static Air Data Module Installation, AMM TASK 34-21-04-400-802.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then do these steps:

1) Re-install the left ADIRU, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

2) Re-install the ADM STATIC PRESS-1, M1751. To install it, do this task: Static Air Data Module Installation, AMM TASK 34-21-04-400-802.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Do the Repair Confirmation at the end of this task.

(6) For maintenance message ADM STATIC PRESS-2, do this check of the wiring:

(a) Remove the ADM STATIC PRESS-2, M1754. To remove it, do this task: Static Air Data Module Removal, AMM TASK 34-21-04-000-802.

(b) Remove the right ADIRU, M1752. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) Do a wiring check between these pins shown at the ADM connector D3695, and ADIRU connector D3693A:

| D3695 | | D3693A |
|---|---|---|
| pin 7 | - - - - - - - - - - - - - - - - - - | pin D10 |
| pin 8 | - - - - - - - - - - - - - - - - - - | pin E10 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the right ADIRU, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-install the ADM STATIC PRESS-2, M1753. To install it, do this task: Static Air Data Module Installation, AMM TASK 34-21-04-400-802.

4) Do the Repair Confirmation at the end of this task.

(e) If you find a problem with the wiring, then do these steps:

1) Re-install the right ADIRU, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

2) Re-install the ADM STATIC PRESS-2, M1753. To install it, do this task: Static Air Data Module Installation, AMM TASK 34-21-04-400-802.

3) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < ADIRU

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

## 812. EFIS Control Panel Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) EFIS CONT PANL-CAPT

(b) EFIS CONT PANL-F/O

(2) These maintenance messages detect these problems:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) The flight control computer (FCC) does not detect the captain's EFIS control panel.

(b) The flight control computer (FCC) does not detect the first officer's EFIS control panel.

B. Possible Causes

(1) EFIS control panel, P7-1 (captain's) or P7-2 (first officer's)

(2) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Related Data

(1) (SSM 22-11-52)

(2) (SSM 31-62-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) Replace the applicable EFIS control panel, P7-1 or P7-2.

These are the tasks:

EFIS Control Panel Removal, AMM TASK 31-62-12-000-801,

EFIS Control Panel Installation, AMM TASK 31-62-12-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) For maintenance message EFIS CONT PANL-CAPT, do this check of the wiring:

(a) Remove DEU-1, M1808. To remove it, do this task: Display Electronic Unit Installation, AMM TASK 31-62-21-400-801.

(b) Remove the captains EFIS control panel (EFCP), P7-1. To remove it, do this task: EFIS Control Panel Removal, AMM TASK 31-62-12-000-801.

(c) Do a wiring check between these pins shown at the EFCP connector D3993, and DEU connector D3973A:

| D3993 | | D3973A |
|---|---|---|
| pin 35 | - - - - - - - - - - - - - - - - - - | pin J1 |
| pin 36 | - - - - - - - - - - - - - - - - - - | pin K1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the captain's EFCP, P7-1. To install it, do this task: EFIS Control Panel Installation, AMM TASK 31-62-12-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-install DEU-1, M1808. To install it, do this task: Display Electronic Unit Installation, AMM TASK 31-62-21-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you find a problem with the wiring, then do these steps:

1) Re-install the captain's EFCP, P7-1. To install it, do this task: EFIS Control Panel Installation, AMM TASK 31-62-12-400-801.

2) Re-install DEU-1, M1808. To install it, do this task: Display Electronic Unit Installation, AMM TASK 31-62-21-400-801.

3) Do the Repair Confirmation at the end of this task.

(4) For maintenance message EFIS CONT PANL-F/O, do this check of the wiring:

(a) Remove DEU-2, M1809. To remove it, do this task: Display Electronic Unit Installation, AMM TASK 31-62-21-400-801.

(b) Remove the F/O's EFIS control panel (EFCP), P7-2. To remove it, do this task: EFIS Control Panel Removal, AMM TASK 31-62-12-000-801.

(c) Do a wiring check between these pins shown at the EFCP connector D3995, and DEU connector D3975D:

| D3995 | | D3975D |
|---|---|---|
| pin 35 | - - - - - - - - - - - - - - - - - - | pin J1 |
| pin 36 | - - - - - - - - - - - - - - - - - - | pin K1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the F/O's EFCP, P7-2. To install it, do this task: EFIS Control Panel Installation, AMM TASK 31-62-12-400-801.

3) Re-install DEU-2, M1809. To install it, do this task: Display Electronic Unit Installation, AMM TASK 31-62-21-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you find a problem with the wiring, then do these steps:

1) Re-install the F/O's EFCP, P7-1. To install it, do this task: EFIS Control Panel Installation, AMM TASK 31-62-12-400-801.

2) Re-install DEU-2, M1809. To install it, do this task: Display Electronic Unit Installation, AMM TASK 31-62-21-400-801.

3) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < ADIRU

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 813. FCC, Captain's VHF/NAV Control Panel Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) VHF/NAV CONTROL PANEL-1 (J1A-D1)

(b) VHF/NAV CONTROL PANEL-1 (J1B-K14)

(2) This maintenance message detects these problems:

NOTE: The pins listed on the CDU indicate which fault you have.

(a) FCC-A: The flight control computer A (FCC-A) does not receive the LCL loc time signal from VHF/NAV control panel-1.

NOTE: Pin J1B-K14

(b) FCC-B: The flight control computer B (FCC-B) does not receive the LCL loc time signal from VHF/NAV control panel-1.

NOTE: Pin J1A-D1

B. Possible Causes

(1) VHF/NAV control panel, P8-25 (captain's)

(2) Wiring problem

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-11-16)

(2) (WDM 34-51-41)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again, if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: ILS or Multi-Mode Receiver BITE Procedure, 34-31 TASK 801.

(a) If an MMR/ILS maintenance message shows, then go to the applicable fault isolation task for the maintenance message.

1) Do the Repair Confirmation at the end of this task.

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If an MMR/ILS maintenance message does not show, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If the maintenance messages shows, then continue.

(3) If the maintenance message is on channel A, then do these steps;

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the captain's VHF/NAV control panel, P8-25. To remove it, do this task: Navigation Control Panel Removal, AMM TASK 34-31-52-000-801.

(c) Do a wiring check between these pins of connector D10135B at the E1-1 shelf, and connector D263 at the P8 control stand (SSM 22-11-16):

| D10135B | | D263 |
|---|---|---|
| pin K14 | - - - - - - - - - - - - - - - - - | pin 38 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the captain's VHF/NAV control panel, P8-25. To install it, do this task: Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

3) Re-install FCC-A, M1875. To install it, do this task: Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(4) If the maintenance message is on channel B, then do these steps;

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the captain's VHF/NAV control panel. To remove it, do this task: Navigation Control Panel Removal, AMM TASK 34-31-52-000-801.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf, and connector D263 at the P8 control panel (SSM 22-11-16):

| D10135A | | D263 |
|---|---|---|
| pin D1 | - - - - - - - - - - - - - - - - - | pin 38 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the captain's VHF/NAV control panel, P8-25. To install it, do this task: Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

3) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) Install a new captain's VHF/NAV control panel, P8-25. To install it, do this task: Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

(a) Do the Repair Confirmation at the end of this task.

1) If the Repair Confirmation is not satisfactory, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) VOR >

(c) If the maintenance message does not show, then you corrected the fault.

**END OF TASK**

**814. FCC, First Officer's VHF/NAV Control Panel Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) VHF/NAV CONTROL PANEL-2 (J1A-D1)

(b) VHF/NAV CONTROL PANEL-2 (J1B-K14)

(2) This maintenance message detects these problems:

NOTE: The pins listed on the CDU indicate which fault you have.

(a) FCC-A: The flight control computer A (FCC-A) does not receive the LCL loc time signal from VHF/NAV control panel-2.

NOTE: Pin J1A-D1

(b) FCC-B: The flight control computer B (FCC-B) does not receive the LCL loc time signal from VHF/NAV control panel-2.

NOTE: Pin J1B-K14

B. Possible Causes

(1) VHF/NAV control panel, P8-26 (first officer's)

(2) Wiring problem

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-11-16)

(2) (WDM 34-51-41)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) (WDM 34-51-41)

(a) If an MMR/ILS maintenance message shows, then go to the applicable fault isolation task for the maintenance message.

1) Do the Repair Confirmation at the end of this task.

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If an MMR/ILS maintenance message does not show, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(3) If the maintenance message is on channel A, then do these steps;

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the first officer's VHF/NAV control panel, P8-26. To remove it, do this task: Navigation Control Panel Removal, AMM TASK 34-31-52-000-801.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf, and connector D265 at the P8 control stand (SSM 22-11-16):

| **D10135A** | | **D265** |
|---|---|---|
| pin D1 | - - - - - - - - - - - - - - - - - - | pin 38 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the first officer's VHF/NAV control panel, P8-26. To install it, do this task: Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

3) Re-install FCC-A, M1875. To install it, do this task: Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(4) If the maintenance message is on channel B, then do these steps;

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the first officer's VHF/NAV control panel, P8-26. To remove it, do this task: Navigation Control Panel Removal, AMM TASK 34-31-52-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) Do a wiring check between these pins of connector D10137B at the E1-4 shelf, and connector D265 at the P8 control panel SSM 22-11-16():

| D10137B | | D265 |
|---|---|---|
| pin H14 | - - - - - - - - - - - - - - - - - | pin 52 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the first officer's VHF/NAV control panel, P8-26. To install it, do this task: Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

3) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) Install a new first officers's VHF/NAV control panel, P8-26. To install it, do this task: Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) VOR>

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

## 815. FCC, Squat Switch Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A=D10135A, J1B=D10135B and J1C=D10135C. For the FCC-B: J1A=10137A, J1B=10137B and J1C=10137C.

(a) AIR/GND SW INDICATES AIR MODE (J1A-B03)

(2) This maintenance message detects these problems:

(a) The flight control computer A (FCC-A) does not detect the squat switch.

(b) The flight control computer B (FCC-B) does not detect the squat switch.

B. Possible Causes

(1) Proximity switch electronics unit (PSEU), M2061



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) Wiring problem

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-11-12)

(2) (WDM 22-11-12)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) could not be done.

NOTE: When the DFCS BITE was performed the message "CONDITIONS INHIBITING BITE ENTRY FOR FCC-A (or B)" is shown followed by the maintenance message, and the airplane is in ground mode.

E. Fault Isolation Procedure

(1) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D11142 from the PSEU, M2061.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D11142 at the PSEU (WDM 22-11-12):

| D10135A | | D11142 |
|---|---|---|
| pin B3 | - - - - - - - - - - - - - - - - - - | pin 47 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-connect connector D11142 to the PSEU, M2061.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(2) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connector D11140 from the PSEU, M2061.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D11140 at the PSEU (WDM 22-11-12):

| D10137A | | D11140 |
|---|---|---|
| pin B3 | - - - - - - - - - - - - - - - - - - | pin 47 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-B, M1877. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-connect connector D11140 to the PSEU, M2061.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(3) Replace the PSEU, M2061.

These are the tasks:

Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801,

Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

(a) Do the Repair Confirmation at the end of this task.

1) If the Repair Confirmation is not satisfactory, then continue.

(4) Replace the applicable FCC, M1875 or M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) Make sure that the MAINT page is shown on the CDU.

(b) Push the LSK adjacent to < DFCS.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**816. FCC, Flight Director Switch Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) MCP (J1A-F01)

(b) MCP (J1B-F01)

(2) This maintenance message detects these problems:

NOTE: The pins listed on the CDU indicate which fault you have.

(a) The flight control computer A (FCC-A) does not detect flight director switch A.

NOTE: Pin J1B-F01

(b) The flight control computer B (FCC-B) does not detect flight director switch A.

NOTE: Pins J1A-F01

(c) The flight control computer A (FCC-A) does not detect flight director switch B.

NOTE: Pin J1A-F01



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) The flight control computer B (FCC-B) does not detect flight director switch B.

NOTE: Pins J1B-F01

B. Possible Causes

(1) Mode control panel (MCP), M198

(2) Wiring problem

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-11-11)

(2) (WDM 22-11-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the MCP, M198. To remove it, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801.

(c) For input pin J1B-F01;

1) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D299 at the MCP (WDM 22-11-11):

| **D10135B** | | **D299** |
|---|---|---|
| pin F1 | - - - - - - - - - - - - - - - - - | pin 23 |

(d) For input pin J1A-F01;

1) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1815 at the MCP (WDM 22-11-11):

| **D10135A** | | **D1815** |
|---|---|---|
| pin F1 | - - - - - - - - - - - - - - - - - | pin 23 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-install the MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the MCP, M198. To remove it, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801.

(c) For input pin J1B-F01;

1) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D299 at the MCP (WDM 22-11-11):

| D10137B | | D299 |
|---|---|---|
| pin F1 | - - - - - - - - - - - - - - - - - - | pin 23 |

(d) For input pin J1A-F01;

1) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D1815 at the MCP (WDM 22-11-11):

| D10137A | | D1815 |
|---|---|---|
| pin F1 | - - - - - - - - - - - - - - - - - - | pin 23 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(4) Install a new MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

(a) Do the Repair Confirmation at the end of this task.

1) If the Repair Confirmation is not satisfactory, then continue.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Push the INIT/REF key on the CDU to exit BITE.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Make these selections on the CDU:
   a) < INDEX
   b) MAINT >
   c) < DFCS
   d) EXTENDED MAINTENANCE
   e) MCP TESTS
   f) < CHANNEL A AND B
3) Do the instructions shown on the CDU to complete the test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**817. Mach Trim 28 VDC Problem - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) MACH TRIM 28 VDC (J1C-53)

(2) The FCC-A or FCC-B does not detect 28 VDC for the mach trim system.

B. Possible Causes

(1) These are the circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 4 | C00457 | AFCS SYS A MACH TRIM DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 2 | C01064 | AFCS SYS B MACH TRIM DC |

(2) Wiring problem

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 4 | C00457 | AFCS SYS A MACH TRIM DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 2 | C01064 | AFCS SYS B MACH TRIM DC |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Related Data

(1) (SSM 22-18-11)

(2) (WDM 22-18-11)

E. Initial Evaluation

(1) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 4 | C00457 | AFCS SYS A MACH TRIM DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 2 | C01064 | AFCS SYS B MACH TRIM DC |

(2) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this check for power at FCC-A or FCC-B:

(a) If the maintenance message is on channel A, then do these steps;

1) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 4 | C00457 | AFCS SYS A MACH TRIM DC |

4) Do a check for 28 VDC power between pin 53 of connector D10135C and structure ground.

(b) If the maintenance message is on channel B, then do these steps:

1) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 2 | C01064 | AFCS SYS B MACH TRIM DC |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

4) Do a check for 28 VDC power between pin 53 of connector D10137C and structure ground.

(c) If there is 28 VDC at the pin, then do these steps:

1) Install a new FCC. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If there is not 28 VDC at the pins, then continue.

(2) If the maintenance message is on channel A, then do these steps;

(a) Disconnect connector D41803P from the P18-1 circuit breaker panel.

(b) Do a check for 28 VDC power at pin 4 of D41803J.

(c) If you do not find 28 VDC at pin 4, then do these step:

1) Replace this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 4 | C00457 | AFCS SYS A MACH TRIM DC |

2) Re-connect connector D41803P to the P18-1 circuit breaker panel.

3) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(d) If you find 28 VDC at pin 4 of D41803J, then continue.

(e) Do a continuity check between these pins of connector D41803P at the P18-1 panel and connector D10135C for FCC-A:

| **D41803P** | | **D10135C** |
|---|---|---|
| pin 4 | - - - - - - - - - - - - - - - - - - - | pin 53 |

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 4 | C00457 | AFCS SYS A MACH TRIM DC |

3) Re-connect connector D41803P to the P18-1 circuit breaker panel.

4) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

5) Do the Repair Confirmation at the end of this task.

(3) If the maintenance message is on channel B, then do these steps;

(a) Disconnect connector D46065P from the P6-2 circuit breaker panel.

(b) Do a check for 28 VDC power at pin 3 of D46065P.

(c) If you do not find 28 VDC at pin 3, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Replace this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 2 | C01064 | AFCS SYS B MACH TRIM DC |

2) Re-connect connector D46065P to the P6 circuit breaker panel.

3) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(d) If you find 28 VDC at pin 28 of D46065P, then continue.

(e) Do a continuity check between these pins of connector D46065P at the P6 panel and connector D10137C for FCC-B:

| D46065P | | D10137C |
|---|---|---|
| pin 3 | - - - - - - - - - - - - - - - - - - | pin 53 |

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 2 | C01064 | AFCS SYS B MACH TRIM DC |

3) Re-connect connector D46065P to the P6 circuit breaker panel.

4) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

5) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) <RUN SELECT LIBRARY TESTS

c) MACH TRIM 33>

d) EXECUTE

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 818. FCC, Stab Trim Down Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) COL SW MODULE M1201

(b) COL SW MODULE M1201 (J1C-K03)

(c) STAB TRIM SERVO

(d) STAB TRIM SERVO (J1C-K03)

(2) These maintenance messages detects these problems:

NOTE: The pins listed on the CDU indicate which fault you have.

(a) The flight control computer A (FCC-A) can not trim the stabilizer down.

(b) The flight control computer B (FCC-B) can not trim the stabilizer down.

B. Possible Causes

(1) Stab trim servo motor, M1659

(2) Stab trim cutout relay, R384

(3) Stab limit switch, S145

(4) Column switching module, M1201

(5) Wiring problem

(6) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-13-11)

(2) (WDM 22-13-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this check of the stabilizer position sensor:

(a) Make these selections on the CDU:

1) Push the INIT/REF key on the CDU to exit BITE.

2) < INDEX

3) MAINT >



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

4) < DFCS
5) < LRU REPLACEMENT TESTS
6) < CHANNEL A AND B
7) Push the NEXT PAGE key.
8) < STAB SENS

(b) Do the instructions on the CDU to complete the test.

(c) If a maintenance message shows on the CDU, then go to the applicable fault isolation task for the maintenance message.

1) Do the Repair Confirmation at the end of this task.
2) If the Repair Confirmation is not satisfactory, then continue.

(d) If a maintenance message does not show on the CDU, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove this access panel:

| Number | Name/Location |
|---|---|
| 311AL | Access Door to Aft Unpressurized Compartment |

(c) Disconnect connector D381 from the servo motor, M1659.

(d) Do a continuity check between these pins of connector D10135C at the E1-1 shelf and connector D381 at the servo motor (WDM 22-13-11):

| **D10135C** | **D381** |
|---|---|
| K3 | pin 6 |

(e) If there is continuity, then do these steps:

1) Replace the stab trim servo motor, M1659.

These are the tasks:

Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801,

Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801.

2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
3) Do the Repair Confirmation at the end of this task.
4) If the Repair Confirmation is not satisfactory, then do these steps:
   a) Replace FCC-A, M1875.

   These are the tasks:

   Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

   Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
   b) Do the Repair Confirmation at the end of this task.

(f) If there is no continuity, then continue:

1) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove this access panel:

| Number | Name/Location |
|---|---|
| 311AL | Access Door to Aft Unpressurized Compartment |

(c) Disconnect connector D381 from the servo motor, M1659.

(d) Do a continuity check between these pins of connector D10137C at the E1-1 shelf and connector D381 at the servo motor (WDM 22-13-11):

| D10137C | D381 |
|---|---|
| K3 | pin 6 |

(e) If there is continuity, then do these steps:

1) Replace the stab trim servo motor, M1659.

These are the tasks:

Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801,

Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801.

2) Re-install FCC-B, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the Repair Confirmation at the end of this task.

4) If the Repair Confirmation is not satisfactory, then do these steps:

a) Replace FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

b) Do the Repair Confirmation at the end of this task.

(f) If there is no continuity, then continue:

1) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(4) Do this check of the stab trim cutout relay and trim limit switch:

(a) Make sure the stab trim cutout switch on the P8 panel is in the NORMAL position.

(b) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(c) Do a check for an open circuit between pins 6 and 7 of connector D381.

(d) If there is continuity between pins 6 and 7, then do these steps:

1) Replace the stab trim cutout relay, R384.

2) Re-connect connector D381 to the servo motor, M1659.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Do the Repair Confirmation at the end of this task.

(e) If there is an open circuit between pins 6 and 7, then continue.

(f) Put the stab trim cutout switch on the P8 panel in the CUTOUT position.

(g) Do a check for an open circuit between pins 6 and 7 of connector D381.

(h) If there is an open circuit between pins 6 and 7, then do these steps:

1) Remove the right lower side panel on the P8 control stand.

2) Disconnect connector D2485 from the stab trim cutout relay, R384.

3) Do a wiring check between these pins at connector D381 at the servo motor and connector D2485 at the cutout relay (WDM 22-13-11).

| D381 | | D2485 |
|---|---|---|
| 6 | - - - - - - - - - - - - - - - - - - - - | A2 |

4) If there is continuity, then do these steps:

a) Replace the stab trim cutout relay, R384.

b) Re-connect connector D381 to the servo motor, M1659.

c) Do the Repair Confirmation at the end of this task.

5) If there is no continuity, then continue.

6) Disconnect connector D4083P from the E1-1 shelf.

7) Do a wiring check between these pins at connector D381 at the column switching module and connector D4083P at the E1-1 shelf (WDM 22-13-11).

| D381 | | D4083P |
|---|---|---|
| 6 | - - - - - - - - - - - - - - - - - - - - | A4 |

8) If there is continuity, then do these steps:

a) Repair the wiring between the E1-1 shelf and the cutout relay.

b) Re-connect connector D2485 to the stab trim cutout relay, R384.

c) Install the right lower side panel on the P8 control stand.

d) Re-connect connector D381 to the servo motor, M1659.

e) Do the Repair Confirmation at the end of this task.

9) If there is no continuity, then do these steps:

a) Replace the stab nose down limit switch, S145.

These are the tasks:

Stabilizer Trim Limit Switch Removal, AMM TASK 27-41-94-000-801,

Stabilizer Trim Limit Switch Installation, AMM TASK 27-41-94-400-801.

b) Re-connect connector D381 to the servo motor, M1659.

c) Re-connect connector D2485 to the stab trim cutout relay, R384.

d) Install the right lower side panel on the P8 control stand.

e) Do the Repair Confirmation at the end of this task.

f) If the maintenace message still shows, correct the wiring problem at wire W3381-0004-20 or W3381-0012-20.

(i) If there is continuity between pins 6 and 7, then continue.

1) Reconnect connector D381 to the servo motor, M1659.

(5) Do this check at the column switching module, M1201:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Remove the right lower side panel on the P8 control stand.

(b) Disconnect connector D2485 from the stab trim cutout relay, R384.

(c) Disconnect connector D2257 at the column switching module (AMM TASK 27-41-51-000-801).

(d) Do a wiring check between these pins at connector D2257 at the column switching module and connector D2485 at the cutout relay (WDM 22-13-11):

| D2257 | | D2485 |
|---|---|---|
| 3 | - - - - - - - - - - - - - - - - - - - - - - | A3 |

(e) If you do not find a problem with the wiring, then do these steps:

1) Repair the wiring between the column switching module, M1201 and FCC-A, M1875.

2) Re-connect connector D2485 to the stab trim cutout relay, R384.

3) Install the right lower side panel on the P8 control stand.

4) Re-connect connector D2257 to the column switching module (AMM TASK 27-41-51-000-801).

5) Do the Repair Confirmation at the end of this task.

(f) If you find a problem with the wiring, then continue.

(g) Do a wiring check between these pins at connector D2257 at the column switching module and connector D2485 at the cutout relay (WDM 22-13-11):

| D2257 | | D2485 |
|---|---|---|
| 12 | - - - - - - - - - - - - - - - - - - - - - - | A3 |

(h) If you do not find a problem with the wiring, then replace the column switching module, M1201.

These are the tasks:

Column Cutout Switch Removal, AMM TASK 27-41-51-000-801,

Column Cutout Switch Installation, AMM TASK 27-41-51-400-801.

(i) If you find problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D2257 to the column switching module (AMM TASK 27-41-51-000-801).

(j) Re-connect connector D2485 to the stab trim cutout relay, R384.

(k) Install the right lower side panel on the P8 control stand.

(l) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) Make sure this access panel is closed:

| Number | Name/Location |
|---|---|
| 311AL | Access Door to Aft Unpressurized Compartment |

(b) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(c) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Make these selections on the CDU:
   a) < CHANNEL A AND B
   b) < RUN SELECT LIBRARY TESTS
   c) SPEED/STAB TRIM 32 >
2) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**819. FCC, Stab Trim Up Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) COL SW MODULE M1201
(b) COL SW MODULE M1201 (J1C-G02)
(c) STAB TRIM SERVO
(d) STAB TRIM SERVO (J1C-G02)

(2) This maintenance message detects these problems:

NOTE: The pins listed on the CDU indicate which fault you have.

(a) The flight control computer A (FCC-A) can not trim the stabilizer up.
(b) The flight control computer B (FCC-B) can not trim the stabilizer up.

B. Possible Causes

(1) Stab trim servo motor, M1659
(2) Stab trim cutout relay, R384
(3) Stab limit switch, S145
(4) Column switching module, M1201
(5) Wiring problem
(6) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-13-11)
(2) (WDM 22-13-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.
(b) If the maintenance message does not show, then there was an intermittent fault.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Fault Isolation Procedure

(1) Do this check of the stabilizer position sensor:

(a) Make these selections on the CDU:

1) Push the INIT/REF key on the CDU to exit BITE.
2) < INDEX
3) MAINT >
4) < DFCS
5) < LRU REPLACEMENT TESTS
6) < CHANNEL A AND B
7) Push the NEXT PAGE key.
8) < STAB SENS

(b) Do the instructions on the CDU to complete the test.

(c) If a maintenance message shows on the CDU, then go to the applicable task for the maintenance message.

1) Do the Repair Confirmation at the end of this task.
2) If the Repair Confirmation is not satisfactory, then continue.

(d) If a maintenance message does not show on the CDU, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove this access panel:

| Number | Name/Location |
|---|---|
| 311AL | Access Door to Aft Unpressurized Compartment |

(c) Disconnect connector D381 from the servo motor, M1659.

(d) Do a continuity check between these pins of connector D10135C at the E1-1 shelf and connector D381 at the servo motor (WDM 22-13-11):

| **D10135C** | **D381** |
|---|---|
| G2 | pin 5 |

(e) If there is continuity, then do these steps:

1) Replace the stab trim servo motor, M1659.

These are the tasks:

Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801,

Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801.

2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
3) Do the Repair Confirmation at the end of this task.
4) If the Repair Confirmation is not satisfactory, then do these steps:

a) Replace FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

b) Do the Repair Confirmation at the end of this task.

(f) If there is no continuity, then continue.

1) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove this access panel:

| Number | Name/Location |
|---|---|
| 311AL | Access Door to Aft Unpressurized Compartment |

(c) Disconnect connector D381 from the servo motor, M1659.

(d) Do a continuity check between these pins of connector D10137C at the E1-1 shelf and connector D381 at the servo motor (WDM 22-13-11):

| **D10137C** | **D381** |
|---|---|
| G2 | pin 5 |

(e) If there is continuity, then do these steps:

1) Replace the stab trim servo motor, M1659.

These are the tasks:

Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801,

Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801.

2) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the Repair Confirmation at the end of this task.

4) If the Repair Confirmation is not satisfactory, then do these steps:

a) Replace FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

b) Do the Repair Confirmation at the end of this task.

(f) If there is no continuity, then continue.

1) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(4) Do this check of the stab trim cutout relay and trim limit switch:

(a) Make sure the stab trim cutout switch on the P8 panel is in the NORMAL position.

(b) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |

(c) Do a check for an open circuit between pins 5 and 7 of connector D381.

(d) If there is continuity between pins 5 and 7, then do these steps:

1) Replace the stab trim cutout relay, R384.
2) Reconnect connector D381 to the servo motor, M1659.
3) Do the Repair Confirmation at the end of this task.

(e) If there is an open circuit between pins 5 and 7, then continue.

(f) Put the stab trim cutout switch on the P8 panel in the CUTOUT position.

(g) Do a check for an open circuit between pins 5 and 7 of connector D381.

(h) If there is an open circuit between pins 5 and 7, then do these steps:

1) Remove the right lower side panel on the P8 control stand.
2) Disconnect connector D2485.
3) Do a wiring check between these pins at connector D381 at the servo motor and connector D2485 at the cutout relay (WDM 22-13-11):

| **D381** | | **D2485** |
|---|---|---|
| 5 | - - - - - - - - - - - - - - - - - - - - | D2 |

4) If there is continuity, then do these steps:
   a) Replace the stab trim cutout relay, R384.
   b) Re-connect connector D381 to the servo motor, M1659.
   c) Re-connect connector D2485.
   d) Re-install the right lower side panel on the P8 control stand.
   e) Do the Repair Confirmation at the end of this task.
5) If there is no continuity, then continue.
6) Re-connect connector D2485.
7) Re-install the right lower side panel on the P8 control stand.
8) Disconnect connector D4083P from the E1-1 shelf.
9) Do a wiring check between these pins at connector D381 at the servo motor and connector D4083P at the E1-1 shelf (WDM 22-13-11):

| **D381** | | **D4083P** |
|---|---|---|
| 5 | - - - - - - - - - - - - - - - - - - - - | A5 |

10) If there is continuity, then do these steps:
    a) Repair the wiring between the E1-1 shelf and the cutout relay.
    b) Re-connect connector D381 to the servo motor, M1659.
    c) Do the Repair Confirmation at the end of this task.
11) If there is no continuity, then do these steps:
    a) Replace the stab nose up limit switch, S144.

    These are the tasks:

    Stabilizer Trim Limit Switch Removal, AMM TASK 27-41-94-000-801,


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Stabilizer Trim Limit Switch Installation, AMM TASK 27-41-94-400-801.

b) Re-connect connector D381 to the servo motor, M1659.

c) Do the Repair Confirmation at the end of this task.

d) If the maintenace message still shows, correct the wiring problem at wire W3381-0005-20 or W3381-0010-20.

(i) If there is continuity between pins 5 and 7, then continue:

1) Re-connect connector D381 to the servo motor, M1659.

(5) Do this check of the column switching module, M1201:

(a) Disconnect connector D2485 from the stab trim cutout relay, R384.

(b) Disconnect connector D2257 at the column switching module (AMM TASK 27-41-51-000-801).

(c) Do a wiring check between these pins at connector D2257 at the column switching module and connector D2485 at the cutout relay (WDM 22-13-11):

| D2257 | | D2485 |
|---|---|---|
| 15 | - - - - - - - - - - - - - - - - - - - - | D3 |

(d) If you do not find a problem with the wiring, then do these steps:

1) Repair the wiring between the column switching module, M1201 and FCC-A, M1875.

2) Re-connect connector D2485 to the stab trim cutout relay, R384.

3) Re-connect connector D2257 at the column switching module (AMM TASK 27-41-51-000-801).

4) Do the Repair Confirmation at the end of this task.

(e) If you find a problem with the wiring, then continue.

(f) Do this wiring check between these pins at connector D2257 at the column switching module and connector D2485 at the cutout relay (WDM 22-13-11).

| D2257 | | D2485 |
|---|---|---|
| 13 | - - - - - - - - - - - - - - - - - - - - | D3 |

(g) If you do not find a problem with the wiring, then replace the column switching module, M1201.

These are the tasks:

Column Cutout Switch Removal, AMM TASK 27-41-51-000-801,

Column Cutout Switch Installation, AMM TASK 27-41-51-400-801.

(h) If you find problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connectors D2257 at the column switching module.

(i) Re-connect connectors D2485 to the cutout relay.

(j) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) Make sure this access panel is closed:

| Number | Name/Location |
|---|---|
| 311AL | Access Door to Aft Unpressurized Compartment |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(c) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < RUN SELECT LIBRARY TESTS

c) SPEED/STAB TRIM 32 >

2) If the maintenance message does not show, then you corrected the fault.

**—————— END OF TASK ——————**

**820. FCC, Remote Electoninc Unit Problem - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) REMOTE ELECTRONIC UNIT (J1C-K02)

(2) This maintenance message detects these problems:

(a) The flight control computer A (FCC-A) does not detect the remote electronic unit (REU).

(b) The flight control computer B (FCC-B) does not detect the remote electronic unit (REU).

B. Possible Causes

(1) Remote electronic unit (REU), M1353

(2) Wiring problem

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-14-11)

(2) (WDM 22-14-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Replace the REU, M1353.

These are the tasks:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Remote Electronics Unit (REU) Removal, AMM TASK 23-51-01-000-801,

Remote Electronics Unit (REU) Installation, AMM TASK 23-51-01-000-802.

(a) Do the Repair Confirmation at the end of this task.

1) If the Repair Confirmation is not satisfactory, then continue.

(2) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the REU, M1353. To remove it, do this task: Remote Electronics Unit (REU) Removal, AMM TASK 23-51-01-000-801.

(c) Do a wiring check between these pins of connector D10135C at the E1-1 shelf and connector D2501A at the E4-1 shelf (WDM 22-11-12):

| D2501A | | D10135C |
|---|---|---|
| pin F10 | - - - - - - - - - - - - - - - - - - | pin K2 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the REU, M1353. To install it, do this task: Remote Electronics Unit (REU) Installation, AMM TASK 23-51-01-000-802.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the REU, M1353. To install it, do this task: Remote Electronics Unit (REU) Installation, AMM TASK 23-51-01-000-802.

(3) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the REU, M1353. To remove it, do this task: Remote Electronics Unit (REU) Removal, AMM TASK 23-51-01-000-801.

(c) Do a wiring check between these pins of connector D10137C at the E1-4 shelf and connector D2501A at the E4-1 shelf (WDM 22-14-11):

| D2501A | | D10135C |
|---|---|---|
| pin F10 | - - - - - - - - - - - - - - - - - - | pin K2 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-B, M1877. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the REU, M1353. To install it, do this task: Remote Electronics Unit (REU) Installation, AMM TASK 23-51-01-000-802.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the REU, M1353. To install it, do this task: Remote Electronics Unit (REU) Installation, AMM TASK 23-51-01-000-802.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(4) Replace the applicable FCC, M1875 or M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < RUN SELECT LIBRARY TESTS

c) < 61 ALT ALERT

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**821. FCC, Stab Trim Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) STAB TRIM SERVO

(b) COL SW MODULE M1201

(2) This maintenance message detects these problems:

NOTE: The pins listed on the CDU indicate which fault you have.

(a) The flight control computer A (FCC-A) detects a stabilizer trim problem.

(b) The flight control computer B (FCC-B) detects a stabilizer trim problem.

B. Possible Causes

(1) Stab trim servo motor, M1659

(2) Stab trim cutout relay, R384

(3) Stab limit switch, S145

(4) Column switching module, M1201

(5) Wiring problem

(6) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Related Data

(1) (SSM 22-13-11)

(2) (WDM 22-13-11)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) The maintenance message shows when power is supplied to the FCC or DFCS BITE Procedure (22-11 TASK 801) was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC, Stab Trim Down Problem - Fault Isolation, 22-15 TASK 818.

(a) If the maintenance message shows, continue.

(2) Do this task: FCC, Stab Trim Up Problem - Fault Isolation, 22-15 TASK 819.

**———————— END OF TASK ————————**

**822. FCC Model ID Disagree - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) 737-600 (J1A-B07,C07)

(b) 737-700 (J1A-B07,C07)

(c) 737-800 (J1A-B07,C07)

(d) UNDEFINED AIRPLANE (J1A-B07,C07)

(2) The FCCs do not agree on the model identification.

B. Possible Causes

(1) FCC-A, M1875

(2) FCC-B, M1876

(3) Wiring problem

C. Related Data

(1) (SSM 22-11-75)

(2) (WDM 22-11-75)

D. Initial Evaluation

(1) The maintenance message shows when power is supplied to the FCC or DFCS BITE Procedure (22-11 TASK 801) was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, continue.

(2) Do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a continuity check between pins B7 and C7 of connector D10135A at the E1-1 shelf and structure ground (WDM 22-11-75).

(c) If you find continuity between pin B7 or C7 and structure ground, then do these steps:

1) Repair the wiring.

2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the Repair Confirmation at the end of this task.

(d) If you do not find a problem with the wiring, then continue.

(3) Do this check of the wiring:

(a) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a continuity check between pins B7 and C7 of connector D10137A at the E1-1 shelf and structure ground (WDM 22-11-75).

(c) If you find continuity between pin B7 or C7 and structure ground, then do these steps:

1) Repair the wiring.

2) Re-install FCC-B, M1877. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) Push the INDEX button on the CDU.

(b) Push the line select key (LSK) adjacent to < DFCS.

1) If the maintenance message does not show before the CDU prompts you for the test type, then you corrected the fault.

**———————— END OF TASK ————————**

**823. Program Pin Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A SOP PARITY (J1A-K08)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999**

1) For this message, do this task: Program Pin Problem - Fault Isolation, 22-16 TASK 831.

**HAP ALL**

(b) FCC-B SOP PARITY (J1A-K08)

**HAP 031-054, 101-999**

1) For this message, do this task: Program Pin Problem - Fault Isolation, 22-16 TASK 831.

**HAP ALL**

(c) ALT ALERT (J1A-A08,B08)

NOTE: STD or OPT # will also be shown in the maintenance message.

(d) A/S WARN (J1A-E07)

(e) AIRPLANE CONFIG STD (J1A-C08,D08,E08)

NOTE: STD or # will also be shown in the maintenance message.

(f) G/S BEFORE LOC (J1A-J07)

(g) CWS WARN (J1A-G08)

(h) CWS OVERRIDE (J1A-F08)

(i) FAA/JAA (J1A-G07)

(j) SPD/ALT INTERVENTION (J1A-J08)

(k) HDG SEL TOGA (J1A-H06)

(l) WINGS LEVEL TOGA (J1A-H06)

(m) DUAL CHAN (J1A-F07)

(n) GPS (J1A-A07)

(o) MLS (J1A-H08)

(2) The FCCs do not agree on the program pin in the maintenance message.

B. Possible Causes

(1) FCC-A switch module, M1992

(2) FCC-B switch module, M1993

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem

C. Related Data

(1) (SSM 22-11-75)

(2) (WDM 22-11-75)

D. Initial Evaluation

(1) The maintenance message shows when power is supplied to the FCC or DFCS BITE Procedure (22-11 TASK 801) was attempted.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Fault Isolation Procedure

(1) Push the LSK adjacent to CONTINUE on the CDU.

(2) Do this task: AMM TASK 22-11-00-740-814.

(3) If the channel A value does not match the value in the Option Pins Test, then do these steps:

(a) Use the wiring diagram (WDM 22-11-75) to determine which pin or pins are incorrect.

NOTE: The pin or pins should match the pins listed in the maintenance message.

(b) Loosen the screws on the M1992 switch module to get access to the switches.

(c) If the switches are not in the correct position, then do these steps.

1) Put the switches in the correct position.

2) Re-install the switch cover.

3) Do the Repair Confirmation at the end of this task.

(d) If the switches are in the correct position, then continue.

(e) Re-install the switch cover.

(f) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(g) Disconnect the appropriate wires from the switch module, M1992 (WDM 22-11-75).

(h) Do a continuity check between the FCC A pins shown in the maintenance message and the appropriate wires at the switch, M1992.

(i) If there is a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801

3) Re-connect the wire to the switch module, M1992.

4) Do the Repair Confirmation at the end of this task.

(j) If you do not find a problem with the wiring, then continue.

1) Replace the switch module, M1992.

2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the Repair Confirmation at the end of this task.

a) If the maintenance message shows, then continue.

(4) If the channel B value does not match the value in the Option Pins Test, then do these steps:

(a) Use the wiring diagram (WDM 22-11-75) to determine which pin or pins are incorrect.

NOTE: The pin or pins should match the pins listed in the maintenance message.

(b) Loosen the screws on the M1993 switch module to get access to the switches.

(c) If the switches are not in the correct position, then do these steps.

1) Put the switches in the correct position.

2) Re-install the switch cover.

3) Do the Repair Confirmation at the end of this task.

(d) If the switches are in the correct position, then continue.

(e) Re-install the switch cover.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(f) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(g) Disconnect the appropriate wires from the switch module, M1993 (WDM 22-11-75).

(h) Do a continuity check between the FCC B pins shown in the maintenance message and the appropriate wires at the switch, M1993.

(i) If there is a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-connect the wire to the switch module, M1993.

4) Do the Repair Confirmation at the end of this task.

(j) If you do not find a problem with the wiring, then continue.

1) Replace the switch module, M1993.

2) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the Repair Confirmation at the end of this task.

a) If the maintenance message shows, then continue.

(5) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, continue.

F. Repair Confirmation

(1) Do these steps:

(a) Push the INDEX button on the CDU.

(b) Push the Line Select Key (LSK) adjacent to <DFCS.

1) If the maintenance message does not show before the CDU prompts you for the test type, then you corrected the fault.

**——————— END OF TASK ———————**

## 824. FCC Synchronization Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) SYNCHRONIZATION

(2) There ia a problem with the test synch lines between the FCCs.

B. Possible Causes

(1) FCC-A, M1875

(2) FCC-B, M1876

(3) Wiring problem

C. Related Data

(1) (SSM 22-11-11)

(2) (WDM 22-11-11)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) The maintenance message shows when power is supplied to the FCC or DFCS BITE Procedure (22-11 TASK 801) was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(c) Do a check of the connectors and sockets for bent or broken pins, dirt and damage.

(d) Do a wiring check between pin E11 of connector D10135A at the E1-1 shelf and pin E11 of connector D10137B at the E1-4 shelf (WDM 22-11-11):

| D10135A | | D10137B |
|---|---|---|
| pin E11 | - - - - - - - - - - - - - - - - - - | pin E11 |

(e) If you find a problem with the wiring, do these steps:

1) Repair the wiring.

2) Re-install the FCCs, M1875 and M1876. To install them, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

(g) Do a wiring check between pin E11 of connector D10135B at the E1-1 shelf and pin E11 of connector D10137A at the E1-4 shelf (WDM 22-11-11):

| D10135B | | D10137A |
|---|---|---|
| pin E11 | - - - - - - - - - - - - - - - - - - | pin E11 |

(h) If you find a problem with the wiring, do these steps:

1) Repair the wiring.

2) Re-install the FCCs, M1875 and M1876. To install them, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the Repair Confirmation at the end of this task.

(2) Replace FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(3) Replace FCC-B, M1876.

These are the tasks:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) Push the INDEX button on the CDU.

(b) Push the Line Select Key (LSK) adjacent to < DFCS.

1) If the maintenance message does not show before the CDU prompts you for the test type, then you corrected the fault.

**——————— END OF TASK ———————**

**825. FCC Cross Channel Communication Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) CROSS CHANNEL TEST FAIL

(b) FCC-A (J1B-B10,A10)

(c) FCC-A (J1B-E10,D10)

(d) FCC-B (J1B-B10,A10)

(e) FCC-B (J1B-E10,D10)

(2) There is a problem with the cross channel bus lines between the FCCs.

B. Possible Causes

(1) FCC-A, M1875

(2) FCC-B, M1876

(3) Wiring problem

C. Related Data

(1) (SSM 22-11-11)

(2) (SSM 22-11-51)

(3) (WDM 22-11-11)

(4) (WDM 22-11-51)

D. Initial Evaluation

(1) The maintenance message shows when power is supplied to the FCC or DFCS BITE Procedure (22-11 TASK 801) was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Fault Isolation Procedure

(1) Do this check of the wiring:

(a) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(c) Do a check of the connectors and sockets for bent or broken pins, dirt and damage.

(d) Do a wiring check between these pins of the FCC-A connectors at the E1-1 shelf and the FCC-B connectors at the E1-4 shelf for the applicable maintenance message (WDM 22-11-11 and WDM 22-11-51):

| MAINT MESSAGE | FCC-A | | FCC-B |
|---|---|---|---|
| **CROSS CHANNEL** | **D10315A** | | **D10137B** |
| | pin H11 | - - - - - - - - - - - - - - - - - | pin H11 |
| **TEST FAIL** | **D10135B** | | **D10137A** |
| | pin H11 | - - - - - - - - - - - - - - - - - | pin H11 |
| **FCC-A (J1B-B10, A10)** | **D10135A** | | **D10137B** |
| | pin A10 | - - - - - - - - - - - - - - - - - | pin A10 |
| | pin B10 | - - - - - - - - - - - - - - - - - | pin B10 |
| **FCC-A (J1B-E10, D10)** | **D10135A** | | **D10137B** |
| | pin D10 | - - - - - - - - - - - - - - - - - | pin D10 |
| | pin B10 | - - - - - - - - - - - - - - - - - | pin B10 |
| **FCC-B (J1B-B10, A10)** | **D10135B** | | **D10137A** |
| | pin A10 | - - - - - - - - - - - - - - - - - | pin A10 |
| | pin B10 | - - - - - - - - - - - - - - - - - | pin B10 |
| **FCC-B (J1B-E10, D10)** | **D10135B** | | **D10137A** |
| | pin D10 | - - - - - - - - - - - - - - - - - | pin D10 |
| | pin E10 | - - - - - - - - - - - - - - - - - | pin E10 |

(e) If you find a problem with the wiring, do these steps:

1) Repair the wiring.

2) Re-install the FCCs, M1875 and M1876. To install them, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

(2) Replace FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(3) Replace FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) Push the INDEX button on the CDU.

(b) Push the Line Select Key (LSK) adjacent to < DFCS.

1) If the maintenance message does not show before the CDU prompts you for the test type, then you corrected the fault.

**———————— END OF TASK ————————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 801. Airplane has Pitch Oscillation - Fault Isolation

A. Description

(1) This task is for this observed fault:

(a) Airplane has pitch oscillation (porpoises) with the autopilot engaged.

B. Possible Causes

(1) Elevator Rigging

(2) Stabilizer Rigging

(3) FCC-A, M1875

(4) FCC-B, M1876

(5) Elevator position sensor, M929

(6) Stabilizer position sensor, M1192

(7) Neutral shift sensor, M958

(8) Wiring problem

(9) ADIRU, M1749 (left) or M1752 (right)

C. Fault Isolation Procedure

(1) Do this task: Stabilizer Surface Has Excessive Play - Fault Isolation, 27-41 TASK 813.

(a) If you find a problem, do these steps;

1) Complete the task to correct the problem.

2) If the problem does not occur on subsequent flights, then you corrected the fault.

3) If you do not find a problem, then continue.

(2) Do this task: Elevator Does Not Move Correctly - Fault Isolation, 27-31 TASK 810.

(a) If you find a problem, do these steps;

1) Complete the task to correct the problem.

2) If the problem does not occur on subsequent flights, then you corrected the fault.

3) If you do not find a problem, then continue.

(3) Do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.

(a) If you find any maintenance messages, then do the Fault Isolation tasks for the maintenance messages you find.

1) If the problem does not occur on subsequent flights, then you corrected the fault.

2) If you do not find a problem, then continue.

(4) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) Do the Fault Isolation tasks for the maintenance messages you find.

1) If the problem does not occur on subsequent flights, then you corrected the fault.

**END OF TASK**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 802. Control Columns Moved when Autopilot Engaged - Fault Isolation

A. Description

(1) The control columns move when pilot engages the autopilot.

B. Possible Causes

(1) Elevator position sensor rigging problem.

(2) Stabilizer position sensor rigging problem.

(3) Autopilot Elevator Actuator problem.

C. Initial Evaluation

(1) Make sure that the autopilot stab trim cutout switch, on the control stand, is in the NORMAL position.

(2) Make sure that the VHF NAV and IRS switches, on the P5 forward overhead panel, are in the NORMAL positions.

(3) Set the left and right IRS select switches, on the P5 aft overhead panel, to the ALIGN or NAV position.

**WARNING:** KEEP PERSONS AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES. THE AILERONS, ELEVATORS, RUDDER, FLAPS, SLATS, SPOILERS, STABILIZER AND NOSE GEAR CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Supply hydraulic power to hydraulic systems A and B. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(5) Do this manual test:

(a) Push the CMD A or CMD B autopilot engage switch on the mode control panel to engage the autopilot.

(b) Make sure that the CMD A or CMD B autopilot engage switch light comes on.

(c) Make sure that the control columns do not move when you engage the autopilot.

(d) If the control columns move when you engage the autopilot, then do the Fault Isolation Procedure below.

(e) If the control columns do not move when you engage the autopilot, then there was an intermittent fault.

(f) Push the captain or first officer autopilot disengage switch on the control wheel to disengage the autopilot.

(g) Push the captain or first officer autopilot disengage switch again to stop the autopilot disengage warning sound.

(6) Remove hydraulic power from hydraulic systems A and B. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

D. Fault Isolation Procedure

(1) Do the adjustment for the elevator position sensor:

(a) Do this task: Elevator Position Sensor Adjustment, AMM TASK 22-11-30-820-801.

(b) Do this task: Elevator Position Sensor Test, AMM TASK 22-11-30-710-801.

(c) Do the Repair Confirmation at the end of this task.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) If the Repair Confirmation is not satisfactory, then continue.

(2) Do the adjustment for the stabilizer position sensor:

(a) Do this task: Stabilizer Position Sensor Adjustment, AMM TASK 22-11-31-820-801.

(b) Do this task: Stabilizer Position Sensor Test, AMM TASK 22-11-31-710-801.

(c) Do the Repair Confirmation at the end of this task.

(d) If the Repair Confirmation is not satisfactory, then continue.

(3) Do the adjustment for the autopilot elevator actuator.

(a) Do this task:Autopilot Elevator Actuator Adjustment, AMM TASK 22-11-26-820-801

(b) Do the Repair Confirmation at the end of this task.

E. Repair Confirmation

(1) Make sure that the autopilot stab trim cutout switch, on the control stand, is in the NORMAL position.

(2) Make sure that the VHF NAV and IRS switches, on the P5 forward overhead panel, are in the NORMAL positions.

(3) Set the left and right IRS select switches, on the P5 aft overhead panel, to the ALIGN or NAV position.

**WARNING:** KEEP PERSONS AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES. THE AILERONS, ELEVATORS, RUDDER, FLAPS, SLATS, SPOILERS, STABILIZER AND NOSE GEAR CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Supply hydraulic power to hydraulic systems A and B. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(5) Do this manual test:

(a) Push the CMD A or CMD B autopilot engage switch on the mode control panel to engage the autopilot.

(b) Make sure that the CMD A or CMD B autopilot engage switch light comes on.

(c) Make sure that the control columns do not move when you engage the autopilot.

(d) If the control columns do not move when you engage the autopilot, then you corrected the fault.

(e) Push the captain or first officer autopilot disengage switch on the control wheel to disengage the autopilot.

(f) Push the captain or first officer autopilot disengage switch again to stop the autopilot disengage warning sound.

(6) Remove hydraulic power from hydraulic systems A and B. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

**END OF TASK**

**803. Control Wheels Moved when Autopilot Engaged - Fault Isolation**

A. Description

(1) The control wheels move when pilot engages the autopilot.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

B. Possible Causes

(1) Aileron position sensor rigging problem.

(2) Autopilot Aileron Actuator problem.

C. Initial Evaluation

(1) Make sure that the autopilot stab trim cutout switch, on the control stand, is in the NORMAL position.

(2) Make sure that the VHF NAV and IRS switches, on the P5 forward overhead panel, are in the NORMAL positions.

(3) Set the left and right IRS select switches, on the P5 aft overhead panel, to the ALIGN or NAV position.

**WARNING:** KEEP PERSONS AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES. THE AILERONS, ELEVATORS, RUDDER, FLAPS, SLATS, SPOILERS, STABILIZER AND NOSE GEAR CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Supply hydraulic power to hydraulic systems A and B. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(5) Do this manual test:

(a) Push the CMD A or CMD B autopilot engage switch on the mode control panel to engage the autopilot.

(b) Make sure that the CMD A or CMD B autopilot engage switch light comes on.

(c) Make sure that the control wheels do not move when you engage the autopilot.

(d) If the control wheels move when you engage the autopilot, then do the Fault Isolation Procedure below.

(e) If the control wheels do not move when you engage the autopilot, then there was an intermittent fault.

(f) Push the captain or first officer autopilot disengage switch on the control wheel to disengage the autopilot.

(g) Push the captain or first officer autopilot disengage switch again to stop the autopilot disengage warning sound.

(6) Remove hydraulic power from hydraulic systems A and B. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

D. Fault Isolation Procedure

(1) Do the adjustment for the aileron position sensor:

(a) Do this task: Aileron Position Sensor Adjustment, AMM TASK 22-11-29-820-801.

(b) Do this task: Aileron Position Sensor Test, AMM TASK 22-11-29-710-801.

(c) Do the Repair Confirmation at the end of this task.

(d) If the Repair Confirmation is not satisfactory, then continue.

(2) Do the adjustment for the autopilot aileron actuator.

(a) Do this task: Autopilot Aileron Actuator Adjustment, AMM TASK 22-11-25-820-801

(b) Do the Repair Confirmation at the end of this task.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Repair Confirmation

(1) Make sure that the autopilot stab trim cutout switch, on the control stand, is in the NORMAL position.

(2) Make sure that the VHF NAV and IRS switches, on the P5 forward overhead panel, are in the NORMAL positions.

(3) Set the left and right IRS select switches, on the P5 aft overhead panel, to the ALIGN or NAV position.

**WARNING:** KEEP PERSONS AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES. THE AILERONS, ELEVATORS, RUDDER, FLAPS, SLATS, SPOILERS, STABILIZER AND NOSE GEAR CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Supply hydraulic power to hydraulic systems A and B. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(5) Do this manual test:

(a) Push the CMD A or CMD B autopilot engage switch on the mode control panel to engage the autopilot.

(b) Make sure that the CMD A or CMD B autopilot engage switch light comes on.

(c) Make sure that the control wheels do not move when you engage the autopilot.

(d) If the control wheels do not move when you engage the autopilot, then you corrected the fault.

(e) Push the captain or first officer autopilot disengage switch on the control wheel to disengage the autopilot.

(f) Push the captain or first officer autopilot disengage switch again to stop the autopilot disengage warning sound.

(6) Remove hydraulic power from hydraulic systems A and B. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

**END OF TASK**

**827. A/B Index Disagreement - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) A/B Index (J1B-5A)

B. Possible Causes

(1) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(2) Wiring problem

C. Related Data

(1) (SSM 22-11-75)

(2) (WDM 22-11-75)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) The maintenance message shows when power is supplied to the FCC or DFCS BITE Procedure (22-11 TASK 801) was attempted.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Push the LSK adjacent to CONTINUE on the CDU.

(2) Replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(3) Do the Repair Confirmation at the end of this task.

(a) If the maintenance message shows, then continue.

(4) Replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(5) Do the Repair Confirmation at the end of this task.

(a) If the maintenance message shows, then continue.

(6) Use (WDM 22-11-75) to determine the correct wiring for A Index input for FCC-A and FCC-B.

| Connector No. | Pin No. | Signal Name |
|---|---|---|
| D10135B | A5 | A Index |
| D10137B | A5 | A Index |

(a) If you found a problem with the wiring for FCC-A, then do these steps:

1) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Repair the wiring.

3) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801

4) Do the Repair Confirmation at the end of this task.

a) If the maintenance message shows, then continue.

(b) If you found a problem with the wiring for FCC-B, then do these steps:

1) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Repair the wiring.

3) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801

4) Do the Repair Confirmation at the end of this task.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F. Repair Confirmation

(1) Do these steps:

(a) Push the INDEX button on the CDU.

(b) Push the Line Select Key (LSK) adjacent to <DFCS.

1) If the maintenance message does not show before the CDU prompts you for the test type, then you corrected the fault.

**——————— END OF TASK ———————**

**828. FCC Pitch Sensor Excitation Power Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1A-B15,A15)

(b) FCC-B (J1A-B15,A15)

(2) The flight control computer A (FCC-A) or FCC-B detects problem with the pitch sensor excitation power output.

B. Possible Causes

(1) Flight control computer A (FCC-A), M1875

(2) Flight control computer B (FCC-B), M1876

(3) Elevator surface position sensor, M929

(4) Neutral shift sensor, M958

(5) Stabilizer position sensor, M1192

(6) A/P elevator actuator, M1020

(7) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

D. Related Data

(1) (SSM 22-12-31)

(2) (WDM 22-12-31)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) If the maintenance message is on channel A, then do these steps:

(a) Disconnect the elevator surface position sensor connector, D1711.

NOTE: You can find the elevator surface position sensor (M929) on the aft bulkhead station 1156. There are two connectors for the elevator surface position sensor. The connector D1711 is for the FCC-A.

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

(c) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1711.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(d) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1711, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1711 at STA 1158, WL 258, RBL 10 (WDM 22-12-31).

| **D10135A** | | **D1711** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1711.

c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(e) If there is 14V AC (±2) between pins 2 and 1 of the connector D1711, then do these steps:

1) Replace the elevator surface position sensor, M929. To replace it,



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

These are the tasks:

Elevator Position Sensor Removal, AMM TASK 22-11-30-000-801,

Elevator Position Sensor Installation, AMM TASK 22-11-30-400-801.

2) Do the Repair Confirmation at the end of this task.

(f) If the maintenance message continues to show, then continue.

(g) Disconnect the neutral shift sensor connector, D1829.

NOTE: You can find the neutral shift sensor (M958) on the forward right side of the feel and centering unit. The feel and centering unit is on the aft bulkhead station 1156. There are two connectors for the neutral shift sensor. The connector D1829 is for the FCC-A.

(h) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1829.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1829, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1829 at STA 1161, WL 268, LBL 8 (WDM 22-12-31).

| **D10135A** | | **D1829** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

(k) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1829.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(l) If there is 14V AC (±2) between pins 2 and 1 of the connector D1829, then do these steps:

1) Replace the neutral shift sensor, M958. To replace it,

These are the tasks:

Elevator Neutral Shift Sensor Removal, AMM TASK 22-11-14-000-801,

Elevator Neutral Shift Sensor Installation, AMM TASK 22-11-14-400-801.

2) Do the Repair Confirmation at the end of this task.

(m) If the maintenance message continues to show, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(n) Disconnect the stabilizer position sensor connector, D2205.

NOTE: You can find the stabilizer position sensor (M1192) on the aft bulkhead station 1156. There are two connectors for the elevator surface position sensor. The connector D2205 is for the FCC-A.

(o) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

(p) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D2205.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(q) If there is not 14V AC (±2) between pins 2 and 1 of the connector D2205, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
2) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D2205 at STA 1164, WL 268, LBL 8 (WDM 22-12-31).

| **D10135A** | | **D2205** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect the connector, D2205.
   c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
   d) Do the Repair Confirmation at the end of this task.

(r) If there is 14V AC (±2) between pins 2 and 1 of the connector D2205, then do these steps:

1) Replace the stabilizer position sensor, M1192. To replace it,

   These are the tasks:

   Stabilizer Position Sensor Removal, AMM TASK 22-11-31-000-801,

   Stabilizer Position Sensor Installation, AMM TASK 22-11-31-400-801.
2) Do the Repair Confirmation at the end of this task.

(s) If the maintenance message continues to show, then continue.

(t) Disconnect the A/P elevator actuator connector, D1681.

NOTE: You can find the A/P elevator actuator (M1020) on the aft bulkhead station 1156. The connector D1681 is for the FCC-A.

(u) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(v) Do a check for 14V AC (±2) between pins 9 and 10 of the connector D1681.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(w) If there is not 14V AC (±2) between pins 9 and 10 of the connector D1681, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D1681 at STA 1161, WL 287, LBL 7 (WDM 22-12-31).

| D10135A | | D1681 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 10 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 9 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1681.

c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(x) If there is 14V AC (±2) between pins 9 and 10 of the connector D1681, then do these steps:

1) Replace the A/P elevator actuator, M1020. To replace it,

These are the tasks:

Autopilot Elevator Actuator Removal, AMM TASK 22-11-26-000-801,

Autopilot Elevator Actuator Installation, AMM TASK 22-11-26-400-801.

2) Do the Repair Confirmation at the end of this task.

(3) If the maintenance message is on channel B, then do these steps:

(a) Disconnect the elevator surface position sensor connector, D1679.

NOTE: You can find the elevator surface position sensor (M929) on the aft bulkhead station 1156. There are two connectors for the elevator surface position sensor. The connector D1679 is for the FCC-B.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(c) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1679.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(d) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1679, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137A at the E1-1 shelf and connector D1679 at STA 1158, WL 258, RBL 10 (WDM 22-12-41).

| D10137A | | D1679 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1679.

c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(e) If there is 14V AC (±2) between pins 2 and 1 of the connector D1679, then do these steps:

1) Replace the elevator surface position sensor, M929. To replace it,

These are the tasks:

Elevator Position Sensor Removal, AMM TASK 22-11-30-000-801,

Elevator Position Sensor Installation, AMM TASK 22-11-30-400-801.

2) Do the Repair Confirmation at the end of this task.

(f) If the maintenance message continues to show, then continue.

(g) Disconnect the neutral shift sensor connector, D1677.

NOTE: You can find the neutral shift sensor (M958) on the forward right side of the feel and centering unit. The feel and centering unit is on the aft bulkhead station 1156. There are two connectors for the neutral shift sensor. The connector D1677 is for the FCC-B.

(h) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1677.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1677, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137A at the E1-1 shelf and connector D1677 at STA 1161, WL 268, LBL 8 (WDM 22-12-41).

| D10137A | | D1677 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(k) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-connect the connector, D1677.
3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(l) If there is 14V AC (±2) between pins 2 and 1 of the connector D1677, then do these steps:

1) Replace the neutral shift sensor, M958. To replace it,

These are the tasks:

Elevator Neutral Shift Sensor Removal, AMM TASK 22-11-14-000-801,

Elevator Neutral Shift Sensor Installation, AMM TASK 22-11-14-400-801.

2) Do the Repair Confirmation at the end of this task.

(m) If the maintenance message continues to show, then continue.

(n) Disconnect the stabilizer position sensor connector, D2207.

NOTE: You can find the stabilizer position sensor (M1192) on the aft bulkhead station 1156. There are two connectors for the elevator surface position sensor. The connector D2207 is for the FCC-B.

(o) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(p) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D2207.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(q) If there is not 14V AC (±2) between pins 2 and 1 of the connector D2207, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
2) Do a wiring check between these pins of connector D10137A at the E1-1 shelf and connector D2207 at STA 1164, WL 268, LBL 8 (WDM 22-12-41).

| **D10137A** | | **D2207** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect the connector, D2207.
   c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
   d) Do the Repair Confirmation at the end of this task.

(r) If there is 14V AC (±2) between pins 2 and 1 of the connector D2207, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Replace the stabilizer position sensor, M1192. To replace it,

These are the tasks:

Stabilizer Position Sensor Removal, AMM TASK 22-11-31-000-801,

Stabilizer Position Sensor Installation, AMM TASK 22-11-31-400-801.

2) Do the Repair Confirmation at the end of this task.

(s) If the maintenance message continues to show, then continue.

(t) Disconnect the A/P elevator actuator connector, D1687.

NOTE: You can find the A/P elevator actuator (M1022) on the aft bulkhead station 1156. The connector D1687 is for the FCC-B.

(u) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(v) Do a check for 14V AC (±2) between pins 9 and 10 of the connector D1687.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(w) If there is not 14V AC (±2) between pins 9 and 10 of the connector D1687, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137A at the E1-1 shelf and connector D1687 at STA 1161, WL 287, LBL 7 (WDM 22-12-41).

| **D10137A** | | **D1687** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 10 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 9 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1687.

c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(x) If there is 14V AC (±2) between pins 9 and 10 of the connector D1687, then do these steps:

1) Replace the A/P elevator actuator, M1022. To replace it,

These are the tasks:

Autopilot Elevator Actuator Removal, AMM TASK 22-11-26-000-801,

Autopilot Elevator Actuator Installation, AMM TASK 22-11-26-400-801.

2) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ROLL SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**829. FCC Roll Sensor Excitation Power Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) FCC-A (J1B-B15,A15)

(b) FCC-B (J1B-B15,A15)

(2) The flight control computer A (FCC-A) or FCC-B detects problem with the roll sensor excitation power output.

B. Possible Causes

(1) Flight control computer A (FCC-A), M1875

(2) Flight control computer B (FCC-B), M1876

(3) Aileron position sensor, M937

(4) Aileron A/P Actuator - A, M943

(5) Spoiler - 4 position sensor, M931

(6) Spoiler - 9 position sensor, M930

(7) A/P Aileron Actuator, M943

(8) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

D. Related Data

(1) (SSM 22-11-31)

(2) (WDM 22-11-31)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance messages shows, then continue.

(2) If the maintenance message is on channel A, then do these steps:

(a) Disconnect the aileron position sensor connector, D1709.

NOTE: You can find the aileron position sensor (M937) on the left aileron torque tube. There are two connectors for the aileron surface position sensor. The connector D1709 is for the FCC-A.

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

(c) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1709.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(d) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1709, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1709 at STA 666, WL 187, LBL 20 (WDM 22-11-31).

| **D10135B** | | **D1709** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1709.

c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(e) If there is 14V AC (±2) between pins 2 and 1 of the connector D1709, then do these steps:

1) Replace the aileron position sensor, M937. To replace it,



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

These are the tasks:

Aileron Position Sensor Removal, AMM TASK 22-11-29-000-801,

Aileron Position Sensor Installation, AMM TASK 22-11-29-400-801.

2) Do the Repair Confirmation at the end of this task.

(f) If the maintenance message continues to show, then continue.

(g) Disconnect the spoiler 4 position sensor connector, D1695.

NOTE: You can find the spoiler 4 position sensor (M931) on the left wing spoiler 4. There are two connectors for the spoiler 4 position sensor. The connector D1695 is for the FCC-A.

(h) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1695.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1695, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1695 at spoiler 4 (WDM 22-11-31).

| **D10135B** | | **D1695** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

(k) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector, D1695.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(l) If there is 14V AC (±2) between pins 2 and 1 of the connector D1695, then do these steps:

1) Replace the spoiler 4 position sensor, M931. To replace it,

These are the tasks:

Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.

2) Do the Repair Confirmation at the end of this task.

(m) If the maintenance message continues to show, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(n) Disconnect the spoiler 9 position sensor connector, D1697.

NOTE: You can find the spoiler 9 position sensor (M1192) on the right wing spoiler 9. There are two connectors for the spoiler 9 position sensor. The connector D1697 is for the FCC-A.

(o) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |

(p) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1697.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(q) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1697, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
2) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1697 at spoiler 9 (WDM 22-11-31).

| **D10135B** | | **D1697** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect the connector, D1697.
   c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
   d) Do the Repair Confirmation at the end of this task.

(r) If there is 14V AC (±2) between pins 2 and 1 of the connector D1697, then do these steps:

1) Replace the spoiler 9 position sensor, M930. To replace it,

   These are the tasks:

   Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

   Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.
2) Do the Repair Confirmation at the end of this task.

(s) If the maintenance message continues to show, then continue.

(t) Disconnect the A/P aileron actuator connector, D1827.

NOTE: You can find the A/P elevator actuator (M943) in the left main landing gear well, outboard of the control units for the aileron. The connector D1827 is for the FCC-A.

(u) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 2 | C01045 | AFCS SYS A FCC DC |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(v) Do a check for 14V AC (±2) between pins 9 and 10 of the connector D1827.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(w) If there is not 14V AC (±2) between pins 9 and 10 of the connector D1827, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D1827 at STA 669 (WDM 22-11-31).

| D10135B | | D1827 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 10 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 9 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1827.

c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(x) If there is 14V AC (±2) between pins 9 and 10 of the connector D1827, then do these steps:

1) Replace the A/P aileron actuator, M943. To replace it,

These are the tasks:

Autopilot Aileron Actuator Removal, AMM TASK 22-11-25-000-801,

Autopilot Aileron Actuator Installation, AMM TASK 22-11-25-400-801.

2) Do the Repair Confirmation at the end of this task.

(3) If the maintenance message is on channel B, then do these steps:

(a) Disconnect the aileron position sensor connector, D1707.

NOTE: You can find the aileron position sensor (M937) on the left aileron torque tube. There are two connectors for the aileron position sensor. The connector D1707 is for the FCC-B.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(c) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1707.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(d) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1707, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137B at the E1-1 shelf and connector D1707 at STA 666, WL 187, LBL 20 (WDM 22-11-31).

| D10137B | | D1707 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1707.

c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(e) If there is 14V AC (±2) between pins 2 and 1 of the connector D1707, then do these steps:

1) Replace the aileron position sensor, M937. To replace it,

These are the tasks:

Aileron Position Sensor Removal, AMM TASK 22-11-29-000-801,

Aileron Position Sensor Installation, AMM TASK 22-11-29-400-801.

2) Do the Repair Confirmation at the end of this task.

(f) If the maintenance message continues to show, then continue.

(g) Disconnect the spoiler 4 position sensor connector, D1699.

NOTE: You can find the spoiler 4 position sensor (M931) on the left wing spoiler 4. There are two connectors for the spoiler 4 position sensor. The connector D1699 is for the FCC-B.

(h) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(i) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1699.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(j) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1699, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137B at the E1-1 shelf and connector D1699 at spoiler 4 (WDM 22-11-31).

| D10137B | | D1699 |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

(k) If you find a problem with the wiring, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Repair the wiring.
2) Re-connect the connector, D1699.
3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(l) If there is 14V AC (±2) between pins 2 and 1 of the connector D1699, then do these steps:

1) Replace the spoiler 4 position sensor, M931. To replace it,

These are the tasks:

Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.

2) Do the Repair Confirmation at the end of this task.

(m) If the maintenance message continues to show, then continue.

(n) Disconnect the spoiler 9 position sensor connector, D1701.

NOTE: You can find the spoiler 9 position sensor (M930) on the right wing spoiler 9. There are two connectors for the spoiler 9 position sensor. The connector D1701 is for the FCC-B.

(o) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(p) Do a check for 14V AC (±2) between pins 2 and 1 of the connector D1701.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(q) If there is not 14V AC (±2) between pins 2 and 1 of the connector D1701, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
2) Do a wiring check between these pins of connector D10137B at the E1-1 shelf and connector D1701 at spoiler 9 (WDM 22-11-31).

| **D10137B** | | **D1701** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 2 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 1 |

3) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect the connector, D1701.
   c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
   d) Do the Repair Confirmation at the end of this task.

(r) If there is 14V AC (±2) between pins 2 and 1 of the connector D1701, then do these steps:

1) Replace the spoiler 9 position sensor, M930. To replace it,



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

These are the tasks:

Spoiler Position Sensor Removal, AMM TASK 22-11-27-000-801,

Spoiler Position Sensor Installation, AMM TASK 22-11-27-400-801.

2) Do the Repair Confirmation at the end of this task.

(s) If the maintenance message continues to show, then continue.

(t) Disconnect the A/P aileron actuator connector, D1691.

NOTE: You can find the A/P elevator actuator (M1024) in the left main landing gear well, outboard of the control units for the aileron. The connector D1691 is for the FCC-B.

(u) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |

(v) Do a check for 14V AC (±2) between pins 9 and 10 of the connector D1691.

NOTE: The 14V AC (±2) comes from the FCC. If there is a FCC failure, correct the FCC problem first before you do this check.

(w) If there is not 14V AC (±2) between pins 9 and 10 of the connector D1691, then do these steps:

NOTE: You only see 7V AC (±2) if you measure from pin 2 or pin 1 to structure ground.

1) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a wiring check between these pins of connector D10137B at the E1-1 shelf and connector D1691 at STA 670 (WDM 22-11-31).

| **D10137B** | | **D1691** |
|---|---|---|
| pin B15 | - - - - - - - - - - - - - - - - | pin 10 |
| pin A15 | - - - - - - - - - - - - - - - - | pin 9 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector, D1691.

c) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

d) Do the Repair Confirmation at the end of this task.

(x) If there is 14V AC (±2) between pins 9 and 10 of the connector D1691, then do these steps:

1) Replace the A/P aileron actuator, M1024. To replace it,

These are the tasks:

Autopilot Aileron Actuator Removal, AMM TASK 22-11-25-000-801,

Autopilot Aileron Actuator Installation, AMM TASK 22-11-25-400-801.

2) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ROLL SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**830. FCC ILS Receiver Tune/Test Inhibit Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) FCC-A (J1B-G07)

(b) FCC-B (J1B-G07)

(2) FCC-A (J1B-G07): FCC-A does not receive the wrap around ILS tune/test inhibit discrete output during the ground test.

(3) FCC-B (J1B-G07): FCC-B does not receive the wrap around ILS tune/test inhibit discrete output during the ground test.

B. Possible Causes

(1) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(2) Multi-mode receiver (MMR), M2104 (MMR-1) or M2105 (MMR-2)

(3) Navigation control panel-L, P8-25 or navigation control panel-R, P8-26

(4) Radio altimeter transceiver-1, M1735 or radio altimeter transceiver-2, M1736

(5) Wiring problem.

C. Related Data

(1) (SSM 22-11-18)

(2) (WDM 22-11-18)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the FCC test.

(c) If the maintenance message shows, then do the applicable Fault Isolation Procedure below.

(d) If maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure - Maintenance Message Channel A

(1) Replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(2) Replace the MMR-1, M2104.

These are the tasks:

Receiver for ILS - Removal, AMM TASK 34-31-42-000-801,

Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) Replace the navigation control panel-L, P8-25.

These are the tasks:

Navigation Control Panel Removal, AMM TASK 34-31-52-000-801,

Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) Replace the radio altimeter transceiver-1, M1735.

These are the tasks:

Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Removal, AMM TASK 34-33-21-000-801,

Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Installation, AMM TASK 34-33-21-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(5) Do this check of the wiring between the FCC-A and the MMR-1, navigation control panel-L, and radio altimeter transceiver-1:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the MMR-1, M2104. To remove it, do this task: Receiver for ILS - Removal, AMM TASK 34-31-42-000-801.

(c) Remove the navigation control panel-L, P8-25. To remove it, do this task: Navigation Control Panel Removal, AMM TASK 34-31-52-000-801.

(d) Remove the radio altimeter transceiver-1, M1735. To remove it, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Removal, AMM TASK 34-33-21-000-801.

(e) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D10719B at the E1-2 shelf (WDM 22-11-18):

| **D10135B** | | **D10719B** |
|---|---|---|
| pin G7 | - - - - - - - - - - - - - - - - - - | pin F15 |

(f) If you find a problem with the wiring, then repair the wiring:

(g) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D303 at the panel P8 (WDM 22-11-18):



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10135B | | D303 |
|---|---|---|
| pin G7 | - - - - - - - - - - - - - - - - - - | pin 45 |

(h) If you find a problem with the wiring, then repair the wiring:

(i) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D3667B at the E3-1 shelf (WDM 22-11-18):

| D10135B | | D3667B |
|---|---|---|
| pin G7 | - - - - - - - - - - - - - - - - - - | pin K6 |

(j) If you find a problem with the wiring, then repair the wiring:

1) Re-install the MMR-1, M2104. To install it, do this task: Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

(k) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(l) Re-install the MMR-1, M2104. To install it, do this task: Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

(m) Re-install the navigation control panel-L, P8-25. To install it, do this task: Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

(n) Re-install the radio altimeter transceiver-1, M1735. To install it, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Installation, AMM TASK 34-33-21-400-801.

(o) Do the Repair Confirmation at the end of this task.

F. Fault Isolation Procedure - Maintenance Message Channel B

(1) Replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(2) Replace the MMR-2, M2105.

These are the tasks:

Receiver for ILS - Removal, AMM TASK 34-31-42-000-801,

Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) Replace the navigation control panel-R, P8-26.

These are the tasks:

Navigation Control Panel Removal, AMM TASK 34-31-52-000-801,

Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) Replace the radio altimeter transceiver-2, M1736.

These are the tasks:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Removal, AMM TASK 34-33-21-000-801,

Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Installation, AMM TASK 34-33-21-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(5) Do this check of the wiring between the FCC-B and the MMR-2, navigation control panel-R, radio altimeter transceiver-2:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the MMR-2, M2105. To remove it, do this task: Receiver for ILS - Removal, AMM TASK 34-31-42-000-801.

(c) Remove the navigation control panel-R, P8-26. To remove it, do this task: Navigation Control Panel Removal, AMM TASK 34-31-52-000-801.

(d) Remove the radio altimeter transceiver-2, M1736. To remove it, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Removal, AMM TASK 34-33-21-000-801.

(e) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D10721B at the E1-4 shelf (WDM 22-11-18):

| D10137B | | D10721B |
|---|---|---|
| pin G7 | - - - - - - - - - - - - - - - - - - | pin F15 |

(f) If you find a problem with the wiring, then repair the wiring:

(g) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D305 at the panel P8 (WDM 22-11-18):

| D10137B | | D305 |
|---|---|---|
| pin G7 | - - - - - - - - - - - - - - - - - - | pin 45 |

(h) If you find a problem with the wiring, then repair the wiring:

(i) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D3669B at the E3-2 shelf (WDM 22-11-18):

| D10137B | | D3669B |
|---|---|---|
| pin G7 | - - - - - - - - - - - - - - - - - - | pin K6 |

(j) If you find a problem with the wiring, then repair the wiring:

(k) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(l) Re-install the MMR-2, M2105. To install it, do this task: Receiver for ILS - Installation, AMM TASK 34-31-42-400-801.

(m) Re-install the navigation control panel-R, P8-26. To install it, do this task: Navigation Control Panel Installation, AMM TASK 34-31-52-400-801.

(n) Re-install the radio altimeter transceiver-2, M1736. To install it, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Installation, AMM TASK 34-33-21-400-801.

(o) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**HAP 031-054, 101-999**

**831. Program Pin Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) FCC INCOMPATIBILITY

(b) FCC-A PROG PINS

(c) FCC-B PROG PINS

(d) FCC-A SOP PARITY (J1A-K08)

(e) FCC-B SOP PARITY (J1A-K08)

B. Possible Causes

(1) FCC-A switch module, M1992 or M2539

(2) FCC-B switch module, M1993 or M2540

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem

C. Related Data

(1) (SSM 22-11-75)

(2) (WDM 22-11-75)

D. Initial Evaluation

(1) The maintenance message shows when power is supplied to the FCC or DFCS BITE Procedure (22-11 TASK 801) was attempted.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Push the LSK adjacent to CONTINUE on the CDU.

(2) Do this task: AMM TASK 22-11-00-740-814.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) If the channel A FCC pin options do not match the options in the Option Pins Test, then do these steps:
   (a) Use the (SSM 22-11-75) to determine which pin or pins are incorrect.
   (b) Loosen the screws on switch modules, M1992 and M2539, to get access to the switches.
   (c) If the switches are not in the correct position, then do these steps:
      1) Put the switches in the correct position.
      2) Re-install the switch cover.
      3) Do the Repair Confirmation at the end of this task.
   (d) If the switches are in the correct position, then continue.
   (e) Re-install the switch cover.
   (f) Remove FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
   (g) Disconnect the appropriate wires from the switch modules, M1992 and M2539, (WDM 22-11-75)
   (h) Do a continuity check between the FCC A pins shown in the maintenance message and the appropriate wires at the switch modules, M1992 and M2539.
   (i) If there is a problem with the wiring, then do these steps:
      1) Repair the wiring.
      2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801
      3) Re-connect the wire to the switch modules, M1992 and M2539.
      4) Do the Repair Confirmation at the end of this task.
   (j) If you do not find a problem with the wiring, then continue.
      1) Replace the switch modules, M1992 and M2539.
      2) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801
      3) Do the Repair Confirmation at the end of this task.
         a) If the maintenance message shows, then continue.

(4) If the channel B FCC pin options do not match the options in the Option Pins Test, then do these steps:
   (a) Use the (SSM 22-11-75) to determine which pin or pins are incorrect.
   (b) Loosen the screws on switch modules, M1993 and M2540, to get access to the switches.
   (c) If the switches are not in the correct position, then do these steps:
      1) Put the switches in the correct position.
      2) Re-install the switch cover.
      3) Do the Repair Confirmation at the end of this task.
   (d) If the switches are in the correct position, then continue.
   (e) Re-install the switch cover.
   (f) Remove FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(g) Disconnect the appropriate wires from the switch modules, M1993 and M2540, (WDM 22-11-75)

(h) Do a continuity check between the FCC B pins shown in the maintenance message and the appropriate wires at the switch modules, M1993 and M2540.

(i) If there is a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801

3) Re-connect the wire to the switch modules, M1993 and M2540.

4) Do the Repair Confirmation at the end of this task.

(j) If you do not find a problem with the wiring, then continue.

1) Replace the switch modules, M1993 and M2540.

2) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801

3) Do the Repair Confirmation at the end of this task.

a) If the maintenance message shows, then continue.

(5) Do this task:(FCC Exchange Check, 22-11 TASK 820)

(a) If the maintenance message shows, then continue.

F. Repair Confirmation

(1) Do these steps:

(a) Push the INDEX button on the CDU.

(b) Push the Line Select Key (LSK) adjacent to <DFCS.

1) If the maintenance message does not show before the CDU prompts you for the test type, then you corrected the fault.

**HAP ALL**

**——————— END OF TASK ———————**

## 832. Mode Control Panel Bus Select Wrap Around Signal Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) FCC-A (J1B-H09)

(b) FCC-B (J1B-H09)

(2) The flight control computer A (FCC-A) or FCC-B does not receive mode control panel (MCP) bus select wrap around signal.

B. Possible Causes

(1) Flight control computer A (FCC-A), M1875


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) Flight control computer B (FCC-B), M1876

(3) Mode Control Panel, M198

(4) Wiring problem.

C. Related Data

(1) (SSM 22-11-11)

(2) (WDM 22-11-11)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(2) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(3) Replace the mode control panel, M198.

These are the tasks:

DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801,

DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If the Repair Confirmation is not satisfactory, then continue.

(4) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the mode control panel, M198. To remove it, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D299 at the panel P7 (WDM 22-11-11):

| D10135B | | D299 |
|---|---|---|
| pin H9 | - - - - - - - - - - - - - - - - - - | pin 45 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the mode control panel, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the mode control panel, M198. To remove it, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801.

(c) Do a wiring check between these pins of connector D10137B at the E1-4 shelf and connector D1815 at the panel P7 (WDM 22-11-11):

| D10137B | | D1815 |
|---|---|---|
| pin H9 | - - - - - - - - - - - - - - - - - - | pin 45 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the mode control panel, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

## 833. FMC Transfer Switch Problems - Fault Isolation

A. Description

(1) This task is for maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) FMC TRANSFER SW (J1A-E04,D04)

(2) The flight control computer-A (FCC-A) or FCC-B senses data on the FMC input bus that either the FMC-1 or the FMC-2 failed to respond to the commanded position of the FMC source select switch.

B. Possible Causes

(1) FMCS Transfer Relay 1, R475

(2) FMCS Transfer Relay 2, R476

(3) Instrument Switching Module, P5-28

(4) Wiring problem

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 15 | C01263 | FMCS XFR |

D. Related Data

(1) (SSM 22-11-52)

(2) (SSM 34-61-12)

(3) (SSM 34-61-14)

(4) (WDM 34-61-12)

(5) (WDM 34-61-14)

E. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: Flight Management Computer System BITE Procedure, 34-61 TASK 801.

(a) If there is a fault message for the FMC, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message for the FMC, then continue.

(2) Do this check of the FMC source select switch:

(a) Make sure the FMC source select switch is in the BOTH ON L position.

(b) On the CDU, from the FMCS BITE page, push the LSK next to DISCRETES.

(c) Push the PAGE key until FMC SOURCE SEL shows.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) Make sure the position of the switch on the FMC ANALOG DISC display agrees with the switch position.

(e) If the switch position does not agree with the display, then do these steps:

1) Replace the Instrument Switching Module, P5-28.

These are the tasks:

Instrument Switching Module Removal, AMM TASK 31-62-14-000-801,

Instrument Switching Module Installation, AMM TASK 31-62-14-400-801.

2) Do the repair confirmation at the end of this task.

(f) If the switch position agrees with the display, then continue.

(3) Replace the FMCS Transfer relay 1, R475, or replace the FMCS Transfer relay 2, R476.

(a) Do the repair confirmation at the end of this task.

(b) If the repair confirmation fails, then continue.

(4) Examine the wiring between the Instrument Switching Module, P5-28, and the FMCS transfer relays, R475 and R476, as follows:

(a) Disconnect connectors D3265 and D3267 from FMCS transfer relay 1, R475.

(b) Disconnect connectors D3425 and D3427 from FMCS transfer relay 2, R476.

(c) Remove the Instrument Switching Module, P5-28, do this task: Instrument Switching Module Removal, AMM TASK 31-62-14-000-801

(d) Do a wiring check between these pins of connector D1817 at the Instrument Switching Module and these connectors at the relays.

| | | |
|---|---|---|
| **D1817** | | **D3267** |
| pin 8 | - - - - - - - - - - - - - - - - - - | pin T |
| **D1817** | | **D3425** |
| pin 9 | - - - - - - - - - - - - - - - - - - | pin P |
| **D1817** | | **D3265** |
| pin 10 | - - - - - - - - - - - - - - - - - - | pin P |
| **D1817** | | **D3427** |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin T |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the Instrument Switching Module, P5-28, do this task: Instrument Switching Module Installation, AMM TASK 31-62-14-400-801.

3) Reconnect connectors D3265 and D3267 to the FMCS transfer relay 1, R475.

4) Reconnect connectors D3425 and D3427 to the FMCS transfer relay 2, R476.

5) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FMC test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

## 834. IFSAU 26 VAC Reference Signal Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) IFSAU (J1C-G05,F05)

(2) The FCC-A or FCC-B does not detect 26 VAC from the Integrated Flight System Accessory Unit (IFSAU).

B. Possible Causes

(1) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(2) Integrated Flight System Accessory Unit, M1474

(3) These circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

(4) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

D. Related Data

(1) (SSM 22-11-11)

(2) (WDM 22-11-11)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Initial Evaluation

(1) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

(2) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this check for power at FCC-A or FCC-B:

(a) If the maintenance message is on channel A, then do these steps;

1) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |

4) Do a check for 26 VAC between pins G5 and F5 of connector D10135C.

(b) If the maintenance message is on channel B, then do these steps;

1) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

4) Do a check for 26 VAC between pins G5 and F5 of connector D10137C.

(c) If there is 26 VAC at the pins, then do these steps:

1) Install a new FCC. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If there is not 26 VAC at the pins, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) Do this check for power at the IFSAU:

(a) Remove the IFSAU. To remove it, do this task: Integrated Flight System Accessory Unit (IFSAU) Removal, AMM TASK 22-11-37-000-801.

(b) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

(c) If the fail message is on channel A, then do these steps:

1) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |

2) Do a check for 115 VAC between pins 4 and 6 of the IFSAU connector D2209A.

(d) If the fail message is on channel B, then do these steps:

1) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

2) Do a check for 115 VAC between pins 4 and 6 of the IFSAU connector D2209B.

(e) If there is 115 VAC at the pin, then do these step:

1) Install a new IFSAU. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

2) Do the Repair Confirmation at the end of this task.

(f) If there is not 115 VAC at the pins, then continue.

(3) If the fail message is on channel A, then do these steps:

(a) Disconnect connector D41801P from the P18-1 circuit breaker panel.

(b) Do a check for 115 VAC power between pin 5 of D41801J and structure ground.

(c) If you do not find 115 VAC at pin 5, then do these steps:

1) Replace the following circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |

2) Re-connect connector D41801P to the P18-1 circuit breaker panel.

3) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Re-install IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.

5) Do the repair confirmation at the end of this task.

(d) If you find 115 VAC at pin 5 of D41801J, then continue.

(e) Do a continuity check between these pins of connector D41801P at the P18-1 panel and IFSAU connector D2209A (WDM 22-11-11):

| D41801P | | D2209A |
|---|---|---|
| pin 5 | - - - - - - - - - - - - - - - - - - | pin 4 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(f) Do a continuity check between these pins of IFSAU connector D2209A and FCC-A connector D10135C (WDM 22-14-11):

| D2209A | | D10135C |
|---|---|---|
| pin 1 | - - - - - - - - - - - - - - - - - - | pin G5 |

(g) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-connect connector D41801P to the P18-1 circuit breaker panel.
3) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Re-install IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.
5) Do the Repair Confirmation at the end of this task.

(4) If the fail message is on channel B, then do these steps:

(a) Disconnect connector D46061P from the P6-2 circuit breaker panel.

(b) Do a check for 115 VAC power between pin 7 of D46061J and structure ground.

(c) If you do not find 115 VAC at pin 7, then do these steps:

1) Replace this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

2) Re-connect connector D46061P to the P6-2 circuit breaker panel.
3) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Re-install IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.
5) Do the repair confirmation at the end of this task.

(d) If you find 115 VAC at pin 7 of D46061J, then continue.

(e) Do a continuity check between these pins of connector D46061P at the P6-2 panel and IFSAU connector D2209B (WDM 22-11-11):

| D46061P | | D2209B |
|---|---|---|
| pin 7 | - - - - - - - - - - - - - - - - - - | pin 4 |

(f) Do a continuity check between these pins of IFSAU connector D2209B and FCC-B connector D10137C (WDM 22-14-11):

| D2209B | | D10137C |
|---|---|---|
| pin 1 | - - - - - - - - - - - - - - - - - - | pin G5 |

(g) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-connect connector D46061P to the P6-2 circuit breaker panel.
3) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Re-install IFSAU, M1474. To install it, do this task: Integrated Flight System Accessory Unit Installation, AMM TASK 22-11-37-400-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

5) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) < CHANNEL A AND B

b) < FCC

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**

**835. Mach Trim 115 VAC Problem - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.

(a) MACH TRIM 115 VAC (J1C-A05,B05)

(2) The FCC-A or FCC-B does not detect 115 VAC input power for mach trim system.

B. Possible Causes

(1) These circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 4 | C00456 | AFCS SYS A MACH TRIM AC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 1 | C01037 | AFCS SYS B MACH TRIM AC |

(2) Wiring problem

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 4 | C00456 | AFCS SYS A MACH TRIM AC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 1 | C01037 | AFCS SYS B MACH TRIM AC |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Related Data

(1) (SSM 22-18-11)

(2) (WDM 22-18-11)

E. Initial Evaluation

(1) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 4 | C00456 | AFCS SYS A MACH TRIM AC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 1 | C01037 | AFCS SYS B MACH TRIM AC |

(2) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this check for power at FCC-A or FCC-B:

(a) If the maintenance message is on channel A, then do these steps;

1) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 4 | C00456 | AFCS SYS A MACH TRIM AC |

4) Do a check for 115 VAC power between pins A5 and D5 of connector D10135C.

(b) If the maintenance message is on channel B, then do these steps:

1) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 1 | C01037 | AFCS SYS B MACH TRIM AC |

4) Do a check for 115 VAC power between pins A5 and D5 of connector D10137C.

(c) If there is 115 VAC at the pins, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Install a new FCC. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
2) Do the Repair Confirmation at the end of this task.

(d) If there is not 115 VAC at the pins, then continue.

(2) If the maintenance message is on channel A, then do these steps;

(a) Disconnect connector D41801P from the P18-1 circuit breaker panel.

(b) Do a check for 115 VAC power between pin 6 of D41801J and structure ground.

(c) If you do not find 115 VAC at pin 6, then do these steps:

1) Replace the following circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 4 | C00456 | AFCS SYS A MACH TRIM AC |

2) Re-connect connector D41801P to the P18-1 circuit breaker panel.
3) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the Repair Confirmation at the end of this task.

(d) If you find 115 VAC at pin 6 of D41801J, then continue.

(e) Do a continuity check between these pins of connector D41801P at the P18-1 panel and connector D10135C for FCC-A:

| D41801P | | D10135C |
|---|---|---|
| pin 6 | - - - - - - - - - - - - - - - - - - | pin A5 |

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 4 | C00456 | AFCS SYS A MACH TRIM AC |

3) Re-connect connector D41801P to the P18-1 circuit breaker panel.
4) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
5) Do the Repair Confirmation at the end of this task.

(3) If the maintenance message is on channel B, then do these steps;

(a) Disconnect connector D46061P from the P6-2 circuit breaker panel.

(b) Do a check for 115 VAC power between pin 4 of D46061P and structure ground.

(c) If you do not find 115 VAC at pin 4, then do these steps:

1) Replace the following circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 1 | C01037 | AFCS SYS B MACH TRIM AC |

2) Re-connect connector D46061P to the P6-2 circuit breaker panel.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(d) If you find 115 VAC at pin 4 of D46061P, then continue.

(e) Do a continuity check between these pins of connector D46061P at the P6-2 panel and connector D10137C for FCC-B:

| D46061P | | D10137C |
|---|---|---|
| pin 4 | - - - - - - - - - - - - - - - - - - - | pin A5 |

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 1 | C01037 | AFCS SYS B MACH TRIM AC |

3) Re-connect connector D46061P to the P6-2 circuit breaker panel.

4) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

5) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: BITE Library Test, AMM TASK 22-11-00-740-806.

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) <RUN SELECT LIBRARY TESTS

c) MACH TRIM 33>

d) EXECUTE

(c) If the maintenance message does not show, then you corrected the fault.

**———————— END OF TASK ————————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999**

## 801. ISFD Output Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) ISFD (J1B-G11,F11)

(2) The FCC receives invalid data or no data from the ISFD (integrated standby flight display).

B. Possible Causes

(1) ISFD, N226

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Related Data

(1) (SSM 22-11-51)

(2) (WDM 22-11-51)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the ISFD test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: Integrated Standby Flight Display BITE Procedure, 34-20 TASK 801.

(a) If there is a maintenance message, then do the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(3) Do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(c) Remove the ISFD, N226. To remove it, do this task: Integrated Standby Flight Display Removal, AMM TASK 34-24-02-000-801.

(d) Do a wiring check between these pins of connector D10135B (FCC-A) at the E1-1 shelf and connector D10853 at the P2-1 panel (WDM 22-11-51).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

| D10135B | | D10853 |
|---|---|---|
| pin G11 | - - - - - - - - - - - - - - - - - | pin P |
| pin F11 | - - - - - - - - - - - - - - - - - | pin R |

(e) Do a wiring check between these pins of connector D10137B (FCC-B) at the E1-4 shelf and connector D10853 at the P2-1 (WDM 22-11-51).

| D10137B | | D10853 |
|---|---|---|
| pin G11 | - - - - - - - - - - - - - - - - - | pin P |
| pin F11 | - - - - - - - - - - - - - - - - - | pin R |

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Re-install the ISFD, N226. To install it, do this task: Integrated Standby Flight Display Installation, AMM TASK 34-24-02-400-801.

5) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ISDF test.

(c) If the maintenance message does not show, then you corrected the fault.

**HAP ALL**

**——————— END OF TASK ———————**

**802. Manual Trim Inhibit Problem - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) FCC-A (J1A-J09)

(b) FCC-B (J1A-J09)

(2) The FCC does not receive wrap around for Manual Trim inhibit discrete output.

B. Possible Causes

(1) Stabilizer Trim Control Relay, R64



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) Radio Noise Suppressor, M110

(3) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(4) Wiring problem

C. Related Data

(1) (SSM 22-13-11)

(2) (SSM 27-41-12)

(3) (WDM 22-13-11)

(4) (WDM 27-41-12)

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

**HAP 031-054, 101-999; AIRPLANES WITH COLLINS FCC AND COLLINS OPS SOFTWARE P/N 831-5854-111**

NOTE: If the INTERACTIVE TEST 32 shows TEST FAILED and only maintenance messages 22-11176 and 22-11216 shows on the CDU display, then ignore this failure. This is a nuisance fault.

**HAP ALL**

(b) If the maintenance message does not show, then there was an intermittent fault.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(3) Replace the Radio Noise Suppressor, M110 (WDM 27-41-12). These are the steps:

(a) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 031-054, 101-999** | | | |
| A | 3 | C01631 | AFCS INTLK 2 |
| **HAP ALL** | | | |
| D | 10 | C00840 | FLIGHT CONTROL STAB TRIM ACTUATOR |

(b) Replace the Radio Noise Suppressor, M110. It is located in the J4 Junction Box at STA 262, WL 167, BL R025.

(c) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 031-054, 101-999** | | | |
| A | 3 | C01631 | AFCS INTLK 2 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP ALL** | | | |
| D | 10 | C00840 | FLIGHT CONTROL STAB TRIM ACTUATOR |

(d) Do the repair confirmation at the end of this task.

(e) If there is a fault message, then continue.

(4) Replace the Stabilizer Trim Control Relay, R64 (WDM 27-41-12). These are the steps:

(a) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 031-054, 101-999** | | | |
| A | 3 | C01631 | AFCS INTLK 2 |
| **HAP ALL** | | | |
| D | 10 | C00840 | FLIGHT CONTROL STAB TRIM ACTUATOR |

(b) Replace the Stabilizer Trim Control Relay, R64. It is located in the J4 Junction Box at STA 262, WL 167, BL R025.

(c) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 031-054, 101-999** | | | |
| A | 3 | C01631 | AFCS INTLK 2 |
| **HAP ALL** | | | |
| D | 10 | C00840 | FLIGHT CONTROL STAB TRIM ACTUATOR |

(d) Do the repair confirmation at the end of this task.

(e) If there is a fault message, then continue.

(5) Do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(c) Do a wiring check between this pin of connector D10135A (FCC-A) at the E1-1 shelf and the Stabilizer Trim Control Relay, R64 located in the J4 Junction Box. (WDM 22-13-11).

| **D10135A** | **R64** |
|---|---|
| pin J9 - - - - - - - - - - - - - - - - - - | pin X1 |

(d) Do a wiring check between this pin of connector D10137A (FCC-B) at the E1-4 shelf and the Stabilizer Trim Control Relay, R64 located in the J4 Junction Box (WDM 22-13-11).

| **D10137A** | **R64** |
|---|---|
| pin J9 - - - - - - - - - - - - - - - - - - | pin X1 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

E. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the STAB SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**803. ADIRU(ADC) Data Bus Output Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) ADIRU(ADC)-1 (J1A-K04,J04)

(b) ADIRU(ADC)-2 (J1A-K04,J04)

(2) ADIRU(ADC)-1 (J1A-K04,J04): The flight control computer B (FCC-B) receives invalid data or no data from the ADIRU-L during the ground test.

(3) ADIRU(ADC)-2 (J1A-K04,J04): The flight control computer A (FCC-A) receives invalid data or no data from the ADIRU-R during the ground test.

B. Possible Causes

(1) ADIRU-L, M1749

(2) ADIRU-R, M1752

(3) Wiring problem

(4) Flight control computer A (FCC-A), M1875

(5) Flight control computer B (FCC-B), M1876

C. Related Data

(1) (SSM 22-11-52)

(2) (SSM 22-31-21)

(3) (SSM 34-21-24)

(4) (WDM 34-21-14)

(5) (WDM 34-21-24)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) If there is a fault message, then do to the FIM task for that message.

1) Do the Repair Confirmation at the end of this task.

(b) If there is no fault message, then continue.

(2) If the maintenance message is on channel A, then replace the FCC-A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If there is a fault message, then continue.

(3) If the maintenance message is on channel B, then replace the FCC-B, M1876.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do the Repair Confirmation at the end of this task.

(b) If there is a fault message, then continue.

(4) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the ADIRU-R, M1752. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D3693A at the E5-2 shelf (WDM 34-21-24).

| D10135A | | D3693A |
|---|---|---|
| pin K4 | - - - - - - - - - - - - - - - - - - | pin A7 |
| pin J4 | - - - - - - - - - - - - - - - - - - | pin B7 |

(d) If you find a problem with the wiring, then do this step:

1) Repair the wiring.

(e) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

(f) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(g) Do the Repair Confirmation at the end of this task.

(5) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the ADIRU-L, M1749. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D3687A at the E5-2 shelf (WDM 34-21-14).

| D10137A | | D3687A |
|---|---|---|
| pin K4 | - - - - - - - - - - - - - - - - - - | pin A7 |
| pin J4 | - - - - - - - - - - - - - - - - - - | pin B7 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

(e) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

(f) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(g) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the ADIRU test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**HAP 038, 042-046, 048, 051-053, 104-999**

## 804. Rudder Actuator Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) RUD ACTUATOR (J1B-K10,J10)

(b) RUD ACTUATOR (J1A-K09,J1B-K09)

(c) RUD ACTUATOR (J1A-F11,G11)

(d) RUD ACTUATOR (J1B-H06,H07)

(e) RUD ACTUATOR



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) RUD ACTUATOR (J1B-K10,J10) CHAN-A: The flight control computer A (FCC-A) detects a problem with the rudder actuator engage clutch.

(3) RUD ACTUATOR (J1B-K10,J10) CHAN-B: The flight control computer B (FCC-B) detects a problem with the rudder actuator engage clutch.

(4) RUD ACTUATOR (J1A-K09,J1B-K09) CHAN-A: The flight control computer A (FCC-A) detects a problem with the rudder actuator motor.

(5) RUD ACTUATOR (J1A-K09,J1B-K09) CHAN-B: The flight control computer B (FCC-B) detects a problem with the rudder actuator motor.

(6) RUD ACTUATOR (J1A-F11,G11) CHAN-A: The flight control computer A (FCC-A) detects a problem with rudder actuator tachometer 1.

(7) RUD ACTUATOR (J1A-F11,G11) CHAN-B: The flight control computer B (FCC-B) detects a problem with rudder actuator tachometer 1.

(8) RUD ACTUATOR (J1B-H06,H07) CHAN-A: The flight control computer A (FCC-A) detects a problem with rudder actuator tachometer 2.

(9) RUD ACTUATOR (J1B-H06,H07) CHAN-B: The flight control computer B (FCC-B) detects a problem with rudder actuator tachometer 2.

(10) RUD ACTUATOR RUD SPIN TEST: The flight control computers detect a problem with the rudder actuator spin test.

(11) RUD ACTUATOR RUD MOTION TEST: The flight control computers detect a problem with the rudder actuator motion test.

(12) RUD ACTUATOR RUD TORQUE TEST: The flight control computers detect a problem with the rudder actuator torque fight test.

B. Possible Causes

(1) Rudder actuator, M2446

NOTE: The rudder actuator is also referred to as the rudder rollout guidance actuator.

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

(3) Wiring problem

C. Related Data

(1) (SSM 22-11-81)

(2) (WDM 22-11-81)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the YAW SENS test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If the maintenance message does not show, then there was an intermittent fault.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) Do the Repair Confirmation at the end of this task.

(b) If the maintenance message shows, then continue.

(2) Replace the rudder actuator, M2446 (AMM 22-11-22/401).

(a) Do the Repair Confirmation at the end of this task:

(b) If the maintenance message shows, then continue.

(3) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the rudder actuator, M2446. To remove it, do this task: Rudder Actuator Removal (AMM 22-11-22/401).

(c) Do a wiring check between these pins of connector D10135A and connector D10135B at the E1-1 shelf and connector D11617 at the rudder actuator (WDM 22-11-81).

| **D10135A** | | **D11617** |
|---|---|---|
| pin F11 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin G11 | - - - - - - - - - - - - - - - - - - | pin 1 |
| pin K9 | - - - - - - - - - - - - - - - - - - | pin 18 |

| **D10135B** | | **D11617** |
|---|---|---|
| pin K9 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin H6 | - - - - - - - - - - - - - - - - - - | pin 11 |
| pin H7 | - - - - - - - - - - - - - - - - - - | pin 24 |
| pin K10 | - - - - - - - - - - - - - - - - - - | pin 15 |
| pin J10 | - - - - - - - - - - - - - - - - - - | pin 21 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the rudder actuator, M2446. To install it, do this task: Rudder Actuator Installation (AMM 22-11-22/401).

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(4) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a wiring check between these pins of connector D10137A and connector D10137B at the E1-1 shelf and connector D11619 at the rudder actuator (WDM 34-21-13).


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10137A | | D11619 |
|---|---|---|
| pin F11 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin G11 | - - - - - - - - - - - - - - - - - - | pin 1 |
| pin K9 | - - - - - - - - - - - - - - - - - - | pin 18 |

| D10137B | | D1161 |
|---|---|---|
| pin K9 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin H6 | - - - - - - - - - - - - - - - - - - | pin 11 |
| pin H7 | - - - - - - - - - - - - - - - - - - | pin 24 |
| pin K10 | - - - - - - - - - - - - - - - - - - | pin 15 |
| pin J10 | - - - - - - - - - - - - - - - - - - | pin 21 |

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the rudder actuator, M2446. To install it, do this task: Rudder Actutor Installation (AMM 22-11-22).

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the YAW SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

## 805. Autopilot Rudder Position Sensor Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = D10137A, J1B = D10137B and J1C = D10137C.

(a) RUD POS SEN

(2) RUD POS SEN: The flight control computers detect a problem with the autopilot rudder actuator position sensor.

B. Possible Causes

(1) Autopilot rudder position sensor, M2445

(2) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) Wiring problem

C. Related Data

(1) (SSM 22-11-31)

(2) (SSM 22-11-41)

(3) (SSM 22-11-81)

(4) (WDM 22-11-31)

(5) (WDM 22-11-41)

(6) (WDM 22-11-81)

D. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the channels A and B.

(b) Make the selection for the YAW SENS test.

(c) If the maintenance message shows, then do the Fault Isolation Procedure below.

(d) If the maintenance message does not show, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) Do the Repair Confirmation at the end of this task.

(b) If the maintenance message shows, then continue.

(2) Replace the autopilot rudder position sensor, M2446 (AMM 22-11-23/401).

(a) Do the Repair Confirmation at the end of this task.

(b) If the maintenance message shows, then continue.

(3) If the maintenance message is on channel A, then do this check of the wiring:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the autopilot rudder position sensor, M2446. To remove it, do this task: Autopilot Rudder Position Sensor Removal (AMM 22-11-23/401).

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D11613 at the autopilot rudder position sensor (WDM 22-11-81).

| D10135A | | D11613 |
|---|---|---|
| pin A15 | - - - - - - - - - - - - - - - - - | pin 1 |
| pin B15 | - - - - - - - - - - - - - - - - - | pin 2 |
| pin H9 | - - - - - - - - - - - - - - - - - | pin 3 |
| pin G9 | - - - - - - - - - - - - - - - - - | pin 4 |
| pin G10 | - - - - - - - - - - - - - - - - - | pin 5 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the autopilot rudder position sensor, M2445. To install it, do this task: Autopilot Rudder Position Sensor Installation (AMM 22-11-23/401).


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(4) If the maintenance message is on channel B, then do this check of the wiring:

(a) Remove the FCC-B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D11615 at the autopilot rudder position sensor (WDM 22-11-81).

| D10137A | | D11615 |
|---|---|---|
| pin A15 | - - - - - - - - - - - - - - - - - | pin 1 |
| pin B15 | - - - - - - - - - - - - - - - - - | pin 2 |
| pin H9 | - - - - - - - - - - - - - - - - - | pin 3 |
| pin G9 | - - - - - - - - - - - - - - - - - | pin 4 |
| pin G10 | - - - - - - - - - - - - - - - - - | pin 5 |

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the autopilot rudder position sensor, M2445. To install it, do this task: Autopilot Rudder Position Sensor Installation (AMM 22-11-23/401).

3) Re-install the FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the YAW SENS test.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

## 806. FCC has a Rudder Power Input Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A and FCC-B. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C. For the FCC-B: J1A = 10137A, J1B = 10137B and J1C = 10137C.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) AFCS RUD CB-1 (J1C-55)

(b) AFCS RUD CB-2 (J1C-55)

(2) The FCC-A or FCC-B does not detect 28 VDC on pin J1C-55.

B. Possible Causes

(1) These circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 4 | C01629 | AFCS SYS A RUDDER DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01630 | AFCS SYS B RUDDER DC |

(2) Wiring problem

(3) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 4 | C01629 | AFCS SYS A RUDDER DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01630 | AFCS SYS B RUDDER DC |

D. Related Data

(1) (SSM 22-11-11)

(2) (WDM 22-11-11)

E. Initial Evaluation

(1) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 4 | C01629 | AFCS SYS A RUDDER DC |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01630 | AFCS SYS B RUDDER DC |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) The Digital Flight Control System (DFCS) BITE Procedure (22-11 TASK 801) or DFCS BITE test was performed.

NOTE: When DFCS BITE test failed, RERUN shows on the CDU display after you push the line select key (LSK) adjacent to TEST DATA. You can push the LSK adjacent to RERUN to do the test again if it is necessary.

(a) If the maintenance message shows, then do the Fault Isolation Procedure below.

(b) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this check for power at FCC-A or FCC-B:

(a) If the maintenance message is on channel A, then do these steps;

1) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 4 | C01629 | AFCS SYS A RUDDER DC |

4) Do a check for 28 VDC between pin 55 of connector D10135C and structure ground:

(b) If the maintenance message is on channel B, then do these steps;

1) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01630 | AFCS SYS B RUDDER DC |

4) Do a check for 28 VDC between pin 55 of connector D10137C and structure ground:

(c) If there is 28 VDC at the pins, then do these steps:

1) Install a new FCC. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Do the Repair Confirmation at the end of this task.

(d) If there is not 28 VDC at the pin, then continue.

(2) If the fail message is on channel A, then do these steps;

(a) Disconnect connector D41803P from the P18-1 circuit breaker panel.

(b) Do a check for 28 VDC power at pin 18 of D41803P.

(c) If you do not find 28 VDC at pin 18, then do these steps:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Replace this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 4 | C01629 | AFCS SYS A RUDDER DC |

2) Re-connect connector D41803P to the P18-1 circuit breaker panel.
3) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
4) Do the repair confirmation at the end of this task.

(d) If you find 28 VDC at pin 18 of D41803P, then continue.

(e) Do a continuity check between this pin of connector D41803P at the P18-1 panel and connector D10135C for FCC-A (WDM 22-11-11):

| D41803P | | D10135C |
|---|---|---|
| pin 18 | - - - - - - - - - - - - - - - - - - | pin 55 |

(f) If you find a problem with the wiring, then do these steps:
1) Repair the wiring.
2) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 4 | C01629 | AFCS SYS A RUDDER DC |

3) Re-connect connector D41803P to the P18-1 circuit breaker panel.
4) Re-install FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
5) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 4 | C01629 | AFCS SYS A RUDDER DC |

6) Do the Repair Confirmation at the end of this task.

(3) If the fail message is on channel B, then do these steps;
(a) Disconnect connector D46065P from the P18-1 circuit breaker panel.
(b) Do a check for 28 VDC power at pin 4 of D46065P.
(c) If you do not find 28 VDC at pin 4, then do these steps:
1) Replace this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01630 | AFCS SYS B RUDDER DC |

2) Re-connect connector D46065P to the P6 circuit breaker panel.
3) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

4) Do the Repair Confirmation at the end of this task.

(d) If you find 28 VDC at pin 4 of D46065P, then continue.

(e) Do a continuity check between these pins of connector D46065P at the P18-1 panel and connector D10137C for FCC-B (WDM 22-11-11):

| D46065P | | D10137C |
|---|---|---|
| pin 4 | - - - - - - - - - - - - - - - - - - | pin 55 |

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01630 | AFCS SYS B RUDDER DC |

3) Re-connect connector D46065P to the P6 circuit breaker panel.

4) Re-install FCC-B, M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

5) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01630 | AFCS SYS B RUDDER DC |

6) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make these selections on the CDU:

a) <CHANNEL A AND B

b) <FCC

(c) If the maintenance message does not show, then you corrected the fault.

**HAP ALL**

**——————— END OF TASK ———————**

**807. Latched Flight Deck Effect in Fault History - Fault Isolation**

A. Description

(1) This task is for these latched flight deck effect messages:

(a) NO ALND LCH

(b) NLND3 LCH


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) SPDTRM LCH

(2) There was a flight deck effect that caused a latched message to occur during flight.

B. Possible Causes

(1) The DFCS failed or one of the inputs to the DFCS caused the autoland capability to be degraded.

C. Fault Isolation Procedure

(1) Do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.

(a) Do the FIM tasks for all the faults you find.

**HAP 038, 042-046, 048, 051-053, 104-999**

D. Reset Latched Messages

(1) After you corrected the maintenance messages, do this task: Reset Latches Procedure, AMM TASK 22-11-00-700-802

**END OF TASK**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 801. Stall Management Yaw Damper Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 22-21001 SMYD YD fault (SMYD 1)

(b) 22-22001 SMYD YD fault (SMYD 2)

(c) 22-21008 X-CH invalid (SMYD 1)

(d) 22-22008 X-CH invalid (SMYD 2)

(2) There is a fault internal to the SMYD 1 or 2.

(3) Under certain conditions, the yaw damper switch may disconnect to the OFF position during the stall warning cockpit test. If this occurs, no maintenance action is necessary. This condition only occurs on the ground.

B. Possible Causes

(1) Stall management yaw damper (SMYD) computers, M1747 (SMYD 1), or M1748 (SMYD 2).

(2) AIRPLANES WITH -1 SMYD COMPUTERS; The yaw damper system and the SMYD computers were not supplied with power at the same time.

C. Initial Evaluation

(1) AIRPLANES WITH -1 SMYD COMPUTERS;If the fault message "SMYD YD fault" appeared during interrogation of the SMYD computer BITE then the SMYD and yaw damper system may not have been supplied with power at the same time.

(a) Cycle power to the SMYD.

(b) If the fault does not occur again then it was a nuisance fault and can be ignored.

(2) If the maintenance messages above are not shown in SMYD 1 BITE: EXISTING FAULTS, then there was an intermittent fault.

(3) If the maintenance messages above are shown in SMYD 1 BITE: EXISTING FAULTS, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) For maintenance message 22-21001 or 22-22008, do these steps:

(a) Replace SMYD 1, M1747.

These are the tasks:

Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801,

Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(b) Do the BITE: EXISTING FAULTS test on the SMYD, M1747, or M1748. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(c) If the maintenance message does not show, then you corrected the fault.

(2) For maintenance message 22-22001 or 22-21008, do these steps:

(a) Replace SMYD 2, M1748.

These are the tasks:

Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801,

Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Do the BITE: EXISTING FAULTS test on the SMYD, M1747, or M1748. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(c) If the maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

**802. SMYD has 28 VAC Fault - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) 22-21002 YD 28VAC no power (SMYD 1)

(b) 22-22002 YD 28VAC no power (SMYD 2)

(2) The SMYD does not detect 28 VAC from the XFR BUS 1.

B. Possible Causes

(1) These circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 7 | C00285 | YAW DAMPER AC |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 8 | C00544 | FLIGHT RECORDER POSITION SENSOR |

(2) Wiring problem

(3) Stall manager yaw damper, M1747 (SMYD 1) or M1748 (SMYD 2)

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 7 | C00285 | YAW DAMPER AC |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 8 | C00544 | FLIGHT RECORDER POSITION SENSOR |

D. Related Data

(1) (SSM 22-23-12)

(2) (SSM 27-24-11)

(3) (SSM 31-31-14)

(4) (WDM 22-23-12)

(5) (WDM 27-24-11)

(6) (WDM 31-31-14)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

E. Initial Evaluation

(1) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 7 | C00285 | YAW DAMPER AC |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 8 | C00544 | FLIGHT RECORDER POSITION SENSOR |

(2) If the maintenance messages above are not shown in the SMYD BITE:EXISTING FAULTS, then there was an intermittent fault.

(3) If the maintenance messages above are shown in the SMYD BITE:EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check for power at the stall manager yaw damper computer:

(a) For maintenance message 22-21002, do these steps:

1) Remove SMYD 1. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 7 | C00285 | YAW DAMPER AC |

(b) For maintenance message 22-22002, do these steps:

1) Remove SMYD 2. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

2) Do a check of the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 8 | C00544 | FLIGHT RECORDER POSITION SENSOR |

(c) Do a check for 28 VAC at these pins:

| Maintenance Message | Connector | Pin | WDM |
|---|---|---|---|
| 22-21002 (SMYD 1) | D3683B | 13 | (WDM 22-23-12) |
| 22-22002 (SMYD 2) | D3685B | 13 | (WDM 31-31-14) |

(d) If 28 VAC is found at pin 13, then replace the applicable SMYD. To replace it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(e) If 28 VAC is not found at pin 13, then continue.

(2) For maintenance message 22-21002, do this check of the wiring:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Disconnect connector D41805P from the P18-1 circuit breaker panel.

(b) Do a check for 28 VAC power at pin 5 of D41805J:

1) If you do not find 28 VAC at pin 5, then replace this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 7 | C00285 | YAW DAMPER AC |

2) If you find 28 VAC at pin 5 of D41805J, then continue.

(c) Do a continuity check between these pins:

| D41805P (P18-1) | | D3683B (SMYD 1) |
|---|---|---|
| pin 5 | - - - - - - - - - - - - - - - - - - | pin B13 |

1) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D41805P to the P18-1 circuit breaker panel.

c) Re-install SMYD 1, M1747. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

d) If the maintenance message does not show on SMYD 1, you corrected the fault.

2) If you do not find a problem with the wiring, then do these steps:

a) Re-connect connector D41805P to the P18-1 circuit breaker panel.

b) Re-install SMYD 1, M1747. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

c) If the maintenance message does not show on SMYD 1, then you corrected the fault.

(3) For maintenance message 22-22002, do this check of the wiring:

(a) Disconnect connector D41805P from the P18-1 circuit breaker panel.

(b) Check the connector and sockets for bent or broken pins, dirt and damage.

(c) Do a check for 28 VAC power at pin 6 of D41805J:

1) If you do not find 28 VAC at pin 6, then replace this circuit breaker:

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 8 | C00544 | FLIGHT RECORDER POSITION SENSOR |

2) If you find 28 VAC at pin 6 of D41805J, then continue.

(d) Do a continuity check between these pins:

| D41805P (P18-1) | | D3685B (SMYD 2) |
|---|---|---|
| pin 6 | - - - - - - - - - - - - - - - - - - | pin B13 |

1) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D41805P to the P18-1 circuit breaker panel.

c) Re-install SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) If you do not find a problem with the wiring, then do these steps:
   a) Re-connect connector D41805P to the P18-1 circuit breaker panel.
   b) Re-install SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.
   c) If the maintenance message does not show on SMYD 2, then you corrected the fault.

**——————— END OF TASK ———————**

## 803. SMYD has 28VDC Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:
   (a) 22-21003 YD 28VDC no power (SMYD 1)
   (b) 22-22003 YD 28VDC no power (SMYD 2)

(2) The SMYD does not detect 28 VDC from the DC BUS 1.

B. Possible Causes

(1) These circuit breakers:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 6 | C01354 | YAW DAMPER 2 DC |
| D | 7 | C00286 | YAW DAMPER 1 DC |

(2) Wiring problem

(3) Stall manager yaw damper, M1747 (SMYD 1) or M1748 (SMYD 2)

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 6 | C01354 | YAW DAMPER 2 DC |
| D | 7 | C00286 | YAW DAMPER 1 DC |

D. Related Data

(1) (SSM 22-23-11)

(2) (WDM 22-23-11)

E. Initial Evaluation

(1) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 6 | C01354 | YAW DAMPER 2 DC |
| D | 7 | C00286 | YAW DAMPER 1 DC |

(2) If the maintenance messages above are not shown in the SMYD BITE:EXISTING FAULTS, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) If the maintenance messages above are shown in the SMYD BITE:EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do these steps to check for power at the stall manager yaw damper computer:

(a) For maintenance message 22-21003, do these steps:

1) Remove SMYD 1. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

2) Check the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 7 | C00285 | YAW DAMPER AC |

(b) For maintenance message 22-22002, do these steps:

1) Remove SMYD 2. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

2) Check the connector and sockets for bent or broken pins, dirt and damage.

3) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| C | 8 | C00544 | FLIGHT RECORDER POSITION SENSOR |

(c) Do this check for 28 VDC at the pin shown below:

| Maintenance Message | Connector | Pin | WDM |
|---|---|---|---|
| 22-21003 (SMYD 1) | D3683B | 102 | WDM 22-23-11) |
| 22-22003 (SMYD 2) | D3685B | 102 | (WDM 22-23-11) |

(d) If 28 VDC is found at the pin, then replace the applicable SMYD.

These are the tasks:

Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801,

Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(e) If 28 VDC is not found at the pin, then continue.

(2) For maintenance message 22-21003, do this check of the wiring:

(a) Disconnect connector D41803P from the P18-1 circuit breaker panel.

(b) Do a check for 28 VDC power at pin 7 of D41803J.

1) If you do not find 28 VDC at pin 7, then replace this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 7 | C00286 | YAW DAMPER 1 DC |

2) If you find 28 VDC at pin 7 of D41803J, then continue.

(c) Do a continuity check between these pins:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D41803P (P18-1) | | D3683B (SMYD 1) |
|---|---|---|
| pin 7 | - - - - - - - - - - - - - - - - - - | pin A102 |

(d) If you find a problem with the wiring, thendo these steps:

1) Repair the wiring.
2) Re-connect connector D41803P to the P18-1 circuit breaker panel.
3) Re-install SMYD 1, M1747. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.
4) If the maintenance message does not show on SMYD 1, then you corrected the fault.

(e) If you do not find a problem with the wiring, then do these steps:

1) Re-connect connector D41805P to the P18-1 circuit breaker panel.
2) Re-install SMYD 1, M1747. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.
3) If the maintenance message does not show on SMYD 1, you corrected the fault.

(3) For maintenance message 22-22003, do this check of the wiring:

(a) Disconnect connector D40218P from the P18-1 circuit breaker panel.

(b) Do a check for 28 VDC power at pin 25 of D40218P at the P6 panel.

1) If you do not find 28 VDC at pin 25, then replace this circuit breaker:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 6 | C01354 | YAW DAMPER 2 DC |

2) If you find 28 VDC at pin 25 of D40218P, then continue.

(c) Do a continuity check between these pins:

| D40218J (P6) | | D3685B (SMYD 2) |
|---|---|---|
| pin 25 | - - - - - - - - - - - - - - - - - - | pin B102 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-connect connector D40218J to the P6 circuit breaker panel.
3) Re-install SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.
4) If the maintenance message does not show on SMYD 2, then you corrected the fault.

(e) If you do not find a problem with the wiring, then do these steps:

1) Re-connect connector D40218J to the P6 circuit breaker panel.
2) Re-install SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.
3) If the maintenance message does not show on SMYD 2, then you corrected the fault.

**END OF TASK**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 804. Rudder PCU Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 22-21004 YD LVDT error (SMYD 1)

(2) There is a fault in the rudder power control unit (PCU).

B. Possible Causes

(1) Rudder PCU, M175

(2) Wiring problem

C. Related Data

(1) (SSM 22-23-12)

(2) (WDM 22-23-12)

D. Initial Evaluation

(1) If the maintenance message does not show in SMYD 1 BITE:EXISTING FAULTS, then there was an intermittent fault.

(2) If the maintenance message shows in SMYD 1 BITE:EXISTING FAULTS, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Replace the rudder PCU, M175.

These are the tasks:

Main Rudder Power Control Unit Removal, AMM TASK 27-21-91-000-804-001 or Main Rudder Power Control Unit Removal, AMM TASK 27-21-91-000-803-002,

Main Rudder Power Control Unit Installation, AMM TASK 27-21-91-400-804-001 or Main Rudder Power Control Unit Installation, AMM TASK 27-21-91-400-803-002.

(a) Do the SMYD 1 BITE:EXISTING FAULTS test. To do BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then there was an intermittent fault.

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring:

(a) Remove SMYD 1. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Disconnect connector D291 from the rudder PCU, M175.

(c) Check the connectors and sockets for bent or broken pins, dirt and damage.

(d) Do a wiring check between these pins:

| D291 (Rudder PCU) | | D3683B (SMYD 1) |
|---|---|---|
| pin 12 | - - - - - - - - - - - - - - - - - - | pin B30 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin B16 |
| pin 4 | - - - - - - - - - - - - - - - - - - | pin B29 |
| pin 10 | - - - - - - - - - - - - - - - - - - | pin B13 |
| pin 7 | - - - - - - - - - - - - - - - - - - | pin B40 |
| pin 6 | - - - - - - - - - - - - - - - - - - | pin B41 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D291 (Rudder PCU) | | D3683A (SMYD 1) |
|---|---|---|
| pin 1 | - - - - - - - - - - - - - - - - - - | pin A39 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D291 to the rudder PCU, M175.

3) Re-install SMYD 1, M1747. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

4) If the maintenance message does not show on SMYD 1, then you corrected the fault.

(f) If you do not find a problem with the wiring, then do these steps:

1) Re-connect connector D291 to the rudder PCU, M175.

2) Re-install SMYD 1, M1747. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) If the maintenance message does not show on SMYD 1, then you corrected the fault.

**——————— END OF TASK ———————**

**805. Standby Rudder PCU Problem - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

(a) 22-22004 YD LVDT error (SMYD 2)

(2) There is a fault in the standby rudder power control unit (PCU).

B. Possible Causes

(1) Standby rudder PCU, M1831

(2) Wiring problem

C. Related Data

(1) (SSM 27-24-11)

(2) (WDM 27-24-11)

D. Initial Evaluation

(1) If the maintenance message does not show in SMYD 2 BITE:EXISTING FAULTS, then there was an intermittent fault.

(2) If the maintenance message shows in SMYD 2 BITE:EXISTING FAULTS, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Replace the standby rudder PCU, M1831.

These are the tasks:

Standby Rudder Power Control Unit Removal, AMM TASK 27-21-24-000-801,

Standby Rudder Power Control Unit Installation, AMM TASK 27-21-24-400-801.

(a) Do the BITE TEST:EXISTING FAULTS on SMYD 2, M1748. To do BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring:

(a) Remove SMYD 2. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Disconnect connector D10013 from the standby rudder PCU, M1831.

1) Do a wiring check between these pins:

| D10013 (St Rud PCU) | | D3685B (SMYD 2) |
|---|---|---|
| pin 12 | - - - - - - - - - - - - - - - - - - | pin B30 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin B16 |
| pin 4 | - - - - - - - - - - - - - - - - - - | pin B29 |
| pin 10 | - - - - - - - - - - - - - - - - - - | pin B13 |
| pin 7 | - - - - - - - - - - - - - - - - - - | pin B40 |
| pin 6 | - - - - - - - - - - - - - - - - - - | pin B41 |

| D10013 (St Rud PCU) | | D3685A (SMYD 2) |
|---|---|---|
| pin 1 | - - - - - - - - - - - - - - - - - - | pin A39 |

2) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D10013 to the rudder PCU, M1831.

c) Re-install SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

d) If the maintenance message does not show on SMYD 2, then you corrected the fault.

3) If you do not find a problem with the wiring, then do these steps:

a) Re-connect connector D10013 to the standby rudder PCU, M1831.

b) Re-install SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

c) If the maintenance message does not show on SMYD 2, then you corrected the fault.

**———————— END OF TASK ————————**

**806. Flap Discrete error - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

(a) 22-21005 flap sig disagree (SMYD 1)

(b) 22-22005 flap sig disagree (SMYD 2)

(2) The flap indication inputs disagree.

B. Possible Causes

(1) TE flap switch, S245

(2) Flap position transmitter, T428 (SMYD1), or T427 (SMYD2)

(3) Wiring problem



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Related Data

(1) (SSM 22-23-12)

(2) (SSM 27-32-11)

(3) (WDM 22-23-12)

(4) (WDM 27-32-11)

D. Initial Evaluation

(1) If the maintenance message does not show in the SMYD 1 or 2 BITE:EXISTING FAULTS, then there was an intermittent fault.

(2) If the maintenance message shows in the SMYD 1 or 2 BITE:EXISTING FAULTS, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this BITE test of the TE flap limit switch:

(a) For maintenance message 22-21005: push the MENU button on SMYD 1 to access the main menu.

NOTE: EXISTING FAULTS? will be shown on the display. If not, push the menu button until it is shown.

(b) For maintenance message 22-22005, push the MENU button on SMYD 2 to access the main menu.

NOTE: EXISTING FAULTS? will be shown on the display. If not, push the menu button until it is shown.

(c) Push the down arrow until GROUND TEST? is shown.

(d) Push the YES button.

(e) Push the NO button.

(f) Push the YES button to do the DISCRETE INPUTS? test.

(g) Push the down arrow until FLAP UP shows on the display.

(h) If the flap position shown under FLAP UP does not agree with the flap position, then do these steps:

1) Replace the TE flap limit switch, S245.

2) Do the EXISTING FAULTS? test again. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

a) If the maintenance message does not show, then you corrected the fault.

b) If the maintenance message shows, then continue.

(2) Do this check of the wiring:

(a) Remove SMYD 1, M1747 or SMYD 2, M1748. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Disconnect connector D40006J in the main wheel well.

(c) Check the connectors and sockets for bent or broken pins, dirt and damage.

(d) Do a continuity check between these pins:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| | |
|---|---|
| **D3683A (SMYD 1)** | **D40006J** |
| pin 35 | pin 1 |
| **D3685A (SMYD 2)** | **D40006J** |
| pin 35 | pin 1 |

1) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-install SMYD 1, M1747 or SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.
   c) Re-connect connector D40006J in the main wheel well.
   d) If the maintenance message does not show on SMYD 1 or SMYD 2, then you corrected the fault.
2) If you do not find a problem with the wiring, then do these steps:
   a) Re-install SMYD 1, M1747 or SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.
   b) Re-connect connector D40006J in the main wheel well.
   c) If the maintenance message does not show on SMYD 1 or SMYD 2 then you corrected the fault.
   d) If the maintenance message still shows, then continue.

(3) Do this BITE test of the flap position transmitter:
   (a) Push the MENU button on SMYD 1 or SMYD 2 to access the main menu.

   NOTE: EXISTING FAULTS? will be shown on the display. If not, push the menu button until it is shown.

   (b) Push the down arrow until GROUND TEST? is shown.
   (c) Push the YES button.
   (d) Push the NO button until ANALOG INPUTS? shows on the display.
   (e) Push the YES button to do the ANALOG INPUTS? test.
   (f) Push the down arrow until FLAP DET or FLAP INVALID shows on the display.
   (g) If FLAP INVALID shows on the display, do these steps:
      1) Replace the flap position transmitter, T428 for SMYD 1 or T427 for SMYD 2l.
      2) Do the EXISTING FAULTS? test again. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.
         a) If the maintenance message does not show, then you corrected the fault.
         b) If the maintenance message shows, then continue.

(4) For maintenance message 22-21005, SMYD 1, do this check of the wiring:
   (a) Remove SMYD 1, M1747. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.
   (b) Disconnect connector D229 from the flap position transmitter, T428.
   (c) Check the connectors and sockets for bent or broken pins, dirt and damage.
   (d) Check for 28VAC at pin 4 of D229.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(e) Check for continuity to ground at pin 5 of D229.

(f) Do a continuity check between these pins:

| D3683B (SMYD 1) | | D229 (T428) |
|---|---|---|
| pin 97 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin 98 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin 99 | - - - - - - - - - - - - - - - - - - | pin 6 |

1) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install SMYD 1, M1747. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

c) Re-connect connector D229 in the main wheel well.

d) If the maintenance message does not show on SMYD 1, then you corrected the fault.

2) If you do not find a problem with the wiring, then do these steps:

a) Re-install SMYD 1, M1747. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

b) Re-connect connector D229 in the main wheel well.

c) If the maintenance message does not show on SMYD 1 then you corrected the fault.

(5) For maintenance message 22-22005, SMYD 2, do this check of the wiring:

(a) Remove SMYD 2, M1748. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Disconnect connector D275 from the flap position transmitter, T427.

(c) Check the connectors and sockets for bent or broken pins, dirt and damage.

(d) Check for 28VAC at pin 4 of D275.

(e) Check for continuity to ground at pin 5 of D275.

(f) Do a continuity check between these pins:

| D3685B (SMYD 2) | | D275 (T427) |
|---|---|---|
| pin 97 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin 98 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin 99 | - - - - - - - - - - - - - - - - - - | pin 6 |

1) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

c) Re-connect connector D275 in the main wheel well.

d) If the maintenance message does not show on SMYD 2, then you corrected the fault.

2) If you do not find a problem with the wiring, then do these steps:

a) Re-install SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

b) Re-connect connector D275 in the main wheel well.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

c) If the maintenance message does not show on SMYD 2 then you corrected the fault.

—————— END OF TASK ——————

**807. No data From X-Channel Bus - Fault Isolation**

A. Description

(1) This task is for this maintenance message:

(a) 22-21007 no X-CH data (SMYD 1)

(b) 22-22007 no X-CH data (SMYD 2)

(2) There is no x-channel data.

B. Possible Causes

(1) Stall management yaw damper (SMYD), M1747 (SMYD 1) or M1748 (SMYD 2)

(2) Wiring problem

C. Related Data

(1) (SSM 22-23-11)

(2) (WDM 22-23-11)

D. Initial Evaluation

(1) If the maintenance message do not show in the SMYD 1 or 2 BITE:EXISTING FAULTS, then there was an intermittent fault.

(2) If the maintenance message shows in the SMYD 1 or 2 BITE:EXISTING FAULTS, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) For maintenance message 22-21007, do these steps:

(a) Replace SMYD 2, M1748.

These are the tasks:

Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801,

Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(b) Do the SMYD 1 BITE TEST:EXISTING FAULTS. To do BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message shows, then continue.

(2) For maintenance message 22-22007, do these steps:

(a) Replace SMYD 1 M1747.

These are the tasks:

Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801,

Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(b) Do the SMYD 2 BITE TEST:EXISTING FAULTS. To do BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message shows, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) Do this check of the wiring:

(a) Remove SMYD 1 and SMYD 2. To remove them, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Check the SMYD connectors and sockets for bent or broken pins, dirt and damage.

(c) Do a continuity check between these pins:

| | |
|---|---|
| **D3683B (SMYD 1)** | **D3685B (SMYD 2)** |
| pin 94 | pin 53 |
| pin 53 | pin 94 |
| **D3683B (SMYD 1)** | **D3685A (SMYD 2)** |
| pin 86 | pin 25 |
| **D3683A (SMYD 1)** | **D3685B (SMYD 2)** |
| pin 25 | pin 86 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install SMYD 1, M1747 and SMYD 2, M1748. To install them, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) If the maintenance message does not show on SMYD 1 or SMYD 2, then you corrected the fault.

(e) If you do not find a problem with the wiring, then do these steps:

1) Re-install SMYD 1, M1747 and SMYD 2, M1748. To install them, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

2) If the maintenance message does not show on SMYD 1 or SMYD 2, then you corrected the fault.

**——————— END OF TASK ———————**

## 808. SMYD X-Channel Bus Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 22-21009 X-CH cmd disagree

(b) 22-22009 X-CH cmd disagree

(2) There is a cross channel disagreement or test time out.

B. Possible Causes

(1) Stall management yaw damper (SMYD), M1747 (SMYD 1) or M1748 (SMYD 2)

(2) Wiring problem

C. Related Data

(1) (SSM 22-23-11)

(2) (WDM 22-23-11)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) If the maintenance message does not show in SMYD 1 or 2 BITE:EXISTING FAULTS, then there was an intermittent fault.

(2) If the maintenance message shows in SMYD 1 or 2 BITE:EXISTING FAULTS, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) For maintenance message 22-21009, do these steps:

(a) Replace SMYD 2, M1748.

These are the tasks:

Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801,

Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(b) Do the SMYD 1 BITE TEST:EXISTING FAULTS. To do the BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message shows, then continue.

(c) Replace SMYD 1, M1747.

These are the tasks:

Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801,

Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(d) Do the SMYD 1 BITE TEST:EXISTING FAULTS. To do the BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message shows, then continue.

(2) For maintenance message 22-22009, do these steps:

(a) Replace SMYD 1, M1747.

These are the tasks:

Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801,

Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(b) Do the SMYD 2 BITE TEST:EXISTING FAULTS. To do the BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message shows, then continue.

(c) Replace SMYD 2, M1748.

These are the tasks:

Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801,

Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(d) Do the SMYD 2 BITE TEST:EXISTING FAULTS. To do the BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message shows, then continue.

(3) Do this check of the wiring:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Remove SMYD 1 and SMYD 2. To remove them, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Check the connectors and sockets for bent or broken pins, dirt and damage.

(c) Do a continuity check between these pins:

| | |
|---|---|
| **D3685A (SMYD 2)** | **D3683A (SMYD 1)** |
| pin 61 - - - - - - - - - - - - - - - - - - | pin 51 |
| **D10064** | **D3683A (SMYD 1)** |
| pin 30 - - - - - - - - - - - - - - - - - - | pin 51 |
| **D10064** | **D3685A (SMYD 2)** |
| pin 30 - - - - - - - - - - - - - - - - - - | pin 61 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install SMYD 1, M1747 and SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) If the maintenance message does not show on SMYD 1 or SMYD 2, then you corrected the fault.

(e) If you do not find a problem with the wiring, then do these steps:

1) Re-install SMYD 1, M1747 and SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

2) If the maintenance message does not show on SMYD 1 or SMYD 2, then you corrected the fault.

**——————— END OF TASK ———————**

## 809. SMYD 1, Rudder PCU Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 22-21006 YD servo loop (SMYD 1)

(2) There is a fault in the servo loop between SMYD 1 and the rudder PCU.

B. Possible Causes

(1) SMYD 1, M1747

(2) Rudder PCU Solenoid and Transfer Valve

(3) Rudder PCU, M175

(4) Wiring problem

C. Related Data

(1) (SSM 22-23-12)

(2) (WDM 22-23-12)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Initial Evaluation

(1) If the maintenance message does not show in SMYD 1 BITE:EXISTING FAULTS, then there was an intermittent fault.

(2) If the maintenance message shows in SMYD 1 BITE:EXISTING FAULTS, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Replace SMYD 1, M1747.

These are the tasks:

Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801,

Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(a) Do the SMYD 1 BITE:EXISTING FAULTS test. To do BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message shows, then continue.

(2) Do these tasks: Main Rudder PCU Solenoid and Transfer Valves Removal, AMM TASK 22-23-21-000-801 and Main Rudder PCU Solenoid and Transfer Valves Installation, AMM TASK 22-23-21-400-801.

(a) Do the SMYD 1 BITE:EXISTING FAULTS test. To do BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message shows, then continue.

(3) Replace the rudder PCU, M175.

These are the tasks:

Main Rudder Power Control Unit Removal, AMM TASK 27-21-91-000-804-001 or Main Rudder Power Control Unit Removal, AMM TASK 27-21-91-000-803-002,

Main Rudder Power Control Unit Installation, AMM TASK 27-21-91-400-804-001 or Main Rudder Power Control Unit Installation, AMM TASK 27-21-91-400-803-002.

(a) Do the SMYD 1 BITE:EXISTING FAULTS test. To do BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message shows, then continue.

(4) Do this check of the wiring:

(a) Remove SMYD 1. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Disconnect connector D291 from the rudder PCU, M175.

(c) Check the connectors and sockets for bent or broken pins, dirt and damage.

(d) Do a wiring check between these pins:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D291 (Rudder PCU) | | D3683B (SMYD 1) |
|---|---|---|
| pin 12 | - - - - - - - - - - - - - - - - - - | pin B30 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin B16 |
| pin 4 | - - - - - - - - - - - - - - - - - - | pin B29 |
| pin 10 | - - - - - - - - - - - - - - - - - - | pin B13 |
| pin 7 | - - - - - - - - - - - - - - - - - - | pin B40 |
| pin 6 | - - - - - - - - - - - - - - - - - - | pin B41 |

| D291 (Rudder PCU) | | D3683A (SMYD 1) |
|---|---|---|
| pin 1 | - - - - - - - - - - - - - - - - - - | pin A39 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D291 to the rudder PCU, M175.

3) Re-install SMYD 1, M1747. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

4) If the maintenance message does not show on SMYD 1, then you corrected the fault.

(f) If you do not find a problem with the wiring, then do these steps:

1) Re-connect connector D291 to the rudder PCU, M175.

2) Re-install SMYD 1, M1747. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) If the maintenance message does not show on SMYD 1, then you corrected the fault.

**——————— END OF TASK ———————**

## 810. SMYD 2, Standby Rudder PCU Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 22-22006 YD servo loop (SMYD 2)

(2) There is a fault in the servo loop between SMYD 2 and the standby rudder PCU.

B. Possible Causes

(1) SMYD 2, M1748

(2) Standby Rudder PCU Solenoid and Transfer Valve

(3) Standby rudder PCU, M1831

(4) Wiring problem

C. Related Data

(1) (SSM 27-24-11)

(2) (WDM 27-24-11)

D. Initial Evaluation

(1) If the maintenance message does not show in SMYD 2 BITE:EXISTING FAULTS, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) If the maintenance message shows in SMYD 2 BITE:EXISTING FAULTS, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Replace SMYD 2, M1748.

These are the tasks:

Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801,

Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(a) Do the BITE TEST:EXISTING FAULTS on SMYD 2, M1748. To do BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message shows, then continue.

(2) Do these tasks: Standby Rudder PCU Solenoid and Transfer Valves Removal, AMM TASK 22-23-11-000-801 and Standby Rudder PCU Solenoid and Transfer Valves Installation, AMM TASK 22-23-11-400-801.

(a) Do the SMYD 2 BITE:EXISTING FAULTS test. To do BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message shows, then continue.

(3) Replace the standby rudder PCU, M1831.

These are the tasks:

Standby Rudder Power Control Unit Removal, AMM TASK 27-21-24-000-801,

Standby Rudder Power Control Unit Installation, AMM TASK 27-21-24-400-801.

(a) Do the BITE TEST:EXISTING FAULTS on SMYD 2, M1748. To do BITE, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.

2) If the maintenance message shows, then continue.

(4) Do this check of the wiring:

(a) Remove SMYD 2, M1748. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Disconnect connector D10013 from the standby rudder PCU, M1831.

1) Do a wiring check between these pins:

| **D10013 (St Rud PCU)** | | **D3685B (SMYD 2)** |
|---|---|---|
| pin 12 | - - - - - - - - - - - - - - - - - - | pin B30 |
| pin 11 | - - - - - - - - - - - - - - - - - - | pin B16 |
| pin 4 | - - - - - - - - - - - - - - - - - - | pin B29 |
| pin 10 | - - - - - - - - - - - - - - - - - - | pin B13 |
| pin 7 | - - - - - - - - - - - - - - - - - - | pin B40 |
| pin 6 | - - - - - - - - - - - - - - - - - - | pin B41 |

| **D10013 (St Rud PCU)** | | **D3685A (SMYD 2)** |
|---|---|---|
| pin 1 | - - - - - - - - - - - - - - - - - - | pin A39 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect connector D10013 to the rudder PCU, M1831.
   c) Re-install SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.
   d) If the maintenance message does not show on SMYD 2, then you corrected the fault.
3) If you do not find a problem with the wiring, then do these steps:
   a) Re-connect connector D10013 to the standby rudder PCU, M1831.
   b) Re-install SMYD 2, M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.
   c) If the maintenance message does not show on SMYD 2, then you corrected the fault.

**——————— END OF TASK ———————**


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**801. Autothrottle BITE Procedure**

A. General

(1) You do the autothrottle (A/T) BITE tests from the Control Display Unit (CDU). These are the items on the A/T BITE TEST menu that you can use in this task:

(a) CURRENT STATUS

(b) INFLIGHT FAULTS

(c) INTERACTIVE

(2) CURRENT STATUS

**HAP 001-013, 015-026, 028-030**

(a) The CURRENT STATUS display will show any maintenance messages that are currently active for the autothrottle system. A maintenance message identifies a specific failure which is found by the autothrottle BITE. The maintenance messages are usually abbreviations for line replaceable units (LRUs).

**HAP 031-054, 101-999**

(b) The CURRENT STATUS display will show any maintenance messages and interface pins(if present) that are currently active for the autothrottle system. A maintenance message , interface pins and maintenance message number identifies a specific failure which is found by the autothrottle BITE. The maintenance messages are usually abbreviations for line replaceable units (LRUs).

**HAP ALL**

(3) INFLIGHT FAULTS

(a) The INFLIGHT FAULTS display shows the flight legs during which faults occurred. The autothrottle BITE shows data for the last ten flight legs that had faults. The flight legs are shown with the flight leg that had the most recent fault at the top of the first page. Only the flight legs during which faults occurred will show. You can use the PREV PAGE and NEXT PAGE keys to see all the flight legs.

(b) Press the line select key (LSK) adjacent to the prompt for one of the flight legs that has a fault. You will see this data:

1) The flight leg number.

2) The date of the flight leg.

3) The time that the flight leg started.

**HAP 001-013, 015-026, 028-030**

4) The fault message. Each fault message shows this fault data:

a) Maintenance message.

b) The flight deck effect.

c) If it is a repeated fault.

d) The time that the fault occurred.

e) The specific fault found.

**HAP 031-054, 101-999**

5) The maintenance message. Each maintenance message shows this fault data:

a) Monitor message.

b) Maintenance message.

c) Interface Pins(if present).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

d) Maintenance message number.

**HAP ALL**

(c) If there are more than three maintenance messages for that flight leg, they will show on a subsequent page.

(4) INTERACTIVE

**HAP 001-013, 015-026, 028-030**

(a) The INTERACTIVE tests require specific actions to be completed by the maintenance crew. You must do the instructions that show on the CDU display to complete the interactive tests. The CDU will show any maintenance messages that are currently active for the autothrottle system.

**HAP 031-054, 101-999**

(b) The INTERACTIVE tests require specific actions to be completed by the maintenance crew. You must do the instructions that show on the CDU display to complete the interactive tests. The CDU will show any maintenance messages, interface pin and maintenance message number that are currently active for the autothrottle system.

**HAP ALL**

B. Procedure

(1) Do the BITE procedure for the autothrottle Figure 201.

(a) If you are not at one of the A/T BITE TEST displays, then do these steps:

1) Push the INIT REF function key.

2) If the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

3) Push the LSK adjacent to the MAINT prompt.

(b) From the MAINT BITE INDEX, push the line select key (LSK) adjacent to the A/T prompt.

NOTE: This shows you the A/T BITE TEST index.

1) Push the LSK adjacent to INFLIGHT FAULTS.

2) Push the LSK adjacent to the prompt for the flight leg (FLT) during which the fault occurred.

NOTE: The most recent flight leg is FLT 01.

**HAP 031-054, 101-999**

3) If TEST FAILED shows with maintenance messages 22–11209 and 22–11210, then do these steps:

a) Do a check of the time and altitude that the maintenance message 22–11209 for channel A and maintenace message 22–11210 for channel B are recorded.

b) If the maintenance message 22–11209 for channel A and maintenance message 22–11210 for channel B have the same recorded time and altitude, then ignore this failure.

NOTE: This is a nuisance fault.

c) If the maintenance message 22–11209 for channel A and maintenance message 22–11210 for channel B have the different recorded time and altitude, then continue.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

**HAP 001-013, 015-026, 028-030**

4) Make a record of the maintenance messages, the specific faults found, flight deck effect, if it is repeated fault.

NOTE: Maintenance message is the suspect LRU.

**HAP 031-054, 101-999**

5) Make a record of the maintenance messages, interface pins and message numbers.

NOTE: Maintenance message the suspect LRU.

**HAP ALL**

6) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

NOTE: Push the LSK adjacent to NEXT FLIGHT to move to the subsequent flight leg that has faults.

(c) If no maintenance messages show in INFLIGHT FAULT, do these steps to look for maintenance messages in CURRENT STATUS:

1) Push the LSK adjacent to CURRENT STATUS.

2) Do the instructions that are shown on the CDU display to complete the initial conditions that are necessary for the self-test.

3) Push the LSK adjacent to CONTINUE.

NOTE: During the CURRENT STATUS tests, the CDU display will show TEST IN PROGRESS.

NOTE: If there are active faults detected by the autothrottle BITE, you will see a maintenance message for each fault.

**HAP 001-013, 015-026, 028-030**

4) If there are any maintenance messages displays.

a) Make a record of the maintenance messages.

**HAP 031-054, 101-999**

5) If there are any maintenance messages displays.

a) Make a record of the maintenance messages, interface pins(if present) and message number.

**HAP ALL**

6) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

NOTE: The number of pages of maintenance messages that are in CURRENT STATUS is shown in the upper right corner of the CDU display. You can use the PREV PAGE and NEXT PAGE keys to move from one page to another.

7) If NO FAULTS is shown on the CDU display, then do these steps:

NOTE: The NO FAULTS message tells you that there are no faults that are currently active.

a) Push the LSK adjacent to INDEX.

b) Do the instructions on the CDU display.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

c) Push the LSK adjacent to CONTINUE.

NOTE: This will show you the A/T BITE TEST index.

(d) If no maintenance messages show in CURRENT STATUS, do these steps to look for maintenance messages in INTERACTIVE tests:

1) Push the LSK adjacent to INTERACTIVE.

2) Do the instructions that show on the CDU display to complete all INTERACTIVE tests.

**HAP 001-013, 015-026, 028-030**

3) look to see If there are any maintenance messages displays.

a) Make a record of the maintenance messages.

NOTE: The maintenance message is the suspect LRU.

**HAP 031-054, 101-999**

4) If there are any mainenance message displays.

a) Make a record of the maintenance messages, interface pins and message number.

NOTE: The maintenance message and message number is the suspect LRU.

**HAP ALL**

5) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

6) If NO FAULTS is shown on the CDU display, then do these steps:

NOTE: The NO FAULTS message tells you that there are no faults that are currently active.

a) Push the LSK adjacent to INDEX.

b) Do the instructions on the CDU display.

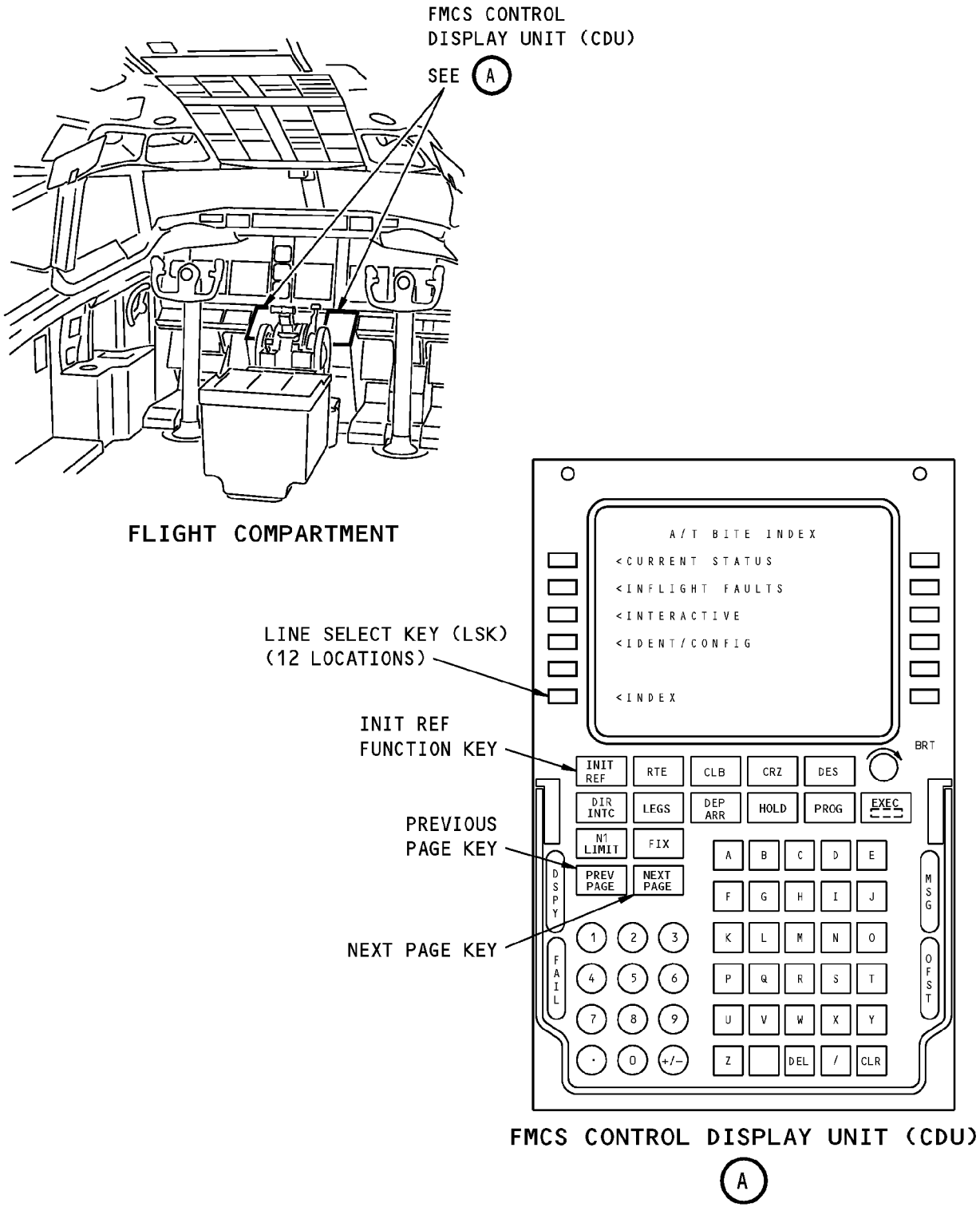
c) Push the LSK adjacent to CONTINUE.

NOTE: This will bring you back to the A/T BITE TEST index.

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details




Autothrottle BITE Index
Figure 201 / 22-31-00-990-802



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31001 ADIRU(ADC)-1 | 22-31 TASK 807 |
| A/T | 22-31004 ADIRU(IRU)-1 | 22-31 TASK 807 |
| A/T | 22-31005 ADIRU(IRU)-2 | 22-31 TASK 807 |
| A/T | 22-31011 ALPHA VANE-1 | 22-31 TASK 813 |
| A/T | 22-31012 ALPHA VANE-2 | 22-31 TASK 813 |
| A/T | 22-31017 ADIRU (ADC)-1 ALPHA VANE-1 | 22-11 TASK 806 |
| A/T | 22-31018 ADIRU (ADC)-2 ALPHA VANE-2 | 22-11 TASK 807 |
| A/T | 22-31024 ADIRU(ADC)-2 | 22-31 TASK 807 |
| A/T | 22-31035 ALPHA VANE-1, ALPHA VANE-2 | 22-31 TASK 813 |
| A/T | 22-31046 ASM 1 (J1A-C06,D05) | 22-31 TASK 805 |
| A/T | 22-31051 RADIO ALT-1 (J1B-B04,A04) | 22-31 TASK 809 |
| A/T | 22-31052 RADIO ALT-2 (J1B-B04,A04) | 22-31 TASK 809 |
| A/T | 22-31056 ASM 2 (J1B-C06,D05) | 22-31 TASK 805 |
| A/T | 22-31057 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31058 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31059 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31060 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31061 MCP | 22-31 TASK 804 |
| A/T | 22-31071 FMC-2 | 22-31 TASK 803 |
| A/T | 22-31072 THRUST RVSR | 22-31 TASK 801 |
| A/T | 22-31074 MCP | 22-31 TASK 804 |
| A/T | 22-31081 SMYDC-1 | 22-31 TASK 808 |
| A/T | 22-31082 SMYDC-2 | 22-31 TASK 808 |
| A/T | 22-31221 TOGA SW-1 | 22-13 TASK 810 |
| A/T | 22-31222 TOGA SW-2 | 22-13 TASK 811 |
| A/T | 22-31263 AFCS A/T CB | 22-31 TASK 810 |
| A/T | 22-31273 ASM 1 | 22-31 TASK 805 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31274 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31281 A/P DISC SW-1 (J1B-K07) | 22-13 TASK 809 |
| A/T | 22-31282 A/P DISC SW-2 (J1B-K07) | 22-13 TASK 809 |
| A/T | 22-31294 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31295 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31296 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31297 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31303 FCC-A | 22-14 TASK 801 |
| A/T | 22-31317 FCC-B | 22-14 TASK 801 |
| A/T | 22-31341 FCC-A SOP PARITY (J1A-K09) | 22-16 TASK 831 |
| A/T | 22-31343 FCC INCOMPATIBILITY | 22-16 TASK 831 |
| A/T | 22-31344 FCC-A S/W CONFIG | Reference Not Currently Available |
| A/T | 22-31351 ADC CAS > 60 OR CAS INV IRU-1 GS > 40 OR GS INV IRU-2 GS > 40 OR GS INV | 22-11 TASK 826 |
| A/T | 22-31353 FCC-B (J1B-E10, D10) | 22-15 TASK 825 |
| A/T | 22-31354 FCC-B (J1B-B10, A10) | 22-15 TASK 825 |
| A/T | 22-31359 RADIO ALT-2, FCC-B | 22-31 TASK 809 |
| A/T | 22-31360 FMC (NO FMC REQ) | 22-31 TASK 803 |
| A/T | 22-31361 MCP (A/P ENGAGED) (J1B-H01) | 22-11 TASK 817 |
| A/T | 22-31362 MCP (A/P ENGAGED) (J1A-H01) | 22-11 TASK 817 |
| A/T | 22-31363 AIR/GND SW INDICATES AIR MODE (J1A-B03) | 22-15 TASK 815 |
| A/T | 22-31376 ADIRU(ADC)-1 | 22-31 TASK 807 |
| A/T | 22-31377 ADIRU(ADC)-2 | 22-31 TASK 807 |
| A/T | 22-31378 ADIRU(IRU)-1 | 22-31 TASK 807 |
| A/T | 22-31379 ADIRU(IRU)-2 | 22-31 TASK 807 |
| A/T | 22-31385 RADIO ALT-1 (J1B-B04,A04) | 22-31 TASK 809 |
| A/T | 22-31388 FMC-1 | 22-31 TASK 803 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31397 SMYDC-1 | 22-31 TASK 808 |
| A/T | 22-31398 SMYDC-2 | 22-31 TASK 808 |
| A/T | 22-31399 ASM-1 (J1A-D05,C06) | 22-31 TASK 805 |
| A/T | 22-31400 ASM-2 (J1B-D05,C06) | 22-31 TASK 805 |
| A/T | 22-31401 FCC-A PROG PINS | 22-16 TASK 831 |
| A/T | 22-31410 EEC 1A | 22-31 TASK 806 |
| A/T | 22-31411 EEC 1B | 22-31 TASK 806 |
| A/T | 22-31412 EEC 2A | 22-31 TASK 806 |
| A/T | 22-31413 EEC 2B | 22-31 TASK 806 |
| A/T | 22-31425 RADIO ALT-2 (J1B-B04,A04) | 22-31 TASK 809 |
| A/T | 22-31453 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31454 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31501 ASM-1 (J1A-D05,C06) | 22-31 TASK 805 |
| A/T | 22-31502 ASM-2 (J1B-D05,C06) | 22-31 TASK 805 |
| A/T | 22-31511 EEC 1A | 22-31 TASK 806 |
| A/T | 22-31512 EEC 1B | 22-31 TASK 806 |
| A/T | 22-31513 EEC 2A | 22-31 TASK 806 |
| A/T | 22-31514 EEC 2B | 22-31 TASK 806 |
| A/T | 22-31515 EEC-1 | 22-31 TASK 806 |
| A/T | 22-31516 EEC-2 | 22-31 TASK 806 |
| A/T | 22-31517 FCC-A (J1A-A14,B14) | 22-31 TASK 805 |
| A/T | 22-31518 FCC-A (J1A-A09,B09) | 22-31 TASK 805 |
| A/T | 22-31519 FCC-A (J1B-A14,B14) | 22-31 TASK 806 |
| A/T | 22-31520 FCC-A (J1B-A09,B09) | 22-31 TASK 805 |
| A/T | 22-31523 FMC-1, EEC-1/-2 | 22-31 TASK 818 |
| A/T | 22-31524 TEMP INVERSN | 22-31 TASK 819 |
| A/T | 22-31525 BRAKE, ASM-1/-2, EEC-1/-2, TLA-1/-2 | 22-31 TASK 812 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31531 EEC-1 (ENGINE RUNNING) Bite Entry | 22-11 TASK 801 |
| A/T | 22-31532 EEC-2 (ENGINE RUNNING) Bite Entry | 22-11 TASK 801 |
| A/T | 22-31538 FCC-A (J1B-F07) | 22-32 TASK 805 |
| A/T | 22-31539 FCC-A (J1A-C09, J1B-F10) | 22-32 TASK 814 |
| A/T | 22-31540 FCC-A (J1B-E09, J1B-F10) | 22-32 TASK 814 |
| A/T | 22-31542 FCC-A (J1B-G09) | 22-31 TASK 802 |
| A/T | 22-31543 FCC-A (J1A-D11) | 22-31 TASK 802 |
| A/T | 22-31544 A/T DISENG THR LVR-1 (J1B-F07) | 22-32 TASK 805 |
| A/T | 22-31545 A/T DISENG THR LVR-2 (J1B-F07) | 22-32 TASK 805 |
| A/T | 22-31546 AUTO FLT STAT ANN-CAPT (J1B-B07) | 22-15 TASK 804 |
| A/T | 22-31547 AUTO FLT STAT ANN-F/O (J1B-B07) | 22-15 TASK 804 |
| A/T | 22-31578 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31579 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31580 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31581 ASM-2 | 22-31 TASK 805 |
| A/T | 22-31582 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31583 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31584 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31585 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31588 RADIO ALT-1, RADIO ALT-2 | 22-31 TASK 809 |
| A/T | 22-31590 FCC-A | 22-31 TASK 802 |
| A/T | 22-31610 MCP (J1B-K05,K04) | 22-31 TASK 804 |
| A/T | 22-31611 MCP (J1B-K05,K04) | 22-31 TASK 804 |
| A/T | 22-31671 ENGINE 1 N1 | 22-31 TASK 817 |
| A/T | 22-31672 ENGINE 2 N2 | 22-31 TASK 817 |
| A/T | 22-31673 TRA 1 | 22-31 TASK 817 |
| A/T | 22-31674 TRA 2 | 22-31 TASK 817 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31675 ENGINE 1 N1 | 22-31 TASK 817 |
| A/T | 22-31676 ENGINE 2 N2 | 22-31 TASK 817 |
| A/T | 22-31677 TRA 1 | 22-31 TASK 817 |
| A/T | 22-31678 TRA 2 | 22-31 TASK 817 |
| A/T | 22-31679 CREW OPERATION, ASM | 22-31 TASK 817 |
| A/T | 22-31680 CREW OPERATION FMC | 22-31 TASK 817 |
| A/T | 22-31681 CREW OPERATION, EEC | 22-32 TASK 804 |
| A/T | 22-31682 FCC-A | 22-31 TASK 802 |
| A/T | 22-31683 MANUAL THROTTLE ADJ | 22-31 TASK 819 |
| A/T | 22-31684 MANUAL THROTTLE ADJ | 22-31 TASK 819 |
| A/T | 22-31685 EEC 1 | 22-31 TASK 819 |
| A/T | 22-31686 EEC 2 | 22-31 TASK 819 |
| A/T | 22-31687 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31688 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31689 EEC 1, EEC 2 | 22-31 TASK 806 |
| A/T | 22-31690 ENGINE 1, ENGINE 2 | 22-31 TASK 806 |
| A/T | 22-31691 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31692 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31696 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31728 FMC SW CONFIG | 22-31 TASK 803 |
| A/T | 22-31729 CDS/DEU-1 (J1B-F09,F08) | 22-32 TASK 817 |
| A/T | 22-31742 FCC-A (J1A-C09,J1B-E09) | 22-32 TASK 814 |
| A/T | 22-31745 CDS/DEU-2 (J1B-F09,F08) | 22-32 TASK 817 |
| A/T | 22-31761 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31762 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31763 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31764 ASM 1 | 22-31 TASK 805 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31765 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31766 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31767 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31768 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31769 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31770 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31771 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31772 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31773 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31774 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31775 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31776 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31777 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31778 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31779 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31780 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31781 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31782 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31783 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31784 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31785 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31786 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31787 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31788 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31789 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31790 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31791 ASM 2 | 22-31 TASK 805 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | 22-31792 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31793 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31794 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31795 ASM 2 | 22-31 TASK 805 |
| A/T | 22-31803 CREW OPERATION, ENGINE 1 | 22-31 TASK 806 |
| A/T | 22-31804 CREW OPERATION, ENGINE 2 | 22-31 TASK 806 |
| A/T | 22-31805 ASM 1 | 22-31 TASK 805 |
| A/T | 22-31822 FMC-2 | 22-31 TASK 803 |
| A/T | 28V POWER | 22-31 TASK 810 |
| A/T | 737 CONFIG | 22-31 TASK 811 |
| A/T | A/T BRAKE THROT SPLIT | 22-31 TASK 812 |
| A/T | A/T | 22-31 TASK 802 |
| A/T | ADIRU(ADC)-1 (J1B-E04,D04) | 22-31 TASK 807 |
| A/T | ADIRU(ADC)-2 (J1A-K04,J04) | 22-31 TASK 807 |
| A/T | ADIRU(IRU)-1 (J1B-K03,K02) | 22-31 TASK 807 |
| A/T | ADIRU(IRU)-2 (J1A-K03,K02) | 22-31 TASK 807 |
| A/T | ADIRU-AD 1 | 22-31 TASK 807 |
| A/T | ADIRU-AD 2 | 22-31 TASK 807 |
| A/T | ADIRU-IR 1 | 22-31 TASK 807 |
| A/T | ADIRU-IR 2 | 22-31 TASK 807 |
| A/T | ALPHA VANE-1 VANE DIFF | 22-31 TASK 813 |
| A/T | ALPHA VANE-2 VANE DIFF | 22-31 TASK 813 |
| A/T | ASM 1 | 22-31 TASK 805 |
| A/T | ASM 2 | 22-31 TASK 805 |
| A/T | ASM-1 THROT SPLIT | 22-31 TASK 812 |
| A/T | ASM-2 THROT SPLIT | 22-31 TASK 812 |
| A/T | EEC 1A | 22-31 TASK 806 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | EEC 1B | 22-31 TASK 806 |
| A/T | EEC 2A | 22-31 TASK 806 |
| A/T | EEC 2B | 22-31 TASK 806 |
| A/T | EEC-1 TARGET MON | 22-31 TASK 818 |
| A/T | EEC-1 THROT SPLIT | 22-31 TASK 812 |
| A/T | EEC-1 | 22-31 TASK 806 |
| A/T | EEC-1A (J1A-C04,B04) | 22-31 TASK 806 |
| A/T | EEC-1B (J1B-C04,B04) | 22-31 TASK 806 |
| A/T | EEC-2 TARGET MON | 22-31 TASK 818 |
| A/T | EEC-2 THROT SPLIT | 22-31 TASK 812 |
| A/T | EEC-2 | 22-31 TASK 806 |
| A/T | EEC-2A (J1A-J02,J01) | 22-31 TASK 806 |
| A/T | EEC-2B (J1B-C04,B04) | 22-31 TASK 806 |
| A/T | FMC (J1A-E04,D04) | 22-31 TASK 803 |
| A/T | FMC-1 (J1A-E04,D04) | 22-31 TASK 803 |
| A/T | FMC-1 TARGET MON | 22-31 TASK 818 |
| A/T | FMC-1 | 22-31 TASK 803 |
| A/T | FMC-2 (J1A-E04,D04) | 22-31 TASK 803 |
| A/T | FMC-2 | 22-31 TASK 803 |
| A/T | FMC | 22-31 TASK 803 |
| A/T | MAN THR ADJ | 22-31 TASK 819 |
| A/T | MANUAL THROTTLE ADJ | 22-31 TASK 819 |
| A/T | MCP (J1B-K05,K04) | 22-31 TASK 804 |
| A/T | MCP | 22-31 TASK 804 |
| A/T | RA 1 | 22-31 TASK 809 |
| A/T | RA 2 | 22-31 TASK 809 |
| A/T | RADIO ALT-1 (J1B-B04,A04) | 22-31 TASK 809 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| LRU/SYSTEM | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| A/T | RADIO ALT-2 (J1B-B04,A04) | 22-31 TASK 809 |
| A/T | SMYD 1 | 22-31 TASK 808 |
| A/T | SMYD 2 | 22-31 TASK 808 |
| A/T | SMYDC-1 (J1A-H04,G04) | 22-31 TASK 808 |
| A/T | SMYDC-2 (J1A-H04,G04) | 22-31 TASK 808 |
| A/T | T/O SET HI | 22-31 TASK 817 |
| A/T | T/O SET LO | 22-31 TASK 817 |
| A/T | TARGET MON | 22-31 TASK 818 |
| A/T | TEMP INVERSN | 22-31 TASK 819 |
| A/T | THROT SPLIT | 22-31 TASK 812 |
| A/T | TLA-1 THROT SPLIT | 22-31 TASK 812 |
| A/T | TLA-2 THROT SPLIT | 22-31 TASK 812 |
| A/T | VANE DIFF | 22-31 TASK 813 |

**802. Autothrottle Internal Problems - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

**HAP 031-054, 101-999**

(a) FCC-A (J1A-B04, A04): FCC-A detects A/T-01 output bus wrap around failure.

(b) FCC-A: FCC-A detects discrete wraparound fail for A/T Engage Hold On or software requested disengage did not occur during BITE.

**HAP 001-013, 015-026, 028-030**

(c) A/T: Autothrottle error.

**HAP ALL**

B. Possible Causes

**HAP 001-013, 015-026, 028-030**

(1) Autothrottle computer, M917.

**HAP 031-054, 101-999**

(2) Flight control computer A, M1875.

**HAP ALL**

(3) Servo Motor 2.

(4) Wiring Problem.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data

(1) (SSM 22-31-11)

(2) (SSM 22-31-31)

(3) (WDM 22-31-11)

(4) (WDM 22-31-31)

(5) (SSM 22-31-41)

(6) (SSM 22-31-51)

(7) (WDM 22-31-41)

(8) (WDM 22-31-51)

E. Initial Evaluation

(1) The Autothrottle BITE Procedure (Autothrottle BITE Procedure, 22-31 TASK 801) or Autothrottle BITE test was performed.

(a) If this maintenance message shows, then do the Fault Isolation Procedure below.

(b) If this maintenance message does not show, then there was an intermittent fault.

**HAP 001-013, 015-026, 028-030**

F. Fault Isolation Procedure

(1) Replace the autothrottle computer, M917.

These are the tasks:

Autothrottle Computer Removal, AMM TASK 22-31-10-000-801,

Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

(a) Do a check of CURRENT STATUS on the CDU to see if the maintenance message shows.

(b) If the CDU does not show the maintenance message, then you corrected the fault.

(c) If the maintenance message show, then continue.

(2) Do this check of the wiring:

Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 001-013, 015-026, 028-030 (Continued)**

(b) Disconnect connectors D10025 from autothrottle servo motor 1, M1836, or D10027 from autothrottle servo motor 2, M1837.

NOTE: The autothrottle servo motors are under the control stand in the area forward of the nose landing gear wheel well.

(c) AUTOTHROTTLE SERVO MOTOR 1, M1836;

Do a wiring check between these pins of the autothrottle computer connector D10009A and D10009B and the autothrottle servo motor connector D10025:

| D10009A | | D10025 |
|---|---|---|
| pin C6 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin C13 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin C15 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin D6 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin D13 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin D15 | - - - - - - - - - - - - - - - - - - | pin 14 |

| D10009B | | D10025 |
|---|---|---|
| pin C10 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin D10 | - - - - - - - - - - - - - - - - - - | pin 8 |

(d) AUTOTHROTTLE SERVO MOTOR 2, M1837;

Do a wiring check between these pins of the autothrottle computer connector D10009B and the autothrottle servo motor connector D10027:

| D10009B | | D10027 |
|---|---|---|
| pin C6 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin C10 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin C13 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin C15 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin D6 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin D10 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin D13 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin D15 | - - - - - - - - - - - - - - - - - - | pin 14 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.
3) Re-connect connectors D10025 to autothrottle servo motor 1, M1836, or D10027 to autothrottle servo motor 2, M1837.
4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.
   a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.
   b) If this maintenance message does not show, then you corrected the fault.

**HAP 031-054, 101-999**

G. Fault Isolation Procedure

(1) Replace the flight control computer, M1875.

These are the tasks:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(a) Do a check of CURRENT STATUS on the CDU to see if the maintenance message shows.

(b) If the CDU does not show the maintenance message, then you corrected the fault.

(c) If the maintenance message show on the CDU, then continue.

(2) Do this Task: Autopilot Disengage Switch Problem - Fault Isolation, 22-13 TASK 809

(a) Do a check of CURRENT STATUS on the CDU to see if the maintenance message shows.

(b) If the CDU does not show the maintenance message, then you corrected the fault.

**HAP ALL**

**———————— END OF TASK ————————**

**803. Flight Management Computer Failure - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) FMC

**HAP 031-054, 101-999**

(b) FMC-1

(c) FMC-2

(d) FMC (J1A-E04,D04)

(e) FMC-1 (J1A-E04,D04)

**HAP ALL**

(2) The autothrottle received invalid data or no data from the flight management computer (FMC) during flight.

B. Possible Causes

(1) Flight management computer, M1175 or M1632

(2) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| A | 6 | C01017 | FMCS CMPTR 1 |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|

**HAP 037-054, 101-999**

| | | | |
|---|---|---|---|
| D | 16 | C01262 | FMCS CMPTR 2 |

**HAP ALL**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Related Data

(1) (SSM 34-61-14)

(2) (WDM 34-61-14)

E. Initial Evaluation

**HAP 001-013, 015-026, 028-030**

(1) AIRPLANES WITH -52 AUTOTHROTTLE COMPUTER;

If the FMC does not have the Quiet Climb System (QCS) the autothrottle BITE will show "FMC" at the end of the current status test.

(a) If you see "FMC" at the end of the current status test then type in "100" in the FMC CDU key pad and push the CDU line-select key 6R while the "FMC" message is being displayed.

1) If the FMC CDU displays "FMC NO QCS" and does not have the QCS Operational Program Configuration (OPC) then there is no fault.

2) If the FMC CDU displays "FMC NO QCS" and has the QCS OPC U10.3 or later or if there is any other message displayed then there is a system fault. Do the step below.

**HAP ALL**

(2) Do this task: Flight Management Computer System BITE Procedure, 34-61 TASK 801.

(a) If a maintenance message shows, then do the Fault Isolation Procedure below:

(b) If a maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this check of the FMC:

(a) If the control display unit (CDU) shows an FMC failure, then do these steps:

1) Replace the flight management computer. These are the tasks:
- FMCS Computer Removal, AMM TASK 34-61-02-000-801
- FMCS Computer Installation, AMM TASK 34-61-02-400-801

2) Do this task: Flight Management Computer System BITE Procedure, 34-61 TASK 801.

a) Look to see if this maintenance message shows.

b) If this maintenance message does not show, then you corrected the fault.

(b) If the CDU does not show an FMC failure, then continue.

**HAP 001-013, 015-026, 028-030**

(2) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(b) Remove the FMC, M1175 or M1632. To remove it, do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801.

(c) Make sure that the FMCS transfer switch on the P5 panel is in the BOTH ON L or NORM position.

(d) FMC-1, M1175;



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Do a wiring check between these pins of the autothrottle computer connector D10009A and the FMC connector D2179A:

| D10009A | | D2179A |
|---|---|---|
| pin A5 | - - - - - - - - - - - - - - - - - - | pin G9 |
| pin B5 | - - - - - - - - - - - - - - - - - - | pin H9 |

(e) FMC-2, M1632;

Do a wiring check between these pins of the autothrottle computer connector D10009A and the FMC connector D3261A:

| D10009A | | D3261A |
|---|---|---|
| pin A5 | - - - - - - - - - - - - - - - - - - | pin G9 |
| pin B5 | - - - - - - - - - - - - - - - - - - | pin H9 |

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.
3) Re-install the FMC, M1175 or M1632. To install it, do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801.
4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.
   a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.
   b) If this maintenance message does not show, then you corrected the fault.

**HAP 031-054, 101-999**

(3) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the flight control computer A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the FMC, M1175 or M1632. To remove it, do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801.

(c) Make sure that the FMCS transfer switch on the P5 panel is in the BOTH ON R position.

(d) FMC-1, M1175; Do a wiring check between these pins of the flight control computer A connector D10135A and the FMC connector D2179A:

| D10135A | | D2179A |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin G9 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin H9 |

(e) FMC-2, M1632; Do a wiring check between these pins of the flight control computer A connector D10135A and the FMC connector D3261A:

| D10135A | | D3261A |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin G9 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin H9 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the flight control computer A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the FMC, M1175 or M1632. To install it, do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801.

4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, then you corrected the fault.

**HAP ALL**

**——————— END OF TASK ———————**

## 804. Mode Control Panel Failure - Fault Isolation

A. Description

(1) This task is for this maintenance message:

**HAP 001-013, 015-026, 028-030**

(a) MCP

**HAP 031-054, 101-999**

(b) MCP (J1B-K05,K04)

**HAP ALL**

(2) The autothrottle receives invalid data or no data from the digital flight control system mode control panel (DFCS MCP).

B. Possible Causes

(1) DFCS MCP, M198

(2) Flight control computer (FCC) A or FCC B, M1875 or M1876

(3) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |
| D | 2 | C01045 | AFCS SYS A FCC DC |
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |
| D | 5 | C01044 | AFCS MCP DC 1 |
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP ALL** | | | |
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |
| B | 3 | C01046 | AFCS SYS B FCC DC |
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |
| C | 3 | C01047 | AFCS MCP DC 2 |

D. Related Data

(1) (SSM 22-11-51)

(2) (WDM 22-11-51)

E. Initial Evaluation

(1) If this maintenance message shows in CURRENT STATUS, then do the Fault Isolation Procedure below.

(2) If this maintenance message does not show in CURRENT STATUS, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.

(a) If the control display unit (CDU) shows an MCP failure, then do these steps:

1) Replace the mode control panel. These are the tasks:
- DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801
- DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801

2) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.

(b) If the control display unit (CDU) shows an FCC failure in DFCS BITE, then do these steps:

1) Replace the applicable flight control computer. These are the tasks:
- Flight Control Computer Removal, AMM TASK 22-11-33-000-801
- Flight Control Computer Installation, AMM TASK 22-11-33-400-801

2) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.

(c) If the CDU does not show an MCP or FCC failure in DFCS BITE, then continue.

**HAP 001-013, 015-026, 028-030**

(2) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 001-013, 015-026, 028-030 (Continued)**

(a) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(b) Remove the MCP, M198. To remove it, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801.

(c) Do a wiring check between these pins of the autothrottle computer connector D10009B and the MCP connector D301:

| D10009B | | D301 |
|---|---|---|
| pin A5 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin B5 | - - - - - - - - - - - - - - - - - - | pin 1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

3) Re-install the MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.

**HAP 031-054, 101-999**

(3) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the flight control computer, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the MCP, M198. To remove it, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801.

(c) Do a wiring check between these pins of the flight control computer A connector D10135B and the MCP connector D301:

| D10135B | | D301 |
|---|---|---|
| pin K5 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin K4 | - - - - - - - - - - - - - - - - - - | pin 1 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the flight control computer A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.

**HAP ALL**

**——————— END OF TASK ———————**

**805. Autothrottle Servo Motor Failure - Fault Isolation**

A. Description

(1) This task is for these maintenance messages: ASM 1 or ASM 2.

(a) ASM 1 or ASM 2: Autothrottle BITE found an autothrottle servo motor (ASM) failure.

**HAP 031-054, 101-999**

(b) FCC-A: FCC-A detects problem with ASM 2 Logic power output.

**HAP ALL**

B. Possible Causes

(1) ASM 1 (M1836) or ASM 2 (M1837)

(2) Wiring

**HAP 031-054, 101-999**

(3) Flight control computer (FCC), M1875 (FCC-A)

**HAP ALL**

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data

(1) (SSM 22-31-31)

(2) (SSM 22-31-41)

(3) (WDM 22-31-31)

(4) (WDM 22-31-41)

E. Initial Evaluation

(1) The Autothrottle BITE Procedure (Autothrottle BITE Procedure, 22-31 TASK 801) or Autothrottle BITE test was performed.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999; AIRPLANES WITH COLLINS FCC AND COLLINS OPS SOFTWARE P/N 831-5854-111**

NOTE: If only maintenance messages 22-31762, 22-31763, 22-31790, and 22-31791 show with no other maintenance messages on the CDU display, then ignore this failure. This is a nuisance fault.

**HAP ALL**

(a) If this maintenance message shows, then do the Fault Isolation Procedure below.

(b) If this maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

**HAP 001-013, 015-026, 028-030**

(1) Do the Servo Motor Test, these are the steps:

(a) If you are at A/T BITE TEST, Push the LSK adjacent to SERVO MOTOR TEST.

(b) If you are not at on the A/T BITE TEST displays, then do these steps:

1) Push the INIT REF function key.

2) if the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

3) Push the LSK adjacent to the MAINT prompt.

4) Push the LSK adjacent to INTERACTIVE.

5) Push the LSK adjacent to THROTTLE TESTS.

6) Push the LSK adjacent to SERVO MOTOR TEST.

7) Look to see if there are any maintenance messages displays.

8) Make a record of the maintenance messages.

(c) Use the table that follows to find the correct task for each maintenance messages:

| MAINTENANCE | GO TO FIM TASK |
|---|---|
| ASM 1 CONFIG INVALID xx | 22–31 TASK 820 |
| ASM 2 CONFIG INVALID xx | 22–31 TASK 820 |
| ASM 1 NO DATA | 22–31 TASK 821 |
| ASM 2 NO DATA | 22–31 TASK 821 |
| ASM 1 FAIL 01 | 22–31 TASK 822 |
| ASM 2 FAIL 01 | 22–31 TASK 822 |
| ASM 1 DATA INVALID | 22–31 TASK 822 |
| ASM 2 DATA INVALID | 22–31 TASK 822 |
| ASM 1 FAIL 02 | 22–31 TASK 822 |
| ASM 2 FAIL 02 | 22–31 TASK 822 |
| ASM 1 FAIL 03 | 22–31 TASK 822 |
| ASM 2 FAIL 03 | 22–31 TASK 822 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 001-013, 015-026, 028-030 (Continued)**

(Continued)

| MAINTENANCE | GO TO FIM TASK |
|---|---|
| ASM 1 NO EEC DATA | 22–31 TASK 823 |
| ASM 2 NO EEC DATA | 22–31 TASK 823 |
| ASM 1 CONFIG INVALID | 22–31 TASK 820 |
| ASM 2 CONFIG INVALID | 22–31 TASK 820 |
| ASM 1 FAIL 04 | 22–31 TASK 822 |
| ASM 2 FAIL 04 | 22–31 TASK 822 |
| ASM 1 FAIL 05 | 22–31 TASK 826 |
| ASM 2 FAIL 05 | 22–31 TASK 826 |
| ASM 1 MOTOR PWR INVALID | 22–31 TASK 826 |
| ASM 2 MOTOR PWR INVALID | 22–31 TASK 826 |
| ASM 1 FAIL 06 | 22–31 TASK 822 |
| ASM 2 FAIL 06 | 22–31 TASK 822 |
| ASM 1 A/T DATA MISSING | 22–31 TASK 821 |
| ASM 2 A/T DATA MISSING | 22–31 TASK 821 |
| ASM 1 FAIL 07 | 22–31 TASK 824 |
| ASM 2 FAIL 07 | 22–31 TASK 824 |
| ASM 1 FAIL 08 | 22–31 TASK 822 |
| ASM 2 FAIL 08 | 22–31 TASK 822 |
| ASM 1 FAIL 09 | 22–31 TASK 825 |
| ASM 2 FAIL 09 | 22–31 TASK 825 |
| ASM 1 TORQUE INVALID | 22–31 TASK 825 |
| ASM 2 TORQUE INVALID | 22–31 TASK 825 |
| ASM 1 FAIL 10 | 22–31 TASK 822 |
| ASM 2 FAIL 10 | 22–31 TASK 822 |
| ASM 1 FAIL 11 | 22–31 TASK 827 |
| ASM 2 FAIL 11 | 22–31 TASK 827 |
| ASM 1 FAIL 12 | 22–31 TASK 825 |
| ASM 2 FAIL 12 | 22–31 TASK 825 |
| ASM 2 FAIL 13 | 22–31 TASK 824 |
| ASM 1 FAIL 13 | 22–31 TASK 824 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 001-013, 015-026, 028-030 (Continued)**

(Continued)

| MAINTENANCE | GO TO FIM TASK |
|---|---|
| ASM 2 FAIL 14 | 22–31 TASK 824 |
| ASM 1 FAIL 14 | 22–31 TASK 824 |
| ASM 2 FAIL 15 | 22–31 TASK 824 |
| ASM 1 FAIL 15 | 22–31 TASK 824 |
| ASM 1 FAIL 16 | 22–31 TASK 825 |
| ASM 2 FAIL 16 | 22–31 TASK 825 |
| ASM 1 FAIL 17 | 22–31 TASK 822 |
| ASM 2 FAIL 17 | 22–31 TASK 822 |
| ASM 1 FAIL 18 | 22–31 TASK 827 |
| ASM 2 FAIL 18 | 22–31 TASK 827 |

**HAP 031-054, 101-999**

(2) Do the Servo Motor Test, these are the steps:

(a) If you are at A/T BITE TEST, Push the LSK adjacent to SERVO MOTOR TEST.

(b) If you are not at on the A/T BITE TEST displays, then do these steps:

1) Push the INIT REF function key.

2) if the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

3) Push the LSK adjacent to the MAINT prompt.

4) Push the LSK adjacent to INTERACTIVE.

5) Push the LSK adjacent to THROTTLE TESTS.

6) Push the LSK adjacent to SERVO MOTOR TEST.

7) Look to see if there are any maintenance messages displays.

8) Make a record of the maintenance messages and messages number.

(c) Use the table that follows to find the correct task for each maintenance messages amd messages number:

| MESSAGE NUMBER | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| 22-31578<br>22-31580<br>22-31792 | ASM 1 | 22–31 TASK 820 |
| 22-31579<br>22-31581<br>22-31793 | ASM 2 | 22–31 TASK 820 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

(Continued)

| MESSAGE NUMBER | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| 22-31046<br>22-31056 | ASM 1 (J1A-C06, D05)<br>ASM 2 (J1B-C06, D05) | 22–31 TASK 821 |
| 22-31057<br>22-31058 | ASM 1<br>ASM 2 | 22–31 TASK 822 |
| 22-31059<br>22-31060 | ASM 1<br>ASM 2 | 22–31 TASK 822 |
| 22-31273<br>22-31274 | ASM 1<br>ASM 2 | 22–31 TASK 822 |
| 22-31294<br>22-31295 | ASM 1<br>ASM 2 | 22–31 TASK 822 |
| 22-31296<br>22-31297 | ASM 1<br>ASM 2 | 22–31 TASK 823 |
| 22-31453<br>22-31454 | ASM 1<br>ASM 2 | 22–31 TASK 820 |
| 22-31582<br>22-31583 | ASM 1<br>ASM 2 | 22–31 TASK 822 |
| 22-31584<br>22-31585 | ASM 1<br>ASM 2 | 22–31 TASK 826 |
| 22-31696<br>22-31761 | ASM 1<br>ASM 2 | 22–31 TASK 826 |
| 22-31762<br>22-31763 | ASM 1<br>ASM 2 | 22–31 TASK 822 |
| 22-31764<br>22-31765 | ASM 1<br>ASM 2 | 22–31 TASK 821 |
| 22-31766<br>22-31767 | ASM 1<br>ASM 2 | 22–31 TASK 824 |
| 22-31768<br>22-31769 | ASM 1<br>ASM 2 | 22–31 TASK 822 |
| 22-31794<br>22-31795 | ASM 1<br>ASM 2 | 22–31 TASK 825 |
| 22-31770<br>22-31771<br>22-31790<br>22-31791 | ASM 1<br>ASM 2<br>ASM 1<br>ASM 2 | 22–31 TASK 825 |
| 22-31772<br>22-31773 | ASM 1<br>ASM 2 | 22–31 TASK 822 |
| 22-31774<br>22-31775 | ASM 1<br>ASM 2 | 22–31 TASK 827 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

(Continued)

| MESSAGE NUMBER | MAINTENANCE MESSAGE | GO TO FIM TASK |
|---|---|---|
| 22-31776<br>22-31777 | ASM 1<br>ASM 2 | 22–31 TASK 825 |
| 22-31780<br>22-31781 | ASM 1<br>ASM 2 | 22–31 TASK 824 |
| 22-31778<br>22-31779 | ASM 1<br>ASM 2 | 22–31 TASK 824 |
| 22-31782<br>22-31783 | ASM 1<br>ASM 2 | 22–31 TASK 824 |
| 22-31784<br>22-31785 | ASM 1<br>ASM 2 | 22–31 TASK 825 |
| 22-31786<br>22-31787 | ASM 1<br>ASM 2 | 22–31 TASK 822 |
| 22-31788<br>22-31789 | ASM 1<br>ASM 2 | 22–31 TASK 827 |

(3) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the flight control computer A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connectors D10025 from autothrottle servo motor 1, M1836, or D10027 from autothrottle servo motor 2, M1837.

NOTE: The autothrottle servo motors are under the control stand in the area forward of the nose landing gear wheel well.

(c) AUTOTHROTTLE SERVO MOTOR 1, M1836;

Do a wiring check between these pins of the flight control computer connector D10135A and D10135B and the autothrottle servo motor connector D10025:

| **D10135A** | | **D10025** |
|---|---|---|
| pin C6 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin B9 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin B14 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin D5 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin A9 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin A14 | - - - - - - - - - - - - - - - - - - | pin 14 |

| **D10135B** | | **D10025** |
|---|---|---|
| pin H3 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin J2 | - - - - - - - - - - - - - - - - - - | pin 8 |

(d) AUTOTHROTTLE SERVO MOTOR 2, M1837;



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

Do a wiring check between these pins of the flight control computer A connector D10135B and the autothrottle servo motor connector D10027:

| D10135B | | D10027 |
|---|---|---|
| pin C6 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin H3 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin B9 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin B14 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin D5 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin J2 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin A9 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin A14 | - - - - - - - - - - - - - - - - - - | pin 14 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the flight control computer A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-connect connectors D10025 to autothrottle servo motor 1, M1836, or D10027 to autothrottle servo motor 2, M1837.

4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, then you corrected the fault.

**HAP ALL**

**———————— END OF TASK ————————**

## 806. Electronic Engine Control Failure - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) EEC 1A

(b) EEC 1B

(c) EEC 2A

(d) EEC 2B

**HAP 031-054, 101-999**

(e) EEC-1

(f) EEC-1A (J1A-C04,B04)

(g) EEC-1B (J1B-C04,B04)

(h) EEC-2

(i) EEC-2A (J1A-J02,J01)

(j) EEC-2B (J1B-C04,B04)

**HAP ALL**

(2) The autothrottle receives invalid data or no data from the electronic engine control (EEC).



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

B. Possible Causes

(1) EEC 1 or EEC 2, M1818

(2) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| A | 4 | C01390 | ENGINE 1 ALTN PWR CHAN B |
| A | 5 | C01314 | ENGINE 1 ALTN PWR CHAN A |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 7 | C01391 | ENGINE 2 ALTN PWR CHAN B |
| D | 8 | C01315 | ENGINE 2 ALTN PWR CHAN A |

D. Related Data

(1) (SSM 22-31-31)

(2) (SSM 22-31-41)

(3) (SSM 73-24-11)

(4) (SSM 73-24-21)

(5) (WDM 73-24-11)

(6) (WDM 73-24-21)

E. Initial Evaluation

(1) If this maintenance message shows in CURRENT STATUS, then do the Fault Isolation Procedure below.

(2) If this maintenance message does not show in CURRENT STATUS, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: EEC BITE Procedure, 73-00 TASK 801.

(a) If the CDU shows an EEC failure, then do these steps:

1) Replace the applicable electronic engine control. These are the tasks:
- EEC Removal, AMM TASK 73-21-60-000-801-F00
- EEC Installation, AMM TASK 73-21-60-400-801-F00

2) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.

(b) If the CDU does not show an EEC failure in EEC BITE, then continue.

(2) Do this task: CDS BITE Procedure, 31-62 TASK 801.

(a) Look for one of these maintenance messages:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) 31-69211, 31-69212, 31-69221, 31-69222, 31-69241, 31-69242, 31-69251, 31-69252

NOTE: If one of these maintenance messages shows, then the related data bus between the digital electronic unit (DEU) and the electronic engine control (EEC) has a problem.

(b) If you find a maintenance message, then do the FIM task for the maintenance message.

(c) If you do not find a maintenance message, then continue.

**HAP 001-013, 015-026, 028-030**

(3) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(b) Disconnect connectors DP0303 and DP0304 from the electronic engine control, M1818.

NOTE: The EEC is on the right side of the engine fan case at the two o'clock position.

(c) ELECTRONIC ENGINE CONTROL 1, M1818;

Do a wiring check between these pins of the autothrottle computer connectors D10009A and D10009B and the electronic engine control connectors DP0303 and DP0404:

| **D10009A** | | **DP0303** |
|---|---|---|
| pin A1 | - - - - - - - - - - - - - - - - - - | pin N |
| pin B1 | - - - - - - - - - - - - - - - - - - | pin M |

| **D10009B** | | **DP0404** |
|---|---|---|
| pin A1 | - - - - - - - - - - - - - - - - - - | pin N |
| pin B1 | - - - - - - - - - - - - - - - - - - | pin M |

(d) ELECTRONIC ENGINE CONTROL 2, M1818;

Do a wiring check between these pins of the autothrottle computer connectors D10009A and D10009B and the electronic engine control connectors DP0303 and DP0404:

| **D10009A** | | **DP0303** |
|---|---|---|
| pin A7 | - - - - - - - - - - - - - - - - - - | pin N |
| pin B7 | - - - - - - - - - - - - - - - - - - | pin M |

| **D10009B** | | **DP0404** |
|---|---|---|
| pin A7 | - - - - - - - - - - - - - - - - - - | pin N |
| pin B7 | - - - - - - - - - - - - - - - - - - | pin M |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

3) Re-connect connectors DP0303 and DP0304 to the electronic engine control, M1818.

4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

b) If this maintenance message does not show, you corrected the fault.

**HAP 031-054, 101-999**

(4) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the flight control computer A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connectors DP0303 and DP0304 from the electronic engine control, M1818.

NOTE: The EEC is on the right side of the engine fan case at the two o'clock position.

(c) ELECTRONIC ENGINE CONTROL 2, M1818;

Do a wiring check between these pins of the flight control computer A connectors D10135A and D10135B and the electronic engine control connectors DP0303 and DP0404:

| **D10135A** | | **DP0303** |
|---|---|---|
| pin B5 | - - - - - - - - - - - - - - - - - - | pin N |
| pin C4 | - - - - - - - - - - - - - - - - - - | pin M |

| **D10135B** | | **DP0404** |
|---|---|---|
| pin B5 | - - - - - - - - - - - - - - - - - - | pin N |
| pin C4 | - - - - - - - - - - - - - - - - - - | pin M |

(d) ELECTRONIC ENGINE CONTROL 2, M1818;

Do a wiring check between these pins of the flight control computer A connectors D10135A and D10135B and the electronic engine control connectors DP0303 and DP0404:

| **D10135A** | | **DP0303** |
|---|---|---|
| pin J2 | - - - - - - - - - - - - - - - - - - | pin N |
| pin J1 | - - - - - - - - - - - - - - - - - - | pin M |

| **D10135B** | | **DP0404** |
|---|---|---|
| pin C10 | - - - - - - - - - - - - - - - - - - | pin N |
| pin D9 | - - - - - - - - - - - - - - - - - - | pin M |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the flight control computer A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-connect connectors DP0303 and DP0304 to the electronic engine control, M1818.

4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.

**HAP ALL**

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 807. Air Data Inertial Reference Unit Failure - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) ADIRU-AD 1

(b) ADIRU-AD 2

(c) ADIRU-IR 1

(d) ADIRU-IR 2

**HAP 031-054, 101-999**

(e) ADIRU(ADC)-1 (J1B-E04,D04)

(f) ADIRU(ADC)-2 (J1A-K04,J04)

(g) ADIRU(IRU)-1 (J1B-K03,K02)

(h) ADIRU(IRU)-2 (J1A-K03,K02)

**HAP ALL**

(2) The autothrottle receives invalid data or no data from the air data inertial reference unit (ADIRU).

NOTE: The IRS mode select switches must not be set to OFF.

B. Possible Causes

(1) ADIRU-1 (M1749) or ADIRU-2 (M1752)

(2) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 5 | C01009 | ADIRU LEFT DC |
| E | 7 | C01007 | ADIRU LEFT AC |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| E | 8 | C00425 | ADIRU LEFT EXC |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 14 | C01008 | ADIRU RIGHT AC |
| C | 15 | C00426 | ADIRU RIGHT EXC |
| C | 17 | C01010 | ADIRU RIGHT DC |

D. Related Data

(1) (SSM 34-21-13)

(2) (SSM 34-21-14)

(3) (WDM 34-21-23)

(4) (WDM 34-21-24)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(5) (WDM 34-21-13)

(6) (WDM 34-21-14)

(7) (WDM 34-21-23)

(8) (WDM 34-21-24)

E. Initial Evaluation

(1) If this maintenance message shows in CURRENT STATUS, then do the Fault Isolation Procedure below.

(2) If this maintenance message does not show in CURRENT STATUS, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) If the CDU shows an ADIRU failure, then do these steps:

1) Replace the applicable air data inertial reference unit. These are the tasks:
- Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801
- Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801

2) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.

(b) If the CDU does not show an ADIRU failure in ADIRU BITE, then continue.

**HAP 001-013, 015-026, 028-030**

(2) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(b) Remove the air data inertial reference unit, M1749 (ADIRU-1) or M1752 (ADIRU-2). To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) AIR DATA INERTIAL REFERENCE UNIT 1, M1749;

Do a wiring check between these pins of the autothrottle computer connector D10009A and the air data inertial reference unit connector D3687A and D3687B:

| **D10009A** | | **D3687A** |
|---|---|---|
| pin C2 | - - - - - - - - - - - - - - - - - - | pin A7 |
| pin D2 | - - - - - - - - - - - - - - - - - - | pin B7 |

| **D10009A** | | **D3687B** |
|---|---|---|
| pin C8 | - - - - - - - - - - - - - - - - - - | pin C10 |
| pin D8 | - - - - - - - - - - - - - - - - - - | pin C11 |

(d) AIR DATA INERTIAL REFERENCE UNIT 2, M1752;


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Do a wiring check between these pins of the autothrottle computer connector D10009B and the air data inertial reference unit connector D3693A and D3693B:

| D10009B | | D3693A |
|---|---|---|
| pin C2 | - - - - - - - - - - - - - - - - - - | pin A7 |
| pin D2 | - - - - - - - - - - - - - - - - - - | pin B7 |

| D10009B | | D3693B |
|---|---|---|
| pin C8 | - - - - - - - - - - - - - - - - - - | pin C10 |
| pin D8 | - - - - - - - - - - - - - - - - - - | pin C11 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.
3) Re-install the air data inertial reference unit, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.
4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.
   a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.
   b) If this maintenance message does not show, you corrected the fault.

**HAP 031-054, 101-999**

(3) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the flight control computer A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the air data inertial reference unit, M1749 (ADIRU-1) or M1752 (ADIRU-2). To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) AIR DATA INERTIAL REFERENCE UNIT 1, M1749;

Do a wiring check between these pins of the flight control computer A connector D10135B and the air data inertial reference unit connector D3687A and D3687B:

| D10135B | | D3687A |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin A3 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin B3 |

| D10135B | | D3687B |
|---|---|---|
| pin K2 | - - - - - - - - - - - - - - - - - - | pin E5 |
| pin K3 | - - - - - - - - - - - - - - - - - - | pin E6 |

(d) AIR DATA INERTIAL REFERENCE UNIT 2, M1752;

Do a wiring check between these pins of the flight control computer A connector D10135A and the air data inertial reference unit connector D3693A and D3693B:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

| D10135A | | D3693A |
|---|---|---|
| pin K4 | - - - - - - - - - - - - - - - - - - | pin A7 |
| pin J4 | - - - - - - - - - - - - - - - - - - | pin B7 |

| D10135A | | D3693B |
|---|---|---|
| pin K3 | - - - - - - - - - - - - - - - - - - | pin C10 |
| pin K2 | - - - - - - - - - - - - - - - - - - | pin C11 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the flight control computer A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the air data inertial reference unit, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.

**HAP ALL**

**———————— END OF TASK ————————**

**808. <u>Stall Management Yaw Damper Computer Failure - Fault Isolation</u>**

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) SMYD 1

(b) SMYD 2

**HAP 031-054, 101-999**

(c) SMYDC-1 (J1A-H04,G04)

(d) SMYDC-2 (J1A-H04,G04)

**HAP ALL**

(2) The autothrottle receives invalid data or no data from the stall management yaw damper (SMYD) computer.

B. Possible Causes

(1) SMYD 1 (M1747) or SMYD 2 (M1748)

(2) Wiring



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 6 | C01429 | YAW DAMPER IND |
| C | 7 | C00285 | YAW DAMPER AC |
| D | 6 | C01354 | YAW DAMPER 2 DC |
| D | 7 | C00286 | YAW DAMPER 1 DC |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| E | 5 | C01204 | SMYD-1 CMPTR DC |
| E | 6 | C01205 | SMYD-1 SNSR EXC AC |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C01207 | SMYD-2 SNSR EXC AC |
| B | 5 | C01206 | SMYD-2 CMPTR DC |

D. Related Data

(1) (SSM 27-32-11)

(2) (SSM 27-32-21)

(3) (SSM 22-23-11)

(4) (WDM 27-32-11)

(5) (WDM 27-32-21)

(6) (WDM 22-23-11)

E. Initial Evaluation

(1) If this maintenance message shows in CURRENT STATUS, then do the Fault Isolation Procedure below.

(2) If this maintenance message does not show in CURRENT STATUS, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the display window shows a SMYD failure, then do these steps:

1) Replace the applicable stall management yaw damper computer. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.

(b) If the display window does not show a SMYD failure in SMYD BITE, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 001-013, 015-026, 028-030**

(2) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(b) Remove the stall management yaw damper computer 1 (M1747) or the stall management yaw damper computer 2 (M1748). To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(c) STALL MANAGEMENT YAW DAMPER COMPUTER 1, M1747;

Do a wiring check between these pins of the autothrottle computer connector D10009A and the stall management yaw damper computer connector D3683A:

| D10009A | | D3683A |
|---|---|---|
| pin C4 | - - - - - - - - - - - - - - - - - - | pin 95 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin 94 |

(d) STALL MANAGEMENT YAW DAMPER COMPUTER 2, M1748;

Do a wiring check between these pins of the autothrottle computer connector D10009B and the stall management yaw damper computer connector D3685A:

| D10009B | | D3685A |
|---|---|---|
| pin C4 | - - - - - - - - - - - - - - - - - - | pin 95 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin 94 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

3) Re-install the stall management yaw damper computer, M1747 or M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.

**HAP 031-054, 101-999**

(3) Do this task: FCC Cross Channel Communication Problem - Fault Isolation, 22-15 TASK 825

(a) If there is a fault message, then do the FIM task for that message.

(b) If there are no fault messages, then continue.

1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(4) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the flight control computer A, M1875, or flight control computer B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the stall management yaw damper computer 1 (M1747) or the stall management yaw damper computer 2 (M1748). To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(c) STALL MANAGEMENT YAW DAMPER COMPUTER 1, M1747;

Do a wiring check between these pins of the flight control computer A connector D10135A and the stall management yaw damper computer connector D3683A:

| D10135A | | D3683A |
|---|---|---|
| pin G4 | - - - - - - - - - - - - - - - - - - | pin 95 |
| pin H4 | - - - - - - - - - - - - - - - - - - | pin 94 |

(d) STALL MANAGEMENT YAW DAMPER COMPUTER 2, M1748;

Do a wiring check between these pins of the flight control computer B connector D10135A and the stall management yaw damper computer connector D3685A:

| D10135A | | D3685A |
|---|---|---|
| pin G4 | - - - - - - - - - - - - - - - - - - | pin 95 |
| pin H4 | - - - - - - - - - - - - - - - - - - | pin 94 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the flight control computer, M1875 or M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the stall management yaw damper computer, M1747 or M1748. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.

**HAP ALL**

**——————— END OF TASK ———————**

## 809. Radio Altimeter Transceiver Failure - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) RA 1



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) RA 2

**HAP 031-054, 101-999**

(c) RADIO ALT-1 (J1B-B04,A04)

(d) RADIO ALT-2 (J1B-B04,A04)

**HAP ALL**

(2) The autothrottle receives invalid data or no data from the radio altimeter (RA).

B. Possible Causes

(1) RA 1 (M1735) or RA 2 (M1736)

(2) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C01384 | RADIO NAVIGATION RADIO ALTM 1 |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| A | 16 | C01385 | RADIO NAVIGATION RADIO ALTM 2 |

D. Related Data

(1) (SSM 34-33-11)

(2) (SSM 34-33-21)

(3) (WDM 34-33-11)

(4) (WDM 34-33-21)

E. Initial Evaluation

(1) If this maintenance message shows in CURRENT STATUS, then do the Fault Isolation Procedure below.

(2) If this maintenance message does not show in CURRENT STATUS, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: Low Range Radio Altimeter (LRRA) BITE Procedure, 34-33 TASK 801.

(a) If there is a fault message, then do the FIM task for that message.

1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.

(b) If there are no fault messages, then continue.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 001-013, 015-026, 028-030**

(2) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(b) Remove the radio altimeter transceiver, M1735 or M1736. To remove it, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Removal, AMM TASK 34-33-21-000-801.

(c) RADIO ALTIMETER TRANSCEIVER 1, M1735;

Do a wiring check between these pins of the autothrottle computer connector D10009A and the stall management yaw damper computer connector D3667B:

| D10009A | | D3667B |
|---|---|---|
| pin A3 | - - - - - - - - - - - - - - - - - - | pin B2 |
| pin B3 | - - - - - - - - - - - - - - - - - - | pin B3 |

(d) RADIO ALTIMETER TRANSCEIVER 2, M1736;

Do a wiring check between these pins of the autothrottle computer connector D10009B and the stall management yaw damper computer connector D3669B:

| D10009B | | D3669B |
|---|---|---|
| pin A3 | - - - - - - - - - - - - - - - - - - | pin B2 |
| pin B3 | - - - - - - - - - - - - - - - - - - | pin B3 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

3) Re-install the radio altimeter transceiver, M1735 or M1736. To install it, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Installation, AMM TASK 34-33-21-400-801.

4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If the CDU does not show this maintenance message, you corrected the fault.

**HAP 031-054, 101-999**

(3) Do this task: FCC Cross Channel Communication Problem - Fault Isolation, 22-15 TASK 825

(a) If there is a fault message, then do the FIM task for that message.

(b) If there are no fault messages, then continue.

1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If this maintenance message does not show, you corrected the fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(4) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the flight control computer A, M1875 or flight control computer B, M1876. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the radio altimeter transceiver, M1735 or M1736. To remove it, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Removal, AMM TASK 34-33-21-000-801.

(c) RADIO ALTIMETER TRANSCEIVER 1, M1735;

Do a wiring check between these pins of the flight control computer A connector D10135B and the stall management yaw damper computer connector D3667B:

| D10135B | | D3667B |
|---|---|---|
| pin B4 | - - - - - - - - - - - - - - - - - - | pin B2 |
| pin A4 | - - - - - - - - - - - - - - - - - - | pin B3 |

(d) RADIO ALTIMETER TRANSCEIVER 2, M1736;

Do a wiring check between these pins of the flight control computer B connector D10137B and the stall management yaw damper computer connector D3669B:

| D10137B | | D3669B |
|---|---|---|
| pin B4 | - - - - - - - - - - - - - - - - - - | pin B2 |
| pin A4 | - - - - - - - - - - - - - - - - - - | pin B3 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the flight control computer, M1875 or M1876. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the radio altimeter transceiver, M1735 or M1736. To install it, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Installation, AMM TASK 34-33-21-400-801.

4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.

b) If the CDU does not show this maintenance message, you corrected the fault.

**HAP ALL**

**——————— END OF TASK ———————**

## 810. Temporary Loss of Electrical Power During Flight - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) 28 V POWER



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999**

(b) AFCS A/T CB.

**HAP ALL**

(2) Autothrottle BITE found a temporary loss of electrical power during flight.

B. Possible Causes

(1) Power generation device

(2) Power distribution device

**HAP 001-013, 015-026, 028-030**

(3) Autothrottle computer, M917

**HAP 031-054, 101-999**

(4) Flight control computer A, M1875

**HAP ALL**

(5) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data

(1) (SSM 22-31-11)

(2) (SSM 24-22-11)

(3) (WDM 22-31-11)

(4) (WDM 24-22-11)

E. Initial Evaluation

(1) Do the CURRENT STATUS BITE procedure for the autothrottle. To do the procedure, do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(2) If the maintenance message A/T shows in CURRENT STATUS, then do these steps:

**HAP 001-013, 015-026, 028-030**

(a) Replace the autothrottle computer, M917.

These are the tasks:

Autothrottle Computer Removal, AMM TASK 22-31-10-000-801,

Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999**

(b) Replace the flight control computer A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

**HAP ALL**

(c) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(d) If the maintenance message A/T does not show in CURRENT STATUS, then you corrected the fault. Do these steps to complete the task:

1) Push the LSK adjacent to INDEX.
2) Do the instructions on the CDU.
3) Push the LSK adjacent to CONTINUE.
4) Push the LSK adjacent to INDEX.

(3) If the maintenance message A/T does not show in CURRENT STATUS, then one of these conditions occurred:

(a) There was an intermittent fault.

(b) The power generation/distribution system can have a fault.

(4) To find the fault in the power generation/distribution system, do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do this task: Generator Control Unit BITE Procedure, 24-21 TASK 801.

(a) If a maintenance message shows in CURRENT STATUS, then do the FIM task for that maintenance message.

(b) If no maintenance messages show, then there was an intermittent fault.

**——————— END OF TASK ———————**

**HAP 001-013, 015-026, 028-030**

## 811. Airplane Configuration Problem for Autothrottle - Fault Isolation

A. Description

(1) This task is for this maintenance message: 737 CONFIG.

(2) Autothrottle BITE found a program pin error.

B. Possible Causes

(1) Autothrottle computer, M917

(2) Autothrottle DIP switch, S1058

(3) Wiring


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

D. Related Data

(1) (SSM 22-31-11)

(2) (WDM 22-31-11)

E. Initial Evaluation

(1) Do the CURRENT STATUS BITE procedure for the autothrottle. To do the procedure, do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(2) If the maintenance message A/T shows in CURRENT STATUS, then do these steps:

(a) Replace the autothrottle computer.

These are the tasks:

Autothrottle Computer Removal, AMM TASK 22-31-10-000-801,

Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

(b) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(c) If the maintenance message A/T does not show in CURRENT STATUS, then you corrected the fault. Do these steps to complete the task:

1) Push the LSK adjacent to INDEX.

2) Do the instructions on the CDU.

3) Push the LSK adjacent to CONTINUE.

4) Push the LSK adjacent to INDEX.

(3) If the maintenance message A/T does not show in CURRENT STATUS, then one of these conditions occurred:

(a) There was an intermittent fault.

(b) The autothrottle DIP switch can have a fault.

(4) To find the fault in the autothrottle DIP switch, do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do this BITE test to check for the correct configuration:

(a) Make sure that the A/T BITE TEST index shows on the CDU.

(b) If you are not at the A/T BITE TEST index, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Push the line select key (LSK) adjacent to MAINT.
4) Push the LSK adjacent to A/T.
5) Make sure that the A/T BITE TEST index shows on the CDU.

(c) Push the LSK adjacent to IDENT/CONFIG.

(d) Make sure that the CDU indications agree with the Identification/configuration test in the autothrottle adjustment/test. To do the Identification/configuration test, do this task: Autothrottle System - System Test, AMM TASK 22-31-00-710-802.

(e) If the CDU indications do not agree, look at the wiring diagram for the correct DIP switch positions (WDM 22-31-11).

(f) Change the switch positions if necessary.

(g) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(h) If the maintenance message 737 CONFIG does not show in CURRENT STATUS, then you corrected the fault. Do these steps to complete the task:

1) Push the LSK adjacent to INDEX.
2) Do the instructions on the CDU.
3) Push the LSK adjacent to CONTINUE.
4) Push the LSK adjacent to INDEX.

(i) If the maintenance message 737 CONFIG shows in CURRENT STATUS, then continue.

(2) Do this check of the wiring:

(a) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(b) Remove the autothrottle DIP switch, S1058.

(c) Do a wiring check between these pins of the autothrottle computer connector D10009A and the autothrottle DIP switch:

| D10009A | | A/T DIP SW |
|---|---|---|
| pin B4 | - - - - - - - - - - - - - - - - - - | pin 1 |
| pin A4 | - - - - - - - - - - - - - - - - - - | pin 2 |
| pin A6 | - - - - - - - - - - - - - - - - - - | pin 3 |

(d) Do a wiring check between this pin of the autothrottle computer connector D10009B and the autothrottle DIP switch:

| D10009B | | A/T DIP SW |
|---|---|---|
| pin B4 | - - - - - - - - - - - - - - - - - - | pin 12 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.
3) Re-install the autothrottle DIP switch.
4) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.
   a) Look at the CURRENT STATUS page on the CDU to see if this maintenance message shows.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

b) If the maintenance message 737 CONFIG does not show in CURRENT STATUS, then you corrected the fault.

**HAP ALL**

**——————— END OF TASK ———————**

## 812. Thrust Difference Between Engines Too Large - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) THROT SPLIT

**HAP 031-054, 101-999**

(b) A/T BRAKE THROT SPLIT

(c) ASM-1 THROT SPLIT

(d) ASM-2 THROT SPLIT

(e) EEC-1 THROT SPLIT

(f) EEC-2 THROT SPLIT

(g) TLA-1 THROT SPLIT

(h) TLA-2 THROT SPLIT

**HAP ALL**

(2) Autothrottle BITE found too large a difference in thrust between the engines.

B. Possible Causes

(1) Autothrottle brake assembly

(2) Autothrottle servo motor, M1836 (servo motor 1) or M1837 (servo motor 2)

**HAP 001-013, 015-026, 028-030**

(3) Autothrottle computer, M917

**HAP 031-054, 101-999**

(4) Flight control computer A, M1875

**HAP ALL**

(5) Electronic engine control, M1818

(6) Thrust lever angle resolver (engine 1) or thrust lever angle resolver (engine 2), M1819

(7) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 001-013, 015-026, 028-030** | | | |
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP ALL** | | | |
| A | 4 | C01390 | ENGINE 1 ALTN PWR CHAN B |
| A | 5 | C01314 | ENGINE 1 ALTN PWR CHAN A |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 7 | C01391 | ENGINE 2 ALTN PWR CHAN B |
| D | 8 | C01315 | ENGINE 2 ALTN PWR CHAN A |

D. Related Data

(1) (SSM 22-31-11)

(2) (SSM 22-31-31)

(3) (SSM 22-31-41)

(4) (SSM 73-24-11)

(5) (SSM 73-24-21)

(6) (WDM 22-31-11)

(7) (WDM 22-31-41)

(8) (WDM 73-24-11)

(9) (WDM 73-24-21)

E. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If one of these maintenance messages shows in CURRENT STATUS, then do the FIM task for that maintenance message:

1) ASM, do this task: Autothrottle Servo Motor Failure - Fault Isolation, 22-31 TASK 805.

2) A/T, do this task: Autothrottle Internal Problems - Fault Isolation, 22-31 TASK 802.

3) EEC, do this task: Electronic Engine Control Failure - Fault Isolation, 22-31 TASK 806.

(b) If none of the above maintenance messages show, then one of these conditions occurred:

1) There was an intermittent fault.

2) The autothrottle brake assembly can have a fault.

3) The thrust lever angle (TLA) resolver can have a fault.

(c) To find the fault in the TLA resolver or the autothrottle brake assembly, do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do this BITE test of the autothrottle brake assembly:

(a) Make sure that the A/T BITE TEST index shows on the CDU.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) If you are not at the A/T BITE TEST index, then do these steps:

1) Push the INIT REF function key on the CDU.
2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.
4) Push the LSK adjacent to A/T.

NOTE: The two autothrottle warning lights come on during BITE.

5) Make sure that the A/T BITE TEST index shows on the CDU.

(c) Push the LSK adjacent to INTERACTIVE.

(d) Push the LSK adjacent to THROTTLE TESTS.

**CAUTION:** MAKE SURE THAT ENGINE START LEVERS ARE IN CUTOFF. IF THE ENGINE START LEVERS ARE NOT IN CUTOFF, THE ENGINE START SEQUENCE CAN OCCUR.

(e) Do the instructions on the CDU.

(f) Push the LSK adjacent to CONTINUE.

(g) Push the LSK adjacent to TORQUE TEST.

(h) Do the instructions on the CDU.

(i) Push the LSK adjacent to CONTINUE.

1) Make sure that the torque remains at a stable value to within approximately 1.5 oz-in while the thrust levers move.
2) Make sure that the torque increases by approximately 3.0 to 6.0 oz-in when the thrust levers get to their limits of travel.

(j) If the torque values for the thrust levers are not satisfactory, then do these steps:

1) Replace the applicable autothrottle brake assembly.

These are the tasks:

Autothrottle Brake Assembly Removal, AMM TASK 22-31-81-000-801,

Autothrottle Brake Assembly Installation, AMM TASK 22-31-81-400-801.

2) Do the interactive TORQUE TEST for the thrust lever again.
   a) Make sure that the torque remains at a stable value to within approximately 1.5 oz-in while the thrust levers move.
   b) Make sure that the torque increases by approximately 3.0 to 6.0 oz-in when the thrust levers get to their limits of travel.
3) If the torque values for the thrust levers are satisfactory, then you corrected the fault. Do these steps to complete the task:
   a) Push the LSK adjacent to INDEX.
   b) Push the LSK adjacent to INDEX again.
   c) Do the instructions on the CDU.
   d) Push the LSK adjacent to CONTINUE.
   e) Push the LSK adjacent to INDEX.

(k) If the torque values for the thrust levers are satisfactory, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) Do this check of the TLA resolvers. To do it, do this task: Engine 1 and Engine 2 Thrust Lever Angle Resolver Alignment Test, AMM TASK 73-21-00-700-807-F00.

(a) If the values for the thrust levers are not satisfactory, then do these steps:

1) Adjust the TLA resolvers. To do the adjustment, do this task: Thrust Lever Angle Resolver Adjustment, AMM TASK 76-11-05-820-801-F00.

2) Do the check of the TLA resolvers again.

3) If the values are satisfactory, then you corrected the fault. Do these steps to complete the task:

a) Push the LSK adjacent to INDEX.

b) Push the LSK adjacent to INDEX again.

c) Push the LSK adjacent to INDEX again.

d) Push the LSK adjacent to INDEX again.

NOTE: Make sure the CDU shows the MAINT BITE INDEX.

(b) If the values for the TLA resolvers are satisfactory, then the fault was intermittent.

**——————— END OF TASK ———————**

## 813. Angle of Attack Sensor Problems - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) VANE DIFF

**HAP 031-054, 101-999**

(b) ALPHA VANE-1 VANE DIFF

(c) ALPHA VANE-2 VANE DIFF

**HAP ALL**

(2) The left and right angle of attack sensors have a difference of more than 1.75 degrees.

B. Possible Causes

(1) Angle of attack sensor, T433 or T437

(2) Air data inertial reference unit, M1749 (ADIRU-L) or M1752 (ADIRU-R)

**HAP 001-013, 015-026, 028-030**

(3) Autothrottle computer, M917

**HAP 031-054, 101-999**

(4) Flight control computer A, M1875

**HAP ALL**

(5) Wiring



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

| | | | |
|---|---|---|---|
| E | 5 | C01009 | ADIRU LEFT DC |
| E | 7 | C01007 | ADIRU LEFT AC |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| E | 8 | C00425 | ADIRU LEFT EXC |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 14 | C01008 | ADIRU RIGHT AC |
| C | 15 | C00426 | ADIRU RIGHT EXC |
| C | 17 | C01010 | ADIRU RIGHT DC |

D. Related Data

(1) (SSM 22-31-11)

(2) (SSM 34-21-12)

(3) (SSM 34-21-22)

(4) (WDM 22-31-11)

(5) (WDM 34-21-12)

(6) (WDM 34-21-22)

E. Initial Evaluation

(1) Do the CURRENT STATUS BITE procedure for the autothrottle. To do the procedure, do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(2) If the maintenance message A/T shows in CURRENT STATUS, then do these steps:

**HAP 001-013, 015-026, 028-030**

(a) Replace the autothrottle computer, M917. These are the tasks:
- Autothrottle Computer Removal, AMM TASK 22-31-10-000-801
- Autothrottle Computer Installation, AMM TASK 22-31-10-400-801

**HAP 031-054, 101-999**

(b) Replace the flight control computer A, M1875. These are the tasks:
- Flight Control Computer Removal, AMM TASK 22-11-33-000-801
- Flight Control Computer Installation, AMM TASK 22-11-33-400-801

**HAP ALL**

(c) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) If the maintenance message A/T does not show in CURRENT STATUS, then you corrected the fault. Do these steps to complete the task:

1) Push the LSK adjacent to INDEX.
2) Do the instructions on the CDU.
3) Push the LSK adjacent to CONTINUE.
4) Push the LSK adjacent to INDEX.

(3) If the maintenance message A/T does not show in CURRENT STATUS, then one of these conditions occurred:

(a) There was an intermittent fault.
(b) The angle of attack sensor can have a fault.
(c) The air data inertial reference unit can have a fault.

(4) To find the fault, do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) For ADIRU-L and ADIRU-R, do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) If a maintenance message shows in CURRENT STATUS, then do the FIM task for that maintenance message.
(b) If no maintenance messages show, then continue.

**HAP 001-013, 015-026, 028-030**

(2) Do this check of the wiring:

(a) Remove the ADIRU-L, M1749. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.
(b) Disconnect connector D10015 from the AOA-L sensor, T433.
(c) Do a wiring check between these pins of connector D3687A at the E5-2 shelf and connector D10015 of the AOA-L sensor, T433 (WDM 34-21-12):

| D3687A | | D10015 |
|---|---|---|
| pin J7 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin H7 | - - - - - - - - - - - - - - - - - - | pin 4 |
| pin K7 | - - - - - - - - - - - - - - - - - - | pin 5 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.
3) Re-connect the connector D10015 to the AOA-L sensor, T433.

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D10015 to the AOA-L sensor, T433.
2) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(f) Do a wiring check between these pins of connector D10009A at the E1-1 shelf and connector D3687A at the E5-2 shelf (WDM 34-21-14):

| D10009A | | D3687A |
|---|---|---|
| pin C2 | - - - - - - - - - - - - - - - - - - | pin A7 |
| pin D2 | - - - - - - - - - - - - - - - - - - | pin B7 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 001-013, 015-026, 028-030 (Continued)**

(g) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

3) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

4) Do the repair confirmation at the end of this task.

(h) If you do not find a problem with the wiring, then continue.

1) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

(i) Remove the ADIRU-R, M1752. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(j) Disconnect connector D10017 from the AOA-R sensor, T437.

(k) Do a wiring check between these pins of connector D3693A at the E5-2 shelf and connector D10017 of the AOA-R sensor, T437 (WDM 34-21-22):

| D3693A | | D10017 |
|---|---|---|
| pin H7 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin J7 | - - - - - - - - - - - - - - - - - - | pin 4 |
| pin K7 | - - - - - - - - - - - - - - - - - - | pin 5 |

(l) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-connect the connector D10017 to the AOA-R sensor, T437.

4) Do the repair confirmation at the end of this task.

(m) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D10017 to the AOA-R Sensor, T437.

(n) Do a wiring check between these pins of connector D10009B at the E1-1 shelf and connector D3693A at the E5-2 shelf (WDM 34-21-24):

| D10009B | | D3693A |
|---|---|---|
| pin C2 | - - - - - - - - - - - - - - - - - - | pin A7 |
| pin D2 | - - - - - - - - - - - - - - - - - - | pin B7 |

(o) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

**HAP 031-054, 101-999**

(3) Do this check of the wiring:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Remove the ADIRU-L, M1749. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(b) Disconnect connector D10015 from the AOA-L sensor, T433.

(c) Do a wiring check between these pins of connector D3687A at the E5-2 shelf and connector D10015 of the AOA-L sensor, T433 (WDM 34-21-12):

| D3687A | | D10015 |
|---|---|---|
| pin J7 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin H7 | - - - - - - - - - - - - - - - - - - | pin 4 |
| pin K7 | - - - - - - - - - - - - - - - - - - | pin 5 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.
3) Re-connect the connector D10015 to the AOA-L sensor, T433.

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D10015 to the AOA-L sensor, T433.
2) Remove the flight control computer A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(f) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and connector D3687A at the E5-2 shelf (WDM 34-21-14):

| D10135B | | D3687A |
|---|---|---|
| pin E4 | - - - - - - - - - - - - - - - - - - | pin A3 |
| pin D4 | - - - - - - - - - - - - - - - - - - | pin B3 |

(g) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the flight control computer A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
3) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.
4) Do the repair confirmation at the end of this task.

(h) If you do not find a problem with the wiring, then continue.

1) Re-install the ADIRU-L, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

(i) Remove the ADIRU-R, M1752. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(j) Disconnect connector D10017 from the AOA-R sensor, T437.

(k) Do a wiring check between these pins of connector D3693A at the E5-2 shelf and connector D10017 of the AOA-R sensor, T437 (WDM 34-21-22):

| D3693A | | D10017 |
|---|---|---|
| pin H7 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin J7 | - - - - - - - - - - - - - - - - - - | pin 4 |
| pin K7 | - - - - - - - - - - - - - - - - - - | pin 5 |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

(l) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-connect the connector D10017 to the AOA-R sensor, T437.

4) Do the repair confirmation at the end of this task.

(m) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D10017 to the AOA-R Sensor, T437.

(n) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D3693A at the E5-2 shelf (WDM 34-21-24):

| D10135A | | D3693A |
|---|---|---|
| pin K4 | - - - - - - - - - - - - - - - - - - | pin A7 |
| pin J4 | - - - - - - - - - - - - - - - - - - | pin B7 |

(o) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the ADIRU-R, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

3) Re-install the flight control computer A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

**HAP ALL**

(4) Repair Confirmation

(a) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

1) Look at the CURRENT STATUS page to see if this maintenance message shows.

2) If this maintenance message shows, then go back to where you were and continue.

3) If this maintenance message does not show, then you corrected the fault.

**——————— END OF TASK ———————**

## 817. N1 Target Problems at Throttle Hold - Fault Isolation

A. Description

**HAP 001-013, 015-026, 028-030**

(1) This task is for maintenance messages:

T/O SET HI

T/O SET LO

TRA 1

TRA 2

**HAP 031-054, 101-999**

(2) This task is for maintenance messages:

22-31671 or 22-31672 ENGINE 1 N1

22-31675 or 22-31676 ENGINE 2 N2



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

22-31673 or 22-31677 TRA 1

22-31674 or 22-31678 TRA 2

22-31679 CREW OPERATION ASM

22-31680 CREW OPERATION FMC

**HAP ALL**

(3) At the start of throttle hold, the TRA (thrust lever resolver angle) is more than two degrees or less than two degrees from the TRA for the target N1.

B. Possible Causes

**HAP 031-054, 101-999**

(1) Wiring between the PSEU, M2061 and the SMYD 1, M1747

(2) Wiring between the CARD FILE STA 212 and the SMYD 2, M1748

**HAP 001-013, 015-026, 028-030**

(3) Autothrottle computer, M917

**HAP 031-054, 101-999**

(4) Flight control computer A, M1875

**HAP ALL**

(5) Flight management computer, M1175

(6) Electronic engine control, M1818

(7) Stall Management Yaw Damper (SMYD 1 or SMYD 2), M1747 or M1748.

(8) Thrust lever angle resolver (engine 1) or thrust lever angle resolver (engine 2), M1819

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|

**HAP ALL**

| | | | |
|---|---|---|---|
| A | 4 | C01390 | ENGINE 1 ALTN PWR CHAN B |
| A | 5 | C01314 | ENGINE 1 ALTN PWR CHAN A |
| A | 6 | C01017 | FMCS CMPTR 1 |
| E | 4 | C01392 | STICK SHAKER LEFT |
| E | 5 | C01204 | SMYD-1 CMPTR DC |
| E | 6 | C01205 | SMYD-1 SNSR EXC AC |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C01207 | SMYD-2 SNSR EXC AC |
| B | 5 | C01206 | SMYD-2 CMPTR DC |
| B | 6 | C01393 | STICK SHAKER RIGHT |
| **HAP 037-054, 101-999** | | | |
| D | 16 | C01262 | FMCS CMPTR 2 |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP ALL** | | | |
| D | 7 | C01391 | ENGINE 2 ALTN PWR CHAN B |
| D | 8 | C01315 | ENGINE 2 ALTN PWR CHAN A |

D. Related Data

(1) (SSM 22-31-11)

(2) (SSM 22-31-31)

(3) (SSM 22-31-41)

(4) (SSM 27-32-11)

(5) (SSM 27-32-21)

(6) (SSM 34-61-14)

(7) (WDM 22-31-11)

(8) (WDM 27-32-11)

(9) (WDM 27-32-21)

(10) (WDM 34-61-14)

(11) (WDM 73-24-11)

(12) (WDM 73-24-21)

E. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If this maintenance message does not show in CURRENT STATUS, then there was an intermittent fault.

(b) If this maintenance message shows in CURRENT STATUS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

**HAP 031-054, 101-999**

(1) Do this check of the wiring between the PSEU and the SMYD 1:

(a) Remove the SMYD 1, M1747. To remove it, do this task:AMM TASK 27-32-42-000-801.

(b) Remove the PSEU, M2061. To remove it, do this task: AMM TASK 32-09-10-000-801.

(c) Do this wiring check between these pins of connector D3683A of the E3-2 shelf and connector D11138 of the PSEU:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

| D3683A | | D11138 |
|---|---|---|
| Pin 20 | - - - - - - - - - - - - - - - - - - | Pin 28 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install SMYD 1, M1747. To install it, do this task: AMM TASK 27-32-42-400-801.
3) Re-install the PSEU, M2061. To install it, do this task: AMM TASK 32-09-10-400-801.
4) RERUN the BITE Test.
5) If the maintenance message does not show, then you correct the fault.

(e) If you find no problem with the wiring, replace the SMYD 1, M1747. To install a new SMYD, M1747: AMM TASK 27-32-42-400-801.

1) Re-install the PSEU, M2061. To install it, do this task: AMM TASK 32-09-10-400-801.
2) RERUN the BITE Test.
3) If the maintenance message does not show, then you correct the fault.
4) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the CARD FILE STA 212 and the SMYD 2:

(a) Remove the SMYD 2, M1748. To remove it, do this task:AMM TASK 27-32-42-000-801

(b) Do this wiring check between these pins of connector D3685A of the E3-2 shelf and connector D10988 of the CARD FILE STA 212:

| D3685A | | D10988 |
|---|---|---|
| Pin 20 | - - - - - - - - - - - - - - - - - - | Pin 28 |

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install SMYD 2. To install it, do this task: AMM TASK 27-32-42-400-801
3) RERUN the BITE Test.
4) If the maintenance message does not show, then you correct the fault.

(d) If you find no problem witht the wiring, replace the SMYD 2, M1748. To install a new SMYD 2, M1748, do this task: AMM TASK 27-32-42-400-801

1) RERUN the BITE Test.
2) If the maintenance message does not show, then you correct the fault.
3) If the maintenance message does show, then continue.

**HAP ALL**

(3) Do these steps if one of these maintenance messages shows in CURRENT STATUS:

**HAP 001-013, 015-026, 028-030**

- A/T, FMC, EEC

**HAP 031-054, 101-999**

- FCC A, FMC, EEC

**HAP ALL**

(a) Do the applicable Fault Isolation tasks for these maintenance messages:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 001-013, 015-026, 028-030**

1) A/T, do this task: Autothrottle Internal Problems - Fault Isolation, 22-31 TASK 802.

**HAP 031-054, 101-999**

2) FCC A, do this task: Autothrottle Internal Problems - Fault Isolation, 22-31 TASK 802.

**HAP ALL**

3) FMC, do this task: Flight Management Computer Failure - Fault Isolation, 22-31 TASK 803.

4) EEC, do this task: Electronic Engine Control Failure - Fault Isolation, 22-31 TASK 806.

(b) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

1) If this maintenance message does not show in CURRENT STATUS, then there was an intermittent fault.

2) If this maintenance message shows in CURRENT STATUS, then continue.

(4) Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) Do the fault isolation tasks for the maintenance messages that you find.

(b) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

1) If this maintenance message does not show in the CURRENT STATUS, then there was an intermittent fault.

2) If this maintenance message shows in the CURRENT STATUS, then continue.

(5) Do a check of the TLA resolvers. Do this task: Engine 1 and Engine 2 Thrust Lever Angle Resolver Alignment Test, AMM TASK 73-21-00-700-807-F00.

(a) If the values for the thrust levers are not satisfactory, then do these steps:

1) Adjust the TLA resolvers. To do the adjustment, do this task: Thrust Lever Angle Resolver Adjustment, AMM TASK 76-11-05-820-801-F00.

2) Do the check of the TLA resolvers again.

3) If the values are satisfactory, then you corrected the fault. Do these steps to complete the task:

a) Push the LSK adjacent to INDEX.

b) Push the LSK adjacent to INDEX again.

c) Push the LSK adjacent to INDEX again.

d) Push the LSK adjacent to INDEX again.

NOTE: Make sure the CDU shows the MAINT BITE INDEX.

(b) If the values for the TLA resolvers are satisfactory, then there was an intermittent fault.

**———————— END OF TASK ————————**

## 818. Target N1 More Than Maximum Permitted - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) TARGET MON



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 001-013, 015-026, 028-030 (Continued)**

**HAP 031-054, 101-999**

(b) FMC-1 TARGET MON

(c) EEC-1 TARGET MON

(d) EEC-2 TARGET MON

**HAP ALL**

(2) Autothrottle BITE found that the flight management computer (FMC) N1 limit is more than the maximum permitted.

B. Possible Causes

**HAP 001-013, 015-026, 028-030**

(1) Autothrottle computer, M917

**HAP 031-054, 101-999**

(2) Flight control computer A, M1875

**HAP ALL**

(3) Flight management computer, M1175

(4) Electronic engine control, M1818

(5) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |
| **HAP 001-013, 015-026, 028-030** | | | |
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP ALL** | | | |
| A | 4 | C01390 | ENGINE 1 ALTN PWR CHAN B |
| A | 5 | C01314 | ENGINE 1 ALTN PWR CHAN A |
| A | 6 | C01017 | FMCS CMPTR 1 |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 037-054, 101-999** | | | |
| D | 16 | C01262 | FMCS CMPTR 2 |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP ALL** | | | |
| D | 7 | C01391 | ENGINE 2 ALTN PWR CHAN B |
| D | 8 | C01315 | ENGINE 2 ALTN PWR CHAN A |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Related Data

(1) (SSM 22-31-31)

(2) (SSM 22-31-41)

(3) (SSM 34-61-14)

(4) (WDM 22-31-31)

(5) (WDM 22-31-41)

(6) (WDM 34-61-14)

(7) (WDM 73-24-11)

(8) (WDM 73-24-21)

E. Initial Evaluation

(1) If this maintenance message shows in INFLIGHT FAULTS, then do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If one of these maintenance messages shows in CURRENT STATUS, then do the FIM task for that maintenance message:

1) A/T, do this task: Autothrottle Internal Problems - Fault Isolation, 22-31 TASK 802.

2) FMC, do this task: Flight Management Computer Failure - Fault Isolation, 22-31 TASK 803.

3) EEC, do this task: Electronic Engine Control Failure - Fault Isolation, 22-31 TASK 806.

(b) If none of the above maintenance messages show, then there was an intermittent fault.

**——————— END OF TASK ———————**

## 819. Unusual N1 Increase During Takeoff - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) MANUAL THROTTLE ADJ

(b) MAN THR ADJ

(c) TEMP INVERSN.

(2) Autothrottle BITE found an unusual increase in flight management computer (FMC) N1 during takeoff.

(3) MANUAL THROTTLE ADJ (the same as MAN THR ADJ) means that the increase in N1 was caused by a change in throttle position made by the flight crew.

(4) TEMP INVERSN means that the increase in N1 was caused by an increase in outside air temperature.

(5) No maintenance action is necessary for the conditions that cause the N1 increases for these messages.

NOTE: It is possible that an engine exceedence occurred.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

B. Initial Evaluation

(1) If there was an engine exceedence, do this task: Engine Overspeed, N1 Over Redline - Fault Isolation, 71-06 TASK 801.

**———————— END OF TASK ————————**

## 821. ASM A/T DATA MISSING

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) ASM 1 A/T DATA MISSING

(b) ASM 1 NO DATA

(c) ASM 2 A/T DATA MISSING

(d) ASM 2 NO DATA

**HAP 031-054, 101-999**

(e) 22-31046 ASM 1 (J1A-C06, D05)

(f) 22-31056 ASM 2 (J1B-C05, D05)

(g) 22-31764 ASM 1

(h) 22-31765 ASM 2

**HAP ALL**

B. Possible Causes

(1) Wiring Problem

(2) ASM 1 and ASM 2

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data

(1) WDM 22-31-31

(2) WDM 22-31-41

(3) SSM 22-31-31

(4) SSM 22-31-41

E. Initial Evaluation

(1) The SERVO MOTOR TEST of the INTERACTIVE THROTTLE TESTS in the A/T BITE TEST was performed.

(a) If this maintenance message shows, then do the Fault Isolation Procedure below.

(b) If this maintenance message does not show, then there was an intermittent fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F. Fault Isolation Procedure

**HAP 001-013, 015-026, 028-030**

(1) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(b) Disconnect connectors D10025 from autothrottle servo motor 1, M1836, or D10027 from autothrottle servo motor 2, M1837.

NOTE: The autothrottle servo motors are under the control stand in the area forward of the nose landing gear wheel well.

(c) AUTOTHROTTLE SERVO MOTOR 1, M1836;

Do a wiring check between these pins of the autothrottle computer connector D10009A and D10009B and the autothrottle servo motor connector D10025:

| **D10009A** | | **D10025** |
|---|---|---|
| pin C6 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin C13 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin C15 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin D6 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin D13 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin D15 | - - - - - - - - - - - - - - - - - - | pin 14 |

| **D10009B** | | **D10025** |
|---|---|---|
| pin C10 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin D10 | - - - - - - - - - - - - - - - - - - | pin 8 |

(d) AUTOTHROTTLE SERVO MOTOR 2, M1837;

Do a wiring check between these pins of the autothrottle computer connector D10009B and the autothrottle servo motor connector D10027:

| **D10009B** | | **D10027** |
|---|---|---|
| pin C6 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin C10 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin C13 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin C15 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin D6 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin D10 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin D13 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin D15 | - - - - - - - - - - - - - - - - - - | pin 14 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

3) Re-connect connectors D10025 to autothrottle servo motor 1, M1836, or D10027 to autothrottle servo motor 2, M1837.

4) Do the Repair Confirmation below.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

a) If this maintenance message does not show, then you corrected the fault.

b) If this maintenance message does shows, then continue.

(f) If you do not find a problem with the wiring, then do these steps:

(g) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

**HAP 031-054, 101-999**

(2) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the flight control computer, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connectors D10025 from autothrottle servo motor 1, M1836, or D10027 from autothrottle servo motor 2, M1837.

NOTE: The autothrottle servo motors are under the control stand in the area forward of the nose landing gear wheel well.

(c) AUTOTHROTTLE SERVO MOTOR 1, M1836;

Do a wiring check between these pins of the flight control computer connector D10135A and D10135B and the autothrottle servo motor connector D10025:

| **D10135A** | | **D10025** |
|---|---|---|
| pin C6 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin D5 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin A9 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin B9 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin B14 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin D15 | - - - - - - - - - - - - - - - - - - | pin 14 |

| **D10135B** | | **D10025** |
|---|---|---|
| pin H3 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin J2 | - - - - - - - - - - - - - - - - - - | pin 8 |

(d) AUTOTHROTTLE SERVO MOTOR 2, M1837;

Do a wiring check between these pins of the autothrottle computer connector D10009B and the autothrottle servo motor connector D10027:

| **D10135B** | | **D10027** |
|---|---|---|
| pin C6 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin A9 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin B9 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin B14 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin D5 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin D10 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin D13 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin D15 | - - - - - - - - - - - - - - - - - - | pin 14 |

(e) If you find a problem with the wiring, then do these steps:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Repair the wiring.
2) Re-install the flight control computer, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
3) Re-connect connectors D10025 to autothrottle servo motor 1, M1836, or D10027 to autothrottle servo motor 2, M1837.
4) Do the Repair Confirmation below.
   a) If this maintenance message does not show, then you corrected the fault.
   b) If this maintenance message does shows, then continue.

(f) If you do not find a problem with the wiring, then do these steps:

(g) Re-install the flight control computer, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

**HAP ALL**

(3) Replace the applicable autothrottle servo motor. These are the tasks:

AMM TASK 22-31-91-020-801

AMM TASK 22-31-91-400-801

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

G. Repair Confirmation

(1) If you are at A/T BITE TEST, push the LSK next to RERUN.

(2) If you are not at on the A/T BITE TEST displays, then do these steps:

(a) Push the INIT REF function Key.

(b) If the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(c) Push the LSK adjacent to the MAINT prompt.

(d) Push the LSK adjacent to INTERACTIVE.

(e) Push the LSK adjacent to THROTTLE TESTS.

(f) Push the LSK adjacent to SERVO MOTOR TEST.

(3) Look at the CDU to see if this maintenance message shows.

**——————— END OF TASK ———————**

## 824. ASM FAIL

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) ASM 1 LIMIT FAIL

(b) ASM 2 LIMIT FAIL


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 001-013, 015-026, 028-030 (Continued)**

**HAP 031-054, 101-999**

(c) 22-31766 ASM 1

(d) 22-31767 ASM 2

(e) 22-31780 ASM 1

(f) 22-31781 ASM 2

(g) 22-31778 ASM 1

(h) 22-31779 ASM 2

(i) 22-31782 ASM 1

(j) 22-31783 ASM 2

**HAP ALL**

B. Possible Causes

(1) Thrust lever angle resolver (TRA)

(2) Autothrottle servo motor (ASM) 1 or autothrottle servo motor (ASM) 2

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data

(1) WDM 22-31-31

(2) WDM 22-31-41

(3) SSM 22-31-31

(4) SSM 22-31-41

E. Initial Evaluation

(1) The SERVO MOTOR TEST of the INTERACTIVE THROTTLE TESTS in the A/T BITE TEST was performed.

(a) If this maintenance message shows, then do the Fault Isolation Procedure below.

(b) If this maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do the adjustment of the hrust lever angle resolver (TRA). To adjust it, do this task: Thrust Lever Angle Resolver Adjustment, AMM TASK 76-11-05-820-801-F00.

(a) Do the Repair Confirmation below.

1) If this maintenance message does not show, then you corrected the fault.

2) If this maintenance message does shows, then continue.

(2) Replace the applicable autothrottle servo motor (ASM). These are the tasks:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Autothrottle Servo Motor and Gearbox Removal, AMM TASK 22-31-91-020-801,

Autothrottle Servo Motor and Gearbox Installation, AMM TASK 22-31-91-400-801.

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

G. Repair Confirmation

(1) If you are at A/T BITE TEST, Push the LSK next to RERUN.

(2) If you are not at on the A/T BITE TEST displays, then do these steps:

(a) Push the INIT REF function Key.

(b) If the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(c) Push the LSK adjacent to the MAINT prompt.

(d) Push the LSK adjacent to INTERACTIVE.

(e) Push the LSK adjacent to THROTTLE TESTS.

(f) Push the LSK adjacent to SERVO MOTOR TEST.

(3) Look at the CDU to see if this maintenance message shows.

**——————— END OF TASK ———————**

## 823. ASM NO EEC DATA

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) ASM 2 NO EEC DATA

(b) ASM 2 NO EEC DATA

**HAP 031-054, 101-999**

(c) 22-31296 ASM 1

(d) 22-31297 ASM 2

**HAP ALL**

B. Possible Causes

(1) Wiring Problem

(2) EEC 1 and EEC 2

(3) ASM 1 and ASM 2

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP ALL**

D. Related Data

(1) WDM 22-31-31

(2) WDM 22-31-41

(3) SSM 22-31-31

(4) SSM 22-31-41

E. Initial Evaluation

(1) The SERVO MOTOR TEST of the INTERACTIVE THROTTLE TESTS in the A/T BITE TEST was performed.

(a) If this maintenance message shows, then do the Fault Isolation Procedure below.

(b) If this maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

**HAP 001-013, 015-026, 028-030**

(1) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(b) Disconnect connectors DP0303 and DP0404 from the electronic engine control 1, M1818, or DP0303 and DP0404 from electronic engine control 2, M1818.

(c) ELECTRONIC ENGINE CONTROL 1, M1818:

Do a wiring check between these pins of the autothrottle computer connector D10009A and D10009B and the electronic engine control DP0303 and DP0404:

| **DP0303** | **D10009A** |
|---|---|
| N | A1 |
| M | B1 |

| **DP0404** | **D10009B** |
|---|---|
| N | A1 |
| M | B1 |

(d) ELECTRONIC ENGINE CONTROL 2, M1818:

Do a wiring check between these pins of the autothrottle computer connector D10009A and D10009B and the electronic engine control DP0303 and DP0404:

| **DP0303** | **D10009A** |
|---|---|
| pin N | pin A7 |
| pin M | pin B7 |

| **DP0404** | **D10009B** |
|---|---|
| pin N | pin A7 |
| pin M | pin B7 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

3) Re-connect connectors DP0303 and DP0404 to electronic engine control 1, M1818, or DP0303 and DP0404 to electronic engine control 2, M1818.

4) Do the Repair Confirmation below.

a) If this maintenance message does not show, then you corrected the fault.

b) If this maintenance message does shows, then continue.

(f) If you do not find a problem with the wiring, then do this step:

1) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

**HAP 031-054, 101-999**

(2) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the flight control computer, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connectors DP0303 and DP0404 from the electronic engine control 1, M1818, or DP0303 and DP0404 from electronic engine control 2, M1818.

(c) ELECTRONIC ENGINE CONTROL 1, M1818:

Do a wiring check between these pins of the flight control computer connector D10135A and D10135b and the electronic engine control DP0303 and DP0404:

| **DP0303** | **D10135A** |
|---|---|
| N | B5 |
| M | C4 |

| **DP0404** | **D10135B** |
|---|---|
| N | B5 |
| M | C4 |

(d) ELECTRONIC ENGINE CONTROL 2, M1818:

Do a wiring check between these pins of the autothrottle computer connector D10135A and D10135B and the electronic engine control DP0303 and DP0404:

| **DP0303** | **D10135A** |
|---|---|
| pin N | pin J2 |
| pin M | pin J1 |

| **DP0404** | **D10135B** |
|---|---|
| pin N | pin C10 |
| pin M | pin D9 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Re-install the flight control computer, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-connect connectors DP0303 and DP0404 to electronic engine control 1, M1818, or DP0303 and DP0404 to electronic engine control 2, M1818.

4) Do the Repair Confirmation below.

a) If this maintenance message does not show, then you corrected the fault.

b) If this maintenance message does shows, then continue.

(f) If you do not find a problem with the wiring, then do this step:

1) Re-install the flight control computer, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

**HAP ALL**

(3) Replace the applicable electronic engine control. These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00

EEC Installation, AMM TASK 73-21-60-400-801-F00

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

(c) If this maintenance message does shows, then continue.

(4) Replace the applicable autothrottle servo motor. These are the tasks:

Autothrottle Servo Motor and Gearbox Removal, AMM TASK 22-31-91-020-801

Autothrottle Servo Motor and Gearbox Installation, AMM TASK 22-31-91-400-801

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

G. Repair Confirmation

(1) If you are at A/T BITE TEST, push the LSK next to RERUN.

(2) If you are not at on the A/T BITE TEST displays, then do these steps:

(a) Push the INIT REF function Key.

(b) If the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(c) Push the LSK adjacent to the MAINT prompt.

(d) Push the LSK adjacent to INTERACTIVE.

(e) Push the LSK adjacent to THROTTLE TESTS.

(f) Push the LSK adjacent to SERVO MOTOR TEST.

(3) Look at the CDU to see if this maintenance message shows.

**END OF TASK**


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 826. ASM MOTOR PWR INVALID

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) ASM 1 FAIL 05

(b) ASM 1 MOTOR PWR INVALID

(c) ASM 2 FAIL 05

(d) ASM 2 MOTOR PWR INVALID

**HAP 031-054, 101-999**

(e) 22-31584 ASM 1

(f) 22-31585 ASM 2

(g) 22-31696 ASM 1

(h) 22-31761 ASM 2

**HAP ALL**

B. Possible Causes

(1) Circuit Breakers

(2) ASM 1 and ASM 2

(3) Wiring Problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| Row | Col | Number | Name |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data

(1) WDM 22-31-31

(2) WDM 22-31-41

(3) SSM 22-31-31

(4) SSM 22-31-41

E. Initial Evaluation

(1) The SERVO MOTOR TEST of the INTERACTIVE THROTTLE TESTS in the A/T BITE TEST was performed.

(a) If this maintenance message shows, then do the Fault Isolation Procedure below.

(b) If this maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) make sure the applicable ASM circuit breaker on the autothrottle computer is closed.

(a) If the circuit breaker is not close.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Closed the applicable ASM circuit breaker.

(c) Do the Repair Confirmation below.

1) If this maintenance message does not show, then you corrected the fault.

2) If this maintenance message does shows, then continue.

**HAP 001-013, 015-026, 028-030**

(2) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the flight control computer, M1875. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(b) Disconnect connectors D10025 from autothrottle servo motor 1, M1836, or D10027 from autothrottle servo motor 2, M1837.

NOTE: The autothrottle servo motors are under the control stand in the area forward of the nose landing gear wheel well.

(c) AUTOTHROTTLE SERVO MOTOR 1, M1836;

Do a wiring check between these pins of the autothrottle computer connector D10009A and the autothrottle servo motor connector D10025:

| **D10009A** | | **D10025** |
|---|---|---|
| pin C13 | - - - - - - - - - - - - - - - - - | pin 3 |
| pin C15 | - - - - - - - - - - - - - - - - - | pin 6 |
| pin D13 | - - - - - - - - - - - - - - - - - | pin 9 |
| pin D15 | - - - - - - - - - - - - - - - - - | pin 14 |

(d) AUTOTHROTTLE SERVO MOTOR 2, M1837;

Do a wiring check between these pins of the autothrottle computer connector D10009B and the autothrottle servo motor connector D10027:

| **D10009B** | | **D10027** |
|---|---|---|
| pin C13 | - - - - - - - - - - - - - - - - - | pin 3 |
| pin C15 | - - - - - - - - - - - - - - - - - | pin 6 |
| pin D13 | - - - - - - - - - - - - - - - - - | pin 9 |
| pin D15 | - - - - - - - - - - - - - - - - - | pin 14 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

3) Re-connect connectors D10025 to autothrottle servo motor 1, M1836, or D10027 to autothrottle servo motor 2, M1837.

4) Do the Repair Confimation below.

a) If this maintenance message does not show, then you corrected the fault.

b) If this maintenance message does shows, then continue.

(f) If you do not find a problem with the wiring, then do these steps:

1) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Re-connect connectors D10025 to autothrottle servo motor 1, M1836, or D10027 to autothrottle servo motor 2, M1837.

**HAP 031-054, 101-999**

(3) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the flight control computer, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect connectors D10025 from autothrottle servo motor 1, M1836, or D10027 from autothrottle servo motor 2, M1837.

NOTE: The autothrottle servo motors are under the control stand in the area forward of the nose landing gear wheel well.

(c) AUTOTHROTTLE SERVO MOTOR 1, M1836;

Do a wiring check between these pins of the flight control computer connector D10135A and the autothrottle servo motor connector D10025:

| D10135A | | D10025 |
|---|---|---|
| pin A9 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin B9 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin B14 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin A14 | - - - - - - - - - - - - - - - - - - | pin 14 |

(d) AUTOTHROTTLE SERVO MOTOR 2, M1837;

Do a wiring check between these pins of the flight control computer connector D10135B and the autothrottle servo motor connector D10027:

| D10135B | | D10027 |
|---|---|---|
| pin B9 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin A9 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin B14 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin A14 | - - - - - - - - - - - - - - - - - - | pin 14 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the flight control computer, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-connect connectors D10025 to autothrottle servo motor 1, M1836, or D10027 to autothrottle servo motor 2, M1837.

4) Do the Repair Confimation below.

a) If this maintenance message does not show, then you corrected the fault.

b) If this maintenance message does shows, then continue.

(f) If you do not find a problem with the wiring, then do these steps:

1) Re-install the autothrottle computer, M917. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Re-connect connectors D10025 to autothrottle servo motor 1, M1836, or D10027 to autothrottle servo motor 2, M1837.

**HAP ALL**

(4) Replace the applicable autothrottle servo motor. These are the tasks:

AMM TASK 22-31-91-020-801

AMM TASK 22-31-91-400-801

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

G. Repair Confirmation

(1) If you are at A/T BITE TEST, Push the LSK next to RERUN.

(2) If you are not at on the A/T BITE TEST displays, then do these steps:

(a) Push the INIT REF function Key.

(b) If the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(c) Push the LSK adjacent to the MAINT prompt.

(d) Push the LSK adjacent to INTERACTIVE.

(e) Push the LSK adjacent to THROTTLE TESTS.

(f) Push the LSK adjacent to SERVO MOTOR TEST.

(3) Look at the CDU to see if this maintenance message shows.

**——————— END OF TASK ———————**

## 820. ASM CONFIG INVALID

A. Description

(1) This task is for these maintenace messages:

**HAP 001-013, 015-026, 028-030**

(a) ASM 1 CONFIG INVALID xx (where xx = 00, 10, 11)

(b) ASM 2 CONFIG INVALID yy (where yy = 00, 01, 11)

(c) ASM 1 CONFIG INVALID

(d) ASM 2 CONFIG INVALID

**HAP 031-054, 101-999**

(e) 022-31578 ASM 1

(f) 22-31580 ASM 1

(g) 22-31792 ASM 1

(h) 22-31579 ASM 2

(i) 22-31581 ASM 2

(j) 22-31793 ASM 2

(k) 22-31453 ASM 1


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(l) 22-31454 ASM 2

**HAP ALL**

B. Possible Causes

(1) ASM 1 and ASM 2

(2) Wiring Problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data

(1) WDM 22-31-31

(2) WDM 22-31-41

(3) SSM 22-31-31

(4) SSM 22-31-41

E. Initial Evaluation

(1) The SERVO MOTOR TEST of the INTERACTIVE THROTTLE TESTS in the A/T BITE TEST was performed.

(a) If this maintenance message shows, then do the Fault Isolation Procedure below.

(b) If this maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this check of the program pins:

(a) AUTOTHROTTLE SERVO MOTOR 1, M1836:

1) Disconnect electrical connector D10025 from the autothrottle servo motor 1, M1836.

2) Do a continuity check between pin 1 and pin 5 at the connector D10025.

(b) AUTOTHROTTLE SERVO MOTOR 2, M1837:

1) Disconnect electrical connector D10027 from the autothrottle servo motor 2, M1837.

2) Do a continuity check between pin 1 and pin 11 at the connector D10027.

(c) If there is no continuity between pin 1 and pin 5 at D10025 or pin 1 and 11 at D10027, then do these steps:

1) Repair the wiring.

2) Re-connect connectors D10025 to autothrottle servo motor 1, M1836, or D10027 to autothrottle servo motor 2, M1837.

3) Do the Repair Confirmation below.

4) If this maintenance message does not show, then you corrected the fault.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(d) If there is continuity between pin 1 and 5 at D10025 or pin 1 and 11 at D10027, then do these steps:

1) Replace the applicable autothrottle servo motor. These are the tasks:

AMM TASK 22-31-91-020-801

AMM TASK 22-31-91-400-801

2) Do the Repair Confirmation below.

3) If this maintenance message does not show, then you corrected the fault.

G. Repair Confirmation

(1) If you are at A/T BITE TEST, Push the LSK next to RERUN.

(2) If you are not at on the A/T BITE TEST displays, then do these steps:

(a) Push the INIT REF function Key.

(b) If the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(c) Push the LSK adjacent to the MAINT prompt.

(d) Push the LSK adjacent to INTERACTIVE.

(e) Push the LSK adjacent to THROTTLE TESTS.

(f) Push the LSK adjacent to SERVO MOTOR TEST.

(3) Look at the CDU to see if this maintenance message shows.

**——————— END OF TASK ———————**

## 822. ASM DATA INVALID

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) ASM 1 FAIL 01

(b) ASM 1 DATA INVALID

(c) ASM 1 FAIL 02

(d) ASM 1 FAIL 03

(e) ASM 1 FAIL 04

(f) ASM 1 FAIL 10

(g) ASM 1 FAIL 17

(h) ASM 2 FAIL 01

(i) ASM 2 DATA INVALID

(j) ASM 2 FAIL 02

(k) ASM 2 FAIL 03

(l) ASM 2 FAIL 04

(m) ASM 2 FAIL 10

(n) ASM 2 FAIL 17



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 001-013, 015-026, 028-030 (Continued)**

**HAP 031-054, 101-999**

(o) 22-31057 ASM 1
(p) 22-31058 ASM 2
(q) 22-31059 ASM 1
(r) 22-31060 ASM 2
(s) 22-31273 ASM 1
(t) 22-31274 ASM 2
(u) 22-31294 ASM 1
(v) 22-31295 ASM 2
(w) 22-31582 ASM 1
(x) 22-31583 ASM 2
(y) 22-31762 ASM 1
(z) 22-31763 ASM 2
(aa) 22-31768 ASM 1
(ab) 22-31769 ASM 2
(ac) 22-31772 ASM 1
(ad) 22-31773 ASM 2
(ae) 22-31786 ASM 1
(af) 22-31787 ASM 2

**HAP ALL**

B. Possible Causes

(1) ASM 1 and ASM 2

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| Row | Col | Number | Name |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data

(1) WDM 22-31-31
(2) WDM 22-31-41
(3) SSM 22-31-31
(4) SSM 22-31-41

E. Initial Evaluation

(1) The SERVO MOTOR TEST of the INTERACTIVE THROTTLE TESTS in the A/T BITE TEST was performed.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If this maintenance message shows, then do the Fault Isolation Procedure below.

(b) If this maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Replace the applicable autothrottle servo motor. These are the tasks:

AMM TASK 22-31-91-020-801

AMM TASK 22-31-91-400-801

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

G. Repair Confirmation

(1) If you are at A/T BITE TEST, Push the LSK next to RERUN.

(2) If you are not at on the A/T BITE TEST displays, then do these steps:

(a) Push the INIT REF function Key.

(b) If the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(c) Push the LSK adjacent to the MAINT prompt.

(d) Push the LSK adjacent to INTERACTIVE.

(e) Push the LSK adjacent to THROTTLE TESTS.

(f) Push the LSK adjacent to SERVO MOTOR TEST.

(3) Look at the CDU to see if this maintenance message shows.

**——————— END OF TASK ———————**

**827. ASM FAIL 11, 18**

A. Description

(1) This task is for these maintenance messages:

**HAP 001-013, 015-026, 028-030**

(a) ASM 1 FAIL 11

(b) ASM 1 FAIL 18

(c) ASM 2 FAIL 11

(d) ASM 2 FAIL 18

**HAP 031-054, 101-999**

(e) 22-31774 ASM 1

(f) 22-31775 ASM 2

(g) 22-31788 ASM 1

(h) 22-31789 ASM 2

**HAP ALL**

B. Possible Causes

(1) Thrust Lever Angle Resolver (TRA)

(2) Electronic engine control (EEC)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) Mechanic Friction Problem

(4) Autothrottle servo motor (ASM) 1 or autothrottle servo motor (ASM) 2

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data

(1) WDM 22-31-31

(2) WDM 22-31-41

(3) SSM 22-31-31

(4) SSM 22-31-41

E. Initial Evaluation

(1) The SERVO MOTOR TEST of the INTERACTIVE THROTTLE TESTS in the A/T BITE TEST was performed.

(a) If this maintenance message shows, then do the Fault Isolation Procedure below.

(b) If this maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do the adjustment of the thrust lever angle resolver (TRA). To adjust it, do this task:

Thrust Lever Angle Resolver Adjustment, AMM TASK 76-11-05-820-801-F00.

(a) Do the Repair Confirmation below.

1) If this maintenance message does not show, then you corrected the fault.

2) If this maintenance message does shows, then continue.

(2) Do the check of mechanical friction. This is the task: Forward Thrust Lever (Difficult To Move In Forward Thrust) - Fault Isolation, 76-05 TASK 802.

(a) Do the Repair Confirmation below.

1) If this maintenance message does not show, then you corrected the fault.

2) If this maintenance message does shows, then continue.

(3) Replace the applicable thrust lever angle resolver (TRA). These are the tasks:

Thrust Lever Angle Resolver and Autothrottle Brake Assembly Removal, AMM TASK 76-11-05-000-801-F00,

Thrust Lever Angle Resolver and Autothrottle Brake Assembly Installation, AMM TASK 76-11-05-400-801-F00.

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

(c) If this maintenance message does shows, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(4) Replace the applicable electronic engine control (EEC). These are the tasks:
EEC Removal, AMM TASK 73-21-60-000-801-F00,
EEC Installation, AMM TASK 73-21-60-400-801-F00.
(a) Do the Repair Confirmation below.
(b) If this maintenance message does not show, then you corrected the fault.
(c) If this maintenance message does shows, then continue.

(5) Replace the applicable autothrottle servo motor (ASM). These are the tasks:
Autothrottle Servo Motor and Gearbox Removal, AMM TASK 22-31-91-020-801,
Autothrottle Servo Motor and Gearbox Installation, AMM TASK 22-31-91-400-801.
(a) Do the Repair Confirmation below.
(b) If this maintenance message does not show, then you corrected the fault.

G. Repair Confirmation

(1) If you are at A/T BITE TEST, push the LSK next to RERUN.

(2) If you are not at on the A/T BITE TEST displays, then do these steps:
(a) Push the INIT REF function Key.
(b) If the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(c) Push the LSK adjacent to the MAINT prompt.
(d) Push the LSK adjacent to INTERACTIVE.
(e) Push the LSK adjacent to THROTTLE TESTS.
(f) Push the LSK adjacent to SERVO MOTOR TEST.

(3) Look at the CDU to see if this maintenance message shows.

**——————— END OF TASK ———————**

## 825. ASM TORQUE INVALID

A. Description

(1) This task is for this maintenance message:

**HAP 001-013, 015-026, 028-030**

(a) ASM 1 FAIL 09
(b) ASM 1 TORQUE INVALID
(c) ASM 1 FAIL 12
(d) ASM 1 FAIL 16
(e) ASM 2 FAIL 09
(f) ASM 2 TORQUE INVALID
(g) ASM 2 FAIL 12
(h) ASM 2 FAIL 16

**HAP 031-054, 101-999**

(i) 22-31794 ASM 1


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(j) 22-31795 ASM 2
(k) 22-31770 ASM 1
(l) 22-31771 ASM 2
(m) 22-31776 ASM 1
(n) 22-31777 ASM 2
(o) 22-31784 ASM 1
(p) 22-31785 ASM 2
(q) 22-31790 ASM 1
(r) 22-31791 ASM 2

**HAP ALL**

B. Possible Causes
(1) Mechanic Friction Problem
(2) ASM 1 or ASM 2

C. Circuit Breakers
(1) These are the primary circuit breakers related to the fault:
(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data
(1) WDM 22-31-31
(2) WDM 22-31-41
(3) SSM 22-31-31
(4) SSM 22-31-41

E. Initial Evaluation
(1) The SERVO MOTOR TEST of the INTERACTIVE THROTTLE TESTS in the A/T BITE TEST was performed.
(a) If this maintenance message shows, then do the Fault Isolation Procedure below.
(b) If this maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure
(1) Do the check of mechanical friction. This is the task:
Forward Thrust Lever (Difficult To Move In Forward Thrust) - Fault Isolation, 76-05 TASK 802
(a) Do the Repair Confirmation below.
1) If this maintenance message does not show, then you corrected the fault.
2) If this maintenance message does shows, then continue.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(2) Replace the applicable autothrottle servo motor. These are the tasks:

Autothrottle Servo Motor and Gearbox Removal, AMM TASK 22-31-91-020-801

Autothrottle Servo Motor and Gearbox Installation, AMM TASK 22-31-91-400-801

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

G. Repair Confirmation

(1) If you are at A/T BITE TEST, Push the LSK next to RERUN.

(2) If you are not at on the A/T BITE TEST displays, then do these steps:

(a) Push the INIT REF function Key.

(b) If the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(c) Push the LSK adjacent to the MAINT prompt.

(d) Push the LSK adjacent to INTERACTIVE.

(e) Push the LSK adjacent to THROTTLE TESTS.

(f) Push the LSK adjacent to SERVO MOTOR TEST.

(3) Look at the CDU to see if this maintenance message shows.

**——————— END OF TASK ———————**

**HAP 001-013, 015-026, 028-030**

**828. ASM FAIL 6**

A. Description

(1) This task is for these maintenance messages:

(a) ASM 1 FAIL 06

(b) ASM 2 FAIL 06

B. Possible Causes

(1) Electronic engine control (EEC)

(2) Thrust lever angle resolver (TRA)

(3) Autothrottle servo motor (ASM) 1 or autothrottle servo motor (ASM) 2

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

D. Related Data

(1) WDM 22-31-31

(2) WDM 22-31-41



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(3) SSM 22-31-31

(4) SSM 22-31-41

E. Initial Evaluation

(1) The SERVO MOTOR TEST of the INTERACTIVE THROTTLE TESTS in the A/T BITE TEST was performed.

(a) If this maintenance message shows, then do the Fault Isolation Procedure below.

(b) If this maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this check of the wiring:

NOTE: If you use a megohmmeter to do wiring check on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

(a) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(b) Disconnect connectors D10025 from autothrottle servo motor 1, M1836, or D10027 from autothrottle servo motor 2, M1837.

NOTE: The autothrottle servo motors are under the control stand in the area forward of the nose landing gear wheel well.

(c) AUTOTHROTTLE SERVO MOTOR 1, M1836;

Do a wiring check between these pins of the autothrottle computer connector D10009A and D10009B and the autothrottle servo motor connector D10025:

| **D10009A** | | **D10025** |
|---|---|---|
| pin C6 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin C13 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin C15 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin D6 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin D13 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin D15 | - - - - - - - - - - - - - - - - - - | pin 14 |

| **D10009B** | | **D10025** |
|---|---|---|
| pin C10 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin D10 | - - - - - - - - - - - - - - - - - - | pin 8 |

(d) AUTOTHROTTLE SERVO MOTOR 2, M1837;

Do a wiring check between these pins of the autothrottle computer connector D10009B and the autothrottle servo motor connector D10027:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| D10009B | | D10027 |
|---|---|---|
| pin C6 | - - - - - - - - - - - - - - - - - - | pin 12 |
| pin C10 | - - - - - - - - - - - - - - - - - - | pin 7 |
| pin C13 | - - - - - - - - - - - - - - - - - - | pin 3 |
| pin C15 | - - - - - - - - - - - - - - - - - - | pin 6 |
| pin D6 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin D10 | - - - - - - - - - - - - - - - - - - | pin 8 |
| pin D13 | - - - - - - - - - - - - - - - - - - | pin 9 |
| pin D15 | - - - - - - - - - - - - - - - - - - | pin 14 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

3) Re-connect connectors D10025 to autothrottle servo motor 1, M1836, or D10027 to autothrottle servo motor 2, M1837.

4) Do the Repair Confirmation below.

a) If this maintenance message does not show, then you corrected the fault.

b) If this maintenance message does shows, then continue.

(f) If you do not find a problem with the wiring, then do these steps:

(g) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

(2) Do the adjustment of the thrust lever angle resolver (TRA). To adjust it, do this task:

Thrust Lever Angle Resolver Adjustment, AMM TASK 76-11-05-820-801-F00.

(a) Do the Repair Confirmation below.

1) If this maintenance message does not show, then you corrected the fault.

2) If this maintenance message does shows, then continue.

(3) Replace the applicable electronic engine control (EEC). These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

(c) If this maintenance message does shows, then continue.

(4) Replace the applicable thrust lever angle resolver (TRA). These are the tasks:

Thrust Lever Angle Resolver and Autothrottle Brake Assembly Removal, AMM TASK 76-11-05-000-801-F00,

Thrust Lever Angle Resolver and Autothrottle Brake Assembly Installation, AMM TASK 76-11-05-400-801-F00.

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

(c) If this maintenance message does shows, then continue.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(5) Replace the applicable autothrottle servo motor (ASM). These are the tasks:
Autothrottle Servo Motor and Gearbox Removal, AMM TASK 22-31-91-020-801,
Autothrottle Servo Motor and Gearbox Installation, AMM TASK 22-31-91-400-801.
(a) Do the Repair Confirmation below.
(b) If this maintenance message does not show, then you corrected the fault.

G. Repair Confirmation

(1) If you are at A/T BITE TEST, Push the LSK next to RERUN.

(2) If you are not at on the A/T BITE TEST displays, then do these steps:
(a) Push the INIT REF function Key.
(b) If the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(c) Push the LSK adjacent to the MAINT prompt.
(d) Push the LSK adjacent to INTERACTIVE.
(e) Push the LSK adjacent to THROTTLE TESTS.
(f) Push the LSK adjacent to SERVO MOTOR TEST.

(3) Look at the CDU to see if this maintenance message shows.

**——————— END OF TASK ———————**

**829. ASM FAIL 07, 08, 13, 14, 15**

A. Description

(1) This task is for these maintenance messages:
(a) ASM 1 FAIL 07
(b) ASM 1 FAIL 08
(c) ASM 1 FAIL 13
(d) ASM 1 FAIL 14
(e) ASM 1 FAIL 15
(f) ASM 2 FAIL 07
(g) ASM 2 FAIL 08
(h) ASM 2 FAIL 13
(i) ASM 2 FAIL 14
(j) ASM 2 FAIL 15

B. Possible Causes

(1) Thrust lever angle resolver (TRA)
(2) Electronic engine control (EEC)
(3) Autothrottle servo motor (ASM) 1 or autothrottle servo motor (ASM) 2

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

D. Related Data

(1) WDM 22-31-31

(2) WDM 22-31-41

(3) SSM 22-31-31

(4) SSM 22-31-41

E. Initial Evaluation

(1) The SERVO MOTOR TEST of the INTERACTIVE THROTTLE TESTS in the A/T BITE TEST was performed.

(a) If this maintenance message shows, then do the Fault Isolation Procedure below.

(b) If this maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do the adjustment of the thrust lever angle resolver (TRA). To adjust it, do this task: Thrust Lever Angle Resolver Adjustment, AMM TASK 76-11-05-820-801-F00.

(a) Do the Repair Confirmation below.

1) If this maintenance message does not show, then you corrected the fault.

2) If this maintenance message does shows, then continue.

(2) Replace the applicable thrust lever angle resolver (TRA). These are the tasks:

Thrust Lever Angle Resolver and Autothrottle Brake Assembly Removal, AMM TASK 76-11-05-000-801-F00,

Thrust Lever Angle Resolver and Autothrottle Brake Assembly Installation, AMM TASK 76-11-05-400-801-F00.

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

(c) If this maintenance message does shows, then continue.

(3) Replace the applicable electronic engine control (EEC). These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00

EEC Installation, AMM TASK 73-21-60-400-801-F00

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

(c) If this maintenance message does shows, then continue.

(4) Replace the applicable autothrottle servo motor (ASM). These are the tasks:

Autothrottle Servo Motor and Gearbox Removal, AMM TASK 22-31-91-020-801,

Autothrottle Servo Motor and Gearbox Installation, AMM TASK 22-31-91-400-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Do the Repair Confirmation below.

(b) If this maintenance message does not show, then you corrected the fault.

G. Repair Confirmation

(1) If you are at A/T BITE TEST, Push the LSK next to RERUN.

(2) If you are not at on the A/T BITE TEST displays, then do these steps:

(a) Push the INIT REF function Key.

(b) If the POS INIT display shows, then push the line select key (LSK) adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

(c) Push the LSK adjacent to the MAINT prompt.

(d) Push the LSK adjacent to INTERACTIVE.

(e) Push the LSK adjacent to THROTTLE TESTS.

(f) Push the LSK adjacent to SERVO MOTOR TEST.

(3) Look at the CDU to see if this maintenance message shows.

**END OF TASK**


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 801. Autothrottle N1 Limit/Set Speed Problem or ASA Amber Warning - Fault Isolation

A. Description

(1) The autothrottle N1 or SPEED mode is set manually from the digital flight control system mode control panel (DFCS MCP). The engines stay at the correct N1 or speed limit for the flight mode selection made by the flight crew.

(2) The autothrottle yellow warning lights flash on the autoflight status annnuciators (P1 and P3) under one of these conditions:

(a) The airspeed is ten knots above the target speed and not decelerating.

(b) The airspeed is five knots below the target speed and not accelerating.

(c) The airspeed has decreased to the alpha floor during a dual channel approach.

B. Possible Causes

(1) N1 or SPEED mode selector pushbutton on the MCP, M198

(2) Autothrottle brake assembly

(3) Autothrottle servo motor, M1836 (servo motor 1) or M1837 (servo motor 2)

**HAP 001-013, 015-026, 028-030**

(4) Autothrottle computer, M917

**HAP 031-054, 101-999**

(5) Flight control computer A, M1875

**HAP ALL**

(6) Flight management computer, M1175

(7) Electronic engine control, M1818

(8) Thrust lever angle resolver (engine 1) or thrust lever angle resolver (engine 2), M1819

(9) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |
| D | 2 | C01045 | AFCS SYS A FCC DC |
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |
| D | 5 | C01044 | AFCS MCP DC 1 |
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|

**HAP ALL**

| | | | |
|---|---|---|---|
| A | 4 | C01390 | ENGINE 1 ALTN PWR CHAN B |
| A | 5 | C01314 | ENGINE 1 ALTN PWR CHAN A |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| Row | Col | Number | Name |
|---|---|---|---|
| A | 6 | C01017 | FMCS CMPTR 1 |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 037-054, 101-999** | | | |
| D | 16 | C01262 | FMCS CMPTR 2 |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP ALL** | | | |
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |
| B | 3 | C01046 | AFCS SYS B FCC DC |
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |
| C | 3 | C01047 | AFCS MCP DC 2 |
| D | 7 | C01391 | ENGINE 2 ALTN PWR CHAN B |
| D | 8 | C01315 | ENGINE 2 ALTN PWR CHAN A |

D. Related Data

(1) (SSM 22-31-21)

(2) (SSM 22-31-31)

(3) (SSM 22-31-41)

(4) (SSM 34-61-14)

(5) (WDM 22-31-11)

(6) (WDM 22-31-41)

(7) (WDM 34-61-14)

(8) (WDM 73-24-11)

(9) (WDM 73-24-21)

E. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If one of these maintenance messages shows in CURRENT STATUS, then go to the fault isolation task for that maintenance message:

1) ASM, do this task: Autothrottle Servo Motor Failure - Fault Isolation, 22-31 TASK 805.

2) A/T, do this task: Autothrottle Internal Problems - Fault Isolation, 22-31 TASK 802.

3) FMC, do this task: Flight Management Computer Failure - Fault Isolation, 22-31 TASK 803.

4) EEC, do this task: Electronic Engine Control Failure - Fault Isolation, 22-31 TASK 806.

5) MCP, do this task: Mode Control Panel Failure - Fault Isolation, 22-31 TASK 804.

(b) If none of the above maintenance messages show, then one of these conditions occurred:

1) There was an intermittent fault.

2) The N1 or SPEED mode selector pushbutton can have a fault.

3) The autothrottle brake assembly can have a fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

4) The TLA resolver can have a fault.

(c) To find the fault in the N1 or SPEED mode selector pushbutton, the autothrottle brake assembly, or the TLA resolver, then do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do this check of the N1 or SPEED mode selector pushbutton:

(a) Make sure that DFCS BITE TEST MAIN MENU shows on the CDU.

(b) If you are not at the DFCS BITE TEST MAIN MENU page, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to DFCS.

5) When the DFCS self-test is complete, make sure that the DFCS BITE TEST MAIN MENU shows on the CDU.

(c) Push the LSK adjacent to EXTENDED MAINTENANCE.

(d) Push the LSK adjacent to BITE LIBRARY TEST.

(e) Push the LSK adjacent to CHANNEL A AND B.

(f) Push the LSK adjacent to RUN SELECT LIBRARY TESTS.

(g) Push and release the NEXT PAGE key on the CDU until 50 MCP PUSHBTN shows on the CDU.

(h) Push the LSK adjacent to 50 MCP PUSHBTN.

(i) Push the LSK adjacent to EXECUTE.

(j) Do the instructions on the CDU.

(k) If the check of the N1 or SPEED mode selector is not satisfactory, then do these steps:

1) Replace the mode control panel.

These are the tasks:

DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801,

DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

2) Do the check of the N1 or SPEED mode selector again.

3) If the N1 or SPEED mode selector is satisfactory, then you corrected the fault. Do this step to complete the task:

a) Get out of DFCS BITE (22-11 TASK 801).

(l) If the check of the N1 or SPEED mode selector pushbutton is satisfactory, then continue.

(2) Do this BITE test of the autothrottle brake assembly:

(a) Make sure that the A/T BITE TEST index shows on the CDU.

(b) If you are not at the A/T BITE TEST index, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to A/T.

NOTE: The two autothrottle warning lights come on during BITE.

5) Make sure that the A/T BITE TEST index shows on the CDU.

(c) Push the LSK adjacent to INTERACTIVE.

(d) Push the LSK adjacent to THROTTLE TESTS.

**CAUTION:** MAKE SURE THAT ENGINE START LEVERS ARE IN CUTOFF. IF THE ENGINE START LEVERS ARE NOT IN CUTOFF, THE ENGINE START SEQUENCE CAN OCCUR.

(e) Do the instructions on the CDU.

(f) Push the LSK adjacent to CONTINUE.

(g) Push the LSK adjacent to TORQUE TEST.

(h) Do the instructions on the CDU.

(i) Push the LSK adjacent to CONTINUE.

1) Make sure that the torque remains at a stable value to within approximately 1.5 oz-in while the thrust levers move.

2) Make sure that the torque increases by approximately 3.0 to 6.0 oz-in when the thrust levers get to their limits of travel.

(j) If the torque values for the thrust levers are not satisfactory, then do these steps:

1) Replace the autothrottle brake assembly.

These are the tasks:

Autothrottle Brake Assembly Removal, AMM TASK 22-31-81-000-801,

Autothrottle Brake Assembly Installation, AMM TASK 22-31-81-400-801.

2) Do the interactive TORQUE TEST for the thrust lever again.

3) If the torque values for the thrust levers are satisfactory, then you corrected the fault. Do these steps to complete the task:

a) Push the LSK adjacent to INDEX.

b) Push the LSK adjacent to INDEX again.

c) Do the instructions on the CDU.

d) Push the LSK adjacent to CONTINUE.

e) Push the LSK adjacent to INDEX.

(k) If the torque values for the thrust levers are satisfactory, then continue.

(3) Do this check of the TLA resolvers. To do it, do this task: Engine 1 and Engine 2 Thrust Lever Angle Resolver Alignment Test, AMM TASK 73-21-00-700-807-F00.

(a) If the values for the thrust levers are not satisfactory, then do these steps:

1) Adjust the TLA resolvers. To do the adjustment, do this task: Thrust Lever Angle Resolver Adjustment, AMM TASK 76-11-05-820-801-F00.

2) Do the check of the TLA resolvers again.

3) If the values are satisfactory, then you corrected the fault. Do these steps to complete the task:

a) Push the LSK adjacent to INDEX.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

b) Push the LSK adjacent to INDEX again.

c) Push the LSK adjacent to INDEX again.

d) Push the LSK adjacent to INDEX again.

NOTE: Make sure the CDU shows the MAINT BITE INDEX.

(b) If the values for the TLA resolvers are satisfactory, there was an intermittent fault.

**——————— END OF TASK ———————**

## 802. Autothrottle Retard Problem - Fault Isolation

A. Description

(1) Retard occurs when the thrust levers automatically move back to the idle stops during airplane descent or flare.

B. Possible Causes

(1) Flight control computer, M1875 (FCC-A) or M1876(FCC-B)

(2) Autothrottle brake assembly

(3) Autothrottle servo motor, M1836 (servo motor 1) or M1837 (servo motor 2)

**HAP 001-013, 015-026, 028-030**

(4) Autothrottle computer, M917

**HAP ALL**

(5) Radio altimeter transceiver, M1735 or M1736

(6) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| B | 4 | C01384 | RADIO NAVIGATION RADIO ALTM 1 |
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |
| D | 2 | C01045 | AFCS SYS A FCC DC |
| D | 5 | C01044 | AFCS MCP DC 1 |
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|

**HAP ALL**

| | | | |
|---|---|---|---|
| A | 16 | C01385 | RADIO NAVIGATION RADIO ALTM 2 |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |
| B | 3 | C01046 | AFCS SYS B FCC DC |
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| Row | Col | Number | Name |
|---|---|---|---|
| C | 3 | C01047 | AFCS MCP DC 2 |

D. Related Data

(1) (SSM 22-11-51)

(2) (SSM 22-31-21)

(3) (SSM 22-31-22)

(4) (SSM 22-31-31)

(5) (SSM 22-31-41)

(6) (SSM 34-33-11)

(7) (SSM 34-33-21)

(8) (WDM 22-31-11)

(9) (WDM 22-31-41)

(10) (WDM 34-33-11)

(11) (WDM 34-33-21)

E. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If one of these maintenance messages shows in CURRENT STATUS, then go to the fault isolation task task for that maintenance message:

1) ASM, do this task: Autothrottle Servo Motor Failure - Fault Isolation, 22-31 TASK 805.

2) A/T, do this task: Autothrottle Internal Problems - Fault Isolation, 22-31 TASK 802.

3) RA, do this task: Low Range Radio Altimeter (LRRA) BITE Procedure, 34-33 TASK 801.

(b) If none of the above maintenance messages show, then one of these conditions occurred:

1) There was an intermittent fault.

2) The flight control computer (FCC) can have a fault.

3) The TLA resolver can have a fault.

4) The autothrottle brake assembly can have a fault.

(c) To find the fault in the FCC, the TLA resolver, or the autothrottle brake assembly, do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do this BITE test of the FCC:

(a) Make sure that DFCS BITE TEST MAIN MENU shows on the CDU.

(b) If you are not at the DFCS BITE TEST MAIN MENU page, then do these steps:

1) Push the INIT REF function key on the CDU.

2) Push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to DFCS.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

5) When the DFCS self-test is complete, make sure that the DFCS BITE TEST MAIN MENU shows on the CDU.

(c) Push the LSK adjacent to EXTENDED MAINTENANCE.

(d) Push the LSK adjacent to BITE LIBRARY TEST.

(e) Push the LSK adjacent to CHANNEL A AND B.

(f) Push the LSK adjacent to RUN SELECT LIBRARY TESTS.

(g) Push and release the NEXT PAGE key on the CDU until MCP INTERF 16 shows on the CDU.

(h) Push the LSK adjacent to MCP INTERF 16.

(i) Push the LSK adjacent to EXECUTE.

(j) Do the instructions on the CDU.

(k) If the FCC is not satisfactory, then do these steps:

1) Replace the FCC.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

2) Do the check of the FCC again.

3) If the FCC is satisfactory, then you corrected the fault. Do this step to complete the task:

a) Get out of DFCS BITE (22-11 TASK 801).

(l) If the BITE test of the FCC is satisfactory, then continue.

(2) Do this BITE test of the autothrottle brake assembly:

(a) Make sure that the A/T BITE TEST index shows on the CDU.

(b) If you are not at the A/T BITE TEST index, then do these steps:

1) Push the INIT REF function key on the CDU.

2) Push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to A/T.

NOTE: The two autothrottle warning lights come on during BITE.

5) Make sure that the A/T BITE TEST index shows on the CDU.

(c) Push the LSK adjacent to INTERACTIVE.

(d) Push the LSK adjacent to THROTTLE TESTS.

**CAUTION:** MAKE SURE THAT ENGINE START LEVERS ARE IN CUTOFF. IF THE ENGINE START LEVERS ARE NOT IN CUTOFF, THE ENGINE START SEQUENCE CAN OCCUR.

(e) Do the instructions on the CDU.

(f) Push the LSK adjacent to CONTINUE.

(g) Push the LSK adjacent to TORQUE TEST.

(h) Do the instructions on the CDU.

(i) Push the LSK adjacent to CONTINUE.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Make sure that the torque remains at a stable value to within approximately 1.5 oz-in while the thrust levers move.

2) Make sure that the torque increases by approximately 3.0 to 6.0 oz-in when the thrust levers get to their limits of travel.

(j) If the torque values for the thrust levers are not satisfactory, then do these steps:

1) Test the Autothrottle Brake Assembly.

Do this task:

Autothrottle Brake Assembly Test, AMM TASK 76-11-05-820-802-F00

2) Replace the autothrottle brake assembly if Autothrottle Brake Assembly Test fail.

These are the tasks:

Autothrottle Brake Assembly Removal, AMM TASK 22-31-81-000-801,

Autothrottle Brake Assembly Installation, AMM TASK 22-31-81-400-801.

3) Do the interactive TORQUE TEST for the thrust lever again.

4) If the torque values for the thrust levers are satisfactory, then you corrected the fault. Do these steps to complete the task:

a) Push the LSK adjacent to INDEX.

b) Push the LSK adjacent to INDEX again.

c) Do the instructions on the CDU.

d) Push the LSK adjacent to CONTINUE.

e) Push the LSK adjacent to INDEX.

(k) If the torque values for the thrust levers are satisfactory, then continue.

(3) Do this check of the TLA resolvers. To do it, do this task: Engine 1 and Engine 2 Thrust Lever Angle Resolver Alignment Test, AMM TASK 73-21-00-700-807-F00.

(a) If the values for the thrust levers are not satisfactory, then do these steps:

1) Adjust the TLA resolvers. To do the adjustment, do this task: Thrust Lever Angle Resolver Adjustment, AMM TASK 76-11-05-820-801-F00.

2) Do the check of the TLA resolvers again.

3) If the values are satisfactory, then you corrected the fault. Do these steps to complete the task:

a) Push the LSK adjacent to INDEX.

b) Push the LSK adjacent to INDEX again.

c) Push the LSK adjacent to INDEX again.

d) Push the LSK adjacent to INDEX again.

NOTE: Make sure the CDU shows the MAINT BITE INDEX.

(b) If the values for the TLA resolvers are satisfactory, then there was an intermittent fault.

**END OF TASK**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 803. Target Airspeed Problem - Fault Isolation

A. Description

(1) The IAS/MACH selector is located on the digital flight control system mode control panel (DFCS MCP). Target airspeed is shown on the IAS/MACH display located above the selector on the MCP. Target airspeed is also shown by the target airspeed indication on the airspeed display located on the main equipment panels.

(2) In normal operation, the IAS/MACH selector is used to set the target airspeed shown on the IAS/MACH display. The target airspeed also shows on the airspeed indicator. When the speed mode selection is set, the autothrottle keeps the airplane speed at the target airspeed.

B. Possible Causes

(1) DFCS MCP, M198

(2) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(3) Display electronics unit, M1808 (DEU-1) or M1809 (DEU-2)

(4) Display unit, N187 or N192

(5) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |
| D | 2 | C01045 | AFCS SYS A FCC DC |
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |
| D | 5 | C01044 | AFCS MCP DC 1 |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 3 | C01365 | DISPLAY CAPT INBD |
| D | 4 | C01363 | DISPLAY CAPT OUTBD |
| D | 5 | C01359 | DISPLAY DEU 1 PRI |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 11 | C01360 | DISPLAY DEU 2 PRI |
| E | 10 | C01364 | DISPLAY F/O OUTBD |
| E | 11 | C01366 | DISPLAY F/O INBD |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |
| B | 3 | C01046 | AFCS SYS B FCC DC |
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |
| C | 3 | C01047 | AFCS MCP DC 2 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

D. Related Data

(1) (SSM 22-11-51)

(2) (WDM 22-11-51)

E. Initial Evaluation

(1) Do this check of the MCP speed selector knob:

(a) Make sure that DFCS BITE TEST MAIN MENU shows on the CDU.

(b) If you are not at the DFCS BITE TEST MAIN MENU page, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to DFCS.

5) When the DFCS self-test is complete, make sure that the DFCS BITE TEST MAIN MENU shows on the CDU.

(c) Push the LSK adjacent to EXTENDED MAINTENANCE.

(d) Push the LSK adjacent to BITE LIBRARY TEST.

(e) Push the LSK adjacent to CHANNEL A AND B.

(f) Push the LSK adjacent to RUN SELECT LIBRARY TESTS.

(g) Push and release the NEXT PAGE key on the CDU until 54 MCP KNB shows on the CDU.

(h) Push the LSK adjacent to 54 MCP KNB.

(i) Push the LSK adjacent to EXECUTE.

(j) Do the instructions on the CDU.

(k) If the check of the MCP speed selector knob is not satisfactory, then do these steps:

1) Replace the mode control panel.

These are the tasks:

DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801,

DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

2) Do the check of the MCP speed selector knob again.

3) If the MCP speed selector knob is satisfactory, then you corrected the fault. Do this step to complete the task:

a) Get out of DFCS BITE (22-11 TASK 801).

(l) If the check of the MCP speed selector knob is satisfactory, then continue. One of these conditions occurred:

1) There was an intermittent fault.

2) The digital flight control system (DFCS) can have a fault.

3) The common display system (CDS) can have a fault.

(m) To find the fault in the DFCS or the CDS, do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) If a related DFCS maintenance message shows, then do the fault isolation for the maintenance message.

(b) If the DFCS BITE test is satisfactory, then continue.

(2) Do this check of the CDS:

(a) Make sure that DFCS BITE TEST MAIN MENU shows on the CDU.

(b) If you are not at the DFCS BITE TEST MAIN MENU page, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to DFCS.

5) When the DFCS self-test is complete, make sure that the DFCS BITE TEST MAIN MENU shows on the CDU.

(c) Push the LSK adjacent to EXTENDED MAINTENANCE.

(d) Push the LSK adjacent to BITE LIBRARY TEST.

(e) Push the LSK adjacent to CHANNEL A AND B.

(f) Push the LSK adjacent to RUN SELECT LIBRARY TESTS.

(g) Push and release the NEXT PAGE key on the CDU until 25 CDS shows on the CDU.

(h) Push the LSK adjacent to 25 CDS.

(i) Push the LSK adjacent to EXECUTE.

(j) Do the instructions on the CDU.

(k) If the check of the CDS is not satisfactory, then do these steps:

1) Do the FIM tasks for the maintenance messages shown.

NOTE: The maintenance messages are shown on Table 201 of 22-11 TASKS, SECTION 22-11.

2) Do the check of the CDS again.

3) If the CDS is satisfactory, then you corrected the fault. Do this step to complete the task:

a) Get out of DFCS BITE (22-11 TASK 801).

(l) If the check of the CDS is satisfactory, then continue.

(3) Do this task: CDS BITE Procedure, 31-62 TASK 801.

(a) If a related CDS maintenance message shows, then go to the fault isolation for the maintenance message.

(b) If the CDS BITE test is satisfactory, then there was an intermittent fault.

**———————— END OF TASK ————————**

## 804. Autothrottle TO/GA Switch Operation Problem - Fault Isolation

A. Description

(1) This Task is for these maintenance messages:

(a) TOGA SW-1 TOGA SW-2: TOGA input is failed activated or Local and Foreign TOGA inputs disagree.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) FCC-A: FCC-B detects FCC-A failed to enter TOGA mode.

(c) FCC-B: FCCA detects FCC-B failed to enter TOGA mode.

(2) The TO/GA switches engage the autothrottle and the DFCS to the takeoff mode or the go-around mode.

(a) On the ground, the two systems will go to the takeoff mode when you push the TO/GA switch.

(b) If you push the TO/GA switch during approach, the autothrottle system increases engine thrust to a reduced thrust go-around. If you push the TO/GA switch a second time, the engine thrust increases to the maximum thrust go-around.

B. Possible Causes

(1) TO/GA switch, S786A (thrust lever 1) or S787A (thrust lever 2)

(2) Autothrottle brake assembly

(3) Autothrottle servo motor, M1836 (servo motor 1) or M1837 (servo motor 2)

**HAP 001-013, 015-026, 028-030**

(4) Autothrottle computer, M917

**HAP 031-054, 101-999**

(5) Flight control computer (FCC), M1875 (FCC-A) or M1876 (FCC-B)

**HAP ALL**

(6) Flight management computer, M1175

(7) Electronic engine control, M1818

(8) Thrust lever angle resolver (engine 1) or thrust lever angle resolver (engine 2), M1819

(9) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |
| **HAP 001-013, 015-026, 028-030** | | | |
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP ALL** | | | |
| A | 4 | C01390 | ENGINE 1 ALTN PWR CHAN B |
| A | 5 | C01314 | ENGINE 1 ALTN PWR CHAN A |
| A | 6 | C01017 | FMCS CMPTR 1 |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP 037-054, 101-999** | | | |
| D | 16 | C01262 | FMCS CMPTR 2 |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP ALL** | | | |
| D | 7 | C01391 | ENGINE 2 ALTN PWR CHAN B |
| D | 8 | C01315 | ENGINE 2 ALTN PWR CHAN A |

D. Related Data

(1) (SSM 22-31-11)

(2) (SSM 22-31-31)

(3) (SSM 22-31-41)

(4) (SSM 34-61-14)

(5) (WDM 22-31-11)

(6) (WDM 22-31-41)

(7) (WDM 34-61-14)

(8) (WDM 73-24-11)

(9) (WDM 73-24-21)

E. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If one of these maintenance messages shows in CURRENT STATUS, then do the FIM task for that maintenance message:

1) ASM, do this task: Autothrottle Servo Motor Failure - Fault Isolation, 22-31 TASK 805.

2) A/T, do this task: Autothrottle Internal Problems - Fault Isolation, 22-31 TASK 802.

3) FMC, do this task: Flight Management Computer Failure - Fault Isolation, 22-31 TASK 803.

4) EEC, do this task: Electronic Engine Control Failure - Fault Isolation, 22-31 TASK 806.

(b) If none of the above maintenance messages show, then one of these conditions occurred:

1) There was an intermittent fault.

2) The TO/GA switch can have a fault.

3) The autothrottle brake assembly can have a fault.

4) The thrust lever angle (TLA) resolver can have a fault.

(c) To find the fault in the TO/GA switch, the autothrottle brake assembly, or the TLA resolver, do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do this check of the TO/GA switch:

(a) Make sure that the A/T BITE TEST index shows on the CDU.

(b) If you are not at the A/T BITE TEST index, then do these steps:

1) Push the INIT REF function key on the CDU.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to A/T.

5) Make sure that the A/T BITE TEST index shows on the CDU.

(c) Push the LSK adjacent to INTERACTIVE.

(d) Push the LSK adjacent to INPUT DISCRETES.

(e) Read the instructions on the CDU.

(f) Push the NEXT PAGE key.

(g) Push and hold the TO/GA switch on thrust lever number 1.

1) Make sure that the CDU indication adjacent to TOGA changes from NOT PRESSED to PRESSED.

(h) Release the TO/GA switch on thrust lever number 1.

1) Make sure that the CDU indication adjacent to TOGA changes from PRESSED to NOT PRESSED.

(i) Push and hold the TO/GA switch on thrust lever number 2.

1) Make sure that the CDU indication adjacent to TOGA changes from NOT PRESSED to PRESSED.

(j) Release the TO/GA switch on thrust lever number 2.

1) Make sure that the CDU indication adjacent to TOGA changes from PRESSED to NOT PRESSED.

(k) If the TO/GA switch is not satisfactory, then continue.

(2) Do this task: FCC Exchange Check, 22-11 TASK 820.

(a) If the maintenance message shows, then continue.

(3) If the maintenance message shows and the fault is on Channel A, then do these checks of the wiring:

(a) Remove FCC-A. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Disconnect the captain's takeoff go-around switch, S786 connector D8313P from D8313J, at the connection point on the control stand.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and connector D8313P at the control stand (WDM 22-11-14):

| D10135A | | D8313P |
|---|---|---|
| pin F4 | - - - - - - - - - - - - - - - - - - | pin 1 |

(d) Make sure that pin 2 of connector D8313P has continuity to electrical ground.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D8313P.

3) Re-install FCC-A. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

4) Do the check of the TO/GA switch again.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

5) If the check of the TO/GA switch is satisfactory, then you corrected the fault. Do these steps to complete the task:
   a) Push the LSK adjacent to INDEX.
   b) Push the LSK adjacent to INDEX again.
   c) Push the LSK adjacent to INDEX again.
6) If the TO/GA switch not is satisfactory, then continue.

(4) If the maintenance message shows and the fault is on Channel B, then do these checks of the wiring:
   (a) Remove FCC-B. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
   (b) Disconnect the captain's takeoff go-around switch, S786 connector D8315P from D8315J, at the connection point on the control stand.
   (c) Do a wiring check between these pins of connector D10137A at the E1-4 shelf and connector D8315P at the control stand (WDM 22-11-14):

| D10137A | | D8315P |
|---|---|---|
| pin F4 | - - - - - - - - - - - - - - - - - - | pin 1 |

   (d) Make sure that pin 2 of connector D8315P has continuity to electrical ground.
   (e) If you find a problem with the wiring, then do these steps:
      1) Repair the wiring.
      2) Re-connect connector D8315P.
      3) Re-install FCC-B. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
      4) Do the check of the TO/GA switch again.
      5) If the check of the TO/GA switch is satisfactory, then you corrected the fault. Do these steps to complete the task:
         a) Push the LSK adjacent to INDEX.
         b) Push the LSK adjacent to INDEX again.
         c) Push the LSK adjacent to INDEX again.
      6) If the TO/GA switch not is satisfactory, then continue.

(5) Replace the applicable TOGA Switch.

These are the tasks:

Takeoff/Go-Around Switch Removal, AMM TASK 22-11-39-000-801,

TOGA Switch Installation, AMM TASK 22-11-39-400-801.

   (a) Do the check of the TO/GA switch again.
   (b) If the check of the TO/GA switch is satisfactory, then you corrected the fault. Do these steps to complete the task:
      1) Push the LSK adjacent to INDEX.
      2) Push the LSK adjacent to INDEX again.
      3) Push the LSK adjacent to INDEX again.
   (c) If the TO/GA switch is satisfactory, then continue.

(6) Do this BITE test of the autothrottle brake assembly:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(a) Make sure that the A/T BITE TEST index shows on the CDU.

(b) If you are not at the A/T BITE TEST index, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to A/T.

5) Make sure that the A/T BITE TEST index shows on the CDU.

(c) Push the LSK adjacent to INTERACTIVE.

(d) Push the LSK adjacent to THROTTLE TESTS.

**CAUTION:** MAKE SURE THAT ENGINE START LEVERS ARE IN CUTOFF. IF THE ENGINE START LEVERS ARE NOT IN CUTOFF, THE ENGINE START SEQUENCE CAN OCCUR.

(e) Do the instructions on the CDU.

(f) Push the LSK adjacent to CONTINUE.

(g) Push the LSK adjacent to TORQUE TEST.

(h) Do the instructions on the CDU.

(i) Push the LSK adjacent to CONTINUE.

1) Make sure that the torque remains at a stable value to within approximately 1.5 oz-in while the thrust levers move.

2) Make sure that the torque increases by approximately 3.0 to 6.0 oz-in when the thrust levers get to their limits of travel.

(j) If the torque values for the thrust levers are not satisfactory, then do these steps:

1) Replace the applicable autothrottle brake assembly.

These are the tasks:

Autothrottle Brake Assembly Removal, AMM TASK 22-31-81-000-801,

Autothrottle Brake Assembly Installation, AMM TASK 22-31-81-400-801.

2) Do the interactive TORQUE TEST for the thrust lever again.

3) If the torque values for the thrust levers are satisfactory, then you corrected the fault. Do these steps to complete the task:

a) Push the LSK adjacent to INDEX.

b) Push the LSK adjacent to INDEX again.

c) Do the instructions on the CDU.

d) Push the LSK adjacent to CONTINUE.

e) Push the LSK adjacent to INDEX.

(k) If the torque values for the thrust levers are satisfactory, then continue.

(7) Do this check of the TLA resolvers. To do it, do this task: Engine 1 and Engine 2 Thrust Lever Angle Resolver Alignment Test, AMM TASK 73-21-00-700-807-F00.

(a) If the values for the thrust levers are not satisfactory, then do these steps:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) Adjust the TLA resolvers. To do the adjustment, do this task: Thrust Lever Angle Resolver Adjustment, AMM TASK 76-11-05-820-801-F00.
2) Do the check of the TLA resolvers again.
3) If the values are satisfactory, then you corrected the fault. Do these steps to complete the task:
   a) Push the LSK adjacent to INDEX.
   b) Push the LSK adjacent to INDEX again.
   c) Push the LSK adjacent to INDEX again.
   d) Push the LSK adjacent to INDEX again.

   NOTE: Make sure the CDU shows the MAINT BITE INDEX.

**——————— END OF TASK ———————**

## 805. Autothrottle Manual Disengage Problem - Fault Isolation

A. Description

(1) The autothrottle does not disengage when one of the autothrottle disengage switches on the thrust levers is pushed.

B. Possible Causes

**HAP 001-013, 015-026, 028-030**

(1) Autothrottle computer, M917

**HAP 031-054, 101-999**

(2) Flight control computer A, M1875

**HAP ALL**

(3) Autothrottle disengage switch, S113 (thrust lever 1) or S114 (thrust lever 2)

(4) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data

(1) (SSM 22-31-51)

(2) (WDM 22-31-51)

E. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.
   (a) If this maintenance message shows in CURRENT STATUS, then do the FIM task for that maintenance message:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

1) A/T, do this task: Autothrottle Internal Problems - Fault Isolation, 22-31 TASK 802.

(b) If the above maintenance message does not show, then one of these conditions occurred:

1) There was an intermittent fault.

2) The autothrottle disengage thumb switch can have a fault.

(c) To find the fault in the autothrottle disengage thumb switch, do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do this task: EEC BITE Procedure, 73-00 TASK 801.

(a) Make sure there is no ECC message shows.

(b) If there is maintenance message shows in CURRENT STATUS, then do the FIM task for that maintenance message:

(2) Do this check of the autothrottle (A/T) disengage thumb switch:

(a) Make sure that the A/T BITE TEST index shows on the CDU.

(b) If you are not at the A/T BITE TEST index, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to A/T.

NOTE: The two autothrottle warning lights come on during BITE.

5) Make sure that the A/T BITE TEST index shows on the CDU.

(c) Push the LSK adjacent to INTERACTIVE.

(d) Push the LSK adjacent to DISENG/WARNINGS.

(e) Follow the instructions on the CDU.

(f) Push the NEXT PAGE key.

(g) Set the A/T switch on the P7 mode control panel to ARM.

(h) Push and release the A/T disengage thumb switch on thrust lever number 1.

1) Make sure the A/T switch goes to OFF.

(i) Set the autothrottle switch to ARM.

(j) Push and release the A/T disengage thumb switch on thrust lever number 2.

1) Make sure that the A/T switch goes to OFF.

(k) If the autothrottle disengage thumb switch is not satisfactory, then do these steps:

1) Replace the applicable autothrottle disengage thumb switch, S113 or S114.

These are the tasks:

Autothrottle Disengage Switch Removal, AMM TASK 22-31-51-000-801,

Autothrottle Disengage Switch Installation, AMM TASK 22-31-51-400-801.

2) Do the check of the autothrottle disengage thumb switch again.

3) If the check of the autothrottle disengage thumb switch is satisfactory, then you corrected the fault. Do these steps to complete the task:



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

a) Push the NEXT PAGE key.

b) Push the LSK adjacent to INDEX.

c) Push the LSK adjacent to INDEX again.

**———————— END OF TASK ————————**

**806. Autothrottle Automatic Disengage Problem - Fault Isolation**

A. Description

(1) The autothrottle is usually used during flight operations. The autothrottle will automatically disengage during flight if it finds certain problems.

(2) After airplane touchdown, the autothrottle will automatically disengage. This lets the flight crew manually operate the thrust levers to taxi the airplane.

B. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If A/T disengage are experienced with no BITE massage, the disconnect circuit should be checked.

(b) If the maintenance message A/T, MCP, or ASM shows in CURRENT STATUS, then go to the fault isolation task for the maintenance message

(c) If the maintenance message A/T, MCP, or ASM does not show in CURRENT STATUS, then there was an intermittent fault.

**———————— END OF TASK ————————**

**807. FMA Status Change Problem - Fault Isolation**

A. Description

(1) The autothrottle modes are shown on the primary EFIS display units (DUs) on the P1 and P3 main instrument panels.

(2) In normal operation, all changes in autothrottle mode are shown on the flight mode annunciations (FMA) on the DUs.

B. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If a maintenance message shows in CURRENT STATUS, then do the fault isolation task for that maintenance message:

(b) If a maintenance message does not show in CURRENT STATUS, then continue. One of these conditions occurred:

1) There was an intermittent fault.

2) The common display system (CDS) can have a fault.

(2) Do this task: CDS BITE Procedure, 31-62 TASK 801.

(a) If a related CDS maintenance message shows, then go to the fault isolation for the maintenance message.

(b) If the CDS BITE test is satisfactory, then there was an intermittent fault.

**———————— END OF TASK ————————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 808. Thrust Lever Movement Problem - Fault Isolation

A. Description

(1) The autothrottle moves thrust levers to control the speed of the airplane or the engine N1.

(2) If the thrust levers do not move smoothly, or if they continuously move forward and aft around a point, the operation is not correct.

B. Possible Causes

(1) Autothrottle brake assembly

(2) Autothrottle servo motor, M1836 (servo motor 1) or M1837 (servo motor 2)

**HAP 001-013, 015-026, 028-030**

(3) Autothrottle computer, M917

**HAP 031-054, 101-999**

(4) Flight control computer A, M1875

**HAP ALL**

(5) Electronic engine control, M1818

(6) Thrust lever angle resolver (engine 1) or thrust lever angle resolver (engine 2), M1819

(7) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |
| **HAP 001-013, 015-026, 028-030** | | | |
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP ALL** | | | |
| A | 4 | C01390 | ENGINE 1 ALTN PWR CHAN B |
| A | 5 | C01314 | ENGINE 1 ALTN PWR CHAN A |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 7 | C01391 | ENGINE 2 ALTN PWR CHAN B |
| D | 8 | C01315 | ENGINE 2 ALTN PWR CHAN A |

D. Related Data

(1) (SSM 22-31-11)

(2) (SSM 22-31-31)

(3) (SSM 22-31-41)

(4) (WDM 22-31-11)



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(5) (WDM 22-31-41)

(6) (WDM 73-24-11)

(7) (WDM 73-24-21)

E. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If one of these maintenance messages shows in CURRENT STATUS, then go to the fault isolation task for that maintenance message:

1) ASM, do this task: Autothrottle Servo Motor Failure - Fault Isolation, 22-31 TASK 805.

2) A/T, do this task: Autothrottle Internal Problems - Fault Isolation, 22-31 TASK 802.

3) EEC, do this task: Electronic Engine Control Failure - Fault Isolation, 22-31 TASK 806.

(b) If none of the above maintenance messages show, then one of these conditions occurred:

1) There was an intermittent fault.

2) The autothrottle brake assembly can have a fault.

3) The thrust lever angle (TLA) resolver can have a fault.

(c) To find the fault in autothrottle brake assembly or the TLA resolver, then do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do this BITE test of the autothrottle brake assembly:

(a) Make sure that the A/T BITE TEST index shows on the CDU.

(b) If you are not at the A/T BITE TEST index, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to A/T.

NOTE: The two autothrottle warning lights come on during BITE.

5) Make sure that the A/T BITE TEST index shows on the CDU.

(c) Push the LSK adjacent to INTERACTIVE.

(d) Push the LSK adjacent to THROTTLE TESTS.

**CAUTION:** MAKE SURE THAT ENGINE START LEVERS ARE IN CUTOFF. IF THE ENGINE START LEVERS ARE NOT IN CUTOFF, THE ENGINE START SEQUENCE CAN OCCUR.

(e) Do the instructions on the CDU.

(f) Push the LSK adjacent to CONTINUE.

(g) Push the LSK adjacent to TORQUE TEST.

(h) Do the instructions on the CDU.

(i) Push the LSK adjacent to CONTINUE.

1) Make sure that the torque remains at a stable value to within approximately 1.5 oz-in while the thrust levers move.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

2) Make sure that the torque increases by approximately 3.0 to 6.0 oz-in when the thrust levers get to their limits of travel.

(j) If the torque values for the thrust levers are not satisfactory, then do these steps:

1) Replace the applicable autothrottle brake assembly.

These are the tasks:

Autothrottle Brake Assembly Removal, AMM TASK 22-31-81-000-801,

Autothrottle Brake Assembly Installation, AMM TASK 22-31-81-400-801.

2) Do the interactive TORQUE TEST for the thrust lever again.

3) If the torque values for the thrust levers are satisfactory, then you corrected the fault. Do these steps to complete the task:

a) Push the LSK adjacent to INDEX.

b) Push the LSK adjacent to INDEX again.

c) Do the instructions on the CDU.

d) Push the LSK adjacent to CONTINUE.

e) Push the LSK adjacent to INDEX.

(k) If the torque values for the thrust levers are satisfactory, then continue.

(2) Do this check of the TLA resolvers. To do it, do this task: Engine 1 and Engine 2 Thrust Lever Angle Resolver Alignment Test, AMM TASK 73-21-00-700-807-F00.

(a) If the values for the thrust levers are not satisfactory, then do these steps:

1) Adjust the TLA resolvers. To do the adjustment, do this task: Thrust Lever Angle Resolver Adjustment, AMM TASK 76-11-05-820-801-F00.

2) Do the check of the TLA resolvers again.

3) If the values are satisfactory, then you corrected the fault. Do these steps to complete the task:

a) Push the LSK adjacent to INDEX.

b) Push the LSK adjacent to INDEX again.

c) Push the LSK adjacent to INDEX again.

d) Push the LSK adjacent to INDEX again.

NOTE: Make sure the CDU shows the MAINT BITE INDEX.

(b) If the values for the TLA resolvers are satisfactory, then there was an intermittent fault.

**——————— END OF TASK ———————**

## 809. MCP A/T Mode Selector Switch Problem - Fault Isolation

A. Description

(1) The autothrottle N1 or SPEED mode is set manually from the digital flight control system mode control panel (DFCS MCP). The engines stay at the correct N1 or speed limit for the flight mode selection made by the flight crew.

B. Possible Causes

(1) N1 or SPEED mode selector pushbutton on the MCP, M198

**HAP 001-013, 015-026, 028-030**

(2) Autothrottle computer, M917



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999**

(3) Flight control computer A, M1875

**HAP ALL**

(4) Flight control computer, M1875 (FCC-A) or M1876 (FCC-B)

(5) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |
| D | 2 | C01045 | AFCS SYS A FCC DC |
| D | 3 | C01048 | AFCS SYS A ENGAGE INTLK |
| D | 5 | C01044 | AFCS MCP DC 1 |
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |
| **HAP 001-013, 015-026, 028-030** | | | |
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| **HAP ALL** | | | |
| B | 1 | C00374 | AFCS SYS B WARN LIGHT (BAT) |
| B | 3 | C01046 | AFCS SYS B FCC DC |
| B | 4 | C00716 | AFCS SYS B ENGAGE INTLK |
| C | 3 | C01047 | AFCS MCP DC 2 |

D. Related Data

(1) (SSM 22-11-51)

(2) (SSM 22-31-21)

(3) (SSM 22-31-31)

(4) (SSM 22-31-41)

(5) (WDM 22-11-51)

(6) (WDM 22-31-11)

(7) (WDM 22-31-41)

E. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If one of these maintenance messages shows in CURRENT STATUS, then go to the fault isolation task for that maintenance message:

1) A/T, do this task: Autothrottle Internal Problems - Fault Isolation, 22-31 TASK 802.

2) FCC, do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

3) MCP, do this task: Mode Control Panel Failure - Fault Isolation, 22-31 TASK 804.

(b) If none of the above maintenance messages show, then one of these conditions occurred:

1) There was an intermittent fault.

2) The N1 or SPEED mode selector pushbutton can have a fault.

(c) To find the fault in the N1 or SPEED mode selector pushbutton, do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do this check of the N1 or SPEED mode selector pushbutton:

(a) Make sure that DFCS BITE TEST MAIN MENU shows on the CDU.

(b) If you are not at the DFCS BITE TEST MAIN MENU page, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key adjacent to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX display show.

3) Push the line select key (LSK) adjacent to MAINT.

4) Push the LSK adjacent to DFCS.

5) When the DFCS self-test is complete, make sure that the DFCS BITE TEST MAIN MENU shows on the CDU.

(c) Push the LSK adjacent to EXTENDED MAINTENANCE.

(d) Push the LSK adjacent to BITE LIBRARY TEST.

(e) Push the LSK adjacent to CHANNEL A AND B.

(f) Push the LSK adjacent to RUN SELECT LIBRARY TESTS.

(g) Push and release the NEXT PAGE key on the CDU until 50 MCP PUSHBTN shows on the CDU.

(h) Push the LSK adjacent to 50 MCP PUSHBTN.

(i) Push the LSK adjacent to EXECUTE.

(j) Do the instructions on the CDU.

(k) If the check of the N1 or SPEED mode selector is not satisfactory, then do these steps:

1) Replace the mode control panel.

These are the tasks:

DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801,

DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

2) Do the check of the N1 or SPEED mode selector again.

3) If the N1 or SPEED mode selector is satisfactory, then you corrected the fault. Do this step to complete the task:

a) Get out of DFCS BITE (22-11 TASK 801).

(l) If the check of the N1 or SPEED mode selector pushbutton is satisfactory, then there was an intermittent fault.

**END OF TASK**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

## 810. Autothrottle ARM Problem - Fault Isolation

A. Description

(1) This task is for these conditions:

(a) The autothrottle does not arm.

(b) The ARM light on the MCP does not come on.

(c) ARM does not show on the flight mode annunciators (FMA).

B. Possible Causes

**HAP 001-013, 015-026, 028-030**

(1) Autothrottle computer, M917.

**HAP 031-054, 101-999**

(2) Flight control computer A, M1875

**HAP ALL**

(3) The autothrottle engage solenoid switch on the digital flight control system mode control panel (DFCS MCP), M198.

(4) Autothrottle disengage switches, S113 or S114.

(5) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| Row | Col | Number | Name |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data

(1) (SSM 22-31-51)

(2) (WDM 22-31-51)

E. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If one of these maintenance messages shows in CURRENT STATUS, then go to the fault isolation task for that maintenance message:

1) A/T, do this task: Autothrottle Internal Problems - Fault Isolation, 22-31 TASK 802.

2) MCP, do this task: Mode Control Panel Failure - Fault Isolation, 22-31 TASK 804.

(b) If the above maintenance messages do not show, then one of these conditions occurred:

1) There was an intermittent fault.

2) The autothrottle disengage switches can have a fault.

3) The wiring can have a fault.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) To find the fault in the autothrottle disengage switches or the wiring, do the Fault Isolation Procedure below:

**HAP 001-013, 015-026, 028-030**

F. Fault Isolation Procedure

(1) Do this check of the wiring:

(a) Remove the autothrottle computer, M917. To remove it, do this task: Autothrottle Computer Removal, AMM TASK 22-31-10-000-801.

(b) Remove the MCP, M198. To remove it, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801.

(c) Do a wiring check between these pins of the autothrottle computer connector D10009A and the MCP connector D301:

| D10009A | | D301 |
|---|---|---|
| pin A10 | - - - - - - - - - - - - - - - - - | pin 13 |
| pin B13 | - - - - - - - - - - - - - - - - - | pin 7 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

3) Re-install the MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

4) Make sure that you are in autothrottle BITE.

5) Set the autothrottle arm switch to ARM.

6) If the autothrottle arm switch stays in ARM, then you corrected the fault.

(e) If you do not find a problem with the wiring, then continue.

(2) Do a check for an open circuit between these pins of the autothrottle computer connector D10009A and the MCP connector D301:

| D10009A | | D301 |
|---|---|---|
| pin A12 | - - - - - - - - - - - - - - - - - | pin 8 |

(a) If there is an open circuit, then do these steps:

1) Remove the autothrottle disengage switch on thrust lever 1, S113. To remove it, do this task: Autothrottle Disengage Switch Removal, AMM TASK 22-31-51-000-801.

2) Do a check for continuity between pins 1 and 2 on the switch.

3) If there is no continuity, then do these steps:

a) Install a new switch, S113. To install it, do this task: Autothrottle Disengage Switch Installation, AMM TASK 22-31-51-400-801.

b) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

c) Re-install the MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

d) Make sure that you are in autothrottle BITE.

e) Set the autothrottle arm switch to ARM.

f) If the autothrottle arm switch stays in ARM, then you corrected the fault.

4) If there is continuity, then continue.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

a) Re-install the switch, S113. To re-install it, do this task: Autothrottle Disengage Switch Installation, AMM TASK 22-31-51-400-801.

(3) Do this check of the autothrottle disengage switch on thrust lever 2:

(a) Remove the autothrottle disengage switch on thrust lever 2, S114. To remove it, do this task: Autothrottle Disengage Switch Removal, AMM TASK 22-31-51-000-801.

(b) Do a check for continuity between pins 1 and 2 on the switch.

1) If there is no continuity, then do these step:

a) Install a new switch, S114. To install it, do this task: Autothrottle Disengage Switch Installation, AMM TASK 22-31-51-400-801.

b) Re-install the autothrottle computer, M917. To install it, do this task: Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

c) Re-install the MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

d) Make sure that you are in autothrottle BITE.

e) Set the autothrottle arm switch to ARM.

f) If the autothrottle arm switch stays in ARM, then you corrected the fault.

**HAP 031-054, 101-999**

G. Fault Isolation Procedure

(1) Do this check of the wiring:

(a) Remove the flight control computer A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the MCP, M198. To remove it, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801.

(c) Do a wiring check between these pins of the flight control computer A connector D10135A and the MCP connector D301:

| D10135A | | D301 |
|---|---|---|
| pin K7 | - - - - - - - - - - - - - - - - - - | pin 13 |
| pin D11 | - - - - - - - - - - - - - - - - - - | pin 7 |

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the flight control computer A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

4) Make sure that you are in autothrottle BITE.

5) Set the autothrottle arm switch to ARM.

6) If the autothrottle arm switch stays in ARM, then you corrected the fault.

(e) If you do not find a problem with the wiring, then continue.

(2) Do a check for an open circuit between these pins of the flight control computer A connector D10135A and the MCP connector D301:


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

| D10135A | | D301 |
|---|---|---|
| pin J12 | - - - - - - - - - - - - - - - - - - | pin 8 |

(a) If there is an open circuit, then do these steps:

1) Remove the autothrottle disengage switch on thrust lever 1, S113. To remove it, do this task: Autothrottle Disengage Switch Removal, AMM TASK 22-31-51-000-801.

2) Do a check for continuity between pins 1 and 2 on the switch.

3) If there is no continuity, then do these steps:

a) Install a new switch, S113. To install it, do this task: Autothrottle Disengage Switch Installation, AMM TASK 22-31-51-400-801.

b) Re-install the flight control computer A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

c) Re-install the MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

d) Make sure that you are in autothrottle BITE.

e) Set the autothrottle arm switch to ARM.

f) If the autothrottle arm switch stays in ARM, then you corrected the fault.

4) If there is continuity, then continue.

a) Re-install the switch, S113. To re-install it, do this task: Autothrottle Disengage Switch Installation, AMM TASK 22-31-51-400-801.

(3) Do this check of the autothrottle disengage switch on thrust lever 2:

(a) Remove the autothrottle disengage switch on thrust lever 2, S114. To remove it, do this task: Autothrottle Disengage Switch Removal, AMM TASK 22-31-51-000-801.

(b) Do a check for continuity between pins 1 and 2 on the switch.

1) If there is no continuity, then do these step:

a) Install a new switch, S114. To install it, do this task: Autothrottle Disengage Switch Installation, AMM TASK 22-31-51-400-801.

b) Re-install the flight control computer A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

c) Re-install the MCP, M198. To install it, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

d) Make sure that you are in autothrottle BITE.

e) Set the autothrottle arm switch to ARM.

f) If the autothrottle arm switch stays in ARM, then you corrected the fault.

**HAP ALL**

**——————— END OF TASK ———————**

**811. A/T Does Not Disengage When Thrust Levers Are Split - Fault Isolation**

A. Description

(1) The autothrottle will automatically disengage if the angle between the thrust levers is greater than the maximum permitted value.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

B. Possible Causes

**HAP 001-013, 015-026, 028-030**

(1) Autothrottle computer, M917

**HAP 031-054, 101-999**

(2) Flight control computer A, M1875

**HAP ALL**

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| E | 1 | C00721 | AUTOTHROTTLE DC 1 |

**HAP 001-013, 015-026, 028-030**

| | | | |
|---|---|---|---|
| E | 3 | C01141 | AUTOTHROTTLE DC 2 |

**HAP ALL**

D. Related Data

(1) (SSM 22-31-51)

(2) (WDM 22-31-51)

E. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If the maintenance message A/T or THROT SPLIT does not show, then there was an intermittent fault.

(b) If the maintenance message A/T or THROT SPLIT shows, then do the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do these steps:

**HAP 001-013, 015-026, 028-030**

(a) Replace the autothrottle computer, M917.

These are the tasks:

Autothrottle Computer Removal, AMM TASK 22-31-10-000-801,

Autothrottle Computer Installation, AMM TASK 22-31-10-400-801.

**HAP 031-054, 101-999**

(b) Replace the flight control computer A, M1875.

These are the tasks:

Flight Control Computer Removal, AMM TASK 22-11-33-000-801,

Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

2) If the maintenance message A/T or THROT SPLIT does not show, then you corrected the fault. Do these steps to complete the task:

a) Push the LSK adjacent to INDEX.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

b) Do the instructions on the CDU.

c) Push the LSK adjacent to CONTINUE.

d) Push the LSK adjacent to INDEX.

——————— END OF TASK ———————

**HAP 001-013, 015-026, 028-030**

**813. Throttle Resolver Angle Blank Display During Range Check - Fault Isolation**

A. Description

(1) The NBR 2 throttle resolver angle display on the CDU can go blank during the 'range check' portion of the interactive throttle ground test.

B. Possible Causes

(1) Autothrottle computer, M917

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 7 | C01391 | ENGINE 2 ALTN PWR CHAN B |

D. Related Data

(1) (SSM 22-31-51)

(2) (WDM 22-31-51)

E. Initial Evaluation

(1) The NBR 2 throttle resolver angle blank display can occur when the following conditions are met:

NOTE: If any other combination of EEC bus channels are in control, the blank display does not occur.

(a) The autothrottle computer 10-62017-51 is installed.

(b) The NBR 1 engine EEC has bus channel "A" in control.

(c) The NBR 2 engine EEC has bus channel "B" in control.

(2) To stop the blank display problem do these steps:

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 7 | C01391 | ENGINE 2 ALTN PWR CHAN B |

(b) Stop for 5 seconds.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 7 | C01391 | ENGINE 2 ALTN PWR CHAN B |

(3) If the thrust lever angle display remains blank then follow the Fault Isolation Procedure below:

F. Fault Isolation Procedure

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(2) Repair any faults that you find.

**——————— END OF TASK ———————**

**HAP 031-054, 101-999**

**814. A/T Disengage Warning - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

NOTE: J1A-XX, J1B-XX and J1C-XX (where XX is a pin number) are the connector and pin numbers on the FCC-A. For the FCC-A: J1A = D10135A, J1B = D10135B and J1C = D10135C.

(a) FCC-A (J1A-C09, J1B-F10), captain

(b) FCC-A (J1B-E09, J1B-F10), first officer

(2) FCC-A (J1A-C09): FCC-A did not receive the A/T Disengage Warning, (captain) wrap signal during the ground test.

(3) FCC-A (J1B-E09): FCC-A did not receive the A/T Disengage Warning, (first officer) wrap signal, (first officer), during the ground test.

B. Possible Causes

(1) A/T P/RST warning light

(2) Autoflight status annunciator, N170 (captain's) or N171 (first officer's)

(3) Flight Control Computer A, M1875 (FCC-A)

(4) Wiring problem

(5) Digital Flight Data Recorder, M675

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

D. Related Data

(1) (SSM 22-31-51)

(2) (WDM 22-31-51)

E. Initial Evaluation

(1) Do this task: LRU Replacement Test, 22-11 TASK 802.

(a) Make the selection for the A/T test.

(b) Make the selection for the LRU Replacement test.

(c) If one of the maintenance messages shows, then do the applicable Fault Isolation Procedure below.

**HAP 031-054, 101-999; AIRPLANES WITH COLLINS FCC AND COLLINS OPS SOFTWARE P/N 831-5854-111**

NOTE: If the library test 62 shows TEST FAILED for channel A only and only maintenance message 22-11540 shows on the CDU display, then ignore this failure. This is a nuisance fault.

**HAP 031-054, 101-999**

(d) If none of the maintenance messages, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this check of the A/T P/RST warning light on the applicable autoflight status annunciator:

(a) Push and hold the TEST switch in the position 1.

(b) Make sure that the A/T P/RST warning light comes on (amber steady).

(c) Release the TEST switch to the center position.

(d) Make sure that the A/T P/RST warning light goes off.

(e) Push and hold the TEST switch in the position 2.

(f) Make sure that the A/T P/RST warning light comes on (red steady).

(g) Release the TEST switch to the center position.

(h) Make sure that the A/T P/RST warning light goes off.

(i) If the A/T P/RST warning light does not operate correctly, then do these steps:

1) Replace the A/T P/RST warning light.

2) Do the Repair Confirmation at the end of this task.

(j) If the A/T P/RST warning light operates correctly, then continue.

(2) Replace the applicable autoflight status annunciator, N170 (captain's), or N171 (first officer's). These are the tasks:

Annunciator Removal, AMM TASK 22-11-32-000-801,

Annunciator Installation, AMM TASK 22-11-32-400-801.

(a) Do the Repair Confirmation at the end of this task.

(3) Do this check of 28V DC for the applicable autoflight status annunciator:

(a) Remove the applicable autoflight status annunciator. To remove it, do this task: Annunciator Removal, AMM TASK 22-11-32-000-801.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 1 | C01049 | AFCS SYS A WARN LIGHT (BAT) |

(c) Do a check for 28V DC between pin 15 of the applicable connector, D2435, (captain), or D2439, (first officer) at the P1 panel and the structure ground (WDM 22-14-11).

(d) If there is not 28V DC, then do these steps:

1) Do a wiring check between these pins of connector D2435 at the P1 panel and connector D41807P at the left load control center (P18 Panel) (WDM 22-14-11):

| D2435 | | D41807P |
|---|---|---|
| pin 15 | - - - - - - - - - - - - - - - - - - | pin 3 |

2) Do a wiring check between these pins of connector D2439 at the P1 panel and connector D41807P at the left load control center (P18 Panel) (WDM 22-14-11):

| D2439 | | D41807P |
|---|---|---|
| pin 15 | - - - - - - - - - - - - - - - - - - | pin 3 |

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install the applicable autoflight status annunciator. To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.

c) Do the Repair Confirmation at the end of this task.

(e) If there is 28V DC (±4), then continue.

(4) Do this check of the wiring between the FCC-A and the applicable autoflight status annunciator:

(a) Remove the FCC-A, M1875. To remove it, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.

(b) Remove the applicable autoflight status annunciator. To remove it, do this task: Annunciator Removal, AMM TASK 22-11-32-000-801.

(c) Do a wiring check between these pins of connector D10135A at the E1-1 shelf and captain's autoflight status annunciator connector D2435 at the P1 panel (WDM 22-14-11):

| D10135A | | D2435 |
|---|---|---|
| pin C9 | - - - - - - - - - - - - - - - - - - | pin 10 |

(d) Do a wiring check between these pins of connector D10135B at the E1-1 shelf and first officer's autoflight status annunciator connector D2439 at the P1 panel (WDM 22-14-11):

| D10135B | | D2439 |
|---|---|---|
| pin E9 | - - - - - - - - - - - - - - - - - - | pin 10 |

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

3) Re-install the applicable autoflight status annunciator, To install it, do this task: Annunciator Installation, AMM TASK 22-11-32-400-801.


BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**HAP 031-054, 101-999 (Continued)**

4) Do the Repair Confirmation at the end of this task.

5) If the Repair Confirmation is not satisfactory, then do this step:

a) Replace the Digital Flight Data Acquisition Unit, M675. To replace it, do these tasks:

These are the tasks:

Flight Data Acquisition Unit (FDAU) Removal, AMM TASK 31-31-22-000-801,

Flight Data Acquisition Unit (FDAU) Installation, AMM TASK 31-31-22-400-801.

6) Do the Repair Confirmation at the end of this task.

7) If the Repair Confirmation is not satisfactory, then do these steps:

a) Remove the Digital Flight Data Recorder, M675. To remove it, do this task: do this task: Flight Data Acquisition Unit (FDAU) Removal, AMM TASK 31-31-22-000-801

b) Remove the FCC-A, M1875. To remove it, do this task: do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801

(f) For the captains, do this check of the wiring between these pins of connector D10135A at the E1-1 shelf and connector D2295E at the E3-2 shelf (WDM 31-31-15)

| **D10135A** | | **D2295E** |
|---|---|---|
| pin C9 | - - - - - - - - - - - - - - - - - - | pin J2 |

(g) For the first officer's, do this check of the wiring between these pins of connector D10135B at the E1-1 shelf and connector D2295B at the E3-2 shelf (WDM 31-31-15)

| **D10135B** | | **D2295B** |
|---|---|---|
| pin E9 | - - - - - - - - - - - - - - - - - - | pin K1 |

(5) If you find a problem with the the wiring, then do these steps:

(a) Repair the wiring.

(b) Re-install the Digital Flight Data Recorder, M675. To install it, do this task: Flight Data Acquisition Unit (FDAU) Installation, AMM TASK 31-31-22-400-801.

(c) Re-install the FCC-A, M1875. To install it, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.

(d) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do these steps:

(a) If RERUN still shows on the CDU display, then push the LSK adjacent to RERUN.

1) If the maintenance message does not show, then you corrected the fault.

(b) If RERUN does not show on the CDU display, then, do this task: LRU Replacement Test, 22-11 TASK 802.

1) Make the selection for the channels A and B.

2) Make the selection for the FCC test.

(c) If the maintenance message does not show, then you corrected the fault.

**HAP ALL**

**END OF TASK**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**815. A/T LIMIT Problem - Fault Isolation**

A. Description

(1) The Engine Display show the A/T LIMIT message.

B. Possible Causes

(1) The Ps3 line or an ECS bleed discrete is missing.

C. Related Data

(1) WDM 21-51-11

(2) WDM 21-51-21

(3) WDM 73-21-31

(4) WDM 73-23-11

D. Initial Evaluation

(1) Do this task: Autothrottle BITE Procedure, 22-31 TASK 801

(a) If the CDU shows this flight deck effect on the INFLIGHT FAULT pages, then do the Fault Isolation Procedure.

(b) If the CDU does not show this flight deck effect on the INFLIGHT FAULT pages, then the Initial Evaluation has shown that the fault is not active at this time and you have an intermittent fault.

1) Use your judment, airline policy, the history of the aircraft's Autothrottle systems, and any reports of user systems malfunctions.

2) Monitor the airplane on the subsequent flights.

E. Fault Isolation Procedure

(1) Do this task: Supply Electrical Power, AMM TASK 24-22-00-860-811

(2) Access the CDS DEU BITE display.

(a) Push INIT REF function key.

(b) If the POS INIT shows, then push the line select key next to the INDEX prompt.

(c) Push the line select key next to the MAINT prompt.

(d) Push the line select key next to the CDS prompt.

(e) Push the line select key next to the DEU 2 prompt.

(f) Push the line select key next to the INPUT MONITORING DISCRETE STATUS prompt.

(g) Push the line select key next to the INSERT B prompt.

(h) Make sure that the DISCRETE STATUS agree with the SWITCH POSITION shown on Tabel 1.



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

**Table 1**

| FLIGHT COMPARTMENT SWITCH | SWITCH POSITION | INSERT | PIN | DISCRETE STATUS |
|---|---|---|---|---|
| ENG 1 BLEED SWITCH | OFF | B | E7 | G |
| ENG 1 BLEED SWITCH | ON | B | E7 | 0 |
| ISOLATION VALVE | OPEN | B | J8 | 0 |
| ISOLATION VALVE | CLOSED | B | J8 | G |
| LEFT PACK | OFF | B | C6 | G *[1] |
| LEFT PACK | AUTO/HIGH | B | C6 | 0 *[1] |
| LEFT PACK | AUTO | B | A2 | G *[1] |
| LEFT PACK | HIGH/OFF | B | A2 | 0 *[1] |
| ENG 1 CTAI | OFF | B | A11 | G |
| ENG 1 CTAI | ON | B | A11 | 0 |
| WTAI | OFF | B | B8 | G |
| WTAI | ON | B | B8 | 0 |

*[1] Supply bleed air from the APU or from a ground cart.

NOTE: The CDU screen updates once per second. The status of the discrete may take as long as 2 seconds to be updated.

(i) Push the line select key next to INDEX prompt to go back to INPUT MONITORING DISCRETE STATUS.

(j) Push the line select key next to INSERT E prompt.

(k) Make sure that the DISCRETE STATUS agree with the SWITCH POSITION shown on Tabel 2.

**Table 2**

| FLIGHT COMPARTMENT SWITCH | SWITCH POSITION | INSERT | PIN | DISCRETE STATUS |
|---|---|---|---|---|
| ENG 2 BLEED SWITCH | OFF | E | E7 | G |
| ENG 2 BLEED SWITCH | ON | E | E7 | 0 |
| RIGHT PACK | OFF | E | C6 | G *[1] |
| RIGHT PACK | AUTO/HIGH | E | C6 | 0 *[1] |
| RIGHT PACK | AUTO | E | A2 | G *[1] |
| RIGHT PACK | HIGH/OFF | E | A2 | 0 *[1] |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

(Continued)

| FLIGHT COMPARTMENT SWITCH | SWITCH POSITION | INSERT | PIN | DISCRETE STATUS |
|---|---|---|---|---|
| ENG 2 CTAI | OFF | E | A11 | G |
| ENG 2 CTAI | ON | E | A11 | 0 |

*[1] Supply bleed air from the APU or from a ground cart.

NOTE: The CDU screen updates once per second. The status of the discrete may take as long as 2 seconds to be updated.

(l) Do the repair confirmation.

(3) Do this task:PS3 Signal is out of Range - Fault Isolation, 73-26 TASK 803 and repair all ground faults.

(a) Do the repair confirmation.

F. Repair Confirmation

(1) Monitor the airplane on subsequent flight for the A/T LIMIT message.

**END OF TASK**

**817. CDS/DEU Interface Problem - Fault Isolation**

A. Description

(1) This task is for these maintenance messages:

(a) 22-31729 CDS/DEU-1 (J1B-F09,F08)

(b) 22-31745 CDS/DEU-2 (J1B-F09,F08)

(2) Operator indicates no display system response to data from FCC A/T-01 output bus to CDS/DEU-1 or CDS/DEU-2.

B. Possible Causes

(1) DEU-1

(2) DEU-2

(3) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-1

| Row | Col | Number | Name |
|---|---|---|---|
| C | 5 | C01041 | AFCS SYS A SNSR EXC AC |
| D | 2 | C01045 | AFCS SYS A FCC DC |

CAPT Electrical System Panel, P18-2

| Row | Col | Number | Name |
|---|---|---|---|
| D | 5 | C01359 | DISPLAY DEU 1 PRI |

F/O Electrical System Panel, P6-1

| Row | Col | Number | Name |
|---|---|---|---|
| D | 9 | C01362 | DISPLAY DEU 2 HOLDUP |



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

| Row | Col | Number | Name |
|---|---|---|---|
| D | 10 | C01361 | DISPLAY DEU 1 HOLDUP |
| D | 11 | C01360 | DISPLAY DEU 2 PRI |

F/O Electrical System Panel, P6-2

| Row | Col | Number | Name |
|---|---|---|---|
| B | 3 | C01046 | AFCS SYS B FCC DC |
| C | 2 | C01042 | AFCS SYS B SNSR EXC AC |

D. Related Data

(1) SSM 22-31-52

(2) WDM 22-31-52

E. Initial Evaluation

(1) Do the Mode Annunciation section of this task: Autothrottle System - System Test, AMM TASK 22-31-00-710-802

(a) If this maintenance message shows in CURRENT STATUS, then do the Fault Isolation Procedure below.

(b) If this maintenance message does not show in CURRENT STATUS, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this task: CDS BITE Procedure, 31-62 TASK 801.

(a) If the CDU shows an A/T failure, then do this task: DEU-1 No Input from LRU on 429 BUS - Fault Isolation, 31-63 TASK 817 or DEU-2 No Input from LRU on 429 BUS - Fault Isolation, 31-63 TASK 818:

(b) Do the repair confirmation at the end of this task.

G. Repair Confirmation

(1) Do the Mode Annunciation section of this task: Autothrottle BITE Procedure, 22-31 TASK 801.

(a) If this maintenance message does not show, you corrected the fault.

**——————— END OF TASK ———————**



BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details