

***Avidyne 700-00004-XXX-() MFD  
Instructions For Continued  
Airworthiness – Cirrus SR20/SR22***

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## **1. Introduction**

### **1.1 Aircraft Description**

Make: Cirrus Design Corporation

Model: SR20/SR22

### **1.2 Scope**

This document identifies the Instructions For Continued Airworthiness for the modification of the above aircraft by installation of an Avidyne 700-00004-XXX-() Multifunction Display.

This ICA satisfies the requirements of 14 CFR 23.1529.

### **1.3 Applicability**

Applies to aircraft altered by the installation of an Avidyne 700-00004-XXX-() Multifunction Display.

### **1.4 Definitions and Abbreviations**

ICA – Instructions for Continued Airworthiness

STC – Supplemental Type Certificate

MFD – Multifunction Display

AEG – Aircraft Evaluation Group

CMOS – Complementary Metal Oxide Semiconductor

SIU – Sensor Interface Unit or EISIU – (Engine Instrument) Sensor Interface Unit

### **1.5 Precautions**

This section not applicable.

### **1.6 Units of Measure**

This section not applicable.

### **1.7 Referenced Publications**

Avidyne 700-00004-XXX-() MFD Installation Manual, P/N 600-00073

FlightMax EX5000C Pilot's Guide, P/N 600-00072

FAA Approved Airplane Flight Manual Supplement, P/N 600-00074

MFD Mechanical Installation Instructions, drawing number 800-00007-000

Avidyne 700-00004-XXX-() MFD Wiring Diagram Cirrus SR20/SR22 Aircraft, drawing number 900-00014-000

### **1.8 Distribution**

This Instructions For Continued Airworthiness is to be furnished to the owner of an aircraft modified in accordance with this STC, and is to become part of the permanent aircraft record.

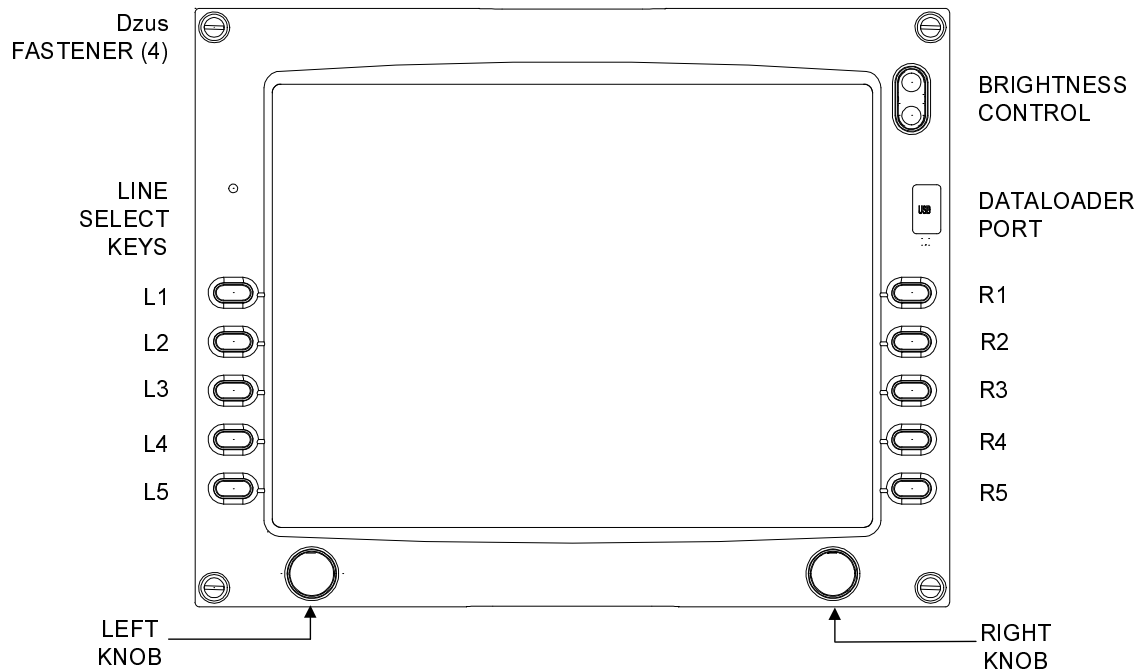
Changes to this ICA shall be provided to Cirrus Design Corporation, who will distribute them to the owners of aircraft modified in accordance with this STC.



A current revision of this ICA shall be available on the Avidyne website at [www.avidyne.com](http://www.avidyne.com) (Technical Publications).

## 2. Description of Alteration

The modification of the Cirrus Design Corporation Models SR20 and SR22 aircraft in accordance with this Supplemental Type Certificate involves the removal of the original equipment ARNAV ICDS 2000 MFD and installation of an Avidyne 700-00004-XXX-() MFD. The Avidyne MFD is a situational awareness display with a 10.4-inch LCD as shown in Figure 1. The MFD is capable of receiving data from a GPS sensor, Goodrich WX-500 Lightning Sensor, Goodrich SKY497 SkyWatch Traffic Advisory System, Moritz A0800 Sensor Interface Unit, and displaying this data on a moving map background. Depending on the selected options, Engine, Lightning or Traffic functions may or may not be implemented on any particular installation.



*Figure 1 - Avidyne 700-00004-XXX-() MFD*

A block diagram of the Avidyne MFD interfaced in a fully equipped Cirrus SR22 aircraft (avionics "B" configuration) is presented in Figure 2. Any particular installation may or may not incorporate certain external sensors. The various avionics configurations in the SR20 and SR22 aircraft are listed in Table 1:

Table 1 – Cirrus SR20 &amp; 22 Aircraft Configurations

Aircraft & Configuration	GPS 1	GPS 2	WX-500 Stormscope	SKY497 SkyWatch	A0800 SIU
SR20 Configuration A	Garmin GNS 430	Garmin GNC 250XL	Not Available	Not Available	Optional
SR20 Configuration B	Garmin GNS 430	Garmin GNC 420	Optional	Optional	Optional
SR20 Configuration C	Garmin GNS 430	Garmin GNS 430	Optional	Optional	Optional
SR22 Configuration A	Garmin GNS 430	Garmin GNC 420	Optional	Optional	Optional
SR22 Configuration B	Garmin GNS 430	Garmin GNS 430	Optional	Optional	Optional

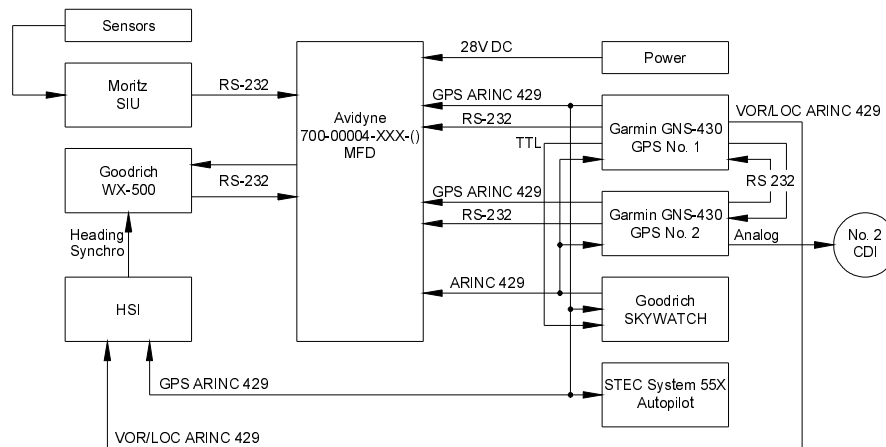


Figure 2 - Avidyne MFD installation in a Cirrus SR22 Configuration B Aircraft

### 3. Control, operation information

The MFD operation is controlled through 10 bezel keys, 2 rotary knobs, and a rocker switch. The left knob selects the desired page, which is identified on the LCD above the knob. The right knob's function is defined by the particular page that is currently selected, and is appropriately labeled on the LCD above the knob.

The rocker switch located in the top right corner of the bezel controls the display brightness, which is adjusted manually by pushing the top portion of the switch to increase intensity and pushing the bottom portion of the switch to decrease intensity. A pop-up window that presents the percentage of full intensity, along with a bar graph representation, indicates the intensity setting of the display.

The functionality of the 10 bezel keys is defined by the page that is currently displayed, and are labeled accordingly on the LCD adjacent to the key.

Refer to the FlightMax EX5000C Pilot's Guide, P/N 600-00072 for more detail on MFD operation.

#### 4. Servicing information

This section not applicable.

#### 5. Maintenance Instructions

Other than the periodic servicing task discussed below, maintenance of the Avidyne 700-00004-XXX-() MFD is based on condition only; no other periodic maintenance is required.

##### 5.1 Recommended periodic scheduled servicing tasks

The Avidyne 700-00004-XXX-() MFD contains a 3-volt lithium battery that maintains CMOS memory on an internal processor board and should be replaced after 10 years of service, or when CMOS memory fails to retain configuration data, whichever occurs first. The Avidyne MFD must be returned to an authorized FAA repair station to perform this maintenance function. Failure of the CMOS memory is indicated by the message "WARNING: CMOS battery failure. Check database expiration date. Press any bezel key to continue" on a blue background prior to system boot up. After system boot up, the MFD will function normally, but will not have retained the system date and time. If the system is interfaced to the GNS 430 through ARINC 429, it will acquire current date and time from the GNS 430 when valid satellite data is received.

#### 6. Troubleshooting Information

The Avidyne MFD incorporates a message bar located at the bottom of the display. Messages are generated by the system and displayed on the message bar and are helpful in troubleshooting system problems. The following tables present the messages that are generated by each application.

Table 2 - GPS Messages

Message	Meaning
Nav Source: Not Responding	No RS 232 or ARINC 429 GPS data is being received. Check wiring and Comm port setting.
Nav Source: Position Data Not Valid	Data is being received from the external GPS. However, insufficient information is available to determine position. Aircraft could be in the hanger or the GPS may not have determined its "fix" or location.
Nav Source: Position Data Valid	The MFD is receiving valid position data from the GPS.

Nav Source: Data Format Error	Data is being received, however the MFD does not recognize the data as the format selected. May indicate a baud rate or receiver type error.
Nav Source: No Port selected	The COMM port setting in the GPS setup dialog is set to NONE. To correct this, choose the port to which the GPS is connected, typically COM2.
Nav Source: Reconnecting	This message is displayed when data between the MFD and the GPS is being synchronized.
Nav Source: Can't Open Port	Another device is configured for the same port. Check the Setup page for all devices. Typically the GPS is configured for RS 232 Port 2 or ARINC 429 port 1. A second GPS can only be configured for ARINC port 2.
Heading Data is NOT VALID	Heading data is no longer available from the GPS. Will only appear if the GPS is being used as the heading source.
Heading Data is VALID	Heading data has been restored.

*Table 3- Lightning Messages*

<b>Message</b>	<b>Meaning</b>
Lightning Sensor is Operating Normally	Verification that strike data to the MFD is valid.
Lightning Sensor in Demo Mode	Demo mode has been selected as the operating mode from the Lightning Setup Page.
Lightning Sensor is in Noise-Monitor Mode	Noise-Monitor mode has been selected as the operating mode from the Lightning Setup Page.
Lightning Sensor in Test Mode	Test mode has been selected as the operating mode from the Lightning Setup Page.
Lightning Sensor ERROR	The sensor system has reported an error that may mean current data is incomplete or erroneous. The error may clear.
Lightning Sensor has FAILED	The sensor system has reported an error that may mean current data is incomplete or erroneous. The error will not clear until power is removed from and reapplied to the sensor system.
Lightning Sensor is OFF	Communication of strike data from the Lightning sensor to the MFD has been lost.
Lightning Ahead	The Lightning Ahead option has been checked on the Lightning Setup page. Displayed when a Lightning Ahead condition exists.
Lightning Heading Source Failed	Heading data is no longer available from the WX-500. Strike data may still be valid. Will only appear if the WX-500 is being used as the heading source.
Lightning Heading Source OK	Heading data has been restored.
Stuck mic-PLEASE CHECK	Check the comm transmitters for indication of a stuck mike.

Verify Antenna Location (run Setup)	There may be an inconsistency between the antenna location jumper setting and the software configuration. This message should only appear during installation.
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Table 4 - Traffic Messages

Message	Meaning
Traffic Sensor is OFF (TAS)	Traffic data is not being received.
Traffic Sensor is in Stand-By (TAS)	The Skywatch sensor has been placed in Standby mode.
Traffic Sensor is in Self-Test (TAS)	The Skywatch sensor has been placed in Self-Test mode.
Traffic Sensor is Operating Normally (TAS)	Verification that Traffic data is valid.
TCAD Altitude Unavailable (TCAD)	Occurs when altitude data has been lost from the TCAD sensor.

Table 5 - Engine Messages

Message	Meaning
Engine Sensor Unit Not Operating	No RS 232 Engine Sensor Unit data is being received.
Engine Sensor Unit Operating Normally	Verification that Engine Sensor Unit data is valid.

## 7. Removal and Replacement Information

### 7.1 Removal

Remove the Avidyne MFD from the instrument panel by turning four corner-mounted  $\frac{1}{4}$ -turn fasteners counter-clockwise and pulling the unit away from instrument panel. Remove the avionics console hump with the four fasteners if necessary. It may be necessary to lift up on the edge of the glare shield so that the MFD clears the hump of the avionics console (see Figure 3). Remove the connector located on the back of MFD by turning two jackscrews counter-clockwise (see Figure 4).

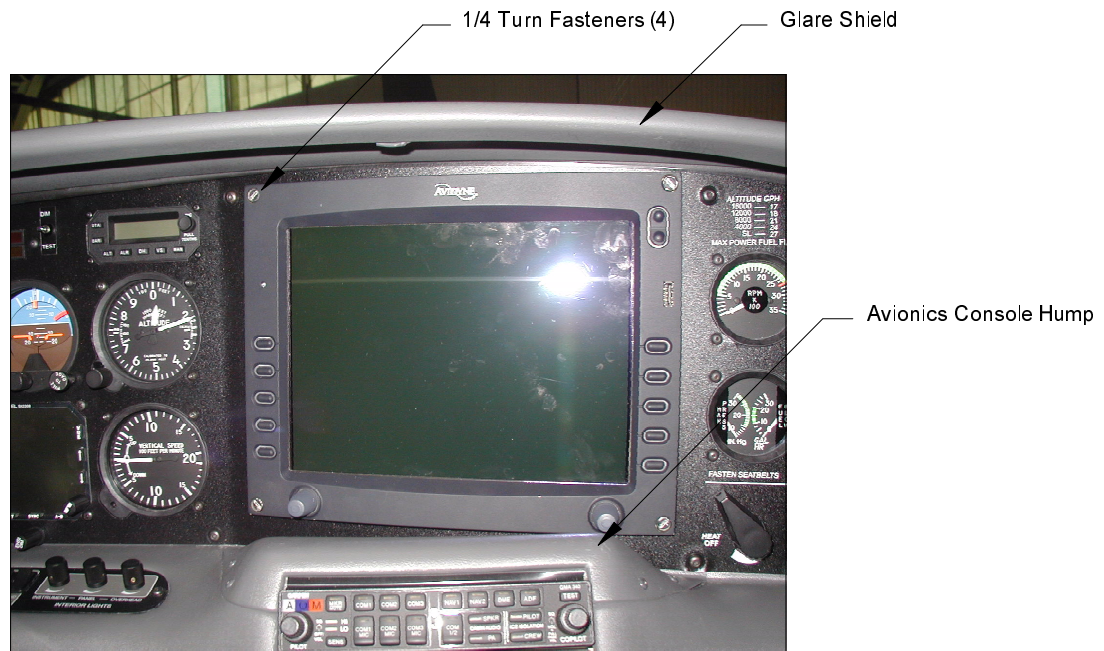
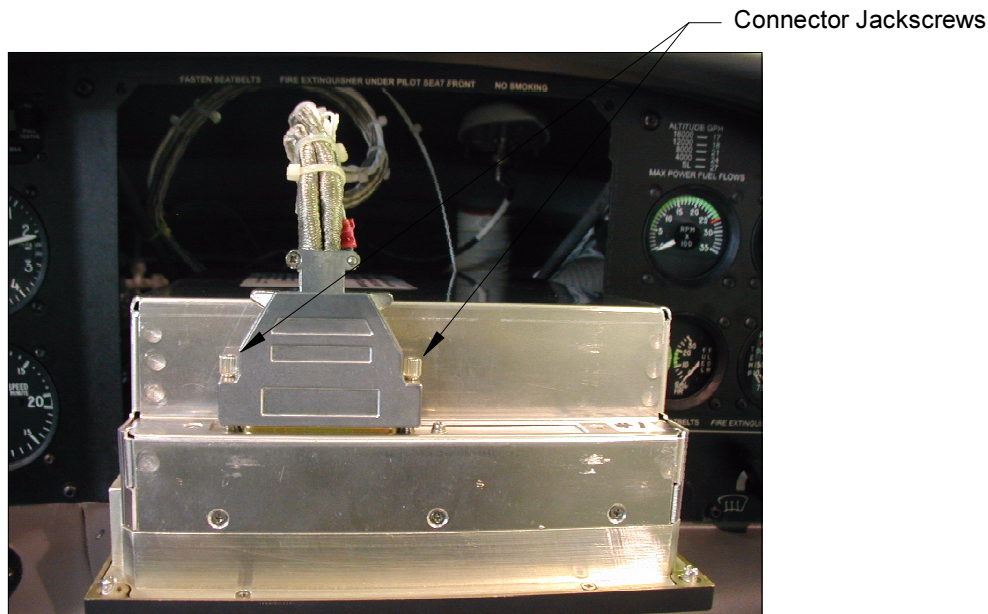


Figure 3 - Cirrus MFD Installation



*Figure 4 - MFD Connector Installed*

## **7.2 Installation**

To install the MFD, secure the connector onto the MFD and tighten the two jackscrews. Rest the MFD on the hump of the avionics console and assure that the service loop of the MFD cable is routed away from any moving parts behind the instrument panel as shown in Figure 5. Position the MFD as shown in Figure 6 and lift up on the edge of the glare shield, while simultaneously pushing the upper edge of the MFD under the glare shield. Slide the bottom edge of the MFD over the hump and locate the MFD bezel against the instrument panel. If necessary remove the avionics console hump to provide more clearance. Secure the MFD to the instrument panel by turning four corner-mounted 1/4-turn fasteners clockwise.

Upon reinstallation, a functional check should be performed in accordance with the System Setup and Checkout procedures detailed in Section 7.3







### **7.3 System Setup and Checkout**

Any time the Avidyne MFD is removed and sent to the factory for service, or is replaced with another unit, these system setup procedures should be performed to assure that the unit is properly configured for the installation. This section should also be referenced if it is suspected that the unit may be misconfigured.

Turn on the MFD by applying power to the aircraft battery and avionics bus master switches. The green bezel key backlighting should illuminate to full intensity when the Instrument Lights dimmer control is turned fully counterclockwise. As the dimmer control is turned clockwise, the bezel key lighting should dim fully, and then increase in intensity.

#### **7.3.1 Maintenance Mode Access**

Upon initial system power-up, the MFD will execute a start-up sequence. During this time, the screen will initially display the FlightMax logo, followed by a blank screen until a blue screen with the text "Initializing-Please Wait..." is displayed. The startup sequence is finished when the text "Press any bezel key to Continue..." is displayed. The initialization screen displays the loaded software version, along with NavData and Obstacle database expiration dates.

Apply power to all sensors that interface with the MFD such as GPS navigator, lightning sensor, and traffic sensor. The MFD configuration is accomplished in the setup pages that are accessed through the Maintenance Mode, which is accessed as follows:

1. Upon completion of system initialization, rotate the page knob to the *Setup* page.
2. Simultaneously press and hold the top and middle left-hand bezel keys for at least 5 seconds until the maintenance page appears, which is shown in Figure 7.

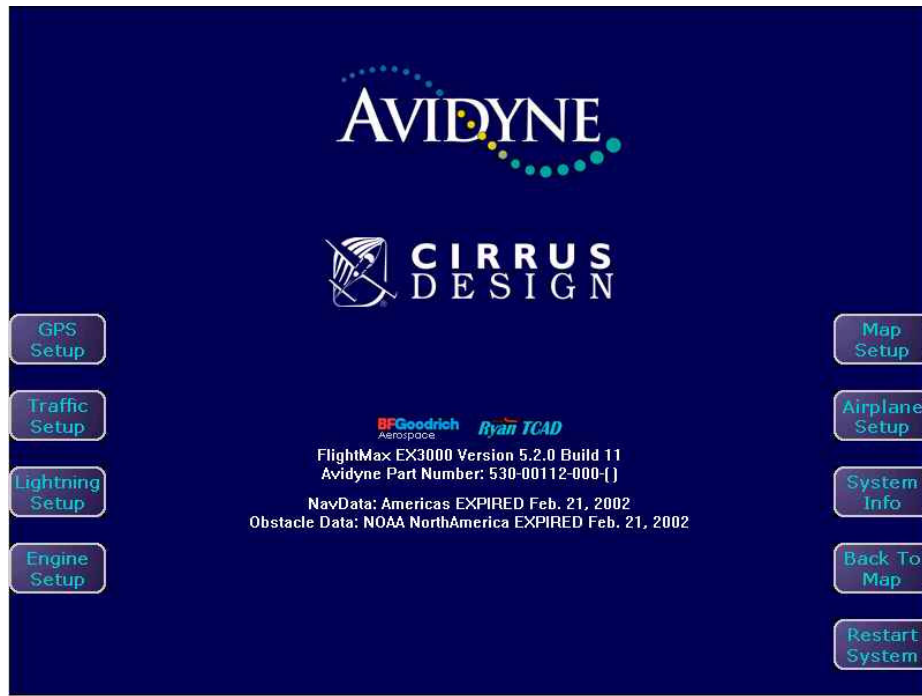


Figure 7 - Maintenance Mode Page

### 7.3.2 GPS Interface, Setup and Checkout

The GPS is interfaced to the MFD by either of two methods selected at the time of initial installation: ARINC 429 or RS 232. The ARINC 429 interconnect requires that a shielded pair connect the MFD to the GPS navigator. The RS 232 interconnect requires that a single shielded wire connect the MFD to the GPS navigator. Refer to the MFD wiring diagram, drawing no. 900-00014-000 for details (see Appendix). If it is not known which interface is utilized in a particular installation, select ARINC 429. If this selection is not correct, the message *Nav Source: Not Responding* will be displayed on the Map page after system start-up, in which case the RS 232 selection should be configured on the MFD.

Note: ARINC 429 is the recommended configuration.

From the Maintenance Page, press the *GPS Setup* bezel key to select the GPS Setup page.

#### 7.3.2.1 ARINC 429 Setup

When the ARINC 429 interconnect is used, GPS 1 and GPS 2 are normally connected to the MFD. To select ARINC 429, highlight each configuration line and select the appropriate MFD settings as shown below:

Configuration Item	MFD Setting	Comment
Receiver	GAMA 429 Format	

Port	ARINC 1	Select ARINC 2 for GPS 2
Speed	Low	

Press the *Save* bezel key. The MFD must be restarted for the settings to take effect.

Assure the Garmin GNS 400 series navigator is configured appropriately. To display the ARINC 429 Configuration Page, apply power to the GPS while pressing and holding the ENT key. Release the ENT key when the display activates. After the data base pages, the first page displayed is the MAIN ARINC 429 CONFIG page. While in the configuration mode, pages can be selected by ensuring the cursor is off and rotating the small right knob.

To change data on the displayed configuration page, press the small right knob (CRSR) to turn on the cursor. Turn the large right knob to change between data fields. Turn the large or small right knob to change a field that the cursor is on. Once the desired selection is made, press the ENT key to accept the entry.

The Garmin GNS 400 series navigator should be configured as follows:

<b>Configuration Item</b>	<b>Speed</b>	<b>Data</b>
IN 1	As Required	As Required
IN 2	As Required	As Required
OUT	Low	GAMA 429 Graphics w/Int

## 7.3.2.2 RS 232 Setup

When the RS 232 interconnect is used, only GPS 1 is connected to the MFD. To select RS 232, highlight each configuration line and select the appropriate MFD settings as shown below:

Configuration Item	MFD Setting
Receiver	King/Aviation Format
Port	COM 2
Baud	9600

Press the *Save* bezel key. The MFD must be restarted for the settings to take effect.

Assure that the Garmin GNS 400 series navigator is configured appropriately. Enter the configuration mode as described in section 7.3.2.1 and display the MAIN RS232 CONFIG Page. Verify that the Channel 1 RS 232 output is set to *Aviation*.

## 7.3.2.3 GPS Checkout

After verifying the MFD GPS settings, the aircraft should be located where the GPS receiver can receive valid GPS satellite signals and generate a valid position. After the MFD has been restarted, the message *Nav Source: Position Data Valid* and the current aircraft position should be depicted on the MFD Map display. Refer to Section 6 *Troubleshooting Information* for resolution of any error messages.

## 7.3.3 Lightning Sensor Interface and Setup

The WX-500 Stormscope lightning sensor interface is optional. Interconnect details are provided on the MFD wiring diagram, drawing no. 900-00014-000. The MFD communicates to and from the WX-500 using RS 232 communications. To configure Lightning, access Maintenance Mode as described in Section 7.3.1 and select *Lightning Setup*. Highlight each configuration item and select the appropriate MFD settings as shown below:

Configuration Item	MFD Setting	Comment
Sensor	WX-500	
Operating Mode	Weather	
Port	COM1	
Stab Type	Synchro	Enter <i>GPS</i> if no other stabilization is provided.
Enable Stabilization?	Check	Leave unchecked if no stabilization is provided.
Enable Lightning Ahead Warning?	Check	Leave unchecked if not desired.
Antenna on Top?	Check	Leave unchecked if WX-500 antenna is mounted on bottom.

Press the *Save* bezel key. The MFD must be restarted for the settings to take effect.

### 7.3.3.1 Lightning Sensor Checkout

After the MFD has been restarted, the message *Lightning Sensor is Operating Normally* should be displayed in the message bar. If not, refer to Section 6, *Troubleshooting Information*, for resolution of any error messages.

Select the Map display and select *Heading/Track Up*. Select the *Strike* Lightning Mode. From the MFD *Setup* page, push the *Lightning Test* bezel key. Verify that a test strike is depicted on the Map display at approximately 18 NM at 45 degrees relative bearing to the aircraft nose.

Refer to Section 6 *Troubleshooting Information* for resolution of any error messages.

### 7.3.4 Traffic Sensor Interface, Setup and Checkout

The SkyWatch traffic sensor interface is optional. Interconnect details are provided on the MFD wiring diagram, drawing no. 900-00014-000. The MFD uses an ARINC 429 data connection to receive data from the SkyWatch TRC 497. The MFD provides mode control of the SkyWatch through discrete signals to the SoftKey 1 and Softkey 4 inputs on the TRC 497.

#### 7.3.4.1 Traffic Setup

To configure SkyWatch, access Maintenance Mode as described in Section 7.3.1 and select *Traffic Setup*. Highlight each configuration item and select the appropriate MFD settings as shown below:

Configuration Item	MFD Setting	Comment
Sensor	TAS	
Port	ARINC3	
External Controller?	Unchecked	
Heading Available?	Unchecked	Check if heading data is supplied to the SkyWatch and is available to the MFD.

Press the *Save* bezel key. The MFD must be restarted for the settings to take effect.

#### 7.3.4.2 Traffic Sensor Checkout

After the MFD has been restarted, the message *Traffic Sensor is Operating Normally* should be displayed in the message bar. If not, refer to Section 6, *Troubleshooting Information*, for resolution of any error messages.

Select the Map display and select *Heading/Track Up*. Select the *Normal* Traffic mode. From the MFD *Setup* page, push the *Traffic Test* bezel key. Verify that the traffic self-test pattern is depicted on the Map display as follows:

Symbol Type	Relative Bearing	Approx Range	Relative Altitude
Other	30°	3.5 nm	1000 Feet Below
Other	330°	3.6 nm	1000 Feet Above
TA	270°	2 nm	200 Feet Below

The message *Traffic Sensor is in Self-Test* should appear in the message bar.

Refer to Section 6 *Troubleshooting Information* for resolution of any error messages.

### 7.3.5 Engine Sensor Unit, Setup and Checkout

The Engine Sensor Unit is optional. Interconnect details are provided on the MFD wiring diagram, drawing no. 900-00014-000. The MFD uses an RS-232 data connection to receive data from the Engine Sensor Unit.

#### 7.3.5.1 Engine Setup

To configure Engine, access Maintenance Mode as described in Section 7.3.1 and select *Engine Setup*. Highlight each configuration item and select the appropriate MFD settings as shown below:

Configuration Item	Selections
Sensor Type	Not installed, Moritz SIU
Port	Com 1, Com 2, Com 3*, Com 4* * If available
Aircraft Model	SR20 Serial Number 4-1147, SR20 Serial Number 1148 and Up SR22
Electrical	Single Bus Single Alternator, Single Bus Dual Alternator, Dual Bus, Dual Alternator

The Aircraft Model setting on the MFD must match the configuration switch settings on the SIU. The MFD reports the SIU configuration in the SIU Status Box. When the Aircraft Model text is blue the MFD and SIU configurations match. Amber text indicates the MFD and SIU configurations do not match.

**NOTE: Selecting the wrong Aircraft Model will result in incorrect fuel flow data presented to the pilot.**

Press the *Save* bezel key. The MFD must be restarted for the settings to take effect.

#### 7.3.5.2 Engine Sensor Checkout

After the MFD has been restarted, view the Engine page to verify data communication. Operate the aircraft engine to confirm correct operation of all sensors. Refer to Section 6, *Troubleshooting Information*, for resolution of error messages.

### **7.3.6 Map Setup**

The Avidyne MFD has the capability to overlay Traffic and Lightning information onto the Map display. To utilize this feature, Map requires Heading or Track information.

The MFD can receive HEADING data from one of following sources:

Garmin 400 series GPS (via ARINC 429).

BF Goodrich StormScope (via RS 232). This is the most common method.

BF Goodrich Skywatch (via ARINC 429) with software level 1.6 or higher.

TRACK is the actual direction the aircraft is moving relative to the earth's surface, and is obtained from the GPS.

To configure the Map heading source, access Maintenance Mode as described in Section 7.3.1 and select *Map Setup*. Use the right hand knob to cycle through the selections: None (Use GPS Track), FMS/GPS, Stormscope, and SkyWatch. When the appropriate setting is selected, press the *Save* bezel key. The MFD must be restarted for the setting to take effect.

### **7.3.7 Checklist Setup**

Checklists are pre-loaded at the factory and are selectable between None, SR20, and SR22.

To configure the checklist, access Maintenance Mode as described in Section 7.3.1 and select *Checklist Setup*. Use the right hand knob to cycle through the selections. When the appropriate setting is selected, press the *Save* bezel key. The MFD must be restarted for the setting to take effect.

## **8. Diagrams**

Wiring information is detailed in drawing no. 900-00014-000, *Avidyne 700-00004-XXX-() MFD Wiring Diagram Cirrus SR20/SR22 Aircraft*. Mechanical installation instructions are detailed in drawing no. 800-00007-000, *MFD Mechanical Installation Instructions*. These drawings are included in the Appendix of this document.

## **9. Special Inspection Requirements**

This section not applicable.

## **10. Application of Protective Treatments**

This section not applicable.

## **11. Data**

This section not applicable.

## **12. List of Special Tools**

This section not applicable.

## **13. For Commuter Category Aircraft**

This section not applicable.

#### **14. Recommended Overhaul Periods**

This section not applicable.

#### **15. Airworthiness Limitation Section**

The Airworthiness Limitations section is FAA approved and specifies maintenance required under §43.16 and §91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

There are no additional airworthiness limitations as a result of this modification.

#### **16. Revision**

Revisions to this document shall be coordinated through the Boston Aircraft Certification Office, the Kansas City AEG, and the STC holder.

#### **17. Assistance**

For questions or assistance regarding this ICA, contact Avidyne at:

Avidyne Corporation  
55 Old Bedford Road  
Lincoln, MA 01773  
Service: 1-888-723-7592  
Web Site: [www.avidyne.com](http://www.avidyne.com)

#### **18. Implementation and Record Keeping**

This ICA is to be made part of the applicable section 91.409 or 135.419 aircraft inspection program for this aircraft.



## **Appendix**

This Appendix contains the following drawings:

Drawing No. 900-00014-000, *Avidyne 700-00004-XXX-() MFD Wiring Diagram Cirrus SR20/SR22 Aircraft*

Drawing No. 800-00007-000, *MFD Mechanical Installation Instructions*

## NOTES:

- ALL WIRE SHALL BE MIL-W-22759/16 (NON-SHIELDED) OR MIL-DTL-27500 (SHIELDED) OR EQUIVALENT UNLESS OTHERWISE SPECIFIED.
- ALL WIRE SHALL BE MINIMUM 22 AWG UNLESS OTHERWISE SPECIFIED; 24 AWG ACCEPTABLE FOR SHIELD GROUND.
- SYMBOLS USED:

△ INDICATES THAT A SPECIFIC NOTE APPLIES

○ INDICATES A REFERENCE TO THE PARTS LIST.

⏏ INDICATES CONNECTION TO LOCAL AIRFRAME GROUND (AS SHORT AS POSSIBLE)

⌘ INDICATES TWISTED SHIELDED WIRE

⌘ INDICATES TWISTED SHIELDED WIRE WITH FLOATING SHIELD.

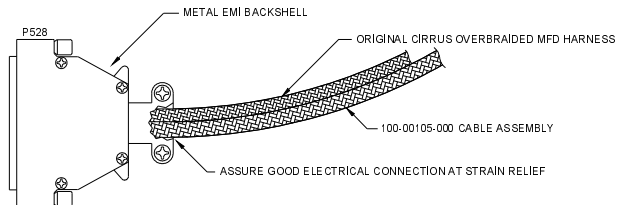
— — — — — INDICATES EXISTING WIRING.  
- - - - - INDICATES OVER-BRAID.

△ P528 CONNECTOR ON 100-00105-000 CABLE ASSEMBLY IS PARTIALLY PRE-WIRED. REMOVE WIRES FROM EXISTING ARNAV MFD CONNECTOR. CUT OFF EXISTING CONTACTS AND SPlice ADDITIONAL WIRES AS SHOWN. TRIM WIRES TO LENGTH AND INSTALL POSITRONIC F08022D CONTACTS. DISASSEMBLE P528 BACKSHELL AND STRAIN RELIEF AND INSERT CONTACTS INTO CONNECTOR AS SHOWN. REASSEMBLE P528 BACKSHELL AND STRAIN RELIEF, MAKING SURE OVERBRAID OF BOTH CABLES IS SECURED UNDER STRAIN RELIEF AS SHOWN BELOW.

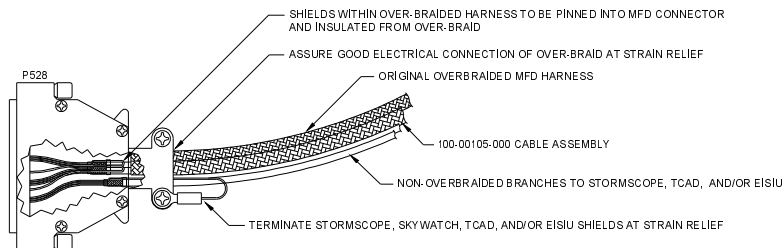
△ OVER-BRAIDED WIRE HARNESSES DO NOT REQUIRE WIRE MARKING SINCE OVER-BRAIDING WILL COVER THE MARKING.

△ OVER-BRAID IS PROVIDED FOR LIGHTNING PROTECTION OF ESSENTIAL HARNESSES. WIRE HARNESS TO BE SENT TO CIRRUS-APPROVED VENDOR FOR OVER-BRAIDING. OVER-BRAID SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

MATERIAL: 36 AWG TINNED COPPER WIRE PER ASTM-B-33  
COVERAGE: 98% 100% OPTICAL  
MFD BRANCH MUST BE TERMINATED SO THAT OVER-BRAID IS ASSURED ADEQUATE ELECTRICAL CONNECTION AT METAL (EMI) BACKSHELL STRAIN RELIEF AS SHOWN BELOW:



MFD CABLE ASSY W/O WX-500, SKYWATCH, OR EISIU



MFD CABLE ASSY W/ STORMSCOPE, SKYWATCH, AND/OR EISIU

△ PERMISSIBLE TO COMBINE INTO SINGLE OVERBRAIDED NAV HARNESS (OEM APPLICATION).

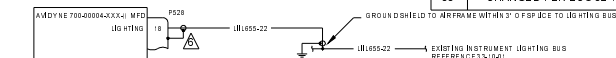
△ ARINC 429 AND/OR RS 232 CONNECTION TO GPS 1 REQUIRED; ARINC 429 CONNECTION RECOMMENDED.

ARINC 429 AND/OR RS 232 CONNECTION TO GPS 2 OPTIONAL; ARINC 429 CONNECTION RECOMMENDED.

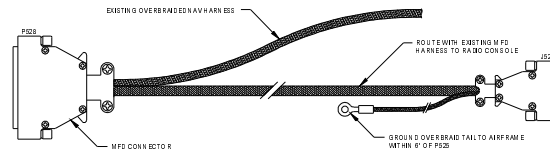
ARINC 429 INTERFACE REQUIRES 700-00004-002 MFD; -001 MFD IS APPLICABLE TO RS 232 INTERFACE ONLY.

EXISTING ARINC 429 CONNECTIONS MAY OR MAY NOT EXIST, DEPENDING ON AIRCRAFT CONFIGURATION. UP TO 5 ARINC 429 LOADS ARE ALLOWED ON GARMIN EQUIPMENT.

OPTIONAL LIGHTING IF NOT ADDING GPS 1 ARINC 429 INTERFACE:



△ WIRE P525 TO RADIO RACK AS SHOWN. P/J518 TO BE LOCATED AT RADIO RACK, PROXIMATE TO P/J518. GROUND OVERBRAID TAIL TO AIRFRAME AS SHOWN:



△ GROUND SHIELDS AT RADIO RACK CHASSIS GROUND POINT BETWEEN CONNECTORS P517 & P518, LOCATED AT TOP REAR OF RADIO RACK.

△ ASSURE POSITIVE GROUND PATH BETWEEN MFD CHASSIS AND AIRFRAME GROUND.

△ STORMSCOPE, SKYWATCH, AND TCAD ARE OPTIONAL INTERFACES. SKYWATCH AND TCAD ARE TRAFFIC ADVISORY SYSTEMS AND ARE MUTUALLY EXCLUSIVE.

△ PIN 16 SHOULD BE GROUNDED WHEN THERE IS NO TCAD INDICATOR OR INSTALLED.

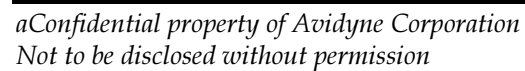
△ GROUND AT STORMSCOPE GROUND LUG.

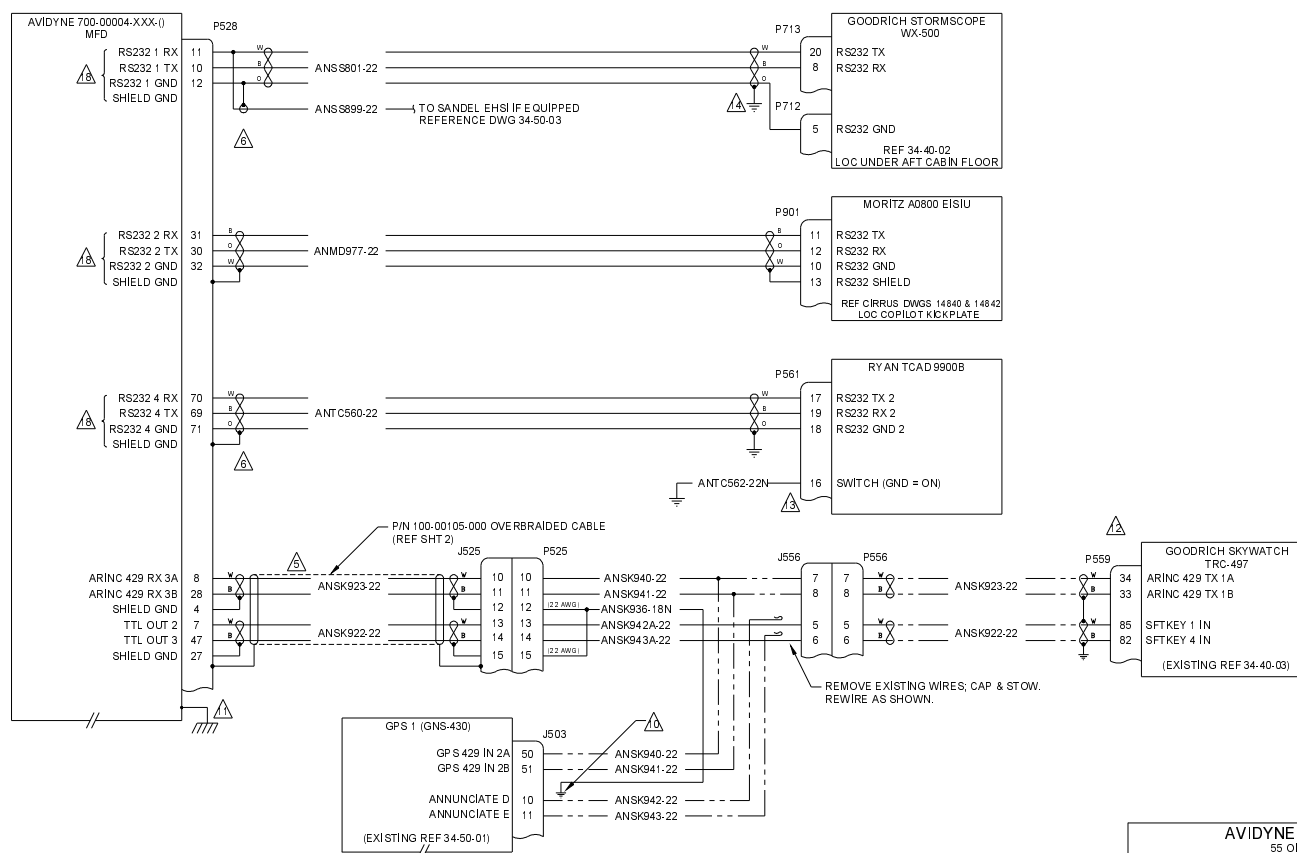
15. MAINTAIN ORIGINAL HARNESS ROUTING.

- IF AIRCRAFT IS EQUIPPED WITH FACTORY INSTALLED SANDEL SN3308 HSI, GPS 2 429 OUT A & B MAY BE SPliced INTO EXISTING WIRES ANGP906-22 & ANGP907-22 AT CONNECTOR J546 PINS 2 & 1, RESPECTIVELY. CONNECTOR J546 IS LOCATED AT THE TOP OF THE RADIO RACK AND SPlicing MAY BE ACCOMPLISHED WITHOUT REMOVING RADIO RACK.
- IF AIRCRAFT IS EQUIPPED WITH FACTORY INSTALLED SKYWATCH SKY 497, GPS 1 429 OUT A & B MAY BE SPliced INTO EXISTING WIRES ANSK944-22 & ANSK945-22 AT CONNECTOR J556, PINS 9 & 10, RESPECTIVELY. IF AIRCRAFT IS EQUIPPED WITH FACTORY INSTALLED SANDEL SN3308 HSI, GPS 1 429 OUT A & B MAY BE SPliced INTO EXISTING WIRES ANSK944-22 & ANSK945-22 AT CONNECTOR P517 PINS 13 & 14, RESPECTIVELY. CONNECTORS J556 & P517 ARE LOCATED AT THE TOP OF THE RADIO RACK AND SPlicing MAY BE ACCOMPLISHED WITHOUT REMOVING RADIO RACK.

△ TWO SERIAL PORTS AVAILABLE FOR MFD S/N 1001-1200; FOUR SERIAL PORTS AVAILABLE FOR MFD S/N 1201 AND SUBSEQUENT. PLAN SERIAL PORT USAGE APPROPRIATELY. SERIAL PORTS ARE NOT SENSOR SPECIFIC.

10					
9					
8	A/R	F08022D FEMALE CONTACTS (POSITRONIC)			
7	A/R	F08020D FEMALE CONTACTS (POSITRONIC)			
6	A/R	M08022D MALE CONTACTS (POSITRONIC)			
5	1	100-001 05-000 CABLE ASSEMBLY (AVIDYNE)			
4	1	R025F100T0 CONNECTOR (POSITRONIC)			
3	1	R025M10G00 CONNECTOR (POSITRONIC) (P/O 100-00105-000 AVIDYNE CABLE ASSEMBLY)			
2	1	D078F10G00 CONNECTOR (POSITRONIC) (P/O 100-00105-000 AVIDYNE CABLE ASSEMBLY)			
1	1	700-00004-XXX-() MULTIFUNCTION DISPLAY (AVIDYNE)			
ITEM	QTY	PART NUMBER / DESCRIPTION			
PARTS LIST					
AVIDYNE CORPORATION PROPRIETARY INFORMATION			AVIDYNE CORPORATION 55 Old Bedford Road Lincoln, MA 01773		
APPROVALS		DATE		Avidyne 700-00004-XXX-() MFD Wiring Diagram Cirrus SR20/SR22 Aircraft	
DRAWN BY R. SPENCER		10-19-01			
CHECKED J. SQUADRITO		10-31-01			
		SIZE B		DWG. NO. 900-00014-000	
		SCALE NONE		SHEET 1 OF 3	
				REV. 08	



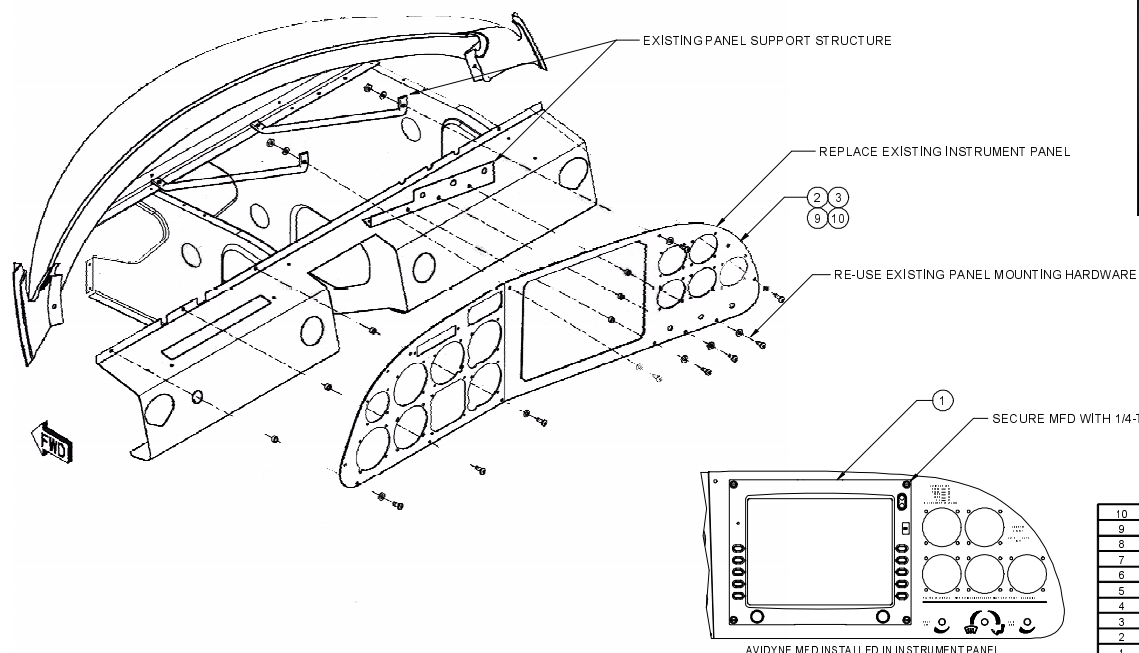


AVIDYNE CORPORATION 55 Old Bedford Road Lincoln, MA 01773			
Avidyne 700-00004-XXX-() MFD Wiring Diagram Cirrus SR20/SR22 Aircraft			
SIZE <b>B</b>	DWG. NO. 900-00014-000	REV. <b>08</b>	
SCALE: NONE	SHEET 3 OF 3		

## NOTES:

1. THE AVIDYNE MFD CAN BE INSTALLED INTO THE CIRRUS AIRCRAFT BY

EITHER OF TWO METHODS:

OPTION 1 - REPLACE ORIGINAL INSTRUMENT PANEL WITH NEW PANEL  
WHICH HAS CUT-OUT FOR AVIDYNE MFD (SEE SHEET 1).OPTION 2 - INSTALL MFD ADAPTER INTO ORIGINAL INSTRUMENT PANEL  
TO ADAPT AVIDYNE MFD TO EXISTING CUT-OUT (SEE SHEET 2).

MFD INSTALLATION OPTION 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
00	RELEASE PER ECO01-091	10-18-01	MC
01	CHANGED PER ECO01-141	11-16-01	MC
02	CHANGED PER ECO01-162	11-30-01	MC

## MFD INSTALLATION OPTION 1

FOR MFD INSTALLATION INTO NEW INSTRUMENT PANEL:

1. REMOVE GLARE SHIELD.
2. REMOVE ALL INSTRUMENTS FROM INSTRUMENT PANEL;  
REMOVE PANEL FASTENERS AND REMOVE PANEL FROM  
AIRCRAFT.
3. INSTALL NEW INSTRUMENT PANEL WITH GRAPHIC OVERLAY  
AS SHOWN USING EXISTING MOUNTING HARDWARE.
4. REINSTALL ALL INSTRUMENTS INTO NEW PANEL.
5. PERFORM WIRING MODIFICATIONS PER AVIDYNE  
DRAWING 900-00014-000.
6. INSTALL AVIDYNE MFD INTO NEW PANEL AND SECURE  
WITH (4) 1/4-TURN FASTENERS.

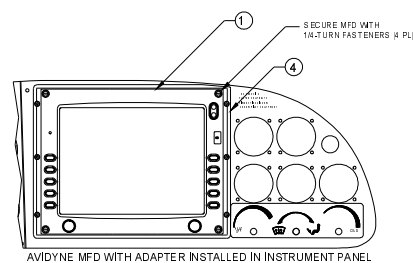
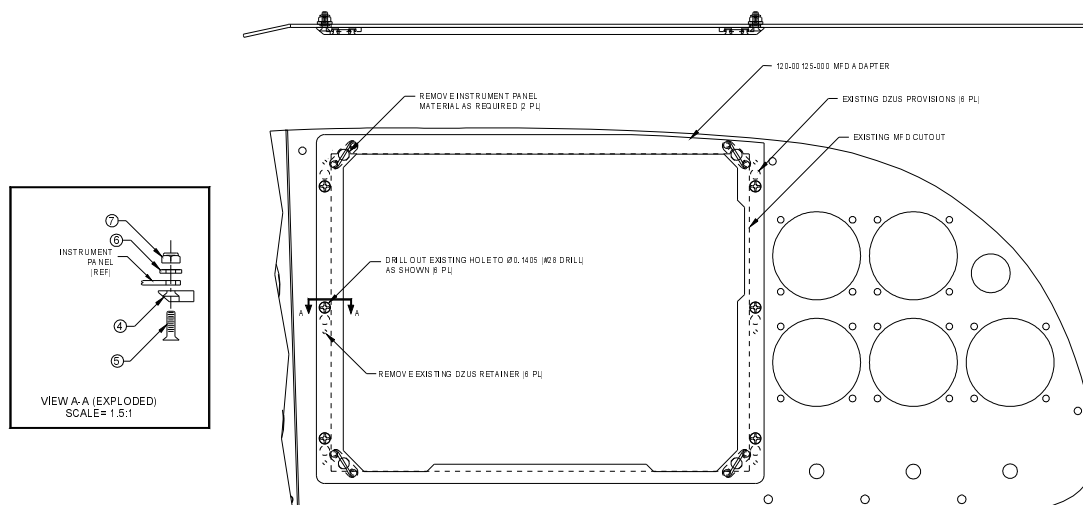
10	A/R	110-00044-000 SR22 INSTRUMENT PANEL GRAPHIC OVERLAY (AVIDYNE)
9	A/R	110-00045-XXX SR20 INSTRUMENT PANEL GRAPHIC OVERLAY (AVIDYNE)
8	A/R	110-00043-000 PLACARD - REQ'D FOR SR22 INSTALLATION ONLY (AVIDYNE)
7	6	6-32 SELF-LOCKING NUT (AN365 OR EQUIVALENT)
6	6	AN960-6L WASHER
5	6	6-32 SCREW WITH BLACK FINISH (MS24693-28B OR EQUIVALENT)
4	1	120-00125-000 MFD ADAPTER PLATE (AVIDYNE)
3	A/R	120-00134-XXX SR22 INSTRUMENT PANEL (AVIDYNE)
2	A/R	120-00087-XXX SR20 INSTRUMENT PANEL (AVIDYNE)
1	1	700-00004-XXX-() AVIDYNE MFD

ITEM	QTY	PART NUMBER/DESCRIPTION
PARTS LIST		
AVIDYNE CORPORATION PROPRIETARY INFORMATION		AVIDYNE CORPORATION 55 Old Bedford Road Lincoln, MA 01773
APPROVALS		DATE
DRAWN BY R. SPENCER		10-10-01
CHECKED M. COLA LILLO		10-18-01
SIZE D	DWG. NO. 800-00007-000	REV. 02
DO NOT SCALE DRAWING	SCALE NONE	SHEET 1 OF 2

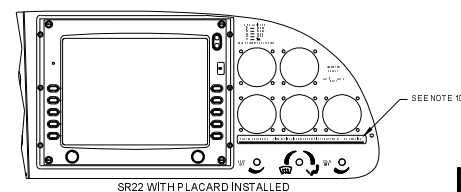
## MFD INSTALLATION OPTION 2

FOR MFD INSTALLATION INTO EXISTING INSTRUMENT PANEL:

1. REMOVE GLARESHIELD, DISCONNECT AND REMOVE EXISTING MFD.
2. DRILL OUT 12 - AN426AD3 RIVETS AND REMOVE 6 - DZUS RETAINERS FROM AROUND EXISTING MFD CUTOUT.
3. RE-SIZE 6 - 0.096 HOLES TO 0.1405 (#28 DRILL) AS SHOWN.
4. ALIGN AVIDYNE MFD ADAPTER WITH MOUNTING HOLES AND TEMPORARILY SECURE WITH 6-32 SCREWS, WASHERS, AND NUTS.
5. MARK 2 CUT-OUT AREAS ON INSTRUMENT PANEL AS SHOWN.
6. REMOVE MFD ADAPTER AND RELIEVE INSTRUMENT PANEL AT MARKED LOCATIONS.
7. INSTALL MFD ADAPTER AND SECURE WITH SCREWS, WASHERS, AND NUTS 6 PLACES AS SHOWN.
8. REMOVE EXISTING MFD CONNECTOR AND INSTALL MFD WIRING PER AVIDYNE DRAWING NO. 900-00014-000.
9. INSTALL MFD INTO INSTRUMENT PANEL AND SECURE WITH (4) 1/4-TURN FASTENERS.
10. INSTALL AVIDYNE P/N 110-00043-000 PLACARD AS SHOWN (SR22 INSTALLATIONS ONLY).



MFD INSTALLATION OPTION 2



SR22 WITH PLACARD INSTALLED

PARTS LIST - SEE SHEET 1			
AVIDYNE CORPORATION			
55 Old Bedford Road Lincoln, MA 01773			
MFD MECHANICAL INSTALLATION INSTRUCTIONS			
SIZE D	DWG. NO. 800-00007-000	REV. 02	
SCALE NONE	SHEET 2 OF 2		