$ID KACALA*0005L26908*500P*1000C*15M*TAPES$ 509500 09/20/67 ON 14-37-43

Tape # 577

```
*       PACK
*       FAP
```

PREPROCESSOR UPDATE PROGRAM

UPDATE 9

```
ENDEND END    CONTIN                                  LS122070      DELETED
ENDEND END      CONTIN                                LS122070      INSERTED
```

```
*                                                                    LS000010
*                                                                    LS000020
*                                                                    LS000030
*       SYSTEM TAPE IS GENERATED ON B6                               LS000040
*       USES A4 AND B1 TO TEST TAPE ROUTINES                         LS000050
*       LISP 1.5  CORRECTED AND TESTED AT STANFORD                   LS000070
        PCC                                                          LS000080
        COUNT   13000                                                LS000090
        ABS                                                          LS000100
```

```
                        TTL     LOADER FOR BIN DECK AND CORRECTIONS                          LS000110
                    *STOCTL  -  STANFORD OCTAL CORRECTION CARD LOADER                        LS000120
                        FUL                                                                  LS000130
                    *       LOADS 22 / CARD COLU7N BINARY AND OCTAL CORRECTION CARDS OFF A2   LS000140
                    *       THE BINARY LOADING SECTION IS FROM WD BL1                         LS000150
                    *       OCTAL CORRECTION CARDS SAME FORMAT AS RW TML                      LS000160
                    *                                                                        LS000170
                    *       THERE MAY BE AS MANY AS 4 OCTAL CORRECTIONS PER CARD, IN THE     LS000180
                    *               FOLLOWING FORMAT ..                                      LS000190
                    *                                                                        LS000200
                    *       COL.    FIELD                                                    LS000210
                    *                                                                        LS000220
                    *        2- 6   LOCATION OF FIRST CORRECTION                             LS000230
                    *        7-18   FIRST CORRECTION                                         LS000240
                    *       20-24   LOCATION OF SECOND CORRECTION                            LS000250
                    *       25-36   SECOND CORRECTION                                        LS000260
                    *       38-42   LOCATION OF THIRD CORRECTION                             LS000270
                    *       43-54   THIRD CORRECTION                                         LS000280
                    *       56-60   LOCATION OF FOURTH CORRECTION                            LS000290
                    *       61-72   FOURTH CORRECTION                                        LS000300
                    *       73-80   IDENTIFICATION                                           LS000310
                    *                                                                        LS000320
                    *               THE FIRST ZERO OR BLANK LOCATION TERMINATES LOADING THE  LS000330
                    *       CARD.  A 1 IN THE BLANK COLUMN IMMDEIATELY BEFORE THE LOADING    LS000340
                    *       ADDRESS WILL CORRECT LOCATION 0 IF THE REST OF THE LOCATION      LS000350
                    *       FIELD IS ZERO.  IN THIS CASE THE LOADING OF CORRECTIONS FROM     LS000360
                    *       THE CARD CONTINUES.                                              LS000370
                    *                                                                        LS000380
                    *               THE LOW ORDER THREE BITS OF EACH CHARACTER ARE           LS000390
                    *       INTERPRETED AS AN OCTAL DIGIT, SO BLANK WILL BE TREATED AS       LS000400
                    *       ZERO, A AS 1, 9 AS 1, ETC.                                       LS000410
                    *                                                                        LS000420
                    *               S. R. RUSSELL,  28 JULY 63                               LS000430
                    *                                                                        LS000440
                            HEAD  L                                                          LS000450
                    01202   Z       TAPENO  A2                                               LS000460
                    77706           ORG     -58                                              LS000470
77706                       B       BSS     12                                               LS000480
                    77717           ORG     *-3                                              LS000490

BINARY CARD NO. LISP0000
    77717  3 00500 0 77722          IORT    *+3,,320                                         LS000500
    77720  0060 00 0 00001          TCOA    1                                                LS000510
    77721  0020 00 0 77722          TRA     LDB                                              LS000520
    77722  0762 00 0 01222  LDB     RTBZ                                                     LS000530
    77723  0540 00 0 77745          RCHZ    IOCT                                             LS000540
    77724  0544 00 0 77741          LCHZ    TXH                                              LS000550
    77725  0022 00 0 77747          TRCZ    FLIP1                                            LS000560
    77726  0500 00 0 77706          CLA     B                                                LS000570
    77727 -0734 00 1 00000          PDX     ,1                                               LS000580
    77730  1 77300 1 77731          TXI     *+1,1,-320                                       LS000590
    77731 -0634 00 1 77706          SXD     B,1                                              LS000600
    77732 -0535 00 1 77706          LDC     B,1                                              LS000610
    77733  0621 00 0 77734          STA     *+1                                              LS000620
    77734 -2 00000 1 00000  LA      TNX     0,1,0                                            LS000630
```

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77735  0540 00 0 77706          RCHZ   B                                  LS000640
77736  0060 00 0 77736          TCOZ   *                                   LS000650
77737  1 00001 1 77740          TXI    *+1,1,1                             LS000660
7774C  0361 60 0 77734          ACL*   LA                                  LS000670
77741  3 00000 1 77737  TXH     TXH    *-2,1,0                             LS000680
77742  0322 00 0 77707          ERA    B+1                                 LS000690
77743  0100 00 0 77722          TZE    LDB                                 LS000700
77744  0000 00 0 77722  HLT     HTR    LDB                                 LS000710
77745 -1 00002 0 77706  IOCT    IOCT   B,,2                                LS000720
                        *                                                  LS000730
77746  0000 00 0 77746          HTR    *                                   LS000740
                        *                                                  LS000750
                                 ABS                                       LS000760
                        *                                                  LS000770

BINARY CARD NO. LISP0001
77747  0764 00 0 01202  FLIP1   BSRZ                                       LS000780
77750  0762 00 0 01202  OCB     RTDZ                                       LS000790
77751  0540 00 0 77776          RCHZ   IOC                                 LS000800
77752  0060 00 0 77752          TCOZ   *                                   LS000810
77753  0022 00 0 77765          TRCZ   FLIP                                LS000820
77754  0774 00 2 00015          AXT    13,2                                LS000830
77755 -0754 00 0 00000  OCL     ZAC                                        LS000840
77756  0074 00 4 77767          TSX    BLD,4                               LS000850
77757  0100 00 0 77750          TZE    OCB                                 LS000860
77760  0621 00 0 77763          STA    SLW                                 LS000870
77761  0074 00 4 77767          TSX    BLD,4                               LS000880
77762  0074 00 4 77767          TSX    BLD,4                               LS000890
77763  0602 00 0 00000  SLW     SLW    -                                   LS000900
77764  0020 00 0 77755          TRA    OCL                                 LS000910
                        *                                                  LS000920
77765  0764 00 0 01202  FLIP    BSRZ                                       LS000930
77766  0020 00 0 77722          TRA    LDB                                 LS000940
                        *                                                  LS000950
77767  0774 00 1 00006  BLD     AXT    6,1                                 LS000960
7776C  0560 00 2 77723          LDQ    B+13,2                              LS000970
77771 -2 00001 2 77750          TNX    OCB,2,1                             LS000980
77772 -0773 00 0 00003  BLDC    RQL    3      PART OF SUBROUTINE TO CONVERT OCTALS LS000990
77773 -0763 00 0 00003          LGL    3                                   LS001000
77774  2 00001 1 77772          TIX    BLDC,1,1                            LS001010

BINARY CARD NO. LISP0002
77775  0020 00 4 00001          TRA    1,4                                 LS001020
                        *                                                  LS001030
77776  0 00014 0 77706  IOC     IOCD   B,,12                               LS001040
                77722    LOAD    SYN    LDB                               LS001050
                77777            ORG    -1                                LS001060
                        *                                                  LS001070

BINARY CARD NO. LISP0003
77777  0 00135 0 77777                 -1,,-STS                            LS001080
                        *                                                  LS001090
                77660            ORG    LOAD-34   COMMON STORAGE          LS001100
77660                   COMMON  BSS    0                                   LS001110
77660                    9L     BSS    24        INPUT BUFFER              LS001120
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                77661   9R      SYN     9L+1            CARD CHECK SUM                          LS001130
                77704   11L     SYN     9L+20           TEMPORARY FOR OCTAL                     LS001140
                77722  LOADER   SYN     LOAD                                                    LS001150
                       *                                                                        LS001160
                       * PROPERTY LISTS FOR THE SPECIAL ATOMS NIL AND VERITAS-NUNQUAM-PERIT THELS001170
                       * ZERO AND THE BINARY TRUTH ATOMS RESPECTIVELY                           LS001180
                       *                                                                        LS001190
                77636          ORG     COMMON-18                                               LS001200

BINARY CARD NO. LISP0004
    77636   0 00141 0 11062  NILSXX          $PNAME,,-*-1                                      LS001210
    77637   0 00000 0 00140                  -*-1                                              LS001220
    7764C  -0 00000 0 00137          MZE     -*-1                                              LS001230
    77641 -053143777777              OCT     453143777777        NIL                           LS001240
    77642   0 00000 0 00424  NILLOC          $ZERO                                             LS001250
                       *                                                                        LS001260
    77643   0 00134 0 12521   STS            $APVAL,,-*-1                                      LS001270
    77644  -0 00132 0 00133          MZE     -*-1,,-*-2                                        LS001280
    77645   0 00000 0 00001                  1                   IS A CONSTANT ,,1 FOR APPLY   LS001290
    77646   0 00131 0 11062                  $PNAME,,-*-1                                      LS001300
    77647   0 00000 0 00130                  -*-1,0                                            LS001310
    77650  -0 00000 0 00127          MZE     -*-1                                              LS001320
    77651 -146354777777              OCT     546354777777                                      LS001330
```

*T*ODD

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                                TTL   BOOTSTRAP RECORD                                                    LS001340
                           *                                                                              LS001350
                           *      BOOTSTRAP RECORD INCLUDES BOOTSTRAP LOADER, LISP READ TAPE              LS001360
                           *      ROUTINE, IOS,CONTIN, FIXUPL, AND CONSTANT POOL.                         LS001370
                           *                                                                              LS001380
                           *                                                                              LS001390
                           *      TRUE BOTTOM OF LISP 1.5                                                 LS001400
                           *                                                                              LS001410
                                        BOOTSTRAP RECORD FOR 709 LISP                                     LS001420
                                                                                                          LS001430
                     00144         ORG     100                 BEGIN LISP                               LS001440
                                   HEAD    B                                                            LS001450
                           *                                                                              LS001460
                           * BOTTOM       THE BOOTSTRAP RECORD FOR LISP ON SYSTEM AND TEMPORARY TAPE     LS001470
                           *                                                                              LS001480

BINARY CARD NO. LISP0005
    00144  0 00421 0 00147  BOTTOM IOCD    BOTTOM+3,,BSRECL-2 I-O COMMAND TO READ IN  BOOTSTRAP REC.     LS001490
    00145  0060 00 0 00001         TCOA    1                  WAIT UNTIL RECORD IS READ IN               LS001500
    00146  0020 00 0 00151         TRA     BTTM               START OF LISP                              LS001510
    00147  433162470105            BCI     1,LISP15                                                      LS001520
    00150  416443600603    SYSNAM  BCI     1,JUL 63                                                      LS001530
    00151  0774 00 4 00003  BTTM    AXT     3,4                NUMBER OF WORDS IN LOWER MEMORY            LS001540
    00152  0500 00 4 00003         CLA     3,4                MOVE THEM TO ORIGINAL POSITION             LS001550
    00153  0601 00 4 00147         STO     BOTTOM+3,4                                                    LS001560
    00154  2 00001 4 00152         TIX     *-2,4,1                                                       LS001570
    00155  0774 00 4 00423         AXT     BSRECL,4           LENGTH OF BOOTSTRAP RECORD                 LS001580
    00156 -0754 00 0 00000         PXD     0,0                CLEAR THE AC                               LS001590
    00157  0361 00 4 00567         ACL     CHKSUM,4           COMPUTE THE CHECK SUM FOR RECORD           LS001600
    00160  2 00001 4 00157         TIX     *-1,4,1                                                       LS001610
    00161  0322 00 0 00567         ERA     CHKSUM             COMPARE WITH THE CHECKSUM ON TAPE          LS001620
    00162  0100 00 0 00164         TZE     *+2                SKIP IF THEY ARE EQUAL                     LS001630
    00163  0074 00 4 00415         TSX   FIXUPL,4                                                        LS001640
    00164  0500 00 0 00202         CLA     STRA               STR TRAP                                   LS001650
    00165  0601 00 0 00002         STO     2                  SET STR CELL                               LS001660
    00166  0500 00 0 00201         CLA     FLTRA              FLOATING POINT TRAP                        LS001670
    00167  0601 00 0 00010         STO     8                  SET TRAP CELL                              LS001680
    00170  0500 00 0 00370         CLA     SYSTAP             TAPE SPECIFICATION FOR SYSTEM TAPE         LS001690
    00171  0074 00 4 00277         TSX     $(IOS),4           SET UP I-O COMMANDS                        LS001700

BINARY CARD NO. LISP0006
    00172  0074 00 4 00203         TSX     LRTAPE,4           READ REST OF SYSTEM TAPE                   LS001710
    00173  0 37200 0 00754               LOWREG,,MIDDLE-LOWREG                                         LS001720
    00174  0074 00 4 00203         TSX   LRTAPE,4                                                        LS001730
    00175  0 37624 0 40154               MIDDLE,,-MIDDLE                                               LS001740
    00176  0522 00 0 00353         XEC     $REW               REWIND SYSTAP                              LS001750
    00177  0020 00 0 77722         TRA     $LOAD              GO TO READ ANY CORRECTION CARDS            LS001760
                           *                                                                              LS001770
                           *                                                                              LS001780
                           * NORMAL CONTENTS FOR CELLS 0, 2, 10 (OCTAL) RESPECTIVELY                      LS001790
                           *                                                                              LS001800
    00200  0 00142 0 77777  ZERC            -1,,-NILSXX        BEGINNING OF ATOM  NIL                     LS001810
    00201  0021 00 0 02453  FLTRA TTR       FLAPTR                                                        LS001820
    00202  0021 00 0 17433  STRA  TTR       C$LINK                                                        LS001830
                     00201  FLAPCX SYN      FLTRA                                                         LS001840
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                    00202  FLAPCY SYN     STRA                                                    LS001850
                    00200  FLAPCZ SYN     ZERC                                                    LS001860
                           *                                                                      LS001870
                           *                                                                      LS001880
                           * LRTAPE       LISP READ TAPE PROGRAM FOR BINARY TAPES                 LS001890
                           *                                                                      LS001900
00203  0500 00 4 00001  LRTAPE CLA     1,4          PARAMETER WORD                               LS001910
00204  0634 00 4 00570         SXA     RTRX,4       SAVE INDEX REGISTERS                         LS001920
00205 -0634 00 2 00570         SXD     RTRX,2                                                    LS001930
00206  0734 00 2 00000   RTTWO PAX     0,2          START ADDRESS                                LS001940
00207  0622 00 0 00210         STD     *+1          COUNT                                        LS001950
00210  1 00000 2 00211         TXI     *+1,2,**     END + 1 ADDRESS                              LS001960
00211  0634 00 2 00571         SXA     RTADR,2      INITIALIZE ADDRESS                           LS001970
00212 -0734 00 2 00000         PDX     0,2          COUNT IN IR 2                                LS001980
00213  0500 00 0 00206         CLA     RTTWO        TAG OF 2                                     LS001990
00214  0625 00 0 00571         STT     RTADR        SET TAG                                      LS002000
00215 -0634 00 0 00571         SXD     RTADR,0      ZERO DECREMENT                               LS002010
00216  0500 00 0 00363         CLA     $LCH         PICK UP CURRENT LOAD CHANNEL INS.            LS002020
00217  0601 00 0 00572         STO     RTLCH        MAKE IMMUNE FROM OVER WRITING                LS002030

BINARY CARD NO. LISP0007
00220  0500 00 0 00347         CLA     $(IOU)       GET CURRENT I-O UNIT                         LS002040
00221  0601 00 0 00573         STO     RTIOU        PREVENT OVERWRITING                          LS002050
00222 -0625 00 0 00360         STL     $TCO         WAIT FOR CHANNELL                            LS002060
00223  0522 00 0 00360         XEC     $TCO         TO GO OUT OF OPERATION                       LS002070
00224  0760 00 0 00005         IOT                  TURN OFF I-O CHECK                           LS002080
00225  0761 00 0 00000         NOP                                                               LS002090
00226 -0774 00 4 00226         AXC     *,4                                                       LS002100
00227  0522 00 0 00361         XEC     $TRC         TURN OFF INDICATOR                           LS002110
00230  0522 00 0 00357         XEC     $TEF         TURN OFF INDICATOR                           LS002120
00231 -0754 00 0 00000   RTRD  PXD     ,0           CLAAR                                        LS002130
00232 -0774 00 4 00275         AXC     RTIOC,4      POINTER TO IO COMMANDS                       LS002140
00233  0522 00 0 00351         XEC     $RDS                                                      LS002150
00234  0522 00 0 00362         XEC     $RCH         RESET AND LOAD CHANNEL                       LS002160
00235  0522 00 0 00572   RTLC  XEC     RTLCH        LOAD CHANNEL                                 LS002170
00236  0560 00 0 00567         LDQ     CHKSUM       PICK UP WORD READ IN                         LS002180
00237 -0600 60 0 00571         STQ*    RTADR        PUT IT AWAY                                  LS002190
00240  0361 60 0 00571         ACL*    RTADR        ADD TO CHECK SUM                             LS002200
00241  2 00001 2 00235         TIX     RTLC,2,1     DO ANOTHER LOAD CHANNEL                      LS002210
00242 -0774 00 4 00276         AXC     RTIOD,4      POINTER TO DISCONNECT INSTRUCTION            LS002220
00243  0522 00 0 00572         XEC     RTLCH        XEC LCH INS.                                 LS002230
00244  0322 00 0 00567         ERA     CHKSUM       SUBTRACT CHECK SUMS                          LS002240
00245  0602 00 0 00567         SLW     CHKSUM       STORE DIFFERENCE                             LS002250

BINARY CARD NO. LISP0008
00246  0500 00 0 00573         CLA     RTIOU        PICK UP CURRENT IOU                          LS002260
00247  0074 00 4 00277         TSX     $(IOS),4     SET UP I-O COMMANDS                          LS002270
00250 -0625 00 0 00360         STL     $TCO         WAIT FOR CHANNEL TO GO OUT OF OPERATIOLS002280
00251  0522 00 0 00360         XEC     $TCO                                                      LS002290
00252  0760 00 0 00005         IOT                  TEST INDICATOR                               LS002300
00253  0020 00 0 00264         TRA     RCK          TRY AGAIN                                    LS002310
00254  0520 00 0 00567         ZET     CHKSUM       SKIP IF CHECK SUMS AGREE                     LS002320
00255  0020 00 0 00264         TRA     RCK          TRY AGAIN                                    LS002330
00256 -0774 00 4 00264         AXC     RCK,4                                                     LS002340
00257  0522 00 0 00361         XEC     $TRC         TEST FOR REDUNDANCY                          LS002350
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00260  0522 CO 0 00357          XEC     $TEF                    AND EOF                                          LS002360
00261  0534 CO 4 00570          LXA     RTRX,4                  RESTORE INDEX REGISTERS                          LS002370
00262 -0534 CO 2 00570          LXD     RTRX,2                                                                   LS002380
00263  0020 00 4 00002          TRA     2,4                     EXIT                                             LS002390
                        *                                                                                        LS002400
00264 -0534 CO 2 00571   RCK    LXD     RTADR,2                 DID NOT WORK, SEE IF FIRST OR SECOND             LS002410
00265 -3 00000 2 00267          TXL     *+2,2,0                                                                  LS002420
00266  0420 CO 0 00002          HPR     2                       SECOND TRY FAILED, STOP                          LS002430
00267 -0634 CO 4 00571          SXD     RTADR,4                 MAKE NON-ZERO                                    LS002440
00270  0522 CO 0 00356          XEC     $BSR                    BACK SPACE AND TRY AGAIN                         LS002450
00271  0534 00 4 00570          LXA     RTRX,4                  GET CALL WORD IR                                 LS002460
00272  0500 CO 4 00001          CLA     1,4                     CALL PARAMETER                                   LS002470
00273 -0734 CO 2 00000          PDX     0,2                     COUNT TO IR 2                                    LS002480

BINARY CARD NO. LISP0009
00274  0020 CO 0 00231          TRA     RTRD                                                                     LS002490
                        *                                                                                        LS002500
00275 -1 00001 0 00567   RTIOC  IOCT    CHKSUM,,1               BRING IN 1 WORD                                  LS002510
00276  0 00000 0 00000   RTIOD  IOCD    0,,0                    DISCONNECT CHANNEL                               LS002520
                        *                                                                                        LS002530
                        *                                                                                        LS002540
                        *       (IOS)   INPUT OUTPUT SUPERVISOR A LA BELL LABS BE SYS 3                          LS002550
                        *                                                                                        LS002560
00277  0340 CO 0 00347   (IOS) CAS     IOU                     CHECK TO SEE IF SAME UNIT AS LAST TIME           LS002570
00300  0020 CO 0 00302          TRA     *+2                     NO                                               LS002580
00301  0020 CO 4 00001          TRA     1,4                     YES EXIT                                         LS002590
00302  0634 CO 4 00326          SXA     IOSX,4                  NO, SAVE LINK IR                                 LS002600
00303  0634 CO 2 00325          SXA     IOSY,2                  SAVE INDEX 2                                     LS002610
00304  0601 CO 0 00347          STO     IOU                     UPDATE IOU                                       LS002620
00305  0621 CO 0 00351          STA     $RDS                    UPDATE ADDRESSES OF TAPE COMMANDS                LS002630
00306  0621 CO 0 00352          STA     $WRS                                                                     LS002640
00307  0621 CO 0 00353          STA     $REW                                                                     LS002650
00310  0621 CO 0 00356          STA     $BSR                                                                     LS002660
00311  0621 CO 0 00354          STA     $WEF                                                                     LS002670
00312  0120 CO 0 00314          TPL     *+2                     TAPE IN NORMAL DENSITH (BIN=HI, BCD=LO           LS002680
00313  0322 CO 0 00350          ERA     IOSBB                   CHANGE DENSITY BIT                               LS002690
00314  0621 CO 0 00355          STA     $SDN                                                                     LS002700
00315  0522 CO 0 00355          XEC     $SDN                                                                     LS002710
00316  0774 CO 2 00005          AXT     5,2                     NUMBER OF COMMANDS TO BE SET                     LS002720
00317 -0734 CO 4 00000          PDX     0,4                     CHANNEL NUMBER TO IR                             LS002730
00320  1 00014 4 00321          TXI     *+1,4,12                TOTAL NUMBER OF COMMANDS - 3                     LS002740
00321 -0500 CO 4 00347   IOSA   CAL     IOU,4                   PICK UP PROPER COMMAND                           LS002750

BINARY CARD NO. LISP0010
00322  0602 CO 2 00364          SLW     COMAND,2                PUT IN PROPER PLACE                              LS002760
00323 -2 00003 4 00325          TNX     IOSY,4,3                DECREMENT BY NUMBER OF CHANNELS                  LS002770
00324  2 00001 2 00321          TIX     IOSA,2,1                LOOP 5 TIMES                                     LS002780
00325  0774 CO 2 00000   IOSY   AXT     **,2                    RESTORE INDEX 2                                  LS002790
00326  0774 CO 4 00000   IOSX   AXT     **,4                    RESTORE LINK IR                                  LS002800
00327  0020 CO 4 00001          TRA     1,4                                                                      LS002810
                        *                                                                                        LS002820
                        *       TAPE COMMANDS FOLLOW                                                             LS002830
                        *                                                                                        LS002840
00330  0031 CO 4 00000          TEFC    0,4                                                                      LS002850
00331 -0030 00 4 00000          TEFB    0,4                                                                      LS002860
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00332  0030 CO 4 C0000          TEFA    0,4                                    LS002870
00333  0062 CO 0 C0000          TCOC    **                                     LS002880
00334  0061 CO 0 00000          TCOB    **                                     LS002890
00335  0060 00 0 00000          TCOA    **                                     LS002900
00336  0024 00 4 00000          TRCC    0,4                                    LS002910
00337 -0022 CO 4 00000          TRCB    0,4                                    LS002920
00340  0022 00 4 00000          TRCA    0,4                                    LS002930
00341  0541 00 4 00000          RCHC    0,4                                    LS002940
00342 -0540 CO 4 00000          RCHB    0,4                                    LS002950
00343  0540 00 4 00000          RCHA    0,4                                    LS002960
00344  0545 CO 4 00000          LCHC    0,4                                    LS002970
00345 -0544 00 4 00000          LCHB    0,4                                    LS002980
00346  0544 CO 4 00000          LCHA    0,4                                    LS002990
00347  0 00000 0 00000  IOU     PZE                    LAST UNIT USED          LS003000

BINARY CARD NO. LISP0011
00350  0 00000 0 00020  IOSBB   PZE     16             BINARY BIT              LS003010
                        HEAD    0                                             LS003020
                       *                                                      LS003030
                       *        ACTUAL TAPE COMMANDS USED BY PROGRAMS (SHOULD BE UNHEADED)  LS003040
                       *                                                      LS003050
00351  0762 CO 0 01220   RDS     RTBA    **                                    LS003060
00352  0766 CO 0 01220   WRS     WTBA    **                                    LS003070
00353  0772 CO 0 01200   REW     REWA    **                                    LS003080
00354  0770 CO 0 01200   WEF     WEFA    **                                    LS003090
00355  0761 CO 0 00000   SDN     NOP                    MAKE A SDN INSTRUCTION FOR 7090  LS003100
00356  0764 CO 0 01200   BSR     BSRA    **                                    LS003110
00357  C030 CO 4 C0000   TEF     TEFA    0,4                                   LS003120
00360  0060 CO 0 00000   TCO     TCOA    **                                    LS003130
00361  0022 CO 4 C0000   TRC     TRCA    0,4                                   LS003140
00362  0540 CO 4 00000   RCH     RCHA    0,4                                   LS003150
00363  0544 CO 4 00000   LCH     LCHA    0,4                                   LS003160
00364                   COMAND  BSS     0                                     LS003170
00364  C 00000 0 00000  SYSPPT  PZE                    ADDRESS,,CHANNEL        LS003180
00365  C 00001 0 01203  SYSPOT          1*512+2*64+3,,1  INTIAL ASSIGNMENT OF A3  LS003190
00366  0 00001 0 01202  SYSPIT          1*512+2*64+2,,1                       LS003200
00367  C 00000 0 00000  SYSTMP                                                LS003210
00370  0 00000 0 00000  SYSTAP                                                LS003220
00371                   TAPASG  BSS     0                                     LS003230
                 00277   (IOS)  SYN     B$(IOS)                               LS003240
                 77722   LOAD   SYN     LOADER                                LS003250
                 00347   (IOU)  SYN     B$IOU                                 LS003260
                       *                                                      LS003270
                              HEAD B                                          LS003280
                       *                                                      LS003290
                       *        CONTIN, SETS UP FROM A COLD START             LS003300
                       *                                                      LS003310
                       *                                                      LS003320
                       *        CONTIN IS USED JUST AFTER LOADING THE ASSEMBLY DECK.  LS003330
                       *        CONT1 IS NORMALLY USED AFTER READING IN FROM THE DISK  LS003340
                       *                                                      LS003350
00371  0500 CO 0 11253  CONTIN  CLA     S$OVIND        THE SMALL PIECE         LS003360
00372  0601 CC 0 11254          STO     SYSIND         OF OVERLORD             LS003370
00373  05C0 CC 0 00615  CONT1   CLA     STSIND         IF MONITOR THINKS WE ARE IN TS MODE,  LS003380
00374  C601 CC 0 00615          STO     $TSIND         WE ARE                  LS003390
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    00375  0600 CC 0 00616          STZ     SYSENB              BUT, WE AREN-T BUYING                  LS003400

BINARY CARD NO. LISP0012
    00376  0564 CO 0 00616          ENB     SYSENB              ANYBODY-S TRAPS TIL WE-RE SURE         LS003410
    00377  0774 CO 4 00016          AXT     14,4                BLANK OUT OVERLORD CARD BUFFER         LS003420
    00400 -0500 CO 0 00414          CAL     CBS                                                        LS003430
    00401  0602 CO 4 00615          SLW     S$OVBUF+14,4                                               LS003440
    00402  2 00001 4 00401          TIX     *-1,4,1                                                    LS003450
    00403  0600 CC 0 00627          STZ     BUFFLG              RESET PDP TO 90 BUFFER FLAG            LS003460
    00404  0522 CO 0 01721          XEC     $SLT1               RESET ERROR INDS                       LS003470
    00405  0761 CO 0 00000          NOP                                                                LS003480
    00406  0522 CC 0 01722          XEC     $SLT2                                                      LS003490
    00407  0761 CO 0 00000          NOP                                                                LS003500
    00410  0522 CO 0 01724          XEC     $SLT4               TO SHWO WE AREN-T BALGOL, REALLY       LS003510
    00411  0761 00 0 00000          NOP                                                                LS003520
    00412  0074 CO 4 00415          TSX     FIXUPL,4            GET LOW MEMORY SET UP                  LS003530
    00413  0020 CO 0 11140          TRA     CVRLRD              GO TO OVERLORD                         LS003540
                                *                                                                      LS003550
    00414  606060606060     CBS    BCI     1,                                                         LS003560
                                *                                                                      LS003570
                                *       FIXUPL  FIX UP LOW REGISTERS . . .                             LS003580
                                *               SETS UP SOME OF THE REQUIRES REGISTERS BELOW 144       LS003590
                                *                                                                      LS003600
    00415  0500 CO 0 00201  FIXUPL CLA     FLAPCX                                                     LS003610
    00416  0601 CO 0 00010          STO     8                                                          LS003620
    00417  0500 CO 0 00202          CLA     FLAPCY                                                     LS003630
    00420  0601 CO 0 00002          STO     2                                                          LS003640
    00421  0500 CO 0 00200          CLA     FLAPCZ                                                     LS003650
    00422  0601 CO 0 00000          STO     0                                                          LS003660
    00423  0020 CO 4 00001          TRA     1,4                                                        LS003670
                                *                                                                      LS003680
                                *       HEAD 0                                                         LS003690
                                *                                                                      LS003700
                                *       CONSTANT POOL                                                  LS003710
                                                                                                       LS003720

BINARY CARD NO. LISP0013
    00424   0 00000 0 00000   ZERO  PZE                                                               LS003730
                      00424   Q0    SYN     ZERO                                                     LS003740
    00425 +000000000001       Q1    DEC     1                                                        LS003750
    00426 +000000000002       Q2    DEC     2                                                        LS003760
    00427 +000000000003       Q3    DEC     3                                                        LS003770
    00430 +000000000004       Q4    DEC     4                                                        LS003780
    00431 +000000000005       Q5    DEC     5                                                        LS003790
    00432 +000000000006       Q6    DEC     6                                                        LS003800
    00433 +000000000007       Q7    DEC     7                                                        LS003810
    00434 +000000000010       Q8    DEC     8                                                        LS003820
    00435 +000000000011       Q9    DEC     9                                                        LS003830
    00436 +000000000012       Q10   DEC     10                                                       LS003840
    00437 +000000000014       Q12   DEC     12                                                       LS003850
    00440   0 00000 0 00015   Q13           13                                                       LS003860
    00441   0 00000 0 00016   Q14           14                                                       LS003870
    00442 +000000000021       Q17   DEC     17                                                       LS003880
    00443 +000000000024       Q20   DEC     20                                                       LS003890
    00444 +000000000025       Q21   DEC     21                                                       LS003900
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00445  0 00000 0 00026   Q22          22                          LS003910
00446 +000000000044      Q36    DEC   36                          LS003920
00447 +000000000077      Q63    DEC   63                          LS003930
00450 +000000000100      Q64    DEC   64                          LS003940
00451 +000000000200      Q128   DEC   128                         LS003950

BINARY CARD NO. LISP0014
00452 +000000000014      Q014   OCT   14                          LS003960
00453 +000000000017      Q017   OCT   17                          LS003970
00454 +000000000020      Q020   OCT   20                          LS003980
00455 +000000000022      Q022   OCT   22                          LS003990
                  00444  Q025   SYN   Q21                         LS004000
00456 +000000000033      Q033   OCT   33                          LS004010
00457 +000000000040      Q040   OCT   40                          LS004020
00460 +000000000041      Q041   OCT   41                          LS004030
00461 +000000000043      Q043   OCT   43                          LS004040
00462 +000000000050      Q050   OCT   50                          LS004050
00463 +000000000060      Q060   OCT   60                          LS004060
00464 +000000000061      Q061   OCT   61                          LS004070
                  00447  Q077   SYN   $Q63                       LS004080
                  00451  Q0200  SYN   Q128                        LS004090
00465 +000000003300     Q033Q2  OCT   3300                        LS004100
00466 +001000000000     Q01Q9   OCT   1000000000                  LS004110
00467 +233000000000     Q233Q9  OCT   233000000000                LS004120
00470 -377000000000     Q777Q9  OCT   777000000000                LS004130
00471 +200000000000     Q02Q11  OCT   200000000000                LS004140
00472  0 00000 1 00000  QT1          ,1                          LS004150
00473  0 00000 2 00000   QT2         ,2                          LS004160
00474  0 00000 4 00000   QT4         ,4                          LS004170
00475  0 00000 5 00000  QT5          0,5                         LS004180
00476  0 00001 0 00000   QD1   PZE   ,,1                         LS004190
00477  0 00002 0 00000   QD2   PZE   ,,2                         LS004200

BINARY CARD NO. LISP0015
00500  0 00005 0 00000   QD5   PZE   ,,5                         LS004210
00501  0 00006 0 00000   QD6   PZE   ,,6                         LS004220
00502  0 00007 0 00000   QD7   PZE   ,,7                         LS004230
00503  0 00024 0 00000   QD20  PZE   ,,20                        LS004240
00504  0 00025 0 00000   QD21  PZE   ,,21                        LS004250
00505 -1 00000 0 00000   QP5   STR                               LS004260
00506  6000000000000     CBLANK BCI   1, 00000                   LS004270
00507  006060606060      ZBLANK BCI   1,0                        LS004280
00510 +201400000000       QF1   DEC   1.0                       LS004290
00511 -0 00000 0 00000    SBIT  MZE                             LS004300
00512 +377777777777      MAGMSK OCT   377777777777              LS004310
00513  0 00000 0 77777    AMASK PZE   -1                        LS004320
00514  0 77777 0 00000    DMASK PZE   ,,-1                      LS004330
00515 -3 00000 0 00000   PMASK  TXL   0,0,0                     LS004340
00516  0 77777 0 77777   ADMASK PZE   -1,,-1                    LS004350
00517  0 00000 7 77777   ATMASK PZE   -1,7                      LS004360
00520 -3 77777 0 00000   PDMASK SVN   ,,-1                      LS004370
00521 -3 77777 7 00000   PDTMSK SVN   0,7,-1                    LS004380
00522 -3 00000 7 77777   PTAMSK SVN   -1,7                      LS004390
00523 +000077000000      CNTMSK OCT   000077000000              LS004400
00524  0 00000 7 00000   TAGMSK PZE   ,7                         LS004410
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    00525 -3 77777 7 77777  SEVENS SVN     -1,7,-1                                          LS004420

BINARY CARD NO. LISP0016
    00526 -377777777760     BTMASK OCT    777777777760                                     LS004430
    00527  606060606060      BLANKS BCI      1,                                             LS004440
    00530                   BCONAT BSS      0           BEGINNING OF CONSTANT ATOMS        LS004450
    00530  0 00000 0 11062  PNAMEA PZE      PNAME                                          LS004460
    00531  0 12521 0 00000  APVALD PZE      ,,APVAL                                        LS004470
    00532  0 11662 0 00000   BIND  PZE      ,,BIN                                          LS004480
                     00532    FIXD  SYN      BIND                                         LS004490
    00533  0 11645 0 00000  FLOATD          ,,$FLOAT                                       LS004500
    00534  0 11630 0 00000  FSUBRD PZE      ,,FSUBR                                        LS004510
    00535  0 11623 0 00000  FNARGD PZE      ,,FUNARG                                       LS004520
    00536  0 11532 0 00000  LABELD PZE      ,,LABEL                                        LS004530
    00537  0 11522 0 00000  LAMDAD PZE      ,,LAMBDA                                       LS004540
    00540  0 11207 0 00000   OCTD           ,,$OCT                                         LS004550
    00541  0 11062 0 00000  PNAMED PZE      ,,PNAME                                        LS004560
    00542  0 10775 0 00000  QUOTED PZE      ,,QUOTE                                        LS004570
    00543  0 10440 0 00000   SUBRD PZE      ,,SUBR                                         LS004580
    00544  0 10615 0 00000  QSPECD PZE      0,,SPECAL                                      LS004590
    00545  0 10413 0 00000   QSYMD PZE      0,,SYM                                         LS004600
    00546  0 11423 0 11760                 ERSETO,,PJ36                                   LS004610
    00547  0 11413 0 11433                 PJ37,,PJ38      LOGAND LOGXOR                  LS004620
    00550  0 11331 0 11341                 -II7,,-II8      MAX MIN                        LS004630
    00551  0 10336 0 11102                 PLUS,,TIMES                                    LS004640
    00552  0 07430 0 07427                 H01,,H02        PROTECT INTEGER OBJECTS        LS004650
    00553  0 07432 0 07431                 H03,,H04                                       LS004660

BINARY CARD NO. LISP0017
    00554  0 07434 0 07433                 H05,,H06                                       LS004670
    00555  0 07436 0 07435                 H07,,H10                                       LS004680
    00556  0 00000 0 07426   H00A  PZE      H00                                            LS004690
    00557  0 00000 0 07440   H12A  PZE      H12                                            LS004700
    00560  0 00000 0 07520   H72A  PZE      H72                                            LS004710
    00561  0 07437 0 00000   H11D  PZE      ,,H11                                          LS004720
    00562  0 07442 0 00000   H14D  PZE      ,,H14                                          LS004730
    00563  0 07461 0 00000   H33D  PZE      ,,H33                                          LS004740
    00564  0 07462 0 00000   H34D  PZE      ,,H34                                          LS004750
    00565  0 07466 0 00000   H40D  PZE      ,,H40                                          LS004760
    00566  0 07522 0 00000   H74D  PZE      ,,H74                                          LS004770
                     00567  ECONAT SYN      *                                            LS004780
                            *                                                            LS004790
                            *                                                            LS004800
                            *       REGISTERS NOT WRITTEN OUT BY OVERLORD                LS004810
                            *                                                            LS004820
                                    HEAD    B                                            LS004830
    00567                   CHKSUM BSS      5           THESE CELLS ARE NOT WRITTEN ON TAP LS004840
                                    HEAD    B           CELLS FOR LRTAPE                 LS004850
                     00570   RTRX  SYN      CHKSUM+1    PROTECTED STORAGE                LS004860
                     00571   RTADR SYN      CHKSUM+2                                     LS004870
                     00572   RTLCH SYN      CHKSUM+3                                     LS004880
                     00573   RTIOU SYN      CHKSUM+4                                     LS004890
                     00423  BSRECL EQU      CHKSUM-BOTTOM   LENGTH OF BOOTSTRAP RECORD   LS004900
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BINARY CARD NO. LISP0018
    00574  C 00000 0 00000  OVLT4                                                  LS004910
                            HEAD    S                                             LS004920
    00575  0 00000 0 00000  OVTX4    MIKE REALLY WAS RIGHT                        LS004930
    00576  C 00000 0 00000  OVCC     PLACE FOR CARRIABE CTL                       LS004940
    00577                   OVBUF   BSS     14      OVERLORD CARD BUFFER         LS004950
                            HEAD    0                                             LS004960

BINARY CARD NO. LISP0019
    00615  0 00000 0 00000  TSIND   PZE             NOISE IF IN TIME STEALING MODE LS004970
                     00615  STSIND  SYN     TSIND                                 LS004980
    00616  C 00000 0 00000  SYSENB  PZE             SYSTEM ENABLE LOCATION       LS004990
                            HEAD    C                                             LS005000
    00617  0 00000 0 00000  INDIC                                                  LS005010
    00620  0 00000 0 00000  AC                                                     LS005020
    00621  C 00000 0 00000  MQ                                                     LS005030
    00622  0 00000 0 00000  CFL                                                    LS005040
    00623  0 00000 0 00000  WCNT                                                   LS005050
    00624  0 00000 0 00000  QP                                                     LS005060
    00625  0 00000 0 00000  XR1                                                    LS005070
    00626  0 00000 0 00000  XR2                                                    LS005080
    00627  0 00000 0 00000  BUFFLG                                                 LS005090
    00630                   RBUFF   BSS     72                                    LS005100
    00740                   BUFF)   BSS     12                                    LS005110
                     00740  BUFR)   EQU     BUFF)                                 LS005120
                     00754  LOWREG  SYN     *       LOWEST REGISTER ON LISP RECORD LS005130
                            *                                                     LS005140
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                                TTL   INPUT, OUTPUT, AND UTILITY                                    LS005150
                          *                                                                       LS005160
                   40154  MIDDLE EQU   LOWREG+16000                                              LS005170
                                 HEAD  B                                                          LS005180
                          *                                                                       LS005190
                          *                                                                       LS005200
                          *      GLORIOUS GENERAL TAPE ROUTINES HIDING UNDER THE CLOAK OF         LS005210
                          *      DISK ROUTINES.  WHAT TREACHERY, YOU SAY -- BUT, THIS SIMP IFIES  LS005220
                          *      CONSIDERABLY THETASK OF MODIFYING LISP FOR STANFORD-S            LS005230
                          *      DISK STORAGE                                                     LS005240
                          *                                                                       LS005250

BINARY CARD NO. LISP0020
    00754  0074 00 4 07136  TAPRW  TSX   TEREAD,4                                                 LS005260
    00755  0500 00 0 00367  DDUMP  CLA   SYSTMP                                                   LS005270
    00756  0074 00 4 00277         TSX $(IOS),4                                                   LS005280
    00757  0074 00 4 01063         TSX LWTAPE,4                                                   LS005290
    00760  0 00423 0 00144               BOTTOM,,BSRECL                                          LS005300
    00761  0074 00 4 01063         TSX   LWTAPE,4                                                 LS005310
    00762  0 37200 0 00754               LOWREG,,MIDDLE-LOWREG                                   LS005320
    00763  0074 00 4 01063         TSX   LWTAPE,4                                                 LS005330
    00764  0 37624 0 40154               MIDDLE,,-MIDDLE                                         LS005340
    00765  0522 00 0 00354         XEC   $WEF                                                     LS005350
    00766  0522 00 0 00353         XEC   $REW                                                     LS005360
    00767  0520 00 0 01155         ZET   WERC                                                     LS005370
    00770  0020 00 0 00754         TRA   TAPRW                                                    LS005380
    00771  0020 00 0 01014         TRA   TPDX4-1                                                  LS005390
                          *                                                                       LS005400
                          *      DLOAD IS OVLTXX FROM ORIGINAL TAPE SYSTEM                        LS005410
                          *                                                                       LS005420
    00772 -0754 00 4 00000  DLOAD  PXD   0,4                                                     LS005430
    00773 -0734 00 2 00000         PDX   0,2                                                      LS005440
    00774  0500 00 0 00367         CLA   SYSTMP                                                   LS005450
    00775  0074 00 4 00277         TSX   $(IOS),4                                                 LS005460
    00776  0074 00 4 00203         TSX   LRTAPE,4                                                 LS005470
    00777  0 00423 0 00144               BOTTOM,,BSRECL                                          LS005480
    01000  0074 00 4 00203         TSX   LRTAPE,4                                                 LS005490
    01001  0 37200 0 00754               LOWREG,,MIDDLE-LOWREG                                   LS005500

BINARY CARD NO. LISP0021
    01002  0074 00 4 00203         TSX   LRTAPE,4                                                 LS005510
    01003  0 37624 0 40154               MIDDLE,,-MIDDLE                                         LS005520
    01004  0522 00 0 00353         XEC   $REW                                                     LS005530
    01005  0020 00 2 00001         TRA   1,2                                                      LS005540
                          *                                                                       LS005550
                          *      END OF GLORIOUS GENERAL TAPE ROUTINES                            LS005560
                          *                                                                       LS005570
                          *                                                                       LS005580
                          *      TAPDMP FOR DISK                                                  LS005590
                          *                                                                       LS005600
    01006  0634 00 4 01015  TAPDMP SXA     TPDX4,4                                               LS005610
    01007  0074 00 4 01033         TSX UNTIM1,4                                                   LS005620
    01010  0074 00 4 07136         TSX     TEREAD,4                                               LS005630
    01011  0560 00 0 01023         LDQ     DISSCR                                                 LS005640
    01012  0074 00 4 00755         TSX     DDUMP,4                                                LS005650
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01013  0020 CO 0 01017          TRA    TAPD1          HERE IF LOADED COLD                    LS005660
01014  0074 CO 4 00415          TSX    FIXUPL,4       GET LOW MEMORY SET UP                  LS005670
01015  0774 CO 4 00000  TPDX4   AXT    -,4                                                   LS005680
01016  0020 CO 4 00001          TRA    1,4                                                   LS005690
                        *                                                                    LS005700
01017  0500 CO 0 01022  TAPD1   CLA    DISFSC         MAKE SCRATCH AREA WHAT IT SHOULD       LS005710
01020  0601 CO 0 01023          STO    DISSCR         BE                                     LS005720
01021  0020 CO 0 00373          TRA    CONT1          INITIALISE SOMEWHAT                    LS005730
                        *                                                                    LS005740
                        *      DISK AREAS                                                    LS005750
                        *                                                                    LS005760
01022  0 00000 0 00000  DISFSC         0              FUTURE SCRATCH AREA                    LS005770
01023  0 00000 0 00000  DISSCR         0              CURRENT SCRATCH AREA                   LS005780
                        *                                                                    LS005790
                        *      OVLTXX  FOR DISK,  LOADS FROM DISK                            LS005800
                        *                                                                    LS005810
01024  0634 CO 4 00574  OVLTXX SXA    OVLT4,4                                               LS005820
01025  0074 CO 4 01033          TSX UNTIM1,4                                                LS005830
01026  0560 CO 0 01023          LDQ    DISSCR                                               LS005840
01027  0074 CO 4 00772          TSX    DLOAD,4                                              LS005850

BINARY CARD NO. LISP0022
01030  0074 CO 4 00415          TSX    FIXUPL,4       GET LOW MEMORY SET UP                  LS005860
01031  0534 CO 4 00574          LXA    OVLT4,4                                               LS005870
01032  0020 CO 4 00001          TRA    1,4                                                   LS005880
                        *                                                                    LS005890
                        *                                                                    LS005900
01033  0601 CO 0 01042  UNTIM1  STO UNTIM2                                                  LS005910
01034  0500 CO 0 00005          CLA 5                                                       LS005920
01035  0140 CO 0 01036          TOV *+1                                                     LS005930
01036  0400 CO 0 01043          ADD UNTIM3                                                  LS005940
01037  0140 CO 0 01055          TOV UNTIM4                                                  LS005950
01040  0500 CO 0 01042          CLA UNTIM2                                                  LS005960
01041  0020 CO 4 00001          TRA 1,4                                                     LS005970
                        *                                                                    LS005980
01042  0 00000 0 00000  UNTIM2                                                             LS005990
01043 +000000005670     UNTIM3 DEC 3000                                                     LS006000
01044  002343462342     UNTIMP BCI   9,0CLOCK TRAP DURING SYSTEM I/O -- I/O SUPPRESSED      LS006010
01045  606351214760
01046  246451314527
01047  606270626325
01050  446031614660
01051  404060316146
01052  606264474751
01053  256262252460
01054  606060606060
                        *                                                                    LS006020
01055  0634 CO 4 00006  UNTIM4 SXA 6,4                                                     LS006030

BINARY CARD NO. LISP0023
01056  0074 CO 4 01527          TSX OUTPUT,4                                                LS006040
01057  0 00000 0 00365              BCDOUT                                                  LS006050
01060  0 00011 0 01044              UNTIMP,,9                                               LS006060
01061  0500 CO 0 01042          CLA UNTIM2                                                  LS006070
01062  0020 CO 0 00007          TRA 7                                                       LS006080
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                                *                                                                  LS006090
    01063  0500 00 4 00001  LWTAPE CLA      1,4          PARAMETER WORD                           LS006100
    01064  0621 00 0 01157         STA      WTIOC        SET UP I-O COMMANDS                      LS006110
    01065  0622 00 0 01157         STD      WTIOC                                                 LS006120
    01066  0622 00 0 01105         STD      WTAD         COUNT                                    LS006130
    01067  0634 00 4 01120         SXA      WTX,4        SAVE LINK IR                             LS006140
    01070  0600 00 0 01156         STZ      WTAG         ZERO TEST CELL                           LS006150
    01071  0600 00 0 01155         STZ      WERC                                                  LS006160
    01072 -0625 00 0 00360         STL      $TCO                                                  LS006170
    01073  0522 00 0 00360         XEC      $TCO         WAIT FOR CHANNEL                         LS006180
    01074  0760 00 0 00005         IOT                   TURN OFF INDICATORS                      LS006190
    01075  0761 00 0 00000         NOP                                                           LS006200
    01076 -0774 00 4 01076         AXC      *,4                                                   LS006210
    01077  0522 00 0 00361         XEC      $TRC                                                  LS006220
    01100  0522 00 0 00357         XEC      $TEF                                                  LS006230
    01101 -0774 00 4 01157  WTWS   AXC      WTIOC,4      POINTER TO IO COMMAND                    LS006240
    01102  0522 00 0 00352         XEC      $WRS                                                  LS006250
    01103  0522 00 0 00362         XEC      $RCH         RESET AND LOAD CHANNEL                   LS006260

BINARY CARD NO. LISP0024
    01104  0534 00 4 01157         LXA      WTIOC,4      ADDRESS OF BEGINNING OF BLOCK            LS006270
    01105  1 00000 4 01106  WTAD   TXI      **+1,4,**    END + 1 OF BLOCK                         LS006280
    01106  0634 00 4 01111         SXA      WTACL,4      SET CHECKSUM COMPUTE ADDRESS             LS006290
    01107 -0534 00 4 01157         LXD      WTIOC,4      COUNT OF BLOCK                           LS006300
    01110 -0754 00 0 00000         PXD      0,0          CLAER AC                                 LS006310
    01111  0361 00 4 00000  WTACL  ACL      **,4         COMPUTE CHECKSUM                         LS006320
    01112  2 00001 4 01111         TIX      *-1,4,1      LOOP                                     LS006330
    01113  0602 00 0 00567         SLW      CHKSUM       STOE IN CHECK SUM CELL                   LS006340
    01114 -0774 00 4 01160         AXC      WTIOD,4      CHECKSUM WRITE COMMAND                   LS006350
    01115  0522 00 0 00363         XEC      $LCH         LOAD CHANNEL                             LS006360
    01116 -0774 00 4 01122         AXC      WRCK,4       TEST FOR WRITE REDUNDANCY                LS006370
    01117  0522 00 0 00361         XEC      $TRC                                                  LS006380
    01120  0774 00 4 00000   WTX   AXT      **,4         RESTORE LINK IR                          LS006390
    01121  0020 00 4 00002         TRA      2,4          EXIT                                     LS006400
                                *                                                                  LS006410
    01122 -0520 00 0 01156  WRCK   NZT      WTAG                                                  LS006420
    01123  0020 00 0 01141         TRA      WAGN         TRY TO WRITE ABAIN                       LS006430
    01124 -0625 00 0 01155         STL      WERC         CELL SAYS THERE WAS BAD TAPE TROULLE     LS006440
    01125 -0534 00 4 00367         LXD      SYSTMP,4     FORM MESSAGE TO OPERATOR                 LS006450
    01126 -0754 00 4 00000         PXA      0,4                                                   LS006460
    01127  0400 00 0 00454         ADD      $QQ20                                                 LS006470
    01130  0767 00 0 00006         ALS      6                                                     LS006480
    01131 -0602 00 0 01146         ORS      WERM                                                  LS006490

BINARY CARD NO. LISP0025
    01132  0500 00 0 00367         CLA      SYSTMP                                                LS006500
    01133 -0320 00 0 00453         ANA      $QQ17                                                 LS006510
    01134 -0602 00 0 01146         ORS      WERM                                                  LS006520
    01135  0074 00 4 01527         TSX      OUTPUT,4     WRITE CHANGE TAPE MESSAGE                LS006530
    01136 -0 00000 0 00365         MZE      BCDOUT                                                LS006540
    01137  0 00007 0 01146                  WERM,,7                                               LS006550
    01140  0420 00 0 00003         HPR      3                                                     LS006560
    01141  0500 00 0 00367  WAGN   CLA      SYSTMP                                                LS006570
    01142  0074 00 4 00277         TSX      $(IOS),4     BACK SPACE SYSTMP                        LS006580
    01143  0522 00 0 00356         XEC      $BSR                                                  LS006590
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01144 -0625 CO 0 01156          STL     WTAG                                    LS006600
01145  0020 CO 0 01101          TRA     WTWS                                    LS006610
                        *                                                       LS006620
01146  606060600000      WERM  BCI     7,    OO IS BAD, CHANGE IT AND START AGAIN. LS006630
01147  603162602221
01150  247360233021
01151  452725603163
01152  602145246062
01153  632151636021
01154  272131453360
                        *                                                       LS006640
01155  0 COOOO 0 OOOOO  WERC                                                    LS006650
01156  0 00000 0 00000   WTAG                  CELL NON-ZERO ON SECOND TRY     LS006660
01157 -1 00000 0 00000   WTIOC IOCT    **,,**   WRITE OUT BLOCK                 LS006670

BINARY CARD NO. LISP0026
01160  0 00001 0 00567   WTICD IOCD    CHKSUM,,1  WRITE OUT CHECK SUM           LS006680
                        *                                                       LS006690
                        *       SAVE AND RESTOR   PRIMARILARILARLY FOR TS       LS006700
                        *                                                       LS006710
01161  0634 CO 4 01163  SAVEXX SXA     SAVR,4                                  LS006720
01162  0074 CO 4 01006          TSX     TAPDMP,4                                LS006730
01163  0774 CO 4 00000  SAVR    AXT     -,4                                     LS006740
01164 -0754 00 0 00000          PXD     ,0              NO JUNK                 LS006750
01165  0020 00 4 00001          TRA     1,4                                     LS006760
                        *                                                       LS006770
01166  0074 CO 4 01024  RESTRO TSX     OVLTXX,4                                LS006780
01167  0020 CO 0 01163          TRA     SAVR                                    LS006790
                        *                                                       LS006800
                        *                                                       LS006810
01170  0500 CO 4 00002   INPUT CLA     2,4                                     LS006820
01171  0634 CO 4 01202          SXA     INX4,4          SAVE LINK IR            LS006830
01172  0601 CO 0 01200          STO     CALL                                    LS006840
01173  0500 CO 0 00366          CLA     SYSPIT          INPUT TAPE SPEC.        LS006850
01174  0074 CO 4 00277          TSX     $(IOS),4        SET UP I-O COMMANDS     LS006860
01175  0522 CO 0 01706          XEC     $SWT1           TEST FOR ON-LINE INPUT  LS006870
01176  0522 CO 0 00351          XEC     $RDS            SELECT INPUT TAPE       LS006880
01177  0074 CO 4 01207          TSX $RTX,4                                      LS006890
01200  0 77777 0 00000   CALL      **,,-1                                       LS006900
01201  0020 CO 0 01204          TRA *+3                                         LS006910
01202  0774 CO 4 00000   INX4    AXT     **,4            RESTORE LINK IR         LS006920
01203  0020 CO 4 00005          TRA 5,4                                         LS006930
01204  0534 CO 4 01202          LXA     INX4,4          RESTORE LINK IR         LS006940
01205 -0120 CO 4 00003          TMI 3,4                                         LS006950

BINARY CARD NO. LISP0027
01206  0020 CO 4 00004          TRA 4,4                                         LS006960
                                                                                LS006970
                        C       HED                                             LS006980
                        *                                                       LS006990
01207  0634 CO 4 01232   RTX    SXA     RTXX,4          SAVE LINK IR            LS007000
01210  0500 CO 4 00001          CLA     1,4             GET PARAMETER WORD      LS007010
01211  0522 CO 0 01706          XEC     $SWT1           TEST FOR ON-LINE INPUT  LS007020
01212  1 00000 0 01215          TXI     H1,,0           IS FROM TAPE            LS007030
01213  0762 CO 0 01321          RCDA                    SELECT CARD READER      LS007040
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01214  1 00000 0 01246          TXI     RDBCD,,0        GO TO CARD IMMAGE CONVERSION PROGRAM  LS007050
01215  0621 00 0 01504    H1    STA     CMMND           SET ADDRESS OF I-O COMMAND            LS007060
01216 -0774 00 4 01220          AXC     *+2,4           LOCATION TO INDEX REGISTER            LS007070
01217  0522 00 0 00357          XEC     $TEF            TURN OFFF EOF INDICATOR               LS007080
01220 -0500 00 0 01234          CAL     H2              PICK UP SWITCH                        LS007090
01221  0601 00 0 01234    H3    STO     H2              SET TO TXH FIRST TIME THROUGH         LS007100
01222 -0774 00 4 01504          AXC     CMMND,4         LOCATION OF I-O COMMAND               LS007110
01223  0522 00 0 00362          XEC     $RCH            RESET AND LOAD CHANNEL                LS007120
01224 -0625 00 0 00360          STL     $TCO            SET UP TCO COMMAND                    LS007130
01225  0522 00 0 00360          XEC     $TCO            WAIT FOR CHANNEL TO GO OUT OF OPERATIOLS007140
01226 -0774 00 4 01241          AXC     RTXBE,4         LOACTION OF BAD EXIT                  LS007150
01227  0522 00 0 00357          XEC     $TEF            GO IF EOF FOUND                       LS007160
01230 -0774 00 4 01234          AXC     H2,4            LOCATION TO TRY AGAIN                 LS007170
01231  0522 00 0 00361          XEC     $TRC            GO IF REDUNDANCY CHECK FOUND          LS007180
01232  0774 00 4 00000    RTXX  AXT     **,4            RESTORE LINK IR                       LS007190
01233  0020 00 4 00003          TRA     3,4             GOOD EXIT                             LS007200

BINARY CARD NO. LISP0028
01234  3 00000 0 01241    H2    TXH     RTXBE,,0        IS TXL ON SECOND TRY                  LS007210
01235  0522 00 0 00356          XEC     $BSR            BACKSPACE RECORD                      LS007220
01236  0522 00 0 00351          XEC     $RDS            SELECT TAPE                           LS007230
01237  0502 00 0 01234          CLS     H2              PICK UP SWITCH                        LS007240
01240 -3 00000 0 01221          TXL     H3,,0           GO TRY AGAIN                          LS007250
01241  0534 00 4 01232    RTXBE LXA     RTXX,4          LINK IR                               LS007260
01242  0020 00 4 00002          TRA     2,4                                                   LS007270
01243  0762 00 0 01321    RCD   RCDA                    RESTART AFTER ERROR                   LS007280
01244 -0534 00 1 01264          LXD B2,1          X                                           LS007290
01245 -0534 00 2 01266          LXD B3,2          X                                           LS007300
01246  0030 00 0 01247    RDBCD TEFA *+1                TURN OFF END FILE INDICATOR           LS007310
01247  0604 00 0 01500          STI B50                 SAVE INDICATORS                       LS007320
01250 -0057 00  000003          RIL 3                   TURN INDICATORS 1,2 OFF               LS007330
01251  0540 00 0 01501          RCHA LR                 READ IN 9 LEFT +RT INTO L,R           LS007340
01252  0544 00 0 01502          LCHA 8LR                DELAY, START 8LEFT + RT INTO 8L,8R    LS007350
01253  0030 00 4 00002          TEFA 2,4                GO TO END OF FILE RETURN IF EOF ON    LS007360
01254  0560 00 0 77667    B1    LDQ L                   X                                     LS007370
01255 -0600 00 0 77661          STQ LS                  SET LEFT SUM                          LS007380
01256 -0634 00 1 01264          SXD B2,1                SAVE INDEX REGISTERS                  LS007390
01257 -0634 00 2 01266          SXD B3,2                X                                     LS007400
01260 -0534 00 1 01275          LXD B4,1                SET DIGIT ROW COUNT                   LS007410
01261  0560 00 0 77670          LDQ R                                                         LS007420

 BINARY CARD NO. LISP0029
01262 -0600 00 0 77662          STQ RS                  SET RIGHT SUM                         LS007430
01263  0074 00 2 01415          TSX C1,2        ENTER CONVERSION LOOP                         LS007440
TD 01264 -3 00000 0 01267  B2   TXL B5          LEAVE CONVERSION LOOP                         LS007450
01265  0767 00 0 00001          ALS 1                                                         LS007460
TD 01266 -3 00000 0 01452  B3   TXL C2          INITIALIZE BCD RECORD                         LS007470
01267  0544 00 0 01501    B5    LCHA LR                 DELAY UNTIL 8 IN, START READING 7     LS007480
01270  0560 00 0 77663          LDQ 8L                  USE 8 ROW AS SUM                      LS007490
01271 -0600 00 0 77661          STQ LS                  X                                     LS007500
01272  0560 00 0 77664          LDQ 8R                  X                                     LS007510
01273 -0600 00 0 77662          STQ RS                  X                                     LS007520
01274  0074 00 2 01415          TSX C1,2        ENTER CONVERSION LOOP                         LS007530
01275 -3 00010 0 01300    B4    TXL B6,0,8      LEAVE CONVERSION LOOP                         LS007540
01276  0767 00 0 00003          ALS 3           ADD 8 TIMES 8 ROW                             LS007550
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TD   01277 -3 C00C0 0 01451          TXL C3          X                                          LS007560
     01300 -0500 C0 0 77667    B6    CAL L           USE 9 ROW AS SUM                           LS007570
     01301  0602 C0 0 77661          SLW LS          X                                          LS007580
     01302 -0500 C0 0 77670          CAL R           X                                          LS007590
     01303  C602 C0 0 77662          SLW RS          X                                          LS007600
     01304 -3 00002 1 01465    B13   TXL B25,1,2           IS IT ZERO OR ONE ROW  YES-        LS007610
     01305  0544 C0 0 01501    B14   LCHA LR               DELAY, READ IN N RT AND LEFT       LS007620
     01306 -0054 CC  000001           LFT 1                 IS END OF RECORD INDICATOR ON      LS007630
     01307  0020 C0 0 01345          TRA B9                YES- END OF RECORD                 LS007640

 BINARY CARD NO. LISP0030
     01310 -0500 C0 0 77667    B8    CAL L                       NO- TEST LEFT ROW FOR      LS007650
     01311 -0320 00 0 77661          ANA LS          ILLEGAL DOUBLE PUNCH                       LS007660
     01312 -0100 C0 0 01470          TNZ B17         X                                          LS007670
     01313 -0500 C0 0 77667    B10   CAL L           FORM LOGICAL SUM                           LS007680
     01314 -0602 C0 0 77661          ORS LS          OF LEFT ROWS                               LS007690
     01315 -0500 C0 0 77670          CAL R           TEST FOR ILLEGAL                           LS007700
     01316 -0320 00 0 77662          ANA RS          DOUBLE PUNCH                               LS007710
     01317 -0100 C0 0 01470          TNZ B17         X                                          LS007720
     01320 -0500 C0 0 77670    B11   CAL R           FORM LOGICAL SUM OF                        LS007730
     01321 -0602 C0 0 77662          ORS RS          RIGHT ROWS                                 LS007740
     01322 -2 00001 1 01461          TNX B12,1,1     TEST FOR ZONE ROWS                         LS007750
     01323  0074 C0 2 01415          TSX C1,2        ENTER CONVERSION LOOP                      LS007760
TD   01324 -3 00000 0 01304          TXL B13         LEAVE CONVERSION LOOP                      LS007770
TD   01325 -3 00000 0 01451          TXL C3          ADD TO BCD RECORD                          LS007780
     01326 -0500 C0 0 77663    B7    CAL 8L          ADD 8 LEFT ROW TO                          LS007790
     01327 -0501 C0 0 77661          ORA LS          LEFT LOGICAL SUM                           LS007800
     01330  0602 C0 0 77663          SLW LDS         X                                          LS007810
     01331  0544 C0 0 01501          LCHA LR               DELAY, START READING X-L,R INTO L,R LS007820
     01332 -0320 C0 0 77665          ANA LZ                FORM INDICATOR FOR                 LS007830
     01333  0602 00 0 77661          SLW LS          BOTH DIGIT AND ZERO                        LS007840
     01334 -0500 C0 0 77664          CAL 8R          ADD 8 RIGHT ROW TO                         LS007850
     01335 -0501 00 0 77662          ORA RS          RIGHT LOGICAL SUM                          LS007860

 BINARY CARD NC. LISP0031
     01336  0602 C0 0 77664          SLW RDS         X                                          LS007870
     01337 -0320 00 0 77666          ANA RZ          FORM INDICATOR FOR                         LS007880
     01340  0602 C0 0 77662          SLW RS          BOTH DIGIT AND ZERO                        LS007890
     01341  0074 C0 2 01415    B40   TSX C1,2              ENTER CONVERSION LOOP              LS007900
TD   01342 -3 00000 0 01305          TXL B14         LEAVE CONVERSION LOOP                      LS007910
     01343  0767 C0 0 00004          ALS 4           SHIFT TO ZONE POSITION                     LS007920
TD   01344 -3 00000 0 01451          TXL C3          X                                          LS007930
     01345 -0500 00 0 77661    B9    CAL LS          SAVE LEFT ZONE SUM                         LS007940
     01346  0602 C0 0 77667          SLW L           X                                          LS007950
     01347 -0500 C0 0 77663          CAL LDS         FORM INDICATOR FOR                         LS007960
     01350  0760 00 0 00006          COM             ZERO AND X AND / OR Y                      LS007970
     01351 -0320 C0 0 77665          ANA LZ          IN LEFT ROWS                               LS007980
     01352  0320 C0 0 77661          ANS LS          X                                          LS007990
     01353 -0500 C0 0 77662          CAL RS          SAVE RIGHT ZONE SUM                        LS008000
     01354  0602 C0 0 77670          SLW R           X                                          LS008010
     01355 -0500 C0 0 77664          CAL RDS         FORM INDICATOR FOR                         LS008020
     01356  0760 C0 0 00006          COM             ZERO AND X AND/OR Y                        LS008030
     01357 -0320 C0 0 77666          ANA RZ          IN RIGHT ROWS                              LS008040
     01360  0320 00 0 77662          ANS RS          X                                          LS008050
     01361  0074 00 2 01415          TSX C1,2        ENTER CONVERSION LOOP                      LS008060
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TD   01362 -3 00000 0 01370          TXL B15          LEAVE CONVERSION LOOP                    LS008070
     01363  0602 CO 0 77660          SLW TP           MULTIPLY INDICATOR                       LS008080

 BINARY CARD NO. LISP0032
     01364  0767 CO 0 00002          ALS 2            BITS BY TEN                              LS008090
     01365  0361 CO 0 77660          ACL TP           X                                        LS008100
     01366  0767 CO 0 00001          ALS 1            X                                        LS008110
TD   01367 -3 00000 0 01451          TXL C3           X                                        LS008120
     01370 -0500 CO 0 77663    B15    CAL LDS          FORM INDICATOR FOR                       LS008130
     01371 -0501 CO 0 77665          ORA LZ           BLANK COLUMNS IN                         LS008140
     01372 -0501 CO 0 77667          ORA L            LEFT HALF OF CARD                        LS008150
     01373  0760 CO 0 00006          COM              X                                        LS008160
     01374  0602 CO 0 77661          SLW LS           X                                        LS008170
     01375 -0500 CO 0 77664          CAL RDS          FORM INDICATOR FOR                       LS008180
     01376 -0501 CO 0 77666          ORA RZ           BLANK COLUMNS IN                         LS008190
     01377 -0501 CO 0 77670          ORA R            RIGHT HALF OF CARD                       LS008200
     01400  0760 CO 0 00006          COM              X                                        LS008210
     01401  0602 CO 0 77662          SLW RS           X                                        LS008220
     01402  0074 CO 2 01415          TSX C1,2         ENTER CONVERSION LOOP                    LS008230
TD   01403 -3 00000 0 01411          TXL B16          LEAVE CONVERSION LOOP                    LS008240
     01404  0602 CO 0 77660          SLW TP           MULTIPLY INDICATOR                       LS008250
     01405  0767 CO 0 00001          ALS 1            BITS BY 3 AND                            LS008260
     01406  0361 CO 0 77660          ACL TP           SHIFT TO ZONE POSITION                   LS008270
     01407  0767 CO 0 00004          ALS 4            X                                        LS008280
TD   01410 -3 00000 0 01451          TXL C3           X                                        LS008290
     01411 -0534 CO 1 01264    B16    LXD B2,1         RESTORE INDEX REGISTERS                  LS008300

 BINARY CARD NO. LISP0033
     01412 -0534 CO 2 01266          LXD B3,2         AND RETURN TO MAIN                       LS008310
     01413  0441 CO 0 01500          LDI B50                RESTORE INDICATORS                 LS008320
     01414  0020 CO 4 00003          TRA 3,4          PROGRAM                                  LS008330
     01415 -0634 00 1 01420    C1     SXD C4,1         SAVE ROW COUNT                           LS008340
     01416 -0500 CO 4 00001    C9     CAL 1,4          INITIALIZE ADDRESSES                     LS008350
     01417  0401 CO 0 01434          ADM C7           X  ADD 6                                 LS008360
     01420 -3 00000 0 01424    C4     TXL C6,,**       TRANSFER IO LEFT ROW                     LS008370
     01421  0401 00 0 01434          ADM C7           RIGHT ROW, ADD 6 MORE                    LS008380
     01422  0560 CO 0 77662          LDQ RS           OBTAIN RIGHT SUM AND                     LS008390
TD   01423  1 00000 0 01425          TXI C8            SKIP OVER LEFT SUM                      LS008400
     01424  0560 00 0 77661    C6     LDQ LS           OBTAIN LEFT SUM                          LS008410
     01425  0621 CO 0 01452    C8     STA C2           SET BCD RECORD ADDRESS                   LS008420
     01426  0621 00 0 01451          STA C3           X                                        LS008430
     01427  3 00001 1 01433          TXH C5,1,1       SKIP TEST IF DIGIT ROW                   LS008440
     01430 -0600 CO 0 77660          STQ TP           TEST FOR NO SUM                          LS008450
     01431 -0500 CO 0 77660          CAL TP           X                                        LS008460
     01432  0100 CO 0 01455          TZE C11          X                                        LS008470
     01433  0534 00 1 01434    C5     LXA C7,1         SET WORD COUNT                           LS008480
     01434 -0754 00 0 00006    C7     PXD    6,0             CONVERT ROW                       LS008490
     01435 -0763 CO 0 00001          LGL 1            X                                        LS008500
     01436  0767 CO 0 00005          ALS 5            X                                        LS008510
     01437 -0763 CO 0 00001          LGL 1            X                                        LS008520

 BINARY CARD NO. LISP0034
     01440  0767 CO 0 00005          ALS 5            X                                        LS008530
     01441 -0763 00 0 00001          LGL 1            X                                        LS008540
     01442  0767 CO 0 00005          ALS 5            X                                        LS008550
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      01443 -0763 CO 0 00001          LGL 1              X                                        LS008560
      01444  0767 CO 0 00005          ALS 5              X                                        LS008570
      01445 -0763 CO 0 00001          LGL 1              X                                        LS008580
      01446  0767 CO 0 00005          ALS 5              X                                        LS008590
      01447 -0763 CO 0 00001          LGL 1              X                                        LS008600
      01450  0020 CO 2 00002          TRA 2,2            EXIT FOR ROW PROCEDURE                   LS008610
      01451  0361 CO 1 00000  C3       ACL 0,1            ADD TO BCD RECORD                        LS008620
      01452  0602 CO 1 00000  C2       SLW 0,1            STORE IN BCD RECORD                      LS008630
      01453  2 00001 1 01434          TIX C7,1,1         COUNT WORDS                              LS008640
      01454 -0534 CO 1 01420          LXD C4,1           RESTORE ROW COUNT                        LS008650
      01455  0502 CO 0 01420  C11      CLS C4             INVERT ROW SWITCH AND                    LS008660
      01456  0601 CO 0 01420          STO C4              TEST FOR RIGHT ROW DONE                 LS008670
      01457 -0120 00 2 00001          TMI 1,2            TRANSFER IF RIGHT ROW DONE               LS008680
TD    01460  1 00000 0 01416  C10      TXI C9             GO CONVERT RIGHT ROW                     LS008690
      01461 -0051 00  000002  B12      IIL 2                    CHANGE INDICATOR BIT 17           LS008700
      01462 -0056 00  000002          LNT 2                    IS THIS TWELVE ROW                LS008710
      01463  0020 CO 0 01472          TRA B100                 CHANGE                            LS008720
      01464  0020 CO 0 01341          TRA B40                  NO                                LS008730
      01465 -3 00001 1 01326  B25      TXL B7,1,1         IS IT XERO ROW OR ONE ROW                LS008740

 BINARY CARD NO. LISP0035
      01466  0544 CO 0 01503          LCHA ZLR                                                    LS008750
      01467  0020 CO 0 01310          TRA B8                                                      LS008760
      01470 -0760 CO 0 00003  B17      SSM                      SET ERROR SIGN                     LS008770
      01471  1 00001 4 01411          TXI     B16,4,1          RESTORE INDEX REGISTERS AND MAKE BAD XLS008780
      01472  0060 CO 0 01472  B100     TCOA *                                                      LS008790
      01473  0074 CO 2 01415          TSX C1,2                                                    LS008800
TD    01474 -3 00000 0 01477          TXL B200                                                    LS008810
      01475  0767 CO 0 00004          ALS 4                                                       LS008820
TD    01476 -3 00000 0 01451          TXL C3                                                      LS008830
      01477  0020 CO 0 01345   B200     TRA B9                                                      LS008840
      01500  0 00000 0 00000   B50      PZE                      INDICATOR STORAGE                  LS008850
      01501 -3 00002 0 77667   LR       MTH L,0,2                                                   LS008860
      01502 -3 00002 0 77663   8LR      MTH 8L,0,2                                                  LS008870
      01503 -3 00002 0 77665   ZLR      MTH LZ,0,2                                                  LS008880
      01504 -3 77777 0 00000  CMMND     MTH      **,0,-1                                            LS008890
                      77660              ORG      COMMON                                            LS008900
      77660                     TP       BSS 1              TEMPORARY                               LS008910
      77661                     LS       BSS 1              LEFT SUM                                LS008920
      77662                     RS       BSS 1              RIGHT SUM                               LS008930
      77663                     LDS      BSS 1              LEFT DIGIT SUM                          LS008940
      77664                     RDS      BSS 1              RIGHT DIGIT SUM                         LS008950
      77665                     LZ       BSS 1              LEFT ZERO ROW                           LS008960
      77666                     RZ       BSS 1              RIGHT ZERO ROW                          LS008970
      77667                     L        BSS 1              LEFT ROW                                LS008980
      77670                     R        BSS 1              RIGHT ROW                               LS008990
                      77663     8L       SYN LDS            8 LEFT ROW                              LS009000
                      77664     8R       SYN RDS            8 RIGHT ROW                             LS009010
                      01505              ORG      CMMND+1                                           LS009020
                            C            HED                                                        LS009030
                      00000     BCDIN    EQU 0                                                      LS009040
                      01207     RTX      SYN      C$RTX                                             LS009050
                                         HEAD     D                                                 LS009060
                            *                                                                       LS009070
                            *            SPACEX   PROVIDES A VARITY OF SPACES ON OFF LINE PRINTER   LS009080
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                        *                                                                  LS009090

BINARY CARD NO. LISP0036
    01505  0522 00 0 01712  SPACEX XEC     $SWT5          TEST FOR NO OFF-LINE OUTPUT      LS009100
    01506  0020 00 0 01510         TRA     *+2                                             LS009110
    01507  0020 00 4 00002         TRA     2,4            RETURN                           LS009120
    01510  0634 00 4 01513         SXA     SPX,4          SAVE LINK IR                     LS009130
    01511  0500 00 0 00365         CLA     SYSPOT         SET UP TAPES                     LS009140
    01512  0074 00 4 00277         TSX     $(IOS),4                                        LS009150
    01513  0774 00 4 00000   SPX   AXT     **,4           RESTORE LINK IR                  LS009160
    01514  0500 00 4 00001         CLA     1,4            GET PARAMETER                    LS009170
    01515  0737 00 4 00000         PAC     0,4            COMPLEMENT INTO IR 4             LS009180
    01516  0522 00 0 00352         XEC     $WRS                                            LS009190
    01517  0522 00 0 00362         XEC     $RCH                                            LS009200
    01520  0534 00 4 01513         LXA     SPX,4                                           LS009210
    01521  0020 00 4 00002         TRA     2,4            RETURN                           LS009220
    01522  2 00001 0 00507  8SPACE IORP    ZBLANK,,1      DOUBLE SPACE                     LS009230
    01523  2 00001 0 00507  6SPACE IORP    ZBLANK,,1      DOUBLE SPACE                     LS009240
    01524  2 00001 0 00507  4SPACE IORP    ZBLANK,,1      DOUBLE SPACE                     LS009250
    01525  2 00001 0 00507  2SPACE IORP    ZBLANK,,1      DOUBLE SPACE                     LS009260
    01526  0 00000 0 00000         IOCD    0,,0           DISCONNECT CHANNEL               LS009270
                        *                                                                  LS009280
                        * OUTPUT       BCD OUTPUT ROUTINE FOR LISP                       LS009290
                        * SWITCHES...                                                      LS009300
                        *   3  PRINT ON-LINE                                             LS009310
                        *   5  DONT WRITE TAPE FOR OFF-LINE PRINTING                     LS009320
                        *                                                                  LS009330
    01527  0634 00 4 01554  OUTPUT SXA     WOTX,4         SAVE LINK IR                     LS009340
    01530  0520 00 0 02251         ZET W$SPCON                                           LS009350
    01531  0020 00 0 02253         TRA W$SPAC1                                           LS009360
    01532  0500 00 4 00002  WOT2   CLA     2,4            GET PARAMETER WORD               LS009370
                   01532  SPAC3   SYN   WOT2                                            LS009380

BINARY CARD NO. LISP0037
    01533  0622 00 0 01677         STD     WOTC           SET COUNT OF I-O COMMAND         LS009390
    01534  0400 00 0 00443         ADD     $Q20           END OF BLOCK                     LS009400
    01535  0621 00 0 01543         STA     WOTM           SET MOVE LOOP                    LS009410
    01536 -0625 00 0 00360         STL     $TCO           WAIT FOR COMPLETION OF LAST OPERATION LS009420
    01537  0522 00 0 00360         XEC     $TCO                                            LS009430
    01540  0500 60 4 00001         CLA*    1,4            GET TAPE SPECIFICATION           LS009440
    01541  0074 00 4 00277         TSX     $(IOS),4       SET UP I-O COMMANDS              LS009450
    01542  0774 00 4 00024         AXT     20,4           MAXIMIUM THAT MAY BE ON 1 RECORD LS009460
    01543  0500 00 4 00000   WOTM  CLA     **,4           MOVE INTO BUFFER                 LS009470
    01544  0601 00 4 01677         STO     WOTB,4                                          LS009480
    01545  2 00001 4 01543         TIX     WOTM,4,1                                        LS009490
    01546  0522 00 0 01712         XEC     $SWT5          TEST FOR NO TAPE OUTPUT          LS009500
    01547  0020 00 0 01551         TRA     *+2            IS OUTPUT ON TAPE                LS009510
    01550  0020 00 0 01554         TRA     WOTX           TEST FOR ON-LINE OUTPUT          LS009520
    01551 -0774 00 4 01677         AXC     WOTC,4         POINTER TO IO COMMAND            LS009530
    01552  0522 00 0 00352         XEC     $WRS                                            LS009540
    01553  0522 00 0 00362         XEC     $RCH           RESET ANF LOAD CHANNEL           LS009550
    01554  0774 00 4 00000   WOTX  AXT     **,4           RESTORE LINK IR                  LS009560
    01555  0500 00 4 00001         CLA     1,4            TEST FOR ON-LINE                 LS009570
    01556  0522 00 0 01710         XEC     $SWT3          ON-LINE SENSE SWITCH             LS009580
    01557  0120 00 4 00003         TPL     3,4                                             LS009590
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                        * DM 716A - 48 CARDS - 02-09-59                                          LS009600
                        *BCD ON-LINE PRINT ROUTINE FOR 709                                       LS009610
                        * MODIFED FOR USE IN LISP 1.5                                           LS009620
    01560  0634 00 4 01644   WOTON SXA     WOTU,4              PRINT ON LINE                     LS009630

BINARY CARD NO. LISP0038
    01561  0634 00 2 01645         SXA     WOTV,2              SAVE INDEX REGISTERS              LS009640
    01562  0634 00 1 01646         SXA     WOTW,1                                                LS009650
    01563  0600 00 0 01650         STZ     WOTT                SET SWITCH                        LS009660
    01564  0600 00 0 01651         STZ     WOTS                SET SWITCH TO SKIP FIRST CHARACTER LS009670
    01565 -0534 00 6 01677         LXD     WOTC,6              COUNT IN  INDEX 4 AND 2           LS009680
    01566  1 01653 4 01567         TXI     *+1,4,WOTB-20       ADD BEGINNING OF BUFFER           LS009690
    01567  0634 00 4 01576         SXA     BC05,4              SET ADDRESS                       LS009700
    01570  0060 00 0 01570  BC02   TCOA    *                   WAIT                              LS009710
    01571  0774 00 4 00030         AXT     24,4            CLEAR                                 LS009720
    01572  0600 00 4 77712         STZ     COMMON+26,4       WORKING                             LS009730
    01573  2 00001 4 01572         TIX     *-1,4,1           STORAGE                             LS009740
    01574 -0500 00 0 00511   BC03  CAL     BC50            STROBE STARTER                        LS009750
    01575  0634 00 2 01601   BC04  SXA     BC01,2          WORKING CELL FOR N                    LS009760
    01576  0560 00 2 00000   BC05  LDQ     0,2             PICK UP WORD TO CONVERT               LS009770
    01577  0774 00 2 00006         AXT     6,2             X2 COUNTS 6 CHARACTERS                LS009780
    01600  0602 00 0 77712   BC06  SLW     COMMON+26       STROBE                                LS009790
    01601 -0754 00 0 00000   BC07  PXD     **,0                                                  LS009800
    01602 -0763 00 0 00006         LGL     6               LOOK AT                               LS009810
    01603 -0520 00 0 01651         NZT     WOTS                 SKIP IF NOT FIRST CHARACTER      LS009820
    01604  0500 00 0 00463         CLA     $Q060                GET BCD BLANK FOR LEADING CHARACTER LS009830
    01605  0767 00 0 00001         ALS     1                  ONE CHARACTER                      LS009840
    01606  0734 00 1 00000         PAX     ,1                                                    LS009850

BINARY CARD NO. LISP0039
    01607 -0500 00 0 77712         CAL     COMMON+26       STROBE                                LS009860
    01610 -2 00140 1 01612         TNX     *+2,1,96        NOT 0                                 LS009870
    01611 -0602 00 4 77705         ORS     COMMON+21,4     0                                     LS009880
    01612  3 00136 1 01625         TXH     BC08,1,94       BLANK                                 LS009890
    01613 -2 00076 1 01616         TNX     *+3,1,62        NOT 11                                LS009900
    01614 -0602 00 4 77707         ORS     COMMON+23,4     11                                    LS009910
    01615 -2 00002 1 01625         TNX     BC08,1,2                                              LS009920
    01616 -2 00036 1 01621         TNX     *+3,1,30        NOT 12                                LS009930
    01617 -0602 00 4 77711         ORS     COMMON+25,4     12                                    LS009940
    01620 -2 00002 1 01625         TNX     BC08,1,2                                              LS009950
    01621 -2 00022 1 01624         TNX     *+3,1,18        NOT 8 COMBINATION                     LS009960
    01622  1 00002 1 01623         TXI     *+1,1,2                                               LS009970
    01623 -0602 00 4 77665         ORS     COMMON+5,4      8 COMBINATION                         LS009980
    01624 -0602 00 5 77705         ORS     COMMON+21,5     NUMBER                                LS009990
    01625  0771 00 0 00001   BC08  ARS     1               MOVE STROBE                           LS010000
    01626 -0625 00 0 01651         STL     WOTS                 SET SWITCH                       LS010010
    01627  2 00001 2 01600         TIX     BC06,2,1        BACK FOR NEXT CHARACTER               LS010020
    01630  0534 00 3 01601         LXA     BC01,3          N                                     LS010030
    01631 -2 00001 2 01635         TNX     BC15,2,1        OUT IF N WORDS DONE                   LS010040
    01632 -0100 00 0 01575         TNZ     BC04            BACK FOR REST OF HALF-CARD            LS010050
    01633 -3 00000 4 01635         TXL     BC15,4,0        RIGHT-HALF DONE                       LS010060
    01634  1 77777 4 01574         TXI     BC03,4,-1       BACK FOR RIGHT HALF                   LS010070
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BINARY CARD NO. LISP0040
    01635  0766 CO C 01361  BC15   WPDA                                                    LS010080
    01636  0540 CO 0 01652         RCHA    BC49                                           LS010090
    01637  0520 CO 0 01650         ZET     WOTT                                           LS010100
    0164C  0760 CO 0 01371         SPRA    9                                              LS010110
    01641 -0625 CO 0 01650         STL     WOTT            SET SWITCH FOR SECOND HALF LINE LS010120
    01642  3 00001 1 01570         TXH     BC02,1,1    BACK FOR MORE WORDS                LS010130
    01643  0060 CO 0 01643         TCOA    *                                              LS010140
    01644  0774 CO 4 00000   WOTU   AXT     **,4            RESTORE INDEX REGISTERS        LS010150
    01645  0774 OO 2 00000   WOTV   AXT     **,2                                           LS010160
    01646  0774 CO 1 00000   WOTW   AXT     **,1                                           LS010170
    01647  0020 CO 4 00003         TRA     3,4             EXIT                           LS010180
                          *                                                               LS010190
    01650  0 00000 0 00000   WOTT                           NON-ZERO ON SECOND HALF LINE   LS010200
    01651  0 00000 0 00000   WOTS                           ZERO FOR FIRST CHARACTER       LS010210
    01652  0 00030 0 77662   BC49   IOCD    COMMON+2,,24                                   LS010220
                   01601     BC01   SYN     BC07                                           LS010230
                   00511     BC50   SYN     $SBIT                                          LS010240
                          *                                                               LS010250
    01677                    WOTB   BES     20              OUTPUT BUFFER                  LS010260

BINARY CARD NO. LISP0041
    01677  2 00000 0 01653   WOTC   IORP    WOTB-20,,**     WRITE RECORD FROM BUFFER       LS010270
    0170C  0 00000 0 00000         IOCD    0,,0            DISCONNECT CHANNEL             LS010280
                   00365     BCDOUT SYN     SYSPOT                                         LS010290
                   00364     PPTOUT SYN     SYSPPT                                         LS010300
                          *                                                               LS010310
                          *                                                               LS010320
    01701  0762 CO 0 01321  PSHLDB RCDA                                                   LS010330
    01702  0540 CO 0 01705         RCHA *+3                                               LS010340
    01703  0544 CO 0 00000         LCHA C                                                 LS010350
    01704  0021 CO 0 00001         TTR 1                                                  LS010360
    01705 -1 00003 0 00000         IOCT 0,,3                                              LS010370
                                   HEAD    0                                              LS010380
                          * $SWTN COMMANDS                ALL SWT COMMANDS ARE EXECUTED  LS010390
                          * NOTE....      SWT COMMANDS MAY BE SIMULATED BY MAKING DOWN SWITCHES LS010400
                          *       ZET     $ZERO                                          LS010410
                          *               AND UP SWITCHES                                LS010420
                          *       NZT     $ZERO                                          LS010430
                          *                                                              LS010440
    01706  0760 CO 0 00161   SWT1   SWT     1                                          LS010450
    01707  0760 CO 0 00162   SWT2   SWT     2                                          LS010460
    01710  0760 CO 0 00163   SWT3   SWT     3                                          LS010470
    01711  0760 CO 0 00164   SWT4   SWT     4                                          LS010480
    01712  0760 CO 0 00165   SWT5   SWT     5                                          LS010490
    01713  0760 CO 0 00166   SWT6   SWT     6                                          LS010500
                          *                                                             LS010510
                          * SENSE LIGHT AND TEST INSTRUCTIONS TO BE EXECUTED OR DUMMYED LS010520
                          *                                                             LS010530
    01714  0760 CO 0 00141   SLN1   SLN     1                                          LS010540
    01715  0760 CO 0 00142   SLN2   SLN     2                                          LS010550
    01716  0760 CO 0 00143   SLN3   SLN     3                                          LS010560
    01717  0760 CO 0 00144   SLN4   SLN     4                                          LS010570
    01720  0760 CO 0 00140   SLF    SLF                                                LS010580
    01721 -0760 CO 0 00141   SLT1   SLT     1                                          LS010590
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01722 -0760 CO 0 00142   SLT2  SLT     2                                  LS010600
01723 -0760 CO 0 00143   SLT3  SLT     3                                  LS010610
01724 -0760 CO 0 00144   SLT4  SLT     4                                  LS010620
                                                                          LS010630
                         *                                                LS010640
                         *       EVTIME AND FRIENDS KEEP TRACK OF SYSTEM AGE FOR  LS010650
                         *       EVALQUOTE PRINTOUTS                      LS010660
                         *                                                LS010670

BINARY CARD NO. LISP0042
01725  0634 CO 4 02027  EVTIME SXA TIMSAV,4                               LS010680
01726  0500 CO 0 01754         CLA TIME1-1                                LS010690
01727  0601 CO 0 02036         STO TIMOT1                                 LS010700
01730  0601 CO 0 02040         STO TIMOT2                                 LS010710
01731  0500 CO 0 00005         CLA 5                                      LS010720
01732  0601 CO 0 02031         STO TIME2                                  LS010730
01733  0601 CO 0 01740         STO EVTIM4                                 LS010740
01734  0560 CO 0 02032         LDQ TIME3                                  LS010750
01735 -0600 CO 0 01737         STQ EVTIM1                                 LS010760
01736  0020 CO 0 02013         TRA EVTIM2+1                               LS010770
                         *                                                LS010780
01737  0 00000 0 00000  EVTIM1                 SAVE SYSTEM AGE           LS010790
01740  0 00000 0 00000  EVTIM4                 SAVE AGE OF SETS          LS010800
                         *                                                LS010810
01741  0634 00 4 02027  EVTIM3 SXA TIMSAV,4                               LS010820
01742  0500 00 0 01740         CLA EVTIM4                                 LS010830
01743  0402 00 0 00005         SUB 5                                      LS010840
01744  0760 00 0 00003         SSP                                        LS010850
01745  0131 00 0 00000         XCA                                        LS010860
01746 -0600 00 0 02032         STQ TIME3                                  LS010870
01747  0500 00 0 01737         CLA EVTIM1                                 LS010880
01750  0400 00 0 02032         ADD TIME3                                  LS010890
01751  0601 00 0 02032         STO TIME3                                  LS010900
01752  0020 00 0 02002         TRA EVTIM5+1                               LS010910
                         *                                                LS010920
                         *                                                LS010930
                         *       TIME PRINTS THE TIME SINCE LAST TIME TIME WAS  LS010940
                         *       CALLED AND TIME SINCE LAST TIME TIME1 WAS  LS010950
                         *       CALLED.  TIME1 INITIALIZES TIME COUNTERS TO ZERO.  LS010960
                         *                                                LS010970

BINARY CARD NO. LISP0043
01753 +000000165140              OCT 165140                               LS010980
01754 -206060606000              OCT 606060606000                         LS010990
01755  0500 00 0 01754  TIME1    CLA *-1                                  LS011000
01756  0601 00 0 02036           STO TIMOT1                               LS011010
01757  0601 00 0 02040           STO TIMOT2                               LS011020
01760  0601 00 0 02043           STO TIMOT3                               LS011030
01761  0601 00 0 02045           STO TIMOT4                               LS011040
01762  0500 00 0 00005           CLA 5                                    LS011050
01763  0601 00 0 02031           STO TIME2                                LS011060
01764  0600 00 0 02032           STZ TIME3                                LS011070
01765  0634 00 4 02027           SXA TIMSAV,4                             LS011080
01766  0020 00 0 02023           TRA TIMPRT                               LS011090
                         *                                                LS011100
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01767  0634 CO 4 02027  TIME   SXA TIMSAV,4                    LS011110
01770  0500 00 0 00005         CLA 5                           LS011120
01771  0131 CO 0 00000         XCA                             LS011130
01772  0500 CO 0 02031         CLA TIME2                       LS011140
01773 -0600 CO 0 02031         STQ TIME2                       LS011150
01774  0402 CO 0 02031         SUB TIME2                       LS011160
01775  0760 00 0 00003         SSP                             LS011170
01776  0601 00 0 02033         STO TIME5                       LS011180
01777  0400 CO 0 02032         ADD TIME3                       LS011190
02000  0601 00 0 02032         STO TIME3                       LS011200

BINARY CARD NO. LISP0044
02001  0560 00 0 02033  EVTIM5 LDQ TIME5                       LS011210
02002  0754 00 0 00000         PXA 0,0                         LS011220
02003  0221 00 0 01753         DVP TIME1-2                     LS011230
02004 -0600 CO 0 02033         STQ TIME5                       LS011240
02005  0074 00 4 04653         TSX $DECON,4                    LS011250
02006  0602 00 0 02040         SLW TIMOT2                      LS011260
02007  0500 CO 0 02033         CLA TIME5                       LS011270
02010  0074 CO 4 04653         TSX $DECON,4                    LS011280
02011  0602 CO 0 02036         SLW TIMOT1                      LS011290
02012  0560 00 0 02032  EVTIM2 LDQ TIME3                       LS011300
02013  0754 00 0 00000         PXA 0,0                         LS011310
02014  0221 CO 0 01753         DVP TIME1-2                     LS011320
02015 -0600 00 0 02033         STQ TIME5                       LS011330
02016  0074 00 4 04653         TSX $DECON,4                    LS011340
02017  0602 CO 0 02045         SLW TIMOT4                      LS011350
02020  0500 CO 0 02033         CLA TIME5                       LS011360
02021  0074 00 4 04653         TSX $DECON,4                    LS011370
02022  0602 CO 0 02043         SLW TIMOT3                      LS011380
02023  0074 CO 4 01527  TIMPRT TSX OUTPUT,4                    LS011390
02024  0 00000 0 00365             BCDOUT                      LS011400
02025  0 00013 0 02034             TIMOUT,,11                  LS011410
02026  0754 00 0 00000         PXA 0,0                         LS011420

BINARY CARD NO. LISP0045
02027  0774 00 4 00000  TIMSAV AXT 0,4                         LS011430
02030  0020 CO 4 00001         TRA 1,4                         LS011440
                               *                               LS011450
02031  0 00000 0 00000  TIME2                                  LS011460
02032  0 00000 0 00000  TIME3  PZE                             LS011470
02033  0 00000 0 00000  TIME5                                  LS011480
                               *                               LS011490
02034 -206060606060      TIMOUT OCT 606060606060               LS011500
02035 -206060606060             OCT 606060606060               LS011510
02036  0 00000 0 00000  TIMOT1                                 LS011520
02037  604431457360             BCI 1, MIN,                    LS011530
02040  0 00000 0 00000  TIMOT2                                 LS011540
02041  604462606060             BCI 1, MS                      LS011550
02042 -206060606060             OCT 606060606060               LS011560
02043  0 00000 0 00000  TIMOT3                                 LS011570
02044  604431457360             BCI 1, MIN,                    LS011580
02045  0 00000 0 00000  TIMOT4                                 LS011590
02046  604462606060             BCI 1, MS                      LS011600
                               *                               LS011610
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                                HEAD W                                                  LS011620
                            *                                                           LS011630
                            *  THE FOLLOWING FUNCTIONS (TAPE, REWIND, MPRINT, MREAD,    LS011640
                            *     SPACE, AND EJECT) ARE DEDICATED THE THE PHYSICIST     LS011650
                            *          ANTHONY HEARN,                                   LS011660
                            *     WHOSE DOGGED PERSERVERANCE CAUSED THEM TO BE WRITTEN  LS011670
                            *          (BY SOMEONE ELSE)                                LS011680
                            *                                                           LS011690
                            *  TAPES ALLOWS USER TO DESIGNATE SCRATCH TAPES.  ARGUMENT IS A  LS011700
                            *    LIST OF OCTAL NUMBERS SPECIFYING TAPE UNIT             LS011710
                            *    EG, A3 -- 1203Q                                        LS011720
                            *                                                           LS011730
    02047  0634 CO 4 02070  TAPES  SXA TAPR,4                                          LS011740
    02050  0634 00 2 02071         SXA TAPR+1,2                                        LS011750
    02051  0634 00 1 02072         SXA TAPR+2,1                                        LS011760
    02052  0100 00 0 02070         TZE TAPR                                            LS011770
    02053 -0734 CO 4 00000         PDX 0,4                                             LS011780
    02054  0774 00 1 00001         AXT 1,1                                             LS011790

BINARY CARD NO. LISP0046
    02055  0500 CO 4 00000  TAP1   CLA 0,4                                           LS011800
    02056 -0734 00 4 00000         PDX 0,4                                             LS011810
    02057  0734 00 2 00000         PAX 0,2                                             LS011820
    02060  0500 CO 2 00000         CLA 0,2                                             LS011830
    02061 -0734 00 2 00000         PDX 0,2                                             LS011840
    02062  0500 00 2 00000         CLA 0,2                                             LS011850
    02063  0621 CO 1 02244         STA TTAB+1,1                                        LS011860
    02064 -3 00000 4 02070         TXL TAPR,4,0                                        LS011870
    02065  1 00001 1 02066         TXI *+1,1,1                                         LS011880
    02066  3 00012 1 02070         TXH TAPR,1,10                                       LS011890
    02067  0020 00 0 02055         TRA TAP1                                            LS011900
                            *                                                           LS011910
    02070  0774 CO 4 00000  TAPR   AXT 0,4                                           LS011920
    02071  0774 00 2 00000         AXT 0,2                                             LS011930
    02072  0774 00 1 00000         AXT 0,1                                             LS011940
    02073  0754 00 0 00000         PXA 0,0                                             LS011950
    02074  0020 00 4 00001         TRA 1,4                                             LS011960
                            *                                                           LS011970
                            *  REWIND(X) REWINDS TAPE UNIT X, AS SPECIFIED IN        LS011980
                            *    TAPE((N1 ... NX ...)) STATEMENT                      LS011990
                            *                                                           LS012000
    02075  0634 CO 4 02107  REW    SXA REWR,4                                          LS012010
    02076 -0734 00 4 00000         PDX 0,4                                             LS012020
    02077  0500 CO 4 00000         CLA 0,4                                             LS012030
    02100 -0734 00 4 00000         PDX 0,4                                             LS012040
    02101  0500 00 4 00000         CLA 0,4                                             LS012050
    02102  0734 00 4 00000         PAX 0,4                                             LS012060

BINARY CARD NO. LISP0047
    02103  3 00012 4 02111         TXH REWER,4,10                                      LS012070
    02104 -3 00000 4 02111         TXL REWER,4,0                                       LS012080
    02105  0522 00 4 02244         XEC TTAB+1,4                                        LS012090
    02106  0754 CO 0 00000         PXA 0,0                                             LS012100
    02107  0774 00 4 00000  REWR   AXT 0,4                                           LS012110
    02110  0020 00 4 00001         TRA 1,4                                             LS012120
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                        *                                                                  LS012130
02111  0074 CO 4 01527  REWER  TSX OUTPUT,4                                               LS012140
02112  C 00000 0 00365          BCDOUT                                                    LS012150
02113  0 00011 0 02115          REWP,,9                                                   LS012160
02114  0020 CO 0 02106          TRA REWR-1                                                LS012170
                        *                                                                  LS012180
02115  006321472560     REWP   BCI 9,0TAPE CALL ERROR -- REWIND -- NO EXECUTION          LS012190
02116  232143436025
02117  515146516040
02120  406051256631
02121  452460404060
02122  454660256725
02123  236463314645
02124  606060606060
02125  606060606060
                        *                                                                  LS012200
                        *                                                                  LS012210
                        *      BACKSPACE(N) BACKSPACES SCRATCH TAPE N ONE RECORD            LS012220
                        *                                                                  LS012230
02126  0634 CO 4 02144  BACKSP SXA   BAKSP1,4                                             LS012240
02127 -0734 CO 4 00000          PDX   0,4                                                 LS012250
02130  0500 CO 4 00000          CLA   0,4                                                 LS012260

BINARY CARD NO. LISP0048
02131 -0734 CO 4 00000          PDX   0,4                                                 LS012270
02132  0500 CO 4 00000          CLA   0,4                                                 LS012280
02133 -0765 CO 0 00004          LGR   4                                                   LS012290
02134 -0754 CO 0 00000          ZAC                                                       LS012300
02135 -0763 CO 0 00004          LGL   4                                                   LS012310
02136  0734 CO 4 00000          PAX   0,4                                                 LS012320
02137 -3 00000 4 02144          TXL   BAKSP1,4,0                                          LS012330
02140  3 00012 4 02144          TXH   BAKSP1,4,10                                         LS012340
02141  0500 CO 4 02244          CLA   TTAB+1,4                                            LS012350
02142  0621 CO 0 02143          STA   *+1                                                 LS012360
02143  0764 CO 0 02201          BSRB  1                                                   LS012370
02144  0774 CO 4 00000  BAKSP1 AXT   0,4                                                 LS012380
02145 -0754 CO 0 00000          ZAC                                                       LS012390
02146  0020 CO 4 00001          TRA   1,4                                                 LS012400
                        *                                                                  LS012410
                        *                                                                  LS012420
                        *                                                                  LS012430
                        *  MPRINT(X S) PRINTS THE S-EXPRESSION S ON TAPE UNIT X.           LS012440
                        *    ITS VALUE IS S.                                               LS012450
                        *  MREAD(X) READS AN S-EXPRESSION FROM TAPE UNIT X.                LS012460
                        *    ITS VALUE IS THE LIST READ.                                   LS012470
                        *                                                                  LS012480
02147  0400 CO 0 02154  MPRT   ADD MPRT1                                                  LS012490
02150  0621 CO 0 02167          STA MUN                                                   LS012500
02151  0400 CO 0 02155          ADD MPRT2                                                 LS012510
02152  0621 CO 0 02205          STA ICC                                                   LS012520
02153  0020 CO 0 02165          TRA MIO                                                   LS012530
                        *                                                                  LS012540
02154  0 00000 0 00364  MPRT1  PZE  SYSPPT                                               LS012550
02155  0 00000 0 05553  MPRT2  PZE  $PUNCH-SYSPPT                                        LS012560
                        *                                                                  LS012570
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    02156  0400 00 0 02163  MRD     ADD MRD1                                    LS012580

BINARY CARD NO. LISP0049
    02157  0621 00 0 02167          STA MUN                                     LS012590
    02160  0400 00 0 02164          ADD MRD2                                    LS012600
    02161  0621 00 0 02205          STA IOC                                     LS012610
    02162  0020 00 0 02165          TRA MIO                                     LS012620
                                    *                                           LS012630
    02163  0 00000 0 00366  MRD1    PZE SYSPIT                                  LS012640
    02164  0 00000 0 06172  MRD2    PZE $READ-SYSPIT                            LS012650
                                    *                                           LS012660
    02165  0634 00 4 02210  MIO     SXA MIOR,4                                  LS012670
    02166 -0734 00 4 00000          PDX 0,4                                     LS012680
    02167  0500 00 0 00000  MUN     CLA 0                                       LS012690
    02170  0601 00 0 02220          STO MIO1                                    LS012700
    02171  0500 00 4 00000          CLA 0,4                                     LS012710
    02172 -0734 00 4 00000          PDX 0,4                                     LS012720
    02173  0500 00 4 00000          CLA 0,4                                     LS012730
    02174  0734 00 4 00000          PAX 0,4                                     LS012740
    02175  3 00012 4 02212          TXH MIOER,4,10                              LS012750
    02176 -3 00000 4 02212          TXL MIOER,4,0                               LS012760
    02177  0500 00 4 02244          CLA TTAB+1,4                                LS012770
    02200  0621 60 0 02167  MERR    STA* MUN                                    LS012780
    02201 -0320 00 0 02217          ANA   MCOMP                                 LS012790
    02202  0767 00 0 00011          ALS   9                                     LS012800
    02203  0622 60 0 02167          STD*  MUN                                   LS012810
    02204  0131 00 0 00000          XCA                                         LS012820

BINARY CARD NO. LISP0050
    02205  0074 00 4 00000  IOC     TSX 0,4                                     LS012830
    02206  0560 00 0 02220          LDQ MIO1                                    LS012840
    02207 -0600 60 0 02167          STQ* MUN                                    LS012850
    02210  0774 00 4 00000  MIOR    AXT 0,4                                     LS012860
    02211  0020 00 4 00001          TRA 1,4                                     LS012870
                                    *                                           LS012880
    02212  0074 00 4 01527  MIOER   TSX OUTPUT,4                                LS012890
    02213  0 00000 0 00365              BCDOUT                                  LS012900
    02214  0 00011 0 02221              MIOPT,,9                                LS012910
    02215  0500 00 0 02243          CLA TTAB                                    LS012920
    02216  0020 00 0 02200          TRA MERR                                    LS012930
                                    *                                           LS012940
    02217 +000000007000     MCOMP   OCT   000000007000                          LS012950
    02220  0 00000 0 00000  MIO1                                                LS012960
    02221  006321472560     MIOPT   BCI 9,0TAPE CALL ERROR -- TAPE I/O -- UNIT 1 USED  LS012970
    02222  232143436025
    02223  515146516040
    02224  406063214725
    02225  603161466040
    02226  406064453163
    02227  600160646225
    02230  246060606060
    02231  606060606060
                                    *                                           LS012980
    02232  0772 00 0 02206          REWB 6                                      LS012990
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BINARY CARD NC. LISP0051
    02233  0772 CO 0 02205          REWB 5                                  LS013000
    02234  0772 CO 0 02204          REWB 4                                  LS013010
    02235  0772 CO 0 02203          REWB 3                                  LS013020
    02236  0772 CO 0 02202          REWB 2                                  LS013030
    02237  0772 CO 0 01210          REWA 8                                  LS013040
    0224C  0772 CO 0 01207          REWA 7                                  LS013050
    02241  0772 CO 0 01206          REWA 6                                  LS013060
    02242  0772 CO 0 01205          REWA 5                                  LS013070
    02243  0772 00 0 01204  TTAB    REWA 4                                  LS013080
                            *                                               LS013090
                            *  SPACE CONTROLS PRINTED OUTPUT SPACING        LS013100
                            *       SPACE(NIL) -- SINGLE-SPACE              LS013110
                            *       SPACE(*T*) -- DOUBLE-SPACE              LS013120
                            *                                               LS013130
    02244  0100 CO 0 02247  SPACE   TZE *+3                                 LS013140
    02245 -0625 CO 0 02251          STL SPCON                               LS013150
    02246  0020 CO 4 00001          TRA 1,4                                 LS013160
    02247  0600 CO C 02251          STZ SPCON                               LS013170
    02250  CO20 CO 4 00001          TRA 1,4                                 LS013180
                            *                                               LS013190
    02251  C 00000 0 00000  SPCON   PZE                                     LS013200
    02252 +007777777777     SPAC2   OCT 7777777777                          LS013210
                            *                                               LS013220
    02253 -0500 60 4 00002  SPAC1   CAL* 2,4                                LS013230
    02254 -0320 CO C 02252          ANA SPAC2                               LS013240
    02255  0602 60 4 00002          SLW* 2,4                                LS013250
    02256  C020 CO 0 01532          TRA D$SPAC3                             LS013260
                            *                                               LS013270
                            *  EJECT EJECTS PAGE                            LS013280
                            *                                               LS013290
    02257  0634 CO 4 02264  EJECT   SXA EJR,4                               LS013300
    02260  0074 CO 4 01527          TSX OUTPUT,4                            LS013310

BINARY CARD NO. LISP0052
    02261  C 00000 0 00365              BCDOUT                              LS013320
    02262  C 00001 0 02266              EJPRT,,1                            LS013330
    02263  0754 CO 0 00000          PXA C,0                                 LS013340
    02264  0774 CO 4 00000  EJR     AXT 0,4                                 LS013350
    02265  0020 CO 4 00001          TRA 1,4                                 LS013360
                            *                                               LS013370
    02266  016060606060    EJPRT   BCI   4,1                               LS013380
    02267  606060606060
    02270  606060606060
    02271  606060606060
                            *                                               LS013390
                                    HEAD C                                  LS013400
                            *                                               LS013410
                            *                                               LS013420
                            *                                               LS013430
                            *       THE FIRST CALL OF BACKTRACE CAUSES THE BACKTRACE PRINTOUT TO BE LS013440
                            *       SUSPENDED.  SUBSEQUENT CALLS OF BACKTRACE NIL RETURN THE LS013450
                            *       BACKTRACE FOR THE MOST RECENT ERROR.  BACKTRACE X, FOR X NOT LS013460
                            *       NLL, RESTORES BACKTRACE PRINTOUT.       LS013470
                            *                                               LS013480
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02272  0634 CO 4 02276  BACTRA SXA   BACTR1,4                LS013490
02273  0520 CO 0 02424          ZET   BACKT2                  LS013500
02274  0020 CO 0 02300          TRA   BACTR2                  LS013510
02275 -0625 CO 0 02424          STL   BACKT2                  LS013520
02276  0774 CO 4 00000  BACTR1 AXT   **,4                    LS013530
02277  0020 CO 4 00001          TRA   1,4                     LS013540
                        *                                    LS013550
02300 -0100 CO 0 02303  BACTR2 TNZ   BACTR3                  LS013560
02301  0500 CO 0 02425          CLA   BACKTR                  LS013570
02302  0020 CO 0 02276          TRA   BACTR1                  LS013580
                        *                                    LS013590
02303  0600 CO 0 02424  BACTR3 STZ   BACKT2                  LS013600
02304  0020 CO 0 02276          TRA   BACTR1                  LS013610
                        *                                    LS013620
                                                             LS013630
02305  0420 CO 0 00007  PAUSEF HPR 7                         LS013640
02306  0020 CO 4 00001          TRA 1,4                       LS013650
                                                             LS013660
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                        TTL     ERROR PROCESSING                                                LS013670
                    *                                                                           LS013680
                    * ERROR     PROCESSES ALL LISP ERRORS. NORMALLY GIVES ERROR NUMBER,         LS013690
                    *           ERROR LOCATION, LISP PRINT OF AC AND BACK TRACE OFALL           LS013700
                    *           FUNCTIONS ENTERED ON PUSH DOWN LIST.                            LS013710
                    *                                                                           LS013720

BINARY CARD NO. LISP0053
    02307  0 00000 0 00000   ERAC                        PLACE TO STORE MACHINE REGISTERS        LS013730
    02310  0 00000 0 00000   ERMQ                                                                LS013740
    02311  0 00000 0 00000   ERIND                                                               LS013750
    02312  0 00000 0 00000   ERX                         INDEX 1,,INDEX 2                        LS013760
    02313  3 00000 0 02314   ERROR  TXH     *+1,,**      INDEX 4                                 LS013770
    02314  0522 CC 0 01714          XEC     $SLN1        ERROR VISIBLE ON CONSOLE                LS013780
    02315 -0520 CC 0 12655          NZT     ERNULL       SEE IF ERROR PROGRAM IS TO BE EXECUTEDLS013790
    02316  0522 CC 0 12656          XEC     EREXIT       NORMAL SETTING GOES TO EVALQUOTE        LS013800
    02317 -0600 CC 0 02310          STQ     ERMQ         SAVE MACHINE REGISTERS                  LS013810
    02320  0604 CC 0 02311          STI     ERIND                                                LS013820
    02321  0634 CC 1 02312          SXA     ERX,1                                                LS013830
    02322 -0634 CC 2 02312          SXD     ERX,2                                                LS013840
    02323  0441 CC 0 11254          LDI     SYSIND       PICK UP SYSTEM INDICATORS               LS013850
    02324  0055 CC  000010          SIR     ERRORI       SET ERROR HAS OCURRED INDICATOR         LS013860
    02325  0604 CC 0 11254          STI     SYSIND       UPDATE SYSTEM INDICATOR CELLS           LS013870
    02326  0601 CC 0 02422          STO     ERT          AC TO BE PRINTED                        LS013880
    02327  0500 CC 4 00001          CLA     1,4          ERROR NUMBER TO AC                      LS013890
    02330  0601 CC 0 02431          STO     ERM          PUT IN ERROR MESSAGE                    LS013900
    02331  0520 CC 0 00615          ZET     $TSIND       TS                                      LS013910
    02332  0020 CC 0 02411          TRA     TSER         YES, BE BRIEF                           LS013920
    02333  0074 CC 4 01527          TSX     OUTPUT,4     WRITE OUT ERROR MESSAGE                 LS013930
    02334  0 00000 0 00365                  BCDOUT                                              LS013940

BINARY CARD NO. LISP0054
    02335  0 00005 0 02426            ERO,,5                                                    LS013950
    02336 -0520 CC 0 15702          NZT TCNTMA                                                   LS013960
    02337  0020 CC 0 02344          TRA ERT1                                                     LS013970
    02340  0074 CC 4 06026          TSX TERPRI,4                                                 LS013980
    02341  0500 CC 0 02343          CLA *+2                                                      LS013990
    02342  0074 CC 4 17201          TSX TRCPRT,4                                                 LS014000
    02343  0 07506 0 00000              0,,-$)H60                                                LS014010
    02344  0520 CC 0 02421   ERT1   ZET     BACACT       SKIP IF BACKTRACE IS NOT ACTIVE         LS014020
    02345  0020 CC 0 02415          TRA     BACER        GO TO SPECIAL ROUTINE                   LS014030
    02346 -0625 CC 0 02421          STL     BACACT       MAKE BACK TRACE ROUTINE ACTIVE          LS014040
    02347  0500 CC 0 02422          CLA     ERT          PICK UP AC ON ENTRANCE                  LS014050
    02350  0520 CC 0 02423          ZET   BACKT1                                                 LS014060
    02351 -0754 CC 0 00000          ZAC                                                          LS014070
    02352  0600 CC 0 02423          STZ   BACKT1                                                 LS014080
    02353  0074 CC 4 05342          TSX     $PRINT,4     PRINT IT IN LISP                        LS014090
    02354  0054 CC  000200          RFT     NOBACT       TEST FOR NO BACK TRACE                  LS014100
    02355  0020 CC 0 02407          TRA     BACD         GO TO EXIT                              LS014110
    02356  0560 CC 0 00424          LDQ     $ZERO        ZERO THE ERROR LIST                     LS014120
    02357 -0534 CC 4 12661          LXD     NUBPDL,4     BEGINNING OF PUSH DOWN LIST             LS014130
    02360  1 77777 4 02361          TXI     *+1,4,-1     PUSH UP BY -1                           LS014140
    02361 -0634 CC 4 02363          SXD     BEX,4        SET UP ALL DONE TEST INSTRUCTION        LS014150
    02362 -0534 CC 4 03110          LXD     $CPPI,4      PICK UP CURRENT PDL COUNTER             LS014160
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BINARY CARD NO. LISP0055
    02363  3 00000 4 02403   BEX    TXH     BACTD,4,**          GO IF ALL UNSAVED                          LS014170
    02364 -0500 00 4 77777          CAL     -1,4                EITHER UNSAVE OR UNWND                     LS014180
    02365 -0320 00 0 00515          ANA     $PMASK              DEPENDING ON COMPILED OR                   LS014190
    02366  0322 00 0 00505          ERA     $QP5                SYSTEM SUBROUTINE PUT IT THERE             LS014200
    02367  0100 00 0 02372          TZE     *+3                 TEST IS FOR STR OP                         LS014210
    02370  0074 00 4 03117          TSX     UNSAVE,4            IN LAST WORD OF BLOCK FROM COMPILER        LS014220
    02371  0020 00 0 02373          TRA     *+2                                                            LS014230
    02372  0074 00 4 17712          TSX     C$UNWND,4                                                      LS014240
    02373 -0534 00 4 03110          LXD     $CPPI,4             BEGINNING OF BLOCK JUST UNSAVED            LS014250
    02374  0500 00 4 00000          CLA     0,4                 LAST IR 4 WORD                             LS014260
    02375  0734 00 4 00000          PAX     0,4                 FUNCTION ATOMIC SYMBOL                     LS014270
    02376 -0754 00 4 00000          PXD     0,4                 PUT IN DECREMENT                           LS014280
    02377  0074 00 4 04471          TSX     $CONS,4             ADD TO ERROR LIST                          LS014290
    02400  0131 00 0 00000          XCA                         ANSWER TO MQ                               LS014300
    02401 -0534 00 4 03110          LXD     $CPPI,4             PUSH DOWN INDICTOR                         LS014310
    02402  0020 00 0 02363          TRA     BEX                 GO BACK FOR NEXT                           LS014320
    02403  0131 00 0 00000   BACTD  XCA                         LIST TO AC                                 LS014330
    02404  0601 00 0 02425          STO   BACKTR                                                           LS014340
    02405 -0520 00 0 02424          NZT   BACKT2                                                           LS014350
    02406  0074 00 4 05342          TSX     $PRINT,4            PRINT THE ERROR LIST                       LS014360
    02407  0600 00 0 02421   BACD   STZ     BACACT              DE-ACTIVATE THE BACK TRACE ROUTINE         LS014370
    02410  0522 00 0 12656          XEC     EREXIT              NORMAL SETTING GOES TO EVALQUOTE           LS014380

BINARY CARD NO. LISP0056
    02411  0074 00 4 01527  TSER    TSX     OUTPUT,4            TIME STEALING, BE BRIEF                    LS014390
    02412  0 00000 0 00365                  BCDOUT                                                         LS014400
    02413  0 00004 0 02426                  ERO,,4                                                         LS014410
    02414  0020 00 0 02344          TRA     ERT1                                                           LS014420
                                    *                                                                      LS014430
    02415  0074 00 4 01527   BACER  TSX     OUTPUT,4                WRITE OUT MESSAGE THAT BACK TRACE      LS014440
    02416  0 00000 0 00365                  BCDOUT                  CAUSED ANOTHER ERROR                   LS014450
    02417  0 00007 0 02433                  BACE,,7                                                        LS014460
    02420  0020 00 0 02407          TRA     BACD                    RESET AND RETURN                       LS014470
                     000200  NOBACT BOOL    200                     NO BACK TRACE INDICATOR                LS014480
    02421  0 00000 0 00000  BACACT                                   NON-ZERO MEANS BACK TRACE ACTIVE       LS014490
    02422  0 00000 0 00000   ERT                                     TEMPORARY STORAGE FOR AC               LS014500
    02423  0 00000 0 00000  BACKT1 PZE                         NOISE MEANS NIL AC PRINTOUT                LS014510
    02424  0 00000 0 00000  BACKT2 PZE                         NOISE MEANS NO BACKTRACE PRINT             LS014520
    02425  0 00000 0 00000  BACKTR PZE                         STORE BACKTRACE                            LS014530
    02426  005454546025      ERO    BCI     3,0*** ERROR NUMBER                                            LS014540
    02427  515146516045
    02430  644422255160
    02431  0 00000 0 00000   ERM                                     ERROR NUMBER IN BCD GOES HERE          LS014550
    02432  606054545454             BCI   1,  ****                                                        LS014560
    02433  005454546021      BACE   BCI     7,0*** ABOVE ERROR TERMINATED BACK-TRACE ***                    LS014570
    02434  224665256025
    02435  515146516063
    02436  255144314521

BINARY CARD NO. LISP0057
    02437  632524602221
    02440  234240635121
    02441  232560545454
                                    *                                                                      LS014580
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                        * FLAPTR AND DCT     GIVE ERROR DIAGNOSTICS FOR FLOATING POINT  TRAP ANDLS014590
                        *                DIVIDE CHECK INCLUDING LOCATION AND CONTENTS OF AC.      LS014600
                        *                BOTH MY BE IGNORED BY MAKING CELL FPTGNR NON-ZERO.       LS014610
                        *                                                                        LS014620
 02442  0520 CO 0 02452   DCT    ZET      FPTGNR              TEST FOR IGNORE ERROR FLAG          LS014630
 02443  0020 CO 4 00001          TRA      1,4                 RETURN                              LS014640
 02444 -0634 CO 4 02313          SXD      $ERROR,4            SAVE IR 4                           LS014650
 02445 -0535 CO 4 02313          LDC      $ERROR,4            COMPLEMENT LOCATION OF ENTRANCE     LS014660
 02446  0634 CO 4 02473          SXA      FLXT,4              SET TRAP ADDRESS                    LS014670
 02447 -0634 CO 0 02473          SXD      FLXT,0              ZERO THE DECREMENT                  LS014680
 02450 -0625 CO 0 02541          STL      FPTDV               SET DIVIDE CHECK FLAG               LS014690
 02451  0020 CO 0 02476          TRA      FPTA                DO FLOATING POINT TRAP ERROR        LS014700
                        *                                                                        LS014710
 02452  0 00000 0 00000  FPTGNR                              TEST CELL IS NON-ZERO TO IGNORE TRAPSLS014720
                        *                                                                        LS014730
 02453  0601 CO 0 77660  FLAPTR STO      COMMON              SAVE AC                             LS014740
 02454  0500 CO 0 00000          CLA      0                   GET TRAP LOCATION                   LS014750
 02455  0621 CO 0 02473          STA      FLXT                SET EXT CELL                        LS014760
 02456  0622 CO 0 02473          STD      FLXT                                                    LS014770
 02457  0500 CO 0 00200          CLA      FLAPCZ              NORMAL CONTENTS OF ZERO             LS014780
 02460  0601 CO 0 00000          STO      0                                                       LS014790
 02461  0500 CO 0 02473          CLA FLXT                                                         LS014800
 02462  0771 CO 0 00001          ARS 1                                                            LS014810
 02463 -0320 CO 0 00477          ANA $QD2                                                         LS014820
 02464 -0100 CO 0 02471          TNZ *+5                                                          LS014830

BINARY CARD NO. LISP0058
 02465  0754 CO 0 00000          PXA 0,0                                                          LS014840
 02466  0131 CO 0 00000          XCA                                                              LS014850
 02467  0754 CO 0 00000          PXA 0,0                                                          LS014860
 02470  0020 60 0 02473          TRA* FLXT                                                        LS014870
 02471  0500 CO 0 77660          CLA      COMMON              RESTORE AC                          LS014880
 02472  0520 CO 0 02452          ZET      FPTGNR              TEST FOR IGNORE TRAP                LS014890
 02473 -3 00000 0 00000  FLXT   TXL      **,,**              IMMEDIATE EXIT INSTRUCTION          LS014900
 02474  0600 CO 0 02541          STZ      FPTDV               INDICATE FLAPPING TRAP              LS014910
 02475 -0634 CO 4 02313          SXD      $ERROR,4            SAVE LINK IR                        LS014920
 02476  0131 CO 0 00000  FPTA   XCA                          AC TO MQ                            LS014930
 02477  0074 CO 4 11731          TSX      OCTALP,4            CONVERT TO OCTAL                    LS014940
 02500  0602 CO 0 02533          SLW      FPTAC               STORE OCTAL FOR LEFT HALF OF AC     LS014950
 02501  0074 CO 4 11731          TSX      OCTALP,4            CONVERT TO OCTAL                    LS014960
 02502  0602 CO 0 02534          SLW      FPTAD               STORE AWAY IN ERROR MESSAGE         LS014970
 02503  0560 CO 0 02473          LDQ      FLXT                GET TRAP CELL CONTENTS              LS014980
 02504 -0773 CO 0 00022          RQL      18                  POSITION IN LEFT HALF OF MQ         LS014990
 02505  0074 CO 4 11731          TSX      OCTALP,4            CONVERT TO OCTAL                    LS015000
 02506 -0501 CO 0 00506          ORA      OBLANK              MAKE LAEDING ZERO A BLANK           LS015010
 02507  0602 CO 0 02530          SLW      FPTLO               SAVE OCTAL FOR LOCATION OF ERROR    LS015020
 02510 -0774 CO 4 02535          AXC      FPTF,4              POINTER TO BEGINNING OF ERROR MESSAGELS015030
 02511  0520 CO 0 02541          ZET      FPTDV               TEST FOR DIVIDE CHECK ERROR         LS015040
 02512 -0774 CO 4 02537          AXC      FPTD,4              DIVIDE CHECK MESSAGE                LS015050

BINARY CARD NO. LISP0059
 02513  0500 CO 4 00000          CLA      0,4                 PICK UP PROPER MESSAGE              LS015060
 02514  0601 CO 0 02525          STO      FPTTY               STORE IN MESSAGE                    LS015070
 02515  0500 CO 4 00001          CLA      1,4                                                     LS015080
 02516  0601 CO 0 02526          STO      FPTTY+1                                                 LS015090
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02517  0074 CO 4 01527          TSX     OUTPUT,4          WRITE ERROR MESSAGE                    LS015100
02520  0 00000 0 00365                  BCDOUT                                                   LS015110
02521  0 00010 0 02525                  FPTTY,,8                                                 LS015120
02522 -0754 00 0 00000          PXD     0,0               CLAER AC                               LS015130
02523  0074 CO 4 02314          TSX     $ERROR+1,4        GO TO ERROR PROGRAM                    LS015140
02524  542760600154             BCI     1,*G  1*          FLOATING POINT TRAP OR DCT             LS015150
02525  606060606060     FPTTY BCI     3,              AT....                                     LS015160
02526  606060606060
02527  216333333333
02530  0 00000 0 00000  FPTLO                             LOCATION OF ERROR                      LS015170
02531  606631633060             BCI     2, WITH AC =                                             LS015180
02532  212360136060
02533  0 00000 0 00000  FPTAC                             OCTAL LEFT HALF OF AC                  LS015190
02534  0 00000 0 00000  FPTAD                             OCTAL RIGHT HALF OF AC                 LS015200
02535  002643214760     FPTF  BCI     2,OFLAP TRAP                                               LS015210
02536  635121476060
02537  002431653124     FPTD  BCI     2,ODIVIDE CHK                                              LS015220
0254C  256023304260
                        *                                                                        LS015230
                        * THIS ROUTINE USES $ERROR,$ERRORP1( AND FPTGNR                         LS015240

BINARY CARD NO. LISP0060
02541  0 00000 0 00000  FPTDV                             DIVIDE CHECK INDICATOR CELL            LS015250
                        *                                                                        LS015260
                        *                                                                        LS015270
                        * STRPNT       A DEBUGGING AID WHICH PRINTS THE DECREMENT OF THE AC AS  LS015280
                        *      A LIST OR DUMPS AC AND IR 4 IN OCTAL WHICH EVER IS APPROPRIATE.  LS015290
                        *                                                                        LS015300
02542  0520 CO 0 02625  STRPNT ZET     STRT              TEST IF ROUNTINE IS ACTIVE.            LS015310
02543  0020 CO 0 02613          TRA     STREX             IT IS THEREFORE EXIT                   LS015320
02544  0634 00 4 02611          SXA     STRX,4            NO, SAVE LINK IR                       LS015330
02545  0601 CO 0 02622          STO     STRA              SAVE AC                                LS015340
02546 -0600 CO 0 02623          STQ     STRQ              SAVE MQ                                LS015350
02547 -0625 CO 0 02625          STL     STRT              SET CELL TO INDAICTE ACTIVE            LS015360
02550  0560 CC 0 00000          LDQ     0                 PICK UP TRAP LOCATION                  LS015370
02551 -0600 CO 0 02626          STQ     STRXT             SAVE CONTENTS                          LS015380
02552 -0773 00 0 00022          RQL     18                ADDRESS PORTION TO LEFT HALF OF MQ     LS015390
02553  0074 CO 4 11731          TSX     OCTALP,4                                                 LS015400
02554 -0501 CO 0 00506          ORA     OBLANK            LEADING BLANK                          LS015410
02555  0602 CO 0 02631          SLW     STRM              STORE TRAP ADDRESS IN OCATL            LS015420
02556  0500 CO 0 00200          CLA     FLAPCZ            RESTORE ORIGNAL CONTENTS OF ZERO       LS015430
02557  0601 CO 0 00000          STO     0                                                        LS015440
02560  0074 CO 4 01527          TSX     OUTPUT,4                                                 LS015450
02561  0 00000 0 00365                  BCDOUT            OUTPUT BCD MESSAGE                     LS015460
02562  0 00005 0 02627                  STRN,,5                                                  LS015470
02563  0560 CO 0 02622  STRO   LDQ     STRA              AC AT TIME OF TRAP                     LS015480
02564  0074 CO 4 11731          TSX     OCTALP,4          CONVERT TO OCTAL                       LS015490
02565  0602 CO 0 02640          SLW     STRMA             STORE LEFT HALF IN OCTAL               LS015500
02566  0074 CO 4 11731          TSX     OCTALP,4          CONVERT TO OCTAL                       LS015510

BINARY CARD NO. LISP0061
02567  0602 CO 0 02641          SLW     STRMB             RIGHT HALF IN OCTAL                    LS015520
02570  0560 CO 0 02611          LDQ     STRX              PICK UP LINK IR                        LS015530
02571 -0773 CO 0 00025          RQL     21                SHIFT TO LEFT OF MQ                    LS015540
02572  0074 CO 4 11731          TSX     OCTALP,4          CONVERT TO OCTAL                       LS015550
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02573  0771 CO 0 00006          ARS     6                  MAKE A HOLE                                  LS015560
02574 -0501 CO 0 00506          ORA     OBLANK             MAKE LEADING ZERO A BLANK                    LS015570
02575  0602 CO 0 02644          SLW     STRMC              PUT IN MESSAGE                               LS015580
02576  0074 CO 4 01527          TSX     OUTPUT,4                                                        LS015590
02577  0 00000 0 00365                  BCDOUT             CUTPUT IN BCD                                LS015600
02600  0 00011 0 02634                  STRMD,,9                                                        LS015610
02601 -0500 CO 0 02622          CAL     STRA               PICK UP AC                                   LS015620
02602 -0734 CO 4 00000          PDX     0,4                                                             LS015630
02603 -0320 CO 0 00522          ANA     PTAMSK             MASK OUT ONLY DECREMENT                      LS015640
02604 -0100 CO 0 02611          TNZ     STRF               GO IF ANY THING LEFT                         LS015650
02605 -3 00000 4 02611  STRTOP  TXL     STRF,4,**          -TFS-1   IF NOT IN LIST STRUCTURE            LS015660
02606  3 00000 4 02611  STRBTM  TXH     STRF,4,**          -BRK  GO TO EXIT IF NOT IN FREE STORAGLS015670
02607 -0754 CO 4 00000          PXD     0,4                OTHERWISE                                    LS015680
02610  0074 CO 4 05342          TSX     $PRINT,4           PRINT AS LISP LIST                           LS015690
02611                    STRF   BSS     0                                                               LS015700
02611  0774 CO 4 00000  STRX   AXT     **,4               DITTO LINK IR                                LS015710
02612  0600 CO 0 02625          STZ     STRT               INDICATE ROUTINE IS INACTIVE                 LS015720
02613  0522 CO 0 01713  STREX  XEC     $SWT6              SHOULD WE GO BACK TO OVERLORD                LS015730
02614  0020 CO 0 02616          TRA     *+2                                                             LS015740

BINARY CARD NO. LISP0062
02615  0020 CO 0 11140          TRA     OVRLRD             FIND NEXT OVERLORD DIRECTION CARD            LS015750
02616 -0754 CO 0 00000          PXD     0,0                                                             LS015760
02617 -0634 CO 4 02313          SXD     $ERROR,4                                                        LS015770
02620  0074 CO 4 02314          TSX     $ERROR+1,4                                                      LS015780
02621  542660600554             BCI     1,*F  5*           STR TRAP ERROR                               LS015790
                        *                                                                              LS015800
                        *                                                                              LS015810
02622  0 00000 0 00000  STRA                              AC STROAGE                                   LS015820
02623  0 00000 0 00000  STRQ                              MQ                                           LS015830
02624 -3 00000 0 00000  STRD   TXL     **,,**             MASK FOR PREFIX                              LS015840
02625  0 00000 0 00000  STRT                              CELL INDICATES ACTIVE IF NON-ZERO            LS015850
02626  0 00000 0 00000  STRXT                             STORAGE FOR CONTENTS OF ZERO                 LS015860
02627  006263516063     STRN   BCI     2,0STR TRAP AT                                                  LS015870
02630  512147602163
02631  0 00000 0 00000  STRM   PZE                        TRAP LOCATION IN OCTAL                       LS015880
02632  604623632143             BCI     2, OCTAL.                                                      LS015890
02633  336060606060
02634  004623632143     STRMD  BCI     4,00CTAL CONTENTS OF AC                                         LS015900
02635  602346456325
02636  456362604626
02637  602123606060
02640  0 00000 0 00000  STRMA                                                                         LS015910
02641  0 00000 0 00000  STRMB                             OCTAL CONTENTS OF AC GO HERE                 LS015920
02642  602145246031             BCI     2, AND INDEX 4                                                 LS015930

BINARY CARD NO. LISP0063
02643  452425676004
02644  0 00000 0 00000  STRMC                             OCATL LINK IR CONTENTS GO HERE               LS015940
                        *                                                                              LS015950
                        * THIS ROUTINE USES $PRINT,OUTPUT,BCDOUT AND OBLANK                            LS015960
                        *                                                                              LS015970
                        *                                                                              LS015980
                                                                                                       LS015990
                              ERROR1 USED BY APPLY HAS ONE ARGUMENT AND PRINTS IT USING                LS016000
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                                PRINT                                                                LS016010
                                                                                                     LS016020
02645 -0634 CC 4 02313  ERROR1 SXD $ERROR,4                                                          LS016030
02646  0074 CC 4 02314         TSX $ERROR+1,4                                                        LS016040
02647  542160600154            RCI     1,*A  1*          APPLIED FUNCTION CALLED ERROR               LS016050
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                                TTL     STORAGE CONTROL                                                 LS016060
                          * SETUP       TAKES  SIZE PARAMETERS AND SETS UP THE DEPENDENT CELLS          LS016070
                          *             MAINLY IN THE RECLAIMER (GARBAGGE COLLECTOR) AND STRPNT         LS016080
                          *                                                                             LS016090
                                HEAD    E                                                               LS016100
                          *                                                                             LS016110
                          *     RESETP  ALTERNATE ENTRANCE TO SETUP TO CHANGE COMPOSITION OF            LS016120
                          * FREE STRORAGE SLIGHTLY.                                                     LS016130
                          *                                                                             LS016140
                          *                                                                             LS016150
                          *     EXCISE (NIL) THROWS OUT ALL RPOGRAMS IN EXCISABLE SPACE.                LS016160
                          *     THIS IS INTENDED FOR USE BY THE COMPILER, BUT IT MAY BE USED IN         LS016170
                          *             OTHER WAYS AT THE USER-S RISK.                                  LS016180
                          *     THE SPACE THUS THROWN AWAY IS CONVERTED TO FREE STORAGE, BUT            LS016190
                          *             NO ATTEMPT IS MADE TO DISCONNECT THE NAMES OF THE               LS016200
                          *             PROGRAMS THUS THROWN OUT, SO ANY FURTHER USE OF THESE           LS016210
                          *             WILL RESULT IN OBSCURITY.                                       LS016220
                          *     EXCISE (T) THROWS OUT LAP AS WELL.                                      LS016230
                          *                                                                             LS016240
02650  0560 00 0 03052  EXCISE LDQ     EXCIQ                                                           LS016250
02651  0100 00 0 02653          TZE     *+2                                                             LS016260
02652  0560 00 0 03053          LDQ     EXCIR                                                           LS016270
02653 -0600 00 0 03055          STQ     $TFS                                                            LS016280
02654  0600 00 0 03073          STZ     BPLACE          MAKE LAP GO TO BPS                              LS016290
02655 -0625 00 0 03074          STL     EXCISD          'DON-T EVER USE EXCISED SPACE FOR               LS016300
                          *                               PROGRAM AGAIN                               LS016310
02656 -0625 00 0 03034  RESETP  STL     RST             SET RESETUP SWITCH                              LS016320
02657  0634 00 4 03030          SXA     SUPX,4          SAVE LINK IR                                    LS016330
02660  0020 00 0 02731          TRA     RSU             CHANGE GARBAGGE COLLECTOR PARAMETERS            LS016340
                          *                                                                             LS016350
02661  0634 00 4 03030   SETUP  SXA     SUPX,4          SAVE LINK IR                                    LS016360
02662  0500 00 0 03064          CLA     $TPG                                                            LS016370
02663  0601 00 0 03065          STO     $ORG                                                            LS016380
02664  0400 00 0 03066          ADD     LBINPG                                                          LS016390
02665  0734 00 4 00000          PAX     0,4                                                             LS016400
02666  1 77777 4 02667          TXI     *+1,4,-1                                                        LS016410
02667 -0634 00 4 04577          SXD     C$LBPTP,4       SETUP FOR LAP                                   LS016420
02670  0400 00 0 00425          ADD     $Q1                                                             LS016430

BINARY CARD NO. LISP0064
02671  0737 00 4 00000          PAC     0,4                                                             LS016440
02672 -0634 00 4 03110          SXD     $CPPI,4         SET PUSH DOWN CELLS                             LS016450
02673 -0634 00 4 03203          SXD     $CSSI,4                                                         LS016460
02674 -0634 00 4 12661          SXD     NUBPDL,4        PRIVATE COPY FOR BACKTRACE                      LS016470
02675  0400 00 0 03067          ADD     LPBPDL                                                          LS016480
02676  0621 00 0 03511          STA     ZPDL            G C ZEROS THE UNUSED PDL                        LS016490
02677  0402 00 0 00443          SUB     $Q20            PROTECTION AGINST COMPILER SAVING               LS016500
02700  0737 00 4 00000          PAC     0,4             WITH OUT LOOKING                                LS016510
02701 -0634 00 4 03204          SXD     ENDPDL,4        OUT OF PDL TEST                                 LS016520
02702 -0634 00 4 20040          SXD     ENPDL1,4                                                        LS016530
02703 -0634 00 4 03111          SXD     ENPDL2,4                                                        LS016540
02704  0500 00 0 03055          CLA     $TFS                                                            LS016550
02705  0402 00 0 03071          SUB     LFREES                                                          LS016560
02706  0621 00 0 03060          STA     $TBT                                                            LS016570
02707  0400 00 0 00425          ADD     $Q1                                                             LS016580
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02710  0621 CO 0 03057          STA     $BFS                                        LS016590
02711  0500 CO 0 03070          CLA     LFULWS                                      LS016600
02712  0771 CO 0 00005          ARS     5                                           LS016610
02713  0400 CO 0 00425          ADD     $Q1                                         LS016620
02714  0601 CO 0 03072          STO     $LBT                                        LS016630
02715  0500 CO 0 03057          CLA     $BFS                                        LS016640
02716  0402 CO 0 03072          SUB     $LBT                                        LS016650

BINARY CARD NO. LISP0065
02717  0601 CO 0 03061          STO     $BBT                                        LS016660
02720  0402 CO 0 00425          SUB     $Q1                                         LS016670
02721  0601 CO 0 03062          STO     $TFW                                        LS016680
02722  0500 CO 0 03057          CLA     $BFS                                        LS016690
02723  0402 CO 0 03070          SUB     LFULWS                                      LS016700
02724  0601 CO 0 03063          STO     $BFW                                        LS016710
02725  0402 CO 0 03067          SUB     LPBPDL                                      LS016720
02726  0402 CO 0 03066          SUB     LBINPG                                      LS016730
02727  0402 CO 0 03064          SUB     $TPG                                        LS016740
02730 -0120 CO 0 03035          TMI     SETERR      OVER LAPPING STORAGE ERROR      LS016750
                       *                STRPNT SETUP                                LS016760
02731  0535 CO 4 03055   RSU    LAC     $TFS,4                                      LS016770
02732  1 77777 4 02733          TXI     *+1,4,-1                                    LS016780
02733 -0634 CO 4 02605          SXD     STRTOP,4                                    LS016790
02734  0535 CO 4 03057          LAC     $BFS,4                                      LS016800
02735 -0634 CO 4 02606          SXD     STRBTM,4                                    LS016810
                       *                RECLAIMER SETUP                             LS016820
02736  0534 CO 4 03072          LXA     $LBT,4                                      LS016830
02737  0634 CO 4 03322          SXA     A,4                                         LS016840
02740  0534 CO 4 03057          LXA     $BFS,4                                      LS016850
02741  0634 CO 4 03323          SXA     B,4                                         LS016860
02742  0534 CO 4 03062          LXA     $TFW,4                                      LS016870
02743 -0634 CO 4 03464          SXD     I,4                                         LS016880
02744 -0634 CO 4 03656          SXD     MONE,4                                      LS016890

BINARY CARD NO. LISP0066
02745  0534 CO 4 03060          LXA     $TBT,4                                      LS016900
02746  0634 CO 4 03666          SXA     MLTBT,4                                     LS016910
02747  0534 CO 4 03055          LXA     $TFS,4                                      LS016920
02750  0634 CO 4 03443          SXA     F,4                                         LS016930
02751  0534 CO 4 03057          LXA     $BFS,4                                      LS016940
02752  0634 CO 4 03476          SXA     SFWLD,4                                     LS016950
02753  0534 CO 4 03063          LXA     $BFW,4                                      LS016960
02754  0634 CO 4 03463          SXA     H,4                                         LS016970
02755  0535 CO 4 03063          LAC     $BFW,4                                      LS016980
02756 -0634 CO 4 03626          SXD     MRKLST,4                                    LS016990
02757 -0634 CO 4 03654          SXD     MLBDW,4                                     LS017000
02760  0535 CO 4 03055          LAC     $TFS,4                                      LS017010
02761  1 77777 4 02762          TXI     *+1,4,-1                                    LS017020
02762 -0634 CO 4 03627          SXD     MRKLST+1,4                                  LS017030
02763 -0634 CO 4 03651          SXD     MLIST,4                                     LS017040
02764  0535 CO 4 03057          LAC     $BFS,4                                      LS017050
02765 -0634 CO 4 03450          SXD     G,4                                         LS017060
02766 -0634 CO 4 03652          SXD     MLBFA,4                                     LS017070
02767 -0535 CO 4 03204          LDC     ENDPDL,4                                    LS017080
02770  1 00001 4 02771          TXI     *+1,4,1                                     LS017090
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    02771  0634 CO 4 03640          SXA     MLEPD,4                                                  LS017100
    02772  0634 CO 4 03647          SXA     MLEPE,4                                                  LS017110

BINARY CARD NO. LISP0067
    02773  0535 CO 4 03061          LAC     $BBT,4                                                   LS017120
    02774 -0634 CO 4 03653          SXD     MLBBJ,4                                                  LS017130
    02775  0520 CO 0 03034          ZET     RST             SKIP IF INITAL SETUP                     LS017140
    02776  0020 CO 0 03030          TRA     SUPX            GO TO EXIT OTERWISE                      LS017150
    02777  0535 CO 4 03057          LAC     $BFS,4          BOTTOM OF FREE STORAGE                   LS017160
    03000  1 77777 4 03001          TXI     *+1,4,-1        SUBTRACT 1                               LS017170
    03001 -0634 CO 4 03010          SXD     SUPFS,4         SET DECREMENT                            LS017180
    03002  0535 CO 4 03056          LAC     $MFS,4          LOWERP                                   LS017190
    03003 -0754 CO 4 00000          PXD     0,4             POINTER TO LWERP IN DECREMENT            LS017200
    03004  0601 CO 0 04512          STO     $FREE           SET UP FREE                              LS017210
    03005  0400 CO 0 00476          ADD     $QD1                                                     LS017220
    03006  0601 CO 4 00000          STO     0,4             START MAKING FREE STORAGE                LS017230
    03007  1 00001 4 03010          TXI     *+1,4,1                                                  LS017240
    03010 -3 00000 4 03005  SUPFS   TXL     *-3,4,**        -BFS                                     LS017250
    03011  0600 CO 4 00000          STZ     0,4                                                      LS017260
    03012  0535 CO 4 03063          LAC     $BFW,4          BOTTOM FULL WORD SPACR                   LS017270
    03013 -0754 CO 4 00000          PXD     0,4                                                      LS017280
    03014  0601 CO 0 04470          STO     FWORDL          SET UP FULL WORD LIST                    LS017290
    03015 -0737 CO 4 00000          PDC     0,4             GET IT RUE IN INDEX                      LS017300
    03016 -0634 CO 4 03021          SXD     SUPFV,4         USE TO CALCULATE LENGTH OF FULL WORD SLS017310
    03017  0534 CO 4 03061          LXA     $BBT,4          TFW + 1                                  LS017320
    03020  0634 CO 4 03023          SXA     SUPFW,4         SET END + 1 ADDRESSS                     LS017330

BINARY CARD NO. LISP0068
    03021  2 00000 4 03022  SUPFV  TIX     *+1,4,**        LENGHT OF FULL WORD                      LS017340
    03022  0402 CO 0 00476          SUB     $QD1                                                     LS017350
    03023  0601 CO 4 00000  SUPFW  STO     **,4            MAKE LIST                                LS017360
    03024  2 00001 4 03022          TIX     *-2,4,1         LOOP                                     LS017370
    03025  0600 60 0 03023          STZ*    SUPFW           MAKE LAST ENTRY ZERO                     LS017380
    03026  0500 00 0 64624          CLA     $OBLB           BEGINNING OF UNSORTED OBJECT LIST        LS017390
    03027  0074 CO 4 03210          TSX     CNSFWL,4                                                 LS017400
    03030  0774 CO 4 00000  SUPX   AXT     **,4                                                     LS017410
    03031  0600 CO 0 03034          STZ     RST             ZERO RESETUP SWITCH                      LS017420
    03032 -0754 CO 0 00000          PXD     0,0                                                      LS017430
    03033  0020 CO 4 00001          TRA     1,4                                                      LS017440
    03034  0 COOCO 0 00000  RST                             RESETUP TEST CELL                        LS017450
    03035  0074 CO 4 01527  SETERR TSX     OUTPUT,4                                                 LS017460
    03036 -0 00000 0 00365          MZE     BCDOUT          PRINT ON-LINE                            LS017470
    03037  0 00011 0 03041                  NOSET,,9                                                 LS017480
    03040  0020 CO 0 03030          TRA     SUPX            EXIT                                     LS017490
    03041  004665255143     NOSET BCI     9,0OVERLAPPING PARAMETERS -SETUP- ERROR NUMBER *0  7*     LS017500
    03042  214747314527
    03043  604721512144
    03044  256325516260
    03045  406225636447
    03046  406025515146

BINARY CARD NO. LISP0069
    03047  516045644422
    03050  255160544660
    03051  600754606060
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03052  0 00000 0 76702  EXCIQ      $BLAP-1          TOP FOR EXCISE(NIL)                    LS017510
03053  0 00000 0 77464  EXCLR          $BUTCH-1         TOP FOR EXCISE ( T )               LS017520
                        *                                                                  LS017530
                              HEAD    0                                                    LS017540
                        *                                                                  LS017550
                        *             STORAGE MAP CELLS FOR LISP                           LS017560
                        *                                                                  LS017570
03054  0 00000 0 70353  XORG         UPERML           ORIGIN OF EXCISED BINARY PROGRAM     LS017580
03055  0 00000 0 70352   TFS         UPERML-1         UPPER LIMIT OF FREE STORAGE          LS017590
03056  0 00000 0 64424   MFS         LOWERP           LOW LIMIT OF PERM. LIST STRUCTURE    LS017600
03057  0 00000 0 00000   BFS                          BOTTOM OF FREE STORAGE               LS017610
03060  0 00000 0 00000   TBT                          TOP OF BIT TABLE                     LS017620
03061  0 00000 0 00000   BBT                          BOTTOM OF BIT TABLR                  LS017630
03062  0 00000 0 00000   TFW                          TOP OF FULL WORD SPACE PROPER        LS017640
03063  0 00000 0 00000   BFW                          BOTTOM OF FULL WORD SPACE            LS017650
03064  0 00000 0 20063   TPG         TOPROG                                                LS017660
03065  0 00000 0 00000   ORG                          ORIGIN OF BINARY PROGRAM IN DECREMENT LS017670
03066  0 00000 0 00000  LBINPG                       LENGTH OF BINATY PROGRAM             LS017680
03067  0 00000 0 00000  LPBPDL                       LENGTH OF PUBLIC PUSH DOWN LIST      LS017690
03070  0 00000 0 00000  LFULWS                       LENGTH OF FULL WORD SPACE + BIT TABLE LS017700
03071  0 00000 0 00000  LFREES                       LENGTH OF FREE STORAGE               LS017710
03072  0 00000 0 00000   LBT                          LENGTH OF FULL WORD BIT TABLE        LS017720
                        *                                                                  LS017730
                        *       CELLS TO DETERMINE WHERE PROGRAMS AND ARRAYS GO            LS017740
                        *                                                                  LS017750
03073  0 00000 0 00000  BPLACE          0            NOISE MEANS ASSEMBLE TO EXCISABLE AREALS017760
03074  0 00000 0 00000  EXCISD          0            NOISE MEANS EXCISION HAS MEAD ABOVE IMLS017770
                        *                             POSSIBLE                           LS017780
                        *                                                                LS017790
                        *       EXCISABLE (T)   SETS LAP AND ARRAYS TO GO INTO EXCISABLE SPACE LS017800
                        *       EXCISABLE(F) SETS THEM TO GO INTO BPS AS IS NORMAL       LS017810
                        *                                                                LS017820
                              HEAD    X                                                  LS017830

BINARY CARD NO. LISP0070
    03075  0520 00 0 03074  EXCABL ZET     EXCISD           CAN WE STILL PUT THINGS UP THERE  LS017840
    03076 -0100 00 0 03101         TNZ     EXER             NO, BUT WE WERE TRYING            LS017850
    03077  0601 00 0 03073         STO     BPLACE           SET FLAG                          LS017860
    03100  0020 00 4 00001         TRA     1,4                                                LS017870
    03101 -0634 00 4 02313  EXER   SXD     $ERROR,4         ATTEMPT TO PUT RPOGRAM INOT EXCISABLE LS017880
    03102  0074 00 4 02314         TSX     $ERROR+1,4       AFTER EXCISION                    LS017890
    03103  546760600154           BCI     1,*X  1*                                           LS017900
                                   HEAD    0                                                  LS017910
                        * SAVE AND UNSAVE                   THE CLOSED SUBROUTINES THAT CONTROL LS017920
                        *                THE PUBLIC PUSH DOWN LIST. THE CALLING SEQUENCES ARE ... LS017930
                        *                                                                  LS017940
                        *       TSX      $SAVE,4                                           LS017950
                        *       TXL      $ENDN,,END OF BLOCK TO BE SAVED  + 2              LS017960
                        *       RETURN                                                     LS017970
                        *                WHERE N IN $ENDN IS THE NUMBER OF ITEMS TO BE SAVED LS017980
                        *                                                                  LS017990
                        *       TSX      UNSAVE,4                                          LS018000
                        *       RETURN                                                     LS018010
                        *                THE SAVED ITEMS MUST BE IN A CONTIGOUS BLOCK WITH THE LS018020
                        *                THE FIRST ITEM    PZE ATOMIC NAME OF SUBR,,IR 4    LS018030
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                        *           THE SAVE PARAMETER WORD IS ADDED AS THE LAST ITEM ON THE LS018040
                        *           BLOCK TO BE SAVED BUT IS NOT UNSAVED.                    LS018050
                        *                                                                    LS018060
 03104  0634 00 2 03175  SAVE  SXA   SAVY,2          SAVE INDEX 2 AND 1                     LS018070
 03105  0601 00 0 03177        STO   SAVT           SAVE THE AC                            LS018080
 03106  0500 60 4 00001        CLA*  1,4            AMMOUNT TO SUBTRACT FROM CPPI IN AC     LS018090
 03107  0734 00 1 00000        PAX   0,1            PUT - NUMBER OF ITEMS TO BE SAVED + 1  LS018100
 03110  1 00000 1 03111  CPPI  TXI   *+1,1,**       IN IR 1 AND INCREMENT BE PUSH DOWN CNT LS018110
 03111 -3 00000 1 03205 ENPDL2 TXL   NOPDL,1,**     GO TO NOPDL IF NOT ENOUGH PDL          LS018120
 03112 -0634 00 1 03110        SXD   $CPPI,1        UP DATE PDL COUNTER LOCATION           LS018130
 03113  0500 00 4 00001        CLA   1,4            PARAMETER WORD                         LS018140
 03114  0601 00 1 77777        STO   -1,1           PUT ON PUSH DOWN LIST                  LS018150
 03115 -0737 00 2 00000        PDC   0,2            LOCATION OF BLOCK TO BE SAVED + 2      LS018160
 03116  0522 00 4 00001        XEC   1,4            JUMP INTO SAVE TABLE                   LS018170
                        *                                                                   LS018180
 03117  0634 00 2 03175 UNSAVE SXA   SAVY,2        SAVE INDEX 2 AND 1                     LS018190
 03120  0601 00 0 03177        STO   SAVT           SAVE THE AC                            LS018200
 03121 -0534 00 2 03110        LXD   $CPPI,2        CURRENT PUSH DOWN COUNTER              LS018210
 03122  0500 00 2 77777        CLA   -1,2           LAST SAVE PARAMETER WORD               LS018220

BINARY CARD NO. LISP0071
 03123  0621 00 0 03126        STA   SAVJ           SET FETCH AND TXI INSTRUCTIONS         LS018230
 03124  0621 00 0 03132        STA   SAVK                                                  LS018240
 03125 -0634 00 2 03127        SXD   SAVI,2         SET UP TO RESTORE PDL COUNTER          LS018250
 03126  0535 00 1 00000  SAVJ  LAC   **,1           NUMBER TO BE UNSAVED                   LS018260
 03127  1 00000 1 03130  SAVI  TXI   *+1,1,**       ADD PUSH DOWN COUNTER                  LS018270
 03130 -0634 00 1 03110        SXD   $CPPI,1        UPDATE PDL COUNTER CELL                LS018280
 03131 -0737 00 1 00000        PDC   0,1            LOCATION OF END OF BLOCK + 2           LS018290
 03132  1 00001 4 00000  SAVK  TXI   **,4,1         JUMP TO PUSH DOWN TABLE AND SET IR 4   LS018300
                        *           PROPER EXIT .                                           LS018310
                        *                                                                   LS018320
                        *           SAVE AND UNSAVE TABLE TO DO THE ACTUAL MOVING TO AND FROMLS018330
                        *           THE PUBLIC PUSH DOWN LIST.                              LS018340
                        *                                                                   LS018350
 03133  0500 00 2 77757 END16 CLA   -17,2                                                  LS018360
 03134  0601 00 1 77757        STO   -17,1                                                 LS018370
 03135  0500 00 2 77760 END15 CLA   -16,2                                                  LS018380
 03136  0601 00 1 77760        STO   -16,1                                                 LS018390
 03137  0500 00 2 77761 END14 CLA   -15,2                                                  LS018400
 03140  0601 00 1 77761        STO   -15,1                                                 LS018410
 03141  0500 00 2 77762 END13 CLA   -14,2                                                  LS018420
 03142  0601 00 1 77762        STO   -14,1                                                 LS018430
 03143  0500 00 2 77763 END12 CLA   -13,2                                                  LS018440
 03144  0601 00 1 77763        STO   -13,1                                                 LS018450
 03145  0500 00 2 77764 END11 CLA   -12,2                                                  LS018460
 03146  0601 00 1 77764        STO   -12,1                                                 LS018470
 03147  0500 00 2 77765 END10 CLA   -11,2                                                  LS018480
 03150  0601 00 1 77765        STO   -11,1                                                 LS018490

BINARY CARD NO. LISP0072
 03151  0500 00 2 77766 END9  CLA   -10,2                                                  LS018500
 03152  0601 00 1 77766        STO   -10,1                                                 LS018510
 03153  0500 00 2 77767 END8  CLA   -9,2                                                   LS018520
 03154  0601 00 1 77767        STO   -9,1                                                  LS018530
 03155  0500 00 2 77770 END7  CLA   -8,2                                                   LS018540
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03156  0601 CO 1 77770          STO    -8,1                                    LS018550
03157  0500 CO 2 77771  END6    CLA    -7,2                                    LS018560
03160  0601 CO 1 77771          STO    -7,1                                    LS018570
03161  0500 CO 2 77772  END5    CLA    -6,2                                    LS018580
03162  0601 CO 1 77772          STO    -6,1                                    LS018590
03163  0500 CO 2 77773  END4    CLA    -5,2                                    LS018600
03164  0601 CO 1 77773          STO    -5,1                                    LS018610
03165  0500 CO 2 77774  END3    CLA    -4,2                                    LS018620
03166  0601 CO 1 77774          STO    -4,1                                    LS018630
03167  0500 CO 2 77775  END2    CLA    -3,2                                    LS018640
03170  0601 CO 1 77775          STO    -3,1                                    LS018650
03171  0500 CO 2 77776  END1    CLA    -2,2                                    LS018660
03172  0601 CO 1 77776          STO    -2,1                                    LS018670
03173  0500 CO 0 03177  ENDO    CLA    SAVT          RESTORE THE AC            LS018680
03174 -0534 CO 1 03110          LXD    $CPPI,1       MAKE IX1 AND $CPPI AGREE  LS018690
03175  0774 00 2 00000  SAVY    AXT    **,2                                    LS018700
03176  0020 CO 4 00002          TRA    2,4           EXIT                      LS018710
                       *                                                       LS018720
BINARY CARD NO. LISP0073
03177  0 00000 0 00000  SAVT                         TEMPORARY STORAGE FOR AC  LS018730
                       *        TIMING INFORAMTION .. SAVE AND UNSAVE 34 + 4N CYCLES  LS018740
                       *        ON THE 709  (SUBTRACT 5 CYCLES FOR SAVE AND 4 FOR UNSAVE LS018750
                       *        ON THE 7090)                                   LS018760
                       *                                                       LS018770
                                                                               LS018780
                                TERPDL                                         LS018790
                                RESETS PUBLIC PUSH DOWN LIST TO ZERO           LS018800
                                                                               LS018810
03200  0500 CO 0 03203  TERPDL CLA $CSSI                                       LS018820
03201  0622 CO 0 03110         STD CPPI                                        LS018830
03202  0020 CO 4 00001         TRA 1,4                                         LS018840
03203  0 00000 0 00000   CSSI                                                  LS018850
03204 -3 00000 4 03205  ENDPDL TXL     *+1,4,**      OUT OF PDL TEST INSTRUCTION (IS XEC)  LS018860
03205 -0634 CO 4 02313   NOPDL SXD $ERROR,4                                    LS018870
03206  0074 CO 4 02314         TSX $ERROR+1,4                                  LS018880
03207  542760600254            BCI     1,*G  2*       OUT OF PUBLIC PUSH DOWN LIST  LS018890
                                                                               LS018900
                                                                               LS018910
                       *                                                       LS018920
                              HEAD     E                                       LS018930
                                                                               LS018940
                       *                                                       LS018950
                       * CNSFWL        USED BY SETUP TO MOVE ALL FULL WORDS ON PERMENENT OBJECTS  LS018960
                       *               TO THE FULL WORD SPACE.                 LS018970
                       *               ALSO BUCKET SORTS THE PERMENENT OBJECTS.  LS018980
                       *                                                       LS018990
03210  0634 CO 4 03237  CNSFWL SXA     CNFWX,4       SAVE INDEX REGISTERS      LS019000
03211  0634 CO 2 03240         SXA     CNFWY,2                                 LS019010
03212 -0734 CO 4 00000         PDX     0,4           POINTER TO OBJECT LIST    LS019020
03213  0500 CO 4 00000   CNMLP CLA     0,4           NEXT WORD ON LIST         LS019030
03214  0622 CO 0 04052         STD     CNXT          POINTER TO NEXT WORD      LS019040
03215  0734 CO 2 00000         PAX     0,2           POINTET TO AN ATOM        LS019050
03216 -0634 CO 2 04055         SXD     CNAT,2        SAVE THE POINTER TO THE ATOM  LS019060
03217  0500 CO 2 00000         CLA     0,2                                     LS019070
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03220 -0320 CO 0 00524          ANA     TAGMSK          TEST FOR NUMBER                          LS019080
03221 -0100 CO 0 03242          TNZ     CNNM            MAKE A NUMVER                            LS019090
03222  0500 00 2 00000  CNSLP   CLA     0,2             NEXT WORD ON ATOM                        LS019100
03223  0734 CO 2 00000          PAX     0,2             CAR OF ATOM, SEARCH FOR FULL WORD        LS019110
03224  3 10440 2 03226          TXH     *+2,2,$SUBR     SUCH AS $SUBR                            LS019120

BINARY CARD NO. LISP0074
03225  3 10437 2 03251          TXH     CMKO,2,$SUBR-1                                           LS019130
03226  3 11630 2 03230          TXH     *+2,2,$FSUBR                                             LS019140
03227  3 11627 2 03251          TXH     CMKO,2,$FSUBR-1                                          LS019150
03230  3 11062 2 03232          TXH     *+2,2,$PNAME                                             LS019160
03231  3 11061 2 03266          TXH     CMPNT,2,$PNAME-1                                         LS019170
03232 -0734 CO 2 CO00C  CNRS    PDX     0,2             IS NONE OF ABOVE SO CDR TO IR 2          LS019180
03233  3 00000 2 03222  CNRT    TXH     CNSLP,2,0       GO BACK IF NOT END OF PROPERTY LIST      LS019190
03234 -0534 CO 4 04052  CNNR    LXD     CNXT,4          POINTER TO NEXT OBJECT                   LS019200
03235  3 00CC0 4 03213          TXH     CNMLP,4,0       GO BACK IF NOT END                       LS019210
03236 -0754 CO 0 00000          PXD     0,0             CLAER AC                                 LS019220
03237  0774 00 4 00000  CNFWX   AXT     **,4            RESTORE INDEX REGISTERS                  LS019230
0324C  0774 CO 2 00000  CNFWY   AXT     **,2                                                     LS019240
03241  0020 CO 4 00001          TRA     1,4             EXIT                                     LS019250
                        *                                                                        LS019260
03242  0500 CO 2 00000  CNNM    CLA     0,2                                                      LS019270
03243 -0120 CO 0 03234          TMI     CNNR            DONT MOVE NUMBERS WITH MZE PREFIX        LS019280
03244 -0734 00 4 00000          PDX     0,4                                                      LS019290
03245  0500 CO 4 00000          CLA     0,4                                                      LS019300
03246  0074 00 4 04451          TSX     $CONSW,4                                                 LS019310
03247  0622 CO 2 00000          STD     0,2                                                      LS019320
03250  0020 CO 0 03234          TRA     CNNR            MAKE UP THE NEW NUMBER                   LS019330
                        *                                                                        LS019340
03251 -0734 CO 2 00000  CMKO    PDX     0,2             PUT ONE WORD IN FULL WORD SPACE          LS019350
03252  0500 CO 2 00000          CLA     0,2             GET NEXT WORD ON PROPERTY LIST           LS019360

BINARY CARD NO. LISP0075
03253  0622 CO 0 04053          STD     CNX             POINTER TO REST OF OBJECT                LS019370
03254 -0120 CO 0 03264          TMI     CMK             SKIP MOVING THIS WORD IF MINUS SIGN ISLS019380
03255  0734 00 4 00000          PAX     0,4             SENSED, OTHERWISE GET POINTER TO FULL    LS019390
03256  0500 CO 4 00000          CLA     0,4             WORD AND WORD IT SELF IN AC              LS019400
03257  0074 CO 4 04451          TSX     $CONSW,4        PUT IT IN FULL WORD SPACE                LS019410
03260  0771 CO 0 00022          ARS     18              MOVE POINTER TO WORD IN FWS TO ADDRESSLS019420
03261  0621 00 2 00000          STA     0,2             REPLACE THE ADDRESS                      LS019430
03262 -0534 CO 2 04053          LXD     CNX,2           POINTER TO NEXT WORD ON PROPERTY LIST    LS019440
03263  0020 CO 0 03233          TRA     CNRT            RETURN                                   LS019450
                        *                                                                        LS019460
03264  0602 CO 2 00000  CMK     SLW     0,2             RESTORE WORD WITH PLUS SIGN              LS019470
03265  0020 CO 0 03232          TRA     CNRS            GO BACK                                  LS019480
                        *                                                                        LS019490
03266 -0734 00 2 00000  CMPNT   PDX     0,2             PUT PRINT NAME IN FULL WORD SPACE        LS019500
03267  0500 00 2 00000          CLA     0,2             NEXT WORD ON PROPERTY LIST               LS019510
03270  0622 CO 0 04053          STD     CNX             POINTER TO NEXT WORD ON PROPERTY LIST    LS019520
03271  0734 00 2 00000          PAX     0,2             POINTET TO PNAME LIST                    LS019530
03272 -0634 CO 2 04056          SXD     CNVA,2          SAVE IT                                  LS019540
03273  0500 CO 2 00000  CMPLP   CLA     0,2             FIRST FORD ON PNAME LIST                 LS019550
03274 -0120 CO 0 03305          TMI     CMPS            SKIP IF WORD IS FLAGGED                  LS019560
03275  0622 CO 0 04054          STD     CNFT            POINTER TO NEXT WORD ON PNAME LIST       LS019570
03276  0734 00 4 00000          PAX     0,4             POINTER TO FULL WORD                     LS019580
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03277  0500 00 4 00000          CLA     0,4                FULL WORD                                  LS019590
03300  0074 00 4 04451          TSX     $CONSW,4           PUT IN FULL WORD SPACE                     LS019600

BINARY CARD NO. LISP0076
03301  0771 00 0 00022          ARS     18                 POINTER TO WORD                            LS019610
03302  0621 00 2 00000          STA     0,2                RPLACE THE ADDRESS                         LS019620
03303 -0534 00 2 04054          LXD     CNFT,2             POINTER TO NEXT WORD ON PNAME LIST         LS019630
03304  3 00000 2 03273          TXH     CMPLP,2,0          GO BACK IF NOT END                         LS019640
03305  0500 00 0 04056   CMPS   CLA     CNVA               POINTER TO PNAME LIST                      LS019650
03306  0560 00 0 04055          LDQ     CNAT               ATOM THAT WE ARE WORKING ON                LS019660
03307  0074 00 4 07245          TSX     BUKSRT,4           PUT ON BUCKET SORTED OBJECT LIST           LS019670
03310 -0534 00 2 04053          LXD     CNX,2              POINTER TO NEXT WORD ON ATOM               LS019680
03311  0020 00 0 03233          TRA     CNRT               GO BACK                                    LS019690
                        *                                                                             LS019700
                        *                                                                             LS019710
                        *                                                                             LS019720
                        *, RECLAIMER    LISP 1.5 STORAGE CONTROL PROGRAM.  CODED 1 MARCH 1961         LS019730
                        *                                                                             LS019740
03312  0634 00 4 03603  RECLAM SXA     RCX,4              SAVE INDEX REGISTERS                       LS019750
03313  0634 00 2 03604          SXA     RCY,2                                                         LS019760
03314  0634 00 1 03605          SXA     RCZ,1                                                         LS019770
03315  0604 00 0 03764          STI     RCIND              AND MACHINE REGISTETS                      LS019780
03316  0601 00 0 04050          STO     RCAC                                                          LS019790
03317 -0600 00 0 04051          STQ     RCMQ                                                          LS019800
03320  0600 00 0 03765          STZ     RCBE               INITIALIZE BAD EXIT CELL                   LS019810
03321  0560 00 0 04030   RCA    LDQ     RCSGNL             SIGNAL PHASE 1                             LS019820
03322  0774 00 4 00000   A      AXT     **,4               BIT TABLE LENGTH                           LS019830
03323  0600 00 4 00000   B      STZ     **,4               DOTTOM FREE STORAGE                        LS019840
03324  2 00001 4 03323          TIX     *-1,4,1            ZERO THE BIT TABLE                         LS019850
03325 -0534 00 4 03204          LXD     ENDPDL,4           END OF PDL                                 LS019860
03326 -0634 00 4 03330          SXD     RCIA,4             SET UP TNX INSTRUCTION                     LS019870

BINARY CARD NO. LISP0077
03327 -0534 00 4 03110          LXD     $CPPI,4            CURRENT PUSH DOWN LIST LOC.                LS019880
03330 -2 00000 4 03643   RCIA   TNX     MLPDE,4,**         AMMOUNT OF PUSH DOWN LIST AVAILABLE        LS019890
03331 -0634 00 4 03642          SXD     MLPDC,4            SET CELL IN MRKLST                         LS019900
03332  0634 00 4 03510          SXA     ZPDLA,4            LENGTH LEFT BAR FOR ZEROIND PDL            LS019910
03333 -0774 00 2 64623          AXC     OBLIST,2           POINTER TO OBJECT LICT                     LS019920
03334  0441 00 0 11254          LDI     SYSIND             SYSTEM INDICATORS                          LS019930
03335  0520 00 0 12507          ZET     EVQRTS             SKIP IF DURING READ IN IN EVALQUOTE        LS019940
03336  0056 00  000004         RNT     DEBUGI             SKIP MARKING OBLIST IF IN A DEBUG          LS019950
03337  0074 00 4 03626          TSX     MRKLST,4           MARK THE LIST                              LS019960
                        *                                                                             LS019970
                        *          TEMLIS MARKER                                                      LS019980
                        *          TEMLIS IS A LIST IN FREE STORAGE AND FULL WORD SPACE               LS019990
                        *          OF THE FORM (CONS (CONSW BEG,,END) TEMLIS) AND INDICATES           LS020000
                        *          PLACES WHERE LIST STRUCTURE MAY BE DURING A GARBAGE                LS020010
                        *          COLLECTION. USED PRINCIPALLY BY THE COMPILER                       LS020020
                        *                                                                             LS020030
03340  0600 00 0 04033          STZ     TMLM               SET EXIT SWITCH                            LS020040
03341 -0534 00 4 04046          LXD     TEMLIS,4                                                      LS020050
03342  0500 00 4 00000   TMLJ   CLA     0,4                NEXT WORD ON TEMLIS                        LS020060
03343  0622 00 0 04033          STD     TMLM               SAVE POINTER TO NEXT WORD                  LS020070
03344  0734 00 4 00000          PAX     0,4                POINTER TO FULL WORD                       LS020080
03345  0500 00 4 00000          CLA     0,4                FULL WORD                                  LS020090
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03346  0734 CO 4 00000          PAX     0,4          BEGINNING OF ARRAY                              LS020100
03347 -0634 CO 4 03353          SXD     TMLD,4                                                       LS020110
03350 -0734 00 1 00000          PDX     0,1          END OF ARRAY                                    LS020120
03351  1 00001 1 03352          TXI     *+1,1,1      ADD 1                                           LS020130
03352  0634 CO 1 03355  TMLK    SXA     TMLE,1                                                       LS020140
03353 -2 00000 1 03367  TMLD    TNX     TMLH,1,**    SUBTRACT BEGINNING , GIVES COUNT IN IRL         LS020150
03354  0634 00 1 03756          SXA     GCPDLC,1     LAST USE IS MARKING PDL, SAVE LENGTH            LS020160

BINARY CARD NO. LISP0078
03355  0441 CO 1 00000  TMLE    LDI     **,1         PICK UP WORD                                    LS020170
03356  0444 CO 0 04034          OFT     TMPTM        SKIP IF NOTAG OR PREFIX                         LS020180
03357  0020 CO 0 03366          TRA     TMLG         NOT A LIST, DO NOT MARK                         LS020190
03360 -0046 CO 0 00000          PIA                  ITEM TO AC                                      LS020200
03361  0621 00 0 03364          STA     TMLF         SAVE ADDRESS                                    LS020210
03362 -0734 00 2 00000          PDX     0,2                                                          LS020220
03363  0074 CO 4 03626          TSX     MRKLST,4     MARK THE DECREMENT                              LS020230
03364  0774 CO 2 00000  TMLF    AXT     **,2         ADDRESS OF WORD TO IR                           LS020240
03365  0074 CO 4 03626          TSX     MRKLST,4     MARK IT                                         LS020250
03366  2 00001 1 03355  TMLG    TIX     TMLE,1,1     GET NEXT WORD IN ARRAY                          LS020260
03367 -0534 CO 4 04033  TMLH    LXD     TMLM,4       NEXT TEMLIS ITEM                                LS020270
03370  3 00000 4 03342          TXH     TMLJ,4,0     GO IF NOT DONE                                  LS020280
03371  0520 CO 0 04033          ZET     TMLM         TEST FOR EXIT                                   LS020290
03372  0020 CO 0 03401          TRA     MPDLF        ALL DONE                                        LS020300
03373 -0535 CO 4 03203          LDC     $CSSI,4      BEGINNING OF PDL                                LS020310
03374 -0634 CO 4 03353          SXD     TMLD,4       SET UP CELL                                     LS020320
03375 -0535 00 1 03110          LDC     $CPPI,1      FIRST FREE CELL ON PDL                          LS020330
03376 -0625 CO 0 04033          STL     TMLM         INDICATE LAST USE OF LOOP                       LS020340
03377  0600 CO 0 03756          STZ     GCPDLC       PUSH DOWN LENGTH INITIALLY ZERO                 LS020350
03400  0020 CO 0 03352          TRA     TMLK         GO MARK PUSH DOWN LIST                          LS020360
03401 -0534 CO 4 04047  MPDLF   LXD     ARYLIS,4     START TO MARK ACTIVE ARRAYS                     LS020370
03402 -3 00000 4 03437  MARYB   TXL     RCB,4,0      GO IF NO ARRAYS                                 LS020380

BINARY CARD NO. LISP0079
03403  0500 CO 4 00000          CLA     0,4          NEXT WORD ON ARYLIS                             LS020390
03404  0622 CO 0 03766          STD     MARYT        SAVE POINTER TO NEXT WORD                       LS020400
03405  0734 00 4 00000          PAX     0,4          ARYATOM TO AC                                   LS020410
03406  0500 CO 4 00000  MARYA   CLA     0,4          NEXT WORD ON ATOM                               LS020420
03407  0734 00 4 00000          PAX     0,4                                                          LS020430
03410 -3 12513 4 03412          TXL     *+2,4,$ARRAY-1  SERCH FOR ARRAY SPECIFICATION                LS020440
03411 -3 12514 4 03416          TXL     MRKA,4,$ARRAY   GO IF FOUND                                  LS020450
03412 -0734 CO 4 00000          PDX     0,4          POINTER TO NEXT WORD                            LS020460
03413  3 00000 4 03406          TXH     MARYA,4,0    GO IF NOT END OF ATOM                           LS020470
03414 -0534 CO 4 03766  MARYC   LXD     MARYT,4      NEXT WORD ON ARYLIS                             LS020480
03415  0020 CO 0 03402          TRA     MARYB                                                        LS020490
                        *                                                                           LS020500
03416 -0734 CO 4 00000  MRKA    PDX     0,4          GET ARRAY SPECIFICATIONS                        LS020510
03417  0500 CO 4 00000          CLA     0,4                                                          LS020520
03420  0734 CO 4 00000          PAX     0,4                                                          LS020530
03421  0500 CO 4 00000          CLA     0,4                                                          LS020540
03422  0734 00 4 00000          PAX     0,4                                                          LS020550
03423  0500 CO 4 00000          CLA     0,4          FIRST SPEC. WORD                                LS020560
03424  0734 CO 2 00000          PAX     0,2          END OF ARRAY + 1                                LS020570
03425  0621 CO 0 03432          STA     MRKE         END OF ARRAY + 1                                LS020580
03426  0500 CO 4 00001          CLA     1,4                                                          LS020590
03427  0601 00 0 04035          STO     MRKP         SECOND SPEC. WORD  TOTAL L,, LIST L             LS020600
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    03430 -0534 CO 1 04035   MRKF  LXD   MRKP,1            GET LIST LENGTH IF ANY                    LS020610

BINARY CARD NO. LISP0080
    03431 -3 00000 1 03414         TXL   MARYC,1,0         EXIT IF A NON-LIST ARRAY                  LS020620
    03432  0500 CO 1 00000   MRKE  CLA   **,1              LIST ITEM                                 LS020630
    03433 -0734 CO 2 00000         PDX   0,2                                                         LS020640
    03434  0074 CO 4 03626         TSX   MRKLST,4          MARK IT                                   LS020650
    03435  2 00001 1 03432         TIX   MRKE,1,1          GET NEXT ITEM                             LS020660
    03436  0020 CO 0 03414         TRA   MARYC             EXIT                                      LS020670
                           *                                                                         LS020680
                           *              ALL MARKING DONE. NOW SWEEP FREE STORAGE                   LS020690
                           *                                                                         LS020700
    03437  0774 CO 2 00000   RCB   AXT   0,2              ZERO COUNT IR                             LS020710
    03440  0600 CO 0 03752         STZ   FSC               INITIALIZE COUNTER                        LS020720
    03441  0560 CO 0 04031         LDQ   RCSGNM            SWEEPING SIGNAL TO MQ                     LS020730
    03442 -0774 CO 1 04512         AXC   $FREE,1           INITIALIZE LAST LOC IR                    LS020740
    03443 -0774 CO 4 00000   F     AXC   **,4              TOP FREE STORAGE                          LS020750
    03444  0502 CO 4 00000   SFSL  CLS   0,4              PICK UP WORD                              LS020760
    03445 -0120 CO 0 03454         TMI   SFSC              COLLECT IF SIGN NOW MINUS                 LS020770
    03446  0601 CO 4 00000         STO   0,4               RESTORE WORD WITH + SIGN                   LS020780
    03447  1 00001 4 03450   SFSA  TXI   *+1,4,1          INCREMENT BY ONE                          LS020790
    03450 -3 00000 4 03444   G     TXL   SFSL,4,**         LOOP IF LESS THAN BOTTOM FREE STORAGE     LS020800
    03451  0600 CO 1 00000         STZ   0,1               ZERO LAST WORD COLLECTED                  LS020810
    03452  0634 CO 2 03752         SXA   FSC,2             SAVE COUNT                                LS020820
    03453  0020 CO 0 03460         TRA   SWPFWS                                                      LS020830
    03454 -0754 CO 4 00000   SFSC  PXD   0,4               THIS LOCATION                             LS020840
    03455  0601 CO 1 00000         STO   0,1               STORE POINTER IN LAST WORD COLLECTED       LS020850
    03456 -0734 00 1 00000         PDX   0,1               UP DATE LAST WORD IR                      LS020860

BINARY CARD NO. LISP0081
    03457  1 00001 2 03447         TXI   SFSA,2,1          UPDATE COUNTER                            LS020870
                           *                                                                         LS020880
                           *          NOW SWEEP FULL WORD SPACE WITH THE BIT TABLE                   LS020890
                           *                                                                         LS020900
    03460  0774 00 4 04470   SWPFWS AXT   FWORDL,4         BEGINNING OF FULL WORD LIST               LS020910
    03461  0634 00 4 03617         SXA   SFWA,4            INITIALIZE ADDRESS                        LS020920
    03462  0600 CO 0 03750         STZ   FWC               ZERO FULL WORD COUNTER                    LS020930
    03463 -0774 CO 1 00000   H     AXC   **,1              BOTTOM FULL WORD SPACE                    LS020940
    03464  1 00000 1 03465   I     TXI   *+1,1,**          TOP FULL WORD SPACE                       LS020950
    03465  0754 00 1 00000         PXA   0,1               GET ADDRESS OF BIT TABLE CORRESPONDINGLS020960
    03466 -0765 CO 0 00005         LGR   5                 TO THE BOTTOM OF FULL WORD SPACE          LS020970
    03467  0734 CO 4 00000         PAX   0,4               BIT TABLE WORD                            LS020980
    03470  1 00001 4 03471         TXI   *+1,4,1           MAKE INDEXING EASY                        LS020990
    03471 -0754 CO 0 00000         PXD   0,0               ZERO AC                                   LS021000
    03472 -0763 CO 0 00005         LGL   5                 BIT NUMBER                                LS021010
    03473  0734 00 2 00000         PAX   0,2               INTO IR 2                                 LS021020
    03474  1 00001 2 03475         TXI   *+1,2,1           MAKE INDEXING EASY                        LS021030
    03475  0535 CO 1 03463         LAC   H,1               SET UP IR 1                               LS021040
    03476  0441 CO 4 00000   SFWLD LDI   **,4              BOTTOM FREE STORAGE, (TBT + 1)            LS021050
    03477  0446 00 0 00526         ONT   BTMASK                                                      LS021060
    03500  0020 00 0 03607         TRA   SFWSC             SEARCH FOR THE WORDS TO BE COLLECTED      LS021070
    03501  1 77740 1 03502         TXI   *+1,1,-32         DECREMENT CURRENT LOC IR                  LS021080
    03502  2 00001 4 03476   SFWB  TIX   SFWLD,4,1         INDEX THROUGH BIT TABLE                   LS021090
    03503  0500 CO 0 03750   SFWDN CLA   FWC               ALL DONE, GET FULL WORD COUNTER           LS021100
    03504  0601 60 0 03617         STO*  SFWA              SET UP LAST CELL COLLECTED                LS021110
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BINARY CARD NO. LISP0082
    03505  0560 CO 0 04032          LDQ     RCSGNN          PASE 3 SIGNAL                                LS021120
    03506  0520 CO 0 03760          ZET     RCT             TEST FOR OUT OF ARRAY SPACE ENTRANCE         LS021130
    03507  0074 CO 4 03725          TSX     RELOC,4         RELOCATE AND COMPACT FULL WORD SPACE         LS021140
    03510  0774 00 4 00000  ZPDLA   AXT     **,4            ZERO UNUSED PDL                              LS021150
    03511  0600 CO 4 00000  ZPDL    STZ     **,4            ZERO PDL WORD                                LS021160
    03512  2 000C1 4 03511          TIX     *-1,4,1                                                      LS021170
    03513  0560 CO 0 00436          LDQ     CRITWN          CRITACL WORD NUMBER                          LS021180
    03514  0600 00 0 03765          STZ     RCBE            INITIALIZE BAD EXIT TEST CELL                LS021190
    03515  0500 CO 0 03750          CLA     FWC             NUMBER OF FULL WORDS COLLECTED               LS021200
    03516  0040 CO 0 03520          TLQ     RCEA            TRANSFER IF MORE THAN CRITACL COLLECT        LS021210
    03517 -0625 CO 0 03765          STL     RCBE            NOT ENOUGH, SIGNAL BAD EXIT                  LS021220
    03520  0400 CO 0 03762  RCEA    ADD     TFWC            ADD TOTAL OF FULL WORDS COLLECTED            LS021230
    03521  0601 CO 0 03762          STO     TFWC            UPDATE COUNTER                               LS021240
    03522 -0763 CO 0 00004          LGL     4               INCREASE TOLERENCE BY 2 TO THE 4 TH          LS021250
    03523  0500 CO 0 03752          CLA     FSC             NUMBER OF FREE STORAGE CELLS PICKED UP       LS021260
    03524  0040 CO 0 03526          TLQ     RCEB            TRA IF GREATER THAN CRITACL NUMBER           LS021270
    03525 -0625 CO 0 03765          STL     RCBE            NO, SIGNAL BAD EXIT                          LS021280
    03526  0400 CO 0 03763  RCEB    ADD     TFSC            ADD TOTAL OF FREE COLLECTED TO DATE          LS021290
    03527  0601 CO 0 03763          STO     TFSC            UPDATE TOTAL                                 LS021300
    03530  0500 CO 0 03757          CLA     RCC             NUMBER OF RECLAIMATION CYCLES EXECUTED       LS021310
    03531  0400 CO 0 00425          ADD     $Q1             INCREMENT BY 1                               LS021320
    03532  0601 CO 0 03757          STO     RCC             UPDATE TOTAL                                 LS021330

BINARY CARD NO. LISP0083
    03533  0500 CO 0 03761          CLA     RLC             NUMBER OF TIMES RELOCATION OF FWS            LS021340
    03534  0520 CO 0 03760          ZET     RCT             SKIP IF NO RELOCATION                        LS021350
    03535  0400 CO 0 00425          ADD     $Q1                                                          LS021360
    03536  0601 CO 0 03761          STO     RLC             UPDATE COUNTER                               LS021370
    03537 -0520 CO 0 03765          NZT     RCBE            SKIP IF BAD EXIT                             LS021380
    03540  0020 00 0 03542          TRA     RCED            DO GOOD EXIT                                 LS021390
    03541  0020 CO 0 03544          TRA     RCEC            DO VERBOSE AND BAD EXIT                      LS021400
    03542 -0520 00 0 04027  RCED    NZT     VERBOS          SKIP IF TALKATIVE                            LS021410
    03543  0020 CO 0 03600          TRA     RCEXIT          DO EXIT                                      LS021420
    03544  0535 00 4 03603  RCEC    LAC     RCX,4           GET EXIT IR4                                 LS021430
    03545 -0754 00 4 00000          PXD     0,4             AND CONVERT FOR PRINTING                     LS021440
    03546  0131 CO 0 00000          XCA                                                                  LS021450
    03547  0074 CO 4 11731          TSX     OCTALP,4                                                     LS021460
    03550 -0501 CO 0 00506          ORA     OBLANK                                                       LS021470
    03551  0602 CO 0 03741          SLW     RCT1                                                         LS021480
    03552  0500 CO 0 03750          CLA     FWC             FULL WORD COUNTER                            LS021490
    03553  0074 00 4 04653          TSX     $DECON,4        CONVERT TO BCD DECIMAL                       LS021500
    03554  0602 CO 0 03750          SLW     RCT4            PUT IN MESSAGE                               LS021510
    03555  0500 CO 0 03752          CLA     FSC             FREE STORAGE COUNTER                         LS021520
    03556  0074 00 4 04653          TSX     $DECON,4        TO DECIMAL                                   LS021530
    03557  0602 CO 0 03752          SLW     RCT5            PUT IN MESSAGE                               LS021540
    03560  0500 00 0 03756          CLA     GCPDLC          NUMBER OF ACTIVE REGISTERS ON PDL            LS021550

BINARY CARD NO. LISP0084
    03561  0074 CO 4 04653          TSX     $DECON,4        TO DECIMAL                                   LS021560
    03562  0602 CO 0 03756          SLW     RCT6            IN MESSAGE                                   LS021570
    03563 -0520 CO 0 15702          NZT TCNTMA                                                           LS021580
    03564  0020 CO 0 03573          TRA TGCPRT                                                           LS021590
    03565  0500 CO 0 15677          CLA TCNTMN                                                           LS021600
    03566  0074 CO 4 04653          TSX $DECON,4                                                         LS021610
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03567  0602 CO 0 03745          SLW RCT1+4                                                    LS021620
03570 -0130 CO 0 00000          XCL                                                           LS021630
03571  0100 CO 0 03573          TZE *+2                                                       LS021640
03572  0602 CO 0 03744          SLW RCT1+3                                                    LS021650
03573  0074 CO 4 01527  TGCPRT  TSX OUTPUT,4                                                  LS021660
03574  0 00000 0 00365                BCDOUT                                                 LS021670
03575  0 00023 0 03734                RCTM,,19                                               LS021680
03576  0520 CO 0 03765          ZET   RCBE          SKIP IF GOOD EXIT                         LS021690
03577  0020 CO 0 03712          TRA   RCBEX         DO BAD EXIT                               LS021700
03600  0500 CO 0 04050  RCEXIT  CLA   RCAC          RESTORE MACHINE REGISTERS                 LS021710
03601  0560 CO 0 04051          LDQ   RCMQ                                                    LS021720
03602  0441 CO 0 03764          LDI   RCIND                                                   LS021730
03603  0774 00 4 C0000   RCX    AXT   **,4          AND INDEX REGISTERS                       LS021740
03604  0774 CO 2 00000   RCY    AXT   **,2                                                    LS021750
03605  0774 CO 1 C0000   RCZ    AXT   **,1                                                    LS021760
03606  0020 00 4 00001          TRA   1,4           EXIT                                      LS021770

BINARY CARD NO. LISP0085
03607  0446 CO 2 04027   SFWSC  ONT   MBIT,2        CHECK FOR CURRENT BIT                     LS021780
03610  0020 CO 0 03615          TRA   SFWC          IS OFF, COLLECT WORD                      LS021790
03611  1 77777 1 03612          TXI   *+1,1,-1      IS ON, DECREMENT CURRENT LOC IR           LS021800
03612  2 00001 2 03607   SFWD   TIX   SFWSC,2,1     INDEX THROUGH THE BITS                    LS021810
03613  0774 CO 2 00040          AXT   32,2          SET UP IR WITH NUMBER OF BITS PER WORD    LS021820
03614  0020 CO 0 03502          TRA   SFWB          EXAMINE NEXT WORD IN BIT TABLE            LS021830
                        *                                                                    LS021840
03615 -0754 CO 1 00000   SFWC   PXD   0,1           COLLECT THIS WORD, POINTER TO THIS WOR    LS021850
03616  0400 CO 0 03750          ADD   FWC           D PLUS NUMBER OF WORDS COLLECTED IN AC    LS021860
03617  0601 00 0 00000   SFWA   STO   **            SET LAST WORD COLLECTED                   LS021870
03620  0400 CO 0 00425          ADD   $Q1           INCREMENT NUMBER OF FULL WORDS COLLECT    LS021880
03621  0621 CO 0 03750          STA   FWC           SAVE FULL WORD COUNTER                    LS021890
03622 -0737 CO 1 00000          PDC   0,1           COMPLEMENT CURRENT LOCATION               LS021900
03623  0634 CO 1 03617          SXA   SFWA,1        TO FORM TRUE ADDRESS FOR UPDATE STORE     LS021910
03624 -0734 CO 1 00000          PDX   0,1           CURRENT LOCATION POINTER                  LS021920
03625  1 77777 1 03612          TXI   SFWD,1,-1     DECREMENT CURRENT LOCATION AND RETURN     LS021930
                        *                                                                    LS021940
                        * MRKLST      THE RECURSIVE SUBROUTINE THAT DOES ALL LIST MARKING     LS021950
                        *                                                                    LS021960
03626  3 00000 2 03672  MRKLST TXH   MLEXT,2,**     BFW BAR, REJECT POINTERS TO PROGRAM       LS021970
03627 -3 00000 2 03672          TXL   MLEXT,2,**     TFS BAR - 1, REJECT POINTERS TO LOADER    LS021980
03630  0634 CO 1 03670          SXA   MSRTN,1        SAVE IR 1                                 LS021990
03631  0634 CO 4 03671          SXA   MRKX,4         SAVE LINK IR                              LS022000
03632  0774 00 1 00001          AXT   1,1            PRESET TO ONE FOR FAST PUSH DOWN ACESS    LS022010
03633  0020 CO 0 03651          TRA   MLIST          DO ACTUAL MARKING                         LS022020
                        *                                                                    LS022030
03634  0502 CO 2 00000   MWIN   CLS   0,2            MARK THIS WORD IN FREE STORAGE            LS022040

BINARY CARD NO. LISP0086
03635  0120 CO 0 03667          TPL   MOUT           TRANSFER OUT IF ALREADY MARKED            LS022050
03636  0601 CO 2 00000          STO   0,2            CAR OF LIST                               LS022060
03637  0734 CO 2 00000          PAX   0,2            CAR TO IR 2                               LS022070
03640  0622 00 1 00000   MLEPD  STD   **,1           ENDPDL + 1, SAVE CDR OF LIST ON PDL       LS022080
03641  1 00001 1 03642          TXI   *+1,1,1        INCREMENT PUSH DOWN COUNTER               LS022090
03642 -3 00000 1 03651   MLPDC  TXL   MLIST,1,**     ENDPDL - C($CPPI) BAR, GO IF NOT NOPDL    LS022100
03643  0074 CO 4 03673   MLPDE  TSX   RCERR,4        OUT OF PUSH DOWN LIST, FATAL ERROR        LS022110
03644  004546604724           BCI   3,ONO PDL -MRKLST-                                      LS022120
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03645  436040445142
03646  436263406060
03647   0500 00 1 00000    MLEPE CLA     **,1            ENDPDL + 1, GET CDR OF LIST                LS022130
03650  -0734 00 2 00000          PDX     0,2             PUT IN  IR 2                               LS022140
03651  -3 00000 2 03667   MLIST TXL     MOUT,2,**       TFS BAR - 1, OUT IF NOT IN LISP STORAG     LS022150
03652  -3 00000 2 03634   MLBFA TXL     MWIN,2,**       BOTTOM FREE STORAGE BAR, IN FREE           LS022160
03653  -3 00000 2 03667   MLBBJ TXL     MOUT,2,**       BBT BAR  OUT IF POINTER TO BIT TABLE       LS022170
03654  -3 00000 2 03656   MLBDW TXL     MONE,2,**       BOTTOM FULL WORD BAR, IN FULL WORD         LS022180
03655   0020 00 0 03667          TRA     MOUT            EXIT , NOT ANY OF ABOVE                    LS022190
                          *                                                                         LS022200
03656   1 00000 2 03657   MONE  TXI     *+1,2,**        TOP FULL WORD                              LS022210
03657   0754 00 2 00000         PXA     0,2             CALCULATE BIT TABLE WORD AND BIT           LS022220
03660  -0765 00 0 00005         LGR     5                                                          LS022230
03661   0734 00 2 00000         PAX     0,2             BIT TABLE WORD                             LS022240
03662  -0754 00 0 00000         PXD     0,0                                                        LS022250

BINARY CARD NO. LISP0087
03663  -0763 00 0 00005         LGL     5               BIT TABLE BIT                              LS022260
03664   0734 00 4 00000         PAX     0,4                                                        LS022270
03665  -0500 00 4 04026         CAL     BIT,4           PICK UP BIT                                LS022280
03666  -0602 00 2 00000   MLTBT ORS     **,2            TOP BIT TABLE, PUT IN BIT                  LS022290
03667   2 00001 1 03647   MOUT  TIX     MLEPE,1,1       GO BACK IF IN RECURSION                    LS022300
03670   0774 00 1 00000   MSRTN AXT     **,1            OTHERWISE RESTORE IR 1                     LS022310
03671   0774 00 4 00000   MRKX  AXT     **,4            AND LINK IR                                LS022320
03672   0020 00 4 00001   MLEXT TRA     1,4             AND EXIT                                   LS022330
                          *                                                                         LS022340
                          * RCERR       RECLAIMER FATAL ERROR DUMP ROUTINE                         LS022350
                          *                                                                         LS022360
03673  -0634 00 4 02313   RCERR SXD     $ERROR,4        SAVE IR 4                                  LS022370
03674   0634 00 4 03675          SXA     *+1,4           COMPLEMENT IR 4 TO GET ERROR MESSAGE       LS022380
03675  -0774 00 4 00000          AXC     **,4                                                       LS022390
03676   1 00001 4 03677          TXI     *+1,4,1         LOCATION OF ERROR MESSAGE                  LS022400
03677   0634 00 4 03702          SXA     RCFEM,4         BUILD OUTPUT CALL                          LS022410
03700   0074 00 4 01527          TSX     OUTPUT,4        WRITE ERROR MESSAGE ON TAPE                LS022420
03701   0 00000 0 00365          BCDOUT                                                             LS022430
03702   0 00003 0 00000   RCFEM         **,,3           WRITE OUT 3 WORDS                          LS022440
03703   0600 00 0 04512          STZ     $FREE                                                      LS022450
03704   0600 00 0 04470          STZ     FWORDL          ZERO STORAGE LISTS                         LS022460
03705   0441 00 0 11254          LDI     SYSIND          GET SYSTEM INDICATORS                      LS022470
03706   0055 00  000010          SIR     ERROKI          SET ERRIR INDICATOR                        LS022480
03707   0604 00 0 11254          STI     SYSIND          UPDATE REGISTER                            LS022490
03710   0074 00 4 01767          TSX     $TIME,4         PRINT THE CURRENT TO TIME                  LS022500

BINARY CARD NO. LISP0088
03711   0020 00 0 11140          TRA     OVRLRD          GET NEXT DIRECTION CARD                    LS022510
                          *                                                                         LS022520
03712   0441 00 0 03764   RCBEX LDI     RCIND           RESTORE MACHINE REGISTERS                  LS022530
03713   0500 00 0 04050          CLA     RCAC                                                       LS022540
03714   0560 00 0 04051          LDQ     RCMQ                                                       LS022550
03715   0534 00 4 03603          LXA     RCX,4           AND INDEX REGISTERS                        LS022560
03716   0534 00 2 03604          LXA     RCY,2                                                      LS022570
03717   0534 00 1 03605          LXA     RCZ,1                                                      LS022580
03720  -0634 00 4 02313          SXD     $ERROR,4        SAVE IR 4                                  LS022590
03721   0601 00 0 02307          STO     $ERAC           SAVE THE CONTENTS OF THE AC                LS022600
03722  -0754 00 0 00000          PXD     0,0                                                        LS022610
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03723  0074 00 4 02314          TSX     $ERROR+1,4          GO TO ERROR                                    LS022620
03724  542723600254             BCI     1,*GC 2*            NOT ENOUGH WORDS COLLECTED -RECLAIMER-         LS022630
                       *                                                                                   LS022640
                       * RELOC           RELOCATES ALL ITEMS IN FULL WORD SPACE INTO A COMPACTED         LS022650
                       *                 BLOCK TO MAKE BLOCKS OF CONTIGOUS STORAGE AVAILABLE FOR        LS022660
                       *                 ARRAYS.                                                        LS022670
                       *                                                                                   LS022680
03725  0634 00 4 03732   RELOC SXA       RELX,4              SAVE LINK IR                                   LS022690
03726  0074 00 4 03673          TSX     RCERR,4             THIS RPUTINE HAS NOT BEEN CODED YET.           LS022700
03727  004546605125             BCI     3,ONO RELOCATOR                                                    LS022710
03730  434623216346
03731  516060606060
03732  0774 00 4 00000   RELX    AXT     **,4                RESTORE LINK IR                                LS022720
03733  0020 00 4 00001          TRA     1,4                 RETURN TO MAIN PROGRAM                         LS022730
                       *                                                                                   LS022740
                       * MESSAGES AND CONSTANTS PLUS STORAGE GO HERE                                       LS022750
                       *                                                                                   LS022760
03734  602721512221     RCTM    BCI 5, GARBAGE COLLECTOR ENTERED AT                                        LS022770
03735  272560234643
03736  432523634651

BINARY CARD NO. LISP0089
03737  602545632551
03740  252460216360
03741  0 00000 0 00000  RCT1                               THE CALL LOCATION IS PUT HERE                  LS022780
03742  604623632143             BCI     4, OCTAL.                                                          LS022790
03743  336060606060
03744  606060606060
03745  606060606060
03746  606026644343             BCI     2,  FULL WORDS                                                     LS022800
03747  606646512462
03750  0 00000 0 00000   RCT4                                NUMBER FULL WORDS COLLECTED                    LS022810
03751  602651252560             BCI     1, FREE                                                            LS022820
03752  0 00000 0 00000   RCT5                                FREE STORAGE WORDS COLLECTED                   LS022830
03753  606047646230             BCI     3,  PUSH DOWN DEPTH                                                LS022840
03754  602446664560
03755  242547633060
03756  0 00000 0 00000   RCT6                                DEPTH ON PUSH DOWN LIST GOES HERE              LS022850
                  03750   FWC     SYN     RCT4                                                           LS022860
                  03752   FSC     SYN     RCT5                STORAGE SAVING SYN S                       LS022870
                  03756   GCPDLC  SYN     RCT6                                                           LS022880
03757  0 00000 0 00000   RCC                                 TOTAL NUMBER OF RECLAMATION CYCLES             LS022890
03760  0 00000 0 00000   RCT                                 TEST CELL TO SEE IF RELOCATION WAS DONLS022900
                  03760   RCRLOC  SYN     RCT                                                            LS022910
03761  0 00000 0 00000   RLC                                 NUMBER OF TIMES RELOCATION WAS DONE            LS022920
03762  0 00000 0 00000   TFWC                                TOTAL FULL WORDS COLLECTED                     LS022930
03763  0 00000 0 00000   TFSC                                TOTAL FREE STORAGE COLLECTED                   LS022940
                  00525   MONES   SYN     SEVENS                                                         LS022950
                  00525   MONS    SYN     SEVENS                                                         LS022960
03764  0 00000 0 00000   RCIND                               INDICATOR STORAGE                              LS022970

BINARY CARD NO. LISP0090
03765  0 00000 0 00000   RCBE                                TEST CELL FOR BAD EXIT                         LS022980
03766  0 00000 0 00000   MARYT                               TEMPORARY STORAGE                              LS022990
                  00436   CRITWN  SYN     $Q10                                                           LS023000
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                        *                                                                                LS023010
                        * BIT TABLES FOR MARKING AND SWEEPING FULL WORD SPACE                            LS023020
                        *                                                                                LS023030
03767 +000000000020             OCT     20                                                               LS023040
03770 +000000000040             OCT     40,100,200,400,1000,2000,4000,10000,20000,40000,100000           LS023050
03771 +000000000100
03772 +000000000200
03773 +000000000400
03774 +000000001000
03775 +000000002000
03776 +000000004000
03777 +000000010000
04000 +000000020000
04001 +000000040000
04002 +000000100000
04003 +000000200000             OCT     200000,400000,1000000,2000000,4000000,10000000,20000000          LS023060
04004 +000000400000
04005 +000001000000
04006 +000002000000
04007 +000004000000
04010 +000010000000
04011 +000020000000
04012 +000040000000             OCT     40000000,100000000,200000000,400000000,1000000000                LS023070

BINARY CARD NO. LISP0091
04013 +000100000000
04014 +000200000000
04015 +000400000000
04016 +001000000000
04017 +002000000000             OCT     2000000000,4000000000,10000000000,20000000000                    LS023080
04020 +004000000000
04021 +010000000000
04022 +020000000000
04023 +040000000000             OCT     40000000000,100000000000,200000000000                            LS023090
04024 +100000000000
04025 +200000000000
04026 -000000000000      BIT    OCT     400000000000                                                     LS023100
                  04027  MBIT   SYN     BIT+1                                                            LS023110
                  03766  MBITF  SYN     BIT-32                                                           LS023120
                        *                                                                                LS023130
                        *                                                                                LS023140
04027 -377777777777      VERBOS OCT     777777777777      THIS CELL NON ZERO MAKES THE RECLAIMERLS023150
                        *                                  VERY TALKATIVE                                LS023160
04030 +111111111111      RCSGNL OCT     111111111111                                                     LS023170
04031 +222222222222      RCSGNM OCT     222222222222                                                     LS023180
04032 +333333333333      RCSGNN OCT     333333333333      PHASE SIGNALS FOR MQ                           LS023190
04033  0 00000 0 00000    TMLM          TEMPORARY STORAGE                                                LS023200
04034 -3 00000 7 00000    TMPTM  SVN     ,7                PREFIX AND TAG MASK                            LS023210
04035  0 00000 0 00000    MRKP          TEMPORARY STORAGE                                                LS023220
                        *                                                                                LS023230
04036  0 73740 0 73741    TEMXX         -*-1,,-*-2        PERMENANT TEMLIS ITEMS                         LS023240
04037  0 00567 0 00530                  BCONAT,,ECONAT                                                   LS023250
04040  0 73736 0 73737                  -*-1,,-*-2                                                       LS023260
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BINARY CARD NO. LISP0092
    04041  0 20056 0 20052                C$PROBE,,C$PROEN   LAP PROTECTED AREA                LS023270
    04042  0 00000 0 73735                -*-1               END OF TEMLIS                      LS023280
    04043  0 04450 0 04046                BEGBLK,,ENDBLK-1   FUNCTION STORAGE                   LS023290
                                *                                                             LS023300
                                *       VERBOS(X) SETS VERBOS CELL TO X--                     LS023310
                                *       X = NIL TURNS OFF GC CONVERSATION                     LS023320
                                *                                                             LS023330
    04044  0601 00 0 04027  GCTALK STO VERBOS                                                  LS023340
    04045  0020 00 4 00001         TRA 1,4                                                     LS023350
                                *                                                             LS023360
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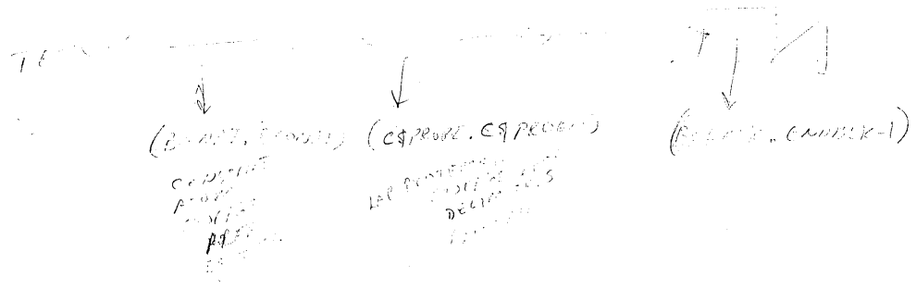

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                                EJECT                                                                   LS023370
                           *                 STORAGE BLOCK FOR FUNCTIONS ALL OVER THE PACKAGE           LS023380
                           *                                                                            LS023390
04046                      BEGBLK BSS     0                                                            LS023400
                           *                 RECLAIMER STORAGE TO BE MARKED                             LS023410
04046  0 73742 0 00000     TEMLIS         ,,-TEMXX                                                     LS023420
04047  0 00000 0 00000     ARYLIS                          LIST OF ACTIVE ARRAYS                       LS023430
04050  0 00000 0 00000      RCAC                           AC STORAGE                                  LS023440
04051  0 00000 0 00000      RCMQ                           MQ-STORAGE                                  LS023450
                           *                 CNSFWL STORAGE                                             LS023460
04052  0 00000 0 00000      CNXT                           POINTER TO NEXT WORD ON LINEAR OBJLIST      LS023470
04053  0 00000 0 00000      CNX                            POINTER TO NEXT WORD ON PROPERTY LIST       LS023480
04054  0 00000 0 00000      CNFT                           POINTER TO NEXT WORD  ON PNAME LIST         LS023490
04055  0 00000 0 04055      CNAT              *            POINTER TO FIRST WORD OF CURRENT ATOM       LS023500
04056  0 00000 0 00000      CNVA                           POINTER TO FIRST WORD OF PNAME LIST         LS023510
                           ***************************************************                          LS023520
                           *                                 THESE CARDS ARE A BLOCK                    LS023530
                                HEAD     A                 $ALIST AND RET IR4                         LS023540
04057  0 00000 0 00000     CSV                                                                          LS023550
                                HEAD     0                 ARGUMENT REGISTERS                         LS023560
04060  0 00000 0 00000     ALIST                           REFERED TO BY COMPILED FUNCTIONS            LS023570
                                                                                                        LS023580
                                REGISTERS FOR FUNCTION ARGUMENTS.  ARG1 ANDARG2 ARE NOT                 LS023590
                                     NORMALLY USED.                                                     LS023600
                                                                                                        LS023610
04061  0 00000 0 00000      ARG1                                                                        LS023620
04062  0 00000 0 00000      ARG2                                                                        LS023630
04063  0 00000 0 00000      ARG3                                                                        LS023640
04064  0 00000 0 00000      ARG4                                                                        LS023650
04065  0 00000 0 00000      ARG5                                                                        LS023660
04066  0 00000 0 00000      ARG6                                                                        LS023670

BINARY CARD NO. LISP0093
     04067  0 00000 0 00000      ARG7                                                                  LS023680
     04070  0 00000 0 00000      ARG8                                                                  LS023690
     04071  0 00000 0 00000      ARG9                                                                  LS023700
     04072  0 00000 0 00000      ARG10                                                                 LS023710
     04073  0 00000 0 00000     ARG11                                                                  LS023720
     04074  0 00000 0 00000     ARG12                                                                  LS023730
     04075  0 00000 0 00000     ARG13                                                                  LS023740
     04076  0 00000 0 00000     ARG14                                                                  LS023750
     04077  0 00000 0 00000     ARG15                                                                  LS023760
     04100  0 00000 0 00000     ARG16                                                                  LS023770
     04101  0 00000 0 00000     ARG17                                                                  LS023780
     04102  0 00000 0 00000     ARG18                                                                  LS023790
     04103  0 00000 0 00000     ARG19                                                                  LS023800
     04104  0 00000 0 00000     ARG20                                                                  LS023810
                                                                                                        LS023820
                                ***************************************************                     LS023830
                                     HEAD     R                 AND                                   LS023840
     04105  0 00000 0 12551      EVA1          $AND                                                    LS023850
     04106  0 00000 0 00000      EVA2                                                                  LS023860
     04107  0 00000 0 00000      EVA9                                                                  LS023870
                                     HEAD     A                 APPEND                                LS023880
     04110  0 00000 0 12541     AS1           $F1                                                     LS023890
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    04111  0 00000 0 00000  CWR1                                                    LS023900
                            HEAD    A           APPLY                               LS023910
    04112  0 00000 0 00000   ASS1                                                   LS023920
    04113  0 00000 0 00000   ASSL                                                   LS023930
    04114  0 00000 0 00000   ASSA                                                   LS023940

BINARY CARD NO. LISP0094
    04115  0 00000 0 00000   AST1                                                   LS023950
    04116  0 00000 0 00000   AST2                                                   LS023960
    04117  0 00000 0 00000   AST3                                                   LS023970
    04120  0 00000 0 00000   AST4                                                   LS023980
                            HEAD    R           COPY                                LS023990
    04121  0 00000 0 12207   CS1         $COPYN                                     LS024000
    04122  0 00000 0 00000   CS2                                                    LS024010
                            HEAD    C           CP1                                 LS024020
    04123  0 00000 0 00000  CPF                 CP1 ANSWER CELL                     LS024030
                            HEAD    A           EVCON                               LS024040
    04124  0 00000 0 12237   ECS1        $COND                                      LS024050
    04125  0 00000 0 00000   ECS2                                                   LS024060
    04126  0 00000 0 00000   ECS3                                                   LS024070
    04127  0 00000 0 00000   ECS4                                                   LS024080
                            HEAD    R           EVLIS                               LS024090
    04130  0 00000 0 11736   EVLX        EVLISL      LINK IR                        LS024100
    04131  0 00000 0 00000   ELA                 ALIST                               LS024110
                            HEAD    A           EVP26                               LS024120
    04132  0 00000 0 00000   EVS1                IR4, BOTTOM OF PROTECTED TEMP. STORAGELS024130
    04133  0 00000 0 00000   EVSE                                                   LS024140
    04134  0 00000 0 00000   EVSA                                                   LS024150
    04135 -0 00000 0 00000   EVTRK MZE          TRACE SWITCH                        LS024160
    04136  0 00000 0 00000   EVCDR              ARG LIST FOR SUBR ARGUMENTS         LS024170
    04151                    EAG11 BES     10   ARGUMENT BLOCK FOR EVAL             LS024180

BINARY CARD NO. LISP0095
    04151  0 00000 0 00000   EVTDE              CDR(E)                              LS024190
    04152  0 00000 0 00000   EVD2                                                   LS024200
                            HEAD    R           GO SPECIAL FORM                     LS024210
    04153  0 00000 0 11564   GOX         $GO     LINK IR                             LS024220
                            HEAD    R           LABP                                LS024230
    04154  0 00000 0 00000   BFS4                                                   LS024240
                            HEAD    R           LAMP                                LS024250
    04155  0 00000 0 00000   BFS2                                                   LS024260
    04156  0 00000 0 00000   BFS3                                                   LS024270
                           *                                                        LS024280
                            HEAD    C           LINK FOR COMPILED FUNCTIONS         LS024290
    04157  0 00000 0 00000  LNKA                LINK STORAGE FOR AC                 LS024300
    04160  0 00000 0 00000  LNKB                LINK STORAGE FOR MQ                 LS024310
                            HEAD    D           MAPCAR                              LS024320
    04161  0 00000 0 11373   RET         $PMAPCA                                    LS024330
    04162  0 00000 0 00000   L                                                      LS024340
    04163  0 00000 0 00000   F                                                      LS024350
                            HEAD    R           MAPCON                              LS024360
    04164  0 00000 0 11363   MCN5        -$)069B                                    LS024370
    04165  0 00000 0 00000   MCN4                                                   LS024380
    04166  0 00000 0 00000   MCN3                                                   LS024390
    04167  0 00000 0 00000   MCN2                                                   LS024400
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                                        HEAD    R                MAPLIS                                  LS024410
    04170  0 00000 0 11353   MS1                 -$)069A          LINK IR STORAGE                         LS024420
    04171  0 00000 0 00000   MS2                                  ARGUMENT L                              LS024430
    04172  0 00000 0 00000   MS3                                  FUNCTIONAL ARGUMENT                     LS024440
    04173  0 00000 0 00000   MS4                                  FINAL ANSWER                            LS024450
    04174  0 00000 0 00000   MS5                                  INTERMEDIATE ANSWER                     LS024460
                                        HEAD    R                OR                                      LS024470
    04175  0 00000 0 11162   EVR1                $OR                                                      LS024480
    04176  0 00000 0 00000   EVR2                                                                         LS024490

BINARY CARD NO. LISP0096
    04177  0 00000 0 00000   EVR9                                                                         LS024500
                                        HEAD    A                PAIR                                    LS024510
    04200  0 00000 0 00000   TEM                                  FIRST ARGUMENT                          LS024520
    04201  0 00000 0 00000   LIS                                  SECOND ARGUMENT                         LS024530
                                        HEAD    P                PRINAR                                  LS024540
    04202  0 00000 0 00000   PAS3                                                                         LS024550
    04203  0 00000 0 00000   PAS4                                                                         LS024560
                                        HEAD    R                PROGRAM FEATURE                         LS024570
    04204  0 00000 0 11025   INTRX               $PROG             LINK INDEX REGISTER                    LS024580
    04205  0 00000 0 00000   INTB                                 CURRENT STATEMENT                       LS024590
    04206  0 00000 0 00000   INTGL                                GO LIST,(LIST OF PROGRAM POINTS) + IR2  LS024600
    04207  0 00000 0 00000   INTPL                                PAIR LIST                               LS024610
    04210  0 00000 0 00000   INTGS                                GO SWITCH , NON-ZERO IF GO OR RETURN    LS024620
                                        HEAD    I                READ1                                   LS024630
    04211  0 00000 0 10753   RS1                 $F13                                                     LS024640
    04212  0 00000 0 00000   RS2                                                                          LS024650
    04213  0 00000 0 00000  PRINTL                                TEMPORARY STORAGE FOR PRINT OR PUNCH    LS024660
                                        HEAD    R                SEARCH                                  LS024670
    04214  0 00000 0 10547   SRS1                $SRCH            IR4                                     LS024680
    04215  0 00000 0 00000   SRS2                                 L                                       LS024690
    04216  0 00000 0 00000   SRS3                                 P                                       LS024700
    04217  0 00000 0 00000   SRS4                                 F                                       LS024710
    04220  0 00000 0 00000   SRS5                                 U                                       LS024720
                                        HEAD    R                SETQP                                   LS024730
    04221  0 00000 0 10527   REPS1               $SETQ                                                    LS024740
    04222  0 00000 0 00000   REPV                                                                         LS024750
    04223  0 00000 0 00000   REPT1                                                                        LS024760
                                        HEAD    B                SUBLIS                                  LS024770
    04224  0 00000 0 10433   X1                  $F17             IR4 OF SUBLIS                           LS024780

BINARY CARD NO. LISP0097
    04225  0 00000 0 00000   X2                                       SAVED E                             LS024790
    04226  0 00000 0 00000   X3                                   D E                                     LS024800
    04227  0 00000 0 00000   X4                                   SUBA (A E)  IN ADDRESS PART             LS024810
    04230  0 00000 0 00000   X5                                   SUBA (D E)                              LS024820
    04231  0 00000 0 00000   X6                                   X FOR THE FUNCTION SUB1                 LS024830
    04232  0 00000 0 00000   P                                                                            LS024840
    04233  0 00000 0 00000   E                                                                            LS024850
                                        HEAD    R                SUBST                                   LS024860
    04234  0 00000 0 00000   SXT                                                                          LS024870
    04235  0 00000 0 00000   SZ                                                                           LS024880
    04236  0 00000 0 00000   SX                                                                           LS024890
    04237  0 00000 0 00000   SY                                                                           LS024900
    04240  0 00000 0 00000   ST                                                                           LS024910
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                                        HEAD    Q                       ADD, ETC.                                   LS024920
    04241  0 00000 0 00000   AMIR                                        IR 4 STORAGE                                LS024930
    04242  0 00000 0 00000   AMIND                                       INDICATOR REGISTER STORAHE                  LS024940
    04243  0 00000 0 00000   AMLIS                                       LIST STORAGE                                LS024950
    04244  0 00000 0 00000   AMQ                                         TYPE STORAGE                                LS024960
                             *                                           ARRAY MAKE PROGRAM                          LS024970
    04245  0 00000 0 00000   AFAT                                        ARRAY ATOM GOES HERE                        LS024980
    04246  0 00000 0 00000   ATMP                                        TEMPORARY STORAGE                           LS024990
                                        HEAD    S                       EVALQUOTE STORAGE                           LS025000
    04247  0 00000 0 00000   EVQAN                                                                                   LS025010
    04250                               BSS     100                     EVALQUOTE BUFFER                            LS025020

BINARY CARD NO. LISP0098
    04414 -0 00000 0 00000   EVQB   MZE                                 TEST CELL FOR READ IN                       LS025030
                                    HEAD    F                                                                       LS025040
                             *              CHARACTER FUNCTIONS                                                     LS025050
    04415                    BBPNT  BSS     1                           POINTER TO REMAINDER OF LIST                LS025060
    04416                    PIND   BSS     1                                                                       LS025070
                             *              MKNO                                                                    LS025080

BINARY CARD NO. LISP0099
    04417  0 00000 0 00000   MKT1                                        TEMP STORAGE TYPE (FIX OR FLO)              LS025090
    04420                               BSS     25                      ROOM FOR MORE STORAGE                       LS025100
    04451                    ENDBLK BSS     0                                                                       LS025110
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                                EJECT                                                                   LS025120
                                HEAD    0                                                               LS025130
                           * CONSW      PUTS FULL WORDS IN FULL WORD SPACE                               LS025140
                           *                                                                            LS025150

BINARY CARD NO. LISP0100
    04451  0634 00 4 04465   CONSW SXA     CSWX,4              SAVE LINK IR                             LS025160
    04452 -0534 00 4 04470   FWLOR LXD     FWORDL,4            PICK UP FULL WORD LIST                   LS025170
    04453 -3 00000 4 04606         TXL     FWLOUT,4,0          TEST FOR NO MORE                         LS025180
    04454 -0600 00 0 04467         STQ     CSWQ                SAVE MQ                                  LS025190
    04455  0560 00 4 00000         LDQ     0,4                 PICK UP POINTER TO NEXT WORD ON FWL      LS025200
    04456 -0620 00 0 04470         SLQ     FWORDL              UP DATE FULL WORD LIST POINTER           LS025210
    04457  0601 00 4 00000         STO     0,4                 PUT AC IN FULL WORD AREA                 LS025220
    04460 -0754 00 4 00000         PXD     0,4                 POINTER TO AC                            LS025230
    04461 -0534 00 4 04470         LXD     FWORDL,4            POINTER TO NEXT AVAILABLE WORD           LS025240
    04462  3 00000 4 04464  LOWARY TXH     CSWO,4,**           BOTTOM FULL WORD SPACE, TEST FOR ARY     LS025250
    04463 -0634 00 4 04462         SXD     *-1,4               AVAILABLE LOCATION AND UPDATE SAME       LS025260
    04464  0560 00 0 04467   CSWO  LDQ     CSWQ                RESTORE MQ                               LS025270
    04465  0774 00 4 00000   CSWX  AXT     **,4                RESTORE LINK IR                          LS025280
    04466  0020 00 4 00001         TRA     1,4                 EXIT                                     LS025290
    04467  0 00000 0 00000   CSWQ                             TEMPORARY STORAGE FOR MQ                 LS025300
    04470  0 00000 0 00000   FWORDL                           POINTER TO FULL WORD LIST                LS025310
                           *                                                                            LS025320
                           * CONS        BASIC LISP FUNCTION PUTS A WORD IN FREE STORAGE                LS025330
                           *                                                                            LS025340
    04471  0634 00 4 04510   CONS  SXA     CNSX,4              SAVE LINK IR                             LS025350
    04472 -0534 00 4 04512         LXD     $FREE,4             GET FREE STORAGE LIST POINTER            LS025360
    04473  3 00000 4 04475         TXH     *+2,4,0             SKIP IF NOT OUT OF FREE STORAGE          LS025370
    04474  0074 00 4 04614         TSX     FROUT,4             CUT OF FREE STORAGE                      LS025380
    04475  0771 00 0 00022         ARS     18                  DECREMENT TO ADDRESS                     LS025390
    04476  0621 00 4 00000         STA     0,4                 PUT ADDRESS AWY                          LS025400

BINARY CARD NO. LISP0101
    04477  0500 00 4 00000         CLA     0,4                 GET POINTER TO NEXT WORD IN FREE         LS025410
    04500  0622 00 0 04512         STD     FREE                PUT IN FREE                              LS025420
    04501 -0620 00 4 00000         SLQ     0,4                 PUT DECREMENT AWAY                       LS025430
    04502 -0754 00 4 00000         PXD     0,4                 POINTER TO WORD                          LS025440
    04503  0774 00 4 00000   CNTR1 AXT     **,4                LOW ORDER 15 BITS OF CONS COUNTER KEPTLS025450
    04504  2 00001 4 04507         TIX     *+3,4,1             DECREMENT COUNT BY 1                     LS025460
    04505  0074 00 4 04513         TSX     ARREST,4            COUNT EXHAUSTED, RELOAD OR STOP          LS025470
    04506  0774 00 4 77777         AXT     -1,4                RELOAD NUMBER                            LS025480
    04507  0634 00 4 04503         SXA     CNTR1,4             PUT IN COUNTER                           LS025490
    04510  0774 00 4 00000   CNSX  AXT     **,4                RESTORE LINK IR                          LS025500
    04511  0020 00 4 00001         TRA     1,4                 EXIT                                     LS025510
    04512  0 00000 0 00000   FREE                             POINTER TO FREE STORAGE LIST             LS025520
                           *                                                                            LS025530
    04513 -0520 00 0 12662  ARREST NZT     TCOUNT              SKIP IF COUNS COUNTER ON                 LS025540
    04514  0020 00 4 00001         TRA     1,4                 OTERWISE RETURN                          LS025550
    04515  0601 00 0 04651         STO     CNTM                SAVE AC                                  LS025560
    04516  0500 00 0 04650         CLA     CNTS                GET REST OF COUNTER                      LS025570
    04517  0100 00 0 04524         TZE     AWHOA               GO TO ERROR CALL IF EXHAUSTED            LS025580
    04520  0402 00 0 04652         SUB     CTG                 DECREMENT BY 32,768                      LS025590
    04521  0601 00 0 04650         STO     CNTS                UPDATE COUNTER                           LS025600
    04522  0500 00 0 04651         CLA     CNTM                RESTORE AC                               LS025610
    04523  0020 00 4 00001         TRA     1,4                 E7IT TO RELOAD CNTR1                     LS025620
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                                *                                                                    LS025630
    04524  0634 CC 0 12662   AWHOA SXA     TCOUNT,0          DEACTIVATE THE CONS COUNTER            LS025640

BINARY CARD NO. LISP0102
    04525  0500 00 0 04642         CLA     CNTST             PICK UP  INITAL COUNT                  LS025650
    04526  0560 00 0 00532         LDQ     $FIXD             PICK UP $FIX                           LS025660
    04527 -0634 CC 4 02313         SXD     $ERROR,4          SAVE LINK IR                           LS025670
    04530  0074 00 4 13624         TSX     $MKNO,4           MAKE THE COUNT A NUMBER                LS025680
    04531  0074 00 4 02314         TSX     $ERROR+1,4        GO TO ERROT                            LS025690
    04532  542660600154            BCI     1,*F  1*          CONS COUNTER TRAP                      LS025700
                                *                                                                    LS025710
                                * SPEAK         TURNS THE CONTENTS OF THE CONS COUNTER INTO A FIXED POINTLS025720
                                *               NUMBER.                                              LS025730
                                *                                                                    LS025740
    04533  0500 CC 0 00513   SPEAK CLA     $AMASK            GET ADDRESS MASK                       LS025750
    04534 -0320 00 0 04503         ANA     CNTR1             PICK UP 15 LOW ORDER BITS              LS025760
    04535 -0501 CC 0 04650         ORA     CNTS              OR IN REST OF COUNT                    LS025770
    04536  0601 CC 0 04651         STO     CNTM              SAVE CURRENT VALUE                     LS025780
    04537  0500 CC 0 04642         CLA     CNTST             PICK UP INITIAL VALUE                  LS025790
    04540  0402 CC 0 04651         SUB     CNTM              SUBTRACT CURRENT VALUE TO GET NUMBER   LS025800
    04541  0560 CC 0 00532         LDQ     $FIXD             OF CONSES.  PUT $FIX IN MQ             LS025810
    04542  0020 CC 0 13624         TRA     $MKNO             MAKE THE RESULT A NUMBER               LS025820
                                *                                                                    LS025830
                                * BLOCKR        BLOCK RESERVATION ROUTINE USED IN DECLARING ARRAYS.   LS025840
                                *                                                                    LS025850
    04543  0634 CC 4 04573   BLOCKR SXA     BLKX,4            SAVE LINK IR                           LS025860
    04544  0621 CC 0 04567         STA     BLKB              BE RESERVED                            LS025870
    04545 -0520 CC 0 03073         NZT     BPLACE            TEST IF  BPS OR EXCISABLE AREA         LS025880
    04546  0534 CC 4 03065         LXA     $ORG,4                                                   LS025890
    04547  0520 CC 0 03073         ZET     BPLACE            TEST IF  BPS OR EXCISABLE AREA         LS025900
    04550  0534 CC 4 03054         LXA     $XORG,4                                                  LS025910
    04551  0754 CC 4 00000   BKOR  PXA     0,4               ADDRESS OF FIRST REGISTER FOR ARRAYS   LS025920
    04552  0401 CC 0 04567         ADM     BLKB              ADDRESS OF END OF BLOCK                LS025930

BINARY CARD NO. LISP0103
    04553  0621 CC 0 04570         STA     BLKC              INITIALIZE STZ LOOP TO CLEAN OUT BLOCKLS025940
    04554  0734 CC 4 00000         PAX     0,4                                                      LS025950
    04555  0402 CC 0 00425         SUB     $Q1                                                      LS025960
    04556  0621 CC 0 04575         STA     BLKBB                                                    LS025970
    04557 -0520 CC 0 03073         NZT     BPLACE            CHECK IF OUT OF BPS                    LS025980
    04560  0522 CC 0 04577         XEC     C$LBPTP                                                  LS025990
    04561  0520 CC 0 03073         ZET     BPLACE                                                   LS026000
    04562  0522 CC 0 04576         XEC     LTBPFJ                                                   LS026010
    04563 -0520 CC 0 03073         NZT     BPLACE            TEST IF  BPS OR EXCISABLE AREA         LS026020
    04564  0634 CC 4 03065         SXA     $ORG,4            UPDATE ORG                             LS026030
    04565  0520 CC 0 03073         ZET     BPLACE            TEST IF  BPS OR EXCISABLE AREA         LS026040
    04566  0634 CC 4 03054         SXA     $XORG,4                                                  LS026050
    04567  0774 CC 4 00000   BLKB  AXT     **,4              LENGTH OF BLOCK                        LS026060
    04570  0600 CC 4 00000   BLKC  STZ     **,4              ZERO THE BLOCK                         LS026070
    04571  2 00001 4 04570         TIX     *-1,4,1                                                  LS026080
    04572  0500 CC 0 04575         CLA     BLKBB             GET ANSWER                             LS026090
    04573  0774 CC 4 00000   BLKX  AXT     **,4              RESTORE LINK IR                        LS026100
    04574  0020 CC 4 00001         TRA     1,4                                                      LS026110
    04575  0 00000 0 00000   BLKBB                          ANSWER STORED HERE                     LS026120
                                *                                                                    LS026130
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                        * LBPTP CHECKS FOR OUT OF BPS AND MAKES ERROR IF D SO.                    LS026140
                        *      LTBPFJ  CHECKS IF OUT OF EXCISABLE SPACE                          LS026150
                        *                                                                        LS026160
                              HEAD    C                       FOR LAP                            LS026170
04576  3 76702 4 04600  LTBPFJ TXH     **+2,4,LAP-1                                               LS026180
04577  3 00000 4 04600  LBPTP  TXH     **+1,4,**               SETUP FILLS THIS CELL              LS026190
04600 -0634 00 4 02313         SXD     $ERROR,4                                                   LS026200

BINARY CARD NO. LISP0104
04601 -0754 00 4 00000         PXD     0,4                                                        LS026210
04602  0560 00 0 00540         LDQ     $OCTD                                                      LS026220
04603  0074 00 4 13624         TSX     $MKNO,4                                                    LS026230
04604  0074 00 4 02314         TSX     $ERROR+1,4                                                 LS026240
04605  544360600254            BCI     1,*L  2*                                                   LS026250
                        *                                                                        LS026260
                        *  JUST REDUCES THE AC MOD 2**15.THE RESULT IS 15 BITS IN ADDR OF AC     LS026270
                              HEAD    0                                                          LS026280
                        *              VAROIUS ENTRANCES TO THE RECLAIMER                        LS026290
                        *                                                                        LS026300
                        *              FWLOUT - OUT OF FULL WORD LIST                            LS026310
04606  0601 00 0 04467  FWLOUT STO     CSWQ                    SAVE FULL WORD                     LS026320
04607 -0754 00 0 00000         PXD     0,0                     ZERO AC                            LS026330
04610  0600 00 0 03760         STZ     RCRLOC                  SIGNAL NO RELOCATION IS NECESSARY  LS026340
04611  0074 00 4 03312         TSX     RECLAM,4                DO THE WORK                        LS026350
04612  0500 00 0 04467         CLA     CSWQ                    RESTORE AC                         LS026360
04613  0020 00 0 04452         TRA     FWLOR                   RETURN TO CONSW                    LS026370
                        *              FROUT - OUT OF REE STORAGE                                LS026380
04614  0634 00 4 04617  FROUT  SXA     FRX,4                   SAVE LINK IR                       LS026390
04615  0600 00 0 03760         STZ     RCRLOC                  SIGNAL NO RELOCATION NECESSARY     LS026400
04616  0074 00 4 03312         TSX     RECLAM,4                DO THE WORK                        LS026410
04617  0774 00 4 00000  FRX    AXT     **,4                    RESTORE LINK OR                    LS026420
04620  0020 00 4 77776         TRA     -2,4                    NON-STANDARD EXIT                  LS026430
                        *                                                                        LS026440
                        *                                                                        LS026450
                        * COUNT        A FUNCTION OF 1 ARGUMENT (A FIXED POINT NUMBER) TURNS ON  LS026460
                        *              THE CONS COUNTER AND LOADS IT WITH THAT NUMBER            LS026470
                        *              A LOAD OF NIL  SIMPLY LEAVES THE PREVIOUS CONTENTS IN THELS026480
                        *              COUNTER                                                   LS026490
                        *                                                                        LS026500
04621 -0625 00 0 12662  COUNT  STL     TCOUNT                  ACTIVATE THE CONS COUNTER          LS026510
04622 -0100 00 0 04626         TNZ     CNTA                    GO IF ARUGMENT IS NOT NULL         LS026520
04623  0500 00 0 04651         CLA     CNTM                    OLD VALUE OF CNTR1                 LS026530
04624  0621 00 0 04503         STA     CNTR1                   PUT IT THERE                       LS026540
04625  0020 00 0 04640         TRA     CNTB                    CLEAR AC AND EXIT                  LS026550
04626  0634 00 4 04636  CNTA   SXA     CNTX,4                  RELOAD COUNTER WITH FIXED POINT ARG. LS026560

BINARY CARD NO. LISP0105
04627  0634 00 2 04637         SXA     CNTY,2                  SAVE INDEX REGISTERS               LS026570
04630 -0734 00 2 00000         PDX     0,2                     ARGUMENT TO INDEX 2                LS026580
04631  0074 00 4 14065         TSX     FIXVAL,4                EVALUATE AS A FIXED POINT NUMBER   LS026590
04632  0601 00 0 04642         STO     CNTST                   SET INITIAL VALUE CELL             LS026600
04633  0621 00 0 04503         STA     CNTR1                   LOW ORDER 15 BITS TO CNTR1         LS026610
04634 -0320 00 0 00521         ANA     PDTMSK                  MASK OUT LOW ORDER 15 BITS         LS026620
04635  0601 00 0 04650         STO     CNTS                    STORE REMAINDER IN HIGH ORDER CELL LS026630
04636  0774 00 4 00000  CNTX   AXT     **,4                    RESTORE INDEX REGISTERS            LS026640
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04637  0774 00 2 00000   CNTY   AXT     **,2                                    LS026650
0464C -0754 00 0 00000   CNTB   PXD     0,0             GIVE VALUE OF NIL       LS026660
04641  0020 00 4 00001          TRA     1,4             EXIT                    LS026670
04642  0 00000 0 00000   CNTST                          INTAL VALUE OF COUNT    LS026680
                         *                                                      LS026690
                         * UNCONT       DEACTIVATES THE CONS COUNTER            LS026700
                         *                                                      LS026710
04643  0634 00 0 12662   UNCONT SXA     TCOUNT,0        DEACTIVATE THE CONS COUNTER LS026720
04644  0500 00 0 04503          CLA     CNTR1           GET CURENT CONTENST OF COUNTER LS026730
04645  0621 00 0 04651          STA     CNTM            SAVE IN TEMP STORAGE    LS026740
04646 -0754 00 0 00000          PXD     0,0             GIVE VALUE OF NULL      LS026750
04647  0020 00 4 00001          TRA     1,4             EXIT                    LS026760
                         *                                                      LS026770
04650  0 00000 0 00000   CNTS                           HIGH ORDER BITS OF CONS COUNTER LS026780
04651  0 00000 0 00000   CNTM                           TEMPORARY STORAGE       LS026790
04652  0 00000 1 00000   CTG            ,1              LOW ORDER BIT OF HIGH ORDER 20 BITS LS026800
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                        TTL     LISP FUNCTIONS                                                  LS026810
                    *                                                                           LS026820
                    E       HED                                                                 LS026830
                    *       DECON AND NUMNAM                                                    LS026840
                    *                                                                           LS026850
                    *       DECON TAKES A DECIMAL INTEGER (+ OR -) AS INPUT IN THE AC AND       LS026860
                    *       GIVES AS OUTPUT THE BCD REPRESENTATION OF THAT NUMBER.  LO ORDER    LS026870
                    *       BITS ARE IN AC, HI ORDER BITS IN MQ.  LEADING ZEROS ARE             LS026880
                    *       SUPPRESSED.  IF THERE ARE NO HI ORDER BITS, MQ IS ZERO.  THE        LS026890
                    *       P BIT AND SIGN OF AC WILL AGREE.                                    LS026900
                    *                                                                           LS026910
                    *       NUMNAM TAKES AS INPUT A POINTER TO A DECIMAL INTEGER (+ OR -) ANDLS026920
                    *       CAUSES THE BCD REPRESENTATION OF THAT NUMBER TO BE PRINTED, WITH    LS026930
                    *       LEADING ZEROS SUPPRESSED.                                           LS026940
                                                                                                LS026950
                                                                                                LS026960
 04653  0600 CO 0 77660   DECON STZ     DETS1           SIGNAL FOR DECON EXIT                   LS026970
 04654  0600 CO 0 77662          STZ     DELOD           SET LO ORDER DIGITS TO ZERO             LS026980

BINARY CARD NO. LISP0106
 04655  0634 CO 4 04740          SXA     DEIR4,4         SAVE IR4                                LS026990
 04656  0020 CO 0 04663          TRA     DE7                                                     LS027000
                                                                                                LS027010
 04657 -0625 CO 0 77660  NUMNAM STL     DETS1           SIGNAL FOR NUMNAM EXIT                  LS027020
 04660  0634 CO 4 04740          SXA     DEIR4,4         SAVE IR4                                LS027030
 04661 -0734 00 4 00000          PDX     ,4              PLACE INPUT NUMBER IN AC                LS027040
 04662  0500 CO 4 00000          CLA     0,4                                                     LS027050
 04663 -0625 CO 0 77661   DE7    STL     DETS2           SIGNAL FOR NO HI- ORDER DIGITS          LS027060
 04664  0601 CO 0 77665          STO     DEINP           SAVE INPUT FOR SIGN TEST                LS027070
 04665  0760 00 0 00012          DCT                     SHUT OFF DIVIDE CHECK LIGHT             LS027080
 04666  0761 CO 0 00000          NOP                                                             LS027090
 04667 -0130 00 0 00000          XCL                     NUMBER TO MQ                            LS027100
 04670  0774 00 4 00044          AXT     36,4            INDEX FOR SHIFTING                      LS027110
 04671  0600 CO 0 77663   DE4    STZ     DEDIG           DEDIG WILL RECIEVE DIGITS               LS027120
                                                                                                LS027130
 04672 -0754 00 0 00000   DE1    PXD     ,0                                                      LS027140
 04673  0221 00 0 00436          DVP     $Q10            PUT ANOTHER DIGIT IN DEDIG              LS027150
 04674  0767 CO 4 00044          ALS     36,4                                                    LS027160
 04675 -0602 CO 0 77663          ORS     DEDIG                                                   LS027170
 04676 -0600 CO 0 77664          STQ     DEMQ            IF QUOTIENT ZERO, CONVERSION            LS027180
 04677 -0520 00 0 77664          NZT     DEMQ              IS DONE                               LS027190
 04700  0020 CO 0 04706          TRA     DE2                                                     LS027200
 04701  2 00006 4 04672          TIX     DE1,4,6                                                 LS027210
                                                                                                LS027220
 04702  0500 CO 0 77663          CLA     DEDIG           STORE LO ORDER DIGITS                   LS027230

BINARY CARD NO. LISP0107
 04703  0601 CO 0 77662          STO     DELOD                                                   LS027240
 04704  0600 00 0 77661          STZ     DETS2           SIGNAL THAT HI ORDER DIGITS EXIST       LS027250
 04705  1 00036 4 04671          TXI     DE4,4,30        RESTORE SHIFT INDEX AND LOOP AGAIN      LS027260
                                                                                                LS027270
 04706  0560 CO 0 77665   DE2    LDQ     DEINP           SEE IF MINUS SIGN NEEDED                LS027280
 04707  0162 00 0 04721          TQP     DEV                                                     LS027290
 04710  2 00006 4 04716          TIX     DEQ,4,6                                                 LS027300
                                                                                                LS027310
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                                *       MINUS SIGN BEGINS A NEW WORD                                    LS027320
    04711  0500 CO 0 77663             CLA     DEDIG           STORE LO ORDER DIGITS                   LS027330
    04712  0601 CO 0 77662             STO     DELOD                                                   LS027340
    04713  0600 CO 0 77661             STZ     DETS2           SIGNAL THAT HI ORDER DIGITS EXIST       LS027350
    04714  0600 CO 0 77663             STZ     DEDIG           CLEAR DIGITS REGISTER                   LS027360
    04715  0774 CO 4 00044             AXT     36,4            RESTORE SHIFT INDEX                     LS027370
    04716  0500 CO 0 00457   DEQ       CLA     DEMIN           INSERT MINUS SIGN                       LS027380
    04717  0767 CO 4 00044             ALS     36,4                                                    LS027390
    04720 -0602 CO 0 77663             ORS     DEDIG                                                   LS027400
                                                                                                       LS027410
    04721  0760 CO 0 00012   DEV       DCT                                                             LS027420
    04722  0074 CO 4 02442             TSX     $DCT,4          MACHINE ERROR                           LS027430
    04723  0520 CO 0 77660             ZET     DETS1           SEE WHICH EXIT TO USE                   LS027440
    04724  0020 CO 0 04742             TRA     DE5                                                     LS027450
                                                                                                       LS027460
                                *       DECON EXIT                                                      LS027470
    04725 -0500 CO 0 77663             CAL     DEDIG           PICK UP DIGITS                          LS027480
    04726 -3 00006 4 04732             TXL     DEJ,4,6         TRANSFER IF FULL WORD OF DIGITS         LS027490
    04727 -0765 CO 4 00052             LGR     42,4            INSERT LEADING BLANKS                   LS027500
    04730 -0500 CO 0 00527             CAL     BLANKS                                                  LS027510

BINARY CARD NO. LISP0108
    04731 -0763 CO 4 00052             LGL     42,4                                                    LS027520
    04732  0560 CO 0 77662   DEJ       LDQ     DELOD           LO ORDER DIGITS OR ZERO -               LS027530
    04733 -0520 CO 0 77661             NZT     DETS2             SEE WHICH                             LS027540
    04734 -0130 CO 0 00000             XCL                     LO ORDER DIGITS TO AC                   LS027550
    04735 -0760 CO 0 00001             PBT                     SIGN AND P BIT MUST AGREE               LS027560
    04736  0020 CO 0 04740             TRA     *+2                                                     LS027570
    04737 -0760 CO 0 00003             SSM                                                             LS027580
    04740  0774 CO 4 00000   DEIR4     AXT     **,4            RESTORE IR4 AND EXIT                    LS027590
    04741  0020 CO 4 00001             TRA     1,4                                                     LS027600
                                                                                                       LS027610
                                *       NUMNAM EXIT                                                     LS027620
    04742 -0500 CO 0 77663   DE5       CAL     DEDIG           INSERT TRAILING SEVENS INTO             LS027630
    04743  0560 CO 0 00525             LDQ     SEVENS            DIGITS WORD                           LS027640
    04744 -0765 CO 4 00052             LGR     42,4                                                    LS027650
    04745  0131 CO 0 00000             XCA                                                             LS027660
    04746  0074 CO 4 05662             TSX     $PRIN2,4        PRINT WORD OF DIGITS                    LS027670
    04747  0520 CO 0 77661             ZET     DETS2           SEE IF ANOTHER WORD MUST                LS027680
    04750  0020 CO 0 04753             TRA     DEY               BE PRINTED                            LS027690
    04751 -0500 CO 0 77662             CAL     DELOD           PRINT LO ORDER DIGITS                   LS027700
    04752  0074 CO 4 05662             TSX     $PRIN2,4                                                LS027710
                                                                                                       LS027720
    04753  0534 CO 4 04740   DEY       LXA     DEIR4,4         RESTORE IR4,  CLEAR AC, AND EXIT        LS027730
    04754 -0754 CO 0 00000             PXD     ,0                                                      LS027740
    04755  0020 CO 4 00001             TRA     1,4                                                     LS027750
                                                                                                       LS027760
                                                                                                       LS027770
                                                                                                       LS027780
                  00457    DEMIN     SYN     $QO40            BCD MINUS SIGN                         LS027790
    04756                 DEORG     BSS     0                                                       LS027800
                  77660               ORG     COMMON                                                  LS027810
    77660                  DETS1     BSS     1               ZERO MEANS DECON EXIT                   LS027820
    77661                  DETS2     BSS     1               ZERO MEANS HI ORDER DIGITS              LS027830
    77662                  DELOD     BSS     1               LO ORDER DIGITS                         LS027840
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77663                    DEDIG BSS     1                  CURRENT DIGITS                          LS027850
77664                    DEMQ  BSS     1                  MQ FOR ZERO TEST                        LS027860
77665                    DEINP BSS     1                  INPUT NUMBER                            LS027870
                  04756          ORG     DEORG                                                     LS027880
                                                                                                   LS027890
                         *       THIS ROUTINE USES COMMON, SEVENS, $PRIN2, BLANKS, AND $Q10        LS027900
                         *                                                                         LS027910
                                                                                                   LS027920
                         R       HED                                                               LS027930
                                          MAPLIS       NEW, FASTER VERSION WITH OPEN SAVE AND CONSLS027940
                         *                                                                         LS027950

BINARY CARD NO. LISP0109
    04756  0100 00 4 00001  MAPLIS TZE     1,4          NULL(L) = NIL                             LS027960
    04757 -0634 00 4 04170          SXD     MS1,4        SAVE LINK IR                              LS027970
    04760 -0534 00 4 03110          LXD     $CPPI,4      GET PDL POINTER                           LS027980
    04761  1 77772 4 04762          TXI     *+1,4,-6          SAVE TOTAL OF 6 ITEMS                LS027990
    04762  0522 00 0 03204          XEC     $ENDPDL           TEST FOR OUT OF PUSH DOWN LIST       LS028000
    04763 -0634 00 4 03110          SXD     $CPPI,4      UPDATE PDL POINTER LOCATION               LS028010
    04764 -0534 00 1 03110          LXD     $CPPI,1           MAKE IX1 AND $CPPI AGREE             LS028020
    04765  0601 00 0 04061          STO     $ARG1        SAVE AC                                   LS028030
    04766  0500 00 0 04170          CLA     MS1          START SAVING    LINK IR                   LS028040
    04767  0601 00 4 77772          STO     -6,4                                                   LS028050
    04770  0500 00 0 04171          CLA     MS2          L ARGUMENT                                LS028060
    04771  0601 00 4 77773          STO     -5,4                                                   LS028070
    04772  0500 00 0 04172          CLA     MS3          FUNCTIONAL ARGUMENT                       LS028080
    04773  0601 00 4 77774          STO     -4,4                                                   LS028090
    04774  0500 00 0 04173          CLA     MS4          FINAL ANSWER                              LS028100
    04775  0601 00 4 77775          STO     -3,4                                                   LS028110
    04776  0500 00 0 04174          CLA     MS5          INTERMEDIATE ANSWER                       LS028120
    04777  0601 00 4 77776          STO     -2,4                                                   LS028130
    05000  0500 00 0 05110          CLA     MS6               SAVE MARKER                          LS028140
    05001  0601 00 4 77777          STO     -1,4                                                   LS028150
    05002  0500 00 0 04061          CLA     $ARG1        SAVING ALL DONE, RESTORE AC               LS028160
    05003  0601 00 0 04171          STO     MS2          PUT L ARGUMENT AWAY                       LS028170

BINARY CARD NO. LISP0110
    05004 -0600 00 0 04172          STQ     MS3          PUT FUNCTIONAL ARGUMENT AWAY              LS028180
    05005  0162 00 0 05100          TQP     CMP          IF TRANSFER, F NOT A TXL, SO GO TO COMPAT LS028190
    05006  0074 00 4 04172          TSX     MS3,4        EXECUTE FUNCTIONAL ARGUMENT               LS028200
    05007 -0534 00 4 04512  MAIN    LXD     $FREE,4      START OPEN CONS                           LS028210
    05010  3 00000 4 05012          TXH     *+2,4,0      TEST FOR OUT OF FREE STORAGE              LS028220
    05011  0074 00 4 04614          TSX     $FROUT,4     GO IF NO MORE FS                          LS028230
    05012  0771 00 0 00022          ARS     18           PUT F(L) IN ADDRESS                       LS028240
    05013  0560 00 4 00000          LDQ     0,4          GET NEXT REGISTER ON FSL                  LS028250
    05014 -0620 00 0 04512          SLQ     $FREE        UPDATE FREE                               LS028260
    05015  0601 00 4 00000          STO     0,4          CONS(F(L),NIL)                            LS028270
    05016 -0634 00 4 04173          SXD     MS4,4        FINAL ANSWER                              LS028280
    05017 -0634 00 4 04174          SXD     MS5,4        INT. ANSWER                               LS028290
    05020  0534 00 4 04503          LXA     $CNTR1,4          PICK UP CONS COUNTER                 LS028300
    05021  2 00001 4 05024          TIX     *+3,4,1           DECREMENT BY 1                       LS028310
    05022  0074 00 4 04513          TSX     ARREST,4          GO IF OUT OF COUNTER                 LS028320
    05023  0774 00 4 77777          AXT     -1,4              RELOAD OF -1 FOR COUNTER             LS028330
    05024  0634 00 4 04503          SXA     $CNTR1,4          RESTORE CONS COUNTER                 LS028340
    05025 -0534 00 4 04171  MLOP1   LXD     MS2,4        MAUN LOOP,  GET L                         LS028350
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05026  0500 CO 4 00000          CLA     0,4             TAKE CDR(L)                                    LS028360
05027 -0734 CO 4 00000          PDX     0,4                                                            LS028370
05030  3 00000 4 05052          TXH     MPRG1,4,0       IF NOT NULL GO ON TO MAIN PROGRAM              LS028380
05031  0500 CO 0 04173          CLA     MS4             ALL DONE, PICK UP FINAL ANSWER                 LS028390

BINARY CARD NO. LISP0111
05032 -0534 CO 4 03110          LXD     $CPPI,4         START OPEN UNSAVE BY GETTING PDL POINTER       LS028400
05033  0560 CO 4 77776          LDQ     -2,4                                                           LS028410
05034 -0600 CO 0 04174          STQ     MS5                                                            LS028420
05035  0560 CO 4 77775          LDQ     -3,4                                                           LS028430
05036 -0600 CO 0 04173          STQ     MS4                                                            LS028440
05037  0560 CO 4 77774          LDQ     -4,4                                                           LS028450
05040 -0600 CO 0 04172          STQ     MS3                                                            LS028460
05041  0560 CO 4 77773          LDQ     -5,4                                                           LS028470
05042 -0600 CO 0 04171          STQ     MS2                                                            LS028480
05043  0560 CO 4 77772          LDQ     -6,4                                                           LS028490
05044 -0600 CO 0 04170          STQ     MS1                                                            LS028500
05045  1 00006 4 05046          TXI     *+1,4,6             RESTORE PDL COUNTER                        LS028510
05046 -0634 CO 4 03110          SXD     $CPPI,4         SET CPPI                                       LS028520
05047 -0534 CO 4 04170          LXD     MS1,4           PICK UP LINK IR                                LS028530
05050 -0534 CO 1 03110          LXD     $CPPI,1             MAKE IX1 AND $CPPI AGREE                   LS028540
05051  0020 CO 4 00001          TRA     1,4             RETURN                                         LS028550
                        *                                                                              LS028560
05052 -0754 CO 4 00000  MPRG1   PXD     0,4             MAIN PROGRAM  PUT L IN AC                      LS028570
05053  0601 CO 0 04171          STO     MS2             SAVE IN L ARGUMENT REGISTER                    LS028580
05054 -0534 CO 4 04172          LXD     MS3,4           SEE IF FUNCTIONAL ARG IS S EXPRESSION          LS028590
05055  3 00012 4 05104          TXH     CMP1,4,10       GO IF S EXPRESSION                             LS028600
05056  0074 CO 4 04172          TSX     MS3,4           EXECUTE FUNCTIONAL ARGUMENT (TXL INS.)         LS028610
05057 -0534 CO 4 04512  MAIN1   LXD     $FREE,4         START OPEN CONS                                LS028620

BINARY CARD NO. LISP0112
05060  3 00000 4 05062          TXH     *+2,4,0         TEST FOR OUT OF FREE STORAGE                   LS028630
05061  0074 CO 4 04614          TSX     $FROUT,4        GO IF OUT                                      LS028640
05062  0560 CO 4 00000          LDQ     0,4             PICK UP POINTER TO NEXT FREE REGISTER          LS028650
05063 -0620 CO 0 04512          SLQ     $FREE           UPDATE FREE                                    LS028660
05064  0771 CO 0 00022          ARS     18              ITEM TO ADDRESS                                LS028670
05065  0601 CO 4 00000          STO     0,4             CONS(F(L),NIL)                                 LS028680
05066 -0754 CO 4 00000          PXD     0,4             ANSWER TO AC                                   LS028690
05067  0534 CO 4 04503          LXA     $CNTR1,4            PICK UP CONS COUNTER                       LS028700
05070  2 00001 4 05073          TIX     *+3,4,1             DECREMENT BY 1                             LS028710
05071  0074 CO 4 04513          TSX     ARREST,4            GO IF OUT OF COUNTER                       LS028720
05072  0774 CO 4 77777          AXT     -1,4                RELOAD OF -1 FOR COUNTER                   LS028730
05073  0634 CO 4 04503          SXA     $CNTR1,4            RESTORE CONS COUNTER                       LS028740
05074 -0534 CO 4 04174          LXD     MS5,4           PICK UP LAST ANSWER                            LS028750
05075  0622 CO 4 00000          STD     0,4             CONCATENATE THE ANSWERS BY RPLACD              LS028760
05076  0601 CO 0 04174          STO     MS5             UPDATE INT. ANSWER                             LS028770
05077  0020 CO 0 05025          TRA     MLOP1           GO TO HEAD OF MAIN LOOP                        LS028780
                        *                                                                              LS028790
05100 -0620 CO 0 05102  CMP     SLQ     *+2             COMPAT CALL FOR S EXPRESSION FUN. ARG.         LS028800
05101  0074 CO 4 13000          TSX     COMPAT,4                                                       LS028810
05102  0 00000 0 00001                  1,,**           FUNCTION OF 1 ARGUMENT                         LS028820
05103  0020 CO 0 05007          TRA     MAIN            GO BACK TO MAIN PROGRAM                        LS028830
                        *                                                                              LS028840
05104 -0634 CO 4 05106  CMP1    SXD     *+2,4           ANOTHER COMPAT CALL                            LS028850
05105  0074 CO 4 13000          TSX     COMPAT,4                                                       LS028860
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BINARY CARD NO. LISP0113
    05106  0 00000 0 00001                    1,,**
    05107  0020 CO 0 05057          TRA      MAIN1          RETURN TO MAIN PROGRAM                    LS028870
                                                                                                      LS028880
                          *                                                                           LS028890
    05110 -3 04176 0 03161   MS6   TXL      $END5,,MS5+2       SAVE 5 ITEMS                           LS028900
                                                                                                      LS028910
                                        FUNCTION COPY                                                 LS028920
                                        COPY(L)= (L=0 YIELDS 0, CAR(L)=-1 YIELDS L,                   LS028930
                                           OTHERWISE CONS(COPY(CAR(L)),COPY(CDR(L))))                 LS028940
                                R       HED                                                           LS028950
    05111  0100 00 4 00001    COPY    TZE 1,4                        L=0                            LS028960
    05112 -0634 00 4 04121            SXD CS1,4                                                       LS028970
    05113 -0734 00 4 00000            PDX 0,4                        L                              LS028980
    05114 -0634 00 4 05143            SXD CT1,4                      L                              LS028990
    05115  0500 00 4 00000            CLA 0,4                        CWR(L)                         LS029000
    05116  0734 00 4 00000            PAX 0,4                        CAR(L)                         LS029010
    05117 -3 77776 4 05123            TXL C1,4,-2                    CAR(L)=-1                      LS029020
    05120  0500 00 0 05143            CLA CT1                        L                              LS029030
    05121 -0534 00 4 04121            LXD CS1,4                                                       LS029040
    05122  0020 00 4 00001            TRA 1,4                                                         LS029050
    05123  0074 00 4 03104    C1      TSX $SAVE,4                                                     LS029060
    05124 -3 04124 0 03167            TXL     $END2,,CS2+2       SAVE 2 ITEMS                         LS029070
    05125 -0534 00 4 05143            LXD CT1,4                      L                              LS029080
    05126  0500 00 4 00000            CLA 0,4                        CWR(L)                         LS029090
    05127  0601 00 0 04122            STO CS2                                                         LS029100
    05130 -0320 00 0 00514            ANA DECM                       CDR(L)                         LS029110
    05131  0074 00 4 05111            TSX COPY,4                     COPY(CDR(L))                   LS029120
    05132  0534 00 4 04122            LXA CS2,4                      CAR(L)                         LS029130
    05133  0601 00 0 04122            STO CS2                        COPY(CDR(L))                   LS029140

BINARY CARD NO. LISP0114
    05134 -0754 00 4 00000            PXD 0,4                                                         LS029150
    05135  0074 00 4 05111            TSX COPY,4                     COPY(CAR(L))                   LS029160
    05136  0560 00 0 04122            LDQ CS2                                                         LS029170
    05137  0074 00 4 04471            TSX $CONS,4                                                     LS029180
    05140  0074 00 4 03117            TSX UNSAVE,4                                                    LS029190
    05141 -0534 00 4 04121            LXD CS1,4                                                       LS029200
    05142  0020 00 4 00001            TRA 1,4                                                         LS029210
    05143  0 00000 0 00000    CT1                                                                    LS029220
                  00514      DECM    SYN     $DMASK                                                 LS029230
                                                                                                      LS029240
                                        FUNCTION SEARCH                                               LS029250
                                        SEARCH(L,P,F,U)=(L=0 YIELDS U,P(L) YIELDS F(L),               LS029260
                                            OTHERWISE SEARCH (CDR(L),P,F,U))                          LS029270
                                                                                                      LS029280
                                R       HED                                                           LS029290
    05144 -0634 00 4 04214    SEARCH  SXD     SRS1,4                                                  LS029300
    05145  0074 00 4 03104            TSX $SAVE,4                                                     LS029310
    05146 -3 04222 0 03161            TXL     $END5,,SRS5+2      SAVE 5 ITEMS                         LS029320
    05147 -0600 00 0 04216            STQ SRS3                       P                              LS029330
    05150  0100 00 0 05211    SR3     TZE     SR4                                                     LS029340
    05151  0601 00 0 04215            STO SRS2                       L                              LS029350
    05152  0560 00 0 04063            LDQ $ARG3                      F                              LS029360
    05153 -0600 00 0 04217            STQ SRS4                                                        LS029370
    05154  0560 00 0 04064            LDQ $ARG4                      U                              LS029380
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05155 -0600 CO 0 04220          STQ SRS5                                    LS029390
05156 -0534 00 4 04216          LXD SRS3,4                                  LS029400
05157  3 00012 4 05162          TXH *+3,4,10                                LS029410
05160  0074 CO 4 04216          TSX SRS3,4                                  LS029420
05161  0020 CO 0 05165          TRA *+4                                     LS029430

BINARY CARD NO. LISP0115
05162 -0634 CO 4 05164          SXD *+2,4                                   LS029440
05163  0074 CO 4 13000          TSX COMPAT,4                                LS029450
05164  C 00000 0 00001              1,,**                                   LS029460
05165  0100 CO 0 05201          TZE SR1             NOT P(L)                LS029470
05166  0500 CO 0 04215          CLA SRS2            L                       LS029480
05167 -0534 CO 4 04217          LXD SRS4,4                                  LS029490
05170  3 00012 4 05173          TXH *+3,4,10                                LS029500
05171  0074 CO 4 04217          TSX SRS4,4                                  LS029510
05172  0020 CO 0 05176          TRA *+4                                     LS029520
05173 -0634 CO 4 05175          SXD *+2,4                                   LS029530
05174  0074 00 4 13000          TSX COMPAT,4                                LS029540
05175  0 00000 0 00001              1,,**                                   LS029550
05176  0074 CO 4 03117          TSX UNSAVE,4                                LS029560
05177 -0534 CO 4 04214          LXD SRS1,4                                  LS029570
05200  0020 CO 4 00001          TRA 1,4                                     LS029580
05201  0500 CO 0 04220    SR1   CLA SRS5            1 YIELDS                LS029590
05202  0601 CO 0 04064          STO $ARG4           U                       LS029600
05203  0500 CO 0 04217          CLA SRS4                                    LS029610
05204  0601 CO 0 04063          STO $ARG3           F                       LS029620
05205 -0534 CO 4 04215          LXD SRS2,4          L                       LS029630
05206  0500 CO 4 00000          CLA 0,4                                     LS029640
05207 -0320 CO 0 00514          ANA DECM            CDR(L)                  LS029650

BINARY CARD NO. LISP0116
05210  0020 CO 0 05150          TRA     SR3                                 LS029660
05211  0074 CO 4 03117    SR4   TSX     UNSAVE,4                            LS029670
05212 -0534 00 4 04064          LXD $ARG4,4                                 LS029680
05213  3 00012 4 05216          TXH     SRCMPT,4,10                         LS029690
05214 -0534 00 4 04214          LXD     SRS1,4                              LS029700
05215  0020 CO 0 04064          TRA     $ARG4                               LS029710
                          *                                                 LS029720
05216  0600 CO 0 04063  SRCMPT STZ     $ARG3                               LS029730
05217  0560 CO 0 04063          LDQ     $ARG3                               LS029740
05220  0074 CO 4 04471          TSX     $CONS,4                             LS029750
05221  0131 00 0 00000          XCA                                         LS029760
05222  0500 CO 0 04064          CLA     $ARG4                               LS029770
05223 -0534 CO 4 04214          LXD     SRS1,4                              LS029780
05224  0020 00 0 15721          TRA     $APPLY                              LS029790
                                                                            LS029800
                                FUNCTION EQUAL                              LS029810
                                EQUAL(L1,L2)=(L1=L2 YIELDS1,L1=0VL2=0 YIELDS 0,  LS029820
                                CAR(L1)=-1VCAR(L2)=-1 YIELDS 0, OTHERWISE   LS029830
                                     EQUAL(CAR(L1,CAR(L2))AEQUAL(CDR(L1),CDR(L2)))  LS029840
                                                                            LS029850
                          L     HED                                         LS029860
                          * EQUAL       A FUNCTION OF 2 ARGUMENTS DETERMINES WETHER 2 LIST  LS029870
                          *             STRUCTURES ARE EQUIVELENT.  REPROGRAMMED 5 OCTOBER 1960 LS029880
                          *             TO MAKE USE OF THE NUMBER CONVENTIONS CURRENTLY IN USE.  LS029890
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                                *                                                                  LS029900
05225 -0634 CO 4 05336   EQUAL SXD     EQXR,4          SAVE LINK IR                               LS029910
05226 -0600 CO 0 05340         STQ     EQL2            SAVE ARGUMENT 2                            LS029920
05227  0601 CO 0 05337         STO     EQL1            SAVE ARGUMENT 1                            LS029930
05230  0402 CO 0 05340   EQLP  SUB     EQL2            EQ TEST                                    LS029940
05231  0100 CO 0 05262         TZE     EQT             TWO LIST ARE EQ, EXIT TRUE                 LS029950
05232 -0520 CO 0 05337         NZT     EQL1            SKIP IF L1 NON NULL                        LS029960
05233  0020 CO 0 05265         TRA     EQF             L1 NULL BUT NOT EQ L2, EXIT FALSE          LS029970
05234 -0520 CO 0 05340         NZT     EQL2            NULL TEST L2                               LS029980
05235  0020 CO 0 05265         TRA     EQF             L2 NULL BUT NOT EQ  L1, EXIT FALSE         LS029990

BINARY CARD NO. LISP0117
05236 -0534 CO 4 05340         LXD     EQL2,4          PICK UP LIST 2                             LS030000
05237  0500 CO 4 00000         CLA     0,4             GET NEXT ELEMENT                           LS030010
05240  0734 CO 4 00000         PAX     0,4             CAR OF LIST 2                              LS030020
05241  3 77776 4 05270         TXH     EQA,4,-2        GO IF ATOM                                 LS030030
05242  0622 CO 0 05340         STD     EQL2                                                       LS030040
05243 -0754 CO 4 00000         PXD     0,4             CAR OF LIST TO DECREMENT OF AC             LS030050
05244  0131 CO 0 00000         XCA                     SWITCH TO MQ                               LS030060
05245 -0534 CO 4 05337         LXD     EQL1,4          PICK UP LIST 1                             LS030070
05246  0500 CO 4 00000         CLA     0,4             GET NEXT ELEMENT                           LS030080
05247  0622 CO 0 05337         STD     EQL1            SAVE CDR OF LIST 1                         LS030090
05250  0734 CO 4 00000         PAX     0,4             CAR OF LIST TO IR 4                        LS030100
05251  3 77776 4 05265         TXH     EQF,4,-2        GO TO FALSE EXIT IF THIS IS AN ATOM        LS030110
05252 -0754 CO 4 00000         PXD     0,4             CAR OF LIST TO DECREMENT OF AC             LS030120
05253  0074 CO 4 03104         TSX     $SAVE,4         SAVE CALL                                  LS030130
05254 -3 05342 0 03165         TXL     $END3,,EQL2+2   SAVE 3 ITEMS                               LS030140
05255  0074 CO 4 05225         TSX     $EQUAL,4        TEST FOR EQUALITY IN CAR  DIRECTION        LS030150
05256  0074 CO 4 03117         TSX     UNSAVE,4        UNSAVE CALL                                LS030160
05257  0100 CO 0 05265         TZE     EQF             WHOLE LIST IS FALSE IF CAR DIRECTION FLS030170
05260  0500 CO 0 05337         CLA     EQL1            PICK UP REST OF LIST 1                     LS030180
05261  0020 CO 0 05230         TRA     EQLP            TEST EQUALITY IN CDR DIRECTION             LS030190
                                *                                                                  LS030200
05262  0500 00 0 00476   EQT   CLA     $QD1            TRUE EXIT, PICK UP 1 IN DECREMENT          LS030210
05263 -0534 CO 4 05336         LXD     EQXR,4          RESTORE LINK IR                            LS030220

BINARY CARD NO. LISP0118
05264  0020 00 4 00001         TRA     1,4                                                        LS030230
                                *                                                                  LS030240
05265 -0754 00 0 00000    EQF  PXD     0,0             FALSE EXIT, CLEAR AC                       LS030250
05266 -0534 CO 4 05336         LXD     EQXR,4          RESTORE LINK IR                            LS030260
05267  0020 CO 4 00001         TRA     1,4             EXIT                                       LS030270
                                *                                                                  LS030280
05270 -0534 CO 4 05337    EQA  LXD     EQL1,4          L2 IS ATOM, IS L1                          LS030290
05271  0500 00 4 00000         CLA     0,4                                                        LS030300
05272  0734 CO 4 00000         PAX     0,4                                                        LS030310
05273 -3 77776 4 05265         TXL     EQF,4,-2                                                   LS030320
05274 -0534 00 4 05336         LXD     EQXR,4          OTHERWISE DO EQP                           LS030330
05275  0500 CO 0 05337         CLA     EQL1                                                       LS030340
05276  0560 CO 0 05340         LDQ     EQL2                                                       LS030350
05277  0020 00 0 05300         TRA     EQPROG                                                     LS030360
                                *                                                                  LS030370
                                *       EQP TESTS FOR EQ BETWEEN LISTS AND NUMERICAL EQUALITY BETWEEN LS030380
                                *       NUMBERS.   USES A TOLERENCE  IN TESTIONG FLOATION PT NUMBERS LS030390
                                *                                                                  LS030400
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                        *       DEFINE  (((EQP (LAMBDA (X Y) (COND                                  LS030410
                        *               ((AND (NUMBERP X) (NUMBERP Y)) (ZEROP (DIFFERENCE(X Y))) LS030420
                        *               (T F) ))) ))                                                LS030430
                        *                                                                           LS030440
                        *       IF THIS DEFINITION OF EQP DOES NOT SUIT THE USER,LET HIM            LS030450
                        *       MAKE HIS OWN USING LISP COMPILER OR LAP.                            LS030460
                        *                                                                           LS030470
05300  0040 00 0 05305  EQPROG TLQ     EQPF                                                       LS030480
05301  0131 00 0 00000          XCA                                                                LS030490
05302  0040 00 0 05305          TLQ     EQPF                                                       LS030500
05303  0500 00 0 00476          CLA     $QD1                                                       LS030510
05304  0020 00 4 00001          TRA     1,4             ARE EQ, EXIT TRUE                          LS030520
                        *                                                                          LS030530
05305  0634 00 4 05327   EQPF   SXA     EQPRX,4         INVESTIGATE FURTHER                        LS030540
05306 -0734 00 4 00000          PDX     0,4                                                        LS030550
05307  0634 00 2 05330          SXA     EQPRY,2                                                    LS030560
05310  0500 00 4 00000          CLA     0,4                                                        LS030570
05311  0734 00 2 00000          PAX     0,2                                                        LS030580

BINARY CARD NO. LISP0119
05312 -3 77776 2 05332          TXL     EQPFX,2,-2                                                 LS030590
05313 -0320 00 0 00524          ANA     TAGMSK                                                     LS030600
05314  0100 00 0 05332          TZE     EQPFX                                                      LS030610
05315 -0754 00 4 00000          PXD     0,4                                                        LS030620
05316  0131 00 0 00000          XCA                                                                LS030630
05317 -0734 00 4 00000          PDX     0,4                                                        LS030640
05320  0500 00 4 00000          CLA     0,4                                                        LS030650
05321  0734 00 2 00000          PAX     0,2                                                        LS030660
05322 -3 77776 2 05332          TXL     EQPFX,2,-2                                                 LS030670
05323 -0320 00 0 00524          ANA     TAGMSK                                                     LS030680
05324  0100 00 0 05332          TZE     EQPFX                                                      LS030690
05325 -0754 00 4 00000          PXD     0,4                                                        LS030700
05326  0074 00 4 14504          TSX     $DIFFER,4                                                  LS030710
05327  0774 00 4 00000   EQPRX  AXT     **,4                                                       LS030720
05330  0774 00 2 00000   EQPRY  AXT     **,2                                                       LS030730
05331  0020 00 0 15510          TRA     $ZEROP                                                     LS030740
                        *                                                                          LS030750
05332  0534 00 4 05327   EQPFX  LXA     EQPRX,4                                                    LS030760
05333  0534 00 2 05330          LXA     EQPRY,2                                                    LS030770
05334 -0754 00 0 00000          PXD     0,0                                                        LS030780
05335  0020 00 4 00001          TRA     1,4                                                        LS030790
                        *                                                                          LS030800
05336  0 00000 0 12010   EQXR           $F8             INDEX REGISTER STORAGE                     LS030810
05337  0 00000 0 00000   EQL1           LIST 1 STORAGE                                             LS030820

BINARY CARD NO. LISP0120
05340  0 00000 0 00000   EQL2           LIST 2 STORAGE                                             LS030830
05341  0 00000 0 00000   EQTS           TEST CELL  0 FIX, NON 0 FLO                                LS030840
                        *                                                                          LS030850
                        *  EQUAL USES $SAVE,$QD1,UNSAVE,$EQUAL AND FIXFLO                          LS030860
                                                                                                   LS030870
                                PRINT                   MAY 14,1959                                LS030880
                                                                                                   LS030890
                        T       HED                                                                LS030900
                                                                                                   LS030910
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                                PRINT MASTERMINDER                                                  LS030920
                                                                                                    LS030930
    05342  0634 CO 4 05352   PRINT SXA     PRPS1,4          SAVE LINK IR                          LS030940
    05343 -0534 CO 4 03110         LXD     $CPPI,4          SAVE CURRENT CONTENTS OF CPPI         LS030950
    05344 -0634 CO 4 06121         SXD     PCPPI,4                                                LS030960
    05345  0600 CO 0 06122         STZ     WALLPC           ZERO WALL PAPER COUNTER               LS030970
    05346  0601 CO 0 04213         STO     PRINTL       SAVE THE ARGUMENT                         LS030980
    05347  0074 CO 4 05356         TSX PRINO,4                                                    LS030990
    05350  0074 CO 4 06026   PRTTI TSX TERPRI,4                                                   LS031000
    05351  0500 CO 0 04213         CLA     PRINTL       RESTORE THE ARGUMENT                      LS031010
    05352  0774 CO 4 00000   PRPS1 AXT     **,4             RESTORE LINK IR                       LS031020
    05353  0020 CO 4 00001         TRA 1,4                                                        LS031030
    05354  0500 CO 0 05436   PRNIL CLA     PRBLW            PICK UP NIL REPRESENTATION            LS031040
    05355  0020 CO 0 05662         TRA     $PRIN2       PUT IN PRINT LINE AND EXIT                LS031050
    05356 -0634 CO 4 05437   PRINO SXD PS1,4                                                      LS031060
    05357  0100 CO 0 05354         TZE     PRNIL            PRINT THE NULL LIST                   LS031070
    05360 -0734 CO 4 00000         PDX 0,4                                                        LS031080
    05361 -0634 CO 4 05445         SXD L1,4                                                       LS031090
    05362  0500 CO 4 00000         CLA 0,4                                                        LS031100
    05363  0601 CO 0 05444         STO CWRL                                                       LS031110
    05364  0734 CO 4 00000         PAX 0,4                                                        LS031120
    05365 -3 77776 4 05371         TXL     XA1,4,-2                                               LS031130

BINARY CARD NO. LISP0121
    05366  0500 CO 0 05445         CLA L1                                                         LS031140
    05367 -0534 CO 4 05437         LXD PS1,4                                                      LS031150
    05370  0020 CO 0 05446         TRA $PRIN1                                                     LS031160
    05371  0520 CO 0 06306   XA1   ZET     PUNACT           DONT TERMINATE EARLY ON PUNCH         LS031170
    05372  0020 CO 0 05376         TRA     *+4                                                    LS031180
    05373 -0534 CO 4 06070         LXD     WORDS,4                                                LS031190
    05374  3 00002 4 05376         TXH     *+2,4,2      IF NEAR END OF LINE                       LS031200
    05375  0074 CO 4 06026         TSX     TERPRI,4     THEN DO A TERPRI                          LS031210
    05376  0500 CO 0 05442         CLA     LPAR2                                                  LS031220
    05377  0074 CO 4 05662         TSX $PRIN2,4                                                   LS031230
    05400  0500 CO 0 05444         CLA CWRL                                                       LS031240
    05401  0074 CO 4 03104         TSX $SAVE,4                                                    LS031250
    05402 -3 05442 0 03167         TXL     $END2,,PS2+2     SAVE 2 ITEMS                          LS031260
    05403  0622 CO 0 05440   A3    STD     PS2              SAVE LIST                             LS031270
    05404  0734 CO 4 00000         PAX     0,4              CAR TO IR 4                           LS031280
    05405 -3 00000 4 05432         TXL PRP2,4,0                                                   LS031290
    05406 -0754 00 4 00000         PXD 0,4                                                        LS031300
    05407  0074 CO 4 05356         TSX PRINO,4                                                    LS031310
    05410 -0534 CO 4 05440   A4    LXD PS2,4                                                      LS031320
    05411 -3 00000 4 05421         TXL     A6,4,0           EXIT IF NULL                          LS031330
    05412  0500 CO 4 00000         CLA     0,4              TEST FOR ATOM                         LS031340
    05413  0734 CO 4 00000         PAX     0,4                                                    LS031350

BINARY CARD NO. LISP0122
    05414 -3 77776 4 05425         TXL     A2,4,-2          GO TO A2 IF NOT AN ATOM               LS031360
    05415  0500 CO 0 05435         CLA     DOT              OTHERWISE PRINT IN DOT NOTATION       LS031370
    05416  0074 CO 4 05662         TSX     $PRIN2,4         PUT IN PRINT LINE                     LS031380
    05417  0500 CO 0 05440         CLA     PS2              CDR OF LIST                           LS031390
    05420  0074 CO 4 05446         TSX     $PRIN1,4         PRINT AS ATOM                         LS031400
    05421  0074 CO 4 03117   A6    TSX     UNSAVE,4                                               LS031410
    05422  0500 CO 0 05441         CLA RPAR2                                                      LS031420
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05423 -0534 CO 4 05437          LXD PS1,4                                          LS031430
05424  0020 CO 0 05662          TRA $PRIN2                                         LS031440
05425  0500 CO C 05443   A2     CLA COMM2                                          LS031450
05426  0074 CO 4 05662          TSX $PRIN2,4                                       LS031460
05427 -0534 CO 4 05440          LXD PS2,4                                          LS031470
05430  0500 CO 4 00000          CLA 0,4                                            LS031480
05431  0020 00 0 05403          TRA A3                                             LS031490
                                                                                  LS031500
05432  0500 CO 0 05436   PRP2   CLA PRBLW                                         LS031510
05433  0074 CO 4 05662          TSX $PRIN2,4                                       LS031520
05434  0020 CC 0 05410          TRA A4                                             LS031530
05435 -203360777777      DOT    OCT     603360777777          .                   LS031540
05436 -053143777777      PRBLW  OCT     453143777777          NIL                 LS031550
05437  0 00000 0 11045   PS1            $F4                                        LS031560
05440  0 00000 0 00000   PS2                                                       LS031570
05441 +347777777777      RPAR2  OCT 347777777777                                  LS031580

BINARY CARD NO. LISP0123
05442 -347777777777      LPAR2  OCT 747777777777                                  LS031590
05443 -207777777777      COMM2  OCT 607777777777  BLANK    INSTEAD OF A COMMA     LS031600
05444  0 00000 0 00000   CWRL                                                      LS031610
05445  0 00000 0 00000   L1                                                        LS031620
                                                                                  LS031630
                                                                                  LS031640
                         T      HED                                               LS031650
                                                                                  LS031660
                                                                                  LS031670
                                SUBROUTINE(PRIN1(L))                              LS031680
                         /      CAR(L)   N=-1 YIELDS ERROR                        LS031690
                                ST = L                                            LS031700
                         A1     CDR(L) = 0 YIELDS ERROR                           LS031710
                                L = CDR(L)                                        LS031720
                                CAR(L) = PNAME YIELDS GO(A3)                      LS031730
                                CAR(L) N= FLOAT YIELDS GO(A1)                     LS031740
                                L = CAR(CDR(L))                                   LS031750
                                VAL = FLONAM(L)                                   LS031760
                                REPLACD(CONS(PNAME,CONS(VAL,CDR(ST))),ST)         LS031770
                                L = CDR(ST)                                       LS031780
                         A3     L= CAR(CDR(L))                                    LS031790
                         A2     PRIN2(CWR(CAR(L))                                 LS031800
                                L = CDR(L)                                        LS031810
                                                  L=0 YIELDS RETURN               LS031820
                         */     GO(A2)                                            LS031830
                                                                                  LS031840
05446 -0634 CO 4 05644   PRIN1  SXD PR1,4                                         LS031850
05447  0601 CO 0 05643          STO PRSS                  SAVE OBJECT             LS031860
05450  0520 00 0 06306          ZET     PUNACT                                    LS031870
05451  0020 00 0 05455          TRA     *+4                                       LS031880
05452 -0534 00 4 06070          LXD     WORDS,4                                   LS031890
05453  3 00002 4 05455          TXH     *+2,4,2           IF NEAR END OF LINE     LS031900
05454  0074 CO 4 06026          TSX     TERPRI,4          THEN DO A TERPRI        LS031910
05455 -0534 CO 4 05643          LXD     PRSS,4                                    LS031920
05456  0500 CO 4 00000          CLA ,4                                            LS031930
05457  0625 CO 0 05655          STT     PTTGR                                     LS031940
05460 -0320 CO 0 00513          ANA ADDM                                          LS031950
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05461  0402 00 0 00513          SUB ADDM                                          LS031960
05462  0100 00 0 05470          TZE PR3                 CAR(L) N=-1 YIELDS ERROR  LS031970
05463 -0634 00 4 02313   PR2     SXD $ERROR,4                                      LS031980
05464  0074 00 4 06026          TSX TERPRI,4                                      LS031990
05465 -0754 00 0 00000          PXD     0,0                                       LS032000
05466  0074 00 4 02314          TSX $ERROR+1,4                                    LS032010
05467  544760600154             BCI     1,*P  1*        TRIED TO PRINT NON-OBJECT -PRIN1-  LS032020
                 00513   ADDM    SYN     $AMASK                                    LS032030

BINARY CARD NO. LISP0124
05470  0520 00 0 05655  PR3     ZET     PTTGR                                     LS032040
05471  0020 00 0 05503          TRA     PR3N                                      LS032050
05472  0500 00 4 00000          CLA     0,4             FIRST WORD OF ATOM        LS032060
05473  0020 00 0 05476          TRA     *+3                                       LS032070
05474 -3 11061 4 05476  PR3P    TXL     *+2,4,$PNAME-1                            LS032080
05475 -3 11062 4 05520          TXL     PA3,4,$PNAME                              LS032090
05476 -0734 00 4 00000          PDX     0,4             CDR                       LS032100
05477 -3 00000 4 05630          TXL     PR5,4,0         UNPRINTABLE               LS032110
05500  0500 00 4 00000          CLA     0,4             NEXT WORD                 LS032120
05501  0734 00 4 00000          PAX     0,4                                       LS032130
05502  0020 00 0 05474          TRA     PR3P            EXAMINE WORD              LS032140
05503 -0534 00 4 05643  PR3N    LXD     PRSS,4                                    LS032150
05504  0500 00 4 00000          CLA     0,4                                       LS032160
05505 -0734 00 4 00000          PDX     0,4                                       LS032170
05506  0634 00 4 05654          SXA     PTPNT,4                                   LS032180
05507  0500 00 0 05655          CLA     PTTGR                                     LS032190
05510 -0320 00 0 00473          ANA     $QT2                                      LS032200
05511 -0100 00 0 05534          TNZ     PR4F                                      LS032210
05512  0500 00 0 05655          CLA     PTTGR                                     LS032220
05513 -0320 00 0 00474          ANA     $QT4                                      LS032230
05514 -0100 00 0 05537          TNZ     LUCY                                      LS032240
05515 -0754 00 4 00000          PXD     0,4                                       LS032250

BINARY CARD NO. LISP0125
05516  0074 00 4 04657          TSX     NUMNAM,4                                  LS032260
05517  0020 00 0 05532          TRA     PR4E                                      LS032270
                        *                                                        LS032280
05520 -0734 00 4 00000   PA3     PDX     0,4             FOUND A PNAME             LS032290
05521  0500 00 4 00000          CLA     0,4                                       LS032300
05522  0734 00 4 00000          PAX     0,4             POINTER TO PRINT LIST     LS032310
05523  0500 00 4 00000   PR4     CLA     0,4             LIST ITEM                 LS032320
05524  0622 00 0 05645          STD     L               SAVE REST OF LIST IF ANY  LS032330
05525  0734 00 4 00000          PAX     0,4             POINTER TO FIRST FULL FULL WORD  LS032340
05526  0500 00 4 00000          CLA     0,4             FULL WORD                 LS032350
05527  0074 00 4 05662          TSX     $PRIN2,4        PRINT IT                  LS032360
05530 -0534 00 4 05645          LXD     L,4             PICK UP REST OF LIST      LS032370
05531  3 00000 4 05523          TXH     PR4,4,0         PRINT MORE IF MORE        LS032380
05532 -0534 00 4 05644   PR4E    LXD     PR1,4           EXIT BY RESTORING LINK IR LS032390
05533  0020 00 4 00001          TRA     1,4             EXIT                      LS032400
05534 -0754 00 4 00000  PR4F    PXD     0,4                                       LS032410
05535  0074 00 4 06326          TSX     FLONAM,4                                  LS032420
05536  0020 00 0 05532          TRA     PR4E                                      LS032430
                        *                                                        LS032440
                        *       PRINT THE NUMBER OCTALLY                         LS032450
05537  0634 00 2 05626   LUCY    SXA     JUDY,2                                    LS032460
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05540  0534 CO 2 05654          LXA     PTPNT,2          GET POINTER TO NUMBER                  LS032470
05541  0560 CO 2 00000          LDQ     0,2                                                     LS032480
05542  0162 CO 0 05547          TQP     BETTY            TEST FOR NEGATIVE NUMBER               LS032490
05543  0500 CO 0 05652          CLA     MISGN            IF SO, PRINT -                         LS032500

BINARY CARD NO. LISP0126
05544  0074 CO 4 05662          TSX     $PRIN2,4                                                LS032510
05545  0500 CO 2 00000          CLA     0,2              REMOVE MINUS SIGN                      LS032520
05546 -0130 00 0 00000          XCL                                                             LS032530
05547 -0520 CO 2 00000   BETTY  NZT     0,2              TEST IF NUMBER ALL ZEROS               LS032540
05550  0020 CO 0 05624          TRA     MARIE                                                   LS032550
                        *       LOOK FOR NON-ZERO DIGIT ON LEFT                                 LS032560
05551 -0754 00 0 00000          PXD     ,0                                                      LS032570
05552  0774 00 2 00014          AXT     12,2             IR2 COUNTS ZEROS ON RIGHT              LS032580
05553 -0763 CO 0 00003          LGL     3                                                       LS032590
05554  1 77777 2 05555          TXI     *+1,2,-1         COUNT VACATED POSITIONS                LS032600
05555  0100 CO 0 05553          TZE     *-2                                                     LS032610
                        *       A NON-ZERO DIGIT HAS APPEARED ON THE LEFT                       LS032620
05556 -0501 CO 0 00450          ORA     $Q64             PUT IN OVERFLOW FLIPPER                LS032630
05557  0140 CO 0 05560          TOV     *+1              SHUT OFF OVERFLOW LIGHT                LS032640
05560 -0600 CO 0 05646   GRETA  STQ     TONI             TEST IF ALL DIGITS ARE SPREAD          LS032650
05561  0162 CO 0 05563          TQP     *+2              TEST FOR NON-ZERO SIGN BIT             LS032660
05562  1 77777 2 05566          TXI     FIFI,2,-1        SOME DIGITS NOT SPREAD, SO CONTINUE    LS032670
05563 -0520 CO 0 05646          NZT     TONI                                                    LS032680
05564  0020 CO 0 05603          TRA     DEBBY            TRA IF ALL NON-ZERO DIGITS SPREAD      LS032690
05565  1 77777 2 05566          TXI     *+1,2,-1                                                LS032700
05566  0767 CO 0 00003   FIFI   ALS     3                SPREAD ONE DIGIT                       LS032710
05567 -0763 CO 0 00003          LGL     3                                                       LS032720
05570 -0140 CO 0 05560          TNO     GRETA            SEE IF FULL WORD OF DIGITS             LS032730
05571 -0600 CO 0 05646          STQ     TONI             PRINT THE WORD                         LS032740

BINARY CARD NO. LISP0127
05572  0074 CO 4 05662          TSX     $PRIN2,4                                                LS032750
05573  0500 CO 0 00425          CLA     $Q1              PUT IN OVERFLOW FLIPPER                LS032760
05574  0560 CO 0 05646          LDQ     TONI                                                    LS032770
05575  0140 CO 0 05576          TOV     *+1              SHUT OFF OVERFLOW LIGHT                LS032780
05576  0162 CO 0 05600          TQP     *+2              TEST FOR NON-ZERO SIGN BIT             LS032790
05577  1 77777 2 05566          TXI     FIFI,2,-1                                               LS032800
05600  0520 CO 0 05646          ZET     TONI             SEE IF ALL DIGITS SPREAD               LS032810
05601  1 77777 2 05566          TXI     FIFI,2,-1                                               LS032820
05602  0020 CO 0 05607          TRA     VICKI                                                   LS032830
                        *       FORM WORD FOR PRINTING                                          LS032840
05603  0560 CO 0 00525   DEBBY  LDQ     SEVENS           PUT 77S IN RIGHT END OF WORD           LS032850
05604 -0763 CO 0 00006          LGL     6                  OVERFLOW SIGNALS LEFT END OF WORD    LS032860
05605 -0140 CO 0 05604          TNO     *-1                                                     LS032870
05606  0074 CO 4 05662          TSX     $PRIN2,4                                                LS032880
                        *       PRINT Q AND SCALE FACTOR IF ANY                                 LS032890
05607  3 00000 2 05612   VICKI  TXH     MICKY,2,0        CONTINUE IF 0 SCALE FACTOR             LS032900
05610  0500 CO 0 05653          CLA     BCIQ                                                    LS032910
05611  0020 CO 0 05625          TRA     PATSY                                                   LS032920
05612 -3 00011 2 05617   MICKY  TXL     SANDY,2,9        TRA IF SCALE FACTOR LESS THAN 10       LS032930
                        *       OCTAL SCALE FACTOR MORE THAN 10                                 LS032940
05613 -0754 00 2 00000          PXD     ,2                                                      LS032950
05614  0400 00 0 05647          ADD     BQ10             FORM SCALE FACTOR FOR PRINTING         LS032960
05615 -0760 CO 0 00003          SSM                                                             LS032970
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05616  0020 CO 0 05625          TRA     PATSY                                          LS032980
                        *       OCTAL SCALE FACTOR LESS THAN 10                        LS032990
05617 -0754 00 2 00000   SANDY  PXD     ,2                                             LS033000

BINARY CARD NO. LISP0128
05620  0767 00 0 00006          ALS     6                                              LS033010
05621  0400 CO C 05650          ADD     BQO                                            LS033020
05622 -C760 CO 0 00003          SSM                                                    LS033030
05623  0020 CO 0 05625          TRA     PATSY                                          LS033040
05624  0500 CO C 05651   MARIE  CLA     BCIOQ           PRINT OQ                       LS033050
05625  0074 CC 4 05662   PATSY  TSX     $PRIN2,4                                       LS033060
05626  0774 CO 2 00000   JUDY   AXT     **,2            ONLY THIS SECTION USES IX2     LS033070
05627  0020 00 0 05532          TRA     PR4E                                           LS033080
                                                                                       LS033090
                        GENERATE A PRINT NAME FOR AN OBJECT WITHOUT ONE.               LS033100
                                                                                       LS033110
                        THE PRINT NAME IS OF THE FORM LDDDDD WHERE THE D,S ARE THE     LS033120
                        OCTAL DIGITS OF THE 2,S COMPLIMENT OF THE FIRST WORD OF        LS033130
                         THE PROPERTY LIST OF THE OBJECT.                              LS033140
                                                                                       LS033150
05630 -0535 CO 4 05643   PR5    LDC     PRSS,4                                         LS033160
05631 -0754 00 4 00000          PXD     0,4                                            LS033170
05632  0131 CO 0 00000          XCA                                                    LS033180
05633  0074 CO 4 11731          TSX     OCTALP,4                                       LS033190
05634 -0501 CO 0 05642          ORA     PRC1                                           LS033200
05635 -0760 00 0 00003          SSM                     FIX SIGN TO AGREE WITH P BIT FOR PRIN2  LS033210
05636 -0760 CO 0 00001          PBT                                                    LS033220
05637  0760 CO 0 00002          CHS                                                    LS033230
05640 -0534 CO 4 05644          LXD     PR1,4           RESTORE LINK IR                LS033240
05641  0020 CO 0 05662          TRA     $PRIN2          PUT IN PRINT LINE AND EXIT     LS033250
                                                                                       LS033260
05642  430000000000      PRC1   BCI     1,L00000        L SYMBOL                       LS033270
05643  0 00000 0 00000   PRSS                           STORAGE FOR POINTER TO OBJECT  LS033280
05644  0 00000 0 00000   PR1                                                          LS033290
05645  0 00000 0 00000   L                                                            LS033300
05646                    TONI   BSS     1                                            LS033310

BINARY CARD NO. LISP0129
05647 +100066777777      BQ10   OCT     100066777777    USED TO FORM BCI Q1N           LS033320
05650 +100077777777      BQO    OCT     100077777777    USED TO FORM BCI QN            LS033330
05651 +005077777777      BCIOQ  OCT     005077777777    BCI OQ                         LS033340
05652 -007777777777      MISGN  OCT     407777777777    BCI -                          LS033350
05653 -107777777777      BCIQ   OCT     507777777777                                   LS033360
05654                    PTPNT  BSS     1                                              LS033370

BINARY CARD NO. LISP0130
05655  0 00000 0 00000   PTTGR                          TEST CELL FOR NUMBER FLAGS     LS033380
                                                                                       LS033390
                                                                                       LS033400
                        PRIN2    PRINTS UP TO 6 CHARACTERS IN ONE WORD WHEN THE        LS033410
                        CHARACTERS ARE JUSTIFIED TO THE LEFT AND FOLLOWED BY THE       LS033420
                        ILLEGAL CHARACTER WHOSE OCTAL FORM IS 77                       LS033430
                                                                                       LS033440
                                                                                       LS033450
05656 -0634 CO 4 06067   PRINT2 SXD PR9,4                                             LS033460
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05657 -0734 00 4 00000          PDX 0,4                     BRING BCD WORD TO AC                    LS033470
05660  0500 00 4 00000          CLA 0,4                                                             LS033480
05661  0020 00 0 05664          TRA     *+3                                                         LS033490
05662  3 00000 0 06153  PRIN2   TXH     $PUN2,,0            SWITCH TO PUNCH OUT ROUTINE             LS033500
05663 -0634 00 4 06067          SXD     PR9,4                                                       LS033510
05664 -0634 00 2 06066          SXD PR8,2                                                           LS033520
05665 -0634 00 1 06065          SXD PR7,1                                                           LS033530
05666 -0534 00 4 06070          LXD WORDS,4                 ROOM LEFT IN OUTPUT RECORD              LS033540
05667 -3 00000 4 06057          TXL INIT,4,0                CAN BE ZERO ONLY IF ROUTINE NOTUSED     LS033550
05670  0774 00 1 00001  COMB4   AXT 1,1                                                            LS033560
05671  0601 00 0 06074          STO TEMP                                                            LS033570
05672 -0500 00 0 06074          CAL TEMP                                                            LS033580
05673 -0340 00 0 00525          LAS SEVENS                  WORD OF ALL 77-S CAUSES NO ACTION       LS033590
05674  0020 00 0 05676          TRA *+2                                                             LS033600
05675  0020 00 0 05727          TRA NOJOB                                                           LS033610
05676 -0320 00 0 06072  SHIFL   ANA RCHM    IS THE RIGHT CHARACTER 77                              LS033620
05677  0402 00 0 06072          SUB RCHM                                                            LS033630
05700 -0100 00 0 05705          TNZ JUST                    NOT 77                                  LS033640
05701 -0500 00 0 06074          CAL TEMP                                                            LS033650
05702  0771 00 0 00006          ARS 6                                                               LS033660

BINARY CARD NO. LISP0131
05703  0602 00 0 06074          SLW TEMP                                                            LS033670
05704  1 00001 1 05676          TXI SHIFL,1,1                                                       LS033680
05705 -0500 00 0 06074  JUST    CAL TEMP                                                            LS033690
05706  0020 00 1 05715          TRA LSHIF+1,1                                                       LS033700
05707  0767 00 0 00006          ALS 6                                                               LS033710
05710  0767 00 0 00006          ALS 6                                                               LS033720
05711  0767 00 0 00006          ALS 6                                                               LS033730
05712  0767 00 0 00006          ALS 6                                                               LS033740
05713  0767 00 0 00006          ALS 6                                                               LS033750
05714  0602 00 0 06074  LSHIF   SLW TEMP                                                            LS033760
05715  0560 00 0 06074          LDQ TEMP                                                            LS033770
05716 -0500 00 0 06073          CAL PART                                                            LS033780
05717 -0534 00 2 06071          LXD PARTS,2                                                         LS033790
05720 -0763 00 0 00006  COMB    LGL 6                                                               LS033800
05721  0602 00 0 06073          SLW PART                                                            LS033810
05722 -2 00001 2 05734          TNX WFULL,2,1                                                       LS033820
05723  1 00001 1 05724  COMB5   TXI *+1,1,1                                                        LS033830
05724 -3 00006 1 05720          TXL COMB,1,6                                                        LS033840
05725 -0634 00 2 06071  COMB1   SXD PARTS,2                                                        LS033850
05726 -0634 00 4 06070          SXD WORDS,4                                                         LS033860
05727 -0534 00 1 06065  NOJOB   LXD PR7,1                                                          LS033870
05730 -0534 00 2 06066          LXD PR8,2                                                           LS033880

BINARY CARD NO. LISP0132
05731 -0534 00 4 06067          LXD PR9,4                                                           LS033890
05732 -0754 00 0 00000          PXD 0,0                                                             LS033900
05733  0020 00 4 00001          TRA 1,4                                                             LS033910
05734  0602 00 4 06121  WFULL   SLW REC,4                                                          LS033920
05735 -2 00001 4 05740          TNX RECFL,4,1                                                       LS033930
05736  0774 00 2 00006  COMB3   AXT 6,2                                                            LS033940
05737  0020 00 0 05723          TRA COMB5                  /                                        LS033950
05740 -0600 00 0 06074  RECFL   STQ TEMP                                                           LS033960
05741  0500 00 0 06122          CLA     WALLPC             GET MAX NUMBER OF LINES PER LIST        LS033970
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05742  0400 CO 0 00425          ADD     $Q1                                    LS033980
05743  0340 CC C 06123          CAS     BRKOUT          COMPARE WITH MAX NUMBER LS033990
05744  0020 CO 0 05746          TRA     *+2             NO, GO ON              LS034000
05745  0020 CO 0 05761          TRA     PRTB            = BREAKOUT             LS034010
05746  0601 CO C 06122          STO     WALLPC          PUT AWAY               LS034020
05747  0074 CO 4 01527          TSX OUTPUT,4                                   LS034030
05750  0 00000 0 00365  PRINTD       BCDOUT                                   LS034040
05751  0 00024 0 06075               REC-20,,20                               LS034050
05752  0560 CO C 06074          LDQ TEMP                                       LS034060
05753 -0534 CO 4 00503          LXD QD20,4                                     LS034070
05754 -0500 CO 0 00527          CAL BLNKA                                      LS034080
05755  0602 CO 0 06073          SLW PART                                       LS034090
05756 -0534 CO 4 00503          LXD QD20,4                                     LS034100

BINARY CARD NO. LISP0133
05757 -0534 CO 2 00500          LXD QD5,2                                      LS034110
05760  0020 CO 0 05723          TRA COMB5                                      LS034120
05761 -0534 CO 1 06121  PRTB    LXD     PCPPI,1         RESTORE IXI AND CPPI   LS034130
05762 -0634 CO 1 03110          SXD     $CPPI,1                                LS034140
05763 -0534 CO 2 06066          LXD     PR8,2                                  LS034150
05764  0020 CO C 05350          TRA     PRTT1           BREAKOUT               LS034160
                        *                                                      LS034170
                        *       TAB     TAKES NUMBER FROM 1 TO 20 AND TABS OUTPUT LINE LS034180
                        *               OUT THAT MANY WORDS.                   LS034190
                        *                                                      LS034200
05765  0634 CO 4 06020   TAB    SXA     TABX,4                                 LS034210
                  C5765  TABTAB SYN     TAB             GET AROUND HEADING NONSCENCE LS034220
05766  0634 CO 2 06021          SXA     TABY,2                                 LS034230
05767 -0734 CO 4 00000          PDX     0,4                                    LS034240
05770  0500 CO 4 00000          CLA     0,4                                    LS034250
05771 -0734 CO 4 00000          PDX     0,4                                    LS034260
05772  0500 CO 4 00000          CLA     0,4                                    LS034270
05773  0734 CO 4 00000          PAX     0,4                                    LS034280
05774 -3 00000 4 06020          TXL     TABX,4,0        NO TAB AT ALL          LS034290
05775  3 00023 4 06024          TXH     TABC,4,19                              LS034300
05776 -0634 CO 4 06000          SXD     *+2,4                                  LS034310
05777  0774 CO 4 00024          AXT     20,4                                   LS034320
06000  2 00000 4 06001          TIX     *+1,4,**                               LS034330
06001 -0634 CO 4 06016          SXD     TABA,4          TAB OUT TO HERE        LS034340
06002 -0534 CO 4 06070          LXD     WORDS,4                                LS034350
06003 -3 00001 4 06024          TXL     TABC,4,1                               LS034360
06004 -0534 CO 2 06071          LXD     PARTS,2                                LS034370

BINARY CARD NO. LISP0134
06005  0560 CO 0 00527          LDQ     BLANK                                  LS034380
06006  0500 CO 0 06073          CLA     PART                                   LS034390
06007 -0763 CO 0 00006          LGL     6                                      LS034400
06010  2 00001 2 06007          TIX     *-1,2,1                                LS034410
06011  0774 CO 2 00006          AXT     6,2                                    LS034420
06012 -0634 CO 2 06071          SXD     PARTS,2                                LS034430
06013  0602 CO 4 06121   TABB   SLW     REC,4                                  LS034440
06014 -0500 CO 0 00527          CAL     BLANK                                  LS034450
06015  1 77777 4 06016          TXI     *+1,4,-1                               LS034460
06016  3 00000 4 06013   TABA   TXH     TABB,4,**                              LS034470
06017 -0634 CO 4 06070          SXD     WORDS,4                                LS034480
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06020  0774 CC 4 00000   TABX  AXT     **,4                                    LS034490
06021  0774 CC 2 00000   TABY  AXT     **,2                                    LS034500
06022 -0754 CC C 00000         PXD     0,0                                     LS034510
06023  0020 CC 4 00001         TRA     1,4                                     LS034520
                          *                                                    LS034530
06024  0074 CC 4 06026   TABC  TSX     TERPRI,4        DUMP THIS LINE          LS034540
06025  0020 CC C 06020         TRA     TABX                                    LS034550
                          *                                                    LS034560
                          *     TERPRI  FINISHES LINE OUT WITH BLANKS AND PRINTS IT LS034570
                          *                                                    LS034580
06026 -0634 CC 2 06066  TERPRI SXD PR8,2                                       LS034590
06027 -0634 CC 4 06067         SXD PR9,4                                       LS034600
06030 -0534 CC 2 06071         LXD PARTS,2                                     LS034610
06031 -0534 CC 4 06070         LXD WORDS,4                                     LS034620
06032 -0500 CC 0 06073         CAL PART                                        LS034630

BINARY CARD NC. LISP0135
06033  0560 CC 0 00527         LDQ BLANK                                       LS034640
06034 -0763 CC 0 00006   TER1  LGL 6                                           LS034650
06035  2 00001 2 06034         TIX TER1,2,1                                    LS034660
06036  0602 CC 4 06121   TER3  SLW REC,4                                       LS034670
06037 -2 00001 4 06042         TNX TER2,4,1                                    LS034680
06040 -0500 CC C 00527         CAL BLANK                                       LS034690
06041  0020 CC C 06036         TRA TER3                                        LS034700
06042  0074 CC 4 01527   TER2  TSX OUTPUT,4                                    LS034710
06043  0 00000 0 00365  PRINTC      BCDOUT                                     LS034720
06044  0 00024 0 06075              REC-20,,20                                 LS034730
06045 -0534 CC 4 00503         LXD QD20,4                                      LS034740
06046 -0634 CC 4 06070         SXD WORDS,4                                     LS034750
06047 -0534 CC 2 00500         LXD QD5,2                                       LS034760
06050 -0634 CC 2 06071         SXD PARTS,2                                     LS034770
06051 -0534 CC 2 06066         LXD PR8,2                                       LS034780
06052 -0534 CC 4 06067         LXD PR9,4                                       LS034790
06053  0500 CC 0 00527         CLA BLNKA                                       LS034800
06054  0601 CC 0 06073         STO PART                                        LS034810
06055 -0754 CC 0 00000         PXD 0,0                                         LS034820
06056  0020 CC 4 00001         TRA 1,4                                         LS034830
06057 -0534 CC 4 00503   INIT  LXD QD20,4                                      LS034840
06060  0560 CC 0 00527         LDQ BLNKA                                       LS034850

BINARY CARD NO. LISP0136
06061 -0600 CC 0 06073         STQ PART                                        LS034860
06062  0774 CC 2 00005         AXT 5,2                                         LS034870
06063 -0634 CC 2 06071         SXD PARTS,2                                     LS034880
06064  0020 CC 0 05670         TRA COMB4                                       LS034890
                          *                                                    LS034900
06065  C C00CC C 00000   PR7                                                   LS034910
06066  C 00000 C 00000   PR8                                                   LS034920
06067  0 00000 0 00000   PR9                                                   LS034930
06070  C 00024 0 00000  WORDS          ,,20                                   LS034940
06071  C 00005 0 00000  PARTS          ,,5                                    LS034950
06072 +CC0000C00077       RCHM  OCT 77                                         LS034960
06073  0 00000 0 00000   PART                                                  LS034970
06074  C 00000 0 00000   TEMP                                                  LS034980
06121                    REC   BES 20                                         LS034990
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BINARY CARD NO. LISP0137
    06121  0 00000 0 00000   PCPPI                              PUSHDOWN COUNTER STORAGE                LS035000
    06122  0 00000 0 00000  WALLPC                              NUMBER OF LINES IN THIS LIST SO FAR     LS035010
    06123 +00C000000113      BRKOUT DEC     75                                                         LS035020
                    00500     QD5    SYN     $QD5                                                      LS035030
                    00503     QD20   SYN     $QD20                                                     LS035040
                    00527     BLANK  SYN     BLANKS                                                    LS035050
                    00527     BLNKA  SYN     BLANKS                                                    LS035060
                             *                                                                         LS035070
                             * BCDAD1         A CONVERT TABLE FOR ADDING 1 TO A 6 DIGIT BCD NUMBER    LS035080
                             *                USED BY LOADING BCD NUMBER INTO AC AND DOING            LS035090
                             *       CVR      BCDAD1,,6                                               LS035100
                             *                                                                         LS035110
    06124  0 00000 0 06124   ADT    PZE      ADT                 0                                    LS035120
    06125  0 10000 0 06124  BCDAD1 PZE      ADT,,1*4096         1                                    LS035130
    06126  0 20000 0 06124         PZE      ADT,,2*4096                                              LS035140
    06127  0 30000 0 06124         PZE      ADT,,3*4096         3                                    LS035150
    06130  0 40000 0 06124         PZE      ADT,,4*4096         4                                    LS035160
    06131  0 50000 0 06124         PZE      ADT,,5*4096         5                                    LS035170
    06132  0 60000 0 06124         PZE      ADT,,6*4096         6                                    LS035180
    06133  0 70000 0 06124         PZE      ADT,,7*4096         7                                    LS035190
    06134  1 00000 0 06124         PON      ADT                 8                                    LS035200
    06135  1 10000 0 06124         PON      ADT,,1*4096         9                                    LS035210
    06136  0 00000 0 06125         PZE      BCDAD1              10                                   LS035220
                             *                                                                         LS035230
                             * PUNCH          WRITES OUT A LIST ON THE SYSTEM PERIFIAL PUNCH TAPE     LS035240
                             *                (SYSPPT) IN A FORM SUTABLE FOR PUNCHING IN BCD.         LS035250
                             *                                                                         LS035260
    06137  0634 00 4 06151   PUNCH SXA      PNCHX,4                 SAVE LINK IR                      LS035270
    06140 -0625 00 0 06306         STL      PUNACT                  ACTIVTE PUNCH ROUTINE             LS035280
    06141 -0734 00 4 00000         PDX      0,4                     ARGUMENT TO IR 4                  LS035290
    06142  0502 00 0 05662         CLS      $PRIN2                  SET SWITCH TO                     LS035300
    06143  0601 00 0 05662         STO      $PRIN2                  GO TO PUNCH ROUTINE               LS035310
    06144 -0754 00 4 00000         PXD      0,4                     ARGUMENT TO AC                    LS035320
    06145  0601 00 0 04213         STO      PRINTL             SAVE THE ARGUMENT                      LS035330
    06146  0074 00 4 05356         TSX      $PRINO,4                USES PRINT ROUTINE                LS035340

BINARY CARD NO. LISP0138
    06147  0074 00 4 06246         TSX      TERPUN,4                TERMINATE PUNCHING                LS035350
    06150  0500 00 0 04213         CLA      PRINTL             RESTORE THE ARGUMENT                   LS035360
    06151  0774 00 4 00000   PNCHX AXT      **,4                    RESTORE LINK IR                   LS035370
    06152  0020 00 4 00001         TRA      1,4                     EXIT                              LS035380
                             *                                                                         LS035390
                             * PUN2           PUNCH EQUIVELENT OF PRIN 2                              LS035400
                             *                                                                         LS035410
    06153  0634 00 4 06176   PUN2   SXA      PNX,4                   SAVE INDEX REGISTERS              LS035420
    06154  0634 00 2 06177          SXA      PNY,2                                                     LS035430
    06155  0634 00 1 06200          SXA      PNZ,1                                                     LS035440
    06156  0774 00 4 00014   PWRDS  AXT      12,4                    NUMBER OF WORDS LEFT IN BUFFER    LS035450
    06157  0774 00 2 00006   PPRTS  AXT      6,2                     CHARACTER POSITION                LS035460
    06160  0774 00 1 00006          AXT      6,1                     MAXIMUM NUMBER OF CHARACTERS      LS035470
    06161  0131 00 0 00000          XCA                              ARGUMENT TO MQ                    LS035480
    06162 -0754 00 0 00000   PLP    PXD      0,0                     CLEAR AC                          LS035490
    06163 -0763 00 0 00006          LGL      6                       CHARACTER TO MQ                   LS035500
    06164  0340 00 0 06304          CAS      PSS                     COMPARE WITH 77                   LS035510
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06165  0761 CO 0 0000C          NOP                                GREATER, (IMPOSSIBLE)                    LS035520
06166  0020 CO 0 06173          TRA      POUT                      = , GO TO EXIT                           LS035530
06167  0522 CO 2 06302          XEC      PCNT,2                    LESS THAN, SHIFT CHARACTER               LS035540
06170 -0602 CO 4 06324          ORS      POUP,4                    PUT IN OUTPUT LINE                       LS035550
06171 -2 00001 2 06202          TNX      PRPLP,2,1                 GO IF LAST CHARACTER IN WORD             LS035560
06172  2 00001 1 06162   PGRA   TIX      PLP,1,1                   GET NEXT CHARACTER                       LS035570
06173  0634 CO 2 06157   POUT   SXA      PPRTS,2                   SAVE INDEX 2 N 4                         LS035580
06174  0634 CO 4 06156          SXA      PWRDS,4                                                            LS035590

BINARY CARD NO. LISP0139
06175 -0754 CO 0 00000          PXD      0,0                       CLEAR AC                                 LS035600
06176  0774 CO 4 00000   PNX    AXT      **,4                      RESTORE INDEX REGISTERS                  LS035610
06177  0774 CO 2 00000   PNY    AXT      **,2                                                               LS035620
06200  0774 CO 1 00000   PNZ    AXT      **,1                                                               LS035630
06201  0020 CO 4 00001          TRA      1,4                       EXIT                                     LS035640
                       *                                                                                   LS035650
06202  0774 CO 2 00006   PRPLP  AXT      6,2                       RELOAD CHARACTER COUNT                   LS035660
06203  2 00001 4 06172          TIX      PGRA,4,1                  GO IF WORD COUNT NOT EXHAUSTED           LS035670
06204  0500 CO 0 06302          CLA      PCNT                      GET CARD NUMBER IN BCD                   LS035680
06205  0114 C6 0 06125          CVR      BCDAD1,,6                 ADD 1 IN BCD                             LS035690
06206  0601 CO 0 06302          STO      PCNT                                                               LS035700
06207 -0600 CO 0 06305          STQ      PNCQ                      SAVE CONTENTS OF MQ                      LS035710
06210  0560 CO 0 00424          LDQ      $ZERO                     ZERO MQ                                  LS035720
06211 -0765 CO 0 00006          LGR      6                         SHIFT LOW ORDER DIGIT INTO MQ            LS035730
06212  0361 CO 0 06303          ACL      PLIS                      ADD BCD NAME OF CARD                     LS035740
06213  0602 CO 0 06324          SLW      POUP                      PUT IN ID FIELD                          LS035750
06214 -0600 CO 0 06325          STQ      POUP+1                                                             LS035760
06215  0500 CO 0 00365          CLA      SYSPOT                    IS SYSPOT = SYSPPT                       LS035770
06216  0402 CO 0 00364          SUB      SYSPPT                                                             LS035780
06217 -0100 CO 0 06230          TNZ      PUNX2                     NO, NORMAL PUNCH                         LS035790
06220  0774 CO 4 00000          AXT      0,4                       YES, SHIFT ALL CHARACTERS                LS035800
06221  0560 CO 0 06325          LDQ      POUP+1                    1 RIGHT AND PUT A -P- IN THE             LS035810
06222 -0500 CO 4 06324   PUNX1  CAL      POUP,4                    FIRST POSITION FOR THE                   LS035820

BINARY CARD NO. LISP0140
06223 -0765 CO 0 00006          LGR      6                         PERIPHERAL PRINT-PUNCH PROGRAM           LS035830
06224 -0600 CO 4 06325          STQ      POUP+1,4                                                           LS035840
06225 -0765 CO 0 00036          LGR      30                                                                 LS035850
06226  1 00001 4 06227          TXI      *+1,4,1                                                            LS035860
06227 -3 00015 4 06222          TXL      PUNX1,4,13                                                         LS035870
06230  0074 CO 4 01527   PUNX2  TSX      OUTPUT,4                                                           LS035880
06231  0 00000 0 00364          PPTOUT                             PUNCH OUT TAPE                           LS035890
06232  0 00016 0 06310          POUP-12,,14                        14 WORDS OUT                             LS035900
06233 -0046 CO 0 00000          PIA                                SAVE INDICATORS IN AC                    LS035910
06234  0441 CO 0 11254          LDI      SYSIND                    PICK UP SYSTEM INDICATORS                LS035920
06235  0055 CO  000040          SIR      PPTIND                    SET PUNCH TAPE INDICATOR                 LS035930
06236  0604 CO 0 11254          STI      SYSIND                    UPDATE SYSTEM INDICATORS                 LS035940
06237  0044 CO 0 00000          PAI                                RESTORE INDICATORS                       LS035950
06240  0774 00 4 00014          AXT      12,4                      NUMBER OF WORDS FROM CC 1 TO 72          LS035960
06241  0600 CO 4 06324          STZ      POUP,4                    ZERO OUTPUT BUFFER                       LS035970
06242  2 00001 4 06241          TIX      *-1,4,1                                                            LS035980
06243  0774 CO 4 00014          AXT      12,4                      RELOAD WORD COUNT                        LS035990
06244  0560 CO 0 06305          LDQ      PNCQ                      RESTORE CONTENTS OF MQ                   LS036000
06245  0020 CO 0 06172          TRA      PGRA                      CONTINUE WORK                            LS036010
                       *                                                                                   LS036020
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                        * TERPUN        FILLS OUT BUFFER WITH BLANKS AND PUNCHES OUT LAST CARD   LS036030
                        *               OPERATES ONLY IF PUNCH ROUTINE IS CURRENTLY ACTIVE       LS036040
                        *                                                                       LS036050
    06246 -0520 00 0 06306  TERPUN NZT      PUNACT              SKIP IF PUNCH ROUTINE IS CURRENTLY ACTLS036060
    06247  0020 00 4 00001         TRA      1,4                 IMMEDIATE EXIT                   LS036070
    06250  0600 00 0 06306         STZ      PUNACT              DE ACTIVATE THE PUNCH ROUTINE    LS036080

BINARY CARD NO. LISP0141
    06251  0634 00 4 06176         SXA      PNX,4               SAVE INDEX REGISTERS             LS036090
    06252  0634 00 2 06177         SXA      PNY,2                                                LS036100
    06253  0634 00 1 06200         SXA      PNZ,1                                                LS036110
    06254  0500 00 0 05662         CLA      $PRIN2                                               LS036120
    06255  0602 00 0 05662         SLW      $PRIN2              RESTORE PRIN2 SWITCH             LS036130
    06256  0534 00 4 06156         LXA      PWRDS,4             PICK UP WORD COUNT               LS036140
    06257  0534 00 2 06157         LXA      PPRTS,2             CHARACTER COUNT                  LS036150
    06260  0774 00 1 00001         AXT      1,1                 CONSTANT 1                       LS036160
    06261  0560 00 0 00527         LDQ      BLANKS              BLANK MQ                         LS036170
    06262 -0754 00 0 00000  TPLP    PXD      0,0                 CLEAR AC                         LS036180
    06263 -0763 00 0 00006         LGL      6                   1 INTO AC                        LS036190
    06264  0522 00 2 06302         XEC      PCNT,2              SHIFT INTO POSITIN               LS036200
    06265 -0602 00 4 06324         ORS      POUP,4              PUT IN OUTPUT LINE               LS036210
    06266  2 00001 2 06262         TIX      TPLP,2,1            FILL OUT THIS WORD               LS036220
    06267 -2 00001 4 06202         TNX      PRPLP,4,1           GO IF LAST WORD IN BUFFER        LS036230
    06270  0500 00 0 00527         CLA      BLANKS              BLANK AC                         LS036240
    06271  0601 00 4 06324         STO      POUP,4              BLANK REST OF BUFFER             LS036250
    06272  2 00001 4 06271         TIX      *-1,4,1                                              LS036260
    06273  0020 00 0 06202         TRA      PRPLP               GO PUNCH IT OUT                  LS036270
                        *                    COSTANTS, STORAGE AND SHIFT TABLE                   LS036280
    06274  0767 00 0 00036         ALS      30                                                   LS036290
    06275  0767 00 0 00030         ALS      24                                                   LS036300
    06276  0767 00 0 00022         ALS      18                                                   LS036310

BINARY CARD NO. LISP0142
    06277  0767 00 0 00014         ALS      12                                                   LS036320
    06300  0767 00 0 00006         ALS      6                                                    LS036330
    06301  0761 00 0 00000         NOP                                                           LS036340
    06302  0 00000 0 00000  PCNT    PZE                          BASE OF SHIFT TABLE AND CARD COUNT LS036350
    06303  433162470000     PLIS    BCI      1,LISP00            CARD ID                          LS036360
    06304 +000000C00077     PSS     OCT      77                  CHARACTER THAT TERMINATES A PNAME LS036370
    06305  0 00000 0 00000  PNCQ                                                                 LS036380
    06306  0 00000 0 00000  PUNACT                               NON-ZERO IF PUNCH ROUTINE ACTIVE LS036390
    06307  000000000047             BCI      1,00000P            1  THESE CARDS MUST BE IN ORDER  LS036400
    06310                           BSS      12                  2  THESE CARDS MUST BE IN ORDER  LS036410

BINARY CARD NO. LISP0143
    06324 +000000000000     POUP    OCT      0,0                 3  THESE CARDS MUST BE IN ORDER  LS036420
    06325 +000000000000                                                                           LS036430
                                FLONAM                          MAY 14,1559                     LS036440
                                   FORMS THE  BCD LIST  FOR A FLOATING NUMBER IN THE ACC        LS036450
                                                                                                 LS036460
                        T       HED                                                              LS036470
    06326  0634 00 4 06514  FLONAM SXA      FLNX,4                                               LS036480
    06327 -0734 00 4 00000         PDX      0,4                                                  LS036490
    06330  0500 00 4 00000         CLA      0,4                                                  LS036500
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06331 -0100 CO 0 06340          TNZ     FLNA                                    LS036510
06332  0534 CO 4 06514          LXA     FLNX,4                                  LS036520
06333  0131 CO 0 00000          XCA                                             LS036530
06334  0500 CO 0 06534          CLA     FLZPZ           0.0                     LS036540
06335  0162 CO 0 05662          TQP     $PRIN2                                  LS036550
06336  0402 CO 0 06557          SUB     CO              -0.0                    LS036560
06337  0020 CO 0 05662          TRA     $PRIN2                                  LS036570
06340  0634 CO 2 06515  FLNA    SXA     FLNY,2                                  LS036580
06341  0634 CO 1 06516          SXA     FLNZ,1                                  LS036590
06342  0774 00 1 00001          AXT     1,1             SET UP BUFFER IRS       LS036600
06343  0774 CO 2 00044          AXT     36,2                                    LS036610
06344  0600 00 0 06531          STZ     FLOPB-3                                 LS036620
06345  0600 CO 0 06532          STZ     FLOPB-2                                 LS036630
06346  0600 CO 0 06533          STZ     FLOPB-1                                 LS036640
06347  0601 CO 0 77665          STO     COMMON+5                                LS036650
06350  0131 CO 0 00000          XCA                                             LS036660
06351 -0754 CO 0 00000          PXD     ,0              CLEAR ACC. AND SIGN.    21303LS036670

BINARY CARD NO. LISP0144
06352  0765 CO 0 00000  FL73    LRS     0               SIGN TO MQ              21305LS036680
06353  0763 CO 0 00010          LLS     8               CHARACTERISTIC.         21310LS036690
06354  0402 CO 0 00451          SUB     A128            128                     21315LS036700
06355 -0600 CO 0 77660          STQ     COMMON          SAVE MANTISSA.          21320LS036710
06356  0131 00 0 00000          XCA                     MULTIPLY BY             21325LS036720
06357  0200 CO 0 06546          MPY     LOG2            LOG BASE 10 OF 2.       21330LS036730
06360  0601 CO 0 77662          STO     COMMON+2                                21335LS036740
06361  0120 CO 0 06370          TPL     FL75                                    21340LS036750
06362  0402 CO 0 06545  FL74    SUB     A1              1                       21345LS036760
06363  0601 CO 0 77662          STO     COMMON+2                                21350LS036770
06364  0131 00 0 00000          XCA                                             21355LS036780
06365  0760 CO 0 00006          COM                                             21360LS036790
06366  0760 CO 0 00003          SSP                                             21365LS036800
06367  0131 CO 0 00000          XCA                                             21370LS036810
06370  0200 CO 0 06547  FL75    MPY     LOG10           LOG BASE 2 OF 10/4.     21375LS036820
06371  0765 CO 0 00041          LRS     33                                      21380LS036830
06372  0621 CO 0 06403          STA     FL76A                                   21385LS036840
06373 -0600 CO 0 77670          STQ     COMMON+8                                21390LS036850
06374  0774 00 4 00007          AXT     7,4                                     21395LS036860
06375  0560 CO 0 06550          LDQ     C7                                      21400LS036870
06376  0200 00 0 77670  FL76    MPY     COMMON+8                                21405LS036880
06377  0400 CO 4 06560          ADD     CO+1,4                                  21410LS036890

BINARY CARD NO. LISP0145
06400  0131 CO 0 00000          XCA                                             21415LS036900
06401  2 00001 4 06376          TIX     FL76,4,1                                21420LS036910
06402  0200 CO 0 77660          MPY     COMMON          MANTISSA.               21425LS036920
06403  0774 00 4 00000  FL76A   AXT     **,4                                    21427LS036930
06404  0765 CO 4 00042          LRS     34,4                                    21430LS036940
06405  0100 CO 0 06412          TZE     FL77                                    21435LS036950
06406  0221 CO 0 06544          DVP     A1-1            10.                     21440LS036960
06407  0500 CO 0 77662          CLA     COMMON+2                                21445LS036970
06410  0400 CO 0 06545          ADD     A1              1.                      21450LS036980
06411  0601 CO 0 77662          STO     COMMON+2                                21455LS036990
06412  0774 CO 4 00010  FL77    AXT     8,4                                         LS037000
06413 -0200 CO 4 06545  FL78    MPR     A1,4            10 TO DEC. PLACES.      21475LS037010
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06414  0340 CO 4 06545          CAS    A1,4                                21480LS037020
06415  0761 CO 0 00000          NOP                GREATER.                 21485LS037030
06416  0020 CO 0 06420          TRA    FL79        EQUAL.                   21490LS037040
06417  0020 CO 0 06424          TRA    FL80        LESS.                    21495LS037050
06420  0500 CO 0 06545  FL79    CLA    A1          ROUNDING CAUSED CARRY.   21500LS037060
06421  0400 CO 0 77662          ADD    COMMON+2                             21505LS037070
06422  0601 CO 0 77662          STO    COMMON+2    EXP+1.                   21510LS037080
06423  0500 CO 4 06546          CLA    A1+1,4      10 TO THE DEC. PL.-1.    21515LS037090
06424  0601 CO 0 77670  FL80    STO    COMMON+8                             21520LS037100
06425 -0754 00 0 00000          PXD    ,0                                   21525LS037110

BINARY CARD NO. LISP0146
06426  0560 CO 0 77662          LDQ    COMMON+2    ENTER DEC EXP.           21530LS037120
06427  0221 00 0 06544          DVP    A1-1        10                       21535LS037130
06430 -0600 CO 0 77667          STQ    COMMON+7                             21540LS037140
06431  0634 CO 4 06447          SXA    FL82,4                               21545LS037150
06432  0074 CO 4 06521          TSX    INBCD,4                              21550LS037160
06433 -0754 00 0 00000          PXD    ,0                                   21555LS037170
06434  0560 CC 0 77667          LDQ    COMMON+7                             21560LS037180
06435  0221 CO 0 06544          DVP    A1-1                                 21565LS037190
06436  0100 CO 0 06440          TZE    *+2                                      LS037200
06437  0074 CO 4 06521          TSX    INBCD,4                              21570LS037210
06440  0500 CO 0 77662          CLA    COMMON+2                             21575LS037220
06441  0100 CC 0 06445          TZE    FL81                                 21580LS037230
06442  0120 CO 0 06445          TPL    FL81                                 21585LS037240
06443  0500 CO 0 00457          CLA    CNEMI       MINUS SIGN               21590LS037250
06444  0074 CO 4 06521          TSX    INBCD,4                              21605LS037260
06445  0500 CO 0 00444  FL81    CLA    CNEE                                     LS037270
06446  0074 CO 4 06521          TSX    INBCD,4                                  LS037280
06447  0774 CO 4 00000  FL82    AXT    **,4                                 21620LS037290
06450  0600 CO 0 06530          STZ    FLZET                                    LS037300
06451  0500 CO 0 77670  FL65    CLA    COMMON+8                             21145LS037310
06452  0765 CO 0 00043  FL67    LRS    35                                   21160LS037320
06453  0221 CO 0 06544          DVP    A1-1        10.                      21165LS037330

BINARY CARD NO. LISP0147
06454 -0600 CO 0 77670          STQ    COMMON+8    FRACTIONAL PART.         21170LS037340
06455 -0520 CO 0 06530          NZT    FLZET                                    LS037350
06456  0100 CO 0 06463          TZE    FL01                                     LS037360
06457 -0602 CO 0 06530          ORS    FLZET                                    LS037370
06460  0634 CO 4 06462          SXA    *+2,4       SAVE IR4.                21175LS037380
06461  0074 CC 4 06521          TSX    INBCD,4     ENTER DIGIT.             21180LS037390
06462  0774 CO 4 00000          AXT    **,4        RESTORE.                 21185LS037400
06463  2 00001 4 06451  FL01    TIX    FL65,4,1                             21190LS037410
06464 -0754 00 0 00000          PXD    0,0                                      LS037420
06465 -0520 CC 0 06530          NZT    FLZET                                    LS037430
06466  0074 CC 4 06521          TSX    INBCD,4                                  LS037440
06467  0500 CO 0 00456          CLA    A33         DEC. POINT.              21195LS037450
06470  0074 CO 4 06521          TSX    INBCD,4     ENTER.                   21200LS037460
06471 -0754 CC 0 00000          PXD    0,0                                      LS037470
06472  0074 00 4 06521          TSX    INBCD,4                                  LS037480
06473  0560 CO 0 77665          LDQ    COMMON+5                                 LS037490
06474 -0500 CO 0 00463          CAL    ONEBL       BLANK                    21220LS037500
06475  0162 CC 0 06477          TQP    FL70        FOR PLUS.                21225LS037510
06476 -0500 CO 0 00457          CAL    ONEMI       NEGATIVE.                21230LS037520
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    06477  0074 CO 4 06521   FL70  TSX     INBCD,4          INSERT BLANK OR MINUS.          21235LS037530
    06500 -0754 00 2 00000         PXD     0,2                                                  LS037540
    06501 -0737 CO 2 00000         PDC     0,2                                                  LS037550

BINARY CARD NO. LISP0148
    06502  0560 CO 0 00525         LDQ     ONES             FILL OUT LAST WORD WITH 77S     LS037560
    06503 -0500 CO 1 06534         CAL     FLOPB,1                                          LS037570
    06504 -0763 CO 2 00000         LGL     0,2                                              LS037580
    06505 -0130 CO 0 00000         XCL                                                      LS037590
    06506  0131 CO 0 00000         XCA                                                      LS037600
    06507  0074 CO 4 05662         TSX     $PRIN2,4                                         LS037610
    06510 -2 00001 1 06514         TNX     FLNX,1,1                                         LS037620
    06511  0500 CO 1 06534         CLA     FLOPB,1                                          LS037630
    06512  0074 CO 4 05662         TSX     $PRIN2,4                                         LS037640
    06513  2 00001 1 06511         TIX     *-2,1,1                                          LS037650
    06514  0774 CO 4 00000   FLNX  AXT     **,4                                             LS037660
    06515  0774 00 2 00000   FLNY  AXT     **,2                                             LS037670
    06516  0774 00 1 00000   FLNZ  AXT     **,1                                             LS037680
    06517 -0754 CO 0 00000         PXD     0,0                                              LS037690
    06520  0020 CO 4 00001         TRA     1,4                                              LS037700
                          *                                                                 LS037710
    06521 -0320 CO 0 00447   INBCD ANA     A77                                              LS037720
    06522  0767 00 2 00044         ALS     36,2                                             LS037730
    06523 -0602 CO 1 06534         ORS     FLOPB,1                                          LS037740
    06524  2 00006 2 06527         TIX     *+3,2,6                                          LS037750
    06525  1 00001 1 06526         TXI     *+1,1,1                                          LS037760
    06526  0774 CO 2 00044         AXT     36,2                                             LS037770
    06527  0020 CO 4 00001         TRA     1,4                                              LS037780
                          *                                                                 LS037790

BINARY CARD NO. LISP0149
    06530  0 00000 0 00000   FLZET                                                          LS037800
    06534                    FLOPB BES     3                                               LS037810

BINARY CARD NO. LISP0150
    06534 -200033007777      FLZPZ OCT     600033007777                                    LS037820
    06535 +000575360400            DEC     100000000                                70100LS037830
    06536 +000046113200            DEC     10000000                                 70101LS037840
    06537 +000003641100            DEC     1000000                                  70102LS037850
    06540 +000000303240            DEC     100000                                   70103LS037860
    06541 +000000023420            DEC     10000                                    70104LS037870
    06542 +000000001750      THSND DEC     1000                                     70105LS037880
    06543 +000000000144            DEC     100                                      70106LS037890
    06544 +000000000012            DEC     10                                       70107LS037900
    06545 +000000000001      A1    DEC     1                                        70108LS037910
    06546 +115040465025      LOG2  OCT     115040465025     LOG BASE 10 OF 2.       70110LS037920
    06547 +324464741127      LOG10 OCT     324464741127     LOG BASE 2 OF 10-4.     70115LS037930
    06550 +000001601225      C7    OCT     1601225                                  70120LS037940
    06551 +000007762664      C6    OCT     7762664                                  70125LS037950
    06552 +000132240566      C5    OCT     132240566                                70130LS037960
    06553 +001164125106      C4    OCT     1164125106                               70135LS037970
    06554 +007066267024      C3    OCT     7066267024                               70140LS037980
    06555 +036577252307      C2    OCT     36577252307                              70145LS037990
    06556 +130562064437      C1    OCT     130562064437                             70150LS038000
    06557  2 00000 0 00000   C0    TIX     0,0,0                                    70155LS038010
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                00456   A33    SYN     $Q033                                    LS038020
                00447   A77    SYN     $Q63                                     LS038030
                00451   A128   SYN     $Q128                                    LS038040
                00454   ONEPL  SYN     $QQ20                                    LS038050
                00444   ONEE   SYN     $QQ25                                    LS038060
                00457   ONEMI  SYN     $QQ40                                    LS038070
                00463   ONEBL  SYN     $QQ60                                    LS038080
                00525   ONES   SYN     SEVENS                                   LS038090
                      *                                                          LS038100
                           READ                                                  LS038110
                                                                                 LS038120
                             READ = SELECT(RD.,LPAR,READ1.,                      LS038130
                                           LITER,INTERN.,                        LS038140
                                           NUMB,INTERN.,                         LS038150
                                           RPAR,ERROR.,                          LS038160
                                           1,ERROR)                              LS038170
                                                                                 LS038180
                                                                                 LS038190
                           READ1                                                 LS038200
                                                                                 LS038210
                           READ1 = SELECT(RD.,RPAR,0.,                           LS038220
                                          LPAR,CONS(READI,READ1).,               LS038230
                                          LITER,CONS(INTERN,READ1).,             LS038240
                                          NUMB,CONS(INTERN,READ1))               LS038250
                                                                                 LS038260
                     I     HED                                                   LS038270
    06560  0634 CO 4 06562  READ  SXA     REDS1,4          SAVE LINK IR         LS038280
    06561  0074 CO 4 06654        TSX     $RD,4            GET FIRST ITEM       LS038290

BINARY CARD NO. LISP0151
    06562  0774 00 4 00000  REDS1 AXT     **,4             RESTORE LINK IR      LS038300
    06563  0340 CO 0 06650  REDIS CAS     RLPAR            DISPATCH ON TYPE OF ITEM READ  LS038310
    06564  0020 CO 0 06566        TRA     *+2                                   LS038320
    06565  0020 00 0 06605        TRA     READ1            WAS (                LS038330
    06566  0340 CO 0 06651        CAS     RRPAR                                 LS038340
    06567  0020 CO 0 06571        TRA     *+2                                   LS038350
    06570  0020 00 0 06575        TRA     REDER                                 LS038360
    06571  0340 00 0 06652        CAS     RDOT                                  LS038370
    06572  0020 CO 4 00001        TRA     1,4                                   LS038380
    06573  0020 CO 0 06575        TRA     REDER                                 LS038390
    06574  0020 00 4 00001        TRA     1,4                                   LS038400
    06575 -0634 CO 4 02313  REDER SXD     $ERROR,4         MUST BE AN ERROR     LS038410
    06576  0601 CO 0 04212        STO     RS2              SAVE TYPE            LS038420
    06577  0074 CO 4 01527        TSX     OUTPUT,4         WRITE OUT INPUT BUFFER LS038430
    06600  0 00000 0 00365        BCDOUT                                        LS038440
    06601  0 00017 0 07200        RDPB,,15                                      LS038450
    06602  0500 CO 0 04212        CLA     RS2              GET TYPE             LS038460
    06603  0074 CO 4 02314        TSX     $ERROR+1,4       GO TO ERROR          LS038470
    06604  545160600154           BCI     1,*R  1*         CONTEXT ERROR        LS038480
                      *                                                          LS038490
    06605 -0634 CO 4 04211  READ1 SXD     RS1,4            SAVE LINK IR         LS038500
    06606  0074 CO 4 06654        TSX     $RD,4            GET NEXT ITEM        LS038510
    06607  0340 CO 0 06651        CAS     RRPAR                                 LS038520
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BINARY CARD NO. LISP0152
    0661C  0020 CO 0 06612          TRA     *+2                                                 LS038530
    06611  0020 CO 0 06631          TRA     RP1     WAS )  RETURN WITH NIL                      LS038540
    06612  0074 00 4 03104          TSX     $SAVE,4                                             LS038550
    06613 -3 04214 0 03167          TXL     $END2,,RS2+2    SAVE 2 ITEMS                        LS038560
    06614  0340 CO C 06652          CAS     RDOT                                                LS038570
    06615  0020 CO 0 06617          TRA     *+2                                                 LS038580
    06616  0020 CO 0 06634          TRA     RP2     WAS .                                       LS038590
    06617  0340 CO 0 06650          CAS     RLPAR                                               LS038600
    06620  0020 CO 0 06622          TRA     *+2                                                 LS038610
    06621  0074 CO 4 06605          TSX     READ1,4                                             LS038620
    06622  0601 CO 0 04212          STO     RS2     SAVE RESULTS                                LS038630
    06623  0074 CC 4 06605          TSX     READ1,4 GET NEXT ITEM                               LS038640
    06624  0131 CO 0 00000          XCA             PUT IN MQ                                   LS038650
    06625  0500 CO 0 04212          CLA     RS2     FIRST ITEM                                  LS038660
    06626  0074 00 4 03117          TSX     UNSAVE,4                                            LS038670
    06627 -0534 CO 4 04211          LXD     RS1,4   RESTORE LINK IR                             LS038680
    0663C  0020 CO 0 04471          TRA     $CONS   CONSTRUCT A LIST                            LS038690
                          *                                                                     LS038700
    06631 -0754 00 0 00000   RP1    PXD     0,0     WAS )  RETURN WITH NIL                      LS038710
    06632 -0534 CO 4 04211           LXD     RS1,4                                               LS038720
    06633  0020 CO 4 00001           TRA     1,4                                                 LS038730
                          *                                                                     LS038740
    06634  0074 CO 4 06654   RP2    TSX     $RD,4   WAS .  GET NEXT ITEM                        LS038750
    06635  0074 CO 4 06563           TSX     REDIS,4 DISPATCH ON IT                              LS038760

BINARY CARD NO. LISP0153
    06636  0601 CO 0 04212          STO     RS2     SAVE RESULTS                                LS038770
    06637  0074 CO 4 06654          TSX     $RD,4   GET NEXT ITEM                               LS038780
    06640  0340 CO 0 06651          CAS     RRPAR   SHOULD BE )                                 LS038790
    06641  0020 CO C 06575          TRA     REDER   GO TO ERROR IF NOT                          LS038800
    06642  CC20 CO 0 06644          TRA     *+2                                                 LS038810
    06643  0020 CO 0 06575          TRA     REDER                                               LS038820
    06644  0500 CO 0 04212          CLA     RS2     GET ITEM READ                               LS038830
    06645  0074 CO 4 03117          TSX     UNSAVE,4                                            LS038840
    06646 -0534 00 4 04211          LXD     RS1,4   RESTORE LINK IR                             LS038850
    06647  0020 CO 4 00001          TRA     1,4     RERURN WITH IT                              LS038860
                          *                                                                     LS038870
                   00542  RLTR     SYN     QUOTED  SYMBOL FLAG                                 LS038880
                   C0533   RNUMB   SYN     FLOATD  FLOAT (USED TO SIGNIFY ANY KIND NUMBER      LS038890
                          *                                                                     LS038900
                          I        HED                                                          LS038910
                                                                                                LS038920
                              RD(A)                                                             LS038930
                                                                                                LS038940
                              READS BCD LISTS FROM CARDS (SW I DOWN) OR TAPE 4 (SWI UP)         LS038950
                                                                                                LS038960
    06650  C 00566 C 00000    RLPAR        ,,$H74D                                             LS038970
    06651  C 00564 0 00000    RRPAR        ,,$H34D                                             LS038980
    06652  0 00563 C 00000    RDOT         ,,$H33D                                             LS038990
    06653                      RDVAL BSS    0                                                   LS039000
    06653  C 00000 0 00001   LRCIS         1       CARD IMAGE EMPTY TEST CELL                  LS039010
    06654  0500 CO C 07242   RD     CLA     RDLST                                               LS039020
    06655  0100 CC 0 06660          TZE     RDAA    GO IF NOT                                   LS039030
    06656  C6C0 CC 0 07242          STZ     RDLST   CTHERWISE ZERO                              LS039040
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    06657  0020 CO 4 00001          TRA     1,4             AND EXIT                                LS039050
    06660  0634 CO 4 06711  RDAA    SXA     RDX,4           SAVE INDEX REGISTERS                    LS039060
    06661  0634 CO 2 06716          SXA     RDY,2                                                   LS039070
    06662  0634 CO 1 06715          SXA     RDZ,1                                                   LS039080
    06663  0604 CO 0 07241          STI     RDIND           SAVE THE INDICATORS                     LS039090

BINARY CARD NO. LISP0154
    06664  0441 CO 0 00424          LDI     $ZERO                                                   LS039100
    06665  0774 00 2 00006  RDPTS   AXT     6,2             SET UP IR 2 AND 1                       LS039110
    06666  0774 CO 1 00014  RDWDS   AXT     12,1                                                    LS039120
    06667  0074 CO 4 07020  RDGC    TSX     GET,4           GET THE FIRST CHARACTER                 LS039130
    06670  0734 CO 4 00000          PAX     0,4             TYPE TO INDEX REGISTER                  LS039140
    06671  0020 CO 4 06701          TRA     RDJT1,4         DISPATCH ON TYPE                        LS039150
    06672  0020 CO 0 06720          TRA     RDDLR           $                                       LS039160
    06673  0020 CO 0 06750          TRA     RDLT                                                    LS039170
    06674  0020 CO 0 06751          TRA     RDNM            NUMBER                                  LS039180
    06675  0020 CO 0 06667          TRA     RDGC            ,                                       LS039190
    06676  0020 CO 0 06710          TRA     RDPU            (                                       LS039200
    06677  0020 CO 0 06710          TRA     RDPU            )                                       LS039210
    06700  0020 CO 0 06710          TRA     RDPU            .                                       LS039220
    06701  0074 CO 4 01527  RDJT1   TSX     OUTPUT,4        ILLEGAL CHARACTER                       LS039230
    06702  0 00000 0 00365          BCDOUT                                                          LS039240
    06703  0 00017 0 07200          RDPB,,15                                                        LS039250
    06704 -0754 CO 0 00000          PXD     0,0             CLEAR AC                                LS039260
    06705 -0634 CO 4 02313          SXD     $ERROR,4        SAVE IR 4                               LS039270
    06706  0074 CO 4 02314          TSX     $ERROR+1,4      GO TO ERROR ROUTINE                     LS039280
    06707  545160600354             BCI     1,*R  3*                                                LS039290
    06710  0500 CO 4 06653  RDPU    CLA     RDVAL,4                                                 LS039300
    06711  0774 CO 4 00000  RDX     AXT     **,4                                                    LS039310

BINARY CARD NO. LISP0155
    06712  0634 CO 2 06665  RDFIN   SXA     RDPTS,2         SAVE INDEX REGISTERS                    LS039320
    06713  0634 CO 1 06666          SXA     RDWDS,1                                                 LS039330
    06714  0441 CO 0 07241          LDI     RDIND           RESTORE INDICATORS                      LS039340
    06715  0774 CO 1 00000  RDZ     AXT     **,1            RESTORE INDEX REGISTERS                 LS039350
    06716  0774 CO 2 00000  RDY     AXT     **,2                                                    LS039360
    06717  0020 CO 4 00001          TRA     1,4             EXIT                                    LS039370
                           *                                                                       LS039380
    06720  0055 CO  000003 RDDLR   SIR     3               SET FIRST CHARCTER AND LITERAL INDICATLS039390
    06721  0074 CO 4 07020          TSX     GET,4           IS NEXT CHARACTER A $                   LS039400
    06722  0734 CO 4 00000          PAX     0,4             IF SO IT INDICATES A LITERAL STRING     LS039410
    06723  0500 CO 0 07243          CLA     GTVAL           SAVE VALUE OF GET                       LS039420
    06724  0601 CO 0 07240          STO     RDDDC                                                   LS039430
    06725  3 00006 4 06736          TXH     RDDD,4,6        GO IF A $                               LS039440
    06726  0634 CO 4 06734          SXA     RDT,4           NOT SO DO A REGULAR D                   LS039450
    06727  0500 CO 0 07237          CLA     RDDLS           $                                       LS039460
    06730  0601 CO 0 07243          STO     GTVAL                                                   LS039470
    06731  0074 CO 4 07066          TSX     PUT,4           PUT IN OUTPUT BUFFER                    LS039480
    06732  0500 CO 0 07240          CLA     RDDDC           LAST VALUE OF GET                       LS039490
    06733  0601 CO 0 07243          STO     GTVAL                                                   LS039500
    06734  0774 CO 4 00000  RDT     AXT     **,4            TYPE OF LAST CHARACTER                  LS039510
    06735  0020 CO 4 06765          TRA     RDJT2,4         DISPATCH ON TYPE                        LS039520
                           *                                                                       LS039530
    06736  0074 CO 4 07020  RDDD    TSX     GET,4           IS A LITERAL STRING                     LS039540
    06737  0500 CO 0 07243          CLA     GTVAL           USE THIS ITEM AS A DELIMITER            LS039550
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BINARY CARD NO. LISP0156
    06740  0601 CC 0 07240          STO     RDDDC                                          LS039560
    06741  0074 CC 4 07020   RDDDL  TSX     GET,4    GET NEXT CHARACTER                    LS039570
    06742  0500 CC 0 07240          CLA     RDDDC    GET DELIMITER                         LS039580
    06743  0340 CC 0 07243          CAS     GTVAL    COMPARE WITH CHARACTER JUST READ      LS039590
    06744  0020 CC 0 06746          TRA     *+2      NO                                    LS039600
    06745  0020 CC 0 06770          TRA     RDXT     YES, EXIT                             LS039610
    06746  0074 CC 4 07066          TSX     PUT,4    NO, PUT AWAY THE CHARACTER            LS039620
    06747  0020 CC 0 06741          TRA     RDDDL    GET NEXT CHARACTER                    LS039630
                                   *                                                      LS039640
    06750  0055 CC  000002   RDLT   SIR     2        SET LITERAL INDICATOR                 LS039650
    06751  0055 CC  000001   RDNM   SIR     1        SET FIRST CHARACTER INDICATOR         LS039660
    06752  0074 CC 4 07066   RDNN   TSX     PUT,4    PUT THE CHARACTER AWAY                LS039670
    06753  0074 CC 4 07020          TSX     GET,4    GET NEXT CHARACTER                    LS039680
    06754  0734 CC 4 00000          PAX     0,4                                            LS039690
    06755  0020 CC 4 06765          TRA     RDJT2,4  DISPATCH ON TYPE                      LS039700
    06756  0020 CC 0 06752          TRA     RDNN     $                                     LS039710
    06757  0020 CC 0 06752          TRA     RDNN     LITERAL                               LS039720
    06760  0020 CC 0 06752          TRA     RDNN     NUMBER                                LS039730
    06761  0020 CC 0 06770          TRA     RDXT     ,                                     LS039740
    06762  0020 CC 0 06766          TRA     RDPS     (                                     LS039750
    06763  0020 CC 0 06766          TRA     RDPS     )                                     LS039760
    06764  0020 CC 0 07012          TRA     RDPD     .                                     LS039770
    06765  0020 CC 0 06701   RDJT2  TRA     RDJT1    ILLEGAL CHARACTER                     LS039780
                                   *                                                      LS039790

BINARY CARD NO. LISP0157
    06766  0500 CC 4 06653  RDPS   CLA     RDVAL,4  SETUP RDLST CELL                      LS039800
    06767  0601 CC 0 07242          STO     RDLST                                          LS039810
    06770  0534 CC 4 07073   RDXT   LXA     PUTMC,4  CHARACTER COUNT                       LS039820
    06771 -0754 CC 0 00000          PXD     0,0      CLEAR AC                              LS039830
    06772  3 00005 4 07010          TXH     TPF,4,5  GO IF LAST WORD COMPLETED             LS039840
    06773  0560 CC 0 00525          LDQ     SEVENS   GET 77 S                              LS039850
    06774  0522 CC 4 07154          XEC     PTSFT-1,4 PROPER SHIFT                         LS039860
    06775  0774 CC 4 00006          AXT     6,4      RESET CHARACTER COUNT                 LS039870
    06776  0634 CC 4 07073          SXA     PUTMC,4                                        LS039880
    06777  0534 CC 4 07101          LXA     PUTPC,4  WORD COUNT                            LS039890
    07000 -0602 CC 4 07162          ORS     RDPNB,4  PUT IN PNAME BUFFER                   LS039900
    07001 -0754 CC 0 00000          PXD     0,0      CLEAR AC                              LS039910
    07002  0622 CC 4 07170   TPFA   STD     PUTVL+6,4 CHOP OFF PNMAE SAUSAGE               LS039920
    07003  0500 CC 0 07162          CLA     PUTVL    GET VALUE                             LS039930
    07004 -0774 CC 4 06710          AXC     RDPU,4   SET UP TRANSFER TO EXIT               LS039940
    07005  0056 CC  000002          RNT     2        TEST LITERAL INDICATOR                LS039950
    07006  0020 CC 0 07371          TRA     $NUTRN   MAKE IT A NUMBER                      LS039960
    07007  0020 CC 0 07246          TRA     INTRN1   MAKE IT AN OBJECT                     LS039970
                                   *                                                      LS039980
    07010  0534 CC 4 07101   TPF    LXA     PUTPC,4  CORRECT PART COUNT                    LS039990
    07011  1 00001 4 07002          TXI     TPFA,4,1                                       LS040000
                                   *                                                      LS040010
    07012  0054 CC  000002   RDPD   RFT     2        TEST FOR LITERAL                      LS040020
    07013  0020 CC 0 06766          TRA     RDPS     FIRST . TERMONATES A LITERAL          LS040030

BINARY CARD NO. LISP0158
    07014  0054 CC  000020          RFT     20       TEST FOR FIRST DOT IN A NUMBER        LS040040
    07015  0020 CC 0 06766          TRA     RDPS     SECOND . TERMINATES A NUMBER          LS040050
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07016  0055 00  000020          SIR     20              SET DOT INDICATOR                    LS040060
07017  0020 00 0 06752          TRA     RDNN                                                 LS040070
                                                                                             LS040080
                        *
07020  0634 00 4 07043   GET     SXA     GTX,4           SAVE LINK IR                         LS040090
07021  0520 00 0 06653          ZET     LRCIS           TEST FOR NEW CARD NEEDED             LS040100
07022  0020 00 0 07052          TRA     GTGCD           GET A NEW CAERD                      LS040110
07023 -0754 00 0 00000   GETGO  PXD     0,0             CLEAR AC                             LS040120
07024  0560 00 1 07215          LDQ     CELL,1          GET NEXT WORD                        LS040130
07025 -0763 00 0 00003          LGL     3               HIGH ORDER BITS                      LS040140
07026  0734 00 4 00000          PAX     0,4                                                  LS040150
07027 -0763 00 0 00003          LGL     3               CHARACTER                            LS040160
07030  0601 00 0 07243          STO     GTVAL           VALUE OF GET FOR PUT                 LS040170
07031 -0320 00 0 00433          ANA     $Q7             MASK OUT HIGH ORDER BIT              LS040180
07032  0621 00 0 07036          STA     GTPT                                                 LS040190
07033 -0600 00 1 07215          STQ     CELL,1          UPDATE WORD                          LS040200
07034 -2 00001 2 07045          TNX     GTPC,2,1        UPDATE PART COUNT                    LS040210
07035  0560 00 4 07177   GTMC   LDQ     GTTBL,4         GET TABLE ENTRY                      LS040220
07036 -0763 00 0 00000   GTPT   LGL     **              SHIFT PROPER ITEM TO AC              LS040230
07037  0522 00 0 07036          XEC     GTPT                                                 LS040240
07040  0522 00 0 07036          XEC     GTPT                                                 LS040250
07041 -0754 00 0 00000          PXD     0,0             CLEAR AC                             LS040260

BINARY CARD NO. LISP0159
07042 -0763 00 0 00003          LGL     3               TYPE NOW IN AC                       LS040270
07043  0774 00 4 00000   GTX    AXT     **,4            RESTORE LINK IR                      LS040280
07044  0020 00 4 00001          TRA     1,4                                                  LS040290
                                                                                             LS040300
07045  0774 00 2 00006   GTPC   AXT     6,2             RELOAD PART COUNT                    LS040310
07046  2 00001 1 07035          TIX     GTMC,1,1        GO IF NEW WORD NOT NEEDED            LS040320
07047 -0625 00 0 06653          SIL     LRCIS           GET NEW CARD                         LS040330
07050  0774 00 1 00014          AXT     12,1            ERELOAD IR 1                         LS040340
07051  0020 00 0 07035          TRA     GTMC            GO BACJ                              LS040350
                        *                                                                    LS040360
07052  0074 00 4 01170   GTGCD  TSX     $INPUT,4                                             LS040370
07053  0 00000 0 00000          $BCDIN                                                       LS040380
07054  0 00034 0 07201          LWPO,,28        GET NEXT BCD CARD                            LS040390
07055  0020 00 0 07057          TRA     *+2             IGNORE REDUNDNACY ERROR              LS040400
07056  0020 00 0 07061          TRA     GTEOF           EOF RETURN                           LS040410
07057  0600 00 0 06653          STZ     LRCIS           SET SWITCH THAT CARD IS PRESENT      LS040420
07060  0020 00 0 07023          TRA     GETGO           NO GO ON                             LS040430
                        *                                                                    LS040440
07061 -0754 00 0 00000   GTEOF  PXD     0,0             CLEAR AC                             LS040450
07062  0522 00 0 01706          XEC     $SWT1           IF OFF LINE, SAVE THE EOF            LS040460
07063  0522 00 0 00356          XEC     $BSR                                                 LS040470
07064  0074 00 4 02313          TSX     $ERROR,4        GO TO ERROR                          LS040480
07065  545160600454             BCI     1,*R  4*        EOF ON READ IN                       LS040490
                        *                                                                    LS040500
07066  0054 00  000040   PUT    RFT     40              TEST TO SEE IF TOOMUCH PNAME         LS040510
07067  0020 00 0 07115          TRA     PTTFA           GO TO ERROR COMMENT                  LS040520

BINARY CARD NO. LISP0160
07070  0634 00 4 07103          SXA     PUTX,4          SAVE LINK IR                         LS040530
07071  0056 00  000010          RNT     10              TEST FOR FIRST TIME THRU             LS040540
07072  0020 00 0 07123          TRA     PUTZB           ZERO PNAME BUFFER                    LS040550
07073  0774 00 4 00006   PUTMC  AXT     6,4             CHARACTER COUNT                      LS040560
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07074  0500 CC 0 07243          CLA     GTVAL           GET CHARACTER                    LS040570
07075  0560 CC 0 00424          LDQ     $ZERO                                            LS040580
07076  0522 00 4 07155          XEC     PTSFT,4         PROPER SHIFT TO CHARACTER        LS040590
07077 -2 00001 4 07105          TNX     PTRFP,4,1       DECREMENT CHARACTER COUNT        LS040600
07100  0634 00 4 07073          SXA     PUTMC,4         UPDATE COUNT CELL                LS040610
07101  0774 00 4 00005  PUTPC   AXT     5,4             NUMBER OF WORDS IN PNAME         LS040620
07102 -0602 00 4 07162  PUTGA   ORS     RDPNB,4         PUT CHARACTER IN                 LS040630
07103  0774 00 4 00000  PUTX    AXT     **,4            RESTORE LINK IR                  LS040640
07104  0020 00 4 00001          TRA     1,4             EXIT                             LS040650
07105  0774 00 4 00006  PTRFP   AXT     6,4             RELOAD PART COUNT                LS040660
07106  0634 00 4 07073          SXA     PUTMC,4                                          LS040670
07107  0534 00 4 07101          LXA     PUTPC,4         WORD COUNT                       LS040680
07110 -0602 00 4 07162          ORS     RDPNB,4                                          LS040690
07111  2 00001 4 07113          TIX     *+2,4,1         DECREMENT WORD COUNT             LS040700
07112  0055 00  000040          SIR     40              INDICATE PNAME BUFFER FULL       LS040710
07113  0634 00 4 07101          SXA     PUTPC,4         UPDATE COUNTER                   LS040720
07114  0020 00 0 07103          TRA     PUTX            GO ON                            LS040730
                       *                                                                LS040740
07115  0074 00 4 01527  PTTFA   TSX     OUTPUT,4        TOO MANY CHARACTERS              LS040750

BINARY CARD NO. LISP0161
07116  0 00000 0 00365          BCDOUT  WRITE OUT PNAME SO FAR                           LS040760
07117  0 00006 0 07154          RDPNB-6,,6                                               LS040770
07120 -0754 00 0 00000          PXD     0,0             CLEAR AC                         LS040780
07121  0074 00 4 02313          TSX     $ERROR,4        GO TO ERROR                      LS040790
07122  545160600554             BCI     1,*R  5*                                         LS040800
                       *                                                                LS040810
07123  0055 00  000010  PUTZB   SIR     10              SET SWITCH                       LS040820
07124  0774 00 4 00005          AXT     5,4             FIX UP BUFFER                    LS040830
07125  0634 00 4 07101          SXA     PUTPC,4         AND PART COUNT                   LS040840
07126  0600 00 4 07162          STZ     RDPNB,4                                          LS040850
07127  2 00001 4 07126          TIX     *-1,4,1                                          LS040860
07130  0500 00 0 07162          CLA     PUTVL           RELINK THE WORDS                 LS040870
07131  0774 00 4 00005          AXT     5,4                                              LS040880
07132  0402 00 0 00476          SUB     $QD1            SET POINTERS                     LS040890
07133  0622 00 4 07170          STD     PUTVL+6,4                                        LS040900
07134  2 00001 4 07132          TIX     *-2,4,1                                          LS040910
07135  0020 00 0 07073          TRA     PUTMC                                            LS040920
                       *                                                                LS040930
07136 -0625 00 0 06653  TEREAD  STL     LRCIS           SET SWITCH TO GET A NEW CARD     LS040940
07137  0500 00 0 00432          CLA     $Q6             SET CELLS                        LS040950
07140  0621 00 0 06665          STA     RDPTS                                            LS040960
07141  0621 00 0 07073          STA     PUTMC                                            LS040970
07142  0500 00 0 00437          CLA     $Q12                                             LS040980
07143  0621 00 0 06666          STA     RDWDS                                            LS040990

BINARY CARD NO. LISP0162
07144  0600 00 0 07242          STZ     RDLST                                            LS041000
07145 -0754 00 0 00000          PXD     0,0             CLEAR AC                         LS041010
07146  0020 00 4 00001          TRA     1,4             EXIT                             LS041020
                       *                                                                LS041030
07147 -0763 00 0 00036          LGL     30                                               LS041040
07150 -0763 00 0 00030          LGL     24                                               LS041050
07151 -0763 00 0 00022          LGL     18                                               LS041060
07152 -0763 00 0 00014          LGL     12                                               LS041070
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    07153 -0763 CO C 00006          LGL     6                                                       LS041080
    07154  0761 CO 0 00000          NOP                                                             LS041090
    07155                   PTSFT   BSS     0                                                       LS041100
    07162                   RDPNB   BES     5                                                       LS041110

BINARY CARD NO. LISP0163
    07162  0 70615 0 00000  PUTVL           ,,-*-1                  VALUE OF RDA                    LS041120
    07163  0 70614 0 70623                  -RDPNB+5,,-*-1          FOR INTERN OF NUTRN             LS041130
    07164  0 70613 0 70622                  -RDPNB+4,,-*-1                                          LS041140
    07165  0 70612 0 70621                  -RDPNB+3,,-*-1                                          LS041150
    07166  0 70611 0 70620                  -RDPNB+2,,-*-1                                          LS041160
    07167  0 00000 0 70617                  -RDPNB+1                                                LS041170
    07170 -260430000000             OCT     660430000000,466666660000,660760000000,566666660000    LS041180
    07171 -066666660000
    07172 -260760000000
    07173 -166666660000
    07174 -260120000000             OCT     660120000000,566666660000,550660000000                  LS041190
    07175 -166666660000
    07176 -150660000000
    07177 -155555550000     GTTBL   OCT     555555550000                                            LS041200
    07200  006060606060     RDPB    BCI     1,0                                                     LS041210
    07201  0 00000 0 00000  LWPO                                                                    LS041220
    07202  0 00000 0 00000  LWCKS                                                                   LS041230
    07215                   CELL    BES     10                                                      LS041240
    07231                   LWOPB   BES     12                                                      LS041250
    07231                           BSS     6                       ROOM FOR ID AND BLOK AHEAD BITS LS041260

BINARY CARD NO. LISP0164
    07237  000000000053      RDDLS BCI     1,00000$                                                LS041270
    07240  0 00000 0 00000   RDDDC                                                                 LS041280
    07241  0 00000 0 00000   RDIND                                 INDICATOR STORAGE               LS041290
    07242  0 00000 0 00000  RDLST                                                                  LS041300
    07243  0 00000 0 00000  GTVAL                                                                  LS041310
                             *                                                                     LS041320
                                                                                                   LS041330
                                     INTERN                                                        LS041340
                                                                                                   LS041350
                             I       HED                                                           LS041360
                             *                                                                     LS041370
                             * INTERN       CHANGED AND MODIFIED TO INCLUDE EXTERNAL ENTRANCES AND LS041380
                             *              THE BUCKET SORT                                        LS041390
                             *                                                                     LS041400
    07244  0774 CO 4 00000  BUCK    AXT     **,4                    BUCJET   THIS MUST BE HERE (INTERN-2) LS041410
                             *                                      FOR REMOB                      LS041420
    07245 -0600 CO 0 07362  BUKSRT  STQ     BSRT                    ATOM TO BE PLACED (CNSFWL ENTRANCE) LS041430
    07246  0601 CO 0 07361  INTRN1  STO     $VALUE                  EXTERNAL ENTRANCE FROM APPLY   LS041440
    07247  0634 CO 4 07353  INTERN  SXA     ITRX,4                  ENTRANCE FROM READ             LS041450
    07250  0634 CO 2 07354          SXA     ITRY,2                  SAVE IR S                      LS041460
    07251 -0534 CO 4 07361          LXD     $VALUE,4                PICK UP POINTER TO PNAME LIST  LS041470
    07252  0500 CO 4 00000          CLA     0,4                     GET FIRST WORD OF PNAME        LS041480
    07253  0734 CO 4 00000          PAX     0,4                                                    LS041490
    07254 -0500 CO 4 00000          CAL     0,4                     GET FIRST WORD IN LOGICAL AC   LS041500
    07255  0765 CO C 00043          LRS     35                      PUT IN MQ AND BIT 35 OF AC     LS041510
    07256  0221 CO 0 07363          DVP     BUCKNO                  DIVIDE BY NUMBER OF BUCKETS    LS041520
    07257  0760 CO 0 00012          DCT                             CHECK DIVISION                 LS041530
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07260  0074 00 4 02442          TSX     $DCT,4          DIVIDE ERROR                    LS041540
07261  0734 00 4 00000          PAX     0,4             REMAINDER TO IR 4               LS041550
07262  0500 00 4 64623          CLA     BUCKET,4        PICK UP BUCKET                  LS041560
07263  0634 00 4 07244          SXA     BUCK,4          SAVE THE REMAINDER              LS041570
07264  0734 00 4 00000          PAX     0,4                                             LS041580

BINARY CARD NO. LISP0165
07265 -0634 00 4 07366          SXD     05,4            SET UP WORD                     LS041590
07266  0520 00 0 07362          ZET     BSRT            TEST FOR ONSEWL ENTRANCE        LS041600
07267  0020 00 0 07356          TRA     INTAD           YES, GO                         LS041610
07270 -0634 00 4 07364          SXD 01,4                                                LS041620
07271 -0534 00 4 07364   04     LXD 01,4                NEXT OBJECT                     LS041630
07272 -3 00000 4 07332          TXL OUT,4,0             END OF OBLIST                   LS041640
07273  0500 00 4 00000          CLA ,4                                                  LS041650
07274  0622 00 0 07364          STD 01                                                  LS041660
07275  0734 00 4 00000          PAX ,4                  OBJECT M/C NAME                 LS041670
07276 -0634 00 4 07365          SXD 02,4                PRESERVE IT                     LS041680
07277  0500 00 4 00000          CLA ,4                                                  LS041690
07300 -0734 00 4 00000   03     PDX ,4                  ADDRESS PART IS -1              LS041700
07301 -3 00000 4 07271          TXL 04,4,0              END OF PROPERTY LIST            LS041710
07302  0500 00 4 00000          CLA ,4                                                  LS041720
07303  0734 00 4 00000          PAX ,4                                                  LS041730
07304 -3 11061 4 07300          TXL 03,4,$PNAME-1       NO                              LS041740
07305  3 11062 4 07300          TXH 03,4,$PNAME         NO                              LS041750
07306 -0734 00 4 00000          PDX ,4                  YES IT IS                       LS041760
07307  0500 00 4 00000          CLA ,4                                                  LS041770
07310  0734 00 4 00000          PAX ,4                  U                               LS041780
07311 -0534 00 2 07361          LXD $VALUE,2            V                               LS041790
07312 -3 00000 2 07271   07     TXL     04,2,0                                          LS041800

BINARY CARD NO. LISP0166
07313  0500 00 4 00000          CLA     0,4                                             LS041810
07314  0622 00 0 07370          STD Q4                  CDR(U)                          LS041820
07315  0734 00 4 00000          PAX ,4                  CAR(U)                          LS041830
07316  0500 00 2 00000          CLA ,2                                                  LS041840
07317  0622 00 0 07367          STD Q2                  CDR(V)                          LS041850
07320  0734 00 2 00000          PAX ,2                                                  LS041860
07321  0500 00 4 00000          CLA ,4                   CWR(CAR(U))                    LS041870
07322  0402 00 2 00000          SUB ,2                  -CWR(CAR(V))                    LS041880
07323 -0100 00 0 07271          TNZ 04                  NOT THE SAME,NEXT OBJECT        LS041890
07324 -0534 00 4 07370          LXD Q4,4                CDR(U)                          LS041900
07325 -0534 00 2 07367          LXD Q2,2                                                LS041910
07326  3 00000 4 07312          TXH 07,4,0              IF NOT YET END OF NAME          LS041920
07327  3 00000 2 07271          TXH 04,2,0              IF U,V OF DIFFERENT LENGTH,NEXT LS041930
07330  0500 00 0 07365          CLA 02                                                  LS041940
07331  0020 00 0 07353          TRA     ITRX                                            LS041950
07332  0500 00 0 07361   OUT    CLA $VALUE                                              LS041960
07333  0074 00 4 10166          TSX $CP1,4                                              LS041970
07334  0560 00 0 00424          LDQ     $ZERO                                           LS041980
07335  0074 00 4 04471          TSX $CONS,4                                             LS041990
07336  0131 00 0 00000          XCA                                                     LS042000
07337  0500 00 0 00541          CLA OPNA                                                LS042010
07340  0074 00 4 04471          TSX $CONS,4                                             LS042020
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BINARY CARD NC. LISP0167
    07341  0131 CO 0 00000          XCA                          INTO MQ                                  LS042030
    07342  0500 CO 0 00514          CLA      $DMASK              ATOM SYMBOL                              LS042040
    07343  0074 CO 4 04471          TSX      $CONS,4             MAKE IT AN ATOM                          LS042050
    07344  0560 00 0 07366   INTCN  LDQ      05                  LIST OF ATOMS IN BUCKET                  LS042060
    07345  0622 CO 0 07366          STD      05                  SAVE ATOM AS ANSWER                      LS042070
    07346  0074 CO 4 04471          TSX      $CONS,4             ATTACH TO BEGINNING OF LIST              LS042080
    07347  0771 00 0 00022          ARS      18                  PUT IN ADDRESS                           LS042090
    07350  0522 CO 0 07244          XEC      BUCK                BUCKET NUMBER                            LS042100
    07351  0621 CO 4 64623          STA      BUCKET,4            PUT IN PROPER BUCJET                     LS042110
    07352  0500 CO 0 07366          CLA      05                  ATOM AS ANSWER                           LS042120
    07353  0774 00 4 00000   ITRX   AXT      **,4                RESTORE LINK IR                          LS042130
    07354  0774 CO 2 00000   ITRY   AXT      **,2                                                         LS042140
    07355  0020 CO 4 00001          TRA      1,4                 EXIT                                     LS042150
    07356  0500 CO 0 07362   INTAD  CLA      BSRT                PICK UP ATOM                             LS042160
    07357  0600 CO 0 07362          STZ      BSRT                ZERO LOCATION                            LS042170
    07360  0020 CO 0 07344          TRA      INTCN               PLACE ATOM IN BICKET                     LS042180
    07361  0 00000 0 00000   VALUE                               POINTER TO PNAME LIST                    LS042190
    07362  0 00000 0 00000   BSRT                                ATOM ON CNSFWL WENTRANCE                 LS042200
    07363  0 00000 0 00177   BUCKNO PZE      127                 NUMBER OF BUCKETS                        LS042210
                             *                                                                            LS042220
    07364  0 00000 0 00000   01                                                                           LS042230
    07365  0 00000 0 00000   02                                                                           LS042240
    07366  0 00000 0 00000   05                                                                           LS042250
                      00541   OPNA   SYN      PNAMED                                                       LS042260

BINARY CARD NC. LISP0168
    07367  0 00000 0 00000   Q2                                                                           LS042270
    07370  0 00000 0 00000   Q4                                                                           LS042280
                                                                                                          LS042290
                           T        HED                                                                   LS042300
    07371  0634 00 4 07445   NUTRN  SXA      NX4,4               SAVE INDEX REGISYERS                     LS042310
    07372  0634 CO 2 07444          SXA      NX2,2                                                        LS042320
    07373  0634 00 1 07443          SXA      NX1,1                                                        LS042330
    07374  0774 00 1 00006          AXT 6,1                                                               LS042340
    07375 -0534 00 4 07361          LXD $VALUE,4                                                          LS042350
    07376  0500 CO 4 00000   NA1    CLA 0,4                                                               LS042360
    07377 -0734 00 4 00000          PDX 0,4                                                               LS042370
    07400  0734 00 2 00000          PAX 0,2                                                               LS042380
    07401  0500 CO 2 00000          CLA 0,2                                                               LS042390
    07402  0601 CO 1 10156          STO BUFFER+6,1                                                        LS042400
    07403 -3 00000 4 07414          TXL NA2,4,0                                                           LS042410
    07404  2 00001 1 07376          TIX NA1,1,1                                                           LS042420
    07405 -0634 CO 4 02313   NE     SXD $ERROR,4                                                          LS042430
    07406  0074 CO 4 01527          TSX OUTPUT,4                                                          LS042440
    07407  0 00000 0 00365              BCDOUT                                                            LS042450
    07410  0 00016 0 07176              I$CELL-15,,14                                                     LS042460
    07411 -0754 00 0 00000          PXD      0,0                 CLEAR AC                                 LS042470
    07412  0074 CO 4 02314          TSX $ERROR+1,4                                                        LS042480
    07413  545160600654             BCI      1,*R  6*            NUMBER TOO LARGE IN CONVERSION           LS042490
    07414  0500 CO 0 00527   NA2    CLA BLANKS                                                            LS042500

BINARY CARD NC. LISP0169
    07415  0601 CO 1 10157          STO BUFFER+7,1                                                        LS042510
    07416  0500 CO 0 07447          CLA      KBPOS               PARAMETER FOR NUMBR                      LS042520
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07417  0074 CC 4 07450          TSX     $NUMBR,4        NUMBER TO MQ                        LS042530
07420  0100 CC 0 07405          TZE     NE              OUT-OF-RANGE ERROR                  LS042540
07421 -0120 CC 0 07440          TMI     NA7             TRA IF FLOATING NUMBER              LS042550
07422 -0760 00 0 00001          PBT                     TEST FOR OCTAL NUMBER               LS042560
07423  0020 CC 0 07427          TRA     NA3             TRA IF OCTAL                        LS042570
07424  0500 CC 0 00540          CLA     $OCTD           OCTAL SIGNAL FOR $MKNO              LS042580
07425  0131 00 0 00000          XCA                                                         LS042590
07426  0020 00 0 07442          TRA     NA8                                                 LS042600
07427  0131 00 0 00000  NA3     XCA                     NUMBER TO AC                        LS042610
07430  0560 CC 0 00532          LDQ     $FIXD           FIX TO MQ                           LS042620
07431 -0120 CC 0 07442          TMI     NA8                                                 LS042630
07432  0340 CC 0 00436          CAS     $Q10            TEST FOR 0 THRU 9                   LS042640
07433  0020 CC 0 07442          TRA     NA8                                                 LS042650
07434  0020 CC 0 07442          TRA     NA8                                                 LS042660
07435  0361 CC 0 00556          ACL     $HOOA           FORM PRINT OBJECT                   LS042670
07436  0767 CC 0 00022          ALS     18                                                  LS042680
07437  0020 CC 0 07443          TRA     NX1                                                 LS042690
07440  0500 00 0 00533  NA7     CLA     FLOATD          FLOAT SIGNAL FOR $MKNO              LS042700
07441  0131 CC 0 00000          XCA                     NUMBER TO AC                        LS042710
07442  0074 CC 4 13624  NA8     TSX     $MKNO,4         MAKE A NUMBER                       LS042720

BINARY CARD NO. LISP0170
07443  0774 CC 1 00000  NX1     AXT     **,1            RESTORE INDEX REGISTERS             LS042730
07444  0774 00 2 00000  NX2     AXT     **,2                                                LS042740
07445  0774 CC 4 00000  NX4     AXT     **,4                                                LS042750
07446  0020 CC 4 00001          TRA     1,4                                                 LS042760
07447  0 00001 0 10150  KBPOS   PZE     BUFFER,,1                                           LS042770
                                                                                           LS042780
                                                                                           LS042790
                        F       HED                                                        LS042800
                                                                                           LS042810
                            NUMBR CONVERTS PACKED BCD CHARACTERS TO A NUMBER WHICH         LS042820
                            APPEARS IN MQ.   DBC CONVENTIONS ARE FOLLOWED.  OCTAL          LS042830
                            NUMBERS ARE SIGNALLED BY Q AND MAY BE FOLLOWED BY A            LS042840
                            SCALE FACTOR.                                                  LS042850
                                                                                           LS042860
                            ROUTINE STOLEN FROM UADBC1                                     LS042870
                                                                                           LS042880
                                                                                           LS042890
07450  0634 CC 1 10000  NUMBR SXA PX1,1          SAVE INDEX REGISTERS                    LS042900
07451  0634 CC 2 10001        SXA PX2,2                                                   LS042910
07452  0634 CC 4 10002        SXA PX4,4                                                   LS042920
07453  0602 CC 0 77663        SLW T                                                       LS042930
07454  0737 00 2 00000        PAC ,2              IR2 HAS WORD COUNT                      LS042940
07455 -0737 CC 1 00000        PDC ,1              IR1 WILL GET CHARACTER COUNT            LS042950
07456  0771 CC 0 00021        ARS 17                                                      LS042960
07457  0601 CC 0 77664        STO N                                                       LS042970
07460  0767 00 0 00001        ALS 1                                                       LS042980
07461  0400 00 0 77664        ADD N                                                       LS042990
07462  0737 CC 4 00000        PAC ,4                                                      LS043000
07463  0560 CC 2 00000        LDQ 0,2             PUT BCD WORD IN MQ                      LS043010
07464 -0763 CC 4 77772        LGL -6,4            SHIFT OUT EXTRA CHARACTERS              LS043020
07465 -0600 CC 0 77660        STQ MQ              SAVE FIRST BATCH OF CHARACTERS          LS043030
07466  1 00007 1 07467        TXI *+1,1,7                                                 LS043040
                                                                                           LS043050
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                                   LOOK AT CHARACTERS UNTIL A Q OR NON-OCTAL CHARACTER APPEARS  LS043060
                                                                                               LS043070
    07467 -0754 00 0 00000  CY3    PXD     ,0                                                 LS043080
    07470 -0763 00 0 00006         LGL 6                                                      LS043090

BINARY CARD NO. LISP0171
    07471  0402 00 0 00434         SUB Q8          TEST FOR OCTAL DIGIT                       LS043100
    07472  0120 00 0 07477         TPL CY4                                                    LS043110
    07473  2 00001 1 07467  CY2    TIX CY3,1,1     GET NEXT CHARACTER                         LS043120
    07474  1 77777 2 07475         TXI *+1,2,-1                                               LS043130
    07475  0560 00 2 00000         LDQ 0,2                                                    LS043140
    07476  1 00005 1 07467         TXI CY3,1,5                                                LS043150
    07477  0400 00 0 00434  CY4    ADD Q8                                                     LS043160
    07500  0340 00 0 00462         CAS Q                                                      LS043170
    07501  0020 00 0 07514         TRA DECNO                                                  LS043180
    07502  0020 00 0 10013         TRA OCTNO       IF Q, NUMBER IS OCTAL                      LS043190
    07503  0340 00 0 00457         CAS MINUS       IF CHARACTER IS MINUS, PLUS, OR DASH,      LS043200
    07504  0020 00 0 07514         TRA DECNO         LOOK AT MORE CHARACTERS,                 LS043210
    07505  0020 00 0 07473         TRA CY2           OTHERWISE NUMBER IS DECIMAL              LS043220
    07506  0340 00 0 00454         CAS PLUS                                                   LS043230
    07507  0020 00 0 07514         TRA DECNO                                                  LS043240
    07510  0020 00 0 07473         TRA CY2                                                    LS043250
    07511  0340 00 0 00452         CAS DASH                                                   LS043260
    07512  0020 00 0 07514         TRA DECNO                                                  LS043270
    07513  0020 00 0 07473         TRA CY2                                                    LS043280
                                                                                               LS043290
    07514  0535 00 2 77663  DECNO  LAC T,2       IR2 HAS WORD COUNT                         LS043300
    07515 -0535 00 1 77663         LDC T,1         IR1 WILL GET CHARACTER COUNT               LS043310
    07516  0560 00 0 77660         LDQ MQ          RESTORE FIRST GROUP OF CHARACTERS          LS043320

BINARY CARD NO. LISP0172
    07517 -0754 00 0 00000         PXD     ,0                                                 LS043330
    07520  0602 00 0 77660  BN2    SLW BN          REGISTERS                                  LS043340
    07521  0602 00 0 77661  EX2    SLW EXPN                                                   LS043350
    07522  0602 00 0 77664  INTN   SLW N                                                      LS043360
    07523 -0534 00 4 00436         LXD Q10,4       SET DECIMAL COUNT TO ZERO                  LS043370
    07524 -0500 00 0 07614         CAL SW1         RESET SWITCHES FOR                         LS043380
    07525  0630 00 0 07656         STP CM2          FIXED POINT                               LS043390
    07526  0630 00 0 07731         STP CM6          X                                         LS043400
    07527  0630 00 0 07634         STP EXS          EXP                                       LS043410
    07530  0630 00 0 07660         STP CM3          PCINT                                     LS043420
    07531  0630 00 0 07643         STP CX3          DECIMAL NUMBER                            LS043430
    07532 -0500 00 0 07522         CAL INTN        INITIALIZE CONVERSION                      LS043440
    07533  1 00010 1 07546         TXI BN3,1,8     FIX INITIAL CHARACTER COUNT                LS043450
    07534  0502 00 0 07660  PT1    CLS CM3         INVERT SWITCH TO SIGNAL DECIMAL POINT      LS043460
    07535  0601 00 0 07660         STO CM3                                                    LS043470
    07536 -0500 00 0 07571         CAL CV3                                                    LS043480
    07537  0621 00 0 07606         STA CV5         ROUTINE TO COUNT                           LS043490
    07540  0621 00 0 07611         STA CV6         DECIMAL PLACES                             LS043500
    07541  1 00001 4 07606         TXI CV5,4,1                                                LS043510
    07542  1 77777 4 07571  PT3    TXI CV3,4,-1    COUNT DECIMAL PLACES                       LS043520
    07543  0502 00 0 07634  EX1    CLS EXS         INVERT SWITCH TO SIGNAL EXPONENT           LS043530
    07544  0601 00 0 07634         STO EXS                                                    LS043540
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BINARY CARD NO. LISP0173
    07545 -0500 CO 0 07521          CAL EX2          SET UP EXPONENT CONVERSION                    LS043550
    07546  0621 CO 0 07577   BN3    STA CV7          STORE CONVERSION                              LS043560
    07547  0621 CO 0 07601          STA CV8          ADDRESS                                       LS043570
    07550  0621 CO 0 07605          STA CV9                                                        LS043580
    07551 -0500 CO 0 07542          CAL PT3          INITIAL CONVERSION                            LS043590
    07552  0621 CO 0 07606          STA CV5          WITHOUT DECIMAL COUNT                         LS043600
    07553  0621 CO 0 07611          STA CV6                                                        LS043610
    07554 -0500 CO 0 07601   PL1    CAL CV8                                                        LS043620
    07555  0622 CO 0 07603   MN3    STD CV10                                                       LS043630
    07556  0140 CO 0 07606          TOV CV5                                                        LS043640
    07557 -3 00000 0 07606          TXL     CV5,,                                                  LS043650
    07560  0500 00 0 07656   BN1    CLA CM2          INVERT SWITCHES TO SIGNAL FIXED POINT         LS043660
    07561  0630 CO 0 07656          STP CM2                                                        LS043670
    07562  0630 CO 0 07731          STP CM6                                                        LS043680
    07563 -0500 CO 0 07520          CAL BN2          SET UP B CONVERSION                           LS043690
    07564 -3 00000 0 07546          TXL     BN3,,                                                  LS043700
    07565  0500 CO 0 00511   MN1    CLA PBIT         START NEGATIVE ACCUMULATION WITH NEG. ZERO    LS043710
    07566  0601 60 0 07577          STO* CV7                                                       LS043720
    07567 -0500 CO 0 07570          CAL MN2          OP CODE TO MAKE CV10 A SUB INSTRUCTION        LS043730
    07570 -3 40200 0 07555   MN2    TXL MN3,0,258*64                                               LS043740
    07571 -0754 CO 0 07542   CV3    PXD     PT3,0                                                  LS043750
    07572 -0763 CO 0 00006          LGL 6                                                          LS043760

BINARY CARD NO. LISP0174
    07573  0340 CO 0 00436          CAS TEN          TEST FOR DIGIT                                LS043770
    07574 -3 00000 0 07613          TXL     CM,,                                                   LS043780
    07575 -3 00000 0 07632          TXL     CV2,,                                                  LS043790
    07576  0602 CO 0 77662          SLW CH           PERFORM CODED                                 LS043800
    07577  0500 CO 0 77664   CV7    CLA N            MULTIPLICATION                                LS043810
    07600  0767 00 0 00002          ALS 2            BY TEN AND ADD                                LS043820
    07601  0400 CO 0 77664   CV8    ADD N            CURRENT DIGIT                                 LS043830
    07602  0767 00 0 00001          ALS 1                                                          LS043840
    07603  0400 CO 0 77662   CV10   ADD CH                                                         LS043850
    07604  0140 00 0 07612          TOV OVF          TEST FOR OVERFLOW                             LS043860
    07605  0601 CO 0 77664   CV9    STO N                                                          LS043870
    07606  2 00001 1 07571   CV5    TIX CV3,1,1      COUNT CHARACTERS                              LS043880
    07607  1 77777 2 07610          TXI CV4,2,-1     OBTAIN NEXT BCD                               LS043890
    07610  0560 CO 2 00000   CV4    LDQ 0,2          WORD AND RESTORE                              LS043900
    07611  1 00005 1 07571   CV6    TXI CV3,1,5      CHARACTER COUNT                               LS043910
    07612  1 00001 4 07606   OVF    TXI CV5,4,1      COUNT DECIMAL OVERFLOWS                       LS043920
    07613  0340 00 0 00457   CM     CAS MINUS                                                      LS043930
    07614 -3 00000 0 07632   SW1    TXL     CV2,,                                                  LS043940
    07615 -3 00000 0 07565          TXL     MN1,,                                                  LS043950
    07616  0340 CO 0 00456          CAS POINT                                                      LS043960
    07617 -3 00000 0 07632          TXL     CV2,,                                                  LS043970
    07620 -3 00000 0 07534          TXL     PT1,,                                                  LS043980

BINARY CARD NO. LISP0175
    07621  0340 00 0 00444          CAS E                                                          LS043990
    07622 -3 00000 0 07632          TXL     CV2,,                                                  LS044000
    07623 -3 00000 0 07543          TXL     EX1,,                                                  LS044010
    07624  0340 00 0 00455          CAS B                                                          LS044020
    07625 -3 00000 0 07632          TXL     CV2,,                                                  LS044030
    07626 -3 00000 0 07560          TXL     BN1,,                                                  LS044040
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07627  0340 00 0 00454          CAS PLUS                                                    LS044050
07630 -3 00000 0 07632          TXL     CV2,,                                               LS044060
07631 -3 00000 0 07554          TXL     PL1,,                                               LS044070
07632  0500 00 0 77664   CV2    CLA N                                                       LS044080
07633  0100 00 0 10004          TZE STZ             SEE IF ZERO FIXED OR FLOATING          LS044090
07634 -3 00000 0 07643   EXS    TXL     CX3,,               SWITCH - TXH INDICATES EXPONENT LS044100
07635 -0500 00 0 00511          CAL PBIT            PREPARE TRUE                           LS044110
07636  0400 00 0 77661          ADD EXPN            DECIMAL EXPONENT                       LS044120
07637  0767 00 0 00022          ALS 18                                                     LS044130
07640  0622 00 0 07642          STD CM4                                                    LS044140
07641  0500 00 0 77664          CLA N                                                      LS044150
07642  1 00000 4 07661   CM4    TXI     CM5,4,0                                            LS044160
07643 -3 00000 0 07656   CX3    TXL     CM2,,               SWITCH - TXH INDICATES OCTAL   LS044170
                                SCALE OCTAL NUMBER                                      LS044180
07644  0500 00 0 77660          CLA BN              MULTIPLY SCALE FACTOR BY 3             LS044190
07645  0767 00 0 00001          ALS 1                FOR NUMBER OF SHIFTS NEEDED           LS044200
07646  0400 00 0 77660          ADD BN                                                     LS044210

BINARY CARD NO. LISP0176
07647  0621 00 0 07651          STA CX5                                                    LS044220
07650  0500 00 0 77664          CLA N                                                      LS044230
07651  0767 00 0 00000   CX5    ALS **                                                     LS044240
07652 -0760 00 0 00001          PBT                 ALLOW FOR P BIT                        LS044250
07653  0020 00 0 07751          TRA ISTOR                                                  LS044260
07654 -0760 00 0 00003          SSM                                                        LS044270
07655  0020 00 0 07751          TRA ISTOR                                                  LS044280
                                                                                        LS044290
07656 -3 00000 0 07660   CM2    TXL     CM3,,   SWITCH - INVERTED TO TXH MEANS FIXED PT    LS044300
07657 -3 00000 0 07661          TXL     CM5,,                                              LS044310
07660 -3 00000 0 07751   CM3    TXL     ISTOR,,             SWITCH - TXH INDICATES POINT   LS044320
07661  0621 00 0 10066   CM5    STA FL1             35 BIT INTEGER                         LS044330
07662  0771 00 0 00017          ARS 15                                                     LS044340
07663 -0501 00 0 10067          ORA FL2                                                    LS044350
07664  0300 00 0 10067          FAD FL2                                                    LS044360
07665  0120 00 0 07670          TPL CMF1                                                   LS044370
07666  0302 00 0 10066          FSB FL1                                                    LS044380
07667 -3 00000 0 07671          TXL     CMF2,,                                             LS044390
07670  0300 00 0 10066   CMF1   FAD FL1                                                    LS044400
07671 -0600 00 0 77666   CMF2   STQ RESID                                                  LS044410
07672 -3 00000 4 07731          TXL     CM6,4,0                                            LS044420
07673  3 00046 4 07714    SW2   TXH CM7,4,38        TEST FOR NEGATIVE EXP                  LS044430
07674  0634 00 4 07675          SXA *+1,4           COMPUTE ABSOLUTE VALUE OF EXPONENT     LS044440

BINARY CARD NO. LISP0177
07675 -0774 00 4 00000          AXC **,4                                                   LS044450
07676  0601 00 0 77665          STO DATUM                                                  LS044460
07677  0560 00 4 10067          LDQ ONE,4           COMPUTE FLOATING                       LS044470
07700  0260 00 0 77665          FMP DATUM           BINARY REPRESENTATION                  LS044480
07701  0601 00 0 77663          STO T               OF INTEGER TIMES THE                   LS044490
07702 -0600 00 0 77664          STQ T+1             POWER OF TEN GIVEN                     LS044500
07703  0560 00 4 10067          LDQ ONE,4           BY THE TRUE EXPONENT                   LS044510
07704  0260 00 0 77666          FMP RESID                                                  LS044520
07705  0300 00 0 77664          FAD T+1                                                    LS044530
07706  0300 00 0 77663          FAD T                                                      LS044540
07707  0361 00 0 10064          ACL EXC1                                                   LS044550
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07710 -0760 00 0 00001          PBT                                                     LS044560
07711 -3 00000 0 07731          TXL     CM6,,                                           LS044570
07712 -0754 00 0 00000  CM8     PXD     ,0                                              LS044580
07713  0020 00 0 10000          TRA PX1         NUMBER OUT OF RANGE, EXIT WITH 0 IN AC  LS044590
07714 -3 77717 4 07712   CM7    TXL CM8,4,-49   TEST FOR ILLEGAL EXP                    LS044600
07715  0161 00 0 07716   CM13   TQO CM13+1                                             LS044610
07716  0241 00 4 10067          FDP CNE,4       COMPUTE FLOATING                        LS044620
07717 -0600 00 0 77663          STQ T           BINARY EQUIVALENT                       LS044630
07720  0300 00 0 77666          FAD RESID       OF INTEGER TIMES                        LS044640
07721  0241 00 4 10067          FDP ONE,4       POWER OF TEN GIVEN                      LS044650
07722  0161 00 0 07712          TQO CM8                                                 LS044660

BINARY CARD NO. LISP0178
07723 -0600 00 0 77664          STQ T+1         BY TRUE EXPONENT                        LS044670
07724  0500 00 0 77664          CLA T+1                                                 LS044680
07725  0300 00 0 77663          FAD T                                                   LS044690
07726  0361 00 0 10065          ACL EXC2                                                LS044700
07727 -0760 00 0 00001          PBT                                                     LS044710
07730 -3 00000 0 07712          TXL     CM8,,                                           LS044720
07731 -3 00000 0 07754  CM6     TXL     FSTOR,,         SWITCH - TXH INDICATES FIXED POINT LS044730
07732  0601 00 0 77663          STO T                                                   LS044740
07733  0767 00 0 00002          ALS 2                                                   LS044750
07734 -0760 00 0 00003          SSM             DETERMINE SHIFT                         LS044760
07735  0771 00 0 00035          ARS 29          NECESSARY TO POSITION                   LS044770
07736  0400 00 0 00451          ADD Q128        NUMBER AS INDICATED                     LS044780
07737  0400 00 0 77660          ADD BN          BY B                                    LS044790
07740  0120 00 0 07742          TPL SHIFT                                               LS044800
07741 -0100 00 0 07712          TNZ CM8                                                 LS044810
07742  0621 00 0 07750   SHIFT  STA CM12                                                LS044820
07743  0500 00 0 77663          CLA T           REMOVE CHARACTERISTICS                  LS044830
07744  0763 00 0 00010          LLS 8           FROM FLOATING NUMBER                    LS044840
07745  0767 00 0 00002          ALS 2                                                   LS044850
07746  0771 00 0 00012          ARS 10                                                  LS044860
07747  0763 00 0 00010          LLS 8                                                   LS044870
07750  0765 00 0 00000  CM12    LRS     **                                              LS044880

BINARY CARD NO. LISP0179
07751  0131 00 0 00000  ISTOR  XCA             RESULT TO MQ                            LS044890
07752 -0500 00 0 07614  ISTO1  CAL SW1         SET FIXED POINT INDICATOR SWITCH        LS044900
07753  0020 00 0 07756          TRA XT3                                                 LS044910
07754  0131 00 0 00000  FSTOR  XCA             RESULT TO MQ                            LS044920
07755  0500 00 0 07614          CLA SW1         SET FLOAT INDICATOR SWITCH              LS044930
07756  0630 00 0 07776  XT3    STP XT1                                                 LS044940
07757  2 00001 1 07762          TIX XT2,1,1     IF NO SIGNIFICANT CHARACTERS            LS044950
07760  1 77777 2 07761          TXI *+1,2,-1     LEFT IN WORD, MOVE TO  NEXT WORD       LS044960
07761  0774 00 1 00006          AXT 6,1                                                 LS044970
07762 -0754 00 1 00000  XT2    PXD ,1          SET POSITION INDICATORS                 LS044980
07763  0402 00 0 00502          SUB QD7                                                 LS044990
07764  0602 00 0 77663          SLW T                                                   LS045000
07765 -0500 00 0 07643          CAL CX3                 P BIT IN OUTPUT INDICATES OCTAL LS045010
07766 -0320 00 0 00511          ANA $SBIT                                               LS045020
07767 -0602 00 0 77663          ORS T                                                   LS045030
07770  0760 00 0 00006          COM                                                     LS045040
07771  0630 00 0 77663          STP T                                                   LS045050
07772  0634 00 2 07773          SXA *+1,2                                               LS045060
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07773 -0774 CO 2 00000          AXC **,2                                                LS045070
07774  0754 CO 2 00000          PXA ,2                                                  LS045080
07775  0361 CO 0 77663          ACL T                                                   LS045090
07776 -3 00000 0 10000  XT1      TXL     *+2,,           SET SIGN + FOR FIXED            LS045100

BINARY CARD NO. LISP0180
07777 -0760 00 0 00003          SSM                      - FOR FLOATING                 LS045110
10000  0774 CO 1 00000   PX1    AXT ,1                  RESTORE INDEX REGISTERS         LS045120
10001  0774 00 2 00000   PX2    AXT ,2                                                  LS045130
10002  0774 00 4 00000   PX4    AXT ,4                                                  LS045140
10003  0020 CO 4 00001          TRA 1,4                 EXIT                            LS045150
                                                                                        LS045160
                                WE GET HERE IF NUMBER IS ZERO.                          LS045170
                                WE HERE DECIDE WHETHER WE ARE FACED WITH A FIXED OR FLOATING LS045180
                                 ZERO.                                                  LS045190
                                                                                        LS045200
10004  0560 CO 0 07656   STZ    LDQ CM2                 TXH (+) IF B                    LS045210
10005  0162 CO 0 07751          TQP ISTOR                                               LS045220
10006  0560 CO 0 07660          LDQ CM3                 TXH (+) IF DECIMAL POINT FOUND  LS045230
10007  0162 CO 0 07754          TQP FSTOR                                               LS045240
1001C  0560 CO 0 07634          LDQ EXS                 TXH (+) IF E FOUND              LS045250
10011  0162 CO 0 07754          TQP FSTOR                                               LS045260
10012  0020 CO 0 07751          TRA ISTOR                                               LS045270
                                                                                        LS045280
                                PROCESS OCTAL NUMBER                                    LS045290
                                                                                        LS045300
10013  0535 00 2 77663   OCTNO  LAC T,2                  IR2 HAS WORD COUNT              LS045310
10014 -0535 CC 1 77663          LDC T,1                 IR1 WILL GET CHARACTER COUNT    LS045320
10015  0560 CO 0 77660          LDQ MQ                  RESTORE FIRST GROUP OF CHARACTERS LS045330
10016 -0754 00 0 00000          PXD     ,0                                              LS045340
10017  0621 00 0 07577          STA CV7                 SET SIGNAL FOR OCTAL NUMBER     LS045350
10020  1 00010 1 10026          TXI OCT9,1,8            FIX CHARACTER COUNT             LS045360
10021 -0754 00 0 00000  OCT1    PXD     ,0                                              LS045370
10022 -0763 00 0 00003          LGL 3                                                   LS045380
10023 -0100 CO 0 10034          TNZ OCT8                                                LS045390
10024  0500 CO 0 77664          CLA N                                                   LS045400

BINARY CARD NC. LISP0181
10025 -0763 00 0 00003          LGL 3                                                   LS045410
10026  0601 CO 0 77664   OCT9   STO N                    ALLOW FOR BOTH P BIT AND MINUS SIGN LS045420
10027 -0602 CO 0 77664          ORS N                                                   LS045430
10030  2 00001 1 10021   OCT6   TIX OCT1,1,1                                           LS045440
10031  1 77777 2 10032          TXI OCT2,2,-1                                           LS045450
10032  0560 CO 2 00000   OCT2   LDQ 0,2                  NEW PACKED WORD                 LS045460
10033  1 00005 1 10021          TXI OCT1,1,5                                            LS045470
10034 -0763 CO 0 00003   OCT8   LGL 3                                                   LS045480
10035  0340 CO 0 00462          CAS Q                   TEST FOR OCTAL SCALE FACTOR     LS045490
10036  0020 CO 0 10051          TRA OCT3                                                LS045500
10037  0020 CO 0 10055          TRA OCT10                                               LS045510
10040  0340 CO 0 00457          CAS MINUS                                               LS045520
10041 -3 00000 0 10051          TXL     OCT3,,                                          LS045530
10042 -3 00000 0 10053          TXL     OCT5,,                                          LS045540
10043  0340 CO 0 00454          CAS PLUS                                                LS045550
10044 -3 00000 0 10051          TXL     OCT3,,                                          LS045560
10045 -3 00000 0 10030          TXL     OCT6,,                                          LS045570
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10046  0340 C0 C 00452          CAS DASH          DASH TREATED LIKE -                    LS045580
10047 -3 C00C0 0 10051          TXL     CCT3,,                                           LS045590
10050 -3 00000 0 10053          TXL     CCT5,,                                           LS045600
10051  0560 C0 0 77664   OCT3   LDQ N                                                    LS045610
10052  1 C0000 0 07752          TXI     IST01,,                                          LS045620

BINARY CARD NO. LISP0182
10053  0500 00 0 00511   OCT5   CLA PBIT          SET NEGATIVE SIGN                      LS045630
10054 -3 C0000 0 10026          TXL     CCT9,,                                           LS045640
10055  0500 C0 C 07643   OCT10  CLA CX3           SET SWITCH FOR OCTAL SCALE FACTOR      LS045650
10056  0630 C0 0 07643          STP CX3                                                  LS045660
10057  0600 C0 0 77660          STZ BN            CLEAR SCALE FACTOR CELL                LS045670
10060 -0500 C0 0 07614          CAL SW1           SET EXPONENT SWITCH TO OFF             LS045680
10061  0630 C0 0 07634          STP EXS                                                  LS045690
10062 -0500 C0 0 07520          CAL BN2           SET UP Q CONVERSION                    LS045700
10063  0020 C0 0 07546          TRA BN3                                                  LS045710
                                                                                        LS045720
                                                                                        LS045730
                                                                                        LS045740
                    00434  Q8      SYN $Q8                                              LS045750
                    00436  Q10     SYN $Q10                                             LS045760
                    00451  Q128    SYN $Q128                                            LS045770
                    00502  QD7     SYN $QD7                                             LS045780
                    00511  PBIT    SYN $SBIT                                            LS045790
                    00463  BLANK   SYN $Q060                                            LS045800
                    00457  MINUS   SYN $Q040                                            LS045810
                    00456  POINT   SYN $Q033                                            LS045820
                    00444  E       SYN $Q025                                            LS045830
                    00455  B       SYN $Q022                                            LS045840
                    00462  Q       SYN $Q050                                            LS045850
                    00454  PLUS    SYN $Q020                                            LS045860
                    00452  DASH    SYN $Q014                                            LS045870
10064 +043000000000        EXC1    DEC 35B8          CHARACTERISTIC=35                  LS045880
10065 +335000000000        EXC2    DEC 221B8         CHAR.=COMPL. 35                    LS045890
10066 +233000000000        FL1     DEC 155B8                                            LS045900
10067 +252000000000        FL2     DEC 170B8                                            LS045910
10070 +141500000000                OCT 141500000000,144620000000,147764000000,153470400000  LS045920
10071 +144620000000
10072 +147764000000
10073 +153470400000
10074 +156606500000                OCT 156606500000,161750220000,165461132000,170575360400  LS045930
10075 +161750220000
10076 +165461132000
10077 +170575360400
10100 +173734654500                OCT 173734654500,177452013710,202564416672,205721522451  LS045940

BINARY CARD NO. LISP0183
10101 +177452013710
10102 +202564416672
10103 +205721522451
10104 +211443023471                OCT 211443023471,214553630410,217706576512,223434157116  LS045950
10105 +214553630410
10106 +217706576512
10107 +223434157116
10110 +226543212741                OCT 226543212741,231674055532,235425434430,240532743536  LS045960
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10111 +231674055532
10112 +235425434430
10113 +240532743536
10114 +243661534466          OCT 243661534466,247417031702,252522640262,255647410336          LS045970
10115 +247417031702
10116 +252522640262
10117 +255647410336
10120 +261410545213          OCT 261410545213,264512676456,267635456171,273402374714          LS045980
10121 +264512676456
10122 +267635456171
10123 +273402374714
10124 +276503074077          OCT 276503074077,301623713116,304770675742,310473426555          LS045990
10125 +301623713116
10126 +304770675742

BINARY CARD NO. LISP0184
10127 +310473426555
10130 +313612334311          OCT 313612334311,316755023373,322464114135,325601137164          LS046000
10131 +316755023373
10132 +322464114135
10133 +325601137164
10134 +330741367021          OCT 330741367021,334454732313,337570120775,342726145174          LS046010
10135 +334454732313
10136 +337570120775
10137 +342726145174
10140 +346445677216          OCT 346445677216,351557257061,354713132676,360436770626          LS046020
10141 +351557257061
10142 +354713132676
10143 +360436770626
10144 +363546566774          OCT 363546566774,366700324573,372430204755,375536246150          LS046030
10145 +366700324573
10146 +372430204755
10147 +375536246150
                00436   TEN     SYN Q10                                                   LS046040
                10067   ONE     SYN FL2                                                   LS046050
10150                   REORG   BSS 0                                                     LS046060
                77660           ORG COMMON                                                LS046070
77660                   BN      BSS 1                                                     LS046080
                77660   MQ      SYN BN                                                    LS046090
77661                   EXPN    BSS 1                                                     LS046100
77662                   CH      BSS 1                                                     LS046110
77663                   CHD     BSS 1                                                     LS046120
                77663   T       SYN CHD                                                   LS046130
77664                   N       BSS 1                                                     LS046140
77665                   DATUM   BSS 1                                                     LS046150
77666                   RESID   BSS 1                                                     LS046160
                10150           ORG REORG               RESTORE ORIGIN                    LS046170
10150                 BUFFER    BSS 14                                                    LS046180
                                                                                          LS046190
                                                                                          LS046200
                      R         HED                                                       LS046210
                                                                                          LS046220
                          FUNCTION CP1                                                    LS046230
                          CP1(L)=(L=0 YIELDS 0,                                           LS046240
                                 OTHERWISE CONS(CONSW(CWR(CAR(L))),CP1(CDR(L))))          LS046250
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                                C       HED                                                                    LS046260
                                                                                                               LS046270
BINARY CARD NO. LISP0185
    10166  0634 00 4 10213  CP1     SXA     CPX,4                                                             LS046280
    10167 -0774 00 4 10215          AXC     CPE,4                                                             LS046290
    10170 -0634 00 4 10215          SXD     CPE,4                                                             LS046300
    10171 -0734 00 4 00000          PDX     0,4                                                               LS046310
    10172  0600 00 0 04123          STZ     CPF                                                               LS046320
    10173 -3 00000 4 10212          TXL     CPA,4,0                                                           LS046330
    10174  0500 00 4 00000  CPL     CLA     0,4                                                               LS046340
    10175  0622 00 0 10216          STD     CPT                                                               LS046350
    10176  0734 00 4 00000          PAX     0,4                                                               LS046360
    10177  0500 00 4 00000          CLA     0,4                                                               LS046370
    10200  0074 00 4 04451          TSX     $CONSW,4                                                          LS046380
    10201  0560 00 0 00424          LDQ     $ZERO                                                             LS046390
    10202  0074 00 4 04471          TSX     $CONS,4                                                           LS046400
    10203 -0520 00 0 04123          NZT     CPF                                                               LS046410
    10204  0601 00 0 04123          STO     CPF                                                               LS046420
    10205 -0534 00 4 10215          LXD     CPE,4                                                             LS046430
    10206  0622 00 4 00000          STD     0,4                                                               LS046440
    10207  0622 00 0 10215          STD     CPE                                                               LS046450
    10210 -0534 00 4 10216          LXD     CPT,4                                                             LS046460
    10211  3 00000 4 10174          TXH     CPL,4,0                                                           LS046470
    10212  0500 00 0 04123  CPA     CLA     CPF                                                               LS046480
    10213  0774 00 4 00000  CPX     AXT     **,4                                                              LS046490

BINARY CARD NO. LISP0186
    10214  0020 00 4 00001          TRA     1,4                                                               LS046500
    10215  0 00000 0 00000  CPE                                                                               LS046510
    10216  0 00000 0 00000  CPT                                                                               LS046520
                                                                                                               LS046530
                                SUBST                                                                          LS046540
                                                                                                               LS046550
                                    SUBST(L,V,M) =                                                             LS046560
                                        (M = 0 YIELDS 0,                                                       LS046570
                                         EQUAL(M,V) YIELDS COPY(L),                                            LS046580
                                                        CAR(M)=-1 YIELDS M                                     LS046590
                                         1 YIELDS CONS(SUBST(L,V,CAR(M)),SUBSTL,V,CDR(M))))                    LS046600
                                                                                                               LS046610
                                C       HED                                                                    LS046620
    10217  0601 00 0 04236  SUBST   STO     SX                                                                LS046630
    10220 -0600 00 0 04237          STQ     SY                                                                LS046640
    10221  0500 00 0 04063          CLA     $ARG3                                                             LS046650
    10222 -0634 00 4 04234  SUB1    SXD     SXT,4                                                             LS046660
    10223  0601 00 0 04240          STO     ST                                                                LS046670
    10224  0560 00 0 04237          LDQ     SY                                                                LS046680
    10225  0074 00 4 05225          TSX     $EQUAL,4                                                          LS046690
    10226 -0100 00 0 10273          TNZ     SUB4                                                              LS046700
    10227 -0534 00 4 04240          LXD     ST,4                                                              LS046710
    10230  0500 00 4 00000          CLA     0,4                                                               LS046720
    10231  0734 00 4 00000          PAX     0,4                                                               LS046730
    10232  0500 00 0 04240          CLA     ST                                                                LS046740
    10233  3 77776 4 10271          TXH     SUB2,4,-2                                                         LS046750
    10234  0074 00 4 03104          TSX     $SAVE,4                                                           LS046760
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10235 -3 04237 0 03167          TXL     $END2,,SZ+2                    LS046770
10236  0622 CO 0 04235          STD     SZ                             LS046780
10237 -0734 CO 4 00000          PDX     0,4                            LS046790
10240  0500 CO 4 00000          CLA     0,4                            LS046800
10241 -0734 CO 4 00000          PDX     0,4                            LS046810

BINARY CARD NO. LISP0187
10242  0634 CO 4 04235          SXA     SZ,4                           LS046820
10243  0734 CO 4 00000          PAX     0,4                            LS046830
10244 -0754 CO 4 00000          PXD     0,4                            LS046840
10245  0074 CO 4 10222          TSX     SUB1,4                         LS046850
10246  0534 CO 4 04235          LXA     SZ,4                           LS046860
10247  0771 CO 0 00022          ARS     18                             LS046870
10250  0621 CO 0 04235          STA     SZ                             LS046880
10251 -0754 CO 4 00000          PXD     0,4                            LS046890
10252  0074 CO 4 10222          TSX     SUB1,4                         LS046900
10253 -0534 CO 4 04235          LXD     SZ,4                           LS046910
10254  0622 CO 0 04235          STD     SZ                             LS046920
10255  0500 CO 4 00000          CLA     0,4                            LS046930
10256  0402 CO 0 04235          SUB     SZ                             LS046940
10257  0100 CO 0 10267          TZE     SUB3                           LS046950
10260 -0534 CO 4 04512          LXD     $FREE,4                        LS046960
10261  3 000CO 4 10263          TXH     *+2,4,0                        LS046970
10262  0074 CO 4 04614          TSX     $FROUT,4                       LS046980
10263  0500 CO 4 00000          CLA     0,4                            LS046990
10264  0622 CO 0 04512          STD     $FREE                          LS047000
10265  0500 CO 0 04235          CLA     SZ                             LS047010
10266  0601 CO 4 00000          STO     0,4                            LS047020
10267 -0754 CO 4 00000  SUB3    PXD     0,4                            LS047030

BINARY CARD NO. LISP0188
10270  0074 CO 4 03117          TSX     UNSAVE,4                       LS047040
10271 -0534 CO 4 04234  SUB2    LXD     SXT,4                          LS047050
10272  0020 CO 4 00001          TRA     1,4                            LS047060
10273  0500 CO 0 04236  SUB4    CLA     SX                             LS047070
10274  0020 CO 0 10271          TRA     SUB2                           LS047080
                        B       HED                                    LS047090
                                                                       LS047100
                            FUNCTION SUBLIS                            LS047110
                                                                       LS047120
                *             SUBLIS(P E) = SUBA(E)                    LS047130
                *    SUBA (E) = IF AT E THEN SUB1(P E) ELSE (LAMBDA U V. IF U = A E   LS047140
                * AND V = D E THEN E ELSE U.V) (SUBA(A E) SUBA (D E))   LS047150
                *       SUB1(X E) = IF N X THEN E ELSE IF AA X = E THEN DA X   LS047160
                * ELSE SUB1(D X,E)                                      LS047170
10275  0601 CO 0 04232  SUBLIS STO P                                    LS047180
10276  0131 CO 0 00000          XCA                                     LS047190
10277 -0634 CO 4 04224  SU3     SXD X1,4                               LS047200
10300  0601 CO 0 04233          STO E          E TO IR4                LS047210
10301 -0734 CO 4 00000          PDX ,4                                 LS047220
10302  0500 CO 4 00000          CLA ,4                                 LS047230
10303  0734 CO 4 00000          PAX ,4                                 LS047240
10304 -3 77776 4 10325          TXL SU1,4,-2                           LS047250
10305  0500 CO 0 04232          CLA P                                  LS047260
10306  0601 CO 0 04231          STO X6                                 LS047270
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10307 -0534 00 4 04231   SU2   LXD X6,4                                          LS047280
10310  0500 00 0 04233         CLA E                                            LS047290
10311 -3 00000 4 10355         TXL SU5+1,4,0              TRA IF  N P           LS047300
10312  0500 00 4 00000         CLA ,4                                           LS047310
10313  0622 00 0 04231         STD X6                                           LS047320
10314  0734 00 4 00000         PAX ,4                                           LS047330
10315  0500 00 4 00000         CLA ,4                                           LS047340

BINARY CARD NO. LISP0189
10316  0767 00 0 00022         ALS 18                                           LS047350
10317 -0320 00 0 00514         ANA $DMASK                 DAMN THE Q BIT        LS047360
10320  0402 00 0 04233         SUB E                                            LS047370
10321 -0100 00 0 10307         TNZ SU2                                          LS047380
10322  0500 00 4 00000         CLA ,4                                           LS047390
10323 -0320 00 0 00514         ANA   $DMASK                                     LS047400
10324  0020 00 0 10355         TRA SU5+1                                        LS047410
10325  0074 00 4 03104   SU1   TSX $SAVE,4                                      LS047420
10326 -3 04232 0 03161         TXL $END5,,X5+2                                  LS047430
10327  0560 00 0 04233         LDQ E                                            LS047440
10330 -0600 00 0 04225         STQ X2                                           LS047450
10331  0600 00 0 04226         STZ X3                                           LS047460
10332  0622 00 0 04226         STD X3                     D E                   LS047470
10333  0734 00 4 00000         PAX ,4                                           LS047480
10334 -0754 00 4 00000         PXD ,4                                           LS047490
10335  0074 00 4 10277         TSX SU3,4                  SUBA(A E)             LS047500
10336  0771 00 0 00022         ARS 18                                           LS047510
10337  0601 00 0 04227         STO X4                   SUBA(A E) IN ADDRESS PART LS047520
10340  0500 00 0 04226         CLA X3                                           LS047530
10341  0074 00 4 10277         TSX SU3,4                                        LS047540
10342  0601 00 0 04230         STO X5                     SUBA (D E)            LS047550
10343 -0501 00 0 04227         ORA X4                 SUBA(A E) SUBA(D E)       LS047560

BINARY CARD NO. LISP0190
10344 -0534 00 4 04225         LXD X2,4                                         LS047570
10345  0402 00 4 00000         SUB ,4                                           LS047580
10346  0100 00 0 10357         TZE SU4                                          LS047590
10347  0500 00 0 04227         CLA X4                                           LS047600
10350  0734 00 4 00000         PAX ,4                                           LS047610
10351 -0754 00 4 00000         PXD ,4                                           LS047620
10352  0560 00 0 04230         LDQ X5                                           LS047630
10353  0074 00 4 04471         TSX $CONS,4                                      LS047640
10354  0074 00 4 03117   SU5   TSX UNSAVE,4                                     LS047650
10355 -0534 00 4 04224         LXD X1,4                                         LS047660
10356  0020 00 4 00001         TRA 1,4                                          LS047670
10357  0500 00 0 04225   SU4   CLA X2                       E                   LS047680
10360  0020 00 0 10354         TRA SU5                                          LS047690
                                                                                LS047700
                               APPEND(L1,L2)=                                   LS047710
                               (L1=0 YIELDS L2,1 YIELDS CONS(CAR(L1),APPEND(XDR(L1),L2)))  LS047720
                         A     HED                                              LS047730
10361 -0100 00 0 10364 APPEND  TNZ APNP1                                        LS047740
10362  0131 00 0 00000         XCA                                              LS047750
10363  0020 00 4 00001         TRA 1,4                                          LS047760
10364 -0634 00 4 04110  APNP1  SXD AS1,4                                        LS047770
10365  0074 00 4 03104         TSX $SAVE,4                                      LS047780
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10366 -3 04113 0 03167          TXL     $END2,,CWR1+2       SAVE 2 ITEMS                          LS047790
10367 -0734 00 4 00000          PDX 0,4                                                           LS047800
10370  0500 00 4 00000          CLA 0,4                                                           LS047810
10371  0601 00 0 04111          STO CWR1                                                          LS047820

BINARY CARD NO. LISP0191
10372 -0320 00 0 00514          ANA DECM                                                          LS047830
10373  0074 00 4 10361          TSX APPEND,4                                                      LS047840
10374  0131 00 0 00000          XCA                                                               LS047850
10375  0534 00 4 04111          LXA CWR1,4                                                        LS047860
10376 -0754 00 4 00000          PXD 0,4                                                           LS047870
10377  0074 00 4 03117          TSX UNSAVE,4                                                      LS047880
10400 -0534 00 4 04110          LXD AS1,4                                                         LS047890
10401  0020 00 0 04471          TRA $CONS                                                         LS047900
                     00514  DECM SYN     $DMASK                                                LS047910
                                                                                                LS047920
                                PAIR                                                            LS047930
                     *          RECODED TO MAKE LISTS IN DOT NOTATION                           LS047940
                                                                                                LS047950
                     A      HED                                                                 LS047960
10402  0634 00 4 10410  PAIR   SXA     PAIRX,4             SAVE LINK IR                          LS047970
10403 -0600 00 0 04201          STQ     LIS                 ARG 2                                 LS047980
10404  0560 00 0 10412          LDQ     FARG                PICK UP FUNCTIONAL ARGUMENT           LS047990
10405  0074 00 4 04756          TSX     MAPLIS,4            LET MAPLIST DO THE CONSING            LS048000
10406  0520 00 0 04201          ZET     LIS                 TEST FOR ARG 2 GONE TO END            LS048010
10407  0020 00 0 10432          TRA     PERF                DID NOT, GO TO ERROR                  LS048020
10410  0774 00 4 00000  PAIRX  AXT     **,4                RESTORE LINK IR                       LS048030
10411  0020 00 4 00001          TRA     1,4                 EXIT                                  LS048040
                     *                                                                          LS048050
10412 -3 00001 0 10413  FARG    TXL     *+1,,1              PAIR FUNCTIONAL ARGUMENT FOR MAPLIST  LS048060
10413  0634 00 4 10430          SXA     FARGX,4             SAVE LINK IR                          LS048070
10414  0622 00 0 04200          STD     TEM                 SAVE ARGUMENT                         LS048080
10415 -0534 00 4 04201          LXD     LIS,4               PICK UP 2ND ARG LIST                  LS048090
10416 -3 00000 4 10435          TXL     PERS,4,0            GO IF NO MORE 2ND ARG                 LS048100
10417  0500 00 4 00000          CLA     0,4                 NEXT WORD                             LS048110

BINARY CARD NO. LISP0192
10420  0734 00 4 00000          PAX     0,4                 CAR                                   LS048120
10421  0622 00 0 04201          STD     LIS                 SAVE CDR                              LS048130
10422 -0754 00 4 00000          PXD     0,4                 CAR INTO DECREMENT                    LS048140
10423  0131 00 0 00000          XCA                         INTO MQ                               LS048150
10424 -0534 00 4 04200          LXD     TEM,4               LIST 1                                LS048160
10425  0500 00 4 00000          CLA     0,4                 TAKE CAR OF LIST                      LS048170
10426  0734 00 4 00000          PAX     0,4                                                       LS048180
10427 -0754 00 4 00000          PXD     0,4                                                       LS048190
10430  0774 00 4 00000  FARGX  AXT     **,4                RESTORE LINK IR                       LS048200
10431  0020 00 0 04471          TRA     $CONS                                                     LS048210
                     *          FIRST ARG LIST TOO SHORT ERROR                                  LS048220
10432 -0634 00 4 02313  PERF    SXD     $ERROR,4            SAVE LINK IR                          LS048230
10433  0074 00 4 02314          TSX     $ERROR+1,4          GO TO ERROR                           LS048240
10434  542660600254             BCI     1,*F  2*            FIRST ARG$ LIST TOO SHORT             LS048250
                     *          ERROR, SECOND ARG LIST TOO SHORT                                LS048260
10435 -0634 00 4 02313  PERS    SXD     $ERROR,4            SAVE LINK IR                          LS048270
10436  0074 00 4 02314          TSX     $ERROR+1,4          GO TO ERROR                           LS048280
10437  542660600354             BCI     1,*F  3*            SECOND ARG. LIST TOO SHORT            LS048290
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                        *                                                                    LS048300
                        *                                                                    LS048310
                        *                                                                    LS048320
                                                                                             LS048330
                              MAPCAR(L,F) = (L=0 YIELDS 0,                                   LS048340
                                             F(L) YIELDS 0,                                  LS048350
                                             1 YIELDS MAPCAR(CDR(L),F))                      LS048360
                                                                                             LS048370
                        C     HED                                                            LS048380
    10440  0100 CO 4 00001  MAPCAR TZE 1,4                                                   LS048390
    10441 -0634 CO 4 04161        SXD RET,4                                                  LS048400
    10442  0074 CO 4 03104        TSX $SAVE,4                                                LS048410
    10443 -3 04165 0 03165        TXL     $END3,,F+2          SAVE 3 ITEMS                   LS048420
    10444 -0600 CO 0 04163        STQ F                                                      LS048430
    10445  0601 CO 0 04162   MCPR  STO L                                                    LS048440

BINARY CARD NO. LISP0193
    10446 -0534 CO 4 04163        LXD F,4                                                    LS048450
    10447  3 00012 4 10452        TXH *+3,4,10                                               LS048460
    10450  0074 CO 4 04163        TSX F,4                                                    LS048470
    10451  0020 CO 0 10455        TRA *+4                                                    LS048480
    10452 -0634 CO 4 10454        SXD *+2,4                                                  LS048490
    10453  0074 CO 4 13000        TSX COMPAT,4                                               LS048500
    10454  0 00000 0 00001            1,,**                                                  LS048510
    10455 -0534 CO 4 04162        LXD L,4                                                    LS048520
    10456  0500 CO 4 00000        CLA 0,4                                                    LS048530
    10457 -0734 CO 4 00000        PDX ,4                                                     LS048540
    10460 -0754 CO 4 00000        PXD ,4                                                     LS048550
    10461 -0100 CO 0 10445        TNZ     MCPR                                               LS048560
    10462  0074 CO 4 03117   RTRN  TSX UNSAVE,4                                            LS048570
    10463 -0534 CO 4 04161        LXD RET,4                                                  LS048580
    10464  0020 CO 4 00001        TRA 1,4                                                    LS048590
                                       MAPCON(L,F)=                                        LS048600
                                       (L=0 YIELDS 0,,1 YIELDS NCONC(F(L),MAPCON(CDR(L),F)))LS048610
                        R     HED                                                          LS048620
    10465  0100 CO 4 00001  MAPCON TZE 1,4                                                 LS048630
    10466 -0634 CO 4 04164        SXD MCN5,4                                               LS048640
    10467  0074 CO 4 03104        TSX $SAVE,4                                              LS048650
    10470 -3 04171 0 03163        TXL     $END4,,MCN2+2       SAVE 4 ITEMS                 LS048660
    10471  0601 CO 0 04166        STO MCN3                                                 LS048670
    10472 -0600 CO 0 04165        STQ MCN4                                                 LS048680
    10473 -0534 CO 4 04165        LXD MCN4,4                                               LS048690

BINARY CARD NO. LISP0194
    10474  3 00012 4 10477        TXH *+3,4,10                                             LS048700
    10475  0074 CO 4 04165        TSX MCN4,4                                               LS048710
    10476  0020 CO 0 10502        TRA *+4                                                  LS048720
    10477 -0634 CO 4 10501        SXD *+2,4                                                LS048730
    10500  0074 CO 4 13000        TSX COMPAT,4                                             LS048740
    10501  0 00000 0 00001            1,,**                                              LS048750
    10502  0601 CO 0 04167        STO MCN2                                                 LS048760
    10503 -0534 CO 4 04166        LXD MCN3,4                                               LS048770
    10504  0500 CO 4 00000        CLA 0,4                                                  LS048780
    10505 -0320 CO 0 00514        ANA MCDM                                                 LS048790
    10506  0560 CO 0 04165        LDQ MCN4                                                 LS048800
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10507  0074 CO 4 10465          TSX MAPCON,4                                  LS048810
10510  0131 CO 0 00000          XCA                                           LS048820
10511  0500 CO 0 04167          CLA MCN2                                      LS048830
10512  0074 CO 4 03117          TSX UNSAVE,4                                  LS048840
10513 -0534 CO 4 04164          LXD MCN5,4                                    LS048850
10514  0020 CO 0 10515          TRA     $NCONC                                LS048860
                   00514  MCDM  SYN     $DMASK                                LS048870
                                FUNCTION NCONC                               LS048880
                                /    L1=0 YIELDS RETURN(L2)                  LS048890
                                     M=L1                                    LS048900
                                A2   CDR(M)=0 YIELDS GO A1                   LS048910
                                     M=CDR(M)                                LS048920
                                     GO A2                                   LS048930
                                A1   CDR(M)=L2                               LS048940
                                //   RETURN(L1)                              LS048950
                           R    HED                                          LS048960
10515 -0100 CO 0 10520   NCONC TNZ NCI1                                       LS048970
10516  0131 CO 0 00000          XCA                                           LS048980
10517  0020 CO 4 00001          TRA 1,4                                       LS048990
10520  0634 CO 4 10531   NCI1   SXA     NCS1,4          SAVE LINK IR          LS049000
10521  0601 CO 0 10533          STO NCS3                                      LS049010

BINARY CARD NO. LISP0195
10522 -0734 CO 4 00000    NCI2 PDX 0,4                                       LS049020
10523  0500 CO 4 00000         CLA 0,4                                       LS049030
10524 -0320 CO 0 00514         ANA NCDM                                      LS049040
10525 -0100 CO 0 10522         TNZ NCI2                                      LS049050
10526  0131 CO 0 00000         XCA                                           LS049060
10527  0622 CO 4 00000         STD 0,4                                       LS049070
10530  0500 CO 0 10533         CLA NCS3                                      LS049080
10531  0774 CO 4 00000   NCS1  AXT     **,4            RESTORE LINK IR       LS049090
10532  0020 CO 4 00001         TRA 1,4                                       LS049100
                   00514  NCDM  SYN     $DMASK                              LS049110
10533  0 00000 0 00000    NCS3                                               LS049120
                                REMPRP REMOVES THE PROPERTY GIVEN BY THE MQ FROM THE  LS049130
                                OBJECT GIVEN BY THE AC                       LS049140
10534 -0634 CO 4 10564  REMPRP SXD RMPRX,4                                   LS049150
10535 -0600 CO 0 04062         STQ $ARG2                                     LS049160
10536 -0534 CO 4 04062         LXD $ARG2,4                                   LS049170
10537 -0634 CO 4 10552         SXD RMPRT+1,4                                 LS049180
10540  1 77777 4 10541         TXI *+1,4,-1                                  LS049190
10541 -0634 CO 4 10551         SXD RMPRT,4                                   LS049200
10542 -0734 CO 4 00000         PDX 0,4                                       LS049210
10543  0020 CO 0 10546         TRA RMPR2                                     LS049220
10544  0500 CO 0 04062  RMPR1  CLA $ARG2                                     LS049230
10545  0601 CO 0 04063         STO $ARG3                                     LS049240
10546 -0634 CO 4 04062  RMPR2  SXD $ARG2,4                                   LS049250
10547  0500 CO 4 00000         CLA 0,4                                       LS049260

BINARY CARD NO. LISP0196
10550  0734 00 4 00000          PAX 0,4                                       LS049270
10551 -3 00000 4 10553   RMPRT TXL *+2,4,**                                  LS049280
10552 -3 00000 4 10557         TXL RMPRE,4,**                                LS049290
10553 -0734 CO 4 00000         PDX 0,4                                       LS049300
10554  3 00000 4 10544         TXH RMPR1,4,0                                 LS049310
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10555 -0534 00 4 10564   RMPRO LXD RMPRX,4                                    LS049320
10556  0020 00 4 00001          TRA 1,4                                       LS049330
10557 -0734 00 4 00000   RMPRE PDX 0,4                                        LS049340
10560  0500 00 4 00000          CLA 0,4                                       LS049350
10561 -0534 00 4 04063          LXD $ARG3,4                                   LS049360
10562  0622 00 4 00000          STD 0,4                                       LS049370
10563  0020 00 0 10546          TRA RMPR2                                     LS049380
10564  0 00000 0 00000   RMPRX                                               LS049390
                                                                             LS049400
                                                                             LS049410
                         PRINAR                                              LS049420
                                                                             LS049430
                         USES WOT AND PRINT                                  LS049440
                         CALLING SEQ IS..                                    LS049450
                                 TSX PRINAR,4                                LS049460
                                     NOARG                                   LS049470
                                     BCD2 NAME OF FUN                        LS049480
                                       (RETURN)                              LS049490
                         ARGUMENTS NOT ACCEPTABLE TO PRINT WILL CAUSE ERRORS LS049500
                * HAS BEEN CRIPPLED TO PRINT ONLY FIRST 2 ARGUMENTS          LS049510
                                                                             LS049520
                P       HED                                                  LS049530
10565  0634 00 4 10614  PRINAR SXA     PAS1,4          SAVE INDEX REGISTERS  LS049540
10566  0634 00 2 10615          SXA     PAS2,2                                LS049550
10567  0601 00 0 04202          STO PAS3                                      LS049560
10570 -0600 00 0 04203          STQ PAS4                                      LS049570
10571  0500 00 4 00002          CLA 2,4                                       LS049580
10572  0601 00 0 10621          STO PAL1                                      LS049590
10573  0500 00 4 00003          CLA 3,4                                       LS049600
10574  0601 00 0 10622          STO PAL2                                      LS049610
10575  0500 00 4 00001          CLA 1,4                                       LS049620

BINARY CARD NO. LISP0197
10576  0734 00 2 00000          PAX 0,2                                       LS049630
10577  0074 00 4 01527          TSX OUTPUT,4                                  LS049640
10600  0 00000 0 00365              BCDOUT                                    LS049650
10601  0 00011 0 10617              PAL3,,PAL4-PAL3                           LS049660
10602  0500 00 0 04202          CLA PAS3                                      LS049670
10603  0074 00 4 05342          TSX $PRINT,4                                  LS049680
10604 -2 00001 2 10607          TNX PAP3,2,1                                  LS049690
10605  0500 00 0 04203          CLA PAS4                                      LS049700
10606  0074 00 4 05342   PAP2   TSX $PRINT,4                                  LS049710
10607  0074 00 4 01527   PAP3   TSX OUTPUT,4                                  LS049720
10610  0 00000 0 00365              BCDOUT                                    LS049730
10611  0 00001 0 10630              PAL5,,1                                   LS049740
10612  0500 00 0 04202          CLA PAS3                                      LS049750
10613  0560 00 0 04203          LDQ PAS4                                      LS049760
10614  0774 00 4 00000   PAS1   AXT     **,4          RESTORE INDEX REGISYERS LS049770
10615  0774 00 2 00000   PAS2   AXT     **,2                                  LS049780
10616  0020 00 4 00004          TRA 4,4                                       LS049790
10617  006026644523      PAL3   BCD 20 FUNCTION                              LS049800
10620  633146456060
10621  0 00000 0 00000   PAL1                                                LS049810
10622  0 00000 0 00000   PAL2                                                LS049820
10623  603021626022             BCD 5 HAS BEEN ENTERED, ARGUMENTS..          LS049830
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BINARY CARD NO. LISP0198
    10624  252545602545
    10625  632551252473
    10626  602151276444
    10627  254563623333
    10630                      PAL4  BSS 0                    LS049840
    10630  606060606060        PAL5  BCD 1                    LS049850
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                        EJECT                                                                   LS049860
                                                                                                LS049870
                            PROP AND SASSOC                                                     LS049880
                            SPECIALIZED SEARCH ROUTINES WHICH SHARE STORAGE                     LS049890
                                                                                                LS049900
                     R      HED                                                                 LS049910
                                                                                                LS049920
                            PROP(C,P,U)                                                         LS049930
                             = (NULL(C) YIELDS U, CAR(C) = P YIELDS CDR(C),                     LS049940
                                 T YIELDS PROP(CDR(C),P,U))                                     LS049950
                                                                                                LS049960
10631  0634 CO 4 10705   PROP  SXA     SAST1,4              SAVE LINK IR                       LS049970
10632  0131 CO C 00000         XCA                          PROPERTY TO AC                     LS049980
10633  0622 CO 0 10644         STD SASP1                    SET TXH                            LS049990
10634  0402 CO 0 00476         SUB SASQ1                                                       LS050000
10635  0622 CO 0 10643         STD SASP2                    SET TXL                            LS050010
10636  0131 CO 0 00000         XCA                          OBJECT TO AC                       LS050020
10637 -0734 00 4 00000   SASL1 PDX 0,4                      L = CDR(L)                         LS050030
                               INSERT TXH INSTRUCTION HERE IF NILL IS NADE NON-ZERO             LS050040
10640 -3 00000 4 10650     *   TXL SASP3,4,0                NULL(L)                            LS050050
10641  0500 CO 4 00000         CLA 0,4                      CWR(L)                             LS050060
10642  0734 00 4 00000         PAX 0,4                      CAR(L)                             LS050070
10643 -3 00000 4 10637   SASP2 TXL SASL1,4,**                                                  LS050080
10644  3 00000 4 10637   SASP1 TXH SASL1,4,**                                                  LS050090
10645 -0320 00 0 00514         ANA SASDM                                                       LS050100
10646  0534 CO 4 10705         LXA     SAST1,4              RESTORE LINK IR                    LS050110
10647  0020 CO 4 00001         TRA 1,4                                                         LS050120
                                                                                               LS050130
10650 -0754 CO 0 00000   SASP3 PXD     0,0                  CLEAR                              LS050140
10651 -0534 CO 4 04063         LXD     $ARG3,4              INSPECT FUNCTIONAL ARGUMENT        LS050150

BINARY CARD NO. LISP0199
10652  3 00012 4 10655         TXH     *+3,4,10             SKIP IF NOT A TXL                  LS050160
10653  0534 CO 4 10705         LXA     SAST1,4                                                 LS050170
10654  0020 CO 0 04063         TRA     $ARG3                                                   LS050180
10655  0600 CO 0 04063         STZ     $ARG3                                                   LS050190
10656  0560 CO 0 04063         LDQ     $ARG3                                                   LS050200
10657 -0754 CO 4 00000         PXD     ,4                                                      LS050210
10660  0534 CO 4 10705         LXA     SAST1,4              RESTORE LINK IR                    LS050220
10661  0020 CO 0 15721         TRA     $APPLY                                                  LS050230
                                                                                               LS050240
                            SASSOC(C,A,U)                                                      LS050250
                             = (NULL(A) YIELDS U, CAAR(A) YIELDS  CAR(A),                      LS050260
                                 T YIELDS SASSOC(C,CDR(A),U))                                  LS050270
                                                                                               LS050280
10662  0634 CO 4 10705   SASSOC SXA     SAST1,4              SAVE LINK IR                       LS050290
10663  0634 CO 2 10704         SXA     SAST2,2              SAVE IR 2                          LS050300
10664  0634 CO 1 10702         SXA     SAST3,1              SAVE IR 1                          LS050310
10665  0622 CO 0 10701         STD SASP7                    SET TXH                            LS050320
10666  0402 CO 0 00476         SUB SASQ1                                                       LS050330
10667  0622 CO 0 10700         STD SASP6                    SET TXL                            LS050340
10670  0131 CO 0 00000         XCA                          PAIR LIST TO AC                    LS050350
10671 -0734 CO 4 00000         PDX     0,4                  TO INDEX 4                         LS050360
10672 -3 00000 4 10707   SASP5 TXL SASP4,4,0                NULL(A)                            LS050370
                               INSERT TXH INSTRUCTION HERE IF NILL IS NADE NON-ZERO             LS050380
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    10673  0500 CO 4 00000          CLA 0,4                 CWR(A)                          LS050390
    10674 -0734 CC 4 00000          PDX ,4                  CDR(A)                          LS050400
    10675  0734 CO 2 COOOO          PAX ,2                  CAR(A)                          LS050410
    10676  0500 CO 2 00000          CLA ,2                                                  LS050420
    10677  0734 CO 1 00000          PAX     0,1             CAAR(A) TO INDX REGISTER        LS050430

BINARY CARD NO. LISP0200
    10700 -3 00000 1 10672  SASP6 TXL     SASP5,1,**      LOOK FOR ITEM                   LS050440
    10701  3 00000 1 10672  SASP7 TXH     SASP5,1,**                                      LS050450
    10702  0774 00 1 00000  SAST3 AXT     **,1            FOUND ITEM, RESTORE IR 1        LS050460
    10703 -0754 00 2 00000          PXD     0,2             POINTER TO WORD                 LS050470
    10704  0774 CO 2 00000  SAST2 AXT     **,2            RESTORE IR 2                    LS050480
    10705  0774 CO 4 00000  SAST1 AXT     **,4            RESTORE LINK IR                 LS050490
    10706  0020 00 4 00001          TRA 1,4                                                 LS050500
                                                                                           LS050510
    10707  0534 CO 2 10704  SASP4 LXA     SAST2,2         RESTORE IR 2                    LS050520
    10710  0534 CC 1 10702          LXA     SAST3,1         RESTORE IR 1                    LS050530
    10711  0020 00 0 10650          TRA     SASP3           EXECUTE SASSOC EXIT             LS050540
                    00476  SASQ1 SYN     $QD1                                            LS050550
                    00514  SASDM SYN     $DMASK                                          LS050560
                                                                                           LS050570
    10712  0100 CO 4 00001  SPREAD TZE     1,4             EXIT IF AGLIST IS NULL          LS050580
    10713  0634 CO 4 10752          SXA     SPRX,4          SAVE LINK IR                    LS050590
    10714 -0734 CO 4 00000          PDX     0,4             POINTER TO ARG LIST             LS050600
    10715  0500 CO 4 00000          CLA     0,4             FIRST WORD                      LS050610
    10716  0560 CO 0 00424          LDQ     $ZERO           ZERO THE MQ                     LS050620
    10717 -0765 CO 0 00022          LGR     18              CAR TO CDR OF MQ                LS050630
    10720  0100 CC C 10751          TZE     NLY             GO IF A  SINGLE ARGUMENT        LS050640
    10721  0734 CO 4 00000          PAX     0,4             POINTER TO NEXT WORD            LS050650
    10722  0500 CO 4 00000          CLA     0,4             NEXT WORD                       LS050660
    10723  0734 CO 4 00000          PAX     0,4             POINTER TO ARGUMENT             LS050670
    10724 -0320 CO 0 00514          ANA     $DMASK          MASK OUT ALL BUT DECREMENT      LS050680
    10725  0100 CO 0 10750          TZE     TWA             GO IF 2 ARGUMENTS               LS050690

BINARY CARD NO. LISP0201
    10726 -0634 CO 4 04062          SXD     $ARG2,4         PUT AWAY                        LS050700
    10727  0634 CO 2 10746          SXA     SPRY,2          SAVE INDEX 1 AND 2              LS050710
    10730  0634 CO 1 10745          SXA     SPRZ,1                                          LS050720
    10731  0774 CO 1 00022          AXT     18,1            20 IS MAX NO OF ARGS            LS050730
    10732 -0734 00 4 00000          PDX     0,4             REST OF ARG LIST TO IR 4        LS050740
    10733 -3 00000 4 10745   SPP1   TXL     SPRZ,4,0        GO IF END OF LIST               LS050750
    10734  0500 CO 4 00000          CLA ,4                                                  LS050760
    10735 -0734 CO 4 00000          PDX ,4                                                  LS050770
    10736  0734 CO 2 00000          PAX ,2                                                  LS050780
    10737 -0754 00 2 00000          PXD ,2                                                  LS050790
    10740  0601 CO 1 04105          STO     $ARG20+1,1                                      LS050800
    10741  2 00001 1 10733          TIX SPP1,1,1                                            LS050810
    10742 -0634 CO 4 02313  SPPERR SXD     $ERROR,4                                        LS050820
    10743  0074 CO 4 02314          TSX $ERROR+1,4                                          LS050830
    10744  542160600754             BCI     1,*A  7*        TOO MANY ARGUMENTS---SPREAD*()  LS050840
                                                                                           LS050850
    10745  0774 CO 1 00000   SPRZ  AXT     **,1            RESTORE IR 1                    LS050860
    10746  0774 CO 2 00000   SPRY  AXT     **,2            DITTO IR 2                      LS050870
    10747 -0534 CO 4 04062          LXD     $ARG2,4         ARG 2                           LS050880
    10750 -0754 00 4 00000   TWA   PXD     0,4             PUT IN DECREMENT AC             LS050890
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 10751  0131 00 0 00000   NLY   XCA                        ARG 1 AND 2 TO RIGHT REGISTERS      LS050900
 10752  0774 00 4 00000   SPRX  AXT     **,4               RESTORE LINK IR                     LS050910
 10753  0020 00 4 00001         TRA     1,4                EXIT                                LS050920
                                                                                                LS050930
                          FUNCTION  ATTRIB(O,L)                                                 LS050940
                          ATTRIB(O,L)=/ CDR(O)=0 YIELDS (L REPLACES CDR(O))                     LS050950
                                       ELSE ATTRIB(CDR(O),L)  /                                 LS050960
                                                                                                LS050970
                     R    HED                                                                   LS050980

BINARY CARD NO. LISP0202
 10754   0634 00 4 10766  ATTRIB SXA AT1,4                                                      LS050990
 10755  -0100 00 0 10760         TNZ     ATRB               GO IF BEGINNING OF LIST             LS051000
 10756   0131 00 0 00000         XCA                        OTHERWISE EXIT WITH ARG 2           LS051010
 10757   0020 00 4 00001         TRA     1,4                                                    LS051020
 10760  -0734 00 4 00000   ATRB  PDX ,4                     O                                   LS051030
 10761   0500 00 4 00000         CLA ,4                                                         LS051040
 10762  -0320 00 0 00514         ANA DMASK                  CDR(O)                              LS051050
 10763  -0100 00 0 10760         TNZ ATRB                                                       LS051060
 10764   0131 00 0 00000         XCA                        ARG 2 TO AC                         LS051070
 10765   0622 00 4 00000         STD ,4                                                         LS051080
 10766   0774 00 4 00000  AT1   AXT **,4                                                       LS051090
 10767   0020 00 4 00001         TRA 1,4                                                        LS051100
                 00514    DMASK SYN     $DMASK                                                LS051110
                                                                                               LS051120
                                                                                               LS051130
                          NOT FUNCTION                                                         LS051140
                                                                                               LS051150
                     R    HED                                                                  LS051160
 1077C   0100 CC 0 10773   NOTS  TZE *+3                                                       LS051170
 10771  -0754 00 0 00000         PXD ,0                                                        LS051180
 10772   0020 00 4 00001         TRA 1,4                                                       LS051190
 10773   0500 00 0 00476         CLA NOTC1                                                     LS051200
 10774   0020 00 4 00001         TRA 1,4                                                       LS051210
                 00476    NOTC1 SYN     $QD1                                                  LS051220
                                                                                               LS051230
                          THE RPLACX FUNCTIONS  REPLACE THE X PART OF THE FIRST ARG            LS051240
                          WITH THE SECOND ARGUMENT                                             LS051250
                          THE VALUE OF RPLACA,RPLACD, AND RPLACW IS ZERO                       LS051260
                     S    HED                                                                  LS051270
 10775   0634 00 4 11002  RPLACA SXA REPL,4                                                    LS051280
 10776  -0734 00 4 00000         PDX 0,4                                                       LS051290
 10777  -0763 00 0 00022         LGL 18                                                        LS051300
 11000   0621 00 4 00000         STA 0,4                                                       LS051310
 11001  -0754 00 4 00000   RPLEX PXD     0,4               ARG1 TO AC AS ANSWER                LS051320

BINARY CARD NO. LISP0203
 11002   0774 00 4 00000   REPL  AXT     **,4              RESTORE LINK IR                     LS051330
 11003   0020 00 4 00001         TRA 1,4                                                       LS051340
 11004   0634 00 4 11002  RPLACD SXA REPL,4                                                   LS051350
 11005  -0734 00 4 00000         PDX 0,4                                                       LS051360
 11006  -0620 00 4 00000         SLQ 0,4                                                       LS051370
 11007   0020 00 0 11001         TRA     RPLEX              EXIT                                LS051380
 1101C   0634 00 4 11002  RPLACW SXA REPL,4                                                   LS051390
 11011  -0734 00 4 00000         PDX 0,4                                                       LS051400
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11012 -0600 CC 4 00000          STQ 0,4
11013  0020 CC 0 11001          TRA     RPLEX           EXIT                    LS051410
                                                                               LS051420
                                                                               LS051430
                                                                               LS051440
                                OBJECT GENERATOR                               LS051450
                                                                               LS051460
11014  0634 CC 4 11065  GENSYM  SXA     GENX,4          SAVE LINK IR            LS051470
11015 -0500 CC 0 11070          CAL     DIGIT                                  LS051480
11016  0114 06 0 06125          CVR     BCDAD1,0,6                             LS051490
11017 -0130 CC 0 00000          XCL                                            LS051500
11020 -0600 CC 0 11070          STQ     DIGIT                                  LS051510
11021  0754 CC 0 00000          PXA     0,0                                    LS051520
11022  0774 CC 4 00001  QUANT   AXT     1,4                                    LS051530
11023 -3 00000 4 11027          TXL     GENA,4,0                               LS051540
11024  3 00005 4 11047          TXH     GENB,4,5                               LS051550
                        *                                                      LS051560
11025 -0773 CC 0 00006          RQL     6                                      LS051570
11026  2 00001 4 11025          TIX     *-1,4,1                                LS051580
                        *                                                      LS051590
11027  0634 CC 2 11046  GENA    SXA     GENQ,2                                 LS051600

BINARY CARD NO. LISP0204
11030  0534 CC 2 11022          LXA     QUANT,2                                LS051610
11031  0534 CC 4 11022          LXA     QUANT,4                                LS051620
                        *                                                      LS051630
11032  1 00001 4 11033  GEND    TXI     *+1,4,1                                LS051640
11033 -0763 CC 0 00006          LGL     6                                      LS051650
11034 -0100 CC 0 11036          TNZ     GENE                                   LS051660
11035 -3 00005 4 11032          TXL     GEND,4,5                               LS051670
                        *                                                      LS051680
11036  3 00005 4 11042  GENE    TXH     GENF,4,5                               LS051690
11037 -0763 CC 0 00006          LGL     6                                      LS051700
11040  1 00001 2 11041          TXI     *+1,2,1                                LS051710
11041  1 00001 4 11036          TXI     GENE,4,1                               LS051720
                        *                                                      LS051730
11042  0560 CC 0 00525  GENF    LDQ     SEVENS                                 LS051740
11043  3 00004 2 11046          TXH     GENQ,2,4                               LS051750
11044 -0763 CC 0 00006          LGL     6                                      LS051760
11045  1 00001 2 11043          TXI     GENF+1,2,1                             LS051770
                        *                                                      LS051780
11046  0774 CC 2 00000  GENQ    AXT     0,2                                    LS051790
11047 -0501 CC 0 11067  GENB    ORA     LETTR                                  LS051800
11050 -0130 CC 0 00000          XCL                                            LS051810
11051  0131 CC 0 00000          XCA                                            LS051820
11052  0074 CC 4 04451          TSX $CONSW,4                                   LS051830
11053  0560 CC 0 00424          LDQ GENZ                                       LS051840
11054  0074 CC 4 04471          TSX $CONS,4                                    LS051850
11055  0560 CC 0 00424          LDQ GENZ                                       LS051860

BINARY CARD NO. LISP0205
11056  0074 CC 4 04471          TSX $CONS,4                                    LS051870
11057  0131 CC 0 00000          XCA                                            LS051880
11060  0500 CC 0 00541          CLA GENPN                                      LS051890
11061  0074 CC 4 04471          TSX $CONS,4                                    LS051900
11062  0131 CC 0 00000          XCA                                            LS051910
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11063  0500 CC 0 00514          CLA     GENC                                    LS051920
11064  0074 CC 4 04471          TSX     $CONS,4                                 LS051930
11065  0774 CC 4 00000   GENX   AXT     **,4            RESTORE LINK IR         LS051940
11066  CC20 CO 4 00001          TRA 1,4                                         LS051950
                00424    GENZ   SYN     $ZERO                                   LS051960
                00541    GENPN  SYN     PNAMED                                  LS051970
                00514    GENC   SYN     $DMASK                                  LS051980
11067  270000000000      LETTR  BCI     1,G00000                                LS051990
1107C  000000000000      DIGIT  BCI     1,000000                                LS052000
                        *                                                       LS052010
                        *                                                       LS052020
                        *       SYMNAM ALLOWS SPECIFICATION OF A HEADING WORD OF FROM 0 TO 6   LS052030
                        *     CHARACTERS FOR THE SYMBOLS GENERATED BY GENSYM.   LS052040
                        *                                                       LS052050
                        *                                                       LS052060
11071  0634 CC 2 11126  SYMNAM SXA    GENL+1,2                                 LS052070
11072  0634 CO 4 11127          SXA    GENL+2,4                                 LS052080
11073  0100 CO 0 11132          TZE    GENN                                     LS052090
11074  0560 CO 0 00541          LDQ    GENPN                                    LS052100
11075  0074 CO 4 12762          TSX    C$GET,4                                  LS052110
11076 -0734 CO 4 00000          PDX    0,4                                      LS052120
11077  0500 CO 4 00000          CLA    0,4                                      LS052130
11100  0734 CO 4 00000          PAX    0,4                                      LS052140
11101  0560 CO 4 00000          LDQ    0,4                                      LS052150
11102  0774 OO 2 00000          AXT    0,2                                      LS052160
11103  0754 OO 0 00000  GENM    PXA    0,0                                      LS052170

BINARY CARD NO. LISP0206
11104 -0763 CO 0 00006          LGL    6                                        LS052180
11105  0402 CO 0 00447          SUB    $QQ77                                    LS052190
11106  0100 CO 0 11111          TZE    GENP                                     LS052200
11107  3 00005 2 11111          TXH    GENP,2,5                                 LS052210
11110  1 00001 2 11103          TXI    GENM,2,1                                 LS052220
                        *                                                       LS052230
11111  0634 CO 2 11022  GENP    SXA    QUANT,2                                  LS052240
11112  0560 CO 4 00000          LDQ    0,4                                      LS052250
11113  0754 CO 0 00000          PXA    0,0                                      LS052260
11114 -0763 CO 0 00006          LGL    6                                        LS052270
11115  2 00001 2 11114          TIX    *-1,2,1                                  LS052280
                        *                                                       LS052290
11116  0535 CO 2 11022          LAC    QUANT,2                                  LS052300
11117  1 00006 2 11120          TXI    *+1,2,6                                  LS052310
11120  0560 CO 0 00424          LDQ    GENZ                                     LS052320
11121 -3 00000 2 11124          TXL    *+3,2,0                                  LS052330
11122 -0763 CO 0 00006          LGL    6                                        LS052340
11123  2 00001 2 11122          TIX    *-1,2,1                                  LS052350
11124  0602 CO 0 11067          SLW    LETTR                                    LS052360
11125  0600 CO 0 11070  GENL    STZ    DIGIT                                    LS052370
11126  0774 OO 2 00000          AXT    **,2                                     LS052380
11127  0774 CO 4 00000          AXT    **,4                                     LS052390
11130  0754 CO 0 00000          PXA    0,0                                      LS052400
11131  0020 CO 4 00001          TRA    1,4                                      LS052410
                        *                                                       LS052420
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BINARY CARD NO. LISP0207
    11132 -0754 CO 0 00000  GENN   ZAC                                          LS052430
    11133  0621 CO 0 11022         STA   QUANT                                  LS052440
    11134  0601 CO 0 11067         STO   LETTR                                  LS052450
    11135  0020 CO 0 11125         TRA   GENL                                   LS052460
                           *                                                    LS052470
                           *                                                    LS052480
                           *     FUNCTION TO SET MODE TO TS OR NO               LS052490
                           *     TYPEIN(X) TURNS OFF TS MODE IF X IS NIL-- OTHERWISE, TS MODE LS052500
                           *     IS ACTIVATED.  WHEN INTS MODE, LISP SIGNIFICANTLY LS052510
                           *     ABBREVIATES ITS OUTPUT.                        LS052520
                           *                                                    LS052530
                           *                                                    LS052540
    11136  0601 CO 0 00615  TIMEST STO     $TSIND                              LS052550
    11137  0020 CO 4 00001         TRA     1,4                                 LS052560
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                              TTL   OVERLORD                                                          LS052570
                         *                                                                          LS052580
                         * OVERLORD     THE TAPE HANDLING SECTION OF LISP. RECODED 20 FEBRUARY      LS052590
                         *              1961 BY D. J. EDWARDS.                                      LS052600
                         *                                                                          LS052610
                         * OVERLORD DIRECTION CARDS ARE PUNCHED IN FAP FORMAT WITH THE VARIABLE      LS052620
                         *              FIELD BEGINNING IN COLUMN 16. DIRECTION CARDS ARE           LS052630
                         *       ONE    (USE NO TAPES FOR THIS RUN)                                 LS052640
                         *       SET    ( SAVE RESULTS ON SYSTMP IF NO ERROR OCCURS)                LS052650
                         *       TST    (GET NEW CORE IMAGE AFTER OPERATION)                        LS052660
                         *       TEST   (SAME AS ABOVE)                                             LS052670
                         *       FIN    (ALL DONE, STOP MACHINE OR RETURN TO A HIGHER MONITOR)      LS052680
                         *       SETSET (AVE RESULTS ON SYSTMP NO MATTER WHAT)                      LS052690
                         *       DEBUG  (SAME AS TEST BUT OBJECTLIST IS NOT SAVED AFTER READ IN)    LS052700
                         *       SIZE   N1,N2,N3,N4  (GIVES SIZE OF BINPRG, PPDL, FWS AND FREE)     LS052710
                         *       TAPE   SYSXXX,A7  (ASSIGNS SYSXXX TO UNIT A 7)                     LS052720
                         *       DUMP   BEG,END,TYPE   (MAKES OCTAL DUMP ON SYSPOT ACCORDING TO     LS052730
                         *                              TYPE. 0 FOR STRAIGHT OCTAL, NON-ZERO FOR    LS052740
                         *                              LISP (COMPLEMENT) DUMP.)                    LS052750
                         *       REMARK (LOG AS DIRECTION CARD AND LOKK FOR NEXT DIRECTION CARD)    LS052760
                         *                                                                          LS052770
                         *                                                                          LS052780
                   11140 CVRLRD SYN   *                                                             LS052790
11140  0074 CO 4 01170          TSX   $INPUT,4                                                       LS052800
11141  0 00000 0 00000                $BCDIN          FROM BCD INPUT TAPE                           LS052810
11142  0 00016 0 00577                OVBUF,,14       PUT IN OVERLORD CARD BUFFER                   LS052820
11143  0020 CO 0 11171          TRA   OVERR           ERROR RETURN                                  LS052830
11144  0020 CO 0 11377          TRA   OVEOF          END OF FILE RETURN                            LS052840
11145  0522 CO 0 01721          XEC   $SLT1           ERROR                                         LS052850
11146  0020 CO 0 11150          TRA   *+2             NO                                            LS052860
11147  0522 CO 0 01715          XEC   $SLN2           YES, TURN ON MASTER ERROR IND                 LS052870
11150 -0500 CO 0 12167          CAL   OVSPC           SET SPACING CONTROL                           LS052880
11151  0602 CO 0 00576          SLW   OVCC                                                          LS052890
11152  0560 CO 0 00601 OVGOR    LDQ   OVBUF+2         PICK UP OVERLORD DIRECTION                    LS052900
11153 -0500 CO 0 00600          CAL   OVBUF+1                                                       LS052910
11154 -0763 00 0 00006          LGL   6               SHIFT DIRECTION IN LOGICAL AC                 LS052920
11155  0774 CO 4 00036          AXT   OVTBL-OVDCB,4   TWICE NUMBER OF CARDS                        LS052930
11156 -0340 CO 4 11252 OVSRC    LAS   OVTBL,4         LOOK UP DIRECTION                             LS052940
11157  0020 CO 0 11161          TRA   *+2             NOT THIS ONE                                  LS052950

BINARY CARD NO. LISP0208
11160  0020 CO 0 11175          TRA   OVPNT           FOUND IT GO PRINT CARD                        LS052960
11161  2 00002 4 11156          TIX   OVSRC,4,2       TRY AGAIN                                     LS052970
11162  3 00000 0 11140 OVBSW    TXH   OVRLRD,,0       NOT IN TABLE, PRINT FIRST BAD CARD            LS052980
11163  0502 CO 0 11162          CLS   OVBSW           AND GET NEXT CARD.                            LS052990
11164  0601 CO 0 11162          STO   OVBSW           FLIP SWITCH                                   LS053000
11165  0074 CO 4 01527          TSX   OUTPUT,4        PRINT CARD OUT                                LS053010
11166 -0 00000 0 00365          MZE   BCDOUT          ON BCD OUTPUT TAPE, AND ON LINE               LS053020
11167  0 00017 0 00576                OVBUF-1,,15                                                  LS053030
11170  0020 CO 0 11140          TRA   OVRLRD          GET NEXT CARD                                 LS053040
                         *                                                                          LS053050
11171  0074 CO 4 01527 OVERR    TSX   OUTPUT,4        WRITE ERROR MESSAGE                           LS053060
11172  0 00000 0 00365                BCDOUT                                                       LS053070
11173  0 00011 0 11276                OVRDM,,9                                                     LS053080
11174  0020 CO 0 11152          TRA   OVGOR           TRY TO MAKE SENSE OUT OF CARD                 LS053090
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                                *                                                                   LS053100
    11175  0500 CO 0 11162   OVPNT CLA     OVBSW          RESTORE PRINT SWITCH TO TXH             LS053110
    11176  0602 CO 0 11162          SLW     OVBSW                                                  LS053120
    11177  0500 CO 4 11253          CLA     OVTBL+1,4      PICK UP TRA ADDRESS AND SAVE IT         LS053130
    11200  0621 CO 0 11213          STA     OVTRA                                                  LS053140
    11201  0074 CO 4 00415          TSX     FIXUPL,4       GET LOW MEMORY SET UP                   LS053150
    11202  0074 CO 4 01527          TSX     OUTPUT,4       PRINT DIRECTION CARD                    LS053160
    11203 -0 COOCO 0 00365          MZE     BCDOUT         ON BCD OUTPUT TAPE, AND ON LINE         LS053170
    11204  0 00017 0 00576                  OVBUF-1,,15                                            LS053180
    11205  0140 CO 0 11206          TOV     *+1            TURN OFF AC OVERFLOW LIGHT              LS053190

BINARY CARD NO. LISP0209
    11206  0441 CO 0 11254          LDI     SYSIND         PICK UP SYSTEM INDICATORS               LS053200
    11207  0057 CO  000014          RIR     14             RESET ERROR AND DEBIG INDICATORS        LS053210
    11210  0520 CO 0 00615          ZET     $TSIND         IF TS                                   LS053220
    11211  0057 CO  000200          RIR     NOBACT         NO BACKTRACE                            LS053230
    11212  0604 CO 0 11254          STI     SYSIND                                                 LS053240
    11213  0020 CO 0 00000   OVTRA  TRA     **             EXECUTE SPECIFIC OVERLORD PROGRAM       LS053250
                  000010   ERRORI BOOL    10             ERROR INDICATOR                         LS053260
                                *                                                                  LS053270
                                *       DIRECTION CARD TABLE                                       LS053280
                    11214   OVDCB  SYN     *                                                      LS053290
    11214  464525606060             BCI     1,ONE                                                 LS053300
    11215  0020 CO 0 11436          TRA     OVONE                                                  LS053310
    11216  622563606060             BCI     1,SET                                                 LS053320
    11217  0020 CO 0 11353          TRA     OVSET                                                  LS053330
    11220  636263606060             BCI     1,TST                                                 LS053340
    11221  0020 CO 0 11325          TRA     OVTST                                                  LS053350
    11222  632562636060             BCI     1,TEST                                                LS053360
    11223  0020 CO 0 11325          TRA     OVTST                                                  LS053370
    11224  263145606060             BCI     1,FIN                                                 LS053380
    11225  0020 CO 0 11374          TRA     OVDN                                                   LS053390
    11226  623171256060             BCI     1,SIZE                                                LS053400
    11227  0020 CO 0 11442          TRA     OVSZE                                                  LS053410
    11230  622563622563             BCI     1,SETSET                                              LS053420
    11231  0020 CO 0 11341          TRA     OVSST                                                  LS053430
    11232  242522642760             BCI     1,DEBUG                                               LS053440
    11233  0020 CO 0 11324          TRA     OVDBG                                                  LS053450

BINARY CARD NO. LISP0210
    11234  632147256060             BCI     1,TAPE                                                LS053460
    11235  0020 CO 0 12004          TRA     OVTAP                                                  LS053470
    11236  246444476060             BCI     1,DUMP                                                LS053480
    11237  0020 CO 0 11504          TRA     OVDMP                                                  LS053490
    11240  512544215142             BCI     1,REMARK                                              LS053500
    11241  0020 CO 0 11140          TRA     OVRLRD                                                 LS053510
    11242  243162426060             BCI     1,DISK                                                LS053520
    11243  0020 CO 0 11140          TRA     OVSCR                                                  LS053530
    11244  622351216323             BCI     1,SCRATC                                              LS053540
    11245  0020 CO 0 11140          TRA     OVSCR                                                  LS053550
    11246  456763622351             BCI     1,NXTSCR                                              LS053560
    11247  0020 CO 0 11140          TRA     OVFSCR                                                 LS053570
    11250  434621246060             BCI     1,LOAD                                                LS053580
    11251  0020 CO 0 11140          TRA     OVLD                                                   LS053590
    11252  0 00000 0 00000   OVSVI                         TEMPORARY STORAGE FOR INDICATORS        LS053600
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                    11252   OVTBL SYN     OVSVI                FOR INDEXING DIRECTION CARD TABLE     LS053610
    11253 -1 00000 0 00000  OVIND STR                          PRESET FOR LISP INDICATORS            LS053620
    11254  0 00000 0 00000 SYSIND                              SYSTEM INDICATORES GO HERE            LS053630
    11255  002551514651      OVCEM BCI     7,0ERROR IN SIZE CARD -OVERLORD-  *0 1*                  LS053640
    11256  603145606231
    11257  712560232151
    11260  246040466525
    11261  514346512440

BINARY CARD NO. LISP0211
    11262  606054006001
    11263  546060606060
    11264  002163632544      OVNSM BCI     9,0ATTEMPT TO OPERATE BEFORE SIZE CARD READ -OVERLORD-  LS053650
    11265  476360634660
    11266  464725512163
    11267  256022252646
    11270  512560623171
    11271  256023215124
    11272  605125212460
    11273  404665255143
    11274  465124406060
    11275  605446600354            BCI     1, *0 3*                                                LS053660
    11276  002551514651      OVRDM BCI     9,0ERROR ON INPUT, BUT GOING ON ANYHOW -OVERLORD- *0  5* LS053670
    11277  604645603145
    11300  476463736022
    11301  646360274631
    11302  452760464560
    11303  214570304666
    11304  604046652551
    11305  434651244060
    11306  544660600554
    11307  002545246046       OVALF BCI     4,0END OF LISP JOB.                                     LS053680

BINARY CARD NO. LISP0212
    11310  266043316247
    11311  604146223360
    11312  606060606060
    11313  006346605125     OVDNPT BCI    8,0TO RESTART LISP, PRESS RESET AND PUSH START           LS053690
    11314  626321516360
    11315  433162477360
    11316  475125626260
    11317  512562256360
    11320  214524604764
    11321  623060626321
    11322  516360606060
    11323  0 00004 0 00601   OVPOS         OVBUF+2,,4          BEGINNING OF VARIABLE FIELD IN DIR CRDLS053700
                            *                                                                       LS053710
                            *      DEBUG   OVERLORD DIRECTION                                       LS053720
    11324  0055 00  000004  OVDBG  SIR     4                   SET BEBUG INDICATOR                 LS053730
                            *                                  PREFORM OVTST                       LS053740
                            *                                                                      LS053750
                            *                                                                      LS053760
                            *      TEST OR TST OVERLORD DIRECTION                                   LS053770
    11325  0056 00  000020   OVTST RNT     20                  TEST FOR SETUP                      LS053780
    11326  0020 00 0 11500          TRA     OVNSZ               ERROR FOR NOO SIZE CARD HAS BEEN READ LS053790
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    11327  0057 CO  000100          RIR     TAPIND              RESET TAPE INDICATOR                    LS053800
    11330  0054 CO  000002          RFT     2                   WRITE TEST                              LS053810
    11331  0074 CO 4 01006          TSX     TAPDMP,4            DUMP ON SYSTMP                          LS053820
    11332  0054 CO  000001          RFT     1                   TEST FOR NEW CORE IMAGE                 LS053830
    11333  0074 CO 4 01024          TSX     CVLT,4              GET ONE                                 LS053840
    11334  0055 CO  000001          SIR     1                   SET READ INDICATOR                      LS053850
    11335  0057 CO  000002          RIR     2                   TURN OFF WRITE INDICATOR                LS053860

BINARY CARD NO. LISP0213
    11336  0604 CO 0 11254   OVTA   STI     SYSIND              UPDATE SYSTEM INDICATORS                LS053870
    11337  0074 CO 4 12224          TSX     $EVALQ,4            PERFORM THE EVAL QUOTE OPERATOR         LS053880
    11340  0020 CO 0 11140          TRA     OVRLRD              GET NEXT OVERLORD DIRECTION CARD        LS053890
                  000004   DEBUGI  BOOL    4                   DEBUG INDICATOR                         LS053900
                           *                                                                            LS053910
                           *       SETSET DIRECTION CARD                                                LS053920
    11341  0056 CO  000020   OVSST  RNT     20                  TEST FOR SIZE                           LS053930
    11342  0020 CO 0 11500          TRA     OVNSZ               ERROR, NO SIZE                          LS053940
    11343  0057 CO  000100          RIR     TAPIND              RESET TAPE INDICATOR                    LS053950
    11344  0054 CO  000002          RFT     2                   TEST FOR SAVE CORE                      LS053960
    11345  0074 CO 4 01006          TSX     TAPDMP,4            SAVE IT                                 LS053970
    11346  0054 CO  000001          RFT     1                   TEST FOR NEW IMAGE                      LS053980
    11347  0074 CO 4 01024          TSX     CVLT,4              GET ONE                                 LS053990
    11350  0055 CO  000002          SIR     2                   SET WRITE INDICATOR                     LS054000
    11351  0057 CO  000001          RIR     1                   RESET READ INDICATOR                    LS054010
    11352  0020 CO 0 11336          TRA     OVTA                PERFORM EVALQ AND GET NEXT CARD         LS054020
                           *                                                                            LS054030
                           *       SET     OVERLORD DIRECTION                                           LS054040
    11353  0056 CO  000020   OVSET  RNT     20                  TEST FOR SIZE                           LS054050
    11354  0020 CO 0 11500          TRA     OVNSZ               ERROR, NO SIZE CARD                     LS054060
    11355  0057 CO  000100          RIR     TAPIND              RESET TAPE INDICATOR                    LS054070
    11356  0054 CO  000002          RFT     2                   CHECK WRITE INDICATOR                   LS054080
    11357  0074 CO 4 01006          TSX     TAPDMP,4            DUMP ON SYSTMP                          LS054090
    11360  0054 CO  000001          RFT     1                   TEST FOR NEW CORE IMAGE                 LS054100
    11361  0074 CO 4 01024          TSX     CVLT,4              GET ONE FROM SYSTMP                     LS054110
    11362  0055 CO  000002          SIR     2                   SET WRITE INDICATOR                     LS054120
    11363  0057 CO  000001          RIR     1                   RESET READ INDICATOR                    LS054130

BINARY CARD NO. LISP0214
    11364  0604 CO 0 11254          STI     SYSIND              UPDATE SYSTEM INDICATORS                LS054140
    11365  0074 CO 4 12224          TSX     $EVALQ,4            EVALUATE SET                            LS054150
    11366  0441 CO 0 11254          LDI     SYSIND              GET SYSTEM INDICATORS                   LS054160
    11367  0056 CO  000010          RNT     10                  TEST ERROR INDICATOR                    LS054170
    11370  0020 CO 0 11140          TRA     OVRLRD              OFF, GET NEXT DIRECTION CARD            LS054180
    11371  0051 CO  000003          IIR     3                   ON, INVERT READ AND WRITE INDICATORS    LS054190
    11372  0604 CO 0 11254          STI     SYSIND                                                      LS054200
    11373  0020 CO 0 11140          TRA     OVRLRD              GET NEXT DIRECTION CARD                 LS054210
                           *                                                                            LS054220
                           *       FIN     OVERLORD DIRECTION CARD                                      LS054230
                           *                                                                            LS054240
                  11374    OVDN   SYN     *                                                            LS054250
    11374  0074 CO 4 01527          TSX   OUTPUT,4                                                     LS054260
    11375 -0 00000 0 00365          MZE   BCDOUT                                                       LS054270
    11376  0 00010 0 11313                OVDNPT,,8                                                   LS054280
    11377  0074 CO 4 01527   OVEOF  TSX     OUTPUT,4            PRINT END OF JOB.                       LS054290
    11400  0 00000 0 00365                BCDOUT                                                      LS054300
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11401  0 00004 0 11307                    CVALF,,4                                                    LS054310
11402  0054 00  000002          RFT       2                                                           LS054320
11403  0074 00 4 01006  CVEOFP  TSX TAPDMP,4      DUMP CORE ON SYSTMP                                 LS054330
11404  0057 00  000002  OVFUP   RIR       2       RESET WRITE INDICATOR                               LS054340
11405  0057 00  000100          RIR       TAPIND  RESET TAPE INDICATOR                                LS054350
11406  0500 00 0 00364          CLA       SYSPPT  IF SYSPPT = SYSPOT,                                 LS054360
11407  0402 00 0 00365          SUB       SYSPOT  EOF FOR SYSPOT                                      LS054370
11410  0100 00 0 11416          TZE       *+6     IS ENOUGH                                           LS054380
11411  0056 00  000040          RNT       PPTIND  SEE IF PUNCH TAPE USED                              LS054390

BINARY CARD NO. LISP0215
11412  0020 00 0 11416          TRA       *+4     SKIP IF NOT USED                                    LS054400
11413  0500 00 0 00364          CLA       SYSPPT  TAPE SPEC.                                          LS054410
11414  0074 00 4 00277          TSX       $(IOS),4  SET UP I-O COMMANDS                               LS054420
11415  0522 00 0 00354          XEC       $WEF    WRITE EOF ON PPT                                    LS054430
11416  0057 00  000040          RIR       PPTIND  RESET INDICATOR                                     LS054440
11417  0604 00 0 11254          STI       SYSIND  UPDATE SYSTEM INDICATORS                            LS054450
11420  0500 00 0 00365          CLA       SYSPOT  TAPE SPEC.                                          LS054460
11421  0074 00 4 00277          TSX       $(IOS),4  SET UP I-O COMMANDS                               LS054470
11422  0522 00 0 00354          XEC       $WEF    WRITE EOF ON  SYSPOT                                LS054480
11423  0774 00 7 77777          AXT     -1,7                                                          LS054490
11424  0500 00 0 11435          CLA       OVTOV   PICK UP RESTART INSTRUCTION                         LS054500
11425  0601 00 0 00000          STO       0       STORE IN ZERO                                       LS054510
11426 -0754 00 0 00000          PXD       0,0     LIGHT THE PANEL                                     LS054520
11427  0760 00 0 00006          COM                                                                   LS054530
11430 -0765 00 0 00045          LGR       37                                                          LS054540
11431  0760 00 0 00006          COM                                                                   LS054550
11432 -0760 00 0 00003          SSM                                                                   LS054560
11433  0420 00 7 77777          HPR       -1,7    STOP                                                LS054570
11434  0020 00 0 11433          TRA       *-1     PRESS RESET AND START TO RESTART LISP               LS054580
11435  0020 00 0 11140  OVTOV   TRA       OVRLRD  TRANSFER TO GET NEXT DIRECTION CARD                 LS054590
                000040  PPTIND BOOL      40      PUNCH TAPE INDICATOR                                LS054600
                        *                                                                             LS054610
                        *       ONE       OVERLORD DIRECTION                                          LS054620
                        *                                                                             LS054630
11436  0056 00  000020  OVONE  RNT       20      TEST FOR SIZE                                       LS054640
11437  0020 00 0 11500          TRA       OVNSZ   ERROR, NO SIZE CARD READ                            LS054650

BINARY CARD NO. LISP0216
11440  0057 00  000003          RIR       3       RESET READ AND WRITE INDICATORS                     LS054660
11441  0020 00 0 11336          TRA       OVTA    SAVE INDICATORS AND DO EVAL Q                       LS054670
                        *                                                                             LS054680
                        *       SIZE    N1,N2,N3,N4       (OVERLORD DIRECTION CARD)                   LS054690
                        *       N1 = LENGTH OF BINARY PROGRAM, N2 = LENGTH OF PUBLIC PUSH DOWN      LS054700
                        *       LIST, N3 = LENGTH OF FULL WORD SPACE, N4 = LENGTH OF FREE STORAGE   LS054710
                        *                                                                             LS054720
11442  0054 00  000002  OVSZE  RFT       2       TEST FOR DUMP OF CURRENT CORE IMAGE                 LS054730
11443  0074 00 4 01006          TSX       TAPDMP,4  DUMP ON SYSTMP                                    LS054740
11444  0500 00 0 11323          CLA       OVPOS   SET TO TRANSLATE NUMBERS ON SIZE CARD               LS054750
11445  0074 00 4 07450          TSX       $NUMBR,4  LENGTH OF BINARY PROGRAM                          LS054760
11446  0100 00 0 11471          TZE       OVCER   ERROR IF ZERO                                       LS054770
11447 -0600 00 0 03066          STQ       LBINPG  SAVE NUMBER                                         LS054780
11450  0074 00 4 07450          TSX       $NUMBR,4  LENGTH OF PUBLIC PUSH DOWN LIST                   LS054790
11451  0100 00 0 11471          TZE       OVCER   ZERO IS ERROR                                       LS054800
11452 -0600 00 0 03067          STQ       LPBPDL  SAVE NUMBER                                         LS054810
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11453  0074 CC 4 07450          TSX     $NUMBR,4        LENGTH OF FULL WORD SPACE                    LS054820
11454  0100 CC 0 11471          TZE     OVCER           ZERO IS ERROR                                LS054830
11455 -0600 CC 0 03070          STQ     LFULWS          SAVE NUMBER                                  LS054840
11456  0074 CC 4 07450          TSX     $NUMBR,4        LENGTH OF FREE STORAGE                       LS054850
11457  0100 CC 0 11471          TZE     OVCER           ZERO IS ERROR                                LS054860
11460 -0600 CC 0 03071          STQ     LFREES          SAVE NUMBER                                  LS054870
11461  0074 CC 4 02661          TSX     $SETUP,4        PERFORM SETUP                                LS054880
11462  0441 CC 0 11254          LDI     SYSIND          SYSTEM INDICATORS                            LS054890
11463  0054 CC  000010          RFT     10              TEST FOR ERROR IN SETUP                      LS054900
11464  0020 CC 0 11471          TRA     OVCER           YES, DO ERROR PROCEDURE                      LS054910
11465  0055 CC  000022          SIR     22              SET SIZE AND WRITE INDICATORS                LS054920

BINARY CARD NO. LISP0217
11466  0057 CC  000001          RIR     1               RESET READ INDICATOR                         LS054930
11467  0604 CC 0 11254          STI     SYSIND          UPDATE SYSTEM INDICATORS                     LS054940
11470  0020 CC 0 11140          TRA     OVRLRD          GET NEXT DIRECTION CARD                      LS054950
                        *                                                                            LS054960
11471  0441 CC 0 11254  OVCER   LDI     SYSIND          GETT SYSTEM INDICATORS                       LS054970
11472  0055 CC  000001          SIR     1               CONVERSION ERROR IN SIZE, SET READ INDICATOLS054980
11473  0604 CC 0 11254          STI     SYSIND          UPDATE SYSTEM INDICATORS                     LS054990
11474  0074 CC 4 01527          TSX     OUTPUT,4        WRITE ERROR MESSAGE                          LS055000
11475 -0 00CCC 0 00365          MZE     BCDOUT          ON BCD OUTPUT TAPE AND ONLINE                LS055010
11476  0 00007 0 11255                  OVCEM,,7                                                     LS055020
11477  0020 CC 0 11140          TRA     OVRLRD          GET NEXT DIRECTION CARD                      LS055030
                        *                                                                            LS055040
11500  0074 CC 4 01527  OVNSZ   TSX     OUTPUT,4        WRITE ERROR MESSAGE                          LS055050
11501 -0 00000 0 00365          MZE     BCDOUT          ON BCD OUTPUT TAPE AND ONLINE                LS055060
11502  0 00012 0 11264                  OVNSM,,10                                                    LS055070
11503  0020 CC 0 11140          TRA     OVRLRD          GET NEXT DIRECTION CARD                      LS055080
                        *                                                                            LS055090
                        *       DUMP    BEGINNING,END,N    (OVERLORD DIRECTION)                      LS055100
                        *               ALSO AVAILABLE TO LISP                                       LS055110
                        *               BEGINNING IS A NUMBER TO START DUMP AT, END A NUMBER         LS055120
                        *               (MEANING OBVIOUS) AND N IS A NUMBER IF ZERO GIVES A          LS055130
                        *               STRAIGHT OCTAL DUMP AND IF NON-ZERO GIVES A COMPLEMENT       LS055140
                        *               (LISP TYPE) DUMP.                                            LS055150
                        *                                                                            LS055160
11504  0634 CC 4 11636  OVDMP   SXA     OVDX,4          SAVE INDEX REGISTERS                         LS055170
11505  0634 CC 2 11637          SXA     OVDY,2                                                       LS055180
11506  0634 CC 1 11640          SXA     OVDZ,1                                                       LS055190
11507  0600 CC 0 11750          STZ     OVDEX           INDICATE OVERLORD ENTRANCE                   LS055200
11510  0601 CC 0 11633          STO     OVDC            SAVE AC                                      LS055210
11511 -0600 CC 0 11634          STQ     OVDQ            SAVE MQ                                      LS055220
11512  0604 CC 0 11635          STI     OVDI            SAVE SI                                      LS055230
11513  0500 CC 0 11323          CLA     OVPOS           POSITION OF VARIABLE FIELD                   LS055240

BINARY CARD NO. LISP0218
11514  0074 CC 4 07450          TSX     $NUMBR,4        BEGGINNING OF DUMP                           LS055250
11515  0100 CC 0 11700          TZE     ODER            ERROR IN CONVERSION                          LS055260
11516 -0120 CC 0 11712          TMI     OVENK           IF FLOATING POINT NUMBER, LOOK AT KEYS       LS055270
11517 -0600 CC 0 11752          STQ     OBEG                                                         LS055280
11520  0074 CC 4 07450          TSX     $NUMBR,4        NUMBER TO END DUMP AT                        LS055290
11521 -0600 CC 0 11753          STQ     OEND                                                         LS055300
11522  0100 CC 0 11700          TZE     ODER            CONVERSION ERROR                             LS055310
11523  0074 CC 4 07450          TSX     $NUMBR,4        TYPE OF DUMP                                 LS055320
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11524 -0600 CO 0 11756          STQ     OLISD                                                   LS055330
11525  0100 CO 0 11700          TZE     ODER        CONVERSION ERROR                            LS055340
11526  0500 CO 0 11753  OVGE   CLA     OEND        END DUMP NUMBER                             LS055350
11527  0400 CO 0 00425          ADD     $Q1                                                     LS055360
11530  0621 CO 0 11551          STA     OLDQ        SET ADDRESS                                 LS055370
11531  0402 CO 0 11752          SUB     OBEG        GIVES COUNT OF WORDS TO BE DUMPED           LS055380
11532 -0120 CO 0 11700          TMI     ODER        NEGATIVE NUMBER YIELDS ERROR                LS055390
11533  0734 CO 1 00000          PAX     0,1         COUNT IN INDEX 1                            LS055400
11534  0534 CO 4 11752          LXA     OBEG,4      GET BEGINNING                               LS055410
11535  1 77772 4 11536          TXI     *+1,4,-6    DECREMENT BY 6 (NUMBER OF WORDS /LINE)      LS055420
11536 -0634 CO 4 11752          SXD     OBEG,4      PUT IN DECREMENT FOR OCTAL CONVERSION       LS055430
11537  0020 CO 0 11576          TRA     OVDSH       START THE DUMP                              LS055440
                        *                                                                       LS055450
11540 -0500 CO 0 11746  OAXT1  CAL     OVDSF       PICK UP STAR FLAG                           LS055460
11541  0602 CO 0 11761  OAXT   SLW     OUP+1       PUT STARS OR BLANKS IN LINE                 LS055470

BINARY CARD NO. LISP0219
11542  0774 CO 2 00022          AXT     18,2        SET IR 2                                    LS055480
11543  0500 CO 0 11752          CLA     OBEG        BEGININNING OF LINE                         LS055490
11544  0400 CO 0 00501          ADD     $QD6        6 WORDS PER LINE                            LS055500
11545  0622 CO 0 11752          STD     OBEG        UPDATE LINE NUMBER                          LS055510
11546  0131 CO 0 00000          XCA                 NUMBER TO MQ                                LS055520
11547  0074 CO 4 11731          TSX     OCTLP,4     CONVERT TO OCTAL                            LS055530
11550  0602 CO 0 11760          SLW     OUP         BEGIN OUTPUT LINE                           LS055540
11551 -0500 CO 1 00000  OLDQ   CAL     **,1        PICK UP WORD TO BE DUMPED                   LS055550
11552  0100 CO 0 11601          TZE     OSTZ        EASY IF ALL ZERO                            LS055560
11553 -0625 CO 0 11747          STL     OVDZS       INDICATE SOMETHING NON-ZERO DUMPED          LS055570
11554  0520 CO 0 11756          ZET     OLISD       SKIP IF STRAIGHT DUMP                       LS055580
11555  0020 CO 0 11603          TRA     OLID        DO LISP DUMP                                LS055590
11556 -0130 CO 0 00000  ODXCL  XCL                 NUMBER TO MQ                                LS055600
11557  0074 CO 4 11731          TSX     OCTLP,4     CONVERT LEFT HALF                           LS055610
11560  0602 CO 2 12004          SLW     OUP+20,2    PUT IN OUTPUT LINE                          LS055620
11561  0074 CO 4 11731          TSX     OCTLP,4     CONVERT RIGHT HALF                          LS055630
11562  0560 CO 0 00527  OBQ    LDQ     BLANKS      BLANKS TO MQ                                LS055640
11563 -0765 CO 0 00006          LGR     6           MAKE A HOLE                                 LS055650
11564 -0501 CO 0 00506          ORA     OBLANK      INSERT ONE BLANK                            LS055660
11565  0602 CO 2 12005          SLW     OUP+21,2    PUT IN OUTPUT LINE                          LS055670
11566 -0600 CO 2 12006          STQ     OUP+22,2    DITTO                                       LS055680
11567 -2 00001 1 11623          TNX     OVDFN,1,1   EXIT IF DONE                               LS055690

BINARY CARD NO. LISP0220
11570  2 00003 2 11551          TIX     OLDQ,2,3    LOOP 6 TIMES                                LS055700
11571 -0520 CO 0 11747          NZT     OVDZS       SKIP IF NOT ALL ZEROS                       LS055710
11572  0020 CO 0 11540          TRA     OAXT1       GO BACK AND GET STAR FLAG FOR ZEROS         LS055720
11573  0074 CO 4 01527          TSX     OUTPUT,4    WRITE LINE OF DUMP                          LS055730
11574  0 00000 0 00365                  BCDOUT      ON BCDOUT                                   LS055740
11575  0 00024 0 11760                  OUP,,20                                                 LS055750
11576  0600 CO 0 11747  OVDSH STZ     OVDZS       SET SWITCH TO TEST FOR LINE OF ZEROS        LS055760
11577 -0500 CO 0 00527          CAL     BLANKS      BLANK THE FLAG FIELD                        LS055770
11600  0020 CO 0 11541          TRA     OAXT        GET NEXT LINE                               LS055780
                        *                                                                       LS055790
11601  0600 CO 2 12004  OSTZ   STZ     OUP+20,2    IF ZERO PUT ZERO S IN OUTPUT LINE           LS055800
11602  0020 CO 0 11562          TRA     OBQ         GO AS IF CONVERTED                          LS055810
                        *                                                                       LS055820
11603  0602 CO 0 11755  OLID   SLW     ODLT        LISP TYPE (COMPLEMENT) DUMP                 LS055830
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11604 -0320 CC 0 11757          ANA     CLDM            MASK OUT ALL BUT TAG AND PREFIX         LS055840
11605  0100 CC 0 11610          TZE     ODC             TRANSFER IF LISP                        LS055850
11606 -0500 CC 0 11755          CAL     ODLT            HAS PREFIX AND/OR TAG, DUMP STRAIGHT    LS055860
11607  0020 CC 0 11556          TRA     ODXCL           GO TO NORMAL DUMP                       LS055870
11610 -0535 CC 4 11755  ODC     LDC     ODLT,4          COMPLEMENT DECREMENT                    LS055880
11611 -0634 CC 4 11755          SXD     ODLT,4          STORE                                   LS055890
11612  0535 CC 4 11755          LAC     ODLT,4          COMPLEMENT ADDRESS                      LS055900
11613  0634 CC 4 11755          SXA     ODLT,4          STORE                                   LS055910
11614  0560 CC 0 11755          LDQ     ODLT            PUT IN MQ                               LS055920
11615  0074 CC 4 11731          TSX     OCTLP,4         CONVER LEFT HALF                        LS055930

BINARY CARD NO. LISP0221
11616 -0501 CC 0 11754          ORA     ODSAR           OR IN A *                               LS055940
11617  0602 CC 2 12004          SLW     OUP+20,2        PUT IN OUTPUT LINE                      LS055950
11620  0074 CC 4 11731          TSX     OCTLP,4         CONVERT RIGHT HALF                      LS055960
11621 -0501 CC 0 11754          ORA     ODSAR           PUT IN *                                LS055970
11622  0020 CC 0 11562          TRA     OBQ             PUT AWAY AS USUAL                       LS055980
                        *                                                                       LS055990
11623 -2 00003 2 11627  OVDFN   TNX     OVDLL,2,3       SKIP IF LINE FILLED OUT                 LS056000
11624 -0500 CC 0 00527          CAL     BLANKS          GET BLANKS IN AC                        LS056010
11625  0602 CC 2 12004          SLW     OUP+20,2        BLANK REST OF LINE                      LS056020
11626  2 00001 2 11625          TIX     *-1,2,1                                                 LS056030
11627  0074 CC 4 01527  OVDLL   TSX     OUTPUT,4        WRITE LAST OUTPUT LINE                  LS056040
11630  0 00000 0 00365                  BCDOUT                                                  LS056050
11631  0 00024 0 11760                  OUP,,20                                                 LS056060
11632  0020 CC 0 11636          TRA     OVDX            GO TO EXIT                              LS056070
                        *   FOLLOWING 6 SELLS CONTAIN AC, MQ , SI, AND IR S  UPON DUMP ENTRANCE LS056080
11633  0 00000 0 00000  OVDC                            AC CONTENTS                             LS056090
11634  0 00000 0 00000  OVDQ                            DITTO MQ                                LS056100
11635  0 00000 0 00000  OVDI                            DITTO SI                                LS056110
11636  0774 CC 4 00000  OVDX    AXT     **,4            RESTORE INDEX REGISTERS                 LS056120
11637  0774 CC 2 00000  OVDY    AXT     **,2                                                    LS056130
11640  0774 CC 1 00000  OVDZ    AXT     **,1                                                    LS056140
11641  0520 CC 0 11750          ZET     OVDEX           TEST FOR LISP OR OVERLORD EXIT          LS056150
11642  0020 CC 4 00001          TRA     1,4             LISP EXIT                               LS056160
11643  0520 CC 0 11751          ZET     OVDEK           TEST FOR ENK MODE                       LS056170

BINARY CARD NO. LISP0222
11644  0020 CC 0 11712          TRA     OVENK           GO TO KEEYS                             LS056180
11645  0020 CC 0 11140          TRA     OVRLRD          GO BACK FOR NEXT DIRECTION CARD         LS056190
                        *                                                                       LS056200
11646  0634 CC 4 11636  DUMPXX  SXA     OVDX,4          LISP ENTRANCE                           LS056210
11647  0634 CC 2 11637          SXA     OVDY,2          SAVE INDEX REGISTERS                    LS056220
11650  0634 CC 1 11640          SXA     OVDZ,1                                                  LS056230
11651 -0625 CC 0 11750          STL     OVDEX           SET FOR LISP EXIT                       LS056240
11652  0622 CC 0 11750          STD     OVDEX           SAVE ARG1                               LS056250
11653 -0600 CC 0 11753          STQ     OEND                                                    LS056260
11654  0500 CC 0 04064          CLA     $ARG4           PICK UP ID FOR DUMP                     LS056270
11655  0074 CC 4 05342          TSX     $PRINT,4        PRINT IT                                LS056280
11656 -0534 CC 2 11750          LXD     OVDEX,2         ARG 1                                   LS056290
11657  0074 CC 4 14065          TSX     FIXVAL,4        EVALUATE AS FIXED POINT NUMBER          LS056300
11660  0601 CC 0 11752          STO     OBEG            STORE IN BEGINNING                      LS056310
11661 -0534 CC 2 11753          LXD     OEND,2                                                  LS056320
11662  0074 CC 4 14065          TSX     FIXVAL,4        EVALUATE AS FIXED POINT NUMBER          LS056330
11663  0601 CC 0 11753          STO     OEND                                                    LS056340
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     11664 -0534 CC 2 04063          LXD     $ARG3,2          ARG 3                                  LS056350
     11665  0074 CC 4 14065          TSX     FIXVAL,4         EVALUATE AS FIXED POINT NUMBER         LS056360
     11666  0601 CC 0 11756          STO     OLISD                                                   LS056370
     11667  0020 CC 0 11526          TRA     OVGE             EXECUTE DUMP                           LS056380
                                 *                                                                   LS056390
     11670  0634 CC 4 11636  DUMPYY  SXA     OVDX,4                                                  LS056400
     11671  0634 CC 2 11637          SXA     OVDY,2                                                  LS056410

BINARY CARD NC. LISP0223
     11672  0634 CC 1 11640          SXA     OVDZ,1                                                  LS056420
     11673 -0625 CC 0 11750          STL     OVDEX                                                   LS056430
     11674 -0600 CC 0 11753          STQ     OEND                                                    LS056440
     11675  0601 CC C 11752          STO     OBEG                                                    LS056450
     11676  0600 CC 0 11756          STZ     OLISD                                                   LS056460
     11677  0020 CC 0 11526          TRA     OVGE                                                    LS056470
                                 *                                                                   LS056480
     11700  0074 CC 4 01527   ODER   TSX     OUTPUT,4          WRITE ERROR MESSAGE                   LS056490
     11701 -0 00000 0 00365          MZE     BCDOUT           ON BCD OUTPUT TAPE AND ONLINE          LS056500
     11702  0 00006 0 11704                  ODBAD,,6                                                LS056510
     11703  0020 CC 0 11636          TRA     OVDX             RESTORE AND EXIT                       LS056520
     11704  002221246024      ODBAD BCI     6,0BAD DUMP ARGUMENTS -OVERLORD- *0 4*                  LS056530
     11705  644447602151
     11706  276444254563
     11707  626040466525
     11710  514346512440
     11711  605446600454
                                 *                                                                   LS056540
                                 *                                                                   LS056540
DI   11712  0420 77 7 77777   OVENK HPR     -1,7,63          STOP FOR KEYS                          LS056550
     11713  0760 CC 0 00004          ENK                      PUT KEYS IN MQ                         LS056560
     11714 -0754 CC 0 00000          PXD     0,0              CLEAR AC                               LS056570
     11715 -0763 00 0 00001          LGL     1                TYPE OF DUMP IN SIGN BIT               LS056580
     11716  0601 CC 0 11756          STO     OLISD            PUT AWAY                               LS056590
     11717 -0754 CC 0 00000          PXD     0,0              CLEAR AC                               LS056600

 BINARY CARD NO. LISP0224
     11720 -0763 CC 0 00021          LGL     17               BEGINNING                              LS056610
     11721  0601 CC 0 11752          STO     OBEG                                                    LS056620
     11722 -0754 00 0 00000          PXD     0,0              CLEAR AC                               LS056630
     11723 -0763 CC 0 00022          LGL     18               END                                    LS056640
     11724  0601 CC 0 11753          STO     OEND                                                    LS056650
     11725  0601 CC 0 11751          STO     CVDEK            SET SWITCH ON EXIT                     LS056660
     11726  0600 CC C 11750          STZ     OVDEX            SET OVERLORD EXIT                      LS056670
     11727  0100 CC 0 11636          TZE     OVDX             EXIT ON ZERO REGUEST                   LS056680
     11730  0020 CC 0 11526          TRA     OVGE             PROCESS DUMP                           LS056690
                                 *                                                                   LS056700
     11731 -0754 CC 0 00000   OCTLP PXD     0,0              CONVERT LEFT HALF OF MQ TO OCTAL       LS056710
     11732 -0763 CC 0 00003          LGL     3                CLEAR AC AND DO SHIFT DANCE            LS056720
     11733  0767 CC 0 00003          ALS     3                                                       LS056730
     11734 -0763 CC 0 00003          LGL     3                                                       LS056740
     11735  0767 CC 0 00003          ALS     3                                                       LS056750
     11736 -0763 CC 0 00003          LGL     3                                                       LS056760
     11737  0767 CC 0 00003          ALS     3                                                       LS056770
     11740 -0763 00 0 00003          LGL     3                                                       LS056780
     11741  0767 CC 0 00003          ALS     3                                                       LS056790
     11742 -0763 CC 0 00003          LGL     3                                                       LS056800
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    11743  0767 CO 0 00003          ALS     3                                                  LS056810
    11744 -0763 CO 0 00003          LGL     3                                                  LS056820
    11745  0020 CO 4 00001          TRA     1,4             EXIT                               LS056830
                                    *                                                          LS056840
                     11731  OCTALP  SYN     OCTLP                                              LS056850
                     01024   OVLT   SYN     OVLTXX                                             LS056860

BINARY CARD NO. LISP0225
    11746  605454545460      OVDSF  BCI     1, ****         STAR FLAG AFTER DUMPING ZEROS      LS056870
    11747  0 00000 0 00000   OVDZS                          SUPRESSES OUTPUT WHEN DUMPING ZEROS LS056880
    11750  0 00000 0 00000   OVDEX                          ZERO FOR OVERLORD EXIT NON-ZERO , LISPLS056890
    11751  0 00000 0 00000   OVDEK                          TEST CELL NON-ZERO FOR ENK MODE    LS056900
    11752  0 00000 0 00000   OBEG                           BEGIN DUMP                         LS056910
    11753  0 00000 0 00000   OEND                           END DUMP                           LS056920
    11754  540000000000      ODSAR  BCI     1,*00000        A * FOR COMPLEMENT DUMPING         LS056930
    11755  0 00000 0 00000   ODLT                           TEMPORARY STORAGE                  LS056940
    11756  0 00000 0 00000   OLISD                          NON-ZERO FOR LISP TYPE DUMP        LS056950
    11757 -3 00000 7 00000   OLDM   SVN     ,4+2+1          MASK FOR TAG AND PREFIX            LS056960
    11760  606060606060      OUP    BCI     2,              BLANKS FOR BEGINNING OF OUT PUT LINE LS056970
    11761  606060606060
    11762                             BSS     18              ROOM FOR REST OF LINE              LS056980
                                    *                                                          LS056990
                                    *                                                          LS057000
                                    *       TAPE    SYSXXX,A6       (OVERLORD DIRECTION CARD)  LS057010
                                    *               SYSTAP, SYSTMP, SYSPIT AND SYSPOT ARE CURRENTLY LS057020
                                    *               RECOGINIZED LISP TAPES. UNIT DESIGNATION IS BY CHANNEL LS057030
                                    *               (A, B, OR C) AND NUMBER (1 THRU 10).       LS057040
                                    *                                                          LS057050

BINARY CARD NO. LISP0226
    12004  0634 CO 4 12124   OVTAP  SXA     OVTPX,4         SAVE INDEX REGISTERS               LS057060
    12005  0634 CO 2 12125          SXA     OVTPY,2                                            LS057070
    12006  0634 CO 1 12126          SXA     OVTPZ,1                                            LS057080
    12007  0074 CO 4 12207          TSX     OVTPR,4                                            LS057090
    12010  0774 CO 4 00005          AXT     5,4             NUMBER OF ENTRIES IN TAPE TABLE    LS057100
    12011 -0500 CO 0 00601          CAL     OVBUF+2                                            LS057110
    12012  0560 CO 0 00602          LDQ     OVBUF+3         GET TAPE DESIGNATION IN AC AND MQ  LS057120
    12013 -0763 CO 0 00023          LGL     19              SHIFT INTO AC                      LS057130
    12014 -0765 CO 0 00001          LGR     1               DUMPING Q BIT                      LS057140
    12015 -0340 CO 4 12142   OVLA   LAS     OVTTB,4         COMPARE WITH TAPE TABLE            LS057150
    12016  0020 CO 0 12020          TRA     *+2             NOT THIS ONE                       LS057160
    12017  0020 CO 0 12042          TRA     OVTAA           THIS IS IT                         LS057170
    12020  2 00001 4 12015          TIX     OVLA,4,1        TRY AGAIN                          LS057180
    12021  0602 CO 0 12030   OVCMP  SLW     OVTRM           NOT FOUND, COMPLAIN                LS057190
    12022  0074 CO 4 01527          TSX     OUTPUT,4                                           LS057200
    12023  0 00000 0 00365                  BCDOUT                                             LS057210
    12024  0 00014 0 12026                  OVTRN,,12                                          LS057220
    12025  0020 CO 0 11140          TRA     OVRLRD          GET NEXT DIRECTION CARD            LS057230
    12026  006062465151      OVTRN  BCI     2,0 SORRY,                                         LS057240
    12027  707360606060
    12030  0 00000 0 00000   OVTRM                                                           LS057250
    12031  603162604546             BCI     9, IS NOT A VALID LISP TAPE DESIGNATION -OVERLORD- *0 2* LS057260
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BINARY CARD NO. LISP0227
    12032  636021606521
    12033  433124604331
    12034  624760632147
    12035  256024256231
    12036  274521633146
    12037  45604C466525
    12040  514346512440
    12041  605446600254
    12042 -0773 00 0 00006  CVTAA  RQL     6          DUMP THE COMMA                          LS057270
    12043 -0754 00 0 00000         PXD     0,0        CLAER AC                                LS057280
    12044 -0763 00 0 00006         LGL     6          CHANELL LETTER IN AC                    LS057290
    12045  0044 00 0 00000         PAI                IN INDICATORS                           LS057300
    12046  0774 00 2 00003         AXT     3,2        TRY CHAN. C                             LS057310
    12047  0056 00  000003         RNT     3          SKIP IF C                               LS057320
    12050  0774 00 2 00002         AXT     2,2        TRY B                                   LS057330
    12051  0056 00  000002         RNT     2          SKIP IF B OR C                          LS057340
    12052  0774 00 2 00001         AXT     1,2        IF NO SKIP, MUST BE A                   LS057350
    12053 -0763 00 0 00006         LGL     6          TAPE NUMBER IN AC                       LS057360
    12054 -0320 00 0 00453         ANA     $QO17      MASK OUT ALL BUT 4 LOW ORDER BITS       LS057370
    12055  0441 00 0 00603         LDI     CVBUF+4    NEXT WORD IN INDICATORS                 LS057380
    12056 -0054 00  770000         LFT     770000     SKIP IF LEFT MOST CHARACTER IS A 0      LS057390
    12057  0020 00 0 12061         TRA     *+2                                                LS057400

BINARY CARD NO. LISP0228
    12060  0400 00 0 00435         ADD     $Q9        IF LEFT MOST IS 0 ADD 9 TO THE 1        LS057410
    12061  0734 00 1 00000         PAX     0,1        RESULT TO INDEX 1                       LS057420
    12062 -3 00000 1 12064         TXL     *+2,1,0    ZERO UNIT DOES NOT GO                   LS057430
    12063 -3 00012 1 12073         TXL     CVTPS,1,10 UNITS OVER TEN DON T GO                 LS057440
    12064  0500 00 0 00527         CLA     BLANKS     OVER 10, COMPLAIN                       LS057450
    12065  0560 00 0 00602         LDQ     CVBUF+3                                            LS057460
    12066 -0773 00 0 00030         RQL     24         POSITION TAPE DESIG                     LS057470
    12067 -0763 00 0 00014         LGL     12                                                 LS057480
    12070  0560 00 0 00603         LDQ     CVBUF+4                                            LS057490
    12071 -0763 00 0 00006         LGL     6          ALL IN AC                               LS057500
    12072  0020 00 0 12021         TRA     CVCMP      GO COMPLAIN                             LS057510
    12073 -0501 00 4 12147  CVTPS  ORA     CVTCT,4    OR IN BIN OR BCD FOR THAT TAPE          LS057520
    12074 -0501 00 2 12152         ORA     CVCHN,2    OR IN PROPER CHANEL DESIGNATION         LS057530
    12075  0602 00 4 00371         SLW     TAPASG,4   CHANGE TAPE ASSIGNMENT                  LS057540
    12076  0560 00 4 12142         LDQ     CVTTB,4    MAKE OUTPUT MESSAGE BY GETTING NAME     LS057550
    12077 -0600 00 0 12133         STQ     CVTPO      PUT INTO MESSAGE                        LS057560
    12100  3 00001 4 12115         TXH     CVTXX,4,1  SKIP FOLLOWING IF NOT SYSTAP            LS057570
    12101  0500 00 0 00370         CLA     SYSTAP                                             LS057580
    12102  0074 00 4 00277         TSX     $(IOS),4   SET UP I-O COMMANDS FOR SYSTAP          LS057590
    12103  0560 00 0 00360         LDQ     $TCO       MAKE PROPER SYSTEM CALL CARD            LS057600
    12104 -0620 00 0 00145         SLQ     BOTTOM+1   AND SET UP BOOT STRAP RECORD            LS057610
    12105  0560 00 0 00351         LDQ     $RDS                                               LS057620

BINARY CARD NO. LISP0229
    12106 -0600 00 0 12173         STQ     GCRDB                                              LS057630
    12107  0560 00 0 00362         LDQ     $RCH                                               LS057640
    12110 -0620 00 0 12174         SLQ     GCRDC                                              LS057650
    12111  0560 00 0 00363         LDQ     $LCH                                               LS057660
    12112 -0620 00 0 12176         SLQ     GCRDD                                              LS057670
    12113  0766 00 0 01341         WPUA                       PUCH OUT THE 2 CARD CALLER      LS057680
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    12114  0540 CO 0 12202          RCHA    GCIOC                CHANNEL COMMANDS                              LS057690
    12115  0500 CO 2 12155   OVTXX  CLA     CVCLT,2              TELL WHAT YOU HAVE DONE BY MAKING             LS057700
    12116 -0501 CO 1 12167          ORA     CVCTN,1              A MESSAGE                                     LS057710
    12117  0621 CO 0 12130          STA     OVTPP                                                              LS057720
    12120  0625 CO 0 12130          STT     OVTPP                                                              LS057730
    12121  0074 CO 4 01527          TSX     OUTPUT,4             PRINT OUT THE NEW ASSIGNMENT                  LS057740
    12122  0 00000 0 00365                  BCDOUT                                                             LS057750
    12123  0 00005 0 12130                  OVTPP,,5                                                           LS057760
    12124  0774 CO 4 00000   OVTPX AXT     **,4                 RESTORE INDEX REGISTERS                       LS057770
    12125  0774 CO 2 00000   OVTPY AXT     **,2                                                               LS057780
    12126  0774 CO 1 00000   OVTPZ AXT     **,1                                                               LS057790
    12127  0020 CO 0 11140          TRA     OVRLRD               GET NEXT DIRECTION CARD                       LS057800
    12130  006060000000      OVTPP BCI     3,0  000IS NOW LISP                                                LS057810
    12131  316260454666
    12132  604331624760
    12133  000000C00000      OVTPO BCI     2,000000.                                                          LS057820

BINARY CARD NO. LISP0230
    12134  336060606060
                             *     TABLES FOR OVTAP                                                          LS057830
    12135  627062474763            BCI     5,SYSPPTSYSPOTSYSPITSYSTMPSYSTAP                                  LS057840
    12136  627062474663
    12137  627062473163
    12140  627062634447
    12141  627062632147
    12142  0 00000 0 00000   OVTTB PZE                           LOW DENS, BCD PPT                          LS057850
    12143  0 00000 0 00000          PZE                         LOW DENS, BCD PIT                          LS057860
    12144  0 00000 0 00000          PZE                         LOW DENS, BCD POT                          LS057870
    12145  0 00000 0 00020          PZE     16                  HI DENS, BIN TMP                           LS057880
    12146  0 00000 0 00020          PZE     16                  HI DENS, BIN TMP                           LS057890
    12147  0 00003 0 03200   OVTCT PZE     3*512+2*64,,3       CHANNEL C                                  LS057900
    12150  0 00002 0 02200          PZE     2*512+2*64,,2       B                                          LS057910
    12151  0 00001 0 01200          PZE     1*512+2*64,,1       A                                          LS057920
    12152  000000230000      OVCHN BCI     3,000C00000B00000A00                                               LS057930
    12153  000000220000
    12154  000000210000
    12155  000000000100      OVCLT BCI     9,00001000000900008 00007 00006 00005 00004 00003 00002           LS057940
    12156  000000001160
    12157  000000001060
    12160  000000000760
    12161  000000000660

BINARY CARD NO. LISP0231
    12162  000000000560
    12163  000000000460
    12164  000000000360
    12165  000000000260
    12166  000000000160             BCI     1,00001                                                        LS057950
    12167                   OVCTN BSS     0                                                                  LS057960
    12167  006060606060     CVSPC BCI     1,0                 SPACING FOR CC PRINT                       LS057970
                            *                                                                              LS057980
                            *                                                                              LS057990
                            * SYSTEM CALL CARD PERFORMS A LOAD TAPE SEQUENCE ON THE SYSTAP                  LS058000
                            *                                                                              LS058010
    12170  0 00006 0 00011   GCRD  IOCD    9,,6                                                           LS058020
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12171  0060 CC 0 00001          TCOA   1                                        LS058030
12172  0021 CC 0 00011          TTR    9                                        LS058040
12173  0762 CC 0 01221  GCRDB  RTBA   1        SELECT THE SYSTEM TAPE          LS058050
12174  0540 CC 0 00016  GCRDC  RCHA   14                                       LS058060
12175  0600 CC 0 00001          STZ    1        STOP IF TAPE DOES NOT LOAD      LS058070
12176  0544 CC 0 00000  GCRDD  LCHA   0        LOAD I-O COMMAND FROM TAPE      LS058080
12177  0021 CC 0 00001          TTR    1        TRANSFER TO ONE                 LS058090
12200 -1 00003 0 00000          IOCT   0,,3     LOAD FIRST 3 WORDS FROM TAPE    LS058100
                       *                       SECOND CARD OF CALLER           LS058110
12201  0000 CC 0 00371  GCRDE  HTR    CONTIN   BECOMES A TRANSFER CARD         LS058120
                       *                       I-O COMMANDS TO PUNCH CALL CARDS LS058130
12202  2 00011 0 12170  GCIOC  IORP   GCRD,,9                                   LS058140
12203  2 00001 0 12201          IORP   GCRDE,,1  TRANSFER CARD                  LS058150
12204  2 00000 0 12206          IORP   *+2,,0    2 BLANK CARDS                  LS058160
12205  2 00000 0 12206          IORP   *+1,,0                                   LS058170
12206  0 00000 0 00000          IOCD   0,,0      DISCONNECT CHANNEL             LS058180
                       *                                                       LS058190
                000100  TAPIND BOOL   100                                      LS058200
                       *                                                       LS058210
                       *                                                       LS058220
                       *                                                       LS058230
                       *       OVERLORD TAPE AND DISK ASSIGNMENT CHANGE RITUAL LS058240
                       *                                                       LS058250
12207  0634 CC 4 00575  CVTPR  SXA    OVTX4,4                                  LS058260

BINARY CARD NC. LISP0232
12210  0054 CC  000100          RFT    TAPIND   SKIP IF LAST CARD WAS NOT A TAPE CARD LS058270
12211  0020 CC 0 12220          TRA    OVTJJ    SKIP READ AND WRITE SECTION    LS058280
12212  0054 CC  000002          RFT    2        TEST FOR TAPE DUMP ON SYSTMP   LS058290
12213  0074 CC 4 01006          TSX    TAPDMP,4 DO IT                          LS058300
12214  0054 CC  000001          RFT    1        TEST FOR READ                  LS058310
12215  0074 CC 4 01024          TSX    OVLT,4   GET NEW IMAGE                  LS058320
12216  0057 CC  000001          RIR    1        RESET READ INDICATOR           LS058330
12217  0055 CC  000002          SIR    2        SET WRITE INDICATOR            LS058340
12220  0055 CC  000100  OVTJJ  SIR    TAPIND   SET TAPE DIRECTION INDICATOR    LS058350
12221  0604 CC 0 11254          STI    SYSIND   UPDATE SYSTEM INDICATORS       LS058360
12222  0534 CC 4 00575          LXA    OVTX4,4  MIKE REALLY WAS RIGHT          LS058370
12223  0020 CC 4 00001          TRA    1,4                                     LS058380
                       *                                                       LS058390
                       *                                                       LS058400
                       *       OVERLORD DISK ROUTINES FOR TAPE LISP            LS058410
                       *                                                       LS058420
                11140  CVSCR   SYN    OVRLRD                                   LS058430
                11140  CVFSCR  SYN    OVRLRD                                   LS058440
                11140  CVLD    SYN    OVRLRD                                   LS058450
                       *                                                       LS058460
                       *                                                       LS058470
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                                        TTL   EVALQUOTE                                                          LS058480
                                        HEAD  S                                                                  LS058490
                                    *                                                                            LS058500
                                    *                                                                            LS058510
                                    *       EVALQ   A SUCCESSOR TO THE APPLY OPERATOR, THE GRAND NEW             LS058520
                                    *               (AS OF 1 MARCH 1961) THE EVALQUOTE OPERATOR.                 LS058530
                                    *                                                                            LS058540
 12224   0634 CC 4 12342   EVALQ SXA     EVLQX,4          SAVE LINK IR                                          LS058550
 12225   0634 00 2 12343         SXA     EVLQY,2          SAVE IR 2                                             LS058560
 12226   0500 CC 0 00615         CLA     $TSIND                                                                 LS058570
 12227   0601 CC 0 12502         STO     EVTS                                                                   LS058580
 12230   0074 CC 4 01725         TSX EVTIME,4                                                                   LS058590
 12231   0520 CC 0 12502         ZET     EVTS             TS                                                    LS058600
 12232   0020 CC 0 12451         TRA     TSEVQ            YES                                                   LS058610
 12233   0074 CC 4 01527         TSX     OUTPUT,4         WRITE OPENNING MESSAGE                                LS058620
 12234   0 COOCO 0 00365                 BCDOUT                                                                 LS058630
 12235   0 00014 0 12511                 EVQBM,,12                                                              LS058640

BINARY CARD NO. LISP0233
 12236   0600 CC 0 12507         STZ     EVQRTS           INITIALIZE TEST CELLS                                 LS058650
 12237   0600 CC 0 04414         STZ     EVQB             DITTO                                                 LS058660
 12240   0774 CC 2 00144         AXT     EVQBL,2          LENGTH OF EVAL QUOTE BUFFER                           LS058670
 12241   0634 CC 2 12375   EVQRD SXA     EVQRX,2          SAVE INDEX 2 INCASE OF READ ERROR                     LS058680
 12242  -0625 CC 0 02423         STL   BACKT1                                                                   LS058690
 12243   0074 CC 4 06560         TSX     $READ,4          READ THE INPUT LISTS                                  LS058700
 12244   0601 CC 0 04247         STO     EVQAN            SAVE THE LIST                                         LS058710
 12245   0340 CC 0 12510         CAS     EVQSP            COMPARE WITH STOP ATOM                                LS058720
 12246   0020 CC 0 12250         TRA     *+2              IS NOT                                                LS058730
 12247   1 C0001 2 12263         TXI     EVQPO,2,1                                                              LS058740
 12250   0520 CC 0 04414         ZET     EVQB             SKIP IF FIRST LIST OF DOUBLET                         LS058750
 12251   0020 CC 0 12255         TRA     EVQA             IS SECOND LIST                                        LS058760
 12252  -0625 CC 0 04414         STL     EVQB             FLIP SWITCH                                           LS058770
 12253   0601 CC 2 04414         STO     EVQB,2           SAVE FIRST LIST OF DOUBLET IN BUFFER                  LS058780
 12254   0020 CC 0 12241         TRA     EVQRD            GET NEXT LIST                                         LS058790
 12255  -0734 CC 4 00000   EVQA  PDX     0,4              LIST TO INDEX                                         LS058800
 12256   0754 CC 4 00000         PXA     0,4              MOVE TO ADDRESS                                       LS058810
 12257   0621 CC 2 04414         STA     EVQB,2           SAVE SECOND LIST OF DOUBLET IN BUFFER                 LS058820
 12260   0600 CC 0 04414         STZ     EVQB             FLIP SWITCH                                           LS058830
 12261   2 00001 2 12241         TIX     EVQRD,2,1        GET NEXT LIST                                         LS058840
 12262   0020 CC 0 12264         TRA     EVQOP                                                                  LS058850
 12263   0074 CC 4 07136   EVQPO TSX     TEREAD,4                                                               LS058860

BINARY CARD NO. LISP0234
 12264  -0634 CC 2 12334   EVQOP SXD     EVQTH,2          INDEX VALUE OF LAST LIST READ IN                      LS058870
 12265  -0625 CC 0 12507         STL     EVQRTS           SET ERROR RETURN SWITCH                               LS058880
 12266   0774 CC 2 00144         AXT     EVQBL,2          LENGTH OF BUFFER                                      LS058890
 12267   0634 CC 2 12331   EVQLP SXA     EVQER,2          SAVE INDEX VALUE                                      LS058900
 12270   0074 CC 4 01505   EVQS  TSX     SPACEX,4         WRITE OUT SOME BLANK LINES                            LS058910
 12271   0 CCOCO 0 01523                 6SPACE           3 DOUBLE SPACES                                       LS058920
 12272   0500 CC 2 04414         CLA     EVQB,2           PICK UP FIRST ITEM IN BUFFER                          LS058930
 12273   0600 CC 2 04414         STZ     EVQB,2           ZERO THE BUFFER ENTRY                                 LS058940
 12274   0600 CC 0 04060         STZ     $ALIST           RESET ALIST                                           LS058950
 12275  -0734 CC 4 00000         PDX     0,4              MAKE AN ATOM TEST                                     LS058960
 12276   0560 CC 0 00424         LDQ     $ZERO                                                                  LS058970
 12277  -0765 CC 0 CC022         LGR     18               SECOND LIST INTO MQ                                   LS058980
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12300 -0754 00 4 00000          PXD     0,4             FIRST LIST INTO AC                          LS058990
12301  0074 00 4 10565          TSX     PRINAR,4        PRINT HEADING                               LS059000
12302  0 00000 0 00002                  2                                                           LS059010
12303  602565214350             BCI     2, EVALQUOTE                                                LS059020
12304  644663256060
12305 -0774 00 4 12321  EVTP1   AXC     EVQFT,4         SET RETURN INDES CELL                       LS059030
12306  0634 00 4 12320          SXA     EVQD,4                                                      LS059040
12307  0774 00 4 15721  EVQMP   AXT     $APPLY,4        SET CELL OF PROGRAM TO BE EXECUTED          LS059050
12310  0634 00 4 12321          SXA     EVQFT,4         INITIALIZE PROGRAM TO BE EXECUTED CELL      LS059060
12311  0601 00 0 12504          STO     EVQAC           SAVE AC                                     LS059070

BINARY CARD NO. LISP0235
12312 -0734 00 4 00000          PDX     0,4             FIRST LIST TO IR 4                          LS059080
12313  0500 00 4 00000          CLA     0,4                                                         LS059090
12314  0734 00 4 00000          PAX     0,4                                                         LS059100
12315  3 77776 4 12377          TXH     EVQAT,4,-2      TRANSFER IF FIRST LIST IS ATOMIC            LS059110
12316  0500 00 0 12504  EVQNF   CLA     EVQAC           RESTORE AC                                  LS059120
12317  0600 00 0 04063  EVQZ    STZ     $ARG3           NULL ALIST FOR APPLY                        LS059130
12320  0774 00 4 00000  EVQD    AXT     **,4            RETURN INDEX REGISTER                       LS059140
12321  0020 00 0 00000  EVQFT   TRA     **              PROGRAM TO BE EXECUTED                      LS059150
12322  0601 00 0 04247  EVQE    STO     EVQAN           SAVE ANSWER                                 LS059160
12323  0074 00 4 01527          TSX     OUTPUT,4        PRINT END OF EVALQUOTE MESSAGE              LS059170
12324  0 00000 0 00365                  BCDOUT                                                      LS059180
12325  0 00005 0 12525                  EVQAM,,5                                                    LS059190
12326  0500 00 0 04247          CLA     EVQAN           PICK UP ANSWER                              LS059200
12327  0074 00 4 05342          TSX     $PRINT,4        PRINT IT                                    LS059210
12330  0600 00 0 04247          STZ     EVQAN           ZERO TEMP STORAGE                           LS059220
12331  0774 00 2 00000  EVQER   AXT     **,2            ERRORS COME BACK HERE, RESTORE IR 2         LS059230
12332  0520 00 0 12502          ZET     EVTS            TS                                          LS059240
12333  0020 00 0 12451          TRA     TSEVQ           YES                                         LS059250
12334 -3 00000 2 12336  EVQTH   TXL     EVQDN,2,**      EXIT IF LAST DOUBLET EXECUTED               LS059260
12335  2 00001 2 12267          TIX     EVQLP,2,1       EXECUTE NEXT DOUBLET                        LS059270
                        12336   EVQDN   SYN     *                                                   LS059280
12336  0074 00 4 01741          TSX EVTIM3,4                                                        LS059290
12337  0074 00 4 01527          TSX     OUTPUT,4        PRINT COLSING MESSAGE                       LS059300

BINARY CARD NO. LISP0236
12340  0 00000 0 00365                  BCDOUT                                                      LS059310
12341  0 00005 0 12532                  EVQME,,5                                                    LS059320
12342  0774 00 4 00000  EVLQX   AXT     **,4            RESTORE LINK IR                             LS059330
12343  0774 00 2 00000  EVLQY   AXT     **,2                                                        LS059340
12344  0020 00 4 00001          TRA     1,4             EXIT                                        LS059350
                                *                                                                   LS059360
                                *       EVALQT  LISP ENTRANCE TO EVALQUOTE                          LS059370
                                *                                                                   LS059380
12345  0634 00 4 12320  EVALQT  SXA     EVQD,4          SET RETURN INDEX CELL                       LS059390
12346 -0734 00 4 00000          PDX     0,4                                                         LS059400
12347  0500 00 4 00000          CLA     0,4                                                         LS059410
12350  0560 00 0 00424          LDQ     $ZERO                                                       LS059420
12351 -0765 00 0 00022          LGR     18                                                          LS059430
12352  0734 00 4 00000          PAX     0,4                                                         LS059440
12353  0500 00 4 00000          CLA     0,4                                                         LS059450
12354  0767 00 0 00022          ALS     18                                                          LS059460
12355  0131 00 0 00000          XCA                                                                 LS059470
12356  0020 00 0 12307          TRA     EVQMP           GO TO MAIN PROGRAM                          LS059480
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                                *                                                                    LS059490
                                * ERROR RETURNS CONTROL HERE                                        LS059500
                                *                                                                    LS059510
    12357  0074 CC 4 07136  EVQERR TSX     TEREAD,4          CLEAN UP READ BUFFER                    LS059520
    12360  0074 CC 4 06026         TSX     TERPRI,4          CLEAN UP PRINT BUFFER                   LS059530
    12361  0074 CC 4 06246         TSX     TERPUN,4          CLEAN UP PUNCH BUFFER                   LS059540
    12362  0074 CC 4 03200         TSX     TERPDL,4          RESET PUSH DOWN LIST                    LS059550
    12363  0520 CC 0 12502         ZET     EVTS              TS                                      LS059560
    12364  0020 CC 0 12451         TRA     TSEVQ             YES                                     LS059570
    12365  0520 CC 0 12507         ZET     EVQRTS            SKIP IF IN READ IN SECTION OF EVALQUOTLS059580

BINARY CARD NC. LISP0237
    12366  0020 CC 0 12331         TRA     EVQER             EXECUTE NEXT DOUBLET                    LS059590
    12367 -0625 CC 0 12507         STL     EVQRTS            MOVE TO OPERATE SECTION OF EVALQUOTE    LS059600
    12370  0074 CC 4 01527         TSX     OUTPUT,4          MESSAGE THAT READ WAS ERROR TERMINATEDLS059610
    12371  0 00000 0 00365                 BCDOUT                                                    LS059620
    12372  0 00012 0 12537                 EVQRE,,10                                                 LS059630
    12373  0500 CC 0 04247         CLA     EVQAN             PICK UP LAST LIST READ IN               LS059640
    12374  0074 CC 4 05342         TSX     $PRINT,4                                                  LS059650
    12375  0774 CC 2 00000   EVQRX AXT     **,2              RESTORE IR 2 TO RIGHT VALUE             LS059660
    12376  1 00001 2 12264         TXI     EVQOP,2,1         SET IR 2 TO PROER VALUE                 LS059670
                                *                                                                    LS059680
                                * CASE FOR ATOMIC FIRST LIST OF DOUBLET                              LS059690
                                *                                                                    LS059700
    12377 -0734 CC 4 00000   EVQAT PDX     0,4                                                       LS059710
    12400 -3 00000 4 12316         TXL     EVQNF,4,0         EXIT IF END OF ATOM                     LS059720
    12401  0500 CC 4 00000         CLA     C,4               NEXT WORD                               LS059730
    12402  0734 CC 4 00000         PAX     0,4               CAR OF ATOM                             LS059740
    12403 -0625 CC 0 12506         STL     EVQST             SET SWITCH FOR SUBR OR EXPR             LS059750
    12404 -3 10437 4 12406         TXL     *+2,4,$SUBR-1     LOOK FOR $SUBR                          LS059760
    12405 -3 10440 4 12437         TXL     EVQFS,4,$SUBR     TREAT AS FSUBR (ALMOST)                 LS059770
    12406 -3 11703 4 12410         TXL     *+2,4,$EXPR-1     LOOK FOR $EXPR                          LS059780
    12407 -3 11704 4 12415         TXL     EVQFX,4,$EXPR     TREAT AS FEXPR (ALMOST)                 LS059790
    12410  0600 00 0 12506         STZ     EVQST             SET SWITCH FOR FSUBR OR FEXPR           LS059800
    12411 -3 11627 4 12413         TXL     *+2,4,$FSUBR-1    LOOK FOR FSUBR                          LS059810
    12412 -3 11630 4 12437         TXL     EVQFS,4,$FSUBR                                            LS059820
    12413 -3 11666 4 12377         TXL     EVQAT,4,$FEXPR-1  LOOK FOR FEXPR                          LS059830

BINARY CARD NC. LISP0238
    12414  3 11667 4 12377         TXH     EVQAT,4,$FEXPR                                            LS059840
    12415 -0734 CC 4 00000   EVQFX PDX     0,4               FOUND AN FEXPR                          LS059850
    12416  0500 CC 4 00000         CLA     0,4                                                       LS059860
    12417  0734 00 4 00000         PAX     0,4               THE EXPRESSION FOR THE FEXPR            LS059870
    12420 -0754 CC 4 00000         PXD     0,4               EXPRESSION TO AC                        LS059880
    12421  0520 CC 0 12506         ZET     EVQST             SKIP IF FEXPR                           LS059890
    12422  0020 CC 0 12317         TRA     EVQZ              GO TO APPLY CALL FOR EXPR               LS059900
    12423  0601 CC 0 04247         STO     EVQAN             SAVE THE EXPRESSION                     LS059910
    12424 -0600 CC 0 12505         STQ     EVQMQ             SAVE MQ                                 LS059920
    12425 -0754 00 0 00000         PXD     0,0               CLEAR                                   LS059930
    12426  0131 CC 0 00000         XCA                       MQ AND                                  LS059940
    12427 -0754 CC 0 00000         PXD     0,0               AC                                      LS059950
    12430  0074 CC 4 04471         TSX     $CONS,4           NULL A LIST                             LS059960
    12431  0131 00 0 00000         XCA                       INTO MQ                                 LS059970
    12432  0500 CC 0 12505         CLA     EVQMQ             PUT SECOND LIST IN AC                   LS059980
    12433  0074 CC 4 04471         TSX     $CONS,4           CONS(L,A)                               LS059990
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12434  0131 CO 0 00000          XCA                    ANSWER TO ARG 2                          LS060000
12435  0500 CO 0 04247          CLA      EVQAN         FEXPR                                    LS060010
12436  0020 CO 0 12317          TRA      EVQZ          GO TO APPLY FOR FEXPR                    LS060020
                          *                                                                     LS060030
12437 -0734 CO 4 00000   EVQFS  PDX      0,4           FOUND FSUBR, GET TXL INSTRUCTION         LS060040
12440  0500 CO 4 00000          CLA      0,4                                                    LS060050
12441  0734 CO 4 00000          PAX      0,4                                                    LS060060

BINARY CARD NO. LISP0239
12442  0500 CO 4 00000          CLA      0,4                                                    LS060070
12443  0621 CO 0 12321          STA      EVQFT         SAVE ADDRESS                             LS060080
12444 -0754 CO 0 00000          PXD      0,0           ZERO                                     LS060090
12445  0131 CO 0 00000          XCA                    THE MQ AND PUT LIST IN AC                LS060100
12446  0520 CO 0 12506          ZET      EVQST         SKIP IF FSUBR                            LS060110
12447  0074 CO 4 10712          TSX      SPREAD,4      SPREAD THE ARGUMENTS                     LS060120
12450  0020 CO 0 12320          TRA      EVQD          EXECUTE THE SUBR OR FSUBR                LS060130
                          *                                                                     LS060140
                          *      TS EVALQUOTE                                                   LS060150
                          *                                                                     LS060160
12451 -0625 CO 0 00615   TSEVQ  STL      $TSIND                                                 LS060170
12452  0074 CO 4 01527          TSX      OUTPUT,4                                               LS060180
12453  0 00000 0 00365                   BCDOUT                                                 LS060190
12454  0 00001 0 12503                   EVQM,,1                                                LS060200
12455  0074 CO 4 07136          TSX      TEREAD,4                                               LS060210
12456  0074 CO 4 12465          TSX      TSRD,4                                                 LS060220
12457  0601 CO 0 04413          STO      EVQB-1                                                 LS060230
12460  0074 CO 4 12465          TSX      TSRD,4                                                 LS060240
12461  0131 CO 0 00000          XCA                                                             LS060250
12462  0500 CO 0 04413          CLA      EVQB-1                                                 LS060260
12463  0600 CO 0 04060          STZ      $ALIST                                                 LS060270
12464  0020 CO 0 12305          TRA      EVTP1                                                  LS060280
                          *                                                                     LS060290
12465  0634 CO 4 12500   TSRD   SXA      TSRR,4                                                 LS060300
12466  0074 CO 4 06560          TSX      $READ,4                                                LS060310
12467  0340 CO 0 12510          CAS      EVQSP                                                  LS060320

BINARY CARD NO. LISP0240
12470  0020 CO 0 12472          TRA      *+2                                                    LS060330
12471  0020 CO 0 12336          TRA      EVQDN                                                  LS060340
12472  0601 CO 0 04412          STO      EVQB-2                                                 LS060350
12473  0600 CO 0 00615          STZ      $TSIND                                                 LS060360
12474  0074 CO 4 05342          TSX      $PRINT,4                                               LS060370
12475 -0625 CO 0 00615          STL      $TSIND                                                 LS060380
12476  0500 CO 0 04412          CLA      EVQB-2                                                 LS060390
12477  0600 CO 0 04412          STZ      EVQB-2                                                 LS060400
12500  0774 CO 4 00000   TSRR   AXT      -,4                                                    LS060410
12501  0020 CO 4 00001          TRA      1,4                                                    LS060420
                          *                                                                     LS060430
12502  0 00000 0 00000   EVTS   PZE                     NOISE IF TS EVALQUOTE                  LS060440
12503  601425655014      EVQM   BCI      1, -EVQ-                                               LS060450
                          *                                                                     LS060460
12504  0 00000 0 00000    EVQAC                        TEMPORARY STORAGE                      LS060470
12505  0 00000 0 00000    EVQMQ                        DITTO                                  LS060480
12506  0 00000 0 00000    EVQST                        TEST CELL IS NON-ZERO FOR SUBR OR EXPR LS060490
12507  0 00000 0 00000   EVQRTS                        TEST CEEL IS ZERO DURING READ IN       LS060500
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                  00144   EVQBL EQU     100                 LENGHT OF BUFFER                        LS060510
    12510  0 10477 0 00000   EVQSP       ,,$STOP             STOP ATOM                               LS060520
    12511  002565214350     EVQBM  BCI   7,0EVALQUOTE OPERATOR AS OF 15 MAR 1964.                   LS060530
    12512  644663256046
    12513  472551216346
    12514  516021626046
    12515  266001056044

BINARY CARD NO. LISP0241
    12516  215160011106
    12517  043360606060
    12520  603145476463           BCI   5, INPUT LISTS NOW BEING READ.                            LS060540
    12521  604331626362
    12522  604546666022
    12523  253145276051
    12524  252124336060
    12525  002545246046     EVQAM BCI   5,0END OF EVALQUOTE, VALUE IS ....                        LS060550
    12526  266025652143
    12527  506446632573
    12530  606521436425
    12531  603162603333
    12532  012545246046     EVQME BCI   5,1END OF EVALQUOTE OPERATOR                              LS060560
    12533  266025652143
    12534  506446632560
    12535  464725512163
    12536  465160606060
    12537  005125212431     EVQRE BCI   9,0READING TERMINATED BY AN ERROR. LAST LIST READ IN IS   LS060570
    12540  452760632551
    12541  443145216325
    12542  246022706021
    12543  456025515146

BINARY CARD NO. L1SP0242
    12544  513360432162
    12545  636043316263
    12546  605125212460
    12547  314560316260
    12550  603333333333           BCI   1, .....                                                 LS060580
                          *                                                                       LS060590
                          H       HED                                                             LS060600
                          *       ERRORSET(E,N,SW,AL)                                             LS060610
                          *                                                                       LS060620
                          *       ERRORSET ATTEMPTS TO EVALUATE ITS FIRST ARGUMENT.  IF AN        LS060630
                          *       ERROR OCCURS DURING THE EVALUATION, OR IF MORE THAN N CONS-S     LS060640
                          *       OCCUR DURING THE EVALUATION, ERRORSET RETURNS WITH A VALUE OF F  LS060650
                          *       AFTER RESTORING CONDITIONS TO WHAT THEY WERE BEFORE THE          LS060660
                          *       ATTEMPTED EVALUATION.  IF THE EVALUATION SUCCEEDS, ERRORSET     LS060670
                          *       RETURNS LIST OF THE RESULT.  IF SW = F, ERROR DIAGNOSTICS ARE   LS060680
                          *       SUPPRESSED, AND IF SW = T, THEY ARE INCLUDED.  AL IS THE A-LIST LS060690
                          *       USED FOR THE EVALUATION.                                        LS060700
                          *                                                                       LS060710
    12551 -0634 CO 4 12653  ERRSET SXD    HORN,4                                                  LS060720
    12552  0074 CO 4 03104          TSX    $SAVE,4                                                 LS060730
    12553 -3 12664 0 03153          TXL    $END8,,HORN+9                                           LS060740
    12554 -0634 CO 2 12654          SXD    HORN+1,2                                                LS060750
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12555  0634 CO 1 12654          SXA     HORN+1,1                                    LS060760
12556  0604 CO 0 12657          STI     HORN+4                                      LS060770
12557 -0734 OO 1 00000          PDX     0,1         EXPRESSION TO BE EVALUATED      LS060780
12560 -0534 CO 4 04063          LXD     $ARG3,4     ERROR BYPASS SWITCH             LS060790
12561  0634 CO 4 12655          SXA     ERNULL,4                                    LS060800
12562  0131 CO 0 00000          XCA                                                 LS060810
12563 -0734 CO 2 00000          PDX     0,2         GET CONS COUNTER LIMIT          LS060820
12564  0074 CO 4 14065          TSX     FIXVAL,4                                    LS060830
12565  0601 CO 0 12661          STO     HORN+6                                      LS060840
12566  0500 CO 0 04503          CLA     $CNTR1      GET CURRENT CONS COUNT          LS060850
12567 -0320 CC 0 00513          ANA     $AMASK                                      LS060860
12570  0400 CO 0 04650          ADD     $CNTS                                       LS060870
12571  0402 CO 0 12661          SUB     HORN+6      COMPARE WITH THE LIMIT          LS060880

BINARY CARD NO. LISP0243
12572 -0120 OO 0 12602          TMI     OBOE        TRA IF COUNTER NEED NOT BE CHANGED LS060890
12573 -0760 CO 0 00003          SSM                 NEG. NUMBER FOR GARBAGE COLLECTOR LS060900
12574  0601 CO 0 12660          STO     HORN+5      SAVE (LIMIT - OLD COUNT)        LS060910
12575  0500 CO 0 12661          CLA     HORN+6      SET CONS COUNTER TO LIMIT       LS060920
12576  0621 CO 0 04503          STA     $CNTR1                                      LS060930
12577 -0320 CC 0 00521          ANA     PDTMSK                                      LS060940
12600  0601 CC 0 04650          STO     $CNTS                                       LS060950
12601  0020 OO 0 12603          TRA     *+2                                         LS060960
12602  0600 CO 0 12660   OBOE   STZ     HORN+5      TAKE LIMIT = OLD COUNT          LS060970
12603  0560 CO 0 04064          LDQ     $ARG4       A-LIST FOR EVALUATION           LS060980
12604  0502 CO 0 03110          CLS     $CPPI       SAVE PUSHDOWN POINTER           LS060990
12605  0601 CC 0 12661          STO     HORN+6                                      LS061000
12606 -0625 CO 0 12662          STL     TCOUNT      TURN ON CONS COUNTER            LS061010
12607  0774 CO 4 12616          AXT     BSOON,4     SET UP EXIT IN ERROR            LS061020
12610  0634 CO 4 12656          SXA     EREXIT,4                                    LS061030
                        *       ATTEMPT TO PERFORM THE EVALUATION                   LS061040
12611 -0754 OO 1 00000          PXD     0,1         EXPRESSION TO BE EVALUATED      LS061050
12612  CC74 CC 4 16521          TSX     $EVAL,4                                     LS061060
                        *       WE GET HERE IF THE EVALUATION WORKED                LS061070
12613  0560 CO 0 00424          LDQ     $ZERO       FORM LIST OF THE RESULT         LS061080
12614  0074 CC 4 04471          TSX     $CONS,4                                     LS061090
                        *       AN ERROR IN THIS CONS ACTS LIKE AN ERROR IN THE EVALUATION LS061100
12615  0020 CO 0 12634          TRA     SHAWM       RESTORE PARAMETERS AND EXIT     LS061110
                        *       WE GET HERE IN CASE OF ERROR                        LS061120
12616 -0535 CO 4 12661    BSOON LDC     HORN+6,4    UNSAVE ALL RECURSIVE FUNCTIONS  LS061130
12617 -0634 OO 4 12632          SXD     TUBA,4       ENTERED SINCE THE ERROR        LS061140

BINARY CARD NO. LISP0244
12620  C020 CO 0 12631          TRA     TUBA-1                                      LS061150
12621 -0534 CO 4 03110   HARP   LXD     $CPPI,4                                     LS061160
12622 -0500 CO 4 77777          CAL     -1,4                                        LS061170
12623 -0320 CO 0 00515          ANA     $PMASK      TEST FOR STR FROM COMPILER      LS061180
12624  0322 CO 0 00505          ERA     $QP5                                        LS061190
12625  0100 CO 0 12630          TZE     *+3                                         LS061200
12626  0074 CO 4 03117          TSX     UNSAVE,4                                    LS061210
12627  0020 CO 0 12631          TRA     *+2                                         LS061220
12630  0074 CO 4 17712          TSX     C$UNWND,4                                   LS061230
12631 -0535 CO 4 03110          LDC     $CPPI,4                                     LS061240
12632  3 00000 4 12621   TUBA   TXH     HARP,4,**                                   LS061250
12633 -0754 CO 0 00000          PXD     0,0         RETURN VALUE OF NIL             LS061260
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                                *       RESTORE PARAMETERS FOR EITHER KIND OF EXIT                          LS061270
    12634  0601 CC 0 12661    SHAWM STO     HORN+6              SAVE EXIT VALUE                           LS061280
    12635  0500 CC 0 04503          CLA     $CNTR1              RESTORE CONS COUNTER                      LS061290
    12636 -0320 CC 0 00513          ANA     $AMASK                                                        LS061300
    12637  0400 CC 0 0465C          ADD     $CNTS                                                         LS061310
    1264C  0402 CC 0 12660          SUB     HORN+5                                                        LS061320
    12641  0621 CC 0 04503          STA     $CNTR1                                                        LS061330
    12642 -0320 CC 0 00521          ANA     PDTMSK                                                        LS061340
    12643  0601 CC 0 04650          STO     $CNTS                                                         LS061350
    12644  0534 CC 1 12654          LXA     HORN+1,1            RESTORE INDICATORS, IR1, AND IR2          LS061360
    12645 -0534 CC 2 12654          LXD     HORN+1,2                                                      LS061370

BINARY CARD NO. LISP0245
    12646  0441 CC 0 12657          LDI     HORN+4                                                        LS061380
    12647  0500 CC 0 12661          CLA     HORN+6              PICK UP EXIT VALUE                        LS061390
    12650  0074 CC 4 03117          TSX     UNSAVE,4            RESTORE HORN BLOCK                        LS061400
    12651 -0534 CC 4 12653          LXD     HORN,4              RESTORE IR4 AND EXIT                      LS061410
    12652  0020 CC 4 00001          TRA     1,4                                                           LS061420
                                *       PROTECTED TEMPORARY STORAGE FOR ERRORSET                          LS061430
                                        HEAD    H                                                         LS061440
    12653 -0 00000 0 11760     HORN MZE     ERSETC              (+0) ERRORSET OBJECT IN A, IR4 IN D       LS061450
    12654 -0 00000 0 00000          MZE                         (+1) IR1 IN A, IR2 IN D                   LS061460
    12655 -0 00000 0 12655   ERNULL MZE     *                   (+2) ZERO MEANS SKIP DIAGNOSTICS          LS061470
    12656 -3 00000 0 12357   EREXIT TXL     EVQERR,,            (+3) EXIT INSTURCTION FOR $ERROR          LS061480
    12657 -0 00000 0 00000          MZE                         (+4) INDICATORS                           LS061490
    12660 -0 00000 0 00000          MZE                         (+5) CONS COUNTER INCREMENT               LS061500
    12661 -0 00000 0 00000   NUBPDL MZE                         (+6) PDL BACKUP POINT IN D                LS061510
    12662 -0 00000 0 00000   TCOUNT MZE                         (+7) NON-ZERO ACTIVATES CONS COUNTER      LS061520
                                        HEAD    0                                                         LS061530
                        12656    TERA2 SYN     EREXIT                                                    LS061540
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                                        TTL     MORE LISP FUNCTIONS                                          LS061550
                                    *                                                                        LS061560
                                        HEAD    H                                                            LS061570
                                    *                                                                        LS061580
                                    *           EXTENDED CAR S AND CDR S FOR THE INTERPRETER                 LS061590
                                    *                                                                        LS061600
 12663  0634 CO 4 12674  CAAARX SXA     CAX,4              SAVE LINK IR                                      LS061610
 12664 -0734 00 4 00000          PDX     0,4                                                                 LS061620
 12665  0500 00 4 00000          CLA     0,4                                                                 LS061630
 12666  0734 00 4 OCOOO          PAX     C,4                                                                 LS061640
 12667  0500 CO 4 00000   AA     CLA     0,4                                                                 LS061650
 12670  0734 00 4 COOOC          PAX     0,4                                                                 LS061660
 12671  0500 CO 4 00000   A      CLA     C,4                                                                 LS061670
 12672  0734 CO 4 COOOC          PAX     0,4                                                                 LS061680
 12673 -0754 00 4 00000          PXD     0,4                                                                 LS061690

BINARY CARD NO. LISP0246
 12674  0774 CO 4 00000   CAX    AXT     **,4               RESTORE LINK IR                                  LS061700
 12675  0020 CO 4 00001          TRA     1,4                EXIT                                             LS061710
                                    *                                                                        LS061720
 12676  0634 CO 4 12674  CAADRX SXA     CAX,4                                                               LS061730
 12677 -0734 CO 4 00000          PDX     0,4                                                                 LS061740
 12700  0500 CO 4 00000          CLA     0,4                                                                 LS061750
 12701 -0734 CO 4 00000   AAX    PDX     0,4                                                                 LS061760
 12702  0020 CO 0 12667          TRA     AA                                                                  LS061770
                                    *                                                                        LS061780
 12703  0634 CO 4 12674  CADARX SXA     CAX,4                                                               LS061790
 12704 -0734 CO 4 COOOO          PDX     0,4                                                                 LS061800
 12705  0500 CO 4 00000          CLA     0,4                                                                 LS061810
 12706  0734 CO 4 00000          PAX     0,4                                                                 LS061820
 12707  0500 CO 4 00000   AD     CLA     0,4                                                                 LS061830
 12710 -0734 CO 4 COOOO          PDX     0,4                                                                 LS061840
 12711  0020 CO 0 12671          TRA     A                                                                   LS061850
 12712  0634 CO 4 12674  CADDRX SXA     CAX,4                                                               LS061860
 12713 -0734 CO 4 COOOO          PDX     0,4                                                                 LS061870
 12714  0500 CO 4 00000          CLA     0,4                                                                 LS061880
 12715 -0734 CO 4 00000   ADX    PDX     0,4                                                                 LS061890
 12716  0020 CO 0 12707          TRA     AD                                                                  LS061900
                                    *                                                                        LS061910
 12717  0634 CO 4 12674  CAARXX SXA     CAX,4                                                               LS061920
 12720  0020 CO 0 12701          TRA     AAX                                                                 LS061930
                                    *                                                                        LS061940
 12721  0634 CO 4 12674  CADRXX SXA     CAX,4                                                               LS061950

BINARY CARD NO. L1SP0247
 12722  0020 CO 0 12715          TRA     ADX                                                                 LS061960
                                    *                                                                        LS061970
 12723  0634 CO 4 12733  CDAARX SXA     CDX,4                                                               LS061980
 12724 -0734 CO 4 COOOO          PDX     0,4                                                                 LS061990
 12725  0500 CO 4 00000          CLA     0,4                                                                 LS062000
 12726  0734 CO 4 00000          PAX     0,4                                                                 LS062010
 12727  0500 CO 4 00000   DA     CLA     0,4                                                                 LS062020
 12730  0734 CO 4 00000          PAX     0,4                                                                 LS062030
 12731  0500 CO 4 00000   D      CLA     0,4                                                                 LS062040
 12732 -0320 CO 0 00514          ANA     $DMASK                                                              LS062050
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12733  0774 00 4 00000   CDX    AXT     **,4                                LS062060
12734  0020 00 4 00001          TRA     1,4                                 LS062070
12735  0634 00 4 12733   CDADRX SXA     CDX,4                               LS062080
12736 -0734 00 4 00000          PDX     0,4                                 LS062090
12737  0500 00 4 00000          CLA     0,4                                 LS062100
12740 -0734 00 4 00000    DAX   PDX     0,4                                 LS062110
12741  0020 00 0 12727          TRA     DA                                  LS062120
                        *                                                   LS062130
12742  0634 00 4 12733   CDDARX SXA     CDX,4                               LS062140
12743 -0734 00 4 00000          PDX     0,4                                 LS062150
12744  0500 00 4 00000          CLA     0,4                                 LS062160
12745  0734 00 4 00000          PAX     0,4                                 LS062170
12746  0500 00 4 00000    DD    CLA     0,4                                 LS062180
12747 -0734 00 4 00000          PDX     0,4                                 LS062190

BINARY CARD NO. LISP0248
12750  0020 00 0 12731          TRA     D                                   LS062200
                        *                                                   LS062210
12751  0634 00 4 12733   CDDDRX SXA     CDX,4                               LS062220
12752 -0734 00 4 00000          PDX     0,4                                 LS062230
12753  0500 00 4 00000          CLA     0,4                                 LS062240
12754 -0734 00 4 00000    DDX   PDX     0,4                                 LS062250
12755  0020 00 0 12746          TRA     DD                                  LS062260
                        *                                                   LS062270
12756  0634 00 4 12733   CDARXX SXA     CDX,4                               LS062280
12757  0020 00 0 12740          TRA     DAX                                 LS062290
                        *                                                   LS062300
12760  0634 00 4 12733   CDDRXX SXA     CDX,4                               LS062310
12761  0020 00 0 12754          TRA     DDX                                 LS062320
                        *                                                   LS062330
                         HEAD   C                                           LS062340
12762  0634 00 4 12774    GET   SXA     GETX,4          SAVE LINK IR        LS062350
12763  0601 00 0 12777          STO     GETL                                LS062360
12764  0500 00 0 12776          CLA FCN31                                   LS062370
12765  0601 00 0 04063          STO $ARG3                                   LS062380
12766  0500 00 0 12777          CLA GETL                                    LS062390
12767  0074 00 4 10631          TSX $PROP,4                                 LS062400
12770 -0734 00 4 00000          PDX 0,4                                     LS062410
12771  0500 00 4 00000          CLA 0,4                                     LS062420
12772  0734 00 4 00000          PAX 0,4                                     LS062430
12773 -0754 00 4 00000          PXD 0,4                                     LS062440
12774  0774 00 4 00000    GETX  AXT     **,4            RESTORE  LINK IR    LS062450
12775  0020 00 4 00001          TRA 1,4                                     LS062460

BINARY CARD NO. LISP0249
12776 -3 00000 0 12774    FCN31 TXL     GETX,,0                             LS062470
12777  0 00000 0 00000    GETL                                              LS062480
                        *                                                   LS062490
                        * COMPAT       FUNCTIONAL ARGUMENT LINKAGE PROGRAM BETWEEN COMPILED  LS062500
                        *              PROGRAMS AND APPLY FOR S-EXPRESSION FUNCTIONAL ARGUMENTS LS062510
                        *                                                   LS062520
13000  0634 00 4 13017   COMPAT SXA     CX,4            SAVE INDEX REGISTERS LS062530
13001  0634 00 2 13020          SXA     CY,2                                LS062540
13002  0601 00 0 04061          STO     $ARG1           SAVE AC             LS062550
13003 -0600 00 0 04062          STQ     $ARG2           DITTO MQ            LS062560
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13004  0560 CO 0 00424          LDQ    $ZERO          END OF ARGUMENT LIST                    LS062570
13005  0500 CO 4 00001          CLA    1,4            ARGUMENTS FOR COMPAT                    LS062580
13006  0622 CO 0 13022          STD    CA             S-EXPRESSION FUNCTIONAL ARGUMENT        LS062590
13007  0737 00 2 00000          PAC    0,2            COMPLEMENT NUMBER OF ARGUMENTS          LS062600
13010 -3 00000 2 13015   CL     TXL    CD,2,0         GO WHEN ALL DONE                        LS062610
13011  0500 CO 2 04060          CLA    $ARG1-1,2      PICK UP ARGUMENT                        LS062620
13012  0074 CO 4 04471          TSX    $CONS,4        CONS ON TO ARGUMENT LIST                LS062630
13013  0131 CO 0 00000          XCA                   LIST TO MQ                              LS062640
13014  1 00001 2 13010          TXI    CL,2,1         GO BACK FOR NEXT                        LS062650
13015  0500 CO 0 13022   CD     CLA    CA             FUNCTIONAL ARGUMENT                     LS062660
13016  0600 00 0 04063          STZ    $ARG3          ZERO PAIR LIST                          LS062670
13017  0774 00 4 00000   CX     AXT    **,4           RESTORE INDEX REGISTERS                 LS062680
13020  0774 00 2 00000   CY     AXT    **,2                                                   LS062690
13021  1 77777 4 15721          TXI    $APPLY,4,-1    GO TO APPLY AND ADJUST EXIT INDEX       LS062700
13022  0 00000 0 00000   CA                           S-EXPRESSION GOES HERE                  LS062710
                         F      HED                                                          LS062720
                         *      PACK(CHAR)                                                   LS062730
                         *                                                                   LS062740
                         *      PACK ADDS ANOTHER CHARACTER TO THE CHARACTER BUFFER BOFFO     LS062750
                         *                                                                   LS062760
                         *                                                                   LS062770
13023  0771 CO 0 00022   PACK   ARS    18             GET CHARACTER CODE FROM                 LS062780

BINARY CARD NO. LISP0250
13024  0402 CO 0 00556          SUB    HORG             LOCATION OF OBJECT                    LS062790
13025 -0765 CO 0 00006          LGR    6              PUT NEW CHARACTER INTO PACKED WORD      LS062800
13026 -0500 CO 0 13571          CAL    CHARS                                                  LS062810
13027  0140 CO 0 13030          TOV    *+1            SHUT OFF OVERFLOW LIGHT                 LS062820
13030 -0763 CO 0 00006          LGL    6                                                      LS062830
13031  0140 CO 0 13035          TOV    B5             IF WORD FULL, PUT IT IN BUFFER          LS062840
13032  0602 CO 0 13571          SLW    CHARS                                                  LS062850
13033 -0754 CO 0 00000          PXD    ,0             CLEAR AC FOR EXIT                       LS062860
13034  0020 CO 4 00001          TRA    1,4            EXIT                                    LS062870
13035  0634 CO 4 13044   B5     SXA    B1,4           SAVE IR4                                LS062880
13036  0774 CO 4 00024   BFLOC  AXT    20,4           ADDRESS HAS INDEX FOR BOFFO             LS062890
13037  0602 CO 4 13617          SLW    BOFFO,4        STORE FULL WORD OF CHARACTERS           LS062900
13040 -2 00001 4 13047          TNX    B3,4,1         IF BUFFER FULL, TRANSFER                LS062910
13041  0500 CO 0 13405          CLA    A1             WHEN 1 SHIFTS PAST P BIT,               LS062920
13042  0601 CO 0 13571          STO    CHARS            NEW WORD HAS 6 CHARACTERS             LS062930
13043  0634 CO 4 13036          SXA    BFLOC,4        SAVE BUFFER INDEX                       LS062940
13044  0774 00 4 00000   B1     AXT    ,4             RESTORE IR4                             LS062950
13045 -0754 CO 0 00000          PXD    ,0             CLEAR AC FOR EXIT                       LS062960
13046  0020 CO 4 00001          TRA    1,4            EXIT                                    LS062970
13047 -3 00000 4 13052   B3     TXL    B4,4,0         IF MORE THAN 120 CHARS, TRANSFER        LS062980
13050  0634 00 0 13036          SXA    BFLOC,0        SET INDEX TO SHOW BUFFER FILLED         LS062990
13051  0020 CO 0 13057          TRA    B6                                                     LS063000

BINARY CARD NO. LISP0251
13052  0074 CO 4 13140   B4     TSX    $MKNAM,4       FORM OBJECT FOR ERROR PRINTOUT          LS063010
13053  0074 CO 4 07246          TSX    INTRN1,4                                               LS063020
13054 -0634 CO 4 02313          SXD    $ERROR,4                                               LS063030
13055  0074 CO 4 02314          TSX    $ERROR+1,4                                             LS063040
13056  542330600154             BCI    1,*CH 1*       TOO MANY CHARACTERS IN PRINT NAME       LS063050
13057  0500 CO 0 00525   B6     CLA    SEVENS         BIT 1 IN CHARS WILL MAKE                LS063060
13060  0601 CO 0 13571          STO    CHARS            WORD LOOK FULL                        LS063070
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13061  C020 CO C 13044          TRA     B1                                    LS063080
                        *       PACK USES $ERROR, $ERCR1, AND $Q1             LS063090




                                SPACE   5                                     LS063100
                        *       NUMOB                                         LS063110
                        *                                                     LS063120
                        *       NUMOB MAKES A NUMERICAL OBJECT CORRESPONDING TO THE BCD  LS063130
                        *       CHARACTERS IN THE BUFFER BOFFO.               LS063140
                        *                                                     LS063150
                        *       THIS ROUTINE HAS CROSS-REFERENCES TO THE INNARDS OF NUMBR  LS063160
                        *                                                     LS063170
13062   0634 CO 4 13125  NUMOB  SXA     GV1,4           SAVE IR4              LS063180
13063   0140 CO 0 13064          TOV     *+1             SHUT OFF OVERFLOW LIGHT  LS063190
13064  -0500 CO 0 13571          CAL     CHARS           SHIFT SEVENS INTO LAST PACKED WORD  LS063200
13065   0560 CO 0 00525          LDQ     SEVENS                                LS063210
13066  -0763 CO 0 00006          LGL     6                                     LS063220
13067  -0140 CO 0 13066          TNO     *-1             DONE WHEN 1 PASSES THROUGH P BIT  LS063230
13070   0534 00 4 13036          LXA     BFLOC,4         PUT LAST WORD INTO BOFFO  LS063240
13071   0602 CC 4 13617          SLW     BOFFO,4                               LS063250
13072   0500 CO 0 13561          CLA     PARAM           INPUT PARAMETER FOR NUMBR IS  LS063260
13073   0074 00 4 07450          TSX     NUMBR,4           BEGINNING OF BOFFO  LS063270
13074   0100 CO 0 13127          TZE     GV3             ERROR IF ZERO IN AC   LS063280
13075   0120 CC 0 13103          TPL     GV2             TRANSFER IF FIXED POINT OUTPUT  LS063290
13076   0131 CO 0 00000          XCA                     GET NUMBER FROM MQ    LS063300
13077   0560 CO 0 00533          LDQ     FLOS            FLOATING POINT SIGNAL  LS063310

BINARY CARD NO. LISP0252
   13100   0074 CO 4 13624          TSX     $MKNO,4         FORM OBJECT           LS063320
   13101   0534 CO 4 13125          LXA     GV1,4           RESTORE IR4           LS063330
   13102   0020 CO 0 13172          TRA     CLEAR           RESET BOFFO AND EXIT  LS063340
   13103  -0760 CO 0 00001  GV2     PBT                     OCTAL SIGNAL IN NUMBR OUTPUT  LS063350
   13104   0020 CO 0 13112          TRA     GV6             TRA IF NOT OCTAL      LS063360
   13105   0131 CO 0 00000          XCA                                           LS063370
   13106   0560 CO 0 00540          LDQ     $OCTD           MAKE OCTAL NUMBER     LS063380
   13107   0074 CO 4 13624          TSX     $MKNO,4                               LS063390
   13110   0534 CO 4 13125          LXA     GV1,4                                 LS063400
   13111   0020 CO 0 13172          TRA     CLEAR           RESET BOFFO AND EXIT  LS063410
   13112   0131 CO 0 00000  GV6     XCA                     BRING THE NUMBER TO THE AC  LS063420
   13113  -0120 CO 0 13123          TMI     GV4             TEST FOR DIGITS 0 THRU 9  LS063430
   13114   0340 CO 0 00436          CAS     $Q10                                  LS063440
   13115   0020 CO 0 13123          TRA     GV4                                   LS063450
   13116   0020 CO 0 13123          TRA     GV4                                   LS063460
   13117   0361 CO 0 00556          ACL     HORG            FORM OBJECT DIRECTLY  LS063470
   13120   0767 CO 0 00022          ALS     18                                    LS063480
   13121   0534 CO 4 13125          LXA     GV1,4           RESTORE IR4           LS063490
   13122   0020 CO 0 13172          TRA     CLEAR                                 LS063500
   13123   0560 CO 0 00532  GV4     LDQ     FIXS            FIXED POINT SIGNAL FOR $MKNO  LS063510
   13124   0074 CO 4 13624          TSX     $MKNO,4         FORM NUMERICAL OBJECT  LS063520
   13125   0774 CO 4 00000  GV1     AXT     ,4              RESTORE IR4           LS063530
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BINARY CARD NO. LISP0253
    13126  0020 CC C 13172          TRA     CLEAR              RESET BOFFO AND EXIT                    LS063540
    13127  0074 CC 4 01527   GV3    TSX     OUTPUT,4                                                   LS063550
    13130  C COOCC C 00365          BCDOUT                                                             LS063560
    13131  C COOC4 0 13134          GVA,,4                                                             LS063570
                             *      BCI     1,*CH 2*           FLOATING POINT NUMBER OUT OF RANGE      LS063580
    13132 -0754 CC 0 COOOC          PXD     0,0                RETURN NIL                              LS063590
    13133  0020 CC 0 13125          TRA     GV1                                                        LS063600
    13134  602551514651      GVA    BCI     4, ERROR NUMBER  *CH 2*                                    LS063610
    13135  604564442225
    13136  516060542330
    13137  600254606060
                             *                                                                         LS063620
                             *      THIS ROUTINE USES $CONS, $MKNO,$ZERO,$ERROR, AND $EROR1            LS063630


                                    SPACE   5                                                          LS063640
                             *      MKNAM AND CLEARBUFF                                                LS063650
                             *                                                                         LS063660
                             *                                                                         LS063670
                             *      CLEARBUFF STARTS AT CLEAR AND RESETS THE BUFFER BOFFO TO           LS063680
                             *      THE BEGINNING                                                      LS063690
                             *                                                                         LS063700
                             *      MKNAM() HAS AS OUTPUT A PNAME LIST STRUCTURE CORRESPONDING         LS063710
                             *      TO THE CHARACTERS IN THE BUFFER BOFFO.  THE BEGINNING OF           LS063720
                             *      BOFFO IS RESET.                                                    LS063730
                             *                                                                         LS063740
                             *      THIS ROUTINE HAS CROSS-REFERENCES TO THE INNARDS OF PACK.          LS063750
                             *                                                                         LS063760
    13140  0634 CC 4 13200   MKNAM  SXA     BB1,4              SAVE IR4                                LS063770
    13141  0634 CC 2 13170          SXA     BBIR2,2            SAVE IR2                                LS063780
    13142 -0500 CC 0 13571          CAL     CHARS              IF C(CHARS) = 1, CHARS CONTAINS         LS063790
    13143 -0340 CC 0 13405          LAS     A1                   NO SIGNIFICANT CHARACTERS             LS063800
    13144  0020 CC 0 13147          TRA     BB5                                                        LS063810
    13145 -0754 CC 0 00000          PXD     ,0                                                         LS063820
    13146  0020 CC 0 13160          TRA     BB2                  NO SIGNIFICANT CHARACTERS IN CHARS    LS063830
    13147  0140 CC 0 13150   BB5    TOV     *+1                SHUT OFF OVERFLOW LIGHT                 LS063840
    13150  0560 CC 0 00525          LDQ     SEVNS              SHIFT SEVENS INTO LAST WORD             LS063850
    13151 -0763 CC 0 00006          LGL     6                    OF LIST                               LS063860
    13152 -0140 CC 0 13151          TNO     *-1                                                        LS063870
    13153  0602 CC 0 13562          SLW     T1                 PUT P BIT INTO SIGN                     LS063880

BINARY CARD NO. LISP0254
    13154  0500 CC 0 13562          CLA     T1                                                         LS063890
    13155  0074 CC 4 04451          TSX     $CONSW,4           FORM POINTER TO LAST WORD OF LIST       LS063900
    13156  0560 CC 0 00424          LDQ     ZERO                                                       LS063910
    13157  0074 CC 4 04471          TSX     $CONS,4                                                    LS063920
    13160  0534 CC 2 13036   BB2    LXA     BFLOC,2            LOC OF LAST SIGNIFICAN BUFFER WORD      LS063930
    13161  3 00023 2 13170   BB4    TXH     BBIR2,2,19         TRA IF BUFFER EXHAUSTED                 LS063940
    13162  0602 CC 0 04415          SLW     BBPNT              SAVE DECREMENT FOR FUTURE USE           LS063950
    13163  0500 CC 2 13616          CLA     BOFFO-1,2          GET NEXT WORD OF BUFFER                 LS063960
    13164  0074 CC 4 04451          TSX     $CONSW,4           TACK IT ONTO FRONT OF LIST              LS063970
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13165  0560 00 0 04415          LDQ    BBPNT                                    LS063980
13166  0074 00 4 04471          TSX    $CONS,4                                  LS063990
13167  1 00001 2 13161          TXI    BB4,2,1      MOVE TO NEXT WORD OF BUFFER LS064000
13170  0774 00 2 00000  BBIR2   AXT    **,2         RESTORE IR2                 LS064010
13171  0020 00 0 13173          TRA    BB3          RESET POSITION IN BOFFO     LS064020
13172  0634 00 4 13200  CLEAR   SXA    BB1,4        ENTRANCE FOR CLEARING BUFFER LS064030
13173  0560 00 0 13405  BB3     LDQ    A1           RESET CHARS CELL TO 0 CHARACTERS LS064040
13174 -0600 00 0 13571          STQ    CHARS                                    LS064050
13175  0774 00 4 00024          AXT    20,4         SET INDEX IN PACK FOR FIRST LS064060
13176  0634 00 4 13036          SXA    BFLOC,4        BUFFER WORD               LS064070
13177  0600 00 0 04415          STZ    BBPNT        AVOID UNNECESSARY GARBAGE COLL. LS064080
13200  0774 00 4 00000  BB1     AXT    ,4           RESTORE IR4                 LS064090
13201  0020 00 4 00001          TRA    1,4          EXIT                        LS064100


                         SPACE  5                                              LS064110
                *        ADVANCE, STARTREAD, AND ENDREAD PROGRAMS              LS064120
                *                                                              LS064130
                *        ADVANCE SETS CURCHAR TO THE NEXT CHARACTER            LS064140
                *        STARTREAD READS A NEW RECORD                          LS064150
                *        ENDREAD MOVES TO THE END OF THE CURRENT RECORD AND    LS064160
                *          GIVES ERROR OUTPUT, IF ANY                          LS064170
                                                                               LS064180
BINARY CARD NO. LISP0255
13202 -0634 00 4 13211  ADVANC SXD  PORK,4          SAVE IR4                    LS064190
13203 -0534 00 4 13227          LXD  CHPOS,4        FIND NO. OF CHARS. LEFT IN PACKED LS064200
13204  2 00006 4 13240          TIX  CHOPS,4,6        WORD                      LS064210
13205 -0534 00 4 13230          LXD  WDNUM,4        FIND NEW PACKED WORD        LS064220
13206  2 00001 4 13234          TIX  LAMB,4,1       IF NEW RECORD NEEDED, CONTINUE LS064230
13207 -0520 00 0 13572          NZT  EORTS          IF NONZERO GIVE EOR AS OUTPUT CHAR- LS064240
13210  0020 00 0 13214          TRA  VEAL             ACTER, OTHERWISE READ NEW RECORD LS064250
13211  1 00000 0 13264  PORK    TXI  STEW,,0        READ A NEW RECORD           LS064260
13212 -0634 00 4 13211  STREAD  SXD  PORK,4         SAVE IR4                    LS064270
13213  0020 00 0 13216          TRA  *+3                                        LS064280
13214 -0520 00 0 13505   VEAL   NZT  ERSIG                                      LS064290
13215  0020 00 0 13224          TRA  JOYCE                                      LS064300
13216  0600 00 0 13505          STZ  ERSIG          TURN OFF ERROR SIGNAL       LS064310
13217  0774 00 4 00014          AXT  12,4           PUT BLANKS IN ERROR BUFFER  LS064320
13220 -0500 00 0 00527          CAL  BLANKS                                     LS064330
13221  0602 00 4 13560   RUTH   SLW  ERBFL,4                                    LS064340
13222  0602 00 4 13523          SLW  ERBFU,4                                    LS064350
13223  2 00001 4 13221          TIX  RUTH,4,1                                   LS064360
13224  0074 00 4 01170   JOYCE  TSX  $INPUT,4        READ A NEW RECORD           LS064370
13225  0 00000 0 00000               $BCDIN                                     LS064380
13226  0 00016 0 13524               BUFF-12,,14                                LS064390
13227  1 00000 0 13304  CHPOS   TXI  RIBS,,0        ERROR RETURN                LS064400

BINARY CARD NO. LISP0256
13230  1 00000 0 13257  WDNUM   TXI  RUMP,,0        EOF RETURN                  LS064410
13231 -0625 00 0 13572          STL  EORTS          SET SIGNAL FOR EOR OUTPUT NEXT TIME LS064420
13232  0600 00 0 13623          STZ  $CHACT         INITIALIZE CHARACTER COUNT  LS064430
```

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13233  0774 00 4 00014          AXT 12,4          SET INDEX FOR START OF INPUT BUFFER   LS064440
13234 -0634 00 4 13230  LAMB    SXD WDNUM,4                                             LS064450
13235  0500 00 4 13540          CLA BUFF,4        PICK UP NEW PACKED WORD FROM          LS064460
13236  0601 00 0 13560          STO PWORD           INPUT BUFFER AND STORE IT           LS064470
13237  0774 00 4 00044          AXT 36,4          INITIALIZE POSITION IN PACKED WORD    LS064480
13240 -0634 00 4 13227  CHOPS   SXD CHPOS,4                                            LS064490
13241 -0754 00 0 00000          PXD ,0            PICK OFF ONE CHARACTER                LS064500
13242  0560 00 0 13560          LDQ PWORD                                               LS064510
13243 -0763 00 0 00006  A6      LGL 6                                                   LS064520
13244 -0600 00 0 13560          STQ PWORD         SAVE SHIFTED PACKED WORD              LS064530
13245  0734 00 4 00000          PAX 0,4                                                 LS064540
13246  1 07426 4 13247   SHANK  TXI *+1,4,$H00     POINTER TO NEW CHARACTER OBJECT      LS064550
13247  0500 00 0 13623   BACON  CLA $CHACT         BUMP CHARACTER COUNT                 LS064560
13250  0400 00 0 00425          ADD $Q1                                                 LS064570
13251  0601 00 0 13623          STO $CHACT                                              LS064580
13252 -0754 00 4 00000          PXD ,4            SET CURCHAR TO NEW CHARACTER         LS064590
13253  0602 00 0 13622          SLW $CURC         POINTER IN DECREMENT FOR BIN         LS064600
13254  0634 00 4 13621          SXA $CURC1,4      POINTER IN ADDRESS FOR APVAL1        LS064610
13255 -0534 00 4 13211          LXD PORK,4        RESTORE IR4                          LS064620

BINARY CARD NO. LISP0257
13256  0020 00 4 00001          TRA 1,4           RETURN                               LS064630
13257  0534 00 4 00557  RUMP    LXA EOF,4         END OF FILE CHARACTER                LS064640
13260  0020 00 0 13302          TRA JEAN                                               LS064650
13261 -0634 00 4 13211  ENDRED  SXD PORK,4        SAVE IR4 FOR EXIT (ENDREAD ENTRANCE) LS064660
13262 -0634 00 0 13227          SXD CHPOS,0       SET CHARACTER POSITION AND WORD      LS064670
13263 -0634 00 0 13230          SXD WDNUM,0       NUMBER AT END OF RECORD              LS064680
13264 -0520 00 0 13505  STEW    NZT ERSIG         TEST IF ERROR PRINTOUT NEEDED        LS064690
13265  0020 00 0 13301          TRA SUZIE                                              LS064700
13266  0074 00 4 06026          TSX TERPRI,4      PRINT BLANK LINE                     LS064710
13267  0074 00 4 01527          TSX OUTPUT,4      PRINT UPPER ERROR  BUFFER            LS064720
13270  0 00000 0 00365             BCDOUT                                              LS064730
13271  0 00015 0 13506             ERBFU-13,,13                                        LS064740
13272  0074 00 4 01527          TSX OUTPUT,4      PRINT BAD LINE                       LS064750
13273  0 00000 0 00365             BCDOUT                                              LS064760
13274  0 00015 0 13523             BUFF-13,,13                                         LS064770
13275  0074 00 4 01527          TSX OUTPUT,4      PRINT LOWER ERROR BUFFER             LS064780
13276  0 00000 0 00365             BCDOUT                                              LS064790
13277  0 00015 0 13543             ERBFL-13,,13                                        LS064800
13300  0074 00 4 06026          TSX TERPRI,4      PRINT BLANK LINE                     LS064810
13301  0534 00 4 00560   SUZIE  LXA EOR,4         LOAD END OF RECORD CHARACTER         LS064820
13302  0600 00 0 13572  JEAN    STZ EORTS         SIGNAL TO READ NEW RECORD NEXT TIME  LS064830
13303  0020 00 0 13247          TRA BACON                                              LS064840

BINARY CARD NO. LISP0258
13304 -0634 00 4 02313   RIBS   SXD $ERROR,4                                         LS064850
13305  0074 00 4 02314          TSX $ERROR+1,4                                        LS064860
13306  542330600354             BCI 1,*CH 3*                                          LS064870
                        *       TAPE READING ERROR -ADVANCE, STARTREAD-               LS064880
                 00525   SEVNS  SYN     SEVENS                                       LS064890
```

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                                SPACE   5                                                                  LS064900
                                    ALPHABETIC FUNCTIONS                                                   LS064910
                                                                                                           LS064920
                                    LITER(CHAR)                                                            LS064930
13307 -0634 CO 4 13324  LITER   SXD AL1,4                                                                  LS064940
13310 -0737 CO 4 00000          PDC 0,4                                                                    LS064950
13311  0500 CO 0 13426          CLA A2                                                                     LS064960
13312  0402 CO 4 03757  AL3     SUB CHTYP-$H00,4        COMPARE WITH TABLE ENTRY                           LS064970
13313 -0534 CO 4 13324          LXD AL1,4                                                                  LS064980
13314 -0100 CO 0 13317          TNZ AL6                                                                    LS064990
13315  0500 CO 0 00476          CLA $QD1                EXIT WITH T                                        LS065000
13316  0020 CO 4 00001          TRA 1,4                                                                    LS065010
13317 -0754 CO 0 00000  AL6     PXD ,0                  EXIT WITH F                                        LS065020
13320  0020 CO 4 00001          TRA 1,4                                                                    LS065030
                                    CPCHAR(CHAR)                                                           LS065040
13321 -0634 CO 4 13324  CPCHAR  SXD AL1,4                                                                  LS065050
13322 -0737 CO 4 00000          PDC 0,4                                                                    LS065060
13323  0500 CO 0 13425          CLA A3                                                                     LS065070
13324  1 00000 0 13312   AL1    TXI AL3,,0                                                                 LS065080
                                    DIGIT(CHAR)                                                            LS065090
13325  0340 CO 0 00561  DIGIT   CAS HOL9                                                                  LS065100
13326  0020 CO 0 13332          TRA AL5                                                                    LS065110
13327  0761 CO 0 00000          NOP                                                                        LS065120
13330  0500 CO 0 00476          CLA $QD1                                                                   LS065130
13331  0020 CO 4 00001          TRA 1,4                                                                    LS065140

BINARY CARD NO. LISP0259
13332 -0754 CO 0 00000  AL5     PXD ,0                                                                     LS065150
13333  0020 CO 4 00001          TRA 1,4                                                                    LS065160
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                                SPACE   5                                                                  LS065170
                            *   ERROR1                                                                     LS065180
                            *                                                                              LS065190
                            *   ER1 CREATES A VISUAL POINTER IN ERBFU AND ERBFL                             LS065200
                            *   TO A READING ERROR                                                         LS065210
                            *                                                                              LS065220
13334 -0625 CO 0 13505  EROR1 STL     ERSIG             TURN ON ERROR SIGNAL                               LS065230
13335  0634 CO 4 13351        SXA     ERIR,4            SAVE IR4                                           LS065240
13336  0500 CO 0 00431        CLA     $Q5               V FOR UPPER BUFFER                                 LS065250
13337  0560 CO 0 00460        LDQ     OCT41             A FOR LOWER BUFFER                                 LS065260
13340 -0535 CO 4 13227        LDC     CHPOS,4           SHIFT BOTH LETTERS INTO POSITION                   LS065270
13341 -0763 CO 4 77772        LGL     -6,4                                                                 LS065280
13342 -0534 CO 4 13230        LXD     WDNUM,4                                                              LS065290
13343 -3 00000 4 13350        TXL     ERX,4,0           DO NOTHING IF END OF RECORD                        LS065300
13344 -0602 CO 4 13523        ORS     ERBFU,4           INSERT V INTO UPPER BUFFER                         LS065310
13345 -0130 CO 0 00000        XCL                                                                          LS065320
13346  0322 CO 4 13560        ERA     ERBFL,4           INSERT A INTO LOWER BUFFER                         LS065330
13347  0602 CO 4 13560        SLW     ERBFL,4                                                              LS065340
13350 -0754 CO 0 00000  ERX    PXD     ,0                                                                   LS065350
13351  0774 CO 4 00000  ERIR   AXT     **,4              RESTORE IR4                                        LS065360
13352  0020 CO 4 00001        TRA     1,4               EXIT                                               LS065370
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                                SPACE   5                                                       LS065380
                              *       UNPACK(NAME)                                              LS065390
                              *                                                                 LS065400
                              *       UNPACK(NAME) GIVES A LIST OF THE CHARACTER OBJECTS        LS065410
                              *       IN THE CELL -NAME-, UP TO THE FIRST 77.                   LS065420
                              *                                                                 LS065430
    13353  0634 00 4 13402  UNPACK SXA     UPI4,4          SAVE IR2 AND IR4                    LS065440
    13354  0634 00 2 13403          SXA     UPI2,2                                              LS065450
    13355 -0734 00 4 00000          PDX     ,4              PUT ARGUMENT CELL IN MQ             LS065460
    13356  0560 00 4 00000          LDQ     0,4                                                 LS065470
    13357  0774 00 2 00006          AXT     6,2                                                 LS065480

BINARY CARD NO. LISP0260
    13360 -0754 00 0 00000   UP2    PXD     ,0              LOOK AT A CHARACTER                 LS065490
    13361 -0763 00 0 00006          LGL     6                                                   LS065500
    13362  0340 00 0 00447          CAS     $Q63                                                LS065510
    13363  1 00001 2 13367          TXI     UP1,2,1         ADJUST IR2 FOR CHARACTER            LS065520
    13364  1 00001 2 13367          TXI     UP1,2,1           COUNT                             LS065530
    13365  0601 00 2 13570          STO     T1+6,2          STORE THE CHARACTER                 LS065540
    13366  2 00001 2 13360          TIX     UP2,2,1                                             LS065550
                                                                                               LS065560
    13367  0600 00 0 04415   UP1    STZ     UPLST           SET END OF LIST TO NIL              LS065570
    13370  3 00006 2 13400   UP4    TXH     UP3,2,6         EXIT IF ALL CHARACTERS LISTED       LS065580
    13371  0500 00 2 13570          CLA     T1+6,2          PICK UP NEXT CHARACTER              LS065590
    13372  0400 00 0 00556          ADD     HORG              AND FORM OBJECT                   LS065600
    13373  0767 00 0 00022          ALS     18                                                  LS065610
    13374  0560 00 0 04415          LDQ     UPLST                                               LS065620
    13375  0074 00 4 04471          TSX     $CONS,4         PUT CHAR AT HEAD OF LIST            LS065630
    13376  0601 00 0 04415          STO     UPLST                                               LS065640
    13377  1 00001 2 13370          TXI     UP4,2,1                                             LS065650
    13400  0500 00 0 04415   UP3    CLA     UPLST           RETURN WITH LOCATION OF LIST        LS065660
    13401  0600 00 0 04415          STZ     UPLST           AVOID UNNECESSARY GARBAGE COLL.     LS065670
    13402  0774 00 4 00000   UPI4   AXT     **,4            RESTORE IR4 AND IR2                 LS065680
    13403  0774 00 2 00000   UPI2   AXT     **,2                                                LS065690
    13404  0020 00 4 00001          TRA     1,4             EXIT                                LS065700
                              *                                                                 LS065710
                              *       THIS ROUTINE USES $CONS                                   LS065720



                                SPACE   5                                                       LS065730
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * LS065740
                                                                                               LS065750
                                        STORAGE                                                LS065760
                                                                                               LS065770
                          00556  HORG   SYN $H00A                                              LS065780
                          00557  EOF    SYN $H12A                                              LS065790
                          00560  EOR    SYN $H72A                                              LS065800
                          00561  HOL9   SYN $H11D                                              LS065810
                          00562  HOL14  SYN $H14D                                              LS065820
                          00565  HOL40  SYN $H40D                                              LS065830
                                 TITLE                                                         LS065840
    13405 +000000000001  CHTYP  DEC 1,1,1,1,1,1,1,1      0 = ILLEGAL CHARACTER               LS065850
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BINARY CARD NO. LISP0261
    13415 +000000000001            DEC 1,1,4,3,3,0,0,0      1 = DIGIT                          LS065860
    13425 +000000000003            DEC 3,2,2,2,2,2,2,2      2 = LETTER                         LS065870

BINARY CARD NO. LISP0262
    13435 +000000000002            DEC 2,2,4,4,4,0,0,0      3 = OPERATION CHARACTER            LS065880
    13445 +000000000003            DEC 3,2,2,2,2,2,2,2      4 = OTHER                          LS065890
    13455 +000000000002            DEC 2,2,4,4,3,0,0,0                                         LS065900

BINARY CARD NO. LISP0263
    13465 +000000000004            DEC 4,3,2,2,2,2,2,2                                         LS065910
    13475 +000000000002            DEC 2,2,4,4,4,0,0,0                                         LS065920
                                   DETAIL                                                      LS065930
                    00424   ZERO   SYN $ZERO                                                  LS065940
                    13405   A1     SYN CHTYP                                                  LS065950
                    13426   A2     SYN CHTYP+17                                               LS065960
                    13425   A3     SYN CHTYP+16                                               LS065970
                    00460   OCT41  SYN $Q041                                                  LS065980
                    00446   A36    SYN $Q36                                                   LS065990
    13505                   ERSIG  BSS 1                    ERROR INDICATOR                    LS066000

BINARY CARD NO. LISP0264
    13506  006060606060             BCI     1,0             DOUBLE SPACE UNDER PROGRAM CONTROL LS066010
    13523                   ERBFU  BES     12              UPPER ERROR BUFFER                 LS066020

BINARY CARD NO. LISP0265
    13523  606060606060             BCI     1,              SINGLE SPACE UNDER PROGRAM CONTROL LS066030
    1354C                   BUFF   BES     12              BUFFER FOR INPUT RECORD            LS066040
    13543                          BES     3               ROOM FOR EXTRA WORDS IN READ-IN    LS066050

BINARY CARD NO. LISP0266
    13543  606060606060             BCI     1,              SINGLE SPACE UNDER PROGRAM CONTROL LS066060
    13560                   ERBFL  BES     12              LOWER ERROR BUFFER                 LS066070
    13560                  PWORD   BSS 1                                                      LS066080

BINARY CARD NO. LISP0267
    13561  0 00001 0 13573  PARAM  PZE     BOFFO-20,,1                                        LS066090
                    00533   FLOS   SYN     FLOATD                                             LS066100
    13562                   T1     BSS     7                                                  LS066110
                    00532   FIXS   SYN     $FIXD                                              LS066120
    13571                   CHARS  BSS     1                                                  LS066130
    13572                   EORTS  BSS 1                    NONZERO INDICATES EOR OUTPUT CHAR  LS066140
    13617                   BOFFO  BES     20                                                 LS066150
    13617                          BSS     1               JUNK WORD FOR BOFFO REMNANTS       LS066160
                    04415   UPLST  SYN     BBPNT           CUMULATIVE LIST OF CHARACTERS      LS066170
    13620                          BSS     1                                                  LS066180

BINARY CARD NO. LISP0268
    13621  0 00000 0 00000  CURC1  PZE                     POINTER APPEARS IN ADDRESS         LS066190
    13622  0 00000 0 00000  CURC   PZE                     POINTER APPEARS IN DECREMENT       LS066200
    13623  0 00000 0 00000   CHACT PZE                     CHARACTER COUNT                    LS066210
                            *                                                                 LS066220
                            *   MKNO    A FUNCTION OF TWO ARGUMENTS, THE FIRST IS A NUMBER, THE SECLS066230
                            *           ND IS A TYPE (FLO OR FIX). MKNO FORMS A NON-UNIQUE NUMBER LS066240
    13624  0634 00 4 13646   MKNO  SXA      MKIR,4          SAVE LINK IR                       LS066250
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13625 -0600 CO 0 04417          STQ     MKT1            TYPE OF NUMBER TO MQ                    LS066260
13626  0074 CO 4 04451          TSX     $CONSW,4                                                LS066270
13627  0131 CO 0 00000          XCA                                                             LS066280
13630  0500 CO 0 00514          CLA     $DMASK                                                  LS066290
13631  0074 CO 4 04471          TSX     $CONS,4                                                 LS066300
13632 -0534 CO 4 04417          LXD     MKT1,4          TYPE TO IR 4                            LS066310
13633  0622 CO 0 04417          STD     MKT1                                                    LS066320
13634  0500 CO 0 00475          CLA     $QT5            ASSUME IT IS OCTAL                      LS066330
13635 -3 11661 4 13640          TXL     *+3,4,$FIX-1                                            LS066340
13636  3 11662 4 13640          TXH     *+2,4,$FIX                                              LS066350
13637  0500 CO 0 00472          CLA     $QT1                                                    LS066360
13640 -3 11644 4 13643          TXL     *+3,4,$FLOAT-1                                          LS066370
13641  3 11645 4 13643          TXH     *+2,4,$FLOAT                                            LS066380
13642  0500 CO 0 00473          CLA     $QT2                                                    LS066390
13643 -0534 CO 4 04417          LXD     MKT1,4          LOCATION OF NUMBER                      LS066400
13644 -0602 00 4 00000          ORS     0,4             PUT IN NUMBER FLAG                      LS066410
13645 -0754 00 4 00000          PXD     0,4             ANSWER TO AC                            LS066420
13646  0774 00 4 00000   MKIR   AXT     **,4            RESTORE LINK IR                         LS066430

BINARY CARD NO. LISP0269
13647  0020 00 4 00001          TRA     1,4                                                     LS066440
                        *                                                                       LS066450
                        *                                                                       LS066460
                        H       HED                                                             LS066470
                        *       LOGOR, LOGAND, AND LOGXOR                                       LS066480
                        *                                                                       LS066490
                        *       THESE FUNCTIONS TAKE THE LOGICAL AND, LOGICAL OR, AND LOGICAL   LS066500
                        *       EXCLUSIVE OR RESPECTIVELY OF THEIR ARGUMENTS, WHICH ARE NUMBER  LS066510
                        *       OBJECTS.  THE RESULT IS AN OCTAL NUMBER OBJECT.                 LS066520
                        *                                                                       LS066530
13650  0100 CO 4 00001   LOGOR TZE     1,4             RETURN 0 IF 0 INPUT                     LS066540
13651 -0634 CO 4 13743          SXD     T1,4            SAVE IR4                                LS066550
13652  0774 CO 4 11423          AXT   -$)PJ36,4                                                 LS066560
13653  0634 CO 4 13743          SXA     T1,4            SET FUNCTION ON PDL                     LS066570
13654  0074 CO 4 03104          TSX     $SAVE,4                                                 LS066580
13655 -3 13745 0 03171          TXL     $END1,,T1+2     SAVE 1 ITEM                             LS066590
13656  0074 CO 4 17050          TSX     $EVLIS,4        EVALUATE LIST OF ARGUMENTS              LS066600
13657  0074 CO 4 03117          TSX     UNSAVE,4                                                LS066610
13660  0560 CO 0 00424          LDQ     $ZERO           OR OF NO ARGUMENTS                      LS066620
13661 -0600 CO 0 13744          STQ     T1+1                                                    LS066630
13662  0560 CO 0 13735          LDQ     ORS             INSTRUCTION FOR INNER LOOP              LS066640
13663  0020 CO C 13713          TRA     LOG2                                                    LS066650
                        *                                                                       LS066660
13664  0100 CO 4 00001  LOGAND TZE     1,4             EXIT WITH 0 IF 0 INPUT                  LS066670
13665 -0634 CO 4 13743          SXD     T1,4            SAVE IR4                                LS066680
13666  0774 CO 4 11433          AXT   -$)PJ37,4                                                 LS066690
13667  0634 CO 4 13743          SXA     T1,4            SET FUNCTION ON PDL                     LS066700
13670  0074 CO 4 03104          TSX     $SAVE,4                                                 LS066710
13671 -3 13745 C 03171          TXL     $END1,,T1+2     SAVE 1 ITEM                             LS066720
13672  0074 CO 4 17050          TSX     $EVLIS,4        EVALUATE LIST OF ARGUMENTS              LS066730
13673  0074 CO 4 03117          TSX     UNSAVE,4                                                LS066740
13674  0560 CO 0 00525          LDQ     SEVENS          AND OF NO ARGUMENTS                     LS066750
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BINARY CARD NO. LISP0270
    13675 -0600 CO 0 13744          STQ     T1+1                                    LS066760
    13676  0560 CO 0 13736          LDQ     ANS             INSTRUCTION FOR INNER LOOP LS066770
    13677  0020 CO 0 13713          TRA     LOG2                                    LS066780
                              *                                                     LS066790
    13700  0100 CO 4 00001  LOGXOR TZE     1,4             EXIT WITH 0 IF 0 INPUT  LS066800
    13701 -0634 CO 4 13743          SXD     T1,4            SAVE IR4                LS066810
    13702  0774 CO 4 11413          AXT     -$)PJ38,4       LOGXOR ATOM             LS066820
    13703  0634 CO 4 13743          SXA     T1,4            SET FUNCTION ON PDL     LS066830
    13704  0074 CO 4 03104          TSX     $SAVE,4                                 LS066840
    13705 -3 13745 0 03171          TXL     $END1,,T1+2     SAVE 1 ITEM             LS066850
    13706  0074 CO 4 17050          TSX     $EVLIS,4        EVALUATE LIST OF ARGUMENTS LS066860
    13707  0074 CO 4 03117          TSX     UNSAVE,4                                LS066870
    13710  0560 CO 0 00424          LDQ     $ZERO           RINGSUM OF NO ARGUMENTS LS066880
    13711 -0600 CO 0 13744          STQ     T1+1                                    LS066890
    13712  0560 CO 0 13737          LDQ     ERS             TRA TO INSTRUCTIONS FOR INNER LOOP LS066900
                              *     COMMON PART OF LOGAND, LOGOR, AND LOGXOR        LS066910
    13713 -0600 CO 0 13725   LOG2   STQ     LOG5                                    LS066920
    13714  0634 CO 2 13733          SXA     LOG4,2          SAVE IR2                LS066930
    13715 -0734 00 2 00000          PDX     ,2              POINTER TO ARGUMENT LIST LS066940
                              *     FORM THE PROPER LOGICAL COMBINATION OF THE ARGUMENTS LS066950
    13716  0500 CO 2 00000   LOG1   CLA     0,2             L                       LS066960
    13717 -0734 00 2 00000          PDX     0,2             CDR(L)                  LS066970
    13720  0734 CO 4 00000          PAX     0,4                                     LS066980
    13721 -0754 CO 4 00000          PXD     0,4             CAR(L)                  LS066990
    13722  0074 CO 4 15343          TSX     NUMVAL,4        GET NUMBER FOR THIS ELEMENT LS067000

BINARY CARD NO. LISP0271
    13723 -0734 CO 4 00000          PDX     0,4                                     LS067010
    13724 -0500 CO 4 00000          CAL     0,4                                     LS067020
    13725  0 00000 0 00000   LOG5           **              INSTRUCTION SET EARLIER LS067030
    13726  3 00000 2 13716   LOG7   TXH     LOG1,2,0        LOOP AGAIN IF CDR(L) NOT NULL LS067040
                              *     RETURN A POINTER TO THE RESULT                  LS067050
    13727  0500 CO 0 13744   LOG6   CLA     T1+1            PICK UP RESULT          LS067060
    13730  0560 CO 0 00540          LDQ     $OCTD           MAKE AN OBJECT OF IT    LS067070
    13731  0074 CO 4 13624          TSX     $MKNO,4                                 LS067080
    13732 -0534 00 4 13743          LXD     T1,4            RESTORE IR4 AND IR2     LS067090
    13733  0774 CO 2 00000   LOG4   AXT     **,2                                    LS067100
    13734  0020 CO 4 00001          TRA     1,4                                     LS067110
                              *     INSTRUCTIONS TO BE INSERTED IN INNER LOOP       LS067120
    13735 -0602 CO 0 13744   ORS    ORS     T1+1                                    LS067130
    13736  0320 CO C 13744   ANS    ANS     T1+1                                    LS067140
    13737  0020 CO 0 13740   ERS    TRA     *+1             TRA SINCE ERS TAKES 2 INSTRUCTIONS LS067150
    13740  0322 CO 0 13744          ERA     T1+1                                    LS067160
    13741  0602 CO 0 13744          SLW     T1+1                                    LS067170
    13742  0020 CO 0 13726          TRA     LOG7                                    LS067180
                              *                                                     LS067190
    13743 -000000000000       T1    OCT     -0,-0           STORAGE FOR LOGAND, ETC. LS067200
    13744 -000000000000
                              *     THIS ROUTINE USES NUMVAL,$MKNO,$ZERO,AND SEVENS LS067210
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                                SPACE   5                                                       LS067220
                        *       LEFTSHIFT(X,N)                                                  LS067230
                        *                                                                       LS067240
                        *       IF N IS +, X IS SHIFTED LEFT N PLACES.                          LS067250
                        *       IF N IS -, X IS SHIFTED RIGHT -N PLACES.                        LS067260
                        *       BOTH INPUTS MUST BE NUMERICAL OBJECTS.                          LS067270
                        *                                                                       LS067280
 13745  0634 CO 4 13772  LSHIFT SXA     LSH1,4              SAVE IR4                           LS067290
 13746  0634 CO 2 13771          SXA     LSH4,2              SAVE IR2                           LS067300
 13747  0601 CO 0 13743          STO     T2                  SAVE X                             LS067310
 13750  0131 CO 0 00000          XCA                                                            LS067320

BINARY CARD NO. LISP0272
 13751 -0734 CO 2 00000          PDX     0,2                 FIND VALUE OF N                    LS067330
 13752  0074 CO 4 14065          TSX     FIXVAL,4                                               LS067340
 13753  0774 CO 4 77100          AXT     7*4096+7*512+1*64,4  SET UP ARS                       LS067350
 13754 -0120 CO 0 13756          TMI     LSH2                IF NEGATIVE, SET UP ARS            LS067360
 13755  0774 CO 4 76700          AXT     7*4096+6*512+7*64,4  SET UP ALS                        LS067370
 13756 -0634 CO 4 13764   LSH2   SXD     LSH3,4              PUT OP CODE INTO INSTRUCTION       LS067380
 13757  0621 CO 0 13764          STA     LSH3                PUT ADDRESS IN SHIFT INSTRUCTION   LS067390
 13760  0500 CO 0 13743          CLA     T2                  FIND VALUE OF X                    LS067400
 13761  0074 CO 4 15343          TSX     NUMVAL,4                                               LS067410
 13762 -0734 CO 4 00000          PDX     0,4                                                    LS067420
 13763 -0500 CO 4 00000          CAL     0,4                                                    LS067430
 13764  0767 CO 0 00000   LSH3   ALS     **                  THIS INSTRUCTION WAS SET UP EARLIER LS067440
 13765  0560 CO 0 00540          LDQ     $OCTD               FORM OCTAL NUMBER                  LS067450
 13766  0602 CO 0 13743          SLW     T2              SAUNDERS FIXES THE LEFTSHIFT BUG.....  LS067460
 13767  0500 CO 0 13743          CLA     T2                                                     LS067470
 13770  0074 CO 4 13624          TSX     $MKNO,4                                                LS067480
 13771  0774 00 2 00000   LSH4   AXT     **,2                RESTORE IR2                        LS067490
 13772  0774 00 4 00000   LSH1   AXT     **,4                                                   LS067500
 13773  0020 CO 4 00001          TRA     1,4                                                    LS067510
                13743     T2     SYN     T1                                                     LS067520
                        *                                                                       LS067530
                        *       THIS ROUTINE USES $MKNO,$OCTD,AND NUMVAL                        LS067540
                        Q       HED                                                             LS067550
                        *                                                                       LS067560
                        *                                                                       LS067570
                        * ARYGET       THE FUNCTION THAT GETS AND SETS THE VALUES OF ARRAYS      LS067580
                        *             USED IN LISP AS FOLLOWS ...                               LS067590
                        *             TO GET A VALUE  (NAME,D1,D2,D3)                           LS067600
                        *             TO SET A VALUE   (NAME,SET,VALUE,D1,D2,D3)                LS067610
                        *                                                                       LS067620
                        *             THE CALLING SEQUENCE IS  AS FOLLOWS                       LS067630
                        *       SXA   ARYGTX,4                                                  LS067640
                        *       TSX   ARYGET,4                                                  LS067650
                        *       PZE   LOCATION OF TABLE 1,,NUMBER OF DIMENSIONS                 LS067660
                        *                                                                       LS067670
 13774  0634 CO 2 14033  ARYGET SXA     ARYY,2              SAVE INDEX REGISTERS               LS067680
 13775  0634 CO 1 14034          SXA     ARYZ,1                                                 LS067690
 13776  0601 CO 0 14062          STO     AGAO                SAVE ARGUMENT 1                    LS067700

BINARY CARD NO. LISP0273
 13777  0500 CO 4 00003          CLA     3,4                 TABLE ZERO PARAMETER WORD          LS067710
 14000  0621 CO 0 14031          STA     AGXEX               ADDRESS OF END OF TABLE 1          LS067720
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14001 -0734 CO 2 00000          PDX     0,2             NUMBER OF DIMENSIONS                    LS067730
14002 -0600 CO 0 14063          STQ     AGAT            ARG 2                                   LS067740
14003  0500 CO 0 04063          CLA     $ARG3                                                   LS067750
14004  0601 CO 0 14064          STO     AGATH           ARGUMENT 3                              LS067760
14005  0500 CO 0 14060          CLA     AX              XEC INSTRUCTION                         LS067770
14006 -0534 CO 4 14062          LXD     AGAO,4          GET ARG 1                               LS067780
14007 -3 10536 4 14021          TXL     AGN,4,$SET-1    TEST FOR SET OPERATION                  LS067790
14010  3 10537 4 14021          TXH     AGN,4,$SET      GO ON IF NOT $SET                       LS067800
14011 -0600 CO 0 14061          STQ     AGV             IS SET SAVE VALUE                       LS067810
14012  0500 CO 0 04063          CLA     $ARG3                                                   LS067820
14013  0601 CO 0 14062          STO     AGAO            DIMENSION 1                             LS067830
14014  0500 CO 0 04064          CLA     $ARG4                                                   LS067840
14015  0601 CO 0 14063          STO     AGAT            DIMENSION 2                             LS067850
14016  0500 CO 0 04065          CLA     $ARG5                                                   LS067860
14017  0601 CO 0 14064          STO     AGATH           DIMENSION 3                             LS067870
14020  0500 CO 0 14057          CLA     AXS             XEC* INSTRUCTION                        LS067880
14021  0622 CO 0 14031  AGN     STD     AGXEX           SET UP FETCH OR STORE INSTUCTION        LS067890
14022  3 00002 2 14036          TXH     AGDTH,2,2       GO IF 3 D ARRAY                         LS067900
14023  3 00001 2 14046          TXH     AGDT,2,1        GO IF 2 D ARRAY                         LS067910
14024 -0534 CO 2 14062          LXD     AGAO,2          DIMENSION 1                             LS067920

BINARY CARD NO. LISP0274
14025  0074 CO 4 14065          TSX     FIXVAL,4        EVALUATE THE FIXED POINT NUMBER         LS067930
14026  0734 CO 1 00000          PAX     0,1             INTO PROPER INDEX                       LS067940
14027  0774 CO 6 00000          AXT     0,6             ZERO INDEX  REGISTERS                   LS067950
14030  0500 CO 0 14061  AGXE    CLA     AGV             GET THE VALUE                           LS067960
14031  0522 CO 4 00000  AGXEX   XEC     **,4            FETCH BY XEC OR STORE BY XEC*           LS067970
14032  0774 CO 4 00000  ARYGTX  AXT     **,4            RESTORE INDEX REGISTERS                 LS067980
14033  0774 CO 2 00000  ARYY    AXT     **,2                                                    LS067990
14034  0774 CO 1 00000  ARYZ    AXT     **,1                                                    LS068000
14035  0020 CO 4 00001          TRA     1,4                                                     LS068010
                        *                                                                       LS068020
14036 -0534 CO 2 14064  AGDTH   LXD     AGATH,2         DIMENSION 3                             LS068030
14037  0074 CO 4 14065          TSX     FIXVAL,4        EVALUATE AS A FIXED POINT NUMBER        LS068040
14040  0734 CO 1 00000          PAX     0,1             INTO INDEX                              LS068050
14041 -0534 CO 2 14062          LXD     AGAO,2          DIMENSION 1                             LS068060
14042  0074 CO 4 14065          TSX     FIXVAL,4        EVALUATE IT                             LS068070
14043  0621 CO 0 14055          STA     AGR             SET UP AXT INSTRUCTION                  LS068080
14044 -0534 CO 2 14063          LXD     AGAT,2                                                  LS068090
14045  0020 CO 0 14053          TRA     AGD1                                                    LS068100
                        *                                                                       LS068110
14046  0634 CO 0 14055  AGDT    SXA     AGR,0           PRESET AXT INSTRUCTION                  LS068120
14047 -0534 CO 2 14063          LXD     AGAT,2                                                  LS068130
14050  0074 CO 4 14065          TSX     FIXVAL,4        FIXED POINT NUMBER EVALUATION           LS068140
14051  0734 CO 1 00000          PAX     0,1             INTO INDEX 1                            LS068150
14052 -0534 CO 2 14062  AGD     LXD     AGAO,2                                                  LS068160

BINARY CARD NO. LISP0275
14053  0074 CO 4 14065  AGD1    TSX     FIXVAL,4                                                LS068170
14054  0734 CO 2 00000          PAX     0,2             INTO INDEX 2                            LS068180
14055  0774 CO 4 00000  AGR     AXT     **,4            ZERO OR DIMENSION 1                     LS068190
14056  0020 CO 0 14030          TRA     AGXE            GO BACK TO MAIN PROGRAM                 LS068200
                        *                                                                       LS068210
14057  0522 60 0 00000  AXS     XEC*    -               THE STORE INSTRUCTION                   LS068220
14060  0522 CO 0 00000  AX      XEC     -               THE FETCH INSTRUCTION                   LS068230
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14061  0 00000 0 00000   AGV                          VALUE TO BE STORED PUT HERE          LS068240
14062  0 00000 0 00000   AGAO                         DIMENSION 1                          LS068250
14063  0 00000 0 00000   AGAT                         DIMENSION 2                          LS068260
14064  0 00000 0 00000   AGATH                        DIMENSION 3                          LS068270
                         *                                                                 LS068280
                         *       FIXVAL                                                    LS068290
                         *                                                                 LS068300
                         *       FIXVAL HAS AS INPUT A POINTER TO A FIXED POINT NUMBER OBJECT IN  LS068310
                         *       IR2, AND HANDS BACK THE NUMERICAL VALUE OF THAT OBJECT.   LS068320
                         *                                                                 LS068330
14065   0634 00 2 14076  FIXVAL  SXA     FXVE,2             SAVE IR2 IN CASE OF ERROR      LS068340
14066   0500 00 2 00000          CLA     0,2                                               LS068350
14067   0734 00 2 00000          PAX     0,2                                               LS068360
14070  -3 77776 2 14076          TXL     FXVE,2,-2          ERROR IF NOT ATOMIC            LS068370
14071  -0734 00 2 00000          PDX     0,2                                               LS068380
14072  -0320 00 0 00472          ANA     $QT1                                              LS068390
14073   0100 00 0 14076          TZE     FXVE                                              LS068400
14074   0500 00 2 00000          CLA     0,2                PICK UP VALUE                  LS068410
14075   0020 00 4 00001          TRA     1,4                NORMAL EXIT                    LS068420
14076   0774 00 2 00000   FXVE   AXT     **,2               IR2 SHOULD LAND IN DECR. OF AC LS068430
14077  -0634 00 4 02313          SXD     $ERROR,4                                          LS068440
14100  -0754 00 2 00000          PXD     0,2                IT DOES INDEED LAND THERE      LS068450

BINARY CARD NO. LISP0276
14101   0074 00 4 02314          TSX     $ERROR+1,4                                        LS068460
14102   543160600454             BCI     1,*I  4*           BAD ARGUMENT -- FIXVAL         LS068470
                         *                                                                 LS068480
                         *                                                                 LS068490
                         *                                                                 LS068480
                         *                                                                 LS068490
                         * ARYMAK        THE FUNCTION THAT MAKES ARRAYS                     LS068500
                         *               THE ARGUMENT IS A SINGLE LIST WHOSE SUB-LISTS HAVE THE  LS068510
                         *               FORM  (NAME,(DIMENSION1,DIMENSION2,DIMENSION3),TYPE)    LS068520
                         *       ARRAYS MAY BE 1, 2, OR 3 DIMENSIONAL AND MAY BE OF LIST OR      LS068530
                         *               NON-LIST TYPE.                                     LS068540
                         *                                                                  LS068550
                         *               ARRAY IS STORED AS FOLLOWS ...                     LS068560
                         *       SXA     ARTGTX,4           ADDRESS OF SUBR TXL INSTRUCTION LS068570
                         *       TSX     ARYGET,4                                           LS068580
                         *       PZE     END + 1,, N OF DIMENSIONS  (ARRAY PROPERTY POINTS HERE)  LS068590
                         *       PZE     TOTAL LENGTH,,LIST LENGTH                          LS068600
                         *       PZE     TABLE ZERO,, NUMBER OF DIMENSIONS (ARYGET PARAMETER WORD)LS068610
                         *       CLA*    **,2               TABLE 1                         LS068620
                         *       *************************                                  LS068630
                         *       STO     **,1               TABLE 2                         LS068640
                         *       ****************************                               LS068650
                         *                                  ARRAY PROPER GOES HERE          LS068660
                         *                                                                  LS068670
14103   0560 00 0 14105  ARYMAK  LDQ     AMFAG              PICK UP FUNCTIONAL ARGUMENT     LS068680
14104   0020 00 0 04756          TRA     MAPLIS             LET MAPLIST HANDLE ITERATION ALONG LISLS068690
                         *                                                                  LS068700
14105  -3 00001 0 14106   AMFAG TXL     *+1,,1             FUNCTIONAL ARGUMENT             LS068710
14106   0634 00 4 14312          SXA     AFRX,4             SAVE INDEX REGISTERS            LS068720
14107   0634 00 2 14313          SXA     AFRY,2                                             LS068730
14110  -0734 00 4 00000          PDX     0,4                POINTER TO LIST                 LS068740
14111   0500 00 4 00000          CLA     0,4                                                LS068750
14112   0734 00 4 00000          PAX     0,4                POINTER TO SUBLIST              LS068760
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14113 -0500 00 4 00000          CAL     0,4                                     LS068770
14114  0734 00 4 00000          PAX     0,4             NAME                    LS068780
14115 -0634 00 4 04245          SXD     AFAT,4          SAVE IT                 LS068790
14116 -0734 00 4 00000          PDX     0,4                                     LS068800
14117  0500 00 4 00000          CLA     0,4                                     LS068810
14120  0734 00 2 00000          PAX     0,2             POINTER TO DIMENSION LIST LS068820
14121 -0734 00 4 00000          PDX     0,4                                     LS068830
14122  0500 00 4 00000          CLA     0,4                                     LS068840
14123  0734 00 4 00000          PAX     0,4             TYPE                    LS068850
14124  0600 00 0 14330          STZ     ATYP                                    LS068860
14125 -3 11462 4 14130          TXL     ADA,4,$LIST-1   GO IF NOT $ LIST        LS068870
14126  3 11463 4 14130          TXH     ADA,4,$LIST                             LS068880

BINARY CARD NO. LISP0277
14127 -0634 00 4 14330          SXD     ATYP,4          MAKES ATYP NON-ZERO FOR LIST ARRAYS LS068890
14130  0500 00 2 00000    ADA  CLA     0,2             FIRST WORD ON DIMENSION LIST LS068900
14131  0734 00 2 00000          PAX     0,2             DIMENSION 1             LS068910
14132  0622 00 0 04246          STD     ATMP            POINTER TO REST         LS068920
14133  0074 00 4 14065          TSX     FIXVAL,4        EVALUATE THE FIXED POINT NUMBER LS068930
14134  0601 00 0 14332          STO     ADO             DIMENSION 1             LS068940
14135 -0534 00 4 04246          LXD     ATMP,4          PICK UP POINTER TO REST OF LIST LS068950
14136 -3 00000 4 14154          TXL     AOD,4,0         GO IF 1 D               LS068960
14137  0500 00 4 00000          CLA     0,4             NEXT WORD               LS068970
14140  0622 00 0 04246          STD     ATMP            SAVE POINTER            LS068980
14141  0734 00 2 00000          PAX     0,2             DIMENSION 2             LS068990
14142  0074 00 4 14065          TSX     FIXVAL,4        GET NUMBER VALUE        LS069000
14143  0601 00 0 14333          STO     ADT             DIMENSION 2             LS069010
14144 -0534 00 4 04246          LXD     ATMP,4          POINTER TO REST OF LIST LS069020
14145 -3 00000 4 14163          TXL     ATD,4,0         GO IF 2 D ARRAY         LS069030
14146  0500 00 4 00000          CLA     0,4                                     LS069040
14147  0734 00 2 00000          PAX     0,2             DIMENSION 3             LS069050
14150  0074 00 4 14065          TSX     FIXVAL,4        NUMBER VALUE            LS069060
14151  0601 00 0 14334          STO     ADTH            DIMENSION 3             LS069070
14152  0774 00 2 00003          AXT     3,2             NUMBER OF DIMENSIONS    LS069080
14153  0020 00 0 14171          TRA     AGA             GO TO NEXT PART OF PROGRAM LS069090
14154  0500 00 0 14332    AOD   CLA     ADO             1D, TREAT AS A 1 X 1 X D1 ARRAY LS069100

BINARY CARD NO. LISP0278
14155  0601 00 0 14334          STO     ADTH                                    LS069110
14156  0500 00 0 00425          CLA     $Q1                                     LS069120
14157  0601 00 0 14333          STO     ADT             DIMENSION 2             LS069130
14160  0601 00 0 14332          STO     ADO             DIMENSION 1             LS069140
14161  0774 00 2 00001          AXT     1,2             1 D ARRAY               LS069150
14162  0020 00 0 14171          TRA     AGA             GO NEXT PART            LS069160
14163  0601 00 0 14334    ATD   STO     ADTH                                    LS069170
14164  0500 00 0 14332          CLA     ADO                                     LS069180
14165  0601 00 0 14333          STO     ADT                                     LS069190
14166  0500 00 0 00425          CLA     $Q1                                     LS069200
14167  0601 00 0 14332          STO     ADO             DIMENSION 1             LS069210
14170  0774 00 2 00002          AXT     2,2             2 D ARRAY               LS069220
14171  0560 00 0 14332    AGA   LDQ     ADO             DIMENSION 1             LS069230
14172 -0754 00 0 00000          PXD     0,0             ZERO AC                 LS069240
14173  0200 00 0 14333          MPY     ADT             DIMENSION 2             LS069250
14174 -0600 00 0 14327          STQ     ADOT            D1 X D2                 LS069260
14175  0200 00 0 14334          MPY     ADTH            DIMENSION 3             LS069270
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14176  0520 CO 0 14330        ZET     ATYP          SKIP NEXT IF NON-LIST ARRAY          LS069280
14177 -0600 CO 0 1433C        STQ     ATYP          LIST LENGHT                          LS069290
14200  0131 CO 0 00000        XCA                   D1 X D2 X D3 TO AC                   LS069300
14201  0400 CO 0 14327        ADD     ADOT          ADD INDEX TABLE LENGTHS              LS069310
14202  0400 CO 0 14332        ADD     ADO                                                LS069320

BINARY CARD NO. LISP0279
14203  0400 CO 0 00431        ADD     $Q5           CONSTANT LENGTH                      LS069330
14204  0621 CO 0 14325        STA     APWT          PARAMETER WORD TWO                   LS069340
14205  0621 CO 0 14331        STA     ATMQ          SAVE LENGTH                          LS069350
14206  0534 CO 4 14330        LXA     ATYP,4        ZERO OR LIST LENGTH                  LS069360
14207 -0634 CO 4 14325        SXD     APWT,4                                             LS069370
14210  0074 CO 4 04543        TSX     BLOCKR,4      RESERVE A BLOCK OF THIS LENGTH       LS069380
14211  0100 CO 0 14315        TZE     ARYTL         GO IF ARRAY WILL NOT FIT             LS069390
14212  0621 CO 0 04246        STA     ATMP          END OF BLOCK ADDRESS                 LS069400
14213  0400 CO 0 00425        ADD     $Q1           ADD 1                                LS069410
14214  0621 CO 0 14324        STA     APWO          PARAMETER WORD 1                     LS069420
14215 -0634 00 2 14326        SXD     ATBZ,2        NUMBER OF DIMENSIONS                 LS069430
14216 -0634 CO 2 14324        SXD     APWO,2                                             LS069440
14217 -0634 CO 2 14335        SXD     ASBR,2                                             LS069450
14220  0402 CO 0 14331        SUB     ATMQ          LENGTH OF BLOCK                      LS069460
14221  0621 CO 0 14335        STA     ASBR          ADDRESS OF BEGINNING OG BLOCK        LS069470
14222  0737 CO 4 00000        PAC     0,4           POINTER IN IR 4                      LS069480
14223  1 77776 4 14224        TXI     *+1,4,-2      POINTER TO ARRAY PROPERTY            LS069490
14224 -0634 CO 4 14336        SXD     AARY,4        SAVE POINTER                         LS069500
14225  0737 CO 4 00000        PAC     0,4           POINTER TO BEGINNING OF ARRAY        LS069510
14226  0400 CO 0 00430        ADD     $Q4           LENGTH OF PREFIX - 1                 LS069520
14227  0400 CO 0 14332        ADD     ADO                                                LS069530
14230  0621 00 0 14326        STA     ATBZ          LAST LOC. IN TAQBLE ONE              LS069540

BINARY CARD NO. LISP0280
14231  0774 00 2 00005        AXT     5,2           LENGTH OF PREFIX TO ARRAY            LS069550
14232  0500 00 2 14327  ACLA  CLA     ADOT,2        PICK UP PREFIX                       LS069560
14233  0601 CO 4 00000        STO     0,4           AND STORE IN CORE                    LS069570
14234  1 77777 4 14235        TXI     *+1,4,-1      UPDTAEC CORE LOCATION                LS069580
14235  2 00001 2 14232        TIX     ACLA,2,1      GET REST OF PREFIX                   LS069590
14236 -0320 00 0 00513        ANA     $AMASK        TABLE ZERO IN AC                     LS069600
14237 -0501 CO 0 14337        ORA     ACLAS         OR IN CLA* INSTRUCTION               LS069610
14240  0534 CO 2 14332        LXA     ADO,2         LENGTH OF TABLE                      LS069620
14241  0400 00 0 14333  AADD  ADD     ADT           INCREMENT BY DIMENSION 2             LS069630
14242  0601 00 4 00000        STO     0,4           PUT IN CORE                          LS069640
14243  1 77777 4 14244        TXI     *+1,4,-1      UP DATE CORE COUNTER                 LS069650
14244  2 00001 2 14241        TIX     AADD,2,1      FINISH OFFF                          LS069660
14245  0534 CO 2 14327        LXA     ADOT,2        LENGTH OF TABLE 2                    LS069670
14246 -0320 CO 0 00513        ANA     $AMASK        CLEAR OUT ALL BUT ADDRESS            LS069680
14247 -0501 CO 0 14340        ORA     ARSTO         PUT INSTRUCTION                      LS069690
14250  0400 CO 0 14334  AAA   ADD     ADTH          ADD DIMENSION 3                      LS069700
14251  0601 CO 4 00000        STO     0,4           PUT IN CORE                          LS069710
14252  1 77777 4 14253        TXI     *+1,4,-1      UPDATE CORE COUNTER                  LS069720
14253  2 00001 2 14250        TIX     AAA,2,1       CONTINUE TO CONSTRUCT TABLE          LS069730
                       *              TABLE CONSTRUCTION ALL DONE.                       LS069740
                       *              THE FOLLOWING ADDS PROPERTYS TO THE ARYATOM        LS069750
14254  0500 CO 0 14336        CLA     AARY          PICK UP POINTER TO TO ARRAY PROPERTY LS069760
14255  0560 CO 0 00424        LDQ     $ZERO                                              LS069770
14256  0074 CO 4 04471        TSX     $CONS,4                                            LS069780
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BINARY CARD NO. LISP0281
    14257   0560 CO 0 00424          LDQ     $ZERO                                          LS069790
    14260   0074 CO 4 04471          TSX     $CONS,4                                        LS069800
    14261   0131 CO 0 00000          XCA                                                    LS069810
    14262   0500 CO 0 14341          CLA     ARY             POINTER TO ATOMIC SYMBOL ARRAY LS069820
    14263   0074 CO 4 04471          TSX     $CONS,4         (ARRAY,(POINTER TO ARRAY PROPERTY)) LS069830
    14264   0601 CO 0 04246          STO     ATMP            SAVE IN TEMP STORAGE           LS069840
    14265   0500 CO 0 14335          CLA     ASBR            TXL INSTRUCTIONM               LS069850
    14266   0074 CO 4 04451          TSX     $CONSW,4        PUT IN FULL WORD SPACE         LS069860
    14267   0560 CO 0 04246          LDQ     ATMP            REST OF PROPERTIES             LS069870
    14270   0074 CO 4 04471          TSX     $CONS,4                                        LS069880
    14271   0131 CO 0 00000          XCA                                                    LS069890
    14272   0500 CO 0 00543          CLA     ASB             POINTER TO $SUBR ATOMIC SYMBOL LS069900
    14273   0074 CO 4 04471          TSX     $CONS,4                                        LS069910
    14274   0131 CO 0 00000          XCA                     SAVE IN MQ                     LS069920
    14275  -0534 CO 4 04245          LXD     AFAT,4          POINTER TO NAME                LS069930
    14276   0500 CO 4 00000          CLA     0,4             FIRST WORD                     LS069940
    14277  -0734 CO 4 00000          PDX     0,4             SAVE POINTER TO REST           LS069950
    14300  -0754 CO 4 00000          PXD     0,4             PUT IN AC                      LS069960
    14301   0131 CO 0 00000          XCA                     INTER CHANGE AC AND MQ         LS069970
    14302   0074 CO 4 10515          TSX     $NCONC,4        SPLICE  2 LISTS TOGETHER       LS069980
    14303  -0534 CO 4 04245          LXD     AFAT,4          POINTER TO FIRST WORD ON PROPERTY LISTLS069990
    14304   0622 CO 4 00000          STD     0,4             REPLACE DECREMENT OPERATION    LS070000

BINARY CARD NO. LISP0282
    14305  -0754 CO 4 00000          PXD     0,4             POINTER TO ARRY ATOM           LS070010
    14306   0560 CO 0 04047          LDQ     ARYLIS          PICK UP ARRAY LIST             LS070020
    14307   0074 CO 4 04471          TSX     $CONS,4         PUT ON AS ACTIVE ARRAY         LS070030
    14310   0622 CO 0 04047          STD     ARYLIS          UPDATE ARRAY LIST              LS070040
    14311   0500 CO 0 04245          CLA     AFAT            FINAL ANSWER                   LS070050
    14312   0774 CO 4 00000  AFRX    AXT     **,4            RESTORE INDEX REGISTERS        LS070060
    14313   0774 CO 2 00000  AFRY    AXT     **,2                                           LS070070
    14314   0020 CO 4 00001          TRA     1,4             EXIT                           LS070080
                      *                                                                     LS070090
    14315  -0634 CO 4 02313  ARYTL   SXD     $ERROR,4        SAVE INDEX 4                   LS070100
    14316   0534 CO 2 14313          LXA     AFRY,2          RESTORE INDEX 2                LS070110
    14317   0500 CO 0 04245          CLA     AFAT            ARRAY NAME                     LS070120
    14320   0074 CO 4 02314          TSX     $ERROR+1,4      GO TO ERROR                    LS070130
    14321   543160600154             BCI     1,*I  1*        NOT ENOUGH ROOM FOR ARRAY      LS070140
                      *                     CONSTANTS AND STORAGE                         LS070150
    14322   0634 CO 4 14032          SXA     ARYGTX,4        5 WORD PREFIX TO ARRAYS        LS070160
    14323   0074 CO 4 13774          TSX     ARYGET,4                                       LS070170
    14324   0 00000 0 00000  APWO                            END+1,,N OF D                  LS070180
    14325   0 00000 0 00000  APWT                            LENGTH,,LIST LENGTH            LS070190
    14326   0 00000 0 00000  ATBZ                            TABLE ZERO,, N OF D            LS070200
    14327   0 00000 0 00000  ADOT                            D1 X D2                        LS070210
    14330   0 00000 0 00000  ATYP                            ZERO OR LIST LENGTH            LS070220
    14331   0 00000 0 00000  ATMQ                            TEMPORARY STORAGE              LS070230
    14332   0 00000 0 00000  ADO                             D1                             LS070240

BINARY CARD NO. LISP0283
    14333   0 00000 0 00000  ADT                             D2                             LS070250
    14334   0 00000 0 00000  ADTH                            D3                             LS070260
    14335  -3 00000 0 00000  ASBR    TXL     **,,**                                         LS070270
    14336   0 00000 0 00000  AARY                            POINTER TO ARRAY PROPERTY      LS070280
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14337  0500 60 2 00000   ACLAS CLA*    **,2              FETCH INSTRUCTION                          LS070290
14340  0601 00 1 00000   ARSTO STO     **,1              PUT INSTRUCTION                            LS070300
14341  0 12514 0 00000   ARY           ,,$ARRAY                                                     LS070310
                 00543   ASB   SYN     $SUBRD                                                       LS070320
                        *                                                                          LS070330
                        *                                                                          LS070340
                        * UNUMIX       EVALUATES ITS 2 NUMERICAL ARGUMENTS AND FLOATS THE FIXED   LS070350
                        *              POINT ARGUMENT IF A MIXED EXPRESSION.  THE NUMERICAL       LS070360
                        *              VALUES ARE LEFT IN AC AND MQ WITH TYPE OF NUMBER IN $ARG3  LS070370
                        *                                                                         LS070380
14342  0634 00 4 14363  UNUMIX SXA     UNUX,4            SAVE LINK IR                               LS070390
14343 -0600 00 0 14410         STQ     UNUT              SAVE SECOND ARGUMENT                       LS070400
14344  0074 00 4 15343         TSX     NUMVAL,4          NUMERICALLY EVALUATE THE FIRST ARG         LS070410
14345 -0734 00 4 00000         PDX     0,4               POINTER TO FULL WORD                       LS070420
14346  0500 00 4 00000         CLA     0,4               NUMERICAL VALUE                            LS070430
14347  0601 00 0 14407         STO     UNUS              SAVE IT                                    LS070440
14350 -0600 00 0 14411         STQ     UNUR              SAVE TYPE OF NUMBER                        LS070450
14351  0500 00 0 14410         CLA     UNUT              PICK UP SECOND ARG                         LS070460
14352  0074 00 4 15343         TSX     NUMVAL,4          NUMERICALLY EVALUATE IT                    LS070470
14353 -0734 00 4 00000         PDX     0,4               POINTER TO FULL WORD                       LS070480
14354  0500 00 4 00000         CLA     0,4               NUMERICAL VALUE                            LS070490
14355  0131 00 0 00000         XCA                       VLUE TO MQ, TYPE TO AC                     LS070500
14356  0402 00 0 14411         SUB     UNUR              COMPARE WITH TYPE OF FIRST                 LS070510
14357 -0100 00 0 14365         TNZ     UNMXA             TRA IF NOT SAME                            LS070520
14360  0500 00 0 14411  UNUE  CLA     UNUR              PICK UP NUMBER TYPE                        LS070530

BINARY CARD NO. LISP0284
14361  0601 00 0 04063         STO     $ARG3                                                        LS070540
14362  0500 00 0 14407         CLA     UNUS              PICK UP FIRST NUMERICAL VALUE              LS070550
14363  0774 00 4 00000  UNUX  AXT     **,4              RESTORE LINK IR                            LS070560
14364  0020 00 4 00001         TRA     1,4               EXIT                                       LS070570
                        *                                                                          LS070580
14365 -0600 00 0 14410  UNMXA STQ     UNUT              MIXED TYPES, SAVE SECOND VALUE             LS070590
14366  0634 00 2 14400         SXA     UNUX2,2           SAVE IR 2                                  LS070600
14367 -0534 00 2 14411         LXD     UNUR,2            PICK UP TYPE OF FIRST NUMBER               LS070610
14370  0074 00 4 15551         TSX     FIXFLO,4          DISPATCH                                   LS070620
14371  0761 00 0 00000         NOP                       IMPOSSIBLE RETURN                          LS070630
14372  0020 00 0 14402         TRA     UNMXB             FLOAT SECOND NUMBER                        LS070640
14373  0500 00 0 14407         CLA     UNUS              FIRST NUMBER                               LS070650
14374  0074 00 4 15566         TSX     $UNFIX,4          FLOAT IT                                   LS070660
14375  0560 00 0 00533         LDQ     UNFLT             $FLOAT FOR TYPE                            LS070670
14376 -0600 00 0 04063         STQ     $ARG3                                                        LS070680
14377  0560 00 0 14410         LDQ     UNUT              SECOND NUMBER                              LS070690
14400  0774 00 2 00000  UNUX2 AXT     **,2              RESTORE IR 2                               LS070700
14401  0020 00 0 14363         TRA     UNUX              RESTORE LINK AND EXIT                      LS070710
                        *                                                                          LS070720
14402  0131 00 0 00000  UNMXB XCA                       FLOAT SECOND NUMBER                        LS070730
14403  0074 00 4 15566         TSX     $UNFIX,4          FLOAT FUNCTION                             LS070740
14404  0131 00 0 00000         XCA                       BACK TO MQ                                 LS070750
14405  0534 00 2 14400         LXA     UNUX2,2           RESTORE IR 2                               LS070760
14406  0020 00 0 14360         TRA     UNUE              GET FIRST NUMBER, RESTORE LINK + EXIT      LS070770

BINARY CARD NO. LISP0285
14407  0 00000 0 00000  UNUS                            FIRST NUMERICAL VALUE                      LS070780
14410  0 00000 0 00000  UNUT                            SECOND ARG AND VALUE                       LS070790
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14411  0 00000 0 00000   UNUR                          TYPE OF FIRST ARG                    LS070800
                 00533  UNFLT  SYN FLOATD              FLOAT INDICATOR                      LS070810
                        *                                                                   LS070820
                        * THIS ROUTINE USES NUMVAL,$UNFIX,FIXFLO, AND $ARG3  + $FLOAT      LS070830
                        *                                                                   LS070840
                        *                                                                   LS070850
                        * DIVIDE       DIVIDES THE FIRST NUMERICAL ARGUMENT BY THE SECOND. THE  LS070860
                        *              ANSWER IS A LIST OF THE QUOTIENT AND THE REMAINDER.  LS070870
                        *                                                                   LS070880
                        * QUOTEN       GIVES THE QUOTIENT WHEN THE FIRST NUMERICAL ARGUMENT IS  LS070890
                        *              DIVIDED BY THE SECOND.                               LS070900
                        *                                                                   LS070910
                        * REMAIN       GIVES THE REMAINDER WHEN THE FIRST NUMERICAL ARGUMENT IS LS070920
                        *              DIVIDED BY THE SECOND.                               LS070930
14412  0604 CO 0 14502  DIVIDE STI     DIVND               SAVE INDICATORS                  LS070940
14413  0057 CO  000003         RIR     3                    DIIDE INDICATE                  LS070950
14414  0020 CO 0 14424         TRA     DIVOP               DO OPERATION                     LS070960
                        *                                                                   LS070970
14415  0604 CO 0 14502  REMAIN STI     DIVND               SAVE INDICATORS                  LS070980
14416  0057 CO  000003         RIR     3                   DIVIDE INDICATE                  LS070990
14417  0055 CO  000002         SIR     2                   SET REMAINDER INDICATOR          LS071000
14420  0020 CO 0 14424         TRA     DIVOP               DO OPERATION                     LS071010
                        *                                                                   LS071020
14421  0604 CO 0 14502  QUOTEN STI     DIVND               SAVE INDICATORS                  LS071030
14422  0057 CO  000003         RIR     3                   DIVIDE INDICATE                  LS071040
14423  0055 CO  000001         SIR     1                   QUOTIENT INDICATOR               LS071050
14424  0634 CO 4 14473  DIVOP  SXA     DIVX,4              SAVE LINK IR                     LS071060
14425  0634 CO 2 14472         SXA     DIVX2,2             SAVE IR 2                        LS071070
14426  0074 CO 4 14342         TSX     UNUMIX,4            NUMERICALLY EVALUATE THE ARGUMENTS LS071080
14427 -0534 CO 2 04063         LXD     $ARG3,2             PICK UP TYPE                     LS071090
14430 -0600 CO 0 14503         STQ     DIVT                SECOND ARG                       LS071100
14431  0074 CO 4 15551         TSX     FIXFLO,4            DISPATCH ON TYPE                 LS071110
14432  0761 CO 0 00000         NOP                         IMPOSSIBLE RETURN                LS071120
14433  0241 CO 0 14503         FDP     DIVT                FLOATING DIVIDE                  LS071130
14434  0020 CO 0 14463         TRA     DIVFX               DO FIXED POINT DIVIDE            LS071140

BINARY CARD NO. LISP0286
14435  0760 CO 0 00012  DIVDC DCT                         CHECK  FOR ILLEGAL DIVISION      LS071150
14436  0074 CO 4 02442         TSX     $DCT,4              DIVIDE CHECK ERROR               LS071160
14437  0054 CO  000001         RFT     1                   SEE IF REMAINDER IS TO BE SAVED  LS071170
14440  0020 CO 0 14470         TRA     DIVA                NO, SET UP QUOTIENT              LS071180
14441 -0600 CO 0 14503         STQ     DIVT                YES, SAVE QUOTEINT               LS071190
14442  0560 CO 0 04063         LDQ     $ARG3               PICK UP TYPE                     LS071200
14443  0074 CO 4 13624         TSX     $MKNO,4             MAKE REMAINDER A NUMBER          LS071210
14444  0054 CO  000002         RFT     2                   TEST TO SEE IF QUOTIENT IS WANTED LS071220
14445  0020 CO 0 14476         TRA     DIVEX               NO, RESTORE AND EXIT             LS071230
14446  0560 CO 0 00424         LDQ     $ZERO               NIL IN MQ                        LS071240
14447  0074 CO 4 04471         TSX     $CONS,4             LIST OF REMAINDER                LS071250
14450  0131 CO 0 00000         XCA                         SHUTTLE INTO MQ                  LS071260
14451  0500 CO 0 14503         CLA     DIVT                PICK UP QUOTIENT                 LS071270
14452 -0600 CO 0 14503         STQ     DIVT                SAVE LIST OF REMAINDER           LS071280
14453  0560 CO 0 04063         LDQ     $ARG3               PICK UP TYPE                     LS071290
14454  0074 CO 4 13624         TSX     $MKNO,4             MAKE QUOTIENT A NUMBER           LS071300
14455  0560 CO 0 14503         LDQ     DIVT                LIST(REMAINDER)                  LS071310
14456  0074 CO 4 04471         TSX     $CONS,4             LIST(QUOTIENT,REMAINDER)         LS071320
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    14457  0534 CO 4 14473          LXA     DIVX,4          RESTORE LINK IR                          LS071330
    14460  0534 CO 2 14472          LXA     DIVX2,2         RESTORE IR 2                             LS071340
    14461  0441 CO 0 14502          LDI     DIVND           RESTORE INDICATORS                       LS071350
    14462  0020 00 4 00001          TRA     1,4             EXIT                                     LS071360
                                   *                                                                LS071370

BINARY CARD NO. LISP0287
    14463  0131 CO 0 00000  DIVFX  XCA                     FIXED POINT DIVISION, PUT ARG 1 IN MQ    LS071380
    14464 -0754 CO 0 00000          PXD     0,0             CLEAR AC                                 LS071390
    14465  0763 CO 0 00000          LLS     0               MQ SIGN TO AC                            LS071400
    14466  0221 CO 0 14503          DVP     DIVT            DIVIDE BY ARG 2                          LS071410
    14467  0020 CO 0 14435          TRA     DIVDC           PREFORM DIVIDE CHECK AND CARRY ON        LS071420
    14470  0131 CO 0 00000  DIVA   XCA                     QUOTIENT TO AC                           LS071430
    14471  0560 CO 0 04063          LDQ     $ARG3           TYPE TO MQ                               LS071440
    14472  0774 CO 2 00000  DIVX2  AXT     **,2            RESTORE IR 2                             LS071450
    14473  0774 CO 4 00000  DIVX   AXT     **,4            RESTORE LINK IR                          LS071460
    14474  0441 00 0 14502          LDI     DIVND           RESTORE INDICATORS                       LS071470
    14475  0020 CO 0 13624          TRA     $MKNO                                                    LS071480
                                   *                                                                LS071490
    14476  0534 CO 2 14472  DIVEX  LXA     DIVX2,2         EXIT ROUTINE, RESTORE IR 2               LS071500
    14477  0534 CO 4 14473          LXA     DIVX,4          RESTORE LINK IR                          LS071510
    14500  0441 CO 0 14502          LDI     DIVND           RESTORE INDICATORS                       LS071520
    14501  0020 CO 4 00001          TRA     1,4                                                      LS071530
                                   *                                                                LS071540
    14502  0 00000 0 00000  DIVND                          INDICATORS STORAGE                       LS071550
    14503  0 00000 0 00000  DIVT                           LIST AND NON-LIST TEMPORARY STORAGE      LS071560
                                   *                                                                LS071570
                                   * THIS ROUTINE USES $MKNO,$DCT,$CONS,$ARG3 AND UNUMIX            LS071580
                                   *                                                                LS071590
                                   *                                                                LS071600
                                   * DIFFER       COMPUTES THE DIFFERENCE BETWEEN ITS 2 NUMERICAL ARGUMENTSLS071610
                                   *                                                                LS071620
    14504  0634 CO 4 14517  DIFFER SXA     DIFX,4          SAVE LINK IR                             LS071630
    14505  0634 CO 2 14516          SXA     DIFX2,2         SAVE IR 2                                LS071640
    14506  0074 CO 4 14342          TSX     UNUMIX,4        NUMERICALLY EVALUATE THE ARGUMENTS       LS071650
    14507 -0534 00 2 04063          LXD     $ARG3,2         PICK UP TYPE OF NUMBERS                  LS071660
    14510 -0600 CO 0 14521          STQ     DIFT            STORE SECOND NUMBER                      LS071670

BINARY CARD NO. LISP0288
    14511  0074 CO 4 15551          TSX     FIXFLO,4        DISPATCH ON TYPE                         LS071680
    14512  0761 CO 0 00000          NOP                     IMPOSSIBLE RETURN                        LS071690
    14513  0302 CO 0 14521          FSB     DIFT            FLOATING POINT                           LS071700
    14514  0402 CO 0 14521          SUB     DIFT            FIXED POINT                              LS071710
    14515  0560 CO 0 04063          LDQ     $ARG3           TYPE OF NUMBER                           LS071720
    14516  0774 CO 2 00000  DIFX2  AXT     **,2            RESTORE IR 2                             LS071730
    14517  0774 CO 4 00000  DIFX   AXT     **,4            RESTORE LINK IR                          LS071740
    14520  0020 CO 0 13624          TRA     $MKNO           MAKE RESULT A NUMBER                     LS071750
                                   *                                                                LS071760
    14521  0 00000 0 00000  DIFT                           TEMPORARY STORAGE                        LS071770
                                   *                                                                LS071780
                                   * THIS ROUTINE USES UNUMIX,FIXFLO,$ARG3 AND $MKNO               LS071790
                                   *                                                                LS071800
                                   *                                                                LS071810
                                   * EXPT TAKES 2 FIXED OR FLOATING POINT NUMBERS AS ARGUMENTS AND RAISES LS071820
                                   *              THE FIRST TO THE POWER INDICATED BY THE SECOND.   LS071830
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                                *                                                                  LS071840
    14522  0634 CO 4 14570   EXPT  SXA     EXPX,4          SAVE LINK IR                            LS071850
    14523  0634 CO 2 14571         SXA     EXPY,2          SAVE IR 2                               LS071860
    14524  0074 CO 4 14342         TSX     UNUMIX,4        EVALUATE THE 2 ARGUMENTS AS NUMBERS     LS071870
    14525 -0534 CO 2 04063         LXD     $ARG3,2         PICK UP TYPE OF NUMBERS                 LS071880
    14526  0074 CO 4 15551         TSX     FIXFLO,4        DISPATCH ON FIX OR FLOAT                LS071890
    14527  0761 CO 0 00000         NOP                     IMPOSSIBLE RETURN                       LS071900
    14530  0020 CO 0 14564         TRA     EXPA            IS FLOATING POINT                       LS071910
    14531  0120 CO 0 14541         TPL     EXPB                                                    LS071920
    14532  0100 CO 0 14562         TZE     EXPI            (EXPT -0 N) IS 0                        LS071930
    14533  0534 CO 2 14571   EXPC  LXA     EXPY,2          RESTORE IR 2                            LS071940
    14534  0534 CO 4 14570         LXA     EXPX,4          RESTORE IR 4                            LS071950
    14535 -0634 CO 4 02313         SXD     $ERROR,4        SAVE IN $ERROR                          LS071960
    14536 -0754 CO 0 00000         PXD     0,0             CLEAR AC                                LS071970

BINARY CARD NO. LISP0289
    14537  0074 CO 4 02314         TSX     $ERROR+1,4      GO TO ERROR                             LS071980
    14540  543160600254            BCI     1,*I  2*        FIRST ARGUMENT IS NEGATIVE -EXPT-       LS071990
    14541  0131 CO 0 00000   EXPB  XCA                     INTERCHANGED FIXED POINT ARGUMENTS      LS072000
    14542  0120 CO 0 14547         TPL   EXPLS                                                     LS072010
    14543  0074 CO 4 15566         TSX   $UNFIX,4                                                  LS072020
    14544  0131 CO 0 0000C         XCA                                                             LS072030
    14545  0074 CO 4 15566         TSX   $UNFIX,4                                                  LS072040
    14546  0020 CO 0 14564         TRA   EXPA                                                      LS072050
    14547 -0600 CO 0 77660   EXPLS  STQ   COMMON                                                   LS072060
    14550  0734 CO 4 00000         PAX     0,4             EXPONENT                                LS072070
    14551 -3 00000 4 14561         TXL     OUT,4,0         GO IF ZERO POWER                        LS072080
    14552 -2 00001 4 14556         TNX     OUT1,4,1        GO IF TO FIRST POWER                    LS072090
    14553 -0754 CO 0 00000         PXD     0,0             CLEAR AC                                LS072100
    14554  0200 CO 0 77660         MPY     COMMON          RAISE TO GIVEN POWER                    LS072110
    14555  2 00001 4 14554         TIX     *-1,4,1         IN LOOP                                 LS072120
    14556  0131 CO 0 00000   OUT1  XCA                     ANSWER TO AC                            LS072130
    14557  0560 CO 0 00532         LDQ     $FIXD           $FIX TO DECREMENT                       LS072140
    14560  0020 CO 0 14570         TRA     EXPX            RESTORE INDEX REGISYERS AND MAKE NUMBRLS072150
    14561  0500 CO 0 00425   OUT   CLA     $Q1             ANSWER IS 1                             LS072160
    14562  0560 CO 0 00532   EXPI  LDQ     $FIXD           $FIX TO MQ                              LS072170
    14563  0020 CO 0 14570         TRA     EXPX            EXIT                                    LS072180
    14564  0100 CO 0 14567   EXPA  TZE     EXPF      (EXPT -0.0 N) IS 0.0                          LS072190

BINARY CARD NO. LISP0290
    14565 -0120 CO 0 14533         TMI     EXPC                                                    LS072200
    14566  0074 CO 4 14573         TSX     $POWR,4         POWER ROUTINE                           LS072210
    14567  0560 CO 0 00533   EXPF  LDQ     FLOATD    $FLOAT TO MQ                                  LS072220
    14570  0774 CO 4 00000   EXPX  AXT     **,4            RESTORE INDEX REGISTERS                 LS072230
    14571  0774 CO 2 00000   EXPY  AXT     **,2                                                    LS072240
    14572  0020 CO 0 13624         TRA     $MKNO           MAKE ANSWER A NUMBER                    LS072250
                                     POWER                                                         PKLS072260
                                G    HED                                                        LS072270
    14573 -0600 CO 0 14715   POWR  STQ N                                                          LS072280
    14574 -0634 CO 1 77660         SXD COMMON,1                                                    LS072290
    14575 -0634 CO 2 77661         SXD COMMON+1,2                                                  LS072300
    14576  0534 CO 1 00424   P19   LXA ZERO,1                                                     LS072310
    14577  0534 CO 2 00424         LXA ZERO,2                                                      LS072320
    14600  0765 CO 0 00033         LRS 27                                                          LS072330
    14601  0402 CO 0 00451         SUB L200                                                        LS072340
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14602 -0600 CO 0 14716          STQ FN                          LS072350
14603  0560 CO 0 00424          LDQ ZERO                        LS072360
14604 -0100 CO 0 14607          TNZ P01                         LS072370
14605  0601 CO 0 14717          STO E                           LS072380
14606  0020 CO 0 14621          TRA P02                         LS072390
14607  0765 CO 0 00001   P01    LRS 1                           LS072400
14610  1 00001 1 14611          TXI P03,1,1                     LS072410
14611 -0100 CO 0 14607   P03    TNZ P01                         LS072420
14612 -0754 CO 1 00000          PXD 0,1                         LS072430

BINARY CARD NO. LISP0291
14613  0771 CO 0 00022          ARS 18                          LS072440
14614  0760 CO 0 00003          SSP                             LS072450
14615  0400 CO 0 00451          ADD L200                        LS072460
14616  0763 CO 0 00033          LLS 27                          LS072470
14617  0601 CO 0 14717          STO E                           LS072480
14620  0760 CO 0 00000          CLM                             LS072490
14621  0560 CO 0 14716   P02    LDQ FN                          LS072500
14622  0763 CO 0 00033          LLS 27                          LS072510
14623  0400 CO 0 00471          ADD LL200                       LS072520
14624  0300 CO 0 14720          FAD RSQ                         LS072530
14625  0601 CO 0 14721          STO P04                         LS072540
14626  0302 CO 0 14727          FSB SQ                          LS072550
14627  0240 CO 0 14721          FDH P04                         LS072560
14630 -0600 CO 0 14722          STQ P05                         LS072570
14631  0260 CO 0 14722          FMP P05                         LS072580
14632  0601 CO 0 14723          STO P06                         LS072590
14633  0560 CO 0 14723   P08    LDQ P06                         LS072600
14634  0260 CO 2 14734          FMP C7,2                        LS072610
14635  0300 CO 2 14733          FAD C5,2                        LS072620
14636  0601 CO 2 14733          STO C5,2                        LS072630
14637  1 00001 2 14640          TXI P07,2,1                     LS072640
14640 -3 00002 2 14633   P07    TXL P08,2,2                     LS072650

BINARY CARD NO. LISP0292
14641  0560 CO 0 14731          LDQ C1                          LS072660
14642  0260 CO 0 14722          FMP P05                         LS072670
14643  0302 CO 0 14730          FSB R2                          LS072680
14644  0300 CO 0 14717          FAD E                           LS072690
14645  0601 CO 0 14717   P18    STO E                           LS072700
14646  0560 CO 0 14715          LDQ N                           LS072710
14647  0260 CO 0 14717          FMP E                           LS072720
14650  0601 CO 0 14715          STO N                           LS072730
14651  0020 CO 0 15024          TRA P09                         LS072740
14652  0 00000 0 00000   M1                                     LS072750
14653  0 00000 0 00000   M2                                     LS072760
14654  0 00000 0 00001   M3           1                         LS072770
14655  0 00400 0 00000   M4           0,0,256                   LS072780
14656  0534 CO 1 00424   P41    LXA ZERO,1                      LS072790
14657  0560 CO 0 14726   P11    LDQ W                           LS072800
14660  0260 CO 1 14747          FMP A6,1                        LS072810
14661  0300 CO 1 14746          FAD A5,1                        LS072820
14662  0601 CO 1 14746          STO A5,1                        LS072830
14663  1 00001 1 14664          TXI P10,1,1                     LS072840
14664 -3 00005 1 14657   P10    TXL P11,1,5                     LS072850
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    14665  0601 CC 0 14726          STO W                                  LS072860
    14666  C534 CC 2 00424          LXA ZERO,2                             LS072870

BINARY CARD NC. LISP0293
    14667  0500 CC 2 14756   P13    CLA AP6,2                              LS072880
    14670  0601 CC 2 14747          STO A6,2                               LS072890
    14671  1 00001 2 14672          TXI P12,2,1                            LS072900
    14672 -3 00006 2 14667   P12    TXL P13,2,6                            LS072910
    14673  0534 CC 1 00424          LXA ZERO,1                             LS072920
    14674  C5CC CC 1 14740   P15    CLA CP7,1                              LS072930
    14675  0601 CC 1 14734          STO C7,1                               LS072940
    14676  1 00001 1 14677          TXI P14,1,1                            LS072950
    14677 -3 00003 1 14674   P14    TXL P15,1,3                            LS072960
    14700  0560 CC 0 14726          LDQ W                                  LS072970
    14701  0260 CC 0 14726          FMP W                                  LS072980
    14702  0601 CC 0 14726          STO W                                  LS072990
    14703  0560 CC 0 14726          LDQ W                                  LS073000
    14704  0260 CC 0 14726          FMP W                                  LS073010
    14705  0601 CC 0 14726          STO W                                  LS073020
    14706  0020 CC 0 14757          TRA P16                                LS073030
    14707  0 00000 0 00000   EA                                            LS073040
    14710  0020 CC 0 14764   P171   TRA P17                                LS073050
    14711  0 00000 0 00000   P24                                           LS073060
    14712  0601 CC 0 14717   P21    STO E                                  LS073070
    14713  0 00000 0 00000   S1                                            LS073080
    14714  0 00000 0 00000   S2                                            LS073090

BINARY CARD NC. LISP0294
    14715  0 00000 0 00000   N                                             LS073100
                   00424     ZERO   SYN $ZERO                             LS073110
                   00451     L200   SYN $QQ200                            LS073120
    14716  0 00000 0 00000   FN                                            LS073130
    14717  0 00000 0 00000   E                                             LS073140
                   00471     LL200  SYN QQ2Q11                            LS073150
    14720 +200552023632      RSQ    OCT +200552023632                     LS073160
    14721  0 00000 0 00000   P04                                           LS073170
    14722  0 00000 0 00000   P05                                           LS073180
    14723  0 00000 0 00000   P06                                           LS073190
    14724 +200542710300      LOG    OCT +200542710300                     LS073200
    14725  0 00000 0 00000   S3                                            LS073210
    14726  0 00000 0 00000   W                                             LS073220
    14727 +201552023632      SQ     OCT +201552023632                     LS073230
    14730 +200400000000      R2     OCT +200400000000                     LS073240
    14731 +202561250731      C1     OCT +202561250731                     LS073250
    14732 +200754342231              OCT +200754342231                     LS073260
    14733 +200447154100      C5     OCT +200447154100                     LS073270
    14734 +177674535132      C7     OCT +177674535132                     LS073280
    14735 +202561250731              OCT +202561250731                     LS073290
    14736 +200754342231              OCT +200754342231                     LS073300
    14737 +200447154100              OCT +200447154100                     LS073310
    14740 +177674535132      CP7    OCT +177674535132                     LS073320
    14741 +201400000000              OCT +201400000000                     LS073330
    14742 +176777776476              OCT +176777776476                     LS073340
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BINARY CARD NO. LISP0295
    14743 +174400037635              OCT +174400037635                    LS073350
    14744 +170523517764              OCT +170523517764                    LS073360
    14745 +164547625227              OCT +164547625227                    LS073370
    14746 +157554324201       A5     OCT +157554324201                    LS073380
    14747 +154562606535       A6     OCT +154562606535                    LS073390
    14750 +201400000000       L1     OCT +201400000000                    LS073400
    14751 +176777776476              OCT +176777776476                    LS073410
    14752 +174400037635              OCT +174400037635                    LS073420
    14753 +170523517764              OCT +170523517764                    LS073430
    14754 +164547625227              OCT +164547625227                    LS073440
    14755 +157554324201              OCT +157554324201                    LS073450
    14756 +154562606535       AP6    OCT +154562606535                    LS073460
    14757  0601 CO 0 15023    P16    STO EW                               LS073470
    14760  0500 CO 0 14710           CLA P171                             LS073480
    14761  0601 CO 0 14645           STO P18                              LS073490
    14762  0500 CO 0 15023           CLA EW                               LS073500
    14763  0020 CO 0 14576           TRA P19                              LS073510
    14764  0020 CO 0 15124    P17    TRA P20                              LS073520
    14765  0500 CO 0 14712    P42    CLA P21                              LS073530
    14766  0601 CO 0 14645           STO P18                              LS073540
    14767  0534 CO 1 00424           LXA ZERO,1                           LS073550
    14770  0500 CO 1 14740    P23    CLA CP7,1                            LS073560

BINARY CARD NO. LISP0296
    14771  0601 CO 1 14734           STO C7,1                             LS073570
    14772  1 00001 1 14773           TXI P22,1,1                          LS073580
    14773 -3 00003 1 14770    P22    TXL P23,1,3                          LS073590
    14774  0560 CO 0 14711           LDQ P24                              LS073600
    14775  0260 CO 0 14724           FMP LOG                              LS073610
    14776  0302 CO 0 14725           FSB S3                               LS073620
    14777  0140 CO 0 15014           TOV P25                              LS073630
    15000  0601 CO 0 14713           STO S1                               LS073640
    15001  0560 CO 0 14713           LDQ S1                               LS073650
    15002  0260 CO 0 14730           FMP R2                               LS073660
    15003  0302 CO 0 14750           FSB L1                               LS073670
    15004  0601 CO 0 14714           STO S2                               LS073680
    15005  0560 CO 0 14713           LDQ S1                               LS073690
    15006  0260 CO 0 14714           FMP S2                               LS073700
    15007  0300 CO 0 14750           FAD L1                               LS073710
    15010  0601 CO 0 14713           STO S1                               LS073720
    15011  0560 CO 0 15023           LDQ EW                               LS073730
    15012  0260 CO 0 14713           FMP S1                               LS073740
    15013  0601 CO 0 15023           STO EW                               LS073750
    15014  0560 CO 0 14652    P25    LDQ M1                               LS073760
    15015  0260 CO 0 15023           FMP EW                               LS073770
    15016  0601 CO 0 15023           STO EW                               LS073780

BINARY CARD NO. LISP0297
    15017  0500 CO 0 14715           CLA N                                LS073790
    15020  0120 CO 0 15114           TPL P26                              LS073800
    15021  0500 CO 0 14750           CLA L1                               LS073810
    15022  0020 CO 0 15112           TRA P27                              LS073820
    15023  0 00000 0 00000    EW                                          LS073830
    15024  0560 CO 0 00424    P09    LDQ ZERO                             LS073840
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15025  0760 00 0 00003          SSP                              LS073850
15026  0765 00 0 00033          LRS 27                           LS073860
15027  0402 00 0 00451          SUB L200                         LS073870
15030  0020 00 0 15107          TRA P28                          LS073880
15031  0500 00 0 00424   P40    CLA ZERO                         LS073890
15032  0763 00 0 00000   P39    LLS     **                       LS073900
15033  0400 00 0 00451          ADD L200                         LS073910
15034  0400 00 0 14654          ADD M3                           LS073920
15035  0767 00 0 00033          ALS 27                           LS073930
15036  0400 00 0 14655          ADD M4                           LS073940
15037  0601 00 0 14652          STO M1                           LS073950
15040 -0600 00 0 14653          STQ M2                           LS073960
15041  0500 00 0 14653          CLA M2                           LS073970
15042 -0100 00 0 15061          TNZ P29                          LS073980
15043  0500 00 0 14715          CLA N                            LS073990
15044  0120 00 0 15050          TPL P30                          LS074000

BINARY CARD NO. LISP0298
15045  0500 00 0 14750          CLA L1                           LS074010
15046  0240 00 0 14652          FDH M1                           LS074020
15047 -0600 00 0 14652          STQ M1                           LS074030
15050  0534 00 1 00424   P30    LXA ZERO,1                       LS074040
15051  0500 00 1 14740   P32    CLA CP7,1                        LS074050
15052  0601 00 1 14734          STO C7,1                         LS074060
15053  1 00001 1 15054          TXI P31,1,1                      LS074070
15054 -3 00003 1 15051   P31    TXL P32,1,3                      LS074080
15055  0500 00 0 14652          CLA M1                           LS074090
15056 -0534 00 1 77660          LXD COMMON,1                     LS074100
15057 -0534 00 2 77661          LXD COMMON+1,2                   LS074110
15060  0020 00 4 00001          TRA 1,4                          LS074120
15061  0760 00 0 00000   P29    CLM                              LS074130
15062  0534 00 2 00424          LXA ZERO,2                       LS074140
15063  0763 00 0 00001   P34    LLS 1                            LS074150
15064  1 00001 2 15065          TXI P33,2,1                      LS074160
15065  0100 00 0 15063   P33    TZE P34                          LS074170
15066  0765 00 0 00001          LRS 1                            LS074180
15067 -0754 00 2 00000          PXD 0,2                          LS074190
15070  0771 00 0 00022          ARS 18                           LS074200
15071 -0760 00 0 00003          SSM                              LS074210
15072  0400 00 0 00451          ADD L200                         LS074220

BINARY CARD NO. LISP0299
15073  0400 00 0 14654          ADD M3                           LS074230
15074  0763 00 0 00033          LLS 27                           LS074240
15075  0601 00 0 14653   P36    STO M2                           LS074250
15076  0560 00 0 14724          LDQ LOG                          LS074260
15077  0260 00 0 14653          FMP M2                           LS074270
15100  0601 00 0 14726          STO W                            LS074280
15101  0020 00 0 15122          TRA P35                          LS074290
15102  0500 00 0 14750   P37    CLA L1                           LS074300
15103  0601 00 0 14652          STO M1                           LS074310
15104  0500 00 0 14715          CLA N                            LS074320
15105  0760 00 0 00003          SSP                              LS074330
15106  0020 00 0 15075          TRA P36                          LS074340
15107  0100 00 0 15102   P28    TZE P37                          LS074350
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15110 -0120 CO 0 15102          TMI P37                                          LS074360
15111  0020 CO 0 15120          TRA P38                                          LS074370
15112  0240 CO 0 15023   P27    FDH EW                                           LS074380
15113 -0600 CO 0 15023          STQ EW                                           LS074390
15114  0500 CO 0 15023   P26    CLA EW                                           LS074400
15115 -0534 CO 1 77660          LXD COMMON,1                                     LS074410
15116 -0534 CO 2 77661          LXD COMMON+1,2                                   LS074420
15117  0020 CO 4 00001          TRA 1,4                                          LS074430
15120  0621 CO 0 15032   P38    STA P39                                          LS074440

BINARY CARD NO. LISP0300
15121  0020 CO 0 15031          TRA P40                                          LS074450
15122  0601 CO 0 14725   P35    STO S3                                           LS074460
15123  0020 CO 0 14656          TRA P41                                          LS074470
15124  0760 CO 0 00003   P20    SSP                                              LS074480
15125  0601 CO 0 14711          STO P24                                          LS074490
15126  0020 CO 0 14765          TRA P42                                          LS074500
                                HEAD    Q                                        LS074510
                       * ADD    ADDS A STRING OF FIXED POINT OR FLOATING POINT NUMBERS  LS074520
15127 -0634 CO 4 04241  ADDP    SXD     AMIR,4          SAVE LINK IR             LS074530
15130  0774 CO 4 11102          AXT     $PLUS,4                                  LS074540
15131  0604 CO 0 04242          STI     AMIND           SAVE INDICATORS          LS074550
15132  0057 CO  000177          RIR     177             RESET FIRST 7 INDICATORS LS074560
15133  0055 CO  000001          SIR     1               SET ADD INDICATOR (1)    LS074570
15134  0020 CO 0 15156          TRA     AMMMF           GO TO MAIN FUNCTION      LS074580
                       *                                                        LS074590
15135 -0634 CO 4 04241  MULT    SXD     AMIR,4          SAVE LINK IR             LS074600
15136  0774 CO 4 10336          AXT     $TIMES,4                                 LS074610
15137  0604 CO 0 04242          STI     AMIND           SAVE INDICATORS          LS074620
15140  0057 CO  000177          RIR     177             RESET FIRST 7 INDICATORS LS074630
15141  0055 CO  000002          SIR     2               SET MULTIPLY INDICATOR (2) LS074640
15142  0020 CO 0 15156          TRA     AMMMF           GO TO MAIN FUNCTION      LS074650
                       *                                                        LS074660
15143 -0634 CO 4 04241  MIN     SXD     AMIR,4          SAVE LINK IR             LS074670
15144  0774 CO 4 11331          AXT     $MINP,4                                  LS074680
15145  0604 CO 0 04242          STI     AMIND           SAVE INDICATORS          LS074690
15146  0057 CO  000177          RIR     177             RESET FIRST 7 INDICATORS LS074700

BINARY CARD NO. LISP0301
15147  0055 CO  000010          SIR     10              SET MINIMUM FUNCTION INDICATOR (10) LS074710
15150  0020 CO 0 15156          TRA     AMMMF           GO TO MAIN FUNCTION      LS074720
                       *                                                        LS074730
15151 -0634 CO 4 04241  MAX     SXD     AMIR,4          SAVE LINK IR             LS074740
15152  0774 CO 4 11341          AXT     $MAXP,4                                  LS074750
15153  0604 CO 0 04242          STI     AMIND           SAVE INDICATORS          LS074760
15154  0057 CO  000177          RIR     177             RSET FIRST 7 INDICATORS  LS074770
15155  0055 CO  000004          SIR     4               SET MAXIMUN FUNCTION INDICATOR (4) LS074780
15156  0634 CO 4 04241  AMMMF   SXA     AMIR,4          PUT PROGRAM NAME WITH LINK IR LS074790
15157  0074 CO 4 03104          TSX     $SAVE,4         OTHER 3 FUNCTIONS ENTER AT *-1 LS074800
15160 -3 04244 0 03167          TXL     $END2,,AMIND+2  SAVE 2 ITEMS             LS074810
15161  0074 CO 4 17050          TSX     $EVLIS,4        EVALUATE THE LIST OF ARGUMENTS LS074820
15162  0074 CO 4 03117          TSX     UNSAVE,4        RESTORE IR 4 AND INDICATORS LS074830
15163  0634 CO 2 15337          SXA     AMIR2,2         SAVE IR 2                LS074840
15164  0600 CO 0 15342          STZ     AMSUM           ZERO FINAL ANSWER REGISTER LS074850
15165 -0734 CO 4 00000  AMLP    PDX     0,4             PUT POINTER TO ARG LIST IN IR 4 LS074860
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15166 -3 00000 4 15331          TXL     AMEND,4,0       GO TO EXIT IF NULL                          LS074870
15167  0500 00 4 00000          CLA     0,4             GET FIRST WORD                              LS074880
15170  0601 00 0 04243          STO     AMLIS           SAVE THE WORD                               LS074890
15171  0734 00 4 00000          PAX     0,4             CAR OF LIST                                 LS074900
15172 -0754 00 4 00000          PXD     0,4             TO DECREMENT                                LS074910
15173  0074 00 4 15343          TSX     NUMVAL,4        EVALUATE THE ITEM                           LS074920
15174 -0600 00 0 04244          STQ     AMQ             SAVE CHARACTERISTIC ($FIX OR $FLOAT)        LS074930

BINARY CARD NO. LISP0302
15175  0056 00  000100          RNT     100             TEST FOR FIRST TIME THROUGH                 LS074940
15176  0020 00 0 15221          TRA     AMFRS           IS FIRST TIME GO TO INITIALIZE AMSUM        LS074950
15177  0054 00  000002          RFT     2               TEST FOR MULT FUNCTION                      LS074960
15200  0020 00 0 15241          TRA     AMLT            EXECUTE MULT FUNCTION                       LS074970
15201 -0734 00 4 00000          PDX     0,4             POINTER TO FULL WORD                        LS074980
15202  0500 00 4 00000          CLA     0,4             GET NUMERICAL VALUE                         LS074990
15203  0056 00  000001          RNT     1               SKIP NEXT INSTRUCTION IF ADD FUNCTION       LS075000
15204  0020 00 0 15301          TRA     AMM             EXECCUTE MAX OR MIN FUNCTION                LS075010
15205 -0534 00 2 04244          LXD     AMQ,2           ADD FUNCTION. PICK UP TYPE OF NUMBER        LS075020
15206  0074 00 4 15551          TSX     FIXFLO,4        TEST FOR FIX OR FLOAT                       LS075030
15207  0761 00 0 00000          NOP                     IMPOSSIBLE RETURN                           LS075040
15210  0020 00 0 15234          TRA     AFLL            EXECUTE FAD                                 LS075050
15211  0055 00  000020          SIR     20              IS FIXED POINT. SET FIXED POINT IND.        LS075060
15212 -0774 00 4 15236          AXC     AFLR,4          PRESET IR 4                                 LS075070
15213  0054 00  000040          RFT     40              SKIP NEXT INSTRUCTION IF NOT MIXED EXP      LS075080
15214  0020 00 0 15267          TRA     UNFX            IS MIXED, FLOAT THIS NUMBER                 LS075090
15215  0400 00 0 15342          ADD     AMSUM           FIXED ADD OF SUM                            LS075100
15216  0601 00 0 15342  AMRT    STO     AMSUM           STORE NEW SUM                               LS075110
15217  0500 00 0 04243          CLA     AMLIS           PICK UP ARG LIST                            LS075120
15220  0020 00 0 15165          TRA     AMLP            DO NEXT ITEM                                LS075130
15221 -0734 00 4 00000  AMFRS   PDX     0,4             POINTER TO FULL WORD                        LS075140
15222  0500 00 4 00000          CLA     0,4             GET NUMERICAL VALUE                         LS075150

BINARY CARD NO. LISP0303
15223  0601 00 0 15342          STO     AMSUM           STORE NUMERICAL VALUE IN AMSUM              LS075160
15224 -0534 00 2 04244          LXD     AMQ,2           PICK UP TYPE OF NUMBER                      LS075170
15225  0074 00 4 15551          TSX     FIXFLO,4        TEST FOR FIX OR FLOAT                       LS075180
15226  0761 00 0 00000          NOP                     IMPOSSIBLE EXIT                             LS075190
15227  0055 00  000040          SIR     40              SET FLOAT INDICATOR                         LS075200
15230  0055 00  000020          SIR     20              SET FIX INDICATOR                           LS075210
15231  0055 00  000100          SIR     100             SET INDICATOR SO IT WILL NOT GET BACK       LS075220
15232  0500 00 0 04243          CLA     AMLIS           PICK UP REST OF ARG LIST                    LS075230
15233  0020 00 0 15165          TRA     AMLP            DO NEXT ITEM                                LS075240
15234  0055 00  000040  AFLL    SIR     40              IS FLOATING POINT, SET PROPER INDICATO      LS075250
15235  0054 00  000020          RFT     20              SKIP NEXT INSTRUCTION IF NOT MIXED EXP      LS075260
15236  0074 00 4 15271  AFLR    TSX     MIXFL,4         UNMIX THE EXPRESSION                        LS075270
15237  0300 00 0 15342          FAD     AMSUM           FLOATING ADD THE CURRENT SUM                LS075280
15240  0020 00 0 15216          TRA     AMRT            STORE AND DO NEXT ITEM ON LIST              LS075290
15241 -0734 00 4 00000  AMLT    PDX     0,4             POINTER TO FULL WORD                        LS075300
15242  0500 00 4 00000          CLA     0,4             GET NUMERICAL VALUE                         LS075310
15243 -0534 00 2 04244          LXD     AMQ,2           PICK UP TYPE                                LS075320
15244  0074 00 4 15551          TSX     FIXFLO,4        TEST FOR FIX OR FLOAT                       LS075330
15245  0761 00 0 00000          NOP                     IMPOSSIBLE RETURN                           LS075340
15246  0020 00 0 15261          TRA     AFMP            DO FMP                                      LS075350
15247  0055 00  000020          SIR     20              SET FIXED POINT INDICATOR                   LS075360
15250 -0774 00 4 15263          AXC     AFLT,4          PRESET IR 4                                 LS075370
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BINARY CARD NO. LISP0304
    15251  0054 CO  000040          RFT     40          SKIP NEXT INSTRUCTION IF NOT MIXED EXPLS075380
    15252  0020 CO 0 15267          TRA     UNFX        IS MIXED, FLOAT THIS NUMBER           LS075390
    15253  0131 CO 0 00000          XCA                 NUMBER TO MQ                          LS075400
    15254  0200 CO 0 15342          MPY     AMSUM       MPY BY CURRENT ANSWER                 LS075410
    15255  0131 CO 0 00000          XCA                 PUT LEAST SIGNIFICANT BITS IN AC      LS075420
    15256  0601 CO 0 15342  AMRU    STO     AMSUM       STORE NEW ANSWER                      LS075430
    15257  0500 CO 0 04243          CLA     AMLIS       PICK UP ARG LIST                      LS075440
    15260  0020 CO 0 15165          TRA     AMLP        DO NEXT ITEM                          LS075450
    15261  0055 CO  000040  AFMP    SIR     40          SET FLOATING POINT INDICATOR          LS075460
    15262  0054 CO  000020          RFT     20          TEST FOR MIXED EXP                    LS075470
    15263  0074 CO 4 15271  AFLT    TSX     MIXFL,4     UNMIX THE EXPRESSION                  LS075480
    15264  0131 CO 0 00000          XCA                 NUMBER TO MQ                          LS075490
    15265  0260 CO 0 15342          FMP     AMSUM       FMP BY CURRENT ANSWER                 LS075500
    15266  0020 CO 0 15256          TRA     AMRU        STORE NEW ANSER AND DO NEXT ITEM      LS075510
    15267  0057 CO  000020  UNFX    RIR     20          RESET FIXED POINT INDICATOR           LS075520
    15270  0020 CO 0 15566          TRA     $UNFIX      FLOAT THE NUMBER IN THE AC            LS075530
    15271  0634 CO 4 15277  MIXFL   SXA     MXIR,4      FIX MIXED EXPRESSION                  LS075540
    15272  0601 CO 0 15341          STO     AMR         SAVE AC                               LS075550
    15273  0500 CO 0 15342          CLA     AMSUM       PICK UP CURRENT ANSWER                LS075560
    15274  0074 CO 4 15267          TSX     UNFX,4      FLOAT IT                              LS075570
    15275  0601 CO 0 15342          STO     AMSUM       PUT IT AWAY                           LS075580
    15276  0500 CO 0 15341          CLA     AMR         RESTORE AC                            LS075590

BINARY CARD NO. LISP0305
    15277  0774 CO 4 00000  MXIR    AXT     **,4        RESTORE IR 4                          LS075600
    15300  0020 CO 4 00001          TRA     1,4         RETURN                                LS075610
    15301 -0534 CO 2 04244  AMM     LXD     AMQ,2       MAX OR MIN FUNCTION. GET TYPE         LS075620
    15302  0074 CO 4 15551          TSX     FIXFLO,4    TEST FOR FIX OR FLOAT                 LS075630
    15303  0761 CO 0 00000          NOP                 IMPOSSIBLE RETURN                     LS075640
    15304  0020 CO 0 15317          TRA     AFL         EXECUTE FLOATING SECTION              LS075650
    15305  0055 CO  000020          SIR     20          SET FIXED PONT INDICATOR              LS075660
    15306  0054 CO  000040          RFT     40          TEST FOR MIXED EXP                    LS075670
    15307  0074 CO 4 15267          TSX     UNFX,4      FLOAT THE ARGUMENT IF MIXED           LS075680
    15310  0056 CO  000004  AMRNT   RNT     4           TEST FORMAX FUNCTION                  LS075690
    15311  0020 CO 0 15323          TRA     AMIN        EXECUTE MIN FUNCTION                  LS075700
    15312  0340 CO 0 15342          CAS     AMSUM       COMPARE WITH CURRENT ANSWER           LS075710
    15313  0601 CO 0 15342          STO     AMSUM       IS GREATER, STORE AS NEW ANSWER       LS075720
    15314  0761 CO 0 00000          NOP                 THEY ARE EQUAL                        LS075730
    15315  0500 CO 0 04243          CLA     AMLIS       IS LESS, PICK UP ARGUMENT LIST        LS075740
    15316  0020 CO 0 15165          TRA     AMLP        DO NEXT ITEM                          LS075750
    15317  0055 CO  000040  AFL     SIR     40          SET FLOATING POINT INDICATOR          LS075760
    15320  0054 CO  000020          RFT     20          TEST FOR MIXED EXPRESSION             LS075770
    15321  0074 CO 4 15271          TSX     MIXFL,4     UNMIX THE EXPRESSION                  LS075780
    15322  0020 CO 0 15310          TRA     AMRNT       COMPARE AND DO NEXT ITEM              LS075790
    15323  0340 CO 0 15342  AMIN    CAS     AMSUM       MIN FUNCTION, COMPARE WITH CURRENT VALLS075800
    15324  0020 CO 0 15327          TRA     *+3         IS GREATER                            LS075810

BINARY CARD NO. LISP0306
    15325  0020 CO 0 15327          TRA     *+2         IS EQUAL                              LS075820
    15326  0601 CO 0 15342          STO     AMSUM       IS LESS, STORE AS NEW ANSWER          LS075830
    15327  0500 CO 0 04243          CLA     AMLIS       PICK UP NEXT ITEM                     LS075840
    15330  0020 CO 0 15165          TRA     AMLP        EXECUTE IT                            LS075850
    15331  0500 CO 0 15342  AMEND   CLA     AMSUM       ALL DONE. PICK UP CURRENT ANSWER      LS075860
    15332  0560 CO 0 00532          LDQ     AMFXC       PRESET MQ                             LS075870
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15333  0054 CO  000040          RFT     40                  SKIP NEXT IF FIXED POINT                LS075880
15334  0560 CO 0 00533          LDQ     AMFLC               PICK UP FIX IN MQ                       LS075890
15335  0441 CO 0 04242          LDI     AMIND               RESTORE INDICATORS                      LS075900
15336 -0534 CO 4 04241          LXD     AMIR,4              RESTORE IR 4                            LS075910
15337  0774 CO 2 00000   AMIR2  AXT     **,2                RESTORE IR 2                            LS075920
15340  0020 CO 0 13624          TRA     $MKNO               MAKE THE ANSWER A NUMBER                LS075930
                00533   AMFLC  SYN     FLOATC              FLAOT CONSTANT                          LS075940
                00532   AMFXC  SYN     $FIXD               FIX CONSTANT                            LS075950
15341  C 00000 0 00000   AMR                                TEMP STORAGE                            LS075960
15342  0 00000 0 00000   AMSUM                              CURRENT ANSWER STORAGE                  LS075970
                        * NUMVAL        NUMERICAL VALUE TAKES ANY LIST AND DECIDES IF IT          LS075980
                        *       REPRESENTS A FIXED POINT OR FLOATING POINT NUMBER. IF IT DOES NOTLS075990
                        *       THE ROUTINE CLEARS THE AC AND MQ DOES AN XEC 1,4 AND THEN GOES    LS076000
                        *       TO ERROR WITH A BAD ARGUMENT COMPLAINT. IF THE LIST DOES          LS076010
                        *       REPRESENT A NUMBER, UPON EXIT THE FOLLOWING THINGS ARE LEFT       LS076020
                        *       AS INDICATED                POINTER TO FULL WORD IN AC            LS076030
                        *                                   $FIX OR $FLOAT IN MQ                  LS076040
15343  0634 CO 4 15373  NUMVAL SXA     NVIR4,4             SAVE LINK IR                            LS076050
15344  0601 CO 0 04063          STO     $ARG3               SAVE ORIGINAL ARGUMENT                  LS076060
15345 -0734 CO 4 00000          PDX     0,4                 POINTER TO NUMBER IN IR 4               LS076070
15346 -3 00000 4 15352   NVLP   TXL     NVNO,4,0            NULL  LIST IS NOT A NUMBER              LS076080
15347  0500 CO 4 00000          CLA     0,4                 FIRST ELEMENT                           LS076090
15350  0734 CO 4 00000          PAX     0,4                 CAR LIST                                LS076100
15351  3 77776 4 15363          TXH     NVATM,4,-2          GO IF AN ATOM                           LS076110
                        *                                                                           LS076120
15352 -0754 CO 0 00000   NVNO   PXD     0,0                 IS NOT NUMBER, CLEAR AC                 LS076130

BINARY CARD NO. LISP0307
    15353  0131 CO 0 00000          XCA                     PUT IN MQ                               LS076140
    15354 -0754 CO 0 00000          PXD     0,0             CLEAR AC AGAIN                          LS076150
    15355  0534 CO 4 15373          LXA     NVIR4,4         RESTORE LINK IR                         LS076160
    15356  0522 CO 4 00001          XEC     1,4             EXECUTE POSSIBLE EXIT INSTRUCTION       LS076170
    15357  0500 CO 0 04063          CLA     $ARG3           MUST BE AN ERROR, PICK UP ORIGINAL ARG  LS076180
    15360 -0634 CO 4 02313          SXD     $ERROR,4                                                LS076190
    15361  0074 CO 4 02314          TSX     $ERROR+1,4      GO TO ERROR                             LS076200
    15362  543160600354             BCI     1,*I  3*        BAD ARGUMENT NUMVAL                     LS076210
                        *                                                                           LS076220
    15363 -0734 CO 4 00000  NVATM   PDX     0,4                                                     LS076230
    15364 -0320 CO 0 00524          ANA     TAGMSK                                                  LS076240
    15365  C100 CO 0 15352          TZE     NVNO                                                    LS076250
    15366  0771 CO 0 00017          ARS     15                                                      LS076260
    15367  0621 CO 0 15371          STA     *+2                                                     LS076270
    15370 -0754 CO 4 00000          PXD     0,4                                                     LS076280
    15371 -0774 CO 4 00000          AXC     **,4                                                    LS076290
    15372  0560 CO 4 15374          LDQ     NVTBL,4                                                 LS076300
    15373  0774 CO 4 00000   NVIR4  AXT     **,4            RESTORE IR 4                            LS076310
    15374  0020 CO 4 00001  NVTBL  TRA     1,4                                                     LS076320
    15375  0 11662 0 00000          0,,$FIX                                                         LS076330
    15376  0 11645 0 00000          0,,$FLOAT                                                       LS076340
    15377  0 00000 0 00000          0,,0                                                            LS076350
    15400  0 00000 0 00000          0,,0                                                            LS076360

BINARY CARD NO. LISP0308
    15401  0 11662 0 00000          0,,$FIX                                                         LS076370
                        *                                                                           LS076380
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                                *                                                                    LS076390
                                * ADD1          ADD 1 ADDS ONE TO ANY FIXED POINT OR FLOATING POINT   LS076400
                                *       NUMBER AND EXITS WITH THE NEW NUMBER                         LS076410
 15402  0634 CO 1 15420   ADD1  SXA     A1IR1,1          SAVE IR 1                                   LS076420
 15403  0774 OO 1 00000         AXT     0,1              ZERO IR 1(INDICATES ADD OP)                 LS076430
 15404  0634 CO 2 15421   AD1   SXA     A1IR2,2          SAVE IR 2                                   LS076440
 15405  0634 CO 4 15422         SXA     A1IR4,4          SAVE LINK IR                                LS076450
 15406  0074 CO 4 15343         TSX     NUMVAL,4         EVALUTE NUMERICAL ARGUMENT                  LS076460
 15407 -0600 CO 0 15424         STQ     A1T              SAVE $FIX OR $FLOAT                         LS076470
 15410 -0734 CO 4 00000         PDX     0,4              POINTER TO FULL WORD                        LS076480
 15411  0500 CO 4 00000         CLA     0,4              GET NUMERICAL VALUE                         LS076490
 15412 -0534 OO 2 15424         LXD     A1T,2            PICK UP $FIX OR $FLOAT                      LS076500
 15413  0074 CO 4 15551         TSX     FIXFLO,4                                                     LS076510
 15414  0761 CO 0 00000         NOP                      IMPOSSIBLE RETURN                           LS076520
 15415  0522 CO 1 15425         XEC     FAD,1            IS FLOAT, DO FLOATING POINT OP              LS076530
 15416  0522 CO 1 15427         XEC     ADDF,1           DO FIXED POINT OP                           LS076540
 15417  0560 CO 0 15424         LDQ     A1T              RESTORE $FLOAT AFTER FAD                    LS076550
 15420  0774 OO 1 00000   A1IR1 AXT     **,1             RESTORE IR 1                                LS076560
 15421  0774 CO 2 00000   A1IR2 AXT     **,2             RESTORE IR 2                                LS076570
 15422  0774 CO 4 00000   A1IR4 AXT     **,4             RESTORE LINK IR                             LS076580
 15423  0020 CO 0 13624         TRA     $MKNO            MAKE RESULT A NUMBER                        LS076590
                                *                                                                    LS076600
 15424  0 00000 0 00000   A1T                            TEMPORARY STORAGE                           LS076610
 15425  0300 CO 0 00510   FAD   FAD     $QF1             FLOATING ADD FOR ADD1                       LS076620
 15426  0302 CO 0 00510         FSB     $QF1             FOR SUB1                                    LS076630

BINARY CARD NO. LISP0309
 15427  0400 CO 0 00425   ADDF  ADD     $Q1              FOR ADD1                                    LS076640
 15430  0402 CO 0 00425         SUB     $Q1              FOR SUB1                                    LS076650
                                *                                                                    LS076660
                                * SUB1          SUBTRACT 1 SUBTRACTS ONE FROM A FIXED POINT OR FLOATING LS076670
                                *       POINT NUMBER. USES CODING OF ADD1 WITH AN INITIALIZATION.    LS076680
 15431  0634 CO 1 15420   SUB1  SXA     A1IR1,1          SAVE IR 1                                   LS076690
 15432  0774 CO 1 77777         AXT     -1,1             SET FOR SUBTRACT OPERATIONS                 LS076700
 15433  0020 CO 0 15404         TRA     AD1              PERFORM ADD1 CODING                         LS076710
                                * SUB1 USES THE CODING OF ADD1                                       LS076720
                                *                                                                    LS076730
                                *                                                                    LS076740
 15434  0634 CO 4 15440  GRTRTP SXA     GRTIR,4          SAVE LINK IR                                LS076750
 15435  0074 CO 4 14342         TSX     UNUMIX,4         EVALUATE NUMERICAL ARGUMENTS                LS076760
 15436  0040 CO 0 15442         TLQ     GRTT             PREDICATE TRUE                              LS076770
 15437 -0754 CO 0 00000         PXD     0,0              FALSE, CLEAR AC                             LS076780
 15440  0774 CO 4 00000   GRTIR AXT     **,4                                                         LS076790
 15441  0020 CO 4 00001         TRA     1,4              EXIT                                        LS076800
                                *                                                                    LS076810
 15442  0500 OO 0 00476   GRTT  CLA     $QD1             GET TRUE VALUE                              LS076820
 15443  0020 CO 0 15440         TRA     GRTIR            RESTORE LINK IR AND EXIT                    LS076830
                                *                                                                    LS076840
                                *                                                                    LS076850
                                * LESSTP        LESS THAN PREDICATE.  SIMPLE DOES GREATER THAN  PREDICATELS076860
                                *       WITH THA ARGUMENT REVERSED.                                  LS076870
                                *                                                                    LS076880
 15444  0131 CO 0 00000  LESSTP XCA                      INTERCHANGE ARGUMENTS                       LS076890
 15445  0020 CO 0 15434         TRA     GRTRTP           DO GREATER THAN PREDICATE                   LS076900
                                *                                                                    LS076910
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                        * THE FOLLOWING IS A NUMBER PREDICATE PACKAGE WHICH INCLUDES NUMBER     LS076920
                        *      PREDICATE, ZERO PREDICATE, MINUS PREDICATE, ONE PREDICATE, FIX   LS076930
                        *      PREDICATE AND FLOAT PREDICATE. ALL THESE PREDICATES SHARE CERTAINLS076940
                        *      BLOCKS OF CODING AND TEMPORARY STORAGE.                          LS076950
                        * NUMBRP       NUMBER PREDICATE TESTS ITS ARGUMENT FOR A NUMBER.        LS076960
 15446  0634 CO 4 15452 NUMBRP SXA     NPIR,4              SAVE LINK IR                         LS076970
 15447  0074 CO 4 15343        TSX     NUMVAL,4            EVALUATE ARGUMENT                    LS076980
 15450  0100 CO 0 15452        TZE     NPIR                IF ZERO NOT A NUMBER                 LS076990
 15451  0500 CO 0 00476  NPT   CLA     $QD1                IS A NUMBER, PICK UP TRUTH           LS077000
 15452  0774 CO 4 00000  NPIR  AXT     **,4                RESTORE LINK IR                      LS077010
 15453  0020 CO 4 00001        TRA     1,4                 EXIT                                 LS077020
                        *                                                                       LS077030
                        * FLOATP      FLOATING POINT NUMBER PREDICATE TESTS TO SEE IF ITS      LS077040
                        *      ARGUMENT IS A FLOATING POINT NUMBER                              LS077050
 15454  0634 CO 4 15452 FLOATP SXA     NPIR,4              SAVE LINK IR                         LS077060

BINARY CARD NO. LISP0310
 15455  0634 CO 2 15526        SXA     ZPIR,2              SAVE IR 2                            LS077070
 15456  0074 CO 4 15343        TSX     NUMVAL,4            EVALUATE ARGUMENT                    LS077080
 15457  0131 CO 0 00000        XCA                         GET TYPE IN AC                       LS077090
 15460 -0734 CO 2 00000        PDX     0,2                 TYPE IN IR 2                         LS077100
 15461  0074 CO 4 15551        TSX     FIXFLO,4            TEST FOR $FIX OR $FLOAT              LS077110
 15462  0761 CO 0 00000        NOP                         IMPOSSIBLE RETURN                    LS077120
 15463  0020 CO 0 15465        TRA     FLT                 IS FLOATING POINT                    LS077130
 15464  0020 CO 0 15525        TRA     ZPF                 IS NOT FLOATING POINT, EXIT FALSE    LS077140
 15465  0500 CO 0 00476  FLT   CLA     $QD1                GET TRUTH VALUE                      LS077150
 15466  0020 CO 0 15526        TRA     ZPIR                RESTORE IR S AND EXIT                LS077160
                        *                                                                       LS077170
                        * FIXP        FIXED POINT PREDICATE TESTS FOR FIXED POINT NUMBERS.     LS077180
 15467  0634 CO 4 15452  FIXP  SXA     NPIR,4              SAVE LINK IR                         LS077190
 15470  0634 CO 2 15526        SXA     ZPIR,2              SAVE IR 2                            LS077200
 15471  0074 CO 4 15343        TSX     NUMVAL,4            EVALUATE ARGUMENT                    LS077210
 15472  0131 CO 0 00000        XCA                         GET TYPE IN AC                       LS077220
 15473 -0734 CO 2 00000        PDX     0,2                 TYPE IN IR 2                         LS077230
 15474  0074 CO 4 15551        TSX     FIXFLO,4            TEST FOR $FIX OR $FLOAT              LS077240
 15475  0761 CO 0 00000        NOP                         IMPOSSIBLE EXIT                      LS077250
 15476  0020 CO 0 15525        TRA     ZPF                 IS FLOAT, EXIT FALSE                 LS077260
 15477  0500 CO 0 00476        CLA     $QD1                IS FIX, GET TRUTH VALUE              LS077270
 15500  0020 CO 0 15526        TRA     ZPIR                RESTORE IR S AND RETURN              LS077280
                        *                                                                       LS077290
                        * MINUSP      MINUS PREDICATE TESTS TO SEE IF ITS ARGUMENT IS A        LS077300
                        *      NEGATIVE NUMBER.                                                 LS077310
 15501  0634 CO 4 15452 MINUSP SXA     NPIR,4              SAVE LINK IR                         LS077320
 15502  0074 CO 4 15343        TSX     NUMVAL,4            EVALUATE ARGUMENT                    LS077330

BINARY CARD NO. LISP0311
 15503 -0734 CO 4 00000        PDX     0,4                                                      LS077340
 15504  0500 CO 4 00000        CLA     0,4                 PICK UP NUMBER                       LS077350
 15505 -0120 CO 0 15451        TMI     NPT                 EXIT TRUE IF MINUS                   LS077360
 15506 -0754 CO 0 00000        PXD     0,0                 IS NOT, EXIT FALSE                   LS077370
 15507  0020 CO 0 15452        TRA     NPIR                RESTORE LINK IR AND EXIT             LS077380
                        *                                                                       LS077390
                        * ZEROP       ZERO PREDICATE TESTS ITS ARGUMENT FOR A FIXED POINT      LS077400
                        *      ZERO    OR                                                       LS077410
                        *      ZERO OR A FLOATING POINT ZERO + OR - A TOLERENCE (FLOTOL).       LS077420
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 15510  0634 CO 4 15452   ZEROP SXA     NPIR,4          SAVE LINK IR                                LS077430
 15511  0634 CO 2 15526         SXA     ZPIR,2          SAVE IR 2                                   LS077440
 15512  0074 CC 4 15343         TSX     NUMVAL,4        EVALUATE ARGUMENT                           LS077450
 15513 -0734 00 4 00000         PDX     0,4             GET POINTER TO IR 4                         LS077460
 15514  0500 CO 4 00000         CLA     0,4             FULL WORD                                   LS077470
 15515  0760 CO 0 00003  ZPG    SSP                     GET MAGNITUDE OF N                          LS077480
 15516  0100 CO 0 15530         TZE     ZPT             EXIT TRUE IF ZERO                           LS077490
 15517  0131 CO 0 00000         XCA                     PUT NUMBER IN MQ                            LS077500
 15520 -0734 00 2 00000         PDX     0,2             PUT TYPE IN IR 2                            LS077510
 15521  0500 CO 0 15624         CLA     FLOTOL          PICK UP FLOATING POINT TOLERENCE            LS077520
 15522  0074 CO 4 15551         TSX     FIXFLO,4        TEST FOR FIX OR FLOAT                       LS077530
 15523  0020 CO 0 15532         TRA     ZPTS            NOT FIX OR FLO MEANS FLO FROM ONEP          LS077540
 15524  0020 CO 0 15532         TRA     ZPTS            IS FLOATING POINT, COMPARE WITH FLOTOL      LS077550
 15525 -0754 CO 0 00000  ZPF    PXD     0,0             IS FIXED POINT, EXIT FALSE                  LS077560
 15526  0774 CO 2 00000  ZPIR   AXT     **,2            RESTORE IR 2                                LS077570
 15527  0020 CO 0 15452         TRA     NPIR            RESTORE IR 4 AND EXIT                       LS077580
 15530  0500 CO 0 00476  ZPT    CLA     $QD1            GET TRUTH VALUE                             LS077590

BINARY CARD NO. LISP0312
 15531  0020 CO 0 15526         TRA     ZPIR            RESTORE IR S AND EXIT                       LS077600
 15532  0040 CO 0 15530  ZPTS   TLQ     ZPT             IS FLOATING POINT, EXIT TRUE IF LESS        LS077610
 15533  0020 CO 0 15525         TRA     ZPF             OTHERWISE EXIT FALSE                        LS077620
                        * ONEP          ONE PREDICATE TESTS TO SEE IF ITS ARGUMENT IS ONE           LS077630
                        *       BY SUBTRACTING ONE AND TESTING THE RESULT WITH ZEROP.               LS077640
 15534  0634 CO 4 15452  ONEP   SXA     NPIR,4          SAVE LINK IR                                LS077650
 15535  0634 CO 2 15526         SXA     ZPIR,2          SAVE IR 2                                   LS077660
 15536  0074 CO 4 15343         TSX     NUMVAL,4        EVALUATE ARGUMENT                           LS077670
 15537 -0734 CO 4 00000         PDX     0,4             POINTER TO AC                               LS077680
 15540  0500 CO 4 00000         CLA     0,4             FULL WORD TO AC                             LS077690
 15541  0131 CO 0 00000         XCA                     TYPE TO AC                                  LS077700
 15542 -0734 CO 2 00000         PDX     0,2             TYPE TO IR 2                                LS077710
 15543  0131 CO 0 00000         XCA                                                                 LS077720
 15544  0074 CO 4 15551         TSX     FIXFLO,4        DISPATCH ON FIX OR FLOAT                    LS077730
 15545  0761 CO 0 00000         NOP                     IMPOSSIBLE RETURN                           LS077740
 15546  0302 CO 0 00510         FSB     $QF1                                                        LS077750
 15547  0402 CO 0 00425         SUB     $Q1             SUBTRACT 1                                  LS077760
 15550  0020 CO 0 15515         TRA     ZPG             APPLY ZERO PREDICATE                        LS077770
                        *                                                                           LS077780
                        *       FIXFLO                  SUBROUTINE TO DISPATCH ON FIX OR FLO,       LS077790
                        *                               ARGUMENT IN IR 2.                           LS077800
                        *                                                                           LS077810
 15551 -3 11661 2 15553  FIXFLO TXL     *+2,2,$FIX-1    TXL - TXL FILTER FOR $FIX                   LS077820
 15552 -3 11662 2 15565         TXL     FX,2,$FIX       GO IF $FIX                                  LS077830
 15553 -3 11644 2 15555         TXL     *+2,2,$FLOAT-1  TXL - TXL FILTER FOR $FLOAT                 LS077840
 15554 -3 11645 2 15561         TXL     FL,2,$FLOAT     GO IF $FLOAT                                LS077850
 15555  0522 CO 4 00001         XEC     1,4             EXCEUTE IF NEITHER FIX OR FLOAT             LS077860
 15556  0020 CO 4 00004         TRA     4,4             RETURN                                      LS077870

BINARY CARD NO. LISP0313
 15557  0020 CO 4 00005         TRA     5,4             SKIP EXIT                                   LS077880
 15560  0020 CO 4 00006         TRA     6,4             SKIP 2 EXIT                                 LS077890
 15561  0522 CO 4 00002  FL     XEC     2,4             EXECUTE IF $FLOAT                           LS077900
 15562  0020 CO 4 00004         TRA     4,4             RETURN                                      LS077910
 15563  0020 CO 4 00005         TRA     5,4             SKIP EXIT                                   LS077920
 15564  0020 CO 4 00006         TRA     6,4             SKIP 2 EXIT                                 LS077930
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15565  0020 00 4 00003   FX     TRA     3,4                                                    LS077940
                        *       FIXFLO USES $FIX AND $FLAOT                                   LS077950
                        * UNFIX         UNFIX MAKES A FIXED POINT ARGUMENT IN THE AC A FLOATING LS077960
                        *       POINT NUMBER LEFT IN AC. MQ IS PRESERVED.                     LS077970
15566  0601 00 0 15622   UNFIX  STO     UFC             SAVE ARGUMENT                         LS077980
15567 -0320 00 0 00470         ANA     UFMSK           MASK OUT ALL BUT CHARACTERISTIC       LS077990
15570 -0100 00 0 15577         TNZ     UFE             IF ANY THING LEFT IT MUST BE NORMALIZDLS078000
15571  0500 00 0 15622         CLA     UFC             NOTHING LEFT, RESTORE ARGUMENT        LS078010
15572 -0501 00 0 00467         ORA     UFMC            OR IN CHARACTERISTIC                  LS078020
15573 -0600 00 0 15621         STQ     UFQ             SAVE MQ                               LS078030
15574  0300 00 0 00467         FAD     UFMC            ESSENTIALLY FAD OF ZERO TO NORMALIZE  LS078040
15575  0560 00 0 15621         LDQ     UFQ             RESTORE MQ                            LS078050
15576  0020 00 4 00001         TRA     1,4             EXIT                                  LS078060
                        *                                                                     LS078070
15577  0634 00 4 15617   UFE    SXA     UFXR,4          NUMBER GREATER THAN 2 TO 27. SAVE IR4 LS078080
15600  0774 00 4 00234         AXT     2*64+3*8+4,4     CHARACTERISTIC SO FAR                LS078090
15601  0600 00 0 15623         STZ     UFS             INITIALIZE SIGN PORTION               LS078100
15602  0120 00 0 15605         TPL     UFF             SKIP IF +                             LS078110
15603  0760 00 0 00003         SSP                     MAKE IT +                             LS078120
15604 -0625 00 0 15623         STL     UFS             RECORD FACT BY MAKING UFS NON-ZERO    LS078130

BINARY CARD NO. LISP0314
15605  0771 00 0 00001   UFF    ARS     1               DIVIDE NUMBER BY 2                    LS078140
15606  0340 00 0 00466         CAS     UFNC            SEE IF NORMALIZED YET                 LS078150
15607  1 00001 4 15605         TXI     UFF,4,1         ADD 1 TO CHARACTERISTIC AND TRY AGAIN LS078160
15610  1 00001 4 15605         TXI     UFF,4,1         DITTO                                 LS078170
15611  0601 00 0 15622         STO     UFC             IS NORMALIZED                         LS078180
15612 -0754 00 4 00000         PXD     0,4             CHARACTERISTIC TO AC                  LS078190
15613  0767 00 0 00011         ALS     9               POSITION CHARACTERISTIC               LS078200
15614 -0501 00 0 15622         ORA     UFC             OR IN NORMALIZED NUMBER               LS078210
15615  0520 00 0 15623         ZET     UFS             TEST FOR SIGN, 0 MEANS +              LS078220
15616 -0760 00 0 00003         SSM                     NOT ZERO SO MAKE MINUS                LS078230
15617  0774 00 4 00000   UFXR   AXT     **,4            RESTORE IR 4                          LS078240
15620  0020 00 4 00001         TRA     1,4             EXIT                                  LS078250
                00470   UFMSK  SYN Q777Q9              CHARACTERISTIC MASK                   LS078260
                00467   UFMC   SYN Q233Q9              GENERAL CHARACTERISTIC                LS078270
                00466   UFNC   SYN $Q01Q9                                                    LS078280
15621  0 00000 0 00000   UFQ                            MQ                                    LS078290
15622  0 00000 0 00000   UFC                            AC TEMPORARY STORAGE                  LS078300
15623  0 00000 0 00000   UFS                            SIGN STORAGE                          LS078310
                        * UNFIX USES NO EXTERNAL CONSTANTS.                                   LS078320
                        * FLOTOL        FLOATING POINT TOLERENCE USED IN DESIDING IF FLOATING LS078330
                        *       POINT NUMBERS ARE INTEGERS.                                   LS078340
15624 +156622516334     FLOTOL DEC      3E-6            FLOATING POINT TOLERENCE VALUE        LS078350
                        * MNSPRG        MINUS PROGRAM MAKES A LIST OF MINUS AND ITS ARGUMENT  LS078360
                        *                                                                     LS078370
                        * MNSPRG        CREATES A NUMBER OF OPPOSITE SIGN OF NUMERICAL ARGUMENT LS078380
                        *                                                                     LS078390
15625  0634 00 4 15632   MNSPRG SXA     MRXR,4          SAVE LINK IR                          LS078400
15626  0074 00 4 15343         TSX     NUMVAL,4        EVALUATE THE NUMERICAL ARGUMENT       LS078410
15627 -0734 00 4 00000         PDX     0,4             POINTER TO FULL WORD                  LS078420
15630  0500 00 4 00000         CLA     0,4             NUMERICAL VALUE                       LS078430
15631  0760 00 0 00002         CHS                     MAKE OPPOSITE SIGN                    LS078440
15632  0774 00 4 00000   MRXR   AXT     **,4            RESTORE LINK IR                       LS078450
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BINARY CARD NO. LISP0315
    15633  0020 CO 0 13624          TRA     $MKNO              MAKE IT A NUMBER                          LS078460
                                    *                                                                    LS078470
                                    * RCPPRG       CALCULATES THE RECIPORICAL OF A NUMBER.              LS078480
    15634  0634 CO 4 15655  RCPPRG  SXA     RRXR,4             SAVE LINK IR                              LS078490
    15635  0634 CO 2 15656          SXA     RRXR2,2            SAVE IR 2                                 LS078500
    15636  0074 CO 4 15343          TSX     NUMVAL,4           EVALUTE THE NUMERICAL ARGUMENT            LS078510
    15637 -0734 00 4 00000          PDX     0,4                POINTER TO FULL WORD                      LS078520
    15640  0500 CO 4 00000          CLA     0,4                NUMERICAL VALUE                           LS078530
    15641  0601 CO 0 15663          STO     RCPT               SAVE VALUE                                LS078540
    15642  0131 00 0 00000          XCA                        TYPE TO AC                                LS078550
    15643 -0734 CO 2 00000          PDX     0,2                TYPE TO IR 2                              LS078560
    15644  0074 CO 4 15551          TSX     FIXFLO,4           DISPATCH ON FIX OR FLOAT                  LS078570
    15645  0761 CO 0 00000          NOP                        IMPOSSIBLE RETURN                         LS078580
    15646  0500 CO 0 00510          CLA     $QF1               IS FLOAT, PICK UP FLOATING POINT 1        LS078590
    15647  0020 CO 0 15660          TRA     RCPFX              IS FIXED POINT                            LS078600
    15650  0241 CO 0 15663          FDP     RCPT               DIVIDE BY ARGUMENT                        LS078610
    15651  0760 CO 0 00012          DCT                        CHECK FOR ILLEGAL DIVISION                LS078620
    15652  0074 CO 4 02442          TSX     $DCT,4             DIVIDE CHECK ERROR                        LS078630
    15653  0131 CO 0 00000          XCA                        QUOTENT TO AC                             LS078640
    15654  0560 CO 0 00533          LDQ     RCPS               $FLOAT TO MQ                              LS078650
    15655  0774 00 4 00000  RRXR    AXT     **,4               RESTORE LINK IR                           LS078660
    15656  0774 00 2 00000  RRXR2   AXT     **,2               RESTORE IR 2                              LS078670
    15657  0020 CO 0 13624          TRA     $MKNO              MAKE ANSWER A NUMBER                      LS078680
                                    *                                                                    LS078690
    15660  0131 CO 0 00000  RCPFX   XCA                        FIXED POINT RECIP, ANSWER IS ZERO         LS078700

BINARY CARD NO. LISP0316
    15661 -0754 CO 0 00000          PXD     0,0                CLEAR AC                                  LS078710
    15662  0020 CO 0 15655          TRA     RRXR               RESTORE IR S AND MAKE A NUMBER            LS078720
                                    *                                                                    LS078730
    15663  0 00000 0 00000  RCPT                               TEMPORARY STORAGE                         LS078740
                    00533   RCPS    SYN     FLOATD             FLOAT INDICATOR                           LS078750
                                    *                                                                    LS078760
                                    *                                                                    LS078770
                                            HED                                                          LS078780
                                    *                                                                    LS078790
                                    *       TCNTEM IS THE TRACECOUNT FUNCTION--IT COUNTS THE             LS078800
                                    *       NUMBER OF FUNCTION ENTRANCES THROUGH APLY, EVAL,             LS078810
                                    *        AND LINK-- AND BEGINS TRACING AFTER A SPECIFIED             LS078820
                                    *       NUMBER OF FUNCTION ENTRANCES HAS OCCURRED                    LS078830
                                    *                                                                    LS078840
    15664  0634 CO 4 15675  TCNTEM  SXA TCNTM1,4                                                        LS078850
    15665 -0734 CO 4 00000          PDX 0,4                                                              LS078860
    15666  0500 CO 0 15677          CLA TCNTMN                                                           LS078870
    15667  0400 CO 0 00425          ADD $Q1                                                              LS078880
    15670  0601 CO 0 15677          STO TCNTMN                                                           LS078890
    15671  0402 CO 0 15700          SUB TCNTMF                                                           LS078900
    15672 -0100 CO 0 15674          TNZ *+2                                                              LS078910
    15673 -0625 CO 0 15701          STL TCNTTR                                                           LS078920
    15674 -0754 CO 4 00000          PXD 0,4                                                              LS078930
    15675  0774 CO 4 00000  TCNTM1  AXT 0,4                                                            LS078940
    15676  0020 CO 4 00001          TRA 1,4                                                              LS078950
                                    *                                                                    LS078960
    15677  0 00000 0 00000  TCNTMN                  FUNCTION ENTRANCE COUNT                             LS078970
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15700  0 00000 0 00000  TCNTMF                    TRACECOUNT ARGUMENT                    LS078980
15701  0 00000 0 15701  TCNTTR PZE *              IF ZERO, DONT TRACE                    LS078990
15702  0 00000 0 00000  TCNTMA                    IF ZERO, TRACECOUNT INACTIVE           LS079000
                        *                                                               LS079010
                        *       TCNTM3 SETS UP TRACECOUNT                               LS079020
                        *                                                               LS079030
15703  0634 00 4 15717  TCNTM3 SXA TCNTM4,4                                            LS079040
15704 -0734 00 4 00000          PDX 0,4                                                 LS079050
15705  0500 00 4 00000          CLA 0,4                                                 LS079060
15706 -0734 00 4 00000          PDX 0,4                                                 LS079070

BINARY CARD NO. LISP0317
15707  0500 00 4 00000          CLA 0,4                                                 LS079080
15710  0601 00 0 15700          STO TCNTMF                                              LS079090
15711 -0625 00 0 15702          STL TCNTMA                                              LS079100
15712  0600 00 0 15701          STZ TCNTTR                                              LS079110
15713 -0100 00 0 15715          TNZ *+2                                                 LS079120
15714 -0625 00 0 15701          STL TCNTTR                                              LS079130
15715  0600 00 0 15677          STZ TCNTMN                                              LS079140
15716  0754 00 0 00000          PXA 0,0                                                 LS079150
15717  0774 00 4 00000  TCNTM4 AXT 0,4                                                 LS079160
15720  0020 00 4 00001          TRA 1,4                                                 LS079170
                        *                                                               LS079180
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                                TTL     APPLY AND EVAL                                                  LS079190
                                    APPLY                                                               LS079200
                                                                                                        LS079210
                                    APPLY(F,L,A) =                                                      LS079220
                                       SELECT(CAR(L).,                                                  LS079230
                                              -1,APP2(F,L,A).,                                          LS079240
                                              LAMBDA,EVAL(F,APPEND(PAIR(CADR(F),L),A)).,                LS079250
                                              LABEL,APPLY(CADDR(F),L,APPEND(                            LS079260
                                                   PAIR1(CADR(F),CADDR(F))),A).,                        LS079270
                                              APPLY(EVAL(F,A),L,A))                                     LS079280
                                                                                                        LS079290
                              A       HED                                                               LS079300
     15721 -0634 CO 4 04112    APPLY SXD ASS1,4                                                         LS079310
     15722  C100 CO 4 00001          TZE 1,4                                                           LS079320
     15723  0601 CC 0 04115          STO AST1                    F                                     LS079330
     15724 -C734 CO 4 CCCCC          PDX 0,4                                                           LS079340
     15725  0634 CO 4 04112          SXA     ASS1,4              SAVE FUNCTION ALONG WITH INDEX REGISTELS079350
     15726  0500 CO 4 00000          CLA 0,4                     CWR(F)                                LS079360
     15727  C734 CO 4 CCCCC          PAX 0,4                     CAR(F)                                LS079370
     15730  3 77776 4 15760          TXH ASP1,4,-2               =-1                                   LS079380
     15731 -0754 CO 4 00000          PXD 0,4                                                           LS079390
     15732  0340 CO 0 00537          CAS ASLMD                   = LAMBDA                              LS079400
     15733  0020 CO 0 15735          TRA *+2                                                           LS079410
     15734  0020 CO 0 15763          TRA ASP2                                                          LS079420

BINARY CARD NO. LISP0318
     15735  0340 CO 0 00535          CAS ASFUN                                                         LS079430
     15736  0020 CO 0 15740          TRA *+2                                                           LS079440
     15737  0020 CO 0 16036          TRA ASP4                                                          LS079450
     15740  0340 CO 0 00536          CAS ASLBL                   = LABEL                               LS079460
     15741  0020 CO 0 15743          TRA *+2                                                           LS079470
     15742  0020 CO 0 16006          TRA ASP3                                                          LS079480
     15743  0074 CO 4 03104          TSX $SAVE,4                                                       LS079490
     15744 -3 04116 0 03165          TXL     $END3,,ASSA+2       SAVE 3 ITEMS                          LS079500
     15745 -0600 CO 0 04113          STQ ASSL                                                          LS079510
     15746  0560 CO 0 04063          LDQ $ARG3                                                         LS079520
     15747 -0600 CO 0 04114          STQ ASSA                                                          LS079530
     15750  0500 CO 0 04115          CLA AST1                    F                                     LS079540
     15751  0074 CO 4 16521          TSX $EVAL,4                 EVAL(F,A)                             LS079550
     15752  0560 CO 0 04114          LDQ ASSA                                                          LS079560
     15753 -0600 CO 0 04063          STQ $ARG3                                                         LS079570
     15754  0560 CO 0 04113          LDQ ASSL                                                          LS079580
     15755  0074 CO 4 03117          TSX UNSAVE,4                                                      LS079590
     15756 -0534 CO 4 04112          LXD ASS1,4                                                        LS079600
     15757  0020 CO 0 15721          TRA APPLY                   APPLY(EVAL(F,A),L,A)                  LS079610
                                                                                                       LS079620
     15760  0500 CO 0 04115   ASP1   CLA AST1                    F                                     LS079630
     15761 -0534 CO 4 04112          LXD ASS1,4                                                        LS079640
     15762  0020 CO 0 16054          TRA $APP2                   P APP2(F,L,A)                         LS079650
                              *              LAMBDA BRANCH                                             LS079660

BINARY CARD NO. LISP0319
     15763 -0534 CO 4 04115   ASP2   LXD AST1,4                 F                                     LS079670
     15764  0500 CO 0 04063          CLA $ARG3                                                         LS079680
     15765  0601 CO 0 04117          STO AST3                                                          LS079690
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15766  0500 CO 4 00000          CLA 0,4                    CWR(F)                                          LS079700
15767 -0734 CO 4 00000          PDX 0,4                    CDR(F)                                          LS079710
15770  0500 CO 4 00000          CLA 0,4                   CWDR(F)                                          LS079720
15771  0601 CO 0 04120          STO AST4                                                                   LS079730
15772  0734 CO 4 00000          PAX 0,4                    CADR(F)                                         LS079740
15773 -0754 CO 4 00000          PXD 0,4                                                                    LS079750
15774  0074 CO 4 10402          TSX $PAIR,4                PAIR(CADR(F),L)                                 LS079760
15775  0560 CO 0 04117          LDQ AST3                   A                                               LS079770
15776  0074 CO 4 10515          TSX     $NCONC,4                                                           LS079780
15777  0131 CO 0 00000          XCA                                                                        LS079790
16000 -0534 CO 4 04120          LXD AST4,4                 CDDR(F)                                         LS079800
16001  0500 CO 4 00000          CLA 0,4                                                                    LS079810
16002  0734 CO 4 00000          PAX 0,4                                                                    LS079820
16003 -0754 CO 4 00000          PXD 0,4                                                                    LS079830
16004 -0534 CO 4 04112          LXD ASS1,4                                                                 LS079840
16005  0020 CO 0 16521          TRA $EVAL       EVAL(CADDR(F),APPEND(PAIR(CADR(F),L),A))                   LS079850
                                                                                                           LS079860
                        *                LABEL BRANCH                                                      LS079870
16006 -0534 CO 4 04115   ASP3   LXD AST1,4                 F                                               LS079880
16007 -0600 CO 0 04116          STQ AST2                   L                                               LS079890
16010  0560 CO 0 04063          LDQ $ARG3                  A                                               LS079900

BINARY CARD NO. LISP0320
16011 -0600 CO 0 04117          STQ AST3                                                                   LS079910
16012  0500 CO 4 00000          CLA 0,4                    CWR(F)                                          LS079920
16013 -0734 CO 4 00000          PDX 0,4                    CDR(F)                                          LS079930
16014  0500 CO 4 00000          CLA 0,4                                                                    LS079940
16015  0601 CO 0 04120          STO AST4                   CWDR(F)                                         LS079950
16016 -0734 CO 4 00000          PDX 0,4                    CDDR(F)                                         LS079960
16017  0500 CO 4 00000          CLA 0,4                                                                    LS079970
16020  0734 CO 4 00000          PAX 0,4                    CADDR(F)                                        LS079980
16021 -0754 CO 4 00000          PXD 0,4                                                                    LS079990
16022  0601 CO 0 04115          STO AST1                                                                   LS080000
16023  0131 CO 0 00000          XCA                                                                        LS080010
16024  0534 CO 4 04120          LXA AST4,4                                                                 LS080020
16025 -0754 CO 4 00000          PXD 0,4                    CADR(F)                                         LS080030
16026  0074 CO 4 04471          TSX $CONS,4                CONS(CADR(F),CONS(CADDR(F),0))                  LS080040
16027  0560 CO 0 04117          LDQ AST3                   A                                               LS080050
16030  0074 CO 4 04471          TSX $CONS,4                APPEND( ABOVE,A)                                LS080060
16031  0601 CO 0 04063          STO $ARG3                                                                  LS080070
16032  0560 CO 0 04116          LDQ AST2                                                                   LS080080
16033  0500 CO 0 04115          CLA AST1                   CADDR(F)                                        LS080090
16034 -0534 CO 4 04112          LXD ASS1,4                                                                 LS080100
16035  0020 CO 0 15721          TRA APPLY    APPLY(CADDR(F),L,APPEND(PAIR(CADR(F),CADDR(F)),A))            LS080110
                                                                                                           LS080120
                        *                FUNARG BRANCH                                                     LS080130
16036 -0534 CO 4 04115   ASP4   LXD AST1,4                 F                                               LS080140

BINARY CARD NO. LISP0321
16037  0500 CO 4 00000          CLA ,4                                                                     LS080150
16040 -0734 CO 4 00000          PDX ,4                     CDR(F)                                          LS080160
16041  0500 CO 4 00000          CLA ,4                                                                     LS080170
16042  0601 CO 0 04115          STO AST1                   CWDR(F)                                         LS080180
16043 -0734 CO 4 00000          PDX ,4                     CDDR(F)                                         LS080190
16044  0500 CO 4 00000          CLA ,4                                                                     LS080200
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16045  C734 CO 4 00000          PAX ,4                    CADDR(F)                                  LS080210
16046 -C754 CO 4 00000          PXD ,4                                                              LS080220
16047  C601 CO 0 04063          STO $ARG3                 A                                         LS080230
16050  C534 CO 4 04115          LXA AST1,4                CADR(F)                                   LS080240
16051 -C754 CO 4 00000          PXD ,4                    F                                         LS080250
16052 -C534 CO 4 04112          LXD ASS1,4                                                          LS080260
16053  0020 CO 0 15721          TRA $APPLY                                                          LS080270
                                                                                                    LS080280
                  00536   ASLBL SYN LABELD                                                          LS080290
                  00537   ASLMD SYN LAMDAD                                                          LS080300
                  00535   ASFUN SYN     FNARGD                                                      LS080310
                  00424   ASZRO SYN     $ZERO                                                       LS080320
                                                                                                    LS080330
                      APP2(F,L,A)=SELECT(F.,CAR,CAAR(L).,CDR,                                       LS080340
                      CDAR(L).,CONS,CONS(CAR(L),CADR(L)).,LIST,COPY(L).,SEARCH(F,                   LS080350
                      LAMBDA(J,CAR(J)=SUBR OR CAR(J)=EXP),                                          LS080360
                      LAMBDA(J,CAR(J)=SUBR YIELDS APP3(CWADR                                        LS080370
                      (J),DISTRIB(L)),1 YIELDS APPLY(CADR(J),L,A)))                                 LS080380
                      ERROR)                                                                        LS080390
                                                                                                    LS080400
                    A       HED                                                                     LS080410
16054 -0634 CO 4 16215   APP2   SXD     ATS1,4            SAVE LINK IR                              LS080420
16055 -C734 CO 4 00000          PDX     ,4                SAVE NAME OF FUNCTION IN ADDR             LS080430
16056  C500 CO 0 16215          CLA     ATS1              NAME FOR TRACING                          LS080440
16057  0634 CO 4 16215          SXA     ATS1,4            SAVE IR4 AND                              LS080450
16060  0601 CO 0 04057          STO     CSV                                                         LS080460
16061  0634 CO 4 04057          SXA CSV,4                                                           LS080470
16062 -0754 CO 4 00000          PXD     ,4                RESTORE THE FN TO AC                      LS080480
16063 -0534 CO 4 04063          LXD     $ARG3,4           GET ALIST                                 LS080490
16064 -0634 CO 4 16221          SXD     A,4               SAVE IT                                   LS080500

BINARY CARD NO. LISP0322
16065 -06C0 CO 0 16220          STQ     AL                ARGUMENT LIST                             LS080510
16066  0601 CO 0 16217          STO     F                 FUNCTION  (IS ATOMIC SYMBOL)              LS080520
16067  0600 CO 0 16213          STZ     APTRT             INITIALIZE TRACE TEST CELL                LS080530
16070  0520 CO 0 15702          ZET TCNTMA                                                          LS080540
16071  0074 CC 4 15664          TSX TCNTEM,4                                                        LS080550
16072 -0734 CO 4 00000   APSES  PDX     0,4               ARG TO IR                                 LS080560
16073 -3 00000 4 16135          TXL     APSAL,4,0         GO IF NO MORE PROPERTY LIST               LS080570
16074  C500 CO 4 00000          CLA     0,4               FIRST WORD                                LS080580
16075  0734 CO 4 00000          PAX     0,4               CAR                                       LS080590
16076 -3 10325 4 16100          TXL     *+2,4,$TRACE-1                                              LS080600
16077 -3 10326 4 16165          TXL     APTRK,4,$TRACE    LOOK FOR TRACE                            LS080610
16100 -3 10437 4 16102          TXL     *+2,4,$SUBR-1     LOOK FOR                                  LS080620
16101 -3 10440 4 16114          TXL     R2,4,$SUBR        $SUBR OR                                  LS080630
16102 -3 11703 4 16072          TXL     APSES,4,$EXPR-1   $EXPR                                     LS080640
16103  3 11704 4 16072          TXH     APSES,4,$EXPR                                               LS080650
                          *             EXPR BRANCH IN APPLY                                        LS080660
16104 -0734 CO 4 00000   R21    PDX     0,4               POINTER TO NEXT WORD AFTER $EXPR          LS080670
16105  0500 CO 4 00000          CLA     0,4               NEXT WORD                                 LS080680
16106  0734 CO 4 00000          PAX     0,4               CAR                                       LS080690
16107 -0754 CO 4 00000          PXD     0,4               IS FUNCTION                               LS080700
16110  0520 CO 0 16213          ZET     APTRT             TEST FOR TRACE MODE                       LS080710
16111  0020 CO 0 16155          TRA     APTXP             TRACE THIS EXPRESSION                     LS080720
16112 -0534 CO 4 16215          LXD     ATS1,4            RESTORE LINK IR                           LS080730
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BINARY CARD NO. LISP0323
    16113  0020 CO 0 15721          TRA     $APPLY              GO TO APPLY                                    LS080740
                              *              R2 THE SUBR BRANCH OF APPLY                                        LS080750
    16114 -0734 CO 4 00000   R2     PDX     0,4                 GET THE TXL INSTRUCTION BT  TAKING             LS080760
    16115  0500 CO 4 00000          CLA     0,4                 CWR (CADR L))                                  LS080770
    16116  0734 CO 4 00000          PAX     0,4                                                                LS080780
    16117  0500 CO 4 00000          CLA     0,4                                                                LS080790
    16120  0601 CO 0 16214          STO     CWADR               TXL INSTRUCTION                                LS080800
    16121  0500 CO 0 16220          CLA     AL                  GET THE ARGUMENT LIST                          LS080810
    16122  0074 CO 4 10712          TSX     SPREAD,4            SPREAD IT INTO AC, MQ, ARG3, ETC.              LS080820
    16123  0520 CO 0 16213          ZET     APTRT               TEST FOR TRACE MODE                            LS080830
    16124  0020 CO 0 16177          TRA     APTSB               TRACE THIS SUBROUTINE                          LS080840
    16125  0074 CO 4 03104          TSX     $SAVE,4                                                            LS080850
    16126 -3 04062 0 03167          TXL     $END2,,$ALIST+2                                                    LS080860
    16127 -0534 CO 4 16221          LXD     A,4                                                                LS080870
    16130 -0634 CO 4 04060          SXD     $ALIST,4                                                           LS080880
    16131  0074 CO 4 16214          TSX     CWADR,4                                                            LS080890
    16132  0074 CO 4 03117          TSX     UNSAVE,4                                                           LS080900
    16133 -0534 CO 4 04057          LXD     CSV,4                                                              LS080910
    16134  0020 CO 4 00001          TRA     1,4                                                                LS080920
                              *                                                                                 LS080930
    16135  0500 CO 0 16216  APSAL  CLA     FAS                 WHERE TO GO IF NOT FOUND ON PAIR LIST          LS080940
    16136  0601 CO 0 04063          STO     $ARG3                                                              LS080950
    16137  0500 CO 0 16217          CLA     F                   ATOMIC FUNCTION                                LS080960
    16140  0560 CO 0 16221          LDQ     A                                                                  LS080970

BINARY CARD NO. LISP0324
    16141  0074 CO 4 10662          TSX     SASSOC,4            SEARCH PAIR LIST FOR LABEL DEFINITION          LS080980
    16142 -0734 CO 4 00000          PDX     0,4                 POINTER TO ASSOCIATED ITEM                     LS080990
    16143  0500 CO 4 00000          CLA     0,4                                                                LS081000
    16144 -0734 CO 4 00000          PDX     0,4                 POINTER TO ITEM                                LS081010
    16145 -0754 CO 4 00000          PXD     0,4                                                                LS081020
    16146  0560 CO 0 16221          LDQ     A                   RESTORE PAIR LIST                              LS081030
    16147 -0600 CO 0 04063          STQ     $ARG3                                                              LS081040
    16150  0560 CO 0 16220          LDQ     AL                  RESTORE ARGUMENT LIST                          LS081050
    16151  0520 CO 0 16213          ZET     APTRT               TEST FOR TRACE MODE                            LS081060
    16152  0020 CO 0 16155          TRA     APTXP               TRACE THIS EXPRESSION                          LS081070
    16153 -0534 CO 4 16215          LXD     ATS1,4              RESTORE LINK IR                                LS081080
    16154  0020 CO 0 15721          TRA     $APPLY              GO TO APPLY WITH ITEM ASSOCIATED WITH          LS081090
                              *              THE ATOMIC FUNCTION                                                LS081100
    16155  0074 CO 4 03104  APTXP  TSX     $SAVE,4             TRACE EXPR                                     LS081110
    16156 -3 04061 0 03171          TXL     $END1,,CSV+2                                                       LS081120
    16157  0074 CO 4 15721          TSX     $APPLY,4                                                           LS081130
    16160  0020 CO 0 16204          TRA     APEXC               FINISH UP                                      LS081140
                              *                                                                                 LS081150
    16161 -0634 CO 4 02313   R33    SXD     $ERROR,4                                                           LS081160
    16162  0500 CO 0 16217          CLA     F                   PICK UP FUNCTION                               LS081170
    16163  0074 CO 4 02314          TSX     $ERROR+1,4          GO TO ERROR                                    LS081180
    16164  542160600254             BCI     1,*A  2*            FUNCTION OBJECT HAS NO DEFINITION              LS081190
                              *                                                                                 LS081200
    16165 -0520 CO 0 15701  APTRK  NZT TCNTTR                                                                  LS081210
    16166  0020 CO 0 16072          TRA APSES                                                                  LS081220
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BINARY CARD NO. LISP0325
    16167 -0625 CO 0 16213          STL APTRT                                                   LS081230
    16170  0601 CO 0 16212          STO     APA             SAVE THE AC                         LS081240
    16171  0534 CO 4 04112          LXA     ASS1,4          ATOM NAME                           LS081250
    16172 -0754 00 4 00000          PXD     0,4                                                 LS081260
    16173  0074 CO 4 17124          TSX     ARGOF,4         PRINT ARGUMENTS OF                  LS081270
    16174  0560 CO 0 16220          LDQ     AL              RESTORE MQ AFTER PRINTING           LS081280
    16175  0500 CO 0 16212          CLA     APA             RESTORE AC                          LS081290
    16176  0020 CO 0 16072          TRA     APSES           CONTINUE PROPERTY LIST SEARCH       LS081300
                                   *                                                           LS081310
    16177  0074 CO 4 03104  APTSB   TSX     $SAVE,4         TRACE SUBR                          LS081320
    16200 -3 04062 0 03167          TXL     $END2,,$ALIST+2                                     LS081330
    16201 -0534 00 4 16221          LXD     A,4                                                 LS081340
    16202 -0634 00 4 04060          SXD     $ALIST,4                                            LS081350
    16203  0074 CO 4 16214          TSX     CWADR,4                                             LS081360
    16204  0074 CO 4 03117  APEXC   TSX     UNSAVE,4                                            LS081370
    16205  0131 CO 0 00000          XCA                     VALUE TO MQ                         LS081380
    16206  0534 CO 4 04057          LXA     CSV,4                                               LS081390
    16207 -0754 CO 4 C0000          PXD     0,4             TO AC                               LS081400
    16210 -0534 CO 4 04057          LXD     CSV,4                                               LS081410
    16211  0020 CO 0 17162          TRA     VALOF           PRINT VALUE OF                      LS081420
                                   *                                                           LS081430
    16212  0 00000 0 00000   APA                             AC STORAGE                          LS081440
    16213  0 00000 0 00000   APTRT                           TRACE MODE TEST SWITCH              LS081450
    16214  0 00000 0 00000   CWADR                          TXL INSTRUCTION FOR SUBR            LS081460

BINARY CARD NO. LISP0326
    16215  0 00000 0 00000   ATS1                           LINK INDEX REGISTER                 LS081470
    16216 -3 00000 0 16161   FAS     TXL     R33,,0         NOT FOUND ON PAIR LIST SO CALL ERROR LS081480
    16217  0 00000 0 00000   F                              ATOMIC FUNCTION GOES HERE           LS081490
    16220  0 00000 0 00000   AL                             ARGUMENT LIST                       LS081500
    16221  0 00000 0 00000   A                              A OR PAIR LIST                      LS081510
                             *                                                                  LS081520
                                                                                               LS081530
                                                                                               LS081540
                             A       HED                                                       LS081550
    16222  0100 CO C 16253   EVCON   TZE E3                                                    LS081560
    16223 -0634 CO 4 04124          SXD ECS1,4                                                 LS081570
    16224  0074 CO 4 03104          TSX $SAVE,4                                                LS081580
    16225 -3 04131 0 03163          TXL     $END4,,ECS4+2   SAVE 4 ITEMS                       LS081590
    16226 -0600 CO 0 04125          STQ ECS2                                                   LS081600
    16227 -0734 CO 4 00000          PDX 0,4                                                    LS081610
    16230  0500 CO 4 00000   E1     CLA 0,4                                                    LS081620
    16231  0601 CO 0 04126          STO ECS3                                                   LS081630
    16232  0734 CO 4 00000          PAX 0,4                                                    LS081640
    16233  0500 CO 4 00000          CLA 0,4                                                    LS081650
    16234  0601 CO 0 04127          STO ECS4                                                   LS081660
    16235  0734 CO 4 00000          PAX 0,4                                                    LS081670
    16236 -0754 00 4 00000          PXD 0,4                                                    LS081680
    16237  0074 CO 4 16521          TSX $EVAL,4                                                LS081690
    16240  0560 CO 0 04125          LDQ ECS2                                                   LS081700
    16241  0100 CO 0 16251          TZE E2                                                     LS081710
    16242 -0534 00 4 04127          LXD ECS4,4                                                 LS081720
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BINARY CARD NO. LISP0327
    16243  0500 CO 4 00000          CLA 0,4                                    LS081730
    16244  0734 CO 4 00000          PAX 0,4                                    LS081740
    16245 -0754 00 4 00000          PXD 0,4                                    LS081750
    16246  0074 CO 4 03117          TSX UNSAVE,4                               LS081760
    16247 -0534 CO 4 04124          LXD ECS1,4                                 LS081770
    16250  0020 CO 0 16521          TRA $EVAL                                  LS081780
    16251 -0534 00 4 04126    E2    LXD ECS3,4                                 LS081790
    16252  3 00000 4 16230          TXH E1,4,0                                 LS081800
    16253 -0634 CO 4 02313    E3    SXD $ERROR,4                               LS081810
    16254  0534 CO 4 04126          LXA     ECS3,4                             LS081820
    16255 -0754 CO 4 00000          PXD     0,4             PRINT LAST CONDITION LS081830
    16256  0074 CO 4 02314          TSX $ERROR+1,4                             LS081840
    16257  542160600354             BCI     1,*A  3*        CONDITIONAL UNSATISFIED LS081850
                                    BASIC LISP FUNCTIONS FOR APPLY             LS081860
                                                                               LS081870
                                                                               LS081880
                           R        HED                                        LS081890
                                    CAR                                        LS081900
                                                                               LS081910
    16260  0634 CO 4 16265  CARP    SXA     CARX,4                             LS081920
    16261 -0734 00 4 00000          PDX ,4                                     LS081930
    16262  0500 CO 4 00000          CLA ,4                                     LS081940
    16263  0734 CO 4 00000          PAX ,4                                     LS081950
    16264 -0754 CO 4 00000          PXD ,4                                     LS081960
    16265  0774 CO 4 00000  CARX    AXT     **,4                               LS081970
    16266  0020 CO 4 00001          TRA 1,4                                    LS081980
    16267  0 00000 0 00000   BFS1                                             LS081990
                                                                               LS082000
    16270  0634 CO 4 16274  CDRP    SXA     CDRX,4                             LS082010

BINARY CARD NO. LISP0328
    16271 -0734 00 4 00000          PDX ,4                                     LS082020
    16272  0500 CO 4 00000          CLA ,4                                     LS082030
    16273 -0320 CO 0 00514          ANA BFDM                                   LS082040
    16274  0774 CO 4 00000  CDRX    AXT     **,4                               LS082050
    16275  0020 CO 4 00001          TRA 1,4                                    LS082060
                   00514   BFDM     SYN     $DMASK                             LS082070
                                                                               LS082080
                                                                               LS082090
    16276  0634 CO 4 16307  ATOMP   SXA     ATMX,4                             LS082100
    16277  0100 CO 0 16304          TZE ATP1                                   LS082110
    16300 -0734 00 4 00000          PDX ,4                                     LS082120
    16301  0500 CO 4 00000          CLA ,4                                     LS082130
    16302  0734 CO 4 00000          PAX ,4                                     LS082140
    16303 -3 77776 4 16306          TXL *+3,4,-2                               LS082150
    16304  0500 CO 0 00476   ATP1    CLA BFQ1                                   LS082160
    16305  0020 CO 0 16307          TRA *+2                                    LS082170
    16306 -0754 CO 0 00000          PXD ,0                                     LS082180
    16307  0774 CO 4 00000  ATMX    AXT     **,4                               LS082190
    16310  0020 CO 4 00001          TRA 1,4                                    LS082200
                   00476   BFQ1     SYN     $QD1                               LS082210
                                                                               LS082220
    16311  0100 CO 0 16314   NULLP  TZE *+3                                    LS082230
    16312 -0754 00 0 00000          PXD ,0                                     LS082240
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16313  0020 CO 4 00001          TRA 1,4                                    LS082250
16314  0500 CO 0 00476          CLA BFQ1                                   LS082260
16315  0020 CO 4 00001          TRA 1,4                                    LS082270
                                                                          LS082280
                                                                          LS082290
                                                                          LS082300
                                LAMBDA FOR FUNCTIONAL ARGUMENTS           LS082310
                                                                          LS082320
16316 -0634 CO 4 16267  LAMP    SXD BFS1,4                                LS082330

BINARY CARD NO. LISP0329
16317  0601 CO 0 04155          STO BFS2          L                       LS082340
16320  0131 CO 0 00000          XCA                                       LS082350
16321  0560 CO 0 00424          LDQ BFZRO                                 LS082360
16322  0074 CO 4 04471          TSX $CONS,4       CONS(A,0)               LS082370
16323  0131 CO 0 00000          XCA                                       LS082380
16324  0500 CO 0 04155          CLA BFS2                                  LS082390
16325  0074 CO 4 10361          TSX APPEND,4                              LS082400
16326  0131 CO 0 00000          XCA                                       LS082410
16327  0500 CO 0 00535          CLA BFFAG                                 LS082420
16330 -0534 CO 4 16267          LXD BFS1,4                                LS082430
16331  0020 CO 0 04471          TRA $CONS         LIST(FUNARG,L,A)        LS082440
              00535    BFFAG SYN     FNARGD                             LS082450
              00424    BFZRO SYN     $ZERO                              LS082460
                                                                          LS082470
                                LABEL FSUBR                               LS082480
                                                                          LS082490
16332 -0634 CO 4 16267  LABP    SXD BFS1,4                                LS082500
16333 -0600 CO 0 04156          STQ BFS3          A                       LS082510
16334 -0734 CO 4 00000          PDX ,4            L                       LS082520
16335  0500 CO 4 00000          CLA ,4                                    LS082530
16336  0601 CO 0 04155          STO BFS2          CWR(L)                  LS082540
16337 -0734 CO 4 00000          PDX ,4            CDR(L)                  LS082550
16340  0500 CO 4 00000          CLA ,4                                    LS082560
16341  0734 CO 4 00000          PAX ,4            CADR(L)                 LS082570
16342 -0754 CO 4 00000          PXD ,4                                    LS082580
16343  0601 CO 0 04154          STO BFS4                                  LS082590
16344  0131 CO 0 00000          XCA                                       LS082600

BINARY CARD NO. LISP0330
16345  0534 CO 4 04155          LXA BFS2,4        CAR(L)                  LS082610
16346 -0754 CO 4 00000          PXD ,4                                    LS082620
16347  0074 CO 4 04471          TSX $CONS,4       LIST(CAR(L),CADR(L))    LS082630
16350  0560 CO 0 04156          LDQ BFS3                                  LS082640
16351  0074 CO 4 04471          TSX $CONS,4       CONS(LIST,A)            LS082650
16352  0131 CO 0 00000          XCA                                       LS082660
16353  0500 CO 0 04154          CLA BFS4          CADR(L)                 LS082670
16354 -0534 CO 4 16267          LXD BFS1,4                                LS082680
16355  0020 CO 0 16521          TRA $EVAL                                 LS082690
                                                                          LS082700
                                                                          LS082710
                                                                          LS082720
                                SETQ                                      LS082730
                                                                          LS082740
16356 -0634 CO 4 04221  SETQP   SXD REPS1,4                               LS082750
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16357  0074 CO 4 03104          TSX $SAVE,4                                    LS082760
16360 -3 04224 0 03167          TXL     $END2,,REPV+2                          LS082770
16361 -0734 CO 4 00000          PDX ,4                  L                      LS082780
16362  0500 CC 4 00000          CLA ,4                                         LS082790
16363  0734 CO 4 00000          PAX ,4                  CAR(L)                 LS082800
16364 -0634 CO 4 04222          SXD REPV,4                                     LS082810
16365 -0734 CO 4 00000          PDX ,4                  CDR(L)                 LS082820
16366  0500 CO 4 00000          CLA ,4                                         LS082830
16367  0734 CO 4 00000          PAX ,4                  CADR(L)                LS082840
16370 -0754 00 4 C0000          PXD ,4                                         LS082850
16371  0074 CO 4 16521          TSX $EVAL,4             EVAL(CADR(L),A)        LS082860
16372  0601 CO 0 04223          STO REPT1                                      LS082870

BINARY CARD NO. LISP0331
16373  0500 CO 0 16406          CLA REPP1                                      LS082880
16374  0601 CC 0 04063          STO $ARG3                                      LS082890
16375  0560 CO 0 04207          LDQ PRGVAR                                     LS082900
16376  0500 CO 0 04222          CLA REPV                                       LS082910
16377  0074 CO 4 10662          TSX SASSOC,4            SASSOC(CAR(L),PV,ERROR) LS082920
16400 -0734 CO 4 00000          PDX ,4                                         LS082930
16401  0500 CO 0 04223          CLA REPT1                                      LS082940
16402  0622 CO 4 00000          STD     0,4             REPLACE DECREMENT      LS082950
16403  0074 CO 4 03117          TSX UNSAVE,4                                   LS082960
16404 -0534 CO 4 04221          LXD REPS1,4                                    LS082970
16405  0020 CO 4 00001          TRA 1,4                                        LS082980
                                                                               LS082990
16406 -3 00000 0 16407   REPP1  TXL *+1,,0                                     LS083000
16407 -0634 CO 4 02313          SXD $ERROR,4                                   LS083010
16410  0500 CO 0 04222          CLA REPV                                       LS083020
16411  0074 CO 4 02314          TSX $ERROR+1,4                                 LS083030
16412  542160600454             BCI     1,*A  4*       SETQ GIVEN ON NON-EXISTENT VARIBLE LS083040
                                                                               LS083050
                                                                               LS083060
                                SET                                            LS083070
                                                                               LS083080
16413 -0634 CO 4 16267   SETP   SXD BFS1,4                                     LS083090
16414  0601 CO 0 16434          STO BFS5                                       LS083100
16415 -0600 CO 0 04155          STQ BFS2                                       LS083110
16416  0560 CO 0 16427          LDQ SETP1                                      LS083120
16417 -0600 CO 0 04063          STQ $ARG3                                      LS083130
16420  0560 CO 0 04207          LDQ PRGVAR                                     LS083140

BINARY CARD NO. LISP0332
16421  0074 CO 4 10662          TSX SASSOC,4                                   LS083150
16422 -0734 CO 4 00000          PDX ,4                                         LS083160
16423  0500 CO 0 04155          CLA BFS2                                       LS083170
16424  0622 CO 4 00000          STD 0,4                                        LS083180
16425 -0534 CO 4 16267          LXD BFS1,4                                     LS083190
16426  0020 CO 4 00001          TRA 1,4                                        LS083200
                                                                               LS083210
16427 -3 00000 0 16430   SETP1  TXL *+1,,0                                     LS083220
16430 -0634 CO 4 02313          SXD $ERROR,4                                   LS083230
16431  0500 CO 0 16434          CLA BFS5                                       LS083240
16432  0074 CO 4 02314          TSX $ERROR+1,4                                 LS083250
16433  542160600554             BCI     1,*A  5*       SET  GIVEN ON NON-EXISTENT VARIBLE LS083260
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16434  0 00000 0 00000  BFS5                                                  LS083270
                                                                              LS083280
                        *              AND SPECIAL FORM                       LS083290
16435 -0100 00 0 16440   EVA8  TNZ EVA6                                       LS083300
16436  0500 00 0 00476        CLA EVCT                                        LS083310
16437  0020 00 4 00001        TRA 1,4                                         LS083320
16440 -0634 00 4 04105   EVA6  SXD EVA1,4                                     LS083330
16441  0074 00 4 03104        TSX $SAVE,4                                     LS083340
16442 -3 04111 0 03165        TXL     $END3,,EVA9+2      SAVE 3 ITEMS         LS083350
16443 -0734 00 4 00000        PDX ,4                                          LS083360
16444  0500 00 4 00000   EVA4  CLA ,4                                         LS083370
16445  0601 00 0 04106        STO EVA2                                        LS083380
16446  0734 00 4 00000        PAX ,4                                          LS083390

BINARY CARD NO. LISP0333
16447 -0754 00 4 00000        PXD ,4                                          LS083400
16450 -0600 00 0 04107        STQ EVA9                                        LS083410
16451  0074 00 4 16521        TSX $EVAL,4                                     LS083420
16452  0560 00 0 04107        LDQ EVA9                                        LS083430
16453 -0100 00 0 16457        TNZ EVA3                                        LS083440
16454  0074 00 4 03117   EVA5  TSX UNSAVE,4                                   LS083450
16455 -0534 00 4 04105        LXD EVA1,4                                      LS083460
16456  0020 00 4 00001        TRA 1,4                                         LS083470
16457 -0534 00 4 04106   EVA3  LXD EVA2,4                                     LS083480
16460  3 00000 4 16444        TXH EVA4,4,0                                    LS083490
16461  0500 00 0 00476        CLA EVCT                                        LS083500
16462  0020 00 0 16454        TRA EVA5                                        LS083510
                        *              OR SPECIAL FORM                        LS083520
16463 -0100 00 0 16466   EVR8  TNZ EVR6                                       LS083530
16464  0500 00 0 00424        CLA EVCF                                        LS083540
16465  0020 00 4 00001        TRA 1,4                                         LS083550
16466 -0634 00 4 04175   EVR6  SXD EVR1,4                                     LS083560
16467  0074 00 4 03104        TSX $SAVE,4                                     LS083570
16470 -3 04201 0 03165        TXL     $END3,,EVR9+2      SAVE 3 ITEMS         LS083580
16471 -0734 00 4 00000        PDX ,4                                          LS083590
16472  0500 00 4 00000   EVR4  CLA ,4                                         LS083600
16473  0601 00 0 04176        STO EVR2                                        LS083610
16474  0734 00 4 00000        PAX ,4                                          LS083620

BINARY CARD NO. LISP0334
16475 -0754 00 4 00000        PXD ,4                                          LS083630
16476 -0600 00 0 04177        STQ EVR9                                        LS083640
16477  0074 00 4 16521        TSX $EVAL,4                                     LS083650
16500  0560 00 0 04177        LDQ EVR9                                        LS083660
16501  0100 00 0 16506        TZE EVR3                                        LS083670
16502  0500 00 0 00476        CLA EVCT                                        LS083680
16503  0074 00 4 03117   EVR5  TSX UNSAVE,4                                   LS083690
16504 -0534 00 4 04175        LXD EVR1,4                                      LS083700
16505  0020 00 4 00001        TRA 1,4                                         LS083710
16506 -0534 00 4 04176   EVR3  LXD EVR2,4                                     LS083720
16507  3 00000 4 16472        TXH EVR4,4,0                                    LS083730
16510  0500 00 0 00424        CLA EVCF                                        LS083740
16511  0020 00 0 16503        TRA EVR5                                        LS083750
                      00476   EVCT  SYN     $QD1                            LS083760
                      00424   EVCF  SYN     $ZERO                           LS083770
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16512 -0600 CO 0 16267   EQP   STQ BFS1                                          LS083780
16513  0402 CO 0 16267         SUB BFS1                                          LS083790
16514 -0100 CO 0 16517         TNZ *+3                                           LS083800
16515  0500 CO 0 00476         CLA BFQ1                                          LS083810
16516  0020 CO 4 00001         TRA 1,4                                           LS083820
16517 -0754 CO 0 00000         PXD ,0                                            LS083830
16520  0020 CO 4 00001         TRA 1,4                                           LS083840
                                                                                 LS083850
                                     EVAL(E,A)  5/6/59                           LS083860
                                                                                 LS083870
                                                                                 LS083880
                               A       HED                                       LS083890
16521 -0634 CO 4 04132   EVAL  SXD EVS1,4                                        LS083900
16522  0100 CO 4 00001         TZE 1,4                                           LS083910

BINARY CARD NO. LISP0335
16523  0601 CO 0 17233         STO EVTE          E                               LS083920
16524 -0734 CO 4 00000         PDX ,4                                            LS083930
16525  0500 CO 4 00000         CLA ,4                                            LS083940
16526  0625 CO 0 17240         STT     EVLNS     SEE IF A NUMBER                 LS083950
16527  0520 CO 0 17240         ZET     EVLNS     SKIP IF NOT A NUMBER            LS083960
16530  0020 CO 0 16614         TRA     EVIN      IS A NUMBER(CONSTANT)           LS083970
16531  0734 00 4 00000         PAX ,4            CAR(E)                          LS083980
16532  3 77776 4 16617         TXH EVP1,4,-2     = - 1                           LS083990
16533 -0634 CO 4 17234         SXD EVTAE,4       CAR(E)                          LS084000
16534  0634 CO 4 04132         SXA     EVS1,4    SAVE FUNCTION WITH INDEX REGISTER LS084010
16535  0622 CO 0 04151         STD EVTDE         CDR(E)                          LS084020
16536  0500 00 4 00000         CLA ,4                                            LS084030
16537  0625 CO 0 17240         STT     EVLNS     SEE IF A NUMBER                 LS084040
16540  0520 CO 0 17240         ZET     EVLNS     TEST FOR A NUNBER               LS084050
16541  0020 CO 0 17063         TRA     EVP26     UNDEFINED FUNCTION IF A NUMBER  LS084060
16542  0634 00 0 04135         SXA     EVTRK,0                                   LS084070
16543 -0634 CO 0 04135         SXD     EVTRK,0   ZERO EVTRK (LEAVE MINUS SIGN)   LS084080
16544  0734 CO 4 00000         PAX     0,4                                       LS084090
16545 -3 77776 4 16735         TXL     EV27,4,-2                                 LS084100
                               *                                                 LS084110
                               *         CAAR(E) = -1                            LS084120
                               *                                                 LS084130
16546  0520 CO 0 15702         ZET TCNTMA                                        LS084140
16547  0074 CO 4 15664         TSX TCNTEM,4                                      LS084150
16550 -0734 CO 4 00000   EVP2  PDX ,4            CDAR(E)                         LS084160

BINARY CARD NO. LISP0336
16551 -3 00000 4 16714         TXL EVP25,4,0     NULL(J)                         LS084170
16552  0500 CO 4 00000         CLA ,4                                            LS084180
16553  0734 CO 4 00000         PAX ,4            CAR(J)                          LS084190
16554  3 10326 4 16556         TXH     *+2,4,$TRACE                              LS084200
16555  3 10325 4 16611         TXH     EVTRT,4,$TRACE-1  =TRACE                  LS084210
16556  3 10440 4 16560         TXH *+2,4,$SUBR                                   LS084220
16557  3 10437 4 17032         TXH     EVP27,4,$SUBR-1   OF IF A SUBR            LS084230
16560  3 11630 4 16562         TXH *+2,4,$FSUBR                                  LS084240
16561  3 11627 4 16665         TXH EVP22,4,$FSUBR-1      =FSUBR                  LS084250
16562  3 11704 4 16564         TXH *+2,4,$EXPR                                   LS084260
16563  3 11703 4 16706         TXH EVP23,4,$EXPR-1       =EXPR                   LS084270
16564  3 11667 4 16550         TXH EVP2,4,$FEXPR                                 LS084280
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16565 -3 11666 4 16550          TXL EVP2,4,$FEXPR-1     /= FEXPR                                LS084290
16566  0622 CO 0 04152          STD EVD2                CDR(J)                                  LS084300
16567 -0600 CO 0 04063          STQ $ARG3               A                                       LS084310
16570  0500 CO 0 04063          CLA $ARG3                                                       LS084320
16571  0560 CO 0 00424          LDQ EVZRO               C                                       LS084330
16572  0074 CO 4 04471          TSX $CONS,4             CONS(A,C)                               LS084340
16573  0131 CO 0 00000          XCA                                                             LS084350
16574  0500 CO 0 04151          CLA EVTDE                                                       LS084360
16575  0074 CO 4 04471          TSX $CONS,4             LIST(CDR(E),A)                          LS084370
16576  0131 CO 0 00000          XCA                                                             LS084380

BINARY CARD NO. LISP0337
16577 -0534 CO 4 04152          LXD EVD2,4              CDR(J)                                  LS084390
16600  0500 CO 4 00000          CLA ,4                                                          LS084400
16601  0734 CO 4 00000          PAX ,4                  CADR(J)                                 LS084410
16602 -0754 CO 4 00000          PXD ,4                                                          LS084420
16603  0520 CO 0 04135          ZET     EVTRK           TEST FOR TRACE MODE                     LS084430
16604  0020 CO 0 16607          TRA *+3                                                         LS084440
16605 -0534 CO 4 04132          LXD EVS1,4                                                      LS084450
16606  0020 CO 0 15721          TRA $APPLY              APPLY(CADR(J),LIST(CDR(E),A),A)         LS084460
16607 -0600 CO 0 17236          STQ EVT1                                                        LS084470
16610  0020 CO 0 17105          TRA EVTXP                                                       LS084480
                        *                                                                       LS084490
16611  0520 CO 0 15701  EVTRT   ZET TCNTTR                                                     LS084500
16612 -0625 CO 0 04135          STL EVTRK                                                       LS084510
16613  0020 CO 0 16550          TRA     EVP2            GO SEARCH MORE                          LS084520
                        *                                                                       LS084530
                        *                                                                       LS084540
                        *               CAR(E) = -1                                             LS084550
                        *                                                                       LS084560
16614  0500 CO 0 17233   EVIN   CLA     EVTE            GET THE NUMBER                          LS084570
16615 -0534 CO 4 04132          LXD     EVS1,4          RESTORE LINK INDEX                      LS084580
16616  0020 CO 4 00001          TRA     1,4                                                     LS084590
                        *                                                                       LS084600
16617 -0734 CO 4 00000   EVP1   PDX ,4                  J                                       LS084610
16620 -3 00000 4 16635          TXL EVP11,4,0           = 0                                     LS084620
16621  0500 CO 4 00000          CLA ,4                                                          LS084630
16622  0734 CO 4 00000          PAX ,4                  CAR(J)                                  LS084640
16623  3 12521 4 16617          TXH EVP1,4,$APVAL       = APVAL                                 LS084650
16624 -3 12520 4 16617          TXL EVP1,4,$APVAL-1                                             LS084660

BINARY CARD NO. LISP0338
16625 -0734 CO 4 00000   EVP13  PDX ,4                  CDR(J)                                  LS084670
16626  0500 CO 4 00000          CLA ,4                                                          LS084680
16627  0734 CO 4 00000          PAX ,4                  CADR(J)                                 LS084690
16630  0500 CO 4 00000          CLA ,4                                                          LS084700
16631  0734 CO 4 00000          PAX ,4                  CAADR(J)                                LS084710
16632 -0754 CO 4 00000          PXD ,4                                                          LS084720
16633 -0534 CO 4 04132          LXD EVS1,4                                                      LS084730
16634  0020 CO 4 00001          TRA 1,4                                                         LS084740
                        *                                                                       LS084750
16635 -0600 CO 0 17235   EVP11  STQ EVTA                 A                                       LS084760
16636  0500 CO 0 17233          CLA EVTE                E                                       LS084770
16637  0622 CO 0 16652          STD EVI1                                                        LS084780
16640  0402 CO 0 00476          SUB EVQD1                                                       LS084790
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16641  0622 CC 0 16653          STD EVI2                                          LS084800
16642 -0634 CC 2 17237          SXD EVD1,2                                        LS084810
16643 -0534 CC 4 17235          LXD EVTA,4                                        LS084820
16644 -3 COOCC 4 16661   EVL1   TXL EVP12,4,0          NULL(J)                   LS084830
16645  0500 CC 4 00000          CLA ,4                                            LS084840
16646  0734 CC 2 00000          PAX ,2                CAR(J)                      LS084850
16647 -0734 CC 4 00000          PDX ,4                CDR(J)                      LS084860
16650  0500 CC 2 00000          CLA ,2                                            LS084870
16651  0734 CC 2 00000          PAX ,2                CAAR(J)                     LS084880
16652  3 00000 2 16644   EVI1   TXH EVL1,2,**         CAAR(J) = E                 LS084890

BINARY CARD NO. LISP0339
16653 -3 00000 2 16644   EVI2   TXL EVL1,2,**                                     LS084900
16654 -0734 CC 4 00000          PDX ,4                CDAR(J)                     LS084910
16655 -0754 CC 4 00000          PXD ,4                                            LS084920
16656 -0534 CC 2 17237          LXD EVD1,2                                        LS084930
16657 -0534 CC 4 04132          LXD EVS1,4                                        LS084940
16660  0020 CC 4 00001          TRA 1,4                                           LS084950
                        *                                                         LS084960
16661 -0634 CC 4 02313   EVP12  SXD $ERROR,4                                     LS084970
16662  0500 CC 0 17233          CLA EVTE                                          LS084980
16663  0074 CC 4 02314          TSX $ERROR+1,4                                    LS084990
16664  542160601054             BCI     1,*A  8*      UNBOUND VARIBLE MENTIONED -EVAL-  LS085000
                        *                                                         LS085010
16665 -0734 CC 4 00000   EVP22  PDX ,4                CDR(J)     FSUBR          LS085020
16666  0500 CC 4 00000          CLA ,4                                            LS085030
16667  0734 CC 4 00000          PAX ,4                CADR(J)                     LS085040
16670  0500 CC 4 00000          CLA ,4                CWADR(J)                    LS085050
16671  0601 CC 0 17236          STO EVT1                                          LS085060
16672  0500 CC 0 04132          CLA     EVS1          ATOM AND IR4 FOR SAVING $ALIST  LS085070
16673  0601 CC 0 04057          STO     CSV                                       LS085080
16674  0074 CC 4 03104          TSX     $SAVE,4                                   LS085090
16675 -3 04062 0 03167           TXL     $END2,,$ALIST+2                          LS085100
16676 -0600 CC 0 04060           STQ     $ALIST                                   LS085110
16677  0520 CC 0 04135          ZET     EVTRK         TEST WHETERT TO TRACT       LS085120
16700  0020 CC 0 17070          TRA     EVTFS         YES,TRACE FSUBR             LS085130

BINARY CARD NO. LISP0340
16701  0500 CC 0 04151          CLA     EVTDF         GET BACK ARGUMENTS          LS085140
16702  0074 CC 4 17236          TSX     EVT1,4                                    LS085150
16703  0074 CC 4 03117          TSX     UNSAVE,4                                  LS085160
16704 -0534 CC 4 04057          LXD     CSV,4                                     LS085170
16705  0020 CC 4 00001          TRA     1,4                                       LS085180
                        *                                                         LS085190
                        *       EVP23 THE EXPR BRANCH FOR EVAL                    LS085200
                        *                                                         LS085210
16706 -0734 CC 4 00000   EVP23  PDX     0,4           REST OF PROPERTY LIST       LS085220
16707  0500 CC 4 00000          CLA     0,4           GET THE EXPR                LS085230
16710  0734 CC 4 00000          PAX     0,4                                       LS085240
16711 -0634 CC 4 17234          SXD     EVTAE,4       SAVE IN TEMPORARY STORAGE   LS085250
16712 -0534 CC 4 03110          LXD     $CPPI,4       PUSH DOWN COUNTER           LS085260
16713  1 77773 4 16737          TXI     EVP28,4,-5    SAVE 5 ITEMS                LS085270
                        *                                                         LS085280
16714  0500 CC 0 17234   EVP25  CLA EVTAE             CAR(E)                      LS085290
16715  0622 CC 0 16731          STD EVI3              TXH                         LS085300
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 16716  0402 CO 0 00476          SUB EVQD1                                    LS085310
 16717  0622 CO 0 16732          STD EVI4          TXL                        LS085320
 16720 -0634 CO 2 17236          SXD EVT1,2                                   LS085330
 16721 -0600 CO 0 17237          STQ EVD1                                     LS085340
 16722 -0534 CO 4 17237          LXD EVD1,4        A                          LS085350
 16723 -3 00000 4 17063   EVL2   TXL EVP26,4,0     NULL(J)                    LS085360
 16724  0500 CO 4 00000          CLA ,4                                       LS085370
 16725 -0734 CO 4 00000          PDX ,4            CDR(J)                     LS085380
 16726  0734 CO 2 00000          PAX ,2            CAR(J)                     LS085390

BINARY CARD NO. LISP0341
 16727  0500 CO 2 00000          CLA ,2                                       LS085400
 16730  0734 CO 2 00000          PAX ,2            CAAR(J)                    LS085410
 16731  3 00000 2 16723   EVI3   TXH EVL2,2,**     /= CAR(E)                  LS085420
 16732 -3 00000 2 16723   EVI4   TXL EVL2,2,**                                LS085430
 16733 -0534 CO 2 17236          LXD     EVT1,2                               LS085440
 16734  0622 CO 0 17234          STD     EVTAE     SAVE FUNCTION              LS085450
 16735 -0534 CO 4 03110   EV27   LXD     $CPPI,4                              LS085460
 16736  1 77773 4 16737          TXI     *+1,4,-5  SAVE TOTAL OF 5 ITEMS      LS085470
 16737  0522 CO 0 03204   EVP28  XEC     ENDPDL    TEST FOR OUT OF PUSH DOWN LIST LS085480
 16740 -0634 CO 4 03110          SXD     $CPPI,4                              LS085490
 16741 -0534 CO 1 03110          LXD     $CPPI,1   MAKE IX1 AND $CPPI AGRE5   LS085500
 16742  0500 CO 0 04132          CLA     EVS1                                 LS085510
 16743  0601 CO 4 77773          STO     -5,4                                 LS085520
 16744  0500 CO 0 04133          CLA     EVSE                                 LS085530
 16745  0601 CO 4 77774          STO     -4,4                                 LS085540
 16746  0500 CO 0 04134          CLA     EVSA                                 LS085550
 16747  0601 CO 4 77775          STO     -3,4                                 LS085560
 16750  0500 CO 0 04135          CLA     EVTRK                                LS085570
 16751  0601 CO 4 77776          STO     -2,4                                 LS085580
 16752  0500 CO 0 17241          CLA     EVCM                                 LS085590
 16753  0601 CO 4 77777          STO     -1,4                                 LS085600
 16754  0500 CO 0 17234          CLA     EVTAE          GET THE FUNCTION      LS085610

BINARY CARD NO. LISP0342
 16755  0622 CO 0 04133          STD     EVSE                                 LS085620
 16756 -0600 CO 0 04134          STQ EVSA               A                     LS085630
 16757  0500 CO 0 04151          CLA EVTDE              CDR(E)                LS085640
 16760  0560 CO 0 17037          LDQ     ELP1      FUNCTIONAL ARGUMENT        LS085650
 16761  0074 CO 4 04756          TSX     MAPLIS,4  MAPLIST(L,EVAL(CAR(L),A))  LS085660
 16762  0601 CO 0 17236          STO EVT1                                     LS085670
 16763  0500 CO 0 04134          CLA     EVSA                                 LS085680
 16764  0601 CO 0 04063          STO     $ARG3                                LS085690
 16765  0500 CO 0 04133          CLA     EVSE                                 LS085700
 16766 -0534 CO 4 03110          LXD     $CPPI,4   START OPEN UNSAVE          LS085710
 16767  0560 CO 4 77773          LDQ     -5,4                                 LS085720
 16770 -0600 CO 0 04132          STQ     EVS1                                 LS085730
 16771  0560 CO 4 77774          LDQ     -4,4                                 LS085740
 16772 -0600 CO 0 04133          STQ     EVSE                                 LS085750
 16773  0560 CO 4 77775          LDQ     -3,4                                 LS085760
 16774 -0600 CO 0 04134          STQ     EVSA                                 LS085770
 16775  0560 CO 4 77776          LDQ     -2,4                                 LS085780
 16776 -0600 CO 0 04135          STQ     EVTRK                                LS085790
 16777  1 00005 4 17000          TXI     *+1,4,5                              LS085800
 17000 -0634 CO 4 03110          SXD     $CPPI,4                              LS085810
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17001 -0534 CO 1 03110          LXD     $CPPI,1          MAKE IX1 AND $CPPI AGRE5                LS085820
17002  0560 CO 0 17236          LDQ     EVT1                                                     LS085830

BINARY CARD NO. LISP0343
17003  0520 CO 0 04135          ZET     EVTRK            TEST RACE SWITCH                        LS085840
17004  0020 CO 0 17007          TRA     EVDCO            DECODE EVTRK                            LS085850
17005 -0534 CO 4 04132  EVAPG   LXD     EVS1,4                                                   LS085860
17006  0020 CO 0 15721          TRA $APPLY               APPLY(CADAR(J),EVLIS(CDR(E),A),A)       LS085870
                        *                                                                        LS085880
                        *            IF CAR E IS A SUBR, THE POINTER TO THE TXL INSTRUCTION      LS085890
                        *            IS SAVED IN THE DECREMENT OF EVTRK.  THE ADDRESS OF         LS085900
                        *            EVTRK IS THE TRACE SWITCH.                                  LS085910
                        *                                                                        LS085920
17007 -0534 CO 4 04135  EVDCO   LXD     EVTRK,4          LOOK FOR SUBR POINTER                   LS085930
17010 -3 00000 4 17105          TXL     EVTXP,4,0        THERE ISNT ANY, SO GO AND TRACE EXPR    LS085940
17011  0534 CO 4 04135          LXA     EVTRK,4          SEE IF THE SUBR IS TRACED               LS085950
17012  3 00000 4 17005          TXH     EVAPG,4,0        YES IT IS. LET APPLY HANDLE IT          LS085960
17013 -0534 CO 4 04135          LXD     EVTRK,4          GET THE TXL SUBR WORD                   LS085970
17014  0500 CO 4 00000          CLA     0,4                                                      LS085980
17015  0601 CO 0 17236          STO     EVT1             READY TO EXECUTE                        LS085990
17016  0500 CO 0 04132          CLA     EVS1             GET RETURN INDEX AND ATOM NAME          LS086000
17017  0601 CO 0 04057          STO     CSV              AND SAVE THEM ALONG WITH $ALIST         LS086010
17020  0074 CO 4 03104          TSX     $SAVE,4                                                  LS086020
17021 -3 04062 0 03167          TXL     $END2,,$ALIST+2                                          LS086030
17022  0500 CO 0 04063          CLA     $ARG3                                                    LS086040
17023  0601 CO 0 04060          STO     $ALIST           POST CURRENT ALIST                      LS086050
17024  0131 CO 0 00000          XCA                      ARGUMENT LIST TO AC                     LS086060
17025  0074 CO 4 10712          TSX     $SPREAD,4        SMEAR IT OUT                            LS086070
17026  0074 CO 4 17236          TSX     EVT1,4           EXECUTE SUBR                            LS086080
17027  0074 CO 4 03117          TSX     UNSAVE,4         RESTORE ALIST AND IX                    LS086090
17030 -0534 CO 4 04057          LXD     CSV,4                                                    LS086100

BINARY CARD NO. LISP0344
17031  0020 CO 4 00001          TRA     1,4              AND RETURN                              LS086110
                        *                                                                        LS086120
17032 -0734 CO 4 00000  EVP27   PDX     0,4              SUBR BRANCH                             LS086130
17033  0500 CO 4 00000          CLA     0,4                                                      LS086140
17034  0734 CO 4 00000          PAX     0,4              POINTER TO TXL WORD                     LS086150
17035 -0634 CO 4 04135          SXD     EVTRK,4          TO SAVE POSITION                        LS086160
17036  0020 CO 0 16735          TRA     EV27             EVALUATE ARGUMENTS                      LS086170
                        *                                                                        LS086180
17037 -3 00000 0 17040   ELP1   TXL *+1,,0                                                       LS086190
17040  0634 CO 4 17046          SXA     ELT1,4           SAVE LINK IR                            LS086200
17041 -0734 CO 4 00000          PDX ,4                   J                                       LS086210
17042  0500 CO 4 00000          CLA ,4                                                           LS086220
17043  0734 CO 4 00000          PAX ,4                                                           LS086230
17044 -0754 CO 4 00000          PXD ,4                   CAR(J)                                  LS086240
17045  0560 CO 0 04134          LDQ     EVSA             GET CURRENT A LIST                      LS086250
17046  0774 CO 4 00000   ELT1   AXT     **,4             RESTORE LINK IR                         LS086260
17047  0020 CO 0 16521          TRA $EVAL                                                        LS086270
                        *                                                                        LS086280
                        *       EVLIS                                                            LS086290
                        *                                                                        LS086300
17050 -0634 CO 4 04132   EVLIS SXD     EVS1,4           SAVE LINK IR                            LS086310
17051  0774 CO 4 11736          AXT     EVLISL,4         ATOM EVLIS                              LS086320
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    17052  0634 CO 4 04132          SXA     EVS1,4          FOR BACKTRACE                          LS086330
    17053  0074 CO 4 03104          TSX     $SAVE,4         SAVE EVAL STORAGE                      LS086340
    17054 -3 04136 0 03165          TXL     $END3,,EVSA+2                                          LS086350
    17055 -0600 CO 0 04134          STQ     EVSA                                                   LS086360
    17056  0560 CO 0 17037          LDQ     ELP1                                                   LS086370

BINARY CARD NO. LISP0345
    17057  0074 CO 4 04756          TSX     MAPLIS,4                                               LS086380
    17060  0074 CO 4 03117          TSX     UNSAVE,4                                               LS086390
    17061 -0534 CO 4 04132          LXD     EVS1,4                                                 LS086400
    17062  0020 CO 4 00001          TRA     1,4                                                    LS086410
                          *                                                                        LS086420
    17063 -0634 CO 4 02313   EVP26  SXD $ERROR,4                                                   LS086430
    17064 -0534 CO 2 17236          LXD     EVT1,2                                                 LS086440
    17065  0500 CO 0 17233          CLA EVTE                                                       LS086450
    17066  0074 CO 4 02314          TSX $ERROR+1,4                                                 LS086460
    17067  542160601154             BCI     1,*A  9*        FUNCTION OBJECT HAS NO DEFINITION EVALLS086470
                          *                                                                        LS086480
    17070  0734 CO 4 00000  EVTFS   PAX     0,4             ATOM NAME                              LS086490
    17071 -0754 CO 4 00000          PXD     0,4             TO PRINT POSITION                      LS086500
    17072  0560 CO 0 04151          LDQ     EVTDE                                                  LS086510
    17073  0074 CO 4 17124          TSX     ARGOF,4         PRINT ARGUMENT MESSAGE                 LS086520
    17074  0560 CO 0 04060          LDQ     $ALIST          RESTORE ALIST AFTER ARGOF              LS086530
    17075  0500 CO 0 04151          CLA     EVTDE           AND ARGUMENT LIST                      LS086540
    17076  0074 CO 4 17236          TSX     EVT1,4          DO THE FSUBR                           LS086550
    17077  0074 CO 4 03117          TSX     UNSAVE,4        RESTORE THE IR                         LS086560
    17100  0131 CO 0 00000          XCA                     VALUE TO MQ                            LS086570
    17101  0534 CO 4 04057          LXA     CSV,4           GET ATOM NAME FOR VALUE MESSAGE        LS086580
    17102 -0754 CO 4 00000          PXD     0,4             TO AC                                  LS086590
    17103 -0534 CO 4 04057          LXD     CSV,4           AND RETURN IR4                         LS086600
    17104  0020 CO 0 17162          TRA     VALOF           PRINT VALUE MESSAGE                    LS086610
                          *                                                                        LS086620

BINARY CARD NO. LISP0346
    17105  0622 CO 0 04151  EVTXP   STD     EVTDE           SAVE LAMBDA EXPRESSION                 LS086630
    17106  0534 CO 4 04132          LXA     EVS1,4          GET ATOMIC FUNCTION                    LS086640
    17107 -0754 CO 4 00000          PXD     0,4             TO PRINT POSITION                      LS086650
    17110  0074 CO 4 17124          TSX     ARGOF,4         PRINT ARGUMENT MESSAGE                 LS086660
    17111  0074 CO 4 03104          TSX     $SAVE,4         SAVE THERETURN IX                      LS086670
    17112 -3 04134 0 03171          TXL     $END1,,EVS1+2                                          LS086680
    17113  0560 CO 0 17236          LDQ     EVT1            RESTORE THE LIST OF ARGUMENTS          LS086690
    17114  0500 CO 0 04151          CLA     EVTDE           AND THE LAMBDA EXPRESSION              LS086700
    17115  0074 CO 4 15721          TSX     $APPLY,4        APPLY THE FUNCTION TO ITS ARGS         LS086710
    17116  0074 CO 4 03117          TSX     UNSAVE,4                                               LS086720
    17117  0131 CO 0 00000          XCA                     PUT VALUE IN MQ                        LS086730
    17120  0534 CO 4 04132          LXA     EVS1,4          NAME OF ROUTINE TRACED                 LS086740
    17121 -0754 CO 4 00000          PXD     0,4             PUT IN AC                              LS086750
    17122 -0534 CO 4 04132          LXD     EVS1,4          LINK IR                                LS086760
    17123  0020 CO 0 17162          TRA     VALOF           PRINT VALUE OF STATEMENT               LS086770
                          *                                                                        LS086780
                          *       ARGOF   PRINTS ARGUMENTS OF  NAME FOLLOWED BY THE LIST OF ARGUMENLS086790
                          *                                                                        LS086800
    17124  0634 CO 4 17152   ARGOF SXA     PRX,4           SAVE INDEX REGISTERS                   LS086810
    17125  0634 CO 2 17151          SXA     PRY,2                                                  LS086820
    17126  0601 CO 0 17154          STO     AGA             SAVE ATOM NAME                         LS086830
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    17127 -0600 CO 0 17155          STQ     AGQ                 SAVE LIST OF ARGUMENTS                  LS086840
    17130  0074 CO 4 06026          TSX     TERPRI,4            PRINT A BLANK LINE                      LS086850
    17131  0774 CO 2 00003          AXT     3,2                 PRINT2 OUT 3 WORDS                      LS086860
    17132  0500 CO 2 17161          CLA     AGM+3,2                                                     LS086870

BINARY CARD NO. LISP0347
    17133  0074 CO 4 05662          TSX     $PRIN2,4                                                    LS086880
    17134  2 00001 2 17132          TIX     *-2,2,1             LOOP                                    LS086890
    17135  0500 CO 0 17154          CLA     AGA                                                         LS086900
    17136  0520 CO 0 15702          ZET TCNTMA                                                          LS086910
    17137  0074 CO 4 17201          TSX TRCPRT,4                                                        LS086920
    17140  0074 CO 4 05342          TSX     $PRINT,4            PRINT OUT THE LINE                      LS086930
    17141 -0534 CO 2 17155          LXD     AGQ,2               START THE PRINLIS                       LS086940
    17142 -3 00000 2 17151   PLL    TXL     PRY,2,0             EXIT IF END OF LIST                     LS086950
    17143  0500 00 2 00000          CLA     0,2                 NEXT ITEM                               LS086960
    17144 -0734 CO 2 00000          PDX     0,2                 CDR OF LIST                             LS086970
    17145  0734 CO 4 00000          PAX     0,4                 CAR                                     LS086980
    17146 -0754 CO 4 00000          PXD     0,4                                                         LS086990
    17147  0074 CO 4 05342          TSX     $PRINT,4                                                    LS087000
    17150  0020 CO 0 17142          TRA     PLL                 GET NEXT ITEM                           LS087010
    17151  0774 CO 2 00000   PRY    AXT     **,2                RESTORE INDEX REGISTERS                 LS087020
    17152  0774 CO 4 00000   PRX    AXT     **,4                                                        LS087030
    17153  0020 CO 4 00001          TRA     1,4                 EXIT                                    LS087040
                            *                                                                           LS087050
    17154  0 00000 0 00000   AGA                                 TEMPORARY STORAGE                       LS087060
    17155  0 00000 0 00000   AGQ                                                                         LS087070
    17156  215127644425      AGM    BCI     1,ARGUME                                                    LS087080
    17157 -056362607777             OCT     456362607777        ARGUMENTS                               LS087090
    17160 -062660777777      AGO    OCT     462660777777        OF                                      LS087100

BINARY CARD NO. LISP0348
    17161  652143642560      VALV   BCI     1,VALUE                                                     LS087110
                            *                                                                           LS087120
                            *       VALOF   PRINTS VALUE OF NAME FOLLOWED BY ONE LIST                   LS087130
                            *               SHARES STORAGE WITH ARGOF ROUTINE                           LS087140
                            *                                                                           LS087150
    17162  0634 CO 4 17177   VALOF  SXA     VAX,4               SAVE LINK IR                            LS087160
    17163  0601 CO 0 17154          STO     AGA                 ATOM NAME                               LS087170
    17164 -0600 CO 0 17155          STQ     AGQ                 VALUE OF EXPRESSION                     LS087180
    17165  0074 CO 4 06026          TSX     TERPRI,4            PRINT A BLANK LINE                      LS087190
    17166  0500 CO 0 17161          CLA     VALV                WORD VALUE                              LS087200
    17167  0074 CO 4 05662          TSX     $PRIN2,4            PUT IN OUTPUT LINE                      LS087210
    17170  0500 CO 0 17160          CLA     AGO                 WORD OF                                 LS087220
    17171  0074 CO 4 05662          TSX     $PRIN2,4                                                    LS087230
    17172  0500 CO 0 17154          CLA     AGA                 ATOM                                    LS087240
    17173  0520 CO 0 15702          ZET TCNTMA                                                          LS087250
    17174  0074 CO 4 17201          TSX TRCPRT,4                                                        LS087260
    17175  0074 CO 4 05342          TSX     $PRINT,4            PRINT OUT THE LINE                      LS087270
    17176  0500 CO 0 17155          CLA     AGQ                 VALUE                                   LS087280
    17177  0774 CO 4 00000   VAX    AXT     **,4                RESTORE LINK IR                         LS087290
    17200  0020 CO 0 05342          TRA     $PRINT              PRINT OUT VALUE AND RETURN              LS087300
                            *                                                                           LS087310
                            *       TRCPRT TACKS FUNCTION ENTRANCES PRINTOUT                            LS087320
                            *       ONTO ARGOF AND VALOF PRINTOUTS                                      LS087330
                            *                                                                           LS087340
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17201  0634 CO 4 17220  TRCPRT SXA TRCPR1,4                                  LS087350
17202  0634 CO 2 17232         SXA TRCPR2,2                                  LS087360
17203  0074 CO 4 05446         TSX $PRIN1,4                                  LS087370
17204  0500 CO 0 15677         CLA TCNTMN                                    LS087380
17205  0074 CO 4 04653         TSX $DECON,4                                  LS087390
17206  0602 CO 0 17225         SLW TRCPRL+3                                  LS087400

BINARY CARD NO. LISP0349
17207 -0130 CO 0 00000         XCL                                           LS087410
17210  0100 CO 0 17212         TZE *+2                                       LS087420
17211  0602 CO 0 17224         SLW TRCPRL+2                                  LS087430
17212  0774 CO 2 00010         AXT 8,2                                       LS087440
17213  0500 CO 2 17232         CLA TRCPRL+8,2                                LS087450
17214  0074 CO 4 05662         TSX $PRIN2,4                                  LS087460
17215  2 00001 2 17213         TIX *-2,2,1                                   LS087470
17216  0074 CO 4 06026         TSX TERPRI,4                                  LS087480
17217  0534 CO 2 17232         LXA TRCPR2,2                                  LS087490
17220  0774 CO 4 00000  TRCPR1 AXT 0,4                                       LS087500
17221  0020 CO 4 00002         TRA 2,4                                       LS087510
                       *                                                     LS087520
17222  606060606060     TRCPRL BCI 4,                                        LS087530
17223  606060606060
17224  606060606060
17225  606060606060
17226  602664452363           BCI 4, FUNCTION ENTRANCES                      LS087540
17227  314645602545
17230  635121452325
17231  626060606060
17232  0 00000 0 00000  TRCPR2                    XR2 SAVE                   LS087550
                       *                                                     LS087560
                       *                                                     LS087570
17233  0 00000 0 00000   EVTE                                E              LS087580
17234  0 00000 0 00000   EVTAE                               CAR(E)         LS087590

BINARY CARD NO. LISP0350
17235  0 00000 0 00000   EVTA                                A              LS087600
17236  0 00000 0 00000   EVT1                                               LS087610
17237  0 00000 0 00000   EVD1                                               LS087620
17240  0 00000 0 00000   EVLNS                               TEST CELL FOR NUMBERS  LS087630
17241 -3 04137 0 03163   EVCM   TXL      $END4,,EVTRK+2                     LS087640
                 00424   EVZRO  SYN      $ZERO                              LS087650
                 00476   EVQD1  SYN      $QD1                               LS087660
                       * INTER          MULTIPLE LISP STATEMENT PROGRAM FEATURE INTERPRETER  LS087670
                       *                RECODED TO MAKE THE INTERPRETER AND COMPILER PROGRAM  LS087680
                       *                FEATURE UNDER STAND THE SAME LANGUAGE  LS087690
                       *                                                   LS087700
                       R       HED                                        LS087710
17242 -0634 CO 4 04204   INTER  SXD      INTRX,4          SAVE LINK IR      LS087720
17243  0074 CO 4 03104          TSX      $SAVE,4          SAVE PROTECTED TEMPORARY STORAGE  LS087730
17244 -3 04212 0 03161          TXL      $END5,,INTGS+2   SAVE 5 ITEMS      LS087740
17245  0634 CO 2 04206          SXA      INTGL,2            SAVE  INDEX REGISTER 2  LS087750
17246 -0600 CO 0 04207          STQ      INTPL            SAVE PAIR LIST    LS087760
17247  0600 CO 0 04210          STZ      INTGS            ZERO THE GO SWITCH  LS087770
17250 -0734 CO 4 00000          PDX      0,4              POINTER TO PROGRAM  LS087780
17251  0500 CO 4 00000          CLA      0,4              FIRST WORD        LS087790
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17252  0622 CO 0 04205          STD     INTB          POINTER TO BEGINNING OF PROGRAM          LS087800
17253  0622 CC 0 17403          STD     INTE          DITTO                                    LS087810
17254  0734 CC 4 00000          PAX     0,4           POINTER TO LIST OF PROGRAM VARIBLES      LS087820
17255 -0754 CC 4 00000          PXD     0,4           TO DECREMENT                             LS087830
17256  0560 CC 0 17354          LDQ     INTFB         FUNCTIONAL ARGUMENT                      LS087840
17257  0074 CC 4 04756          TSX     MAPLIS,4      (MAPLIST PV (LAMBDA (L) (CONS (CAR L)    LS087850
17260  0560 CC 0 04207          LDQ     INTPL         NIL)))   PICK UP PAIR LIST               LS087860
17261  0074 CC 4 10515          TSX     $NCONC,4      ATTACH PROGARM VARIBLES TO PAIR LIST     LS087870
17262  0601 CC 0 04207          STO     INTPL         PUT IN PAIR LISDT REGISTER               LS087880

BINARY CARD NC. LISP0351
17263  0560 CC 0 00424          LDQ     $ZERO         ZERO THE MQ                              LS087890
17264 -0534 CC 4 17403   INTGM  LXD     INTE,4        SEARCH PROGRAM FOR GO TO POINTS          LS087900
17265 -3 00000 4 17300          TXL     INTAA,4,0     GO IF END OF PROGRAM                     LS087910
17266  0500 CC 4 00000          CLA     0,4           NEXT WORD                                LS087920
17267  0622 CC 0 17403          STD     INTE          SAVE CDR                                 LS087930
17270  0734 CC 2 00000          PAX     0,2           CAR                                      LS087940
17271  0500 CC 2 00000          CLA     0,2           MAKE ATOM TEST                           LS087950
17272  0734 CC 2 00000          PAX     0,2                                                    LS087960
17273 -3 77776 2 17264          TXL     INTGM,2,-2    GO IF NOT AN ATOM                        LS087970
17274 -0754 CC 4 00000          PXD     0,4           IS AN ATOM, PUT POINTER TO CURRENT LOCLS087980
17275  0074 CC 4 04471          TSX     $CONS,4       PUT ON GO LOST                           LS087990
17276  0131 CC 0 00000          XCA                   ANSWER TO MQ                             LS088000
17277  0020 CC 0 17264          TRA     INTGM         NEXT ITEM                                LS088010
17300 -0620 CC 0 04206   INTAA  SLQ     INTGL         ALL DONE, STORE GO LIST                  LS088020
17301 -0534 CC 4 04205   INTGA  LXD     INTB,4,0      NEXT PROGRAM LOCATION                    LS088030
17302 -3 00000 4 17374          TXL     INTRN,4,0     RETURN WITH NIL IF RAN OUT OF STATEMENLS088040
17303  0500 CC 4 00000          CLA     0,4           NEXT WORD                                LS088050
17304  0622 CC 0 04205          STD     INTB          SAVE CDR                                 LS088060
17305  0734 CC 4 00000          PAX     0,4           CAR                                      LS088070
17306  0500 CC 4 00000          CLA     0,4           FIRST WORD                               LS088080
17307  0734 CC 2 00000          PAX     0,2           CHECK FOR ATOM OR $COND                  LS088090
17310  3 77776 2 17301          TXH     INTGA,2,-2    GO TO NEXT STEP IF ATOM                  LS088100

BINARY CARD NO. LISP0352
17311 -3 12236 2 17333          TXL     INTEV,2,$COND-1  GO TO EVAL IF NOT $COND               LS088110
17312  3 12237 2 17333          TXH     INTEV,2,$COND                                          LS088120
17313 -0734 CC 2 00000          PDX     0,2           IS $COND DO AN EVCOND                    LS088130
17314 -3 00000 2 17301   INTEB  TXL     INTGA,2,0     GO TO NEXT STEP IF COND UNSATISFIED      LS088140
17315  0500 CC 2 00000          CLA     0,2           FIRST COND STATEMENT                     LS088150
17316 -0734 CC 2 00000          PDX     0,2           CDR                                      LS088160
17317  0734 CC 4 00000          PAX     0,4           FIRST SUB COND                           LS088170
17320  0500 CC 4 00000          CLA     0,4                                                    LS088180
17321 -0734 CC 4 00000          PDX     0,4           POINTER TO THEN PART                     LS088190
17322  0634 CC 4 04205          SXA     INTB,4        SAVE IN PROTECTED STORAGE                LS088200
17323  0734 CC 4 00000          PAX     0,4           POINTER TO IF PART                       LS088210
17324 -0754 CC 4 00000          PXD     0,4           PUT IN DECREMENT                         LS088220
17325  0560 CC 0 04207          LDQ     INTPL         PAIR LIST                                LS088230
17326  0074 CC 4 16521          TSX     $EVAL,4       EVALUATE IT                              LS088240
17327  0100 CC 0 17314          TZE     INTEB         GO IF IF PART IS FALSE                   LS088250
17330  0534 CC 4 04205          LXA     INTB,4        GET THEN PART                            LS088260
17331  0500 CC 4 00000          CLA     0,4                                                    LS088270
17332  0734 CC 4 00000          PAX     0,4           PPINTER TPO THEN PART                    LS088280
17333 -0754 CC 4 00000   INTEV  PXD     0,4           LIST TO BE EVALUATED                     LS088290
17334  0560 CC 0 04207          LDQ     INTPL         GET PAIR LIST                            LS088300
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    17335  0074 CO 4 16521          TSX     $EVAL,4          EVALUATE IT                              LS088310
    17336 -0520 CO 0 04210          NZT     INTGS            SEE IF GO SWITCH SET                     LS088320

BINARY CARD NO. LISP0353
    17337  0020 CO 0 17301          TRA     INTGA            GO TO NEXT STATEMENT                     LS088330
    1734C  0534 CO 4 04210          LXA     INTGS,4          WAS SET, SEE IF GO OR RETURN             LS088340
    17341  3 77776 4 17374          TXH     INTRN,4,-2       TRA IF RETURN                            LS088350
    17342 -0754 CO 4 00000          PXD     0,4              POINTER TO ITEM                          LS088360
    17343  0560 CO 0 17365          LDQ     INTFC            GET SASSOC FUNCTIONAL ARGUMENT           LS088370
    17344 -0600 CO 0 04063          STQ     $ARG3            PUT IN $ARG3                             LS088380
    17345  0560 CO 0 04206          LDQ     INTGL            GET GO LIST                              LS088390
    17346  0074 CO 4 10662          TSX     SASSOC,4         SEARCH FOR ATOM                          LS088400
    17347 -0734 CO 4 00000          PDX     0,4              POINTER TP  PROGRAM POINT                LS088410
    1735C  0500 CO 4 00000          CLA     0,4              TAKE CDR                                 LS088420
    17351  0622 CO 0 04205          STD     INTB             SET PROGRAM POINT                        LS088430
    17352  0600 CO 0 04210          STZ     INTGS            ZERO THE GO SWITCH                       LS088440
    17353  0020 CO 0 17301          TRA     INTGA            GO TO THAT STATEMENT                     LS088450
                                *                                                                    LS088460
    17354 -3 00001 0 17355   INTFB  TXL     *+1,,1           MAPLIST FUNCTIONAL ARGUMENT              LS088470
    17355  0634 CO 4 17363          SXA     INTFX,4          (LAMBDA (L) (CONS (CAR L) NIL))          LS088480
    17356 -0734 CO 4 00000          PDX     0,4                                                       LS088490
    17357  0500 CO 4 00000          CLA     0,4                                                       LS088500
    17360  0734 00 4 00000          PAX     0,4                                                       LS088510
    17361 -0754 00 4 00000          PXD     0,4                                                       LS088520
    17362  0560 CO 0 00424          LDQ     $ZERO                                                     LS088530
    17363  0774 00 4 00000   INTFX  AXT     **,4                                                      LS088540
    17364  0020 CO 0 04471          TRA     $CONS                                                     LS088550
                                *                                                                    LS088560

BINARY CARD NO. LISP0354
    17365 -3 00001 0 17366   INTFC  TXL     *+1,,1           UNLABELED GO TO POINT ERROR              LS088570
    17366 -0634 CO 4 02313          SXD     $ERROR,4         SAVE LINK IR                             LS088580
    17367  0534 00 4 04210          LXA     INTGS,4          POINTER TO GO POINT LABEL                LS088590
    17370 -0754 00 4 00000          PXD     0,4              PUT IN DECREMENT                         LS088600
    17371  0534 CO 2 04206          LXA     INTGL,2          RESTORE INDEX REGISTER 2                 LS088610
    17372  0074 CO 4 02314          TSX     $ERROR+1,4       GO TO ERROR                              LS088620
    17373  542160600654             BCI     1,*A  6*              GO TO POINT NOT LABELED             LS088630
                                *                                                                    LS088640
    17374 -0534 CO 4 04210   INTRN  LXD     INTGS,4          RETURN VALUE                             LS088650
    17375 -0754 CO 4 00000          PXD     0,4              PUT IN DECREMENT                         LS088660
    17376  0600 CO 0 04210          STZ     INTGS            ZERO THE GO SWITCH                       LS088670
    17377  0534 CO 2 04206          LXA     INTGL,2          RESTORE INDEX REGISTER 2                 LS088680
    17400  0074 CO 4 03117          TSX     UNSAVE,4         RESTORE PROTECTED STORAGE                LS088690
    17401 -0534 CO 4 04204          LXD     INTRX,4          RESTORE LINK IR                          LS088700
    17402  0020 CO 4 00001          TRA     1,4                                                       LS088710
                                *           TEMPORARY STORAGE FOR INTERPRETER                        LS088720
    17403  0 00000 0 00000   INTE                           TEMPORARY STORAGE                        LS088730
                     04207    PRGVAR SYN     INTPL                                                    LS088740
                                *                                                                    LS088750
                                *                                                                    LS088760
                                * RETURN                    SPECIAL PROGRAM SETS RETURN SWITCH       LS088770
                                *                          IN PROGRAM INTERPRETER                   LS088780
                                *                                                                   LS088790
    17404 -0501 CO 0 00513   RETURN ORA     $AMASK           SIGNAL THAT IT IS A RETURN               LS088800
    17405  0601 CO 0 04210          STO     INTGS            SET UP GO SWITCH                         LS088810
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17406  0500 CO 0 00476          CLA     $QD1              PICK UP TRUTH VALUE                          LS088820
17407  0020 CO 4 00001          TRA     1,4               EXIT                                         LS088830
                                *                                                                     LS088840
                                * GO              SPECIAL FORM FOR PROGRAM INTERPRETER, GIVES GO TO POINT LS088850
                                *                                                                     LS088860
17410 -0634 CO 4 04153  GOGOGO  SXD     GOX,4             SAVE LINK IR                                 LS088870
17411 -0734 00 4 00000          PDX     0,4               POINTER TO ARGUMENT LIST                     LS088880
17412  0500 00 4 00000          CLA     0,4                                                            LS088890

BINARY CARD NO. LISP0355
17413  0621 CO 0 04210          STA     INTGS             PUT CAR IN GO SWITCH                         LS088900
17414  0734 00 4 00000          PAX     0,4               CAR TO IR                                    LS088910
17415  0500 CO 4 00000          CLA     0,4               GET FIRST WORD                               LS088920
17416  0734 00 4 00000          PAX     0,4               SEE IF ATOMIC                                LS088930
17417  3 77776 4 17430          TXH     GOT,4,-2          EXIT TRUE IF ATIMIC                          LS088940
17420  0534 CO 4 04210          LXA     INTGS,4           OTHERWISE GET ARGUMENT                       LS088950
17421 -0754 CO 4 00000          PXD     0,4               PUT INDECREMENT                              LS088960
17422  0074 CO 4 03104          TSX     $SAVE,4           SAVE LINK IR                                 LS088970
17423 -3 04155 0 03171          TXL     $END1,,GOX+2      SAVE 1 ITEM                                  LS088980
17424  0074 CO 4 16521          TSX     $EVAL,4           EVALUATE THE ARGUMENT                        LS088990
17425  0074 CO 4 03117          TSX     UNSAVE,4          RSTORE LINK IR                               LS089000
17426 -0734 00 4 00000          PDX     0,4               VALUE                                        LS089010
17427  0634 00 4 04210          SXA     INTGS,4           PU IN GO SWITCH                              LS089020
17430  0500 CO 0 00476   GOT    CLA     $QD1              TRUTH VALUE                                  LS089030
17431 -0534 CO 4 04153          LXD     GOX,4             RESTORE LINK IR                              LS089040
17432  0020 00 4 00001          TRA     1,4               EXIT                                         LS089050
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                                        TTL     COMPILER SERVICE ROUTINES                                       LS089060
                                        HEAD    C                   COMPILER PERMANENT SUBROUTINES              LS089070
                                    *           LINK HANDLES ALL SUBROUTINE CALLS FROM COMPILED FUNCTION        LS089080
                                    *           IT REPLACES STR WITH TSX IF SUBROUTINE BEING CALLED             LS089090
                                    *           IS A SUBR OR FSUBR                                              LS089100
                                    *           IT GOES TO APPLY IF THE CALL IS TO EXPR OR FEXPR WITH           LS089110
                                    *           $ALIST AS THIRD ARGUMENT                                        LS089120
                                    *           LINK EXPECTS A TAG OF 7 IN THE STR INST, NAME OF FUNCTION       LS089130
                                    *           IN THE ADDRESS, AND THE NUMBER OF ARGUMENTS IN THE DECREM       LS089140
                                    *           ENT                 LINK WILL GO TO THE ROUTINE WHICH           LS089150
                                    *           HANDLES ERROR TRAPS IF THE CALLING INST DOESNT HAVE A 7         LS089160
                                    *           TAG                                                             LS089170
                                    *                                                                           LS089180
    17433  0601 CO 0 04157  LINK    STO     LNKA                                                                LS089190
    17434 -0600 CO 0 04160          STQ     LNKB            SAVE AC AND MQ                                      LS089200
    17435  0634 CO 4 17625          SXA     LER,4           SAVE IR4                                            LS089210
    17436  0535 CO 4 00000          LAC     0,4             COMP POINTER TO STR+1                               LS089220
    17437  1 00001 4 17440          TXI     *+1,4,1         MAKE ORDINARY TSX POINTER                           LS089230
    17440  0500 CO 4 00000          CLA     0,4             GET STR INST  7                                     LS089240

BINARY CARD NO. LISP0356
    17441  0601 CO 0 17635          STO     LNKD            SAVE IT                                             LS089250
    17442 -0320 CO 0 00524          ANA     TAGMSK          CHECK FOR 7 TAG                                     LS089260
    17443  0322 CO 0 00524          ERA     TAGMSK                                                              LS089270
    17444 -0100 CO 0 17625          TNZ     LER             IF NOT 7 TAG                                        LS089280
    17445 -0634 CO 4 17634          SXD     LNKC,4          SAVE POINTER                                        LS089290
    17446  0500 CO 0 00200          CLA     B$ZERC          RESTORE NIL                                         LS089300
    17447  0601 CO 0 00000          STO     0                                                                   LS089310
    17450  0600 CO 0 17630          STZ     LNTRS           RESET TRACE SWITCH                                  LS089320
    17451  0534 CO 4 17635          LXA     LNKD,4          FUNCTION ATOM                                       LS089330
    17452  0500 CO 4 00000          CLA     0,4             START PROPERTY LIST SEARCH                          LS089340
    17453  0734 00 4 00000          PAX     ,4              IS REALLY ATOM                                      LS089350
    17454 -3 77776 4 17512          TXL     LNNF,4,-2                                                           LS089360
    17455  0520 CO 0 15702          ZET     TCNTMA                                                              LS089370
    17456  0074 CO 4 15664          TSX     TCNTEM,4                                                            LS089380
    17457 -0734 00 4 00000  LNLP    PDX     0,4                                                                 LS089390
    17460 -3 00000 4 17512          TXL     LNNF,4,0        NO DEFINITION SO FN VARIABLE                        LS089400
    17461  0500 CO 4 00000          CLA     0,4                                                                 LS089410
    17462  0734 CO 4 00000          PAX     0,4                                                                 LS089420
    17463 -3 10437 4 17465          TXL     *+2,4,$SUBR-1                                                       LS089430
    17464 -3 10440 4 17553          TXL     LNSBR,4,$SUBR                                                       LS089440
    17465 -3 11627 4 17467          TXL     *+2,4,$FSUBR-1                                                      LS089450
    17466 -3 11630 4 17553          TXL     LNSBR,4,$FSUBR                                                      LS089460

BINARY CARD NO. LISP0357
    17467 -3 10325 4 17471          TXL     *+2,4,$TRACE-1                                                      LS089470
    17470 -3 10326 4 17514          TXL     LNTR,4,$TRACE                                                       LS089480
    17471 -3 11703 4 17473          TXL     *+2,4,$EXPR-1                                                       LS089490
    17472 -3 11704 4 17475          TXL     LNEXP,4,$EXPR                                                       LS089500
    17473 -3 11666 4 17457          TXL     LNLP,4,$FEXPR-1                                                     LS089510
    17474  3 11667 4 17457          TXH     LNLP,4,$FEXPR                                                       LS089520
    17475 -0734 CO 4 00000  LNEXP   PDX     0,4             EXPR-FEXPR BRANCH                                   LS089530
    17476  0500 CO 4 00000          CLA     0,4                                                                 LS089540
    17477  0734 CO 4 00000          PAX     0,4             LAMBDA EXPRESSION                                   LS089550
    17500 -0634 CO 4 17631  LNGN    SXD     LNFN,4          SAVE IT                                             LS089560
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17501  0520 CO 0 17630          ZET     LNTRS           TRACE TEST                              LS089570
17502  0020 CO 0 17533          TRA     LNTEX           TRACE EXPR OF FEXPR                     LS089580
17503  0074 CO 4 17570          TSX     LNARS,4         LIST ARGUMENTS                          LS089590
17504  0131 CO 0 00000          XCA                                                             LS089600
17505  0500 CO 0 04060          CLA     $ALIST                                                  LS089610
17506  0601 CO 0 04063          STO     $ARG3           PROPER ALIST                            LS089620
17507  0500 CO 0 17631          CLA     LNFN            LAMBDA EXPRESSION                       LS089630
17510 -0534 CO 4 17634          LXD     LNKC,4          RETURN IR                               LS089640
17511  0020 CO 0 15721          TRA     $APPLY          DO                                      LS089650
                        *                                                                       LS089660
17512  0534 CO 4 17635  LNNF    LXA     LNKD,4          FUNCTION DEFN IS ON ALIST               LS089670
17513  0020 CO 0 17500          TRA     LNGN            APPLY WILL TAKE CARE OF THIS            LS089680
                        *                                                                       LS089690
17514 -0520 CO 0 15701  LNTR    NZT TCNTTR                                                      LS089700

BINARY CARD NO. LISP0358
17515  0020 CO 0 17457          TRA LNLP                                                        LS089710
17516 -0625 CO 0 17630          STL LNTRS                                                       LS089720
17517  0601 CO 0 17632          STO     LNAC            SAVE AC                                 LS089730
17520  0074 CO 4 17570          TSX     LNARS,4         LIST ARGUMENTS                          LS089740
17521  0601 CO 0 17633          STO     LNRGL           AND SAVE THEM                           LS089750
17522  0131 CO 0 00000          XCA                     TO PRINTING POSITION                    LS089760
17523  0534 CO 4 17635          LXA     LNKD,4          ATOM NAME                               LS089770
17524  0634 CO 4 17634          SXA     LNKC,4          SAVE WITH INDEX REGISTER                LS089780
17525 -0754 CO 4 00000          PXD     0,4             ALSO FOR TRACE MESSAGE                  LS089790
17526  0074 CO 4 03104          TSX     $SAVE,4         SAVE NAME AND RETRN                     LS089800
17527 -3 17636 0 03171          TXL     $END1,,LNKC+2                                           LS089810
17530  0074 CO 4 17124          TSX     A$ARGOF,4       PRINT ARGUMENTS                         LS089820
17531  0500 CO 0 17632          CLA     LNAC            RESTORE AC                              LS089830
17532  0020 CO 0 17457          TRA     LNLP            AND CONTINUE PROPERTY LIST SEARCH       LS089840
                        *                                                                       LS089850
17533  0500 CO 0 17631  LNTEX   CLA     LNFN            TRACE EXPR OR FEXPR                     LS089860
17534  0560 CO 0 04060          LDQ     $ALIST                                                  LS089870
17535 -0600 CO 0 04063          STQ     $ARG3                                                   LS089880
17536  0560 CO 0 17633          LDQ     LNRGL           SET UP ARGUMENTS OF APPLY               LS089890
17537  0074 CO 4 15721          TSX     $APPLY,4        AND DO THE FUNCTION                     LS089900
17540  0074 CO 4 03117  LNTEN   TSX     UNSAVE,4        GET BACK IR4 AND FN NAME                LS089910
17541  0131 CO 0 00000          XCA                                                             LS089920
17542  0534 CO 4 17634          LXA     LNKC,4          ATOM NAME TO AC                         LS089930

BINARY CARD NO. LISP0359
17543 -0754 CO 4 00000          PXD     0,4                                                     LS089940
17544 -0534 CO 4 17634          LXD     LNKC,4          RESTORE INDEX                           LS089950
17545  0020 CO 0 17162          TRA     A$VALOF         PRINT VALUE MESSAGE                     LS089960
                        *                                                                       LS089970
17546  0621 CO 0 17551  LNTSB   STA     LNDIS           TRACE SUBR OF FSUBR                     LS089980
17547  0500 CO 0 04157          CLA     LNKA            RESTORE AC                              LS089990
17550  0560 CO 0 04160          LDQ     LNKB            AND MQ                                  LS090000
17551  0074 CO 4 00000  LNDIS   TSX     **,4            EXECUTER SUBROUTINE                     LS090010
17552  0020 CO 0 17540          TRA     LNTEN           AND REPORT VALUE                        LS090020
                        *                                                                       LS090030
17553 -0734 CO 4 00000  LNSBR   PDX     0,4             SUBR OR FSUBR BRANCH                    LS090040
17554  0500 CO 4 00000          CLA     0,4                                                     LS090050
17555  0734 CO 4 00000          PAX     0,4                                                     LS090060
17556  0500 CO 4 00000          CLA     0,4             TXL SUBR,,N WORD                        LS090070
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    17557  0520 CC 0 17630          ZET     LNTRS           TEST FOR TRACING                        LS090080
    1756C  0020 CC 0 17546          TRA     LNTSB                                                   LS090090
    17561  0621 00 0 17636          STA     LNTSX           MAKE A TSX                              LS090100
    17562  0500 CC 0 17636          CLA     LNTSX           GET IT                                  LS090110
    17563 -0534 CC 4 17634          LXD     LNKC,4          RETURN IR                               LS090120
    17564  0601 00 4 00000          STO     0,4             CHANGE THE STR TO TSX                   LS090130
    17565  0500 00 0 04157          CLA     LNKA            RESTORE AC                              LS090140
    17566  0560 CC 0 04160          LDQ     LNKB                                                    LS090150
    17567  CC20 CC 4 00000          TRA     0,4             GO TO NEW TSX                           LS090160
                                    *                                                               LS090170
    17570  0634 00 4 17621  LNARS   SXA     LNLX,4          SUBROUTINE WHICH LISTS ARGS             LS090180

BINARY CARD NO. LISP0360
    17571 -0534 CC 4 17635          LXD     LNKD,4          NUMBER OF ARGS                          LS090190
    17572 -3 00000 4 17623          TXL     LNN,4,0         LST WONT WORK ON ZERO THINGS            LS090200
    17573 -0634 CC 4 17575          SXD     LNKP,4          PUT IN LST ARG POSITION                 LS090210
    17574  0074 CC 4 17637          TSX     LST,4           LIST THEM                               LS090220
    17575  3 00000 0 04157  LNKP    TXH     LNKA,0,**                                               LS090230
    17576  0734 CC 0 04160          PAX     LNKB,0                                                  LS090240
    17577  0734 CC 0 04063          PAX     $ARG3,0                                                 LS090250
    17600  0734 00 0 04064          PAX     $ARG4,0                                                 LS090260
    17601  0734 00 0 04065          PAX     $ARG5,0                                                 LS090270
    17602  0734 CC 0 04066          PAX     $ARG6,0                                                 LS090280
    17603  0734 00 0 04067          PAX     $ARG7,0                                                 LS090290
    17604  0734 00 0 04070          PAX     $ARG8,0                                                 LS090300
    17605  0734 00 0 04071          PAX     $ARG9,0                                                 LS090310
    17606  0734 CC 0 04072          PAX     $ARG10,0                                                LS090320
    17607  0734 CC 0 04073          PAX     $ARG11,0                                                LS090330
    17610  0734 00 0 04074          PAX     $ARG12,0                                                LS090340
    17611  0734 00 0 04075          PAX     $ARG13,0                                                LS090350
    17612  0734 CC 0 04076          PAX     $ARG14,0                                                LS090360
    17613  0734 CC 0 04077          PAX     $ARG15,0                                                LS090370
    17614  0734 00 0 04100          PAX     $ARG16,0                                                LS090380
    17615  0734 CC 0 04101          PAX     $ARG17,0                                                LS090390
    17616  0734 CC 0 04102          PAX     $ARG18,0                                                LS090400

BINARY CARD NO. LISP0361
    17617  0734 00 0 04103          PAX     $ARG19,0                                                LS090410
    17620  0734 CC 0 04104          PAX     $ARG20,0                                                LS090420
    17621  0774 CC 4 00000  LNLX    AXT     **,4            RESTORE INTEX                           LS090430
    17622  0020 CC 4 00001          TRA     1,4                                                     LS090440
    17623 -0754 00 0 00000  LNN     PXD     0,0             NIL                                     LS090450
    17624  0020 CC 0 17621          TRA     LNLX                                                    LS090460
                                    *                                                               LS090470
    17625  0774 CC 4 00000  LER     AXT     **,4            RESTORE IR4                             LS090480
    17626  0500 CC 0 04157          CLA     LNKA                                                    LS090490
    17627  0020 CC 0 02542          TRA     STRPNT          GO TO EREOR HANDLING ROUTINEPP          LS090500
                                    *       LINK STORAGE                                            LS090510
                                    *       IS HERE, EXCEPT FOR LINKA NAD LINKB WHICH ARE IN GARBAG LS090520
    17630  0 00000 0 00000  LNTRS           TRACE SWITCH                                            LS090530
    17631  0 00000 0 00000  LNFN            FUNCTION DEFINITION                                     LS090540
    17632  0 00000 0 00000  LNAC            TEMPORARY AC STORAGE                                    LS090550
    17633  0 00000 0 00000  LNRGL           ARGS LISTED DURNING TRACE INTERLUDE                     LS090560
    17634  0 00000 0 00000  LNKC            IX4 POINTER TO STR WORD                                 LS090570
    17635  0 00000 0 00000  LNKD            CONTAINS STR NAME,7,NUM                                 LS090580
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17636  0074 CO 4 00000  LNTSX  TSX    **,4              INSTRUCTION TO BE PLANTED                    LS090590
                        *             LST IS THE SUBROUTINE WHICH DOES LISTING IN COMPILED         LS090600
                        *             FUNCTIONS          N ELEMENTS WHERE N IS IN AC, ARE          LS090610
                        *             LISTED             ARGUMENTS ARE GOTTEN BY CLA*              LS090620
                        *             FROM THE N REGISTERS SUCCEEDING THE CALL                     LS090630
                        *                                                                          LS090640
17637  0634 CO 2 17700  LST    SXA    LX2,2             SAVE IR2                                     LS090650
17640  0500 00 4 00001         CLA    1,4               TO GET N FROM FIRSTDECREMENT                 LS090660
17641  0622 CO 0 17643         STD    LSN               TO DECREMENT IR4 FOR POINT EXIT              LS090670
17642  0622 CO 0 17657         STD    LSC               TO DECREMENT THE CONS COUNTER                LS090680
17643 -2 00000 4 17644  LSN    TNX    *+1,4,**                                                       LS090690
17644 -0734 CO 2 00000         PDX    0,2               N TO IR2                                     LS090700

BINARY CARD NO. LISP0362
17645 -0754 00 4 00000         PXD    0,4               START TO COMPLEMENT IR4                      LS090710
17646 -0737 CO 4 00000         PDC    0,4               OH FOR A 7094                                LS090720
17647  1 00001 4 17650         TXI    *+1,4,1           ONE MORE FOR EXIT                            LS090730
17650  0634 CO 4 17664         SXA    LSP,4             SET UP GET INST                              LS090740
17651  0634 CO 4 17702         SXA    LSE,4             AND RETURN                                   LS090750
17652 -0534 CO 4 04512         LXD    $FREE,4           FIRST FREE WORD                              LS090760
17653  3 00000 4 17655         TXH    *+2,4,0           TEST FOR OUT OF FREE                         LS090770
17654  0074 CO 4 04614         TSX    $FROUT,4          WILL RETURN -2,4                             LS090780
17655 -0634 CO 4 17711         SXD    LAN,4             THE ANSWER TO THIS SAUSAGE CONS              LS090790
17656  0534 CO 4 04503         LXA    $CNTR1,4          GET CONS COUNTER                             LS090800
17657  2 00000 4 17662  LSC    TIX    *+3,4,**          REDUCE IT BY N                               LS090810
17660  0074 CO 4 04513         TSX    ARREST,4          OUT OF CONSES                                LS090820
17661  0774 CO 4 77777         AXT    -1,4              RESET COUNTER (UP TO N CONSES MAY BE         LS090830
17662  0634 CO 4 04503         SXA    $CNTR1,4          LOST EVERY 7777 OCTAL CONSES)                LS090840
17663 -0534 CO 4 17711         LXD    LAN,4             RESTORE  IR4 TO FREE WORD POINTER            LS090850
17664  0500 60 2 00000  LSP    CLA*   **,2             GET ARGUMENT                                 LS090860
17665  0771 00 0 00022         ARS    18                TO ADDRESS                                   LS090870
17666  0621 00 4 00000         STA    0,4               PUT IT IN THE FREE WORD ADDR                 LS090880
17667  0500 00 4 00000         CLA    0,4               NEXT  FREE WORD                              LS090890
17670  0634 CO 4 17676         SXA    LFX,4             SAVE PRECEDING WORD TO CUT OFF               LS090900
17671 -0734 CO 4 00000  LSR    PDX    0,4               NEXT FREE WORD TO IR                         LS090910
17672 -3 00000 4 17703         TXL    LFIX,4,0          OUT OF FREE STORAGE7                         LS090920

BINARY CARD NO. LISP0363
17673  2 00001 2 17664         TIX    LSP,2,1           COUNT DOWN                                   LS090930
17674  0622 CO 0 04512         STD    $FREE             RESTORE FREE                                 LS090940
17675 -0754 00 0 00000         PXD    0,0               CLEAR                                        LS090950
17676  0774 CO 4 00000  LFX    AXT    **,4              LAST WORD IN LIST                            LS090960
17677  0622 00 4 00000         STD    0,4               GETS NIL IN ITS DECREMENT                    LS090970
17700  0774 CO 2 00000  LX2    AXT    **,2              RESTORE IR2                                  LS090980
17701  0500 CO 0 17711         CLA    LAN               GET THE ANSWER                               LS090990
17702  0020 CO 0 00000  LSE    TRA    **                RETURN                                       LS091000
17703  0500 CO 0 17711  LFIX   CLA    LAN               TO GET IT PROTECTED DURING MOP UP            LS091010
17704  0074 CO 4 03312         TSX    RECLAM,4                                                       LS091020
17705  0500 CO 0 04512         CLA    $FREE             FIX UP THE SAUSAGE                           LS091030
17706  0522 00 0 17676         XEC    LFX               GET LAST WORD TO IR                          LS091040
17707  0622 00 4 00000         STD    0,4               FIX ITS DECREMENT                            LS091050
17710  0020 CO 0 17671         TRA    LSR                                                            LS091060
17711  0 00000 0 00000  LAN    PZE                                                                   LS091070
                        *     UNWND IS UNSAVE FOR COMPILED FUNCTIONS,USED BY ERRORSET              LS091080
                        *     TO RESTORE THE PDL TO PRISTINE STATE                                 LS091090
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17712  0634 CO 4 17743  UNWND  SXA   UNX,4                                  LS091100
17713 -0600 CO 0 17746         STQ   UNSQ          SAVE THE MQ FOR BACKTRACE LS091110
17714 -0534 CO 1 03110         LXD   $CPPI,1                                 LS091120
17715 -0754 00 1 00000         PXD   0,1                                     LS091130
17716  0401 CO 1 77777         ADM   -1,1                                    LS091140
17717  0402 CO 0 00476         SUB   $QD1                                    LS091150
17720  0622 CO 0 17722         STD   UNTL                                    LS091160

BINARY CARD NO. LISP0364
17721  1 00001 1 17722  UNLP  TXI   *+1,1,1                                 LS091170
17722  3 00000 1 17742  UNTL  TXH   UNF,1,**                                LS091180
17723  0500 CO 1 00000         CLA   0,1                                     LS091190
17724  0734 00 4 00000         PAX   0,4                                     LS091200
17725 -3 00000 4 17721         TXL   UNLP,4,0                                LS091210
17726 -0754 CO 4 00000         PXD   0,4                                     LS091220
17727  0131 CO 0 00000         XCA                                           LS091230
17730  0500 CO 4 00000         CLA   0,4                                     LS091240
17731  0734 CO 4 00000         PAX   0,4                                     LS091250
17732  3 77776 4 17721         TXH   UNLP,4,-2                               LS091260
17733  0500 CO 0 20056         CLA   PROS                                    LS091270
17734  0074 CO 4 12762         TSX   GET,4                                   LS091280
17735  0100 CO 0 17721         TZE   UNLP                                    LS091290
17736  0500 CO 1 00000         CLA   0,1                                     LS091300
17737  0734 CO 4 00000         PAX   0,4                                     LS091310
17740  0622 CO 4 00000         STD   0,4                                     LS091320
17741  0020 CO 0 17721         TRA   UNLP                                    LS091330
17742 -0634 CO 1 03110  UNF    SXD   $CPPI,1                                 LS091340
17743  0774 00 4 00000  UNX    AXT   **,4                                    LS091350
17744  0560 CO 0 17746         LDQ   UNSQ                                    LS091360
17745  0020 CO 4 00001         TRA   1,4                                     LS091370
17746  0 00000 0 00000  UNSQ                      SAVE MQ HERE              LS091380
                        *   MOVE IS A SPECIAL COMPILER SERVICE SUBROUTINE WITH BAD CALLING. LS091390
                        *       TSX   *MOVE,1                              LS091400
                        *       TNX   NAME,1,*MN                           LS091410

BINARY CARD NO. LISP0365
17747  0634 CO 1 17754  MOVE  SXA   MOVY,1                                  LS091420
17750 -0534 CO 1 03110         LXD   $CPPI,1       PICK UP PDL PPINTER       LS091430
17751  0601 CO 1 00001         STO   1,1           SAVE AC                   LS091440
17752 -0600 CO 1 00002         STQ   2,1                                     LS091450
17753 -0634 CO 4 20043         SXD   TXLW,4        SAVE RETURN INDEX         LS091460
17754  0774 CO 4 00000  MOVY  AXT   **,4          PICK UP REFERENCE TO CALLING HEAD . LS091470
17755  0500 CO 4 00001         CLA   1,4           TNX WORD HAS NAME IN ADDR. LS091480
17756  0621 CO 0 20043         STA   TXLW          COMPLETES THE TXL WORD    LS091490
17757  0622 CO 0 20042         STD   STRW          PUT N IN STRW DECREMENT   LS091500
17760  0500 CO 0 20043         CLA   TXLW                                    LS091510
17761  0601 CO 1 00000         STO   0,1           PUT IT AT HEAD OF PDL BLOCK LS091520
17762  0500 00 4 00000         CLA   0,4           TSX HAS COUNT FIELD       LS091530
17763 -0320 CO 0 00523         ANA   CNTMSK        COUNT FIELD MASK          LS091540
17764  0100 00 0 20034         TZE   MOVD          IF LESS THAN 3 ARGS       LS091550
17765 -0734 00 4 00000         PDX   0,4           COUNT FIELD TO IX         LS091560
17766  0020 CO 4 20033         TRA   MOVD-1,4      ENTER PART OF MOVE ROUTINE LS091570
17767  0500 CO 0 04104         CLA   $ARG20                                  LS091580
17770  0601 00 1 00024         STO   20,1                                    LS091590
17771  0500 CO 0 04103         CLA   $ARG19                                  LS091600
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    17772  0601 CO 1 00023          STO     19,1                                    LS091610
    17773  0500 CO 0 04102          CLA     $ARG18                                  LS091620
    17774  0601 CO 1 00022          STO     18,1                                    LS091630

BINARY CARD NO. LISP0366
    17775  0500 CO 0 04101          CLA     $ARG17                                  LS091640
    17776  0601 CO 1 00021          STO     17,1                                    LS091650
    17777  0500 CO 0 04100          CLA     $ARG16                                  LS091660
    20000  0601 CO 1 00020          STO     16,1                                    LS091670
    20001  0500 CO 0 04077          CLA     $ARG15                                  LS091680
    20002  0601 CO 1 00017          STO     15,1                                    LS091690
    20003  0500 CO 0 04076          CLA     $ARG14                                  LS091700
    20004  0601 CO 1 00016          STO     14,1                                    LS091710
    20005  0500 CO 0 04075          CLA     $ARG13                                  LS091720
    20006  0601 CO 1 00015          STO     13,1                                    LS091730
    20007  0500 CO 0 04074          CLA     $ARG12                                  LS091740
    20010  0601 CO 1 00014          STO     12,1                                    LS091750
    20011  0500 CO 0 04073          CLA     $ARG11                                  LS091760
    20012  0601 CO 1 00013          STO     11,1                                    LS091770
    20013  0500 CO 0 04072          CLA     $ARG10                                  LS091780
    20014  0601 CO 1 00012          STO     10,1                                    LS091790
    20015  0500 CO 0 04071          CLA     $ARG9                                   LS091800
    20016  0601 CO 1 00011          STO     9,1                                     LS091810
    20017  0500 CO 0 04070          CLA     $ARG8                                   LS091820
    20020  0601 CO 1 00010          STO     8,1                                     LS091830
    20021  0500 CO 0 04067          CLA     $ARG7                                   LS091840
    20022  0601 CO 1 00007          STO     7,1                                     LS091850

BINARY CARD NO. LISP0367
    20023  0500 CO 0 04066          CLA     $ARG6                                   LS091860
    20024  0601 CO 1 00006          STO     6,1                                     LS091870
    20025  0500 CO 0 04065          CLA     $ARG5                                   LS091880
    20026  0601 CO 1 00005          STO     5,1                                     LS091890
    20027  0500 CO 0 04064          CLA     $ARG4                                   LS091900
    20030  0601 CO 1 00004          STO     4,1                                     LS091910
    20031  0500 CO 0 04063          CLA     $ARG3                                   LS091920
    20032  0601 CO 1 00003          STO     3,1                                     LS091930
    20033  0534 CO 4 17754          LXA     MOVY,4          RESTORE IR4             LS091940
    20034  0522 CO 4 00001  MOVD    XEC     1,4       XECED TNX DECREMENTS IX1 BUT NO TRANSFER  LS091950
    20035 -0634 CO 1 03110          SXD     $CPPI,1         KEEP CPPI UP TO DATE ALSO LS091960
    20036  0500 CO 0 20042          CLA     STRW            CREATES SECOND PARAMETER WORD  LS091970
    20037  0601 CO 1 77777          STO     -1,1            PUT AT VERY END OF BLOCK  LS091980
    20040 -3 00000 1 03205  ENPDL1  TXL   $NOPDL,1,**                              LS091990
    20041  0020 CO 4 00002          TRA     2,4             RETURN FROM LINK        LS092000
    20042 -1 00000 0 00000  STRW    STR     **                                      LS092010
    20043 -3 00000 0 00000  TXLW    TXL     **,,**                                  LS092020
                            *                                                       LS092030
                            * RESTOR PICKS UP IX4 FROM PDL,SETS BACK CPPI ,AND EXITS.  LS092040
    20044 -0634 CO 1 03110  RESTOR  SXD     $CPPI,1                                 LS092050
    20045  0131 CO 0 00000          XCA                     SAVE VALUE OF FUNCTION  LS092060
    20046  0500 CO 1 00000          CLA     0,1             PICK UP RETURN WORD     LS092070
    20047 -0734 CO 4 00000          PDX     0,4             RESTORE IX4             LS092080
    20050  0131 CO 0 00000          XCA                     RESTORE AC              LS092090
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BINARY CARD NO. LISP0368
    20051  0C20 CC 4 00001          TRA     1,4          EXIT                                        LS092100
                                    *                                                                LS092110
                       20052  PROBE  SYN     *            BEGINNING OF PROTECTED AREA                 LS092120
    20052  0 COOCO 0 00000  LIST                         MAIN LISTING GOES HERE                      LS092130
    20053  0 COOCO 0 00000  QTLST                        THE LIST OF QUOTES.NEVER ERASE              LS092140
    20054  0 00000 0 00000  TAB                          TEMPORARY SYM TABLE                         LS092150
    20055  0 00000 0 00000  LCOM                         STORAGE FOR COMMON ONLY.PROTECTED           LS092160
    20056  0 COOCO 0 00000  PROS                         PROTECTED FUNCTION NAMES AND SPECIALS       LS092170
                       20056  PROEN  SYN     *-1          END OF PROTECTED AREA                       LS092180
    20057  0 00000 0 17747  MOV                 MOVE      THE WORD POINTED TO BY SYM ON *MOVE         LS092190
    20060  0 00000 0 17637  LSTR                LST       POINTED TO BY SYM ON ATOM *LIST             LS092200
    20061  0 COOCO 0 20044  RTRN                RESTOR                                                LS092210
    20062  0 00000 0 04060   ALST               $ALIST                                                LS092220
    20063                    TOPROG BSS     0                                                        LS092230
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                        TTL     PERMANENT LIST STRUCTURE                                        LS092240
                64424           ORG     26900           LEAVES ROOM AT THE TOP FOR THE COMPILELS092250
64424                   LOWERP  BSS     1               LWER LIMIT OF PERMENANT LIST STRUCTURELS092260
                                ********************HEAD OR HED*****************************LS092270
                        0       HED                                                             LS092280
                                                                                                LS092290
                            LCWER LIMIT OF PERM. LIST STRUCTURE                                 LS092300
                                                                                                LS092310

BINARY CARD NC. LISP0369
    64425   0 00000 0 00000                         LAST BUCKET                                 LS092320
    64426   0 13353 0 00000             ,,-*+1                                                  LS092330
    64427   0 13352 0 00000             ,,-*+1                                                  LS092340
    6443C   0 13351 0 00000             ,,-*+1                                                  LS092350
    64431   0 13350 0 00000             ,,-*+1                                                  LS092360
    64432   0 13347 0 00000             ,,-*+1                                                  LS092370
    64433   0 13346 0 00000             ,,-*+1                                                  LS092380
    64434   0 13345 0 00000             ,,-*+1                                                  LS092390
    64435   0 13344 0 00000             ,,-*+1                                                  LS092400
    64436   0 13343 0 00000             ,,-*+1                                                  LS092410
    64437   0 13342 0 00000             ,,-*+1                                                  LS092420
    6444C   0 13341 0 00000             ,,-*+1                                                  LS092430
    64441   0 13340 0 00000             ,,-*+1                                                  LS092440
    64442   0 13337 0 00000             ,,-*+1                                                  LS092450
    64443   0 13336 0 00000             ,,-*+1                                                  LS092460
    64444   0 13335 0 00000             ,,-*+1                                                  LS092470
    64445   0 13334 0 00000             ,,-*+1                                                  LS092480
    64446   0 13333 0 00000             ,,-*+1                                                  LS092490
    64447   0 13332 0 00000             ,,-*+1                                                  LS092500
    6445C   0 13331 0 00000             ,,-*+1                                                  LS092510
    64451   0 13330 0 00000             ,,-*+1                                                  LS092520
    64452   0 13327 0 00000             ,,-*+1                                                  LS092530

BINARY CARD NC. LISP0370
    64453   0 13326 0 00000             ,,-*+1                                                  LS092540
    64454   0 13325 0 00000             ,,-*+1                                                  LS092550
    64455   0 13324 0 00000             ,,-*+1                                                  LS092560
    64456   0 13323 0 00000             ,,-*+1                                                  LS092570
    64457   0 13322 0 00000             ,,-*+1                                                  LS092580
    6446C   0 13321 0 00000             ,,-*+1                                                  LS092590
    64461   0 13320 0 00000             ,,-*+1                                                  LS092600
    64462   0 13317 0 00000             ,,-*+1                                                  LS092610
    64463   0 13316 0 00000             ,,-*+1                                                  LS092620
    64464   0 13315 0 00000             ,,-*+1                                                  LS092630
    64465   0 13314 0 00000             ,,-*+1                                                  LS092640
    64466   0 13313 0 00000             ,,-*+1                                                  LS092650
    64467   0 13312 0 00000             ,,-*+1                                                  LS092660
    6447C   0 13311 0 00000             ,,-*+1                                                  LS092670
    64471   0 13310 0 00000             ,,-*+1                                                  LS092680
    64472   0 13307 0 00000             ,,-*+1                                                  LS092690
    64473   0 13306 0 00000             ,,-*+1                                                  LS092700
    64474   0 13305 0 00000             ,,-*+1                                                  LS092710
    64475   0 13304 0 00000             ,,-*+1                                                  LS092720
    64476   0 13303 0 00000             ,,-*+1                                                  LS092730
    64477   0 13302 0 00000             ,,-*+1                                                  LS092740
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    64500  C 13301 0 00000          ,,-*+1                              LS092750

BINARY CARD NO. LISP0371
    64501  C 13300 0 00000          ,,-*+1                              LS092760
    64502  C 13277 0 00000          ,,-*+1                              LS092770
    64503  C 13276 0 00000          ,,-*+1                              LS092780
    64504  C 13275 0 00000          ,,-*+1                              LS092790
    64505  C 13274 0 00000          ,,-*+1                              LS092800
    64506  C 13273 0 00000          ,,-*+1                              LS092810
    64507  C 13272 0 00000          ,,-*+1                              LS092820
    64510  C 13271 0 00000          ,,-*+1                              LS092830
    64511  C 13270 0 00000          ,,-*+1                              LS092840
    64512  C 13267 0 00000          ,,-*+1                              LS092850
    64513  C 13266 0 00000          ,,-*+1                              LS092860
    64514  C 13265 0 00000          ,,-*+1                              LS092870
    64515  C 13264 0 00000          ,,-*+1                              LS092880
    64516  C 13263 0 00000          ,,-*+1                              LS092890
    64517  C 13262 0 00000          ,,-*+1                              LS092900
    64520  C 13261 0 00000          ,,-*+1                              LS092910
    64521  C 13260 0 00000          ,,-*+1                              LS092920
    64522  C 13257 0 00000          ,,-*+1                              LS092930
    64523  C 13256 0 00000          ,,-*+1                              LS092940
    64524  C 13255 0 00000          ,,-*+1                              LS092950
    64525  C 13254 0 00000          ,,-*+1                              LS092960
    64526  C 13253 0 00000          ,,-*+1                              LS092970

BINARY CARD NO. LISP0372
    64527  C 13252 0 00000          ,,-*+1                              LS092980
    64530  C 13251 0 00000          ,,-*+1                              LS092990
    64531  C 13250 0 00000          ,,-*+1                              LS093000
    64532  C 13247 0 00000          ,,-*+1                              LS093010
    64533  C 13246 0 00000          ,,-*+1                              LS093020
    64534  C 13245 0 00000          ,,-*+1                              LS093030
    64535  C 13244 0 00000          ,,-*+1                              LS093040
    64536  C 13243 0 00000          ,,-*+1                              LS093050
    64537  C 13242 0 00000          ,,-*+1                              LS093060
    64540  C 13241 0 00000          ,,-*+1                              LS093070
    64541  C 13240 0 00000          ,,-*+1                              LS093080
    64542  C 13237 0 00000          ,,-*+1                              LS093090
    64543  C 13236 0 00000          ,,-*+1                              LS093100
    64544  C 13235 0 00000          ,,-*+1                              LS093110
    64545  C 13234 0 00000          ,,-*+1                              LS093120
    64546  C 13233 0 00000          ,,-*+1                              LS093130
    64547  C 13232 0 00000          ,,-*+1                              LS093140
    64550  C 13231 0 00000          ,,-*+1                              LS093150
    64551  C 13230 0 00000          ,,-*+1                              LS093160
    64552  C 13227 0 00000          ,,-*+1                              LS093170
    64553  C 13226 0 00000          ,,-*+1                              LS093180
    64554  C 13225 0 00000          ,,-*+1                              LS093190

BINARY CARD NO. LISP0373
    64555  C 13224 0 00000          ,,-*+1                              LS093200
    64556  C 13223 0 00000          ,,-*+1                              LS093210
    64557  C 13222 0 00000          ,,-*+1                              LS093220
    64560  C 13221 0 00000          ,,-*+1                              LS093230
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64561  0 13220 0 00000                ,,-*+1                                LS093240
64562  0 13217 0 00000                ,,-*+1                                LS093250
64563  0 13216 0 00000                ,,-*+1                                LS093260
64564  0 13215 0 00000                ,,-*+1                                LS093270
64565  0 13214 0 00000                ,,-*+1                                LS093280
64566  0 13213 0 00000                ,,-*+1                                LS093290
64567  0 13212 0 00000                ,,-*+1                                LS093300
64570  0 13211 0 00000                ,,-*+1                                LS093310
64571  0 13210 0 00000                ,,-*+1                                LS093320
64572  0 13207 0 00000                ,,-*+1                                LS093330
64573  0 13206 0 00000                ,,-*+1                                LS093340
64574  0 13205 0 00000                ,,-*+1                                LS093350
64575  0 13204 0 00000                ,,-*+1                                LS093360
64576  0 13203 0 00000                ,,-*+1                                LS093370
64577  0 13202 0 00000                ,,-*+1                                LS093380
64600  0 13201 0 00000                ,,-*+1                                LS093390
64601  0 13200 0 00000                ,,-*+1                                LS093400
64602  0 13177 0 00000                ,,-*+1                                LS093410

BINARY CARD NO. LISP0374
64603  0 13176 0 00000                ,,-*+1                                LS093420
64604  0 13175 0 00000                ,,-*+1                                LS093430
64605  0 13174 0 00000                ,,-*+1                                LS093440
64606  0 13173 0 00000                ,,-*+1                                LS093450
64607  0 13172 0 00000                ,,-*+1                                LS093460
64610  0 13171 0 00000                ,,-*+1                                LS093470
64611  0 13170 0 00000                ,,-*+1                                LS093480
64612  0 13167 0 00000                ,,-*+1                                LS093490
64613  0 13166 0 00000                ,,-*+1                                LS093500
64614  0 13165 0 00000                ,,-*+1                                LS093510
64615  0 13164 0 00000                ,,-*+1                                LS093520
64616  0 13163 0 00000                ,,-*+1                                LS093530
64617  0 13162 0 00000                ,,-*+1                                LS093540
64620  0 13161 0 00000                ,,-*+1                                LS093550
64621  0 13160 0 00000                ,,-*+1                                LS093560
64622  0 13157 0 00000                ,,-*+1                                LS093570
64623  0 13156 0 00000  BUCKET        ,,-*+1  POINTER TO BUCKETS            LS093580
                 64623  CBLIST SYN     BUCKET                             LS093590
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                                EJECT                                                          LS093600
                                HEAD    0                                                      LS093610
                                    OBJECT LIST                                                LS093620
                                                                                               LS093630
    64624  0 13153 0 77777   OBLB      -1,,-*-1                                                LS093640
    64625  0 13152 0 12602               -III4,,-*-1          ADD 1                          LS093650
    64626  0 13151 0 12560               -)ALST,,-*-1                                         LS093660
    64627  0 13150 0 12551           AND,,-*-1                                                LS093670
    64630  0 13147 0 12541           F1,,-*-1                                                 LS093680

BINARY CARD NO. LISP0375
    64631  0 13146 0 12531           F18,,-*-1                                                LS093690
    64632  0 13145 0 12521           APVAL,,-*-1                                              LS093700
    64633  0 13144 0 12514               -III,,-*-1           ARRAY                          LS093710
    64634  0 13143 0 12504           ATOM,,-*-1                                               LS093720
    64635  0 13142 0 12474           F29,,-*-1                                                LS093730
    64636  0 13141 0 12454           CAR,,-*-1                                                LS093740
    64637  0 13140 0 12444           CDR,,-*-1                                                LS093750
    64640  0 13137 0 12434           CAAR,,-*-1                                               LS093760
    64641  0 13136 0 12424           CDAR,,-*-1                                               LS093770
    64642  0 13135 0 12414           CADR,,-*-1                                               LS093780
    64643  0 13134 0 12404           CDDR,,-*-1                                               LS093790
    64644  0 13133 0 12374           CAAAR,,-*-1                                              LS093800
    64645  0 13132 0 12364           CAADR,,-*-1                                              LS093810
    64646  0 13131 0 12354           CADAR,,-*-1                                              LS093820
    64647  0 13130 0 12344           CADDR,,-*-1                                              LS093830
    64650  0 13127 0 12334           CDAAR,,-*-1                                              LS093840
    64651  0 13126 0 12324           CDADR,,-*-1                                              LS093850
    64652  0 13125 0 12314           CDDAR,,-*-1                                              LS093860
    64653  0 13124 0 12304           CDDDR,,-*-1                                              LS093870
    64654  0 13123 0 12237           COND,,-*-1                                               LS093880
    64655  0 13122 0 12227           CONSN,,-*-1                                              LS093890
    64656  0 13121 0 12207           COPYN,,-*-1                                              LS093900

BINARY CARD NO. LISP0376
    64657  0 13120 0 12102               DUMP,,-*-1                                           LS093910
    64660  0 13117 0 12217           F12,,-*-1                                                LS093920
    64661  0 13116 0 12177           F35,,-*-1                                                LS093930
    64662  0 13115 0 12144               -IJ01,,-*-1          DIFFER                         LS093940
    64663  0 13114 0 12122               -IJ02,,-*-1          DIVIDE                         LS093950
    64664  0 13113 0 12040           EQ,,-*-1                                                 LS093960
    64665  0 13112 0 12030               -)EQP,,-*-1                                          LS093970
    64666  0 13111 0 12010           F8,,-*-1                                                 LS093980
    64667  0 13110 0 12000           F21,,-*-1                                                LS093990
    64670  0 13107 0 11746           F19,,-*-1                                                LS094000
    64671  0 13106 0 11736           EVLISL,,-*-1                                             LS094010
    64672  0 13105 0 11726               -)EXCA,,-*-1         EXCISABLE                      LS094020
    64673  0 13104 0 11714               -)EXCI,,-*-1         EXCISE                         LS094030
    64674  0 13103 0 11704           EXPR,,-*-1                                               LS094040
    64675  0 13102 0 11677           F32,,-*-1                                                LS094050
    64676  0 13101 0 11667           FEXPR,,-*-1                                              LS094060
    64677  0 13100 0 11662           FIX,,-*-1                                                LS094070
    64700  0 13077 0 11655               -III1,,-*-1          FIX P                          LS094080
    64701  0 13076 0 11645           FLOAT,,-*-1                                              LS094090
    64702  0 13075 0 11640               -III2,,-*-1          FLOAT P                        LS094100
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    64703  0 13074 0 11630          FSUBR,,-*-1                                  LS094110
    64704  0 13073 0 11623          FUNARG,,-*-1                                 LS094120

BINARY CARD NO. LISP0377
    64705  0 13072 0 11616          FUNCT,,-*-1                                  LS094130
    64706  0 13071 0 11604          SYMGEN,,-*-1                                 LS094140
    64707  0 13070 0 11564          GO,,-*-1                                     LS094150
    6471C  0 13067 0 11554              -II3,,-*-1      GREATER THAN P           LS094160
    64711  0 13066 0 11542          F16,,-*-1                                    LS094170
    64712  0 13065 0 11532          LABEL,,-*-1                                  LS094180
    64713  0 13064 0 11522          LAMBDA,,-*-1                                 LS094190
    64714  0 13063 0 11515              LAP,,-*-1                                LS094200
    64715  0 13062 0 11473              -II4,,-*-1      LESS THAN P              LS094210
    64716  0 13061 0 11463          LIST,,-*-1                                   LS094220
    64717  0 13060 0 11443              LOADA,,-*-1     LOADER OBJECT            LS094230
    6472C  0 13057 0 11373          PMAPCA,,-*-1                                 LS094240
    64721  0 13056 0 11363          -)069B,,-*-1                                 LS094250
    64722  0 13055 0 11353          -)069A,,-*-1                                 LS094260
    64723  0 13054 0 11341              -II7,,-*-1      MAXIMUM                  LS094270
    64724  0 13053 0 11331              -II8,,-*-1      MINIMUN                  LS094280
    64725  0 13052 0 11321          MINUS,,-*-1                                  LS094290
    64726  0 13051 0 11311              -II16,,-*-1     MINUS P                  LS094300
    64727  0 13050 0 11271          F3,,-*-1                                     LS094310
    64730  0 13047 0 00000          NIL,,-*-1                                    LS094320
    64731  0 13046 0 11261          NOT,,-*-1                                    LS094330
    64732  0 13045 0 11251          NULL,,-*-1                                   LS094340

BINARY CARD NO. LISP0378
    64733  0 13044 0 11241              -II13,,-*-1     NUMBER P                 LS094350
    64734  0 13043 0 11217              OBLBA,,-*-1     OBLIST OBJECT            LS094360
    64735  0 13042 0 11202              -II9,,-*-1      ONE P                    LS094370
    64736  0 13041 0 11162          OR,,-*-1                                     LS094380
    64737  0 13040 0 11142          F2,,-*-1                                     LS094390
    64740  0 13037 0 11132          PAUSE,,-*-1                                  LS094400
    64741  0 13036 0 11112          PLB,,-*-1                                    LS094410
    64742  0 13035 0 11102          PLUS,,-*-1                                   LS094420
    64743  0 13034 0 11062          PNAME,,-*-1                                  LS094430
    64744  0 13033 0 11045          F4,,-*-1                                     LS094440
    64745  0 13032 0 11025          PROG,,-*-1                                   LS094450
    64746  0 13031 0 11005          PROPO,,-*-1                                  LS094460
    64747  0 13030 0 11015              -IJ05,,-*-1     PUNCH                    LS094470
    6475C  0 13027 0 10775          QUOTE,,-*-1                                  LS094480
    64751  0 13026 0 10765              -IJ03,,-*-1     QUOTIENT                 LS094490
    64752  0 13025 0 10753          F13,,-*-1                                    LS094500
    64753  0 13024 0 10743              -II18,,-*-1     RECIP                    LS094510
    64754  0 13023 0 10733          RCLAM,,-*-1                                  LS094520
    64755  0 13022 0 10655          PRPLCA,,-*-1                                 LS094530
    64756  0 13021 0 10645          PRPLCD,,-*-1                                 LS094540
    64757  0 13020 0 10721              -IJ04,,-*-1     REMAINDER                LS094550
    64760  0 13017 0 10625              -)128,,-*-1     RESTOR                   LS094560

BINARY CARD NO. LISP0379
    64761  0 13016 0 10665              RETATM,,-*-1    RETURN                   LS094570
    64762  0 13015 0 10557          SASCO,,-*-1                                  LS094580
    64763  0 13014 0 10675              -)129,,-*-1     SAVE                     LS094590
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    64764  0 13013 0 10547          SRCH,,-*-1                                    LS094600
    64765  0 13012 0 10537          SET,,-*-1                                     LS094610
    64766  0 13011 0 10527          SETQ,,-*-1                                    LS094620
    64767  0 13010 0 10507          F34,,-*-1                                     LS094630
    64770  0 13007 0 10477          STOP,,-*-1                                    LS094640
    64771  0 13006 0 10440          SUBR,,-*-1                                    LS094650
    64772  0 13005 0 10326              TRACE,,-*-1                               LS094660
    64773  0 13004 0 10321              -)130,,-*-1        TYPEIN                 LS094670
    64774  0 13003 0 10606              SMOVE,,-*-1                               LS094680
    64775  0 13002 0 10577              SRETUR,,-*-1                              LS094690
    64776  0 13001 0 10566              SLIST,,-*-1                               LS094700
    64777  0 13000 0 10615              SPECAL,,-*-1                              LS094710
    65000  0 12777 0 10406            -)136,,-*-1      SYMTAB                     LS094720
    65001  0 12776 0 10450              -1115,,-*-1          SUBTRACT 1            LS094730
    65002  0 12775 0 10433          F17,,-*-1                                     LS094740
    65003  0 12774 0 10423          F30,,-*-1                                     LS094750
    65004  0 12773 0 00001              1,,-*-1              *T* BINARY TRUE ATOM  LS094760
    65005  0 12772 0 10356          F27,,-*-1                                     LS094770
    65006  0 12771 0 10346              -)134,,-*-1            TIME1             LS094780

BINARY CARD NO. LISP0380
    65007  0 12770 0 10413              SYM,,-*-1                                 LS094790
    65010  0 12767 0 10376              -)TAB,,-*-1                               LS094800
    65011  0 12766 0 10336          TIMES,,-*-1                                   LS094810
    65012  0 12765 0 10255              -)133,,-*-1                               LS094820
    65013  0 12764 0 10311              -)135,,-*-1                               LS094830
    65014  0 12763 0 10277          F36,,-*-1                                     LS094840
    65015  0 12762 0 10245              -1110,,-*-1          ZERO P               LS094850
    65016  0 12761 0 11574          CGET,,-*-1                                    LS094860
    65017  0 12760 0 10707              REMPP,,-*-1                               LS094870
    65020  0 12757 0 07426          H00,,-*-1                                     LS094880
    65021  0 12756 0 07427          H01,,-*-1                                     LS094890
    65022  0 12755 0 07430          H02,,-*-1                                     LS094900
    65023  0 12754 0 07431          H03,,-*-1                                     LS094910
    65024  0 12753 0 07432          H04,,-*-1                                     LS094920
    65025  0 12752 0 07433          H05,,-*-1                                     LS094930
    65026  0 12751 0 07434          H06,,-*-1                                     LS094940
    65027  0 12750 0 07435          H07,,-*-1                                     LS094950
    65030  0 12747 0 07436          H10,,-*-1                                     LS094960
    65031  0 12746 0 07437          H11,,-*-1                                     LS094970
    65032  0 12745 0 07440          H12,,-*-1                                     LS094980
    65033  0 12744 0 07441          H13,,-*-1                                     LS094990
    65034  0 12743 0 07443          H15,,-*-1                                     LS095000

BINARY CARD NO. LISP0381
    65035  0 12742 0 07442          H14,,-*-1                                     LS095010
    65036  0 12741 0 07444          H16,,-*-1                                     LS095020
    65037  0 12740 0 07445          H17,,-*-1                                     LS095030
    65040  0 12737 0 07446          H20,,-*-1                                     LS095040
    65041  0 12736 0 07447          H21,,-*-1                                     LS095050
    65042  0 12735 0 07450          H22,,-*-1                                     LS095060
    65043  0 12734 0 07451          H23,,-*-1                                     LS095070
    65044  0 12733 0 07452          H24,,-*-1                                     LS095080
    65045  0 12732 0 07453          H25,,-*-1                                     LS095090
    65046  0 12731 0 07454          H26,,-*-1                                     LS095100
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65047  0 12730 0 07455        H27,,-*-1                    LS095110
65050  0 12727 0 07456        H30,,-*-1                    LS095120
65051  0 12726 0 07457        H31,,-*-1                    LS095130
65052  0 12725 0 07460        H32,,-*-1                    LS095140
65053  0 12724 0 07461        H33,,-*-1                    LS095150
65054  0 12723 0 07462        H34,,-*-1                    LS095160
65055  0 12722 0 07463        H35,,-*-1                    LS095170
65056  0 12721 0 07464        H36,,-*-1                    LS095180
65057  0 12720 0 07465        H37,,-*-1                    LS095190
65060  0 12717 0 07466        H40,,-*-1                    LS095200
65061  0 12716 0 07467        H41,,-*-1                    LS095210
65062  0 12715 0 07470        H42,,-*-1                    LS095220

BINARY CARD NO. LISP0382
65063  0 12714 0 07471        H43,,-*-1                    LS095230
65064  0 12713 0 07472        H44,,-*-1                    LS095240
65065  0 12712 0 07473        H45,,-*-1                    LS095250
65066  0 12711 0 07474        H46,,-*-1                    LS095260
65067  0 12710 0 07475        H47,,-*-1                    LS095270
65070  0 12707 0 07476        H50,,-*-1                    LS095280
65071  0 12706 0 07477        H51,,-*-1                    LS095290
65072  0 12705 0 07500        H52,,-*-1                    LS095300
65073  0 12704 0 07501        H53,,-*-1                    LS095310
65074  0 12703 0 07502        H54,,-*-1                    LS095320
65075  0 12702 0 07503        H55,,-*-1                    LS095330
65076  0 12701 0 07504        H56,,-*-1                    LS095340
65077  0 12700 0 07505        H57,,-*-1                    LS095350
65100  0 12677 0 07506        H60,,-*-1                    LS095360
65101  0 12676 0 07507        H61,,-*-1                    LS095370
65102  0 12675 0 07510        H62,,-*-1                    LS095380
65103  0 12674 0 07511        H63,,-*-1                    LS095390
65104  0 12673 0 07512        H64,,-*-1                    LS095400
65105  0 12672 0 07513        H65,,-*-1                    LS095410
65106  0 12671 0 07514        H66,,-*-1                    LS095420
65107  0 12670 0 07515        H67,,-*-1                    LS095430
65110  0 12667 0 07516        H70,,-*-1                    LS095440

BINARY CARD NO. LISP0383
65111  0 12666 0 07517        H71,,-*-1                    LS095450
65112  0 12665 0 07520        H72,,-*-1                    LS095460
65113  0 12664 0 07521        H73,,-*-1                    LS095470
65114  0 12663 0 07522        H74,,-*-1                    LS095480
65115  0 12662 0 07523        H75,,-*-1                    LS095490
65116  0 12661 0 07524        H76,,-*-1                    LS095500
65117  0 12660 0 07525        H77,,-*-1                    LS095510
65120  0 12657 0 12167        PJ1,,-*-1                    LS095520
65121  0 12656 0 12572        PJ2,,-*-1                    LS095530
65122  0 12655 0 11770        PJ4,,-*-1                    LS095540
65123  0 12654 0 12020        PJ5,,-*-1                    LS095550
65124  0 12653 0 12247        PJ6,,-*-1                    LS095560
65125  0 12652 0 11403        PJ7,,-*-1                    LS095570
65126  0 12651 0 10635        PJ8,,-*-1                    LS095580
65127  0 12650 0 11122        PJ9,,-*-1                    LS095590
65130  0 12647 0 12112        PJ10,,-*-1                   LS095600
65131  0 12646 0 11072        PJ11,,-*-1                   LS095610
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    65132  0 12645 0 12464          PJ12,,-*-1                                    LS095620
    65133  0 12644 0 10517          PJ14,,-*-1                                    LS095630
    65134  0 12643 0 10472          PJ15,,-*-1                                    LS095640
    65135  0 12642 0 12154          PJ16,,-*-1                                    LS095650
    65136  0 12641 0 11453          PJ17,,-*-1                                    LS095660

BINARY CARD NO. LISP0384
    65137  0 12640 0 11172          PJ18,,-*-1                                    LS095670
    6514C  0 12637 0 12132          PJ19,,-*-1                                    LS095680
    65141  0 12636 0 10462          PJ21,,-*-1                                    LS095690
    65142  0 12635 0 10366          PJ23,,-*-1                                    LS095700
    65143  0 12634 0 11152              PJ24,,-*-1                                LS095710
    65144  0 12633 0 11227              PJ25,,-*-1                                LS095720
    65145  0 12632 0 11301              PJ26,,-*-1                                LS095730
    65146  0 12631 0 12261              PJ27,,-*-1                                LS095740
    65147  0 12630 0 11207              PJ28,,-*-1                                LS095750
    65150  0 12627 0 12072              PJ30,,-*-1                                LS095760
    65151  0 12626 0 10265              PJ31,,-*-1                                LS095770
    65152  0 12625 0 12274              PJ32,,-*-1                                LS095780
    65153  0 12624 0 11055              PJ33,,-*-1                                LS095790
    65154  0 12623 0 12060              PJ34,,-*-1                                LS095800
    65155  0 12622 0 12050              PJ35,,-*-1                                LS095810
    65156  0 12621 0 11423              PJ36,,-*-1                                LS095820
    65157  0 12620 0 11433              PJ37,,-*-1                                LS095830
    65160  0 12617 0 11413              PJ38,,-*-1                                LS095840
    65161  0 12616 0 11035              PJ39,,-*-1                                LS095850
    65162  0 12615 0 11760              ERSETG,,-*-1        ERRORSET              LS095860
    65163  0 12614 0 10235          -)140,,-*-1         TAPE                      LS095870
    65164  0 12613 0 10225          -)141,,-*-1         REWIND                    LS095880

BINARY CARD NO. LISP0385
    65165  0 12612 0 10215          -)142,,-*-1         MPRINT                    LS095890
    65166  0 12611 0 10205          -)143,,-*-1         MREAD                     LS095900
    65167  0 12610 0 10175          -)145,,-*-1         SPACE                     LS095910
    65170  0 12607 0 10165          -)144,,-*-1         EJECT                     LS095920
    65171  0 12606 0 10155            -)146,,-*-1           EVALQUOTE             LS095930
    65172  0 12605 0 10143            -)147,,-*-1            BACKSPACE            LS095940
    65173  0 12604 0 10131            -)149,,-*-1          BACKTRACE              LS095950
    65174  0 12603 0 10117            -)150,,-*-1             SYMNAM              LS095960
    65175  0 00000 0 11505              PVWI            LAST OBJECT   - LEFTSHIFT LS095970
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                              EJECT                                                    LS095980
                                  PROPERTY LISTS                                       LS095990
                                                                                       LS096000
    65176  0 12601 0 77777   II14          -1,,-*-1                                   LS096010
    65177  0 12600 0 10440                 $SUBR,,-*-1                                LS096020
    65200  0 12576 0 12577                 -*-1,,-*-2                                 LS096030
    65201 -3 00001 0 15402          TXL     ADD1,,1                                   LS096040
    65202  0 12575 0 11062                 $PNAME,,-*-1                               LS096050
    65203  0 00000 0 12574                 -*-1                                       LS096060
    65204  0 00000 0 12573                 -*-1                                       LS096070
    65205 +212424017777             OCT     212424017777        ADD1                  LS096080
                                  *                                                    LS096090
    65206  0 12571 0 77777   )PJ2          -1,,-*-1                   ADVANCE        LS096100
    65207  0 12570 0 10440                 SUBR,,-*-1                                 LS096110
    65210  0 12566 0 12567          PZE    -*-1,,-*-2                                 LS096120
    65211 -3 00000 0 13202          TXL    ADVANC,,0                                  LS096130
    65212  0 12565 0 11062                 PNAME,,-*-1                                LS096140

BINARY CARD NO. LISP0386
    65213  0 00000 0 12564                 -*-1                                       LS096150
    65214  0 12562 0 12563                 -*-1,,-*-2                                 LS096160
    65215  212465214523             BCD    1ADVANC                                   LS096170
    65216  0 00000 0 12561                 -*-1                                       LS096180
    65217 +257777777777             OCT    257777777777                              LS096190
                                  *                                                    LS096200
    65220  0 12557 0 77777   )ALST          -1,,-*-1                                   LS096210
    65221  0 12556 0 11062                 PNAME,,-*-1                                LS096220
    65222  0 12553 0 12555                 -*-1,,-*-3                                 LS096230
    65223  0 00000 0 12554                 -*-1                                       LS096240
    65224 -132143316263             OCT     532143316263        $ALIST                LS096250
    65225  0 12552 0 10413                  SYM,,-*-1                                 LS096260
    65226  0 00000 0 57716                  -C$ALST                                   LS096270
                                                                                       LS096280
    65227  0 12550 0 77777   )002          -1,,-*-1                                   LS096290
    65230  0 12547 0 11630                 FSUBR,,-*-1                                LS096300
    65231  0 12545 0 12546                 -*-1,,-*-2                                 LS096310
    65232 -3 00000 0 16435          TXL    $EVAND,,0                                  LS096320
    65233  0 12544 0 11062                 $PNAME,,-*-1                               LS096330
    65234  0 00000 0 12543                 -*-1                                       LS096340
    65235  0 00000 0 12542                 -*-1                                       LS096350
    65236 +214524777777             OCT    214524777777        AND                   LS096360
                                                                                       LS096370
    65237  0 12540 0 77777   )003          -1,,-*-1                                   LS096380
    65240  0 12537 0 10440                 SUBR,,-*-1                                 LS096390

BINARY CARD NO. LISP0387
    65241  0 12535 0 12536                 -*-1,,-*-2                                 LS096400
    65242 -3 00002 0 10361          TXL    APPEND,,2                                  LS096410
    65243  0 12534 0 11062                 PNAME,,-*-1                                LS096420
    65244  0 00000 0 12533                 -*-1                                       LS096430
    65245  0 00000 0 12532                 -*-1                                       LS096440
    65246  214747254524             BCD    1APPEND                                   LS096450
                                                                                       LS096460
    65247  0 12530 0 77777   )004          -1,,-*-1                                   LS096470
    65250  0 12527 0 10440                 SUBR,,-*-1                                 LS096480
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65251  0 12525 0 12526          -*-1,,-*-2                                  LS096490
65252 -3 00003 0 15721       TXL APPLY,,3                                    LS096500
65253  0 12524 0 11062           PNAME,,-*-1                                LS096510
65254  0 00000 0 12523           -*-1                                       LS096520
65255  0 00000 0 12522           -*-1                                       LS096530
65256 +214747437077          OCT 214747437077          APPLY                LS096540
                                                                            LS096550
65257  0 12520 0 77777  )005       -1,,-*-1                                 LS096560
6526C  0 12517 0 11062            PNAME,,-*-1                              LS096570
65261  0 00000 0 12516            -*-1                                     LS096580
65262  0 00000 0 12515            -*-1                                     LS096590
65263  214765214377          VFD  H30/APVAL,06/77   APVAL                  LS096600
                     *                                                      LS096610
65264  0 12513 0 77777   LI1       -1,,-*-1                                 LS096620
65265  0 12512 0 10440           SUBR,,-*-1                                 LS096630
65266  0 1251C 0 12511           -*-1,,-*-2                                 LS096640

BINARY CARD NC. LISP0388
65267 -3 00001 0 14103       TXL  ARYMAK,,1                                 LS096650
6527C  0 12507 0 11062            $PNAME,,-*-1                             LS096660
65271  C 00000 0 12506            -*-1                                     LS096670
65272  0 00000 0 12505            -*-1                                     LS096680
65273 +215151217077          OCT  215151217077         ARRAY                LS096690
                     *                                                      LS096700
65274  0 12503 0 77777   )007    -1,,-*-1                                   LS096710
65275  C 12502 0 10440           SUBR,,-*-1                                 LS096720
65276  0 12500 0 12501           -*-1,,-*-2                                 LS096730
65277 -3 00001 0 16276       TXL ATOMP,,1                                   LS096740
65300  0 12477 0 11062           PNAME,,-*-1                                LS096750
65301  0 00000 0 12476           -*-1                                       LS096760
65302  0 00000 0 12475           -*-1                                       LS096770
65303 +216346447777          OCT 216346447777          ATOM                 LS096780
                                                                            LS096790
65304  0 12473 0 77777   )008      -1,,-*-1                                 LS096800
65305  0 12472 0 10440           SUBR,,-*-1                                 LS096810
65306  0 12470 0 12471           -*-1,,-*-2                                 LS096820
65307 -3 00002 0 10754       TXL ATTRIB,,2                                  LS096830
65310  0 12467 0 11062           PNAME,,-*-1                                LS096840
65311  0 00000 0 12466           -*-1                                       LS096850
65312  0 00000 0 12465           -*-1                                       LS096860
65313  216363513122          BCD 1ATTRIB                                    LS096870
                     *                                                      LS096880
65314  0 12463 0 77777  )PJ12  PZE -1,,-*-1            BLANK                LS096890

BINARY CARD NC. LISP0389
65315  0 12462 0 11062       PZE PNAME,,-*-1                                LS096900
65316  0 12457 0 12461           -*-1,,-*-3                                 LS096910
65317  0 00000 0 12460           -*-1                                       LS096920
65320 +224321454277          OCT 224321454277          BCD BLANK            LS096930
65321  0 12456 0 12521           APVAL1,,-*-1                               LS096940
65322  0 00000 0 12455           -*-1                                       LS096950
65323  0 00000 0 07506           H60                                        LS096960
                     *                                                      LS096970
65324  0 12453 0 77777   )011      -1,,-*-1                                 LS096980
65325  0 12452 0 10440           SUBR,,-*-1                                 LS096990
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    65326  0 12450 0 12451                    -*-1,,-*-2                    LS097000
    65327 -3 00001 0 16260          TXL        CARP,,1                      LS097010
    65330  0 12447 0 11062                     PNAME,,-*-1                  LS097020
    65331  0 00000 0 12446                     -*-1                         LS097030
    65332  0 00000 0 12445                     -*-1                         LS097040
    65333 +232151777777             OCT        232151777777  CAR            LS097050
                          *                                                 LS097060
    65334  0 12443 0 77777   )012              -1,,-*-1                     LS097070
    65335  0 12442 0 10440                     SUBR,,-*-1                   LS097080
    65336  0 12440 0 12441                     -*-1,,-*-2                   LS097090
    65337 -3 00001 0 16270          TXL        CDRP,,1                      LS097100
    65340  0 12437 0 11062                     PNAME,,-*-1                  LS097110
    65341  0 00000 0 12436                     -*-1                         LS097120
    65342  0 00000 0 12435                     -*-1                         LS097130

BINARY CARD NO. LISP0390
    65343 +232451777777             OCT        232451777777  CDR            LS097140
                                                                            LS097150
    65344  0 12433 0 77777   )201          -1,,-*-1                        LS097160
    65345  0 12432 0 10440                     $SUBR,,-*-1                  LS097170
    65346  0 12430 0 12431                     -*-1,,-*-2                   LS097180
    65347 -3 00001 0 12717          TXL        CAARXX,,1                    LS097190
    65350  0 12427 0 11062                  PNAME,,-*-1                     LS097200
    65351  0 00000 0 12426                     -*-1                         LS097210
    65352  0 00000 0 12425                     -*-1                         LS097220
    65353 +232121517777             OCT 232121517777                        LS097230
                                                                            LS097240
    65354  0 12423 0 77777   )202          -1,,-*-1                        LS097250
    65355  0 12422 0 10440                     $SUBR,,-*-1                  LS097260
    65356  0 12420 0 12421                     -*-1,,-*-2                   LS097270
    65357 -3 00001 0 12756          TXL        CDARXX,,1                    LS097280
    65360  0 12417 0 11062                  PNAME,,-*-1                     LS097290
    65361  0 00000 0 12416                     -*-1                         LS097300
    65362  0 00000 0 12415                     -*-1                         LS097310
    65363 +232421517777             OCT 232421517777                        LS097320
                                                                            LS097330
    65364  0 12413 0 77777   )203          -1,,-*-1                        LS097340
    65365  0 12412 0 10440                     $SUBR,,-*-1                  LS097350
    65366  0 12410 0 12411                     -*-1,,-*-2                   LS097360
    65367 -3 00001 0 12721          TXL        CADRXX,,1                    LS097370
    65370  0 12407 0 11062                  PNAME,,-*-1                     LS097380

BINARY CARD NO. LISP0391
    65371  0 00000 0 12406                  -*-1                            LS097390
    65372  0 00000 0 12405                  -*-1                            LS097400
    65373 +232124517777             OCT 232124517777                        LS097410
                                                                            LS097420
    65374  0 12403 0 77777   )204          -1,,-*-1                        LS097430
    65375  0 12402 0 10440                     $SUBR,,-*-1                  LS097440
    65376  0 12400 0 12401                     -*-1,,-*-2                   LS097450
    65377 -3 00001 0 12760          TXL        CDDRXX,,1                    LS097460
    65400  0 12377 0 11062                  PNAME,,-*-1                     LS097470
    65401  0 00000 0 12376                     -*-1                         LS097480
    65402  0 00000 0 12375                     -*-1                         LS097490
    65403 +232424517777             OCT 232424517777                        LS097500
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65404   0 12373 0 77777   )205      -1,,-*-1                          LS097510
65405   0 12372 0 10440                 $SUBR,,-*-1                   LS097520
65406   0 12370 0 12371                 -*-1,,-*-2                    LS097530
65407  -3 00001 0 12663          TXL    CAAARX,,1                     LS097540
65410   0 12367 0 11062               PNAME,,-*-1                      LS097550
65411   0 00000 0 12366               -*-1                             LS097560
65412   0 00000 0 12365               -*-1                             LS097570
65413  +232121215177               OCT 232121215177                    LS097580
                                                                       LS097590
65414   0 12363 0 77777   )206      -1,,-*-1                          LS097600
65415   0 12362 0 10440                 $SUBR,,-*-1                   LS097610
65416   0 12360 0 12361                 -*-1,,-*-2                    LS097620
                                                                       LS097630
BINARY CARD NO. LISP0392
65417  -3 00001 0 12676          TXL    CAADRX,,1                     LS097640
65420   0 12357 0 11062               PNAME,,-*-1                      LS097650
65421   0 00000 0 12356               -*-1                             LS097660
65422   0 00000 0 12355               -*-1                             LS097670
65423  +232121245177               OCT 232121245177                    LS097680
                                                                       LS097690
65424   0 12353 0 77777   )207      -1,,-*-1                          LS097700
65425   0 12352 0 10440                 $SUBR,,-*-1                   LS097710
65426   0 12350 0 12351                 -*-1,,-*-2                    LS097720
65427  -3 00001 0 12703          TXL    CADARX,,1                     LS097730
65430   0 12347 0 11062               PNAME,,-*-1                      LS097740
65431   0 00000 0 12346               -*-1                             LS097750
65432   0 00000 0 12345               -*-1                             LS097760
65433  +232124215177               OCT 232124215177                    LS097770
                                                                       LS097780
65434   0 12343 0 77777   )208      -1,,-*-1                          LS097790
65435   0 12342 0 10440                 $SUBR,,-*-1                   LS097800
65436   0 12340 0 12341                 -*-1,,-*-2                    LS097810
65437  -3 00001 0 12712          TXL    CADDRX,,1                     LS097820
65440   0 12337 0 11062               PNAME,,-*-1                      LS097830
65441   0 00000 0 12336               -*-1                             LS097840
65442   0 00000 0 12335               -*-1                             LS097850
65443  +232124245177               OCT 232124245177                    LS097860
                                                                       LS097870
65444   0 12333 0 77777   )209      -1,,-*-1                          LS097880

BINARY CARD NO. LISP0393
65445   0 12332 0 10440                 $SUBR,,-*-1                   LS097890
65446   0 12330 0 12331                 -*-1,,-*-2                    LS097900
65447  -3 00001 0 12723          TXL    CDAARX,,1                     LS097910
65450   0 12327 0 11062               PNAME,,-*-1                      LS097920
65451   0 00000 0 12326               -*-1                             LS097930
65452   0 00000 0 12325               -*-1                             LS097940
65453  +232421215177               OCT 232421215177                    LS097950
                                                                       LS097960
65454   0 12323 0 77777   )210      -1,,-*-1                          LS097970
65455   0 12322 0 10440                 $SUBR,,-*-1                   LS097980
65456   0 12320 0 12321                 -*-1,,-*-2                    LS097990
65457  -3 00001 0 12735          TXL    CDADRX,,1                     LS098000
65460   0 12317 0 11062               PNAME,,-*-1                      LS098010
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65461  0 00000 0 12316              -*-1                                    LS098020
65462  0 00000 0 12315              -*-1                                    LS098030
65463 +232421245177           OCT 232421245177                             LS098040
                                                                           LS098050
65464  0 12313 0 77777  )211       -1,,-*-1                                LS098060
65465  0 12312 0 10440                 $SUBR,,-*-1                        LS098070
65466  0 12310 0 12311                 -*-1,,-*-2                         LS098080
65467 -3 00001 0 12742           TXL    CDDARX,,1                          LS098090
65470  0 12307 0 11062              PNAME,,-*-1                             LS098100
65471  0 00000 0 12306              -*-1                                    LS098110
65472  0 00000 0 12305              -*-1                                    LS098120

BINARY CARD NO. LISP0394
65473 +232424215177           OCT 232424215177                             LS098130
                                                                           LS098140
65474  0 12303 0 77777  )212       -1,,-*-1                                LS098150
65475  0 12302 0 10440                 $SUBR,,-*-1                        LS098160
65476  0 12300 0 12301                 -*-1,,-*-2                         LS098170
65477 -3 00001 0 12751           TXL    CDDDRX,,1                          LS098180
65500  0 12277 0 11062              PNAME,,-*-1                             LS098190
65501  0 00000 0 12276              -*-1                                    LS098200
65502  0 00000 0 12275              -*-1                                    LS098210
65503 +232424245177           OCT 232424245177                             LS098220
                                                                           LS098230
65504  0 12273 0 77777  )PJ32       -1,,-*-1      CHARCOUNT                 LS098240
65505  0 12272 0 11062              PNAME,,-*-1                             LS098250
65506  0 12265 0 12271              -*-1,,-*-5                              LS098260
65507  0 12270 0 12267              -*-2,,-*-1                              LS098270
65510  0 00000 0 12266              -*-2                                    LS098280
65511  233021512346           BCI    1,CHARCO      BCI CHARCOUNT             LS098290
65512 -244563777777           OCT    644563777777                          LS098300
65513  0 12264 0 12521              APVAL1,,-*-1                            LS098310
65514  0 00000 0 12263              -*-1                                    LS098320
65515  0 00000 0 12262              -*-1                                    LS098330
65516 -0 64155 1 77777           MZE    -1,1,-CHACT                        LS098340
                                                                           LS098350
65517  0 12260 0 77777  )PJ27       -1,,-*-1      CLEARBUFF                 LS098360
65520  0 12257 0 10440              SUBR,,-*-1                              LS098370

BINARY CARD NO. LISP0395
65521  0 12255 0 12256              -*-1,,-*-2                              LS098380
65522 -3 00000 0 13172           TXL    CLEAR,,                            LS098390
65523  0 12254 0 11062              PNAME,,-*-1                             LS098400
65524  0 00000 0 12253              -*-1                                    LS098410
65525  0 12251 0 12252              -*-1,,-*-2                              LS098420
65526  234325215122            BCI    1,CLEARB                           LS098430
65527  0 00000 0 12250              -*-1                                    LS098440
65530 -242626777777           OCT    642626777777  BCD UFF                 LS098450
                                                                           LS098460
65531  0 12246 0 77777  )PJ6        -1,,-*-1      COMMA (LITERAL)           LS098470
65532  0 12245 0 11062              PNAME,,-*-1                             LS098480
65533  0 12242 0 12244              -*-1,,-*-3                              LS098490
65534  0 00000 0 12243              -*-1                                    LS098500
65535 +234644442177           OCT    234644442177  BCD COMMA               LS098510
65536  0 12241 0 12521              APVAL1,,-*-1                            LS098520
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65537  0 00000 0 12240                    -*-1                                  LS098530
6554C  0 00000 0 07521          PZE       H73                                   LS098540
                                                                                 LS098550
65541  0 12236 0 77777   )016             -1,,-*-1                              LS098560
65542  0 12235 0 11630                    FSUBR,,-*-1                           LS098570
65543  0 12233 0 12234                    -*-1,,-*-2                            LS098580
65544 -3 00000 0 16222          TXL       $EVCON,,0                             LS098590
65545  0 12232 0 11062                    PNAME,,-*-1                           LS098600
65546  0 00000 0 12231                    -*-1                                  LS098610

BINARY CARD NO. LISP0396
65547  0 00000 0 12230                    -*-1                                  LS098620
65550 +234645247777             OCT       234645247777  COND                    LS098630
                                                                                 LS098640
65551  0 12226 0 77777   )017             -1,,-*-1                              LS098650
65552  0 12225 0 10440                    SUBR,,-*-1                            LS098660
65553  0 12223 0 12224                    -*-1,,-*-2                            LS098670
65554 -3 00002 0 04471          TXL       CONS,,2                               LS098680
65555  0 12222 0 11062                    PNAME,,-*-1                           LS098690
65556  0 00000 0 12221                    -*-1                                  LS098700
65557  0 00000 0 12220                    -*-1                                  LS098710
65560 +234645627777             OCT       234645627777  CONS                    LS098720
                                                                                 LS098730
65561  0 12216 0 77777   )019             -1,,-*-1                              LS098740
65562  0 12215 0 10440                    SUBR,,-*-1                            LS098750
65563  0 12213 0 12214                    -*-1,,-*-2                            LS098760
65564 -3 00001 0 10166          TXL       CP1,,1                                LS098770
65565  0 12212 0 11062                    PNAME,,-*-1                           LS098780
65566  0 00000 0 12211                    -*-1                                  LS098790
65567  0 00000 0 12210                    -*-1                                  LS098800
65570 +234701777777             OCT       234701777777  CP1                     LS098810
                                                                                 LS098820
65571  0 12206 0 77777   )020             -1,,-*-1                              LS098830
65572  0 12205 0 10440                    SUBR,,-*-1                            LS098840
65573  0 12203 0 12204                    -*-1,,-*-2                            LS098850
65574 -3 00001 0 05111          TXL       $COPY,,1                              LS098860

BINARY CARD NO. LISP0397
65575  0 12202 0 11062                    PNAME,,-*-1                           LS098870
65576  0 00000 0 12201                    -*-1                                  LS098880
65577  0 00000 0 12200                    -*-1                                  LS098890
65600 +234647707777             OCT       234647707777          COPY            LS098900
                                                                                 LS098910
65601  0 12176 0 77777   )021             -1,,-*-1                              LS098920
65602  0 12175 0 10440                    SUBR,,-*-1                            LS098930
65603  0 12173 0 12174                    -*-1,,-*-2                            LS098940
65604 -3 00000 0 04621          TXL       COUNT,,0                              LS098950
65605  0 12172 0 11062                    PNAME,,-*-1                           LS098960
65606  0 00000 0 12171                    -*-1                                  LS098970
65607  0 00000 0 12170                    -*-1                                  LS098980
65610 +234664456377             OCT       234664456377          COUNT           LS098990
                                                                                 LS099000
65611  0 12166 0 77777   )PJ1             -1,,-*-1              CURCHAR         LS099010
65612  0 12165 0 12521                    APVAL1,,-*-1                          LS099020
65613  0 12164 0 64157                    -CURC1,,-*-1                          LS099030
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    65614  0 12163 0 11062            PNAME,,-*-1                                LS099040
    65615  0 12156 0 12162            -*-1,,-*-5                                 LS099050
    65616  0 12160 0 12161            -*-1,,-*-2                                 LS099060
    65617  236451233021          BCD 1CURCHA                                    LS099070
    65620  0 00000 0 12157            -*-1                                       LS099080
    65621 -117777777777           OCT 517777777777                               LS099090
    65622  0 12155 0 10615                SPECAL,,-*-1                           LS099100

BINARY CARD NO. LISP0398
    65623  0 00000 0 64156                -CURC                                  LS099110
                                                                                  LS099120
    65624  0 12153 0 77777  )PJ16        -1,,-*-1              DASH             LS099130
    65625  0 12152 0 12521            APVAL1,,-*-1                               LS099140
    65626  0 12150 0 12151       PZE  -*-1,,-*-2                                 LS099150
    65627  0 00000 0 07466            H40                                        LS099160
    65630  0 12147 0 11062            PNAME,,-*-1                                LS099170
    65631  0 00000 0 12146            -*-1                                       LS099180
    65632  0 00000 0 12145            -*-1                                       LS099190
    65633 +242162307777           OCT 242162307777          BCD DASH             LS099200
                                                                                  LS099210
    65634  0 12143 0 77777   IJ01        -1,,-*-1                               LS099220
    65635  0 12142 0 10440            $SUBR,,-*-1                                LS099230
    65636  0 12140 0 12141            -*-1,,-*-2                                 LS099240
    65637 -3 00002 0 14504       TXL   DIFFER,,2                                 LS099250
    65640  0 12137 0 11062            $PNAME,,-*-1                               LS099260
    65641  0 00000 0 12136            -*-1                                       LS099270
    65642  0 12135 0 12134            -*-2,,-*-1                                 LS099280
    65643  0 00000 0 12133            -*-2                                       LS099290
    65644  243126262551          BCI   1,DIFFER                                  LS099300
    65645 +254523257777           OCT   254523257777        DIFFERENCE           LS099310
                                *                                                 LS099320
    65646  0 12131 0 77777  )PJ19      -1,,-*-1              DIGIT              LS099330
    65647  0 12130 0 10440            SUBR,,-*-1                                 LS099340
    65650  0 12126 0 12127       PZE  -*-1,,-*-2                                 LS099350

BINARY CARD NO. LISP0399
    65651 -3 00001 0 13325       TXL DIGIT,,1                                    LS099360
    65652  0 12125 0 11062            PNAME,,-*-1                                LS099370
    65653  0 00000 0 12124            -*-1                                       LS099380
    65654  0 00000 0 12123            -*-1                                       LS099390
    65655 +243127316377           OCT 243127316377                               LS099400
                                                                                  LS099410
    65656  0 12121 0 77777   IJ02        -1,,-*-1                               LS099420
    65657  0 12120 0 10440            $SUBR,,-*-1                                LS099430
    65660  0 12116 0 12117            -*-1,,-*-2                                 LS099440
    65661 -3 00002 0 14412       TXL   DIVIDE,,2                                 LS099450
    65662  0 12115 0 11062            $PNAME,,-*-1                               LS099460
    65663  0 00000 0 12114            -*-1                                       LS099470
    65664  0 00000 0 12113            -*-1                                       LS099480
    65665  243165312425          BCI   1,DIVIDE                                  LS099490
                                *                                                 LS099500
    65666  0 12111 0 77777  )PJ10      -1,,-*-1              DOLLAR             LS099510
    65667  0 12110 0 11062            PNAME,,-*-1                                LS099520
    65670  0 12105 0 12107            -*-1,,-*-3                                 LS099530
    65671  0 00000 0 12106            -*-1                                       LS099540
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    65672  244643432151            BCD 1DOLLAR                                  LS099550
    65673  0 12104 0 12521             APVAL1,,-*-1                            LS099560
    65674  0 00000 0 12103             -*-1                                    LS099570
    65675  0 00000 0 07501             H53                                     LS099580
                        *                                                       LS099590
    65676  0 12101 0 77777  DMPOB           -1,,-*-1                           LS099600

BINARY CARD NO. LISP0400
    65677  0 12100 0 10440                  SUBR,,-*-1                         LS099610
    65700  0 12076 0 12077                  -*-1,,-*-2                         LS099620
    65701 -3 00004 0 11646           TXL     DUMPXX,,4                         LS099630
    65702  0 12075 0 11062                  PNAME,,-*-1                        LS099640
    65703  0 00000 0 12074                  -*-1                               LS099650
    65704  0 00000 0 12073                  -*-1                               LS099660
    65705 +246444477777              OCT     246444477777       DUMP           LS099670
                        *                                                       LS099680
    65706  0 12071 0 77777   )PJ30           -1,,-*-1           ENDREAD        LS099690
    65707  0 12070 0 10440                  SUBR,,-*-1                         LS099700
    65710  0 12066 0 12067                  -*-1,,-*-2                         LS099710
    65711 -3 00000 0 13261           TXL     ENDRED,,                          LS099720
    65712  0 12065 0 11062                  PNAME,,-*-1                        LS099730
    65713  0 00000 0 12064                  -*-1                               LS099740
    65714  0 12063 0 12062                  -*-2,,-*-1                         LS099750
    65715  0 00000 0 12061                  -*-2                               LS099760
    65716  254524512521              BCI     1,ENDREA           ENDREA         LS099770
    65717 +247777777777              OCT     247777777777       D              LS099780
                        *                                                       LS099790
    65720  0 12057 0 77777   )PJ34           -1,,-*-1           EOF            LS099800
    65721  0 12056 0 12521                  APVAL1,,-*-1                       LS099810
    65722  0 12054 0 12055             -*-1,,-*-2                              LS099820
    65723  0 00000 0 07440                  H12                                LS099830
    65724  0 12053 0 11062                  PNAME,,-*-1                        LS099840

BINARY CARD NO. LISP0401
    65725  0 00000 0 12052                  -*-1                               LS099850
    65726  0 00000 0 12051             -*-1                                    LS099860
    65727 +254626777777              OCT 254626777777           BCD EOF        LS099870
                        *                                                       LS099880
    65730  0 12047 0 77777   )PJ35           -1,,-*-1                           LS099890
    65731  0 12046 0 12521                  APVAL1,,-*-1                       LS099900
    65732  0 12044 0 12045             -*-1,,-*-2                              LS099910
    65733  0 00000 0 07520                  H72                                LS099920
    65734  0 12043 0 11062                  PNAME,,-*-1                        LS099930
    65735  0 00000 0 12042                  -*-1                               LS099940
    65736  0 00000 0 12041             -*-1                                    LS099950
    65737 +254651777777              OCT 254651777777                           LS099960
                                                                               LS099970
                                                                               LS099980
    65740  0 12037 0 77777   )030           -1,,-*-1                           LS099990
    65741  0 12036 0 10440                  SUBR,,-*-1                         LS100000
    65742  0 12034 0 12035                  -*-1,,-*-2                         LS100010
    65743 -3 00002 0 16512           TXL EQP,,2                                LS100020
    65744  0 12033 0 11062                  PNAME,,-*-1                        LS100030
    65745  0 00000 0 12032                  -*-1                               LS100040
    65746  0 00000 0 12031                  -*-1                               LS100050
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    65747 +255077777777            OCT 255077777777          EQ                    LS100060
                                                                                   LS100070
                                                                                   LS100080
    65750  0 12027 0 77777   )EQP        -1,,-*-1                                 LS100090
    65751  0 12026 0 10440              SUBR,,-*-1                                LS100100
    65752  0 12024 0 12025              -*-1,,-*-2                                LS100110

BINARY CARD NO. LISP0402
    65753 -3 00002 0 05300         TXL     EQPROG,,2                             LS100120
    65754  0 12023 0 11062                 PNAME,,-*-1                           LS100130
    65755  0 00000 0 12022                 -*-1                                  LS100140
    65756  0 00000 0 12021                 -*-1                                  LS100150
    65757  255047777777            VFD     H18/EQP,018/777777 EQP                LS100160
    65760  0 12017 0 77777  )PJ5       -1,,-*-1                 EQSIGN           LS100170
    65761  0 12016 0 11062             PNAME,,-*-1                               LS100180
    65762  0 12013 0 12015             -*-1,,-*-3                                LS100190
    65763  0 00000 0 12014             -*-1                                      LS100200
    65764  255062312745            BCI 1,EQSIGN                                  LS100210
    65765  0 12012 0 12521             APVAL1,,-*-1                              LS100220
    65766  0 00000 0 12011             -*-1                                      LS100230
    65767  0 00000 0 07441             H13                                       LS100240
                                                                                   LS100250
    65770  0 12007 0 77777   )032       -1,,-*-1                                 LS100260
    65771  0 12006 0 10440             SUBR,,-*-1                                LS100270
    65772  0 12004 0 12005             -*-1,,-*-2                                LS100280
    65773 -3 00002 0 05225         TXL EQUAL,,2                                  LS100290
    65774  0 12003 0 11062             PNAME,,-*-1                               LS100300
    65775  0 00000 0 12002             -*-1                                      LS100310
    65776  0 00000 0 12001             -*-1                                      LS100320
    65777 +255064214377            OCT 255064214377          EQUAL                 LS100330
                                                                                   LS100340
    66000  0 11777 0 77777   )034       -1,,-*-1                                 LS100350

BINARY CARD NO. LISP0403
    66001  0 11776 0 10440             SUBR,,-*-1                                LS100360
    66002  0 11774 0 11775             -*-1,,-*-2                                LS100370
    66003 -3 00001 0 02645         TXL ERROR1,,1                                 LS100380
    66004  0 11773 0 11062             PNAME,,-*-1                               LS100390
    66005  0 00000 0 11772             -*-1                                      LS100400
    66006  0 00000 0 11771             -*-1                                      LS100410
    66007 +255151465177            OCT 255151465177          ERROR                 LS100420
                                                                                   LS100430
    66010  0 11767 0 77777  )PJ4       -1,,-*-1                 ERROR1           LS100440
    66011  0 11766 0 10440             SUBR,,-*-1                                LS100450
    66012  0 11764 0 11765         PZE -*-1,,-*-2                                LS100460
    66013 -3 00000 0 13334         TXL EROR1,,0                                  LS100470
    66014  0 11763 0 11062             PNAME,,-*-1                               LS100480
    66015  0 00000 0 11762             -*-1                                      LS100490
    66016  0 00000 0 11761             -*-1                                      LS100500
    66017  255151465101            BCD 1ERROR1                                   LS100510
                                                                                   LS100520
    66020  0 11757 0 77777   )PJ41        -1,,-*-1             ERRORSET         LS100530
    66021  0 11756 0 10440              SUBR,,-*-1                               LS100540
    66022  0 11754 0 11755              -*-1,,-*-2                               LS100550
    66023 -3 00003 0 12551         TXL     ERRSET,,3                             LS100560
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    66024  0 11753 0 11062                PNAME,,-*-1                                LS100570
    66025  0 00000 0 11752                -*-1                                       LS100580
    66026  0 11751 0 11750                -*-2,,-*-1                                 LS100590

BINARY CARD NO. LISP0404
    66027  0 00000 0 11747                -*-2                                       LS100600
    66030  255151465162          BCI      1,ERRORS                                   LS100610
    66031 +256377777777          OCT      256377777777                               LS100620
                                                                                     LS100630
    66032  0 11745 0 77777   )035          -1,,-*-1                                   LS100640
    66033  0 11744 0 10440                SUBR,,-*-1                                 LS100650
    66034  0 11742 0 11743                -*-1,,-*-2                                 LS100660
    66035 -3 00002 0 16521          TXL EVAL,,2                                      LS100670
    66036  0 11741 0 11062                PNAME,,-*-1                                LS100680
    66037  0 00000 0 11740                -*-1                                       LS100690
    66040  0 00000 0 11737                -*-1                                       LS100700
    66041 +256521437777          OCT 256521437777          EVAL                     LS100710
                                                                                     LS100720
    66042  0 11735 0 77777   )036          -1,,-*-1                                   LS100730
    66043  0 11734 0 10440                $SUBR,,-*-1                                LS100740
    66044  0 11732 0 11733                -*-1,,-*-2                                 LS100750
    66045 -3 00002 0 17050          TXL $EVLIS,,2                                    LS100760
    66046  0 11731 0 11062                $PNAME,,-*-1                               LS100770
    66047  0 00000 0 11730                -*-1                                       LS100780
    66050  0 00000 0 11727                -*-1                                       LS100790
    66051 +256543316277          OCT 256543316277          EVLIS                    LS100800
                                                                                     LS100810
    66052  0 11725 0 77777   )EXCA          -1,,-*-1                                   LS100820
    66053  0 11724 0 10440                SUBR,,-*-1                                 LS100830
    66054  0 11722 0 11723                -*-1,,-*-2                                 LS100840

BINARY CARD NO. LISP0405
    66055 -3 00001 0 03075          TXL      EXCABL,,1                               LS100850
    66056  0 11721 0 11062                   PNAME,,-*-1                            LS100860
    66057  0 00000 0 11720                   -*-1                                   LS100870
    66060  0 11716 0 11717                   -*-1,,-*-2                             LS100880
    66061  256723316221             BCI      1,EXCISA          EXCISABLE            LS100890
    66062  0 00000 0 11715                   -*-1                                   LS100900
    66063  224325777777             VFD      H18/BLE,018/777777                     LS100910
                                                                                     LS100920
    66064  0 11713 0 77777   )EXCI          -1,,-*-1                                   LS100930
    66065  0 11712 0 10440                SUBR,,-*-1                                 LS100940
    66066  0 11710 0 11711                -*-1,,-*-2                                 LS100950
    66067 -3 00001 0 02650          TXL      EXCISE,,1                               LS100960
    66070  0 11707 0 11062                   PNAME,,-*-1                            LS100970
    66071  0 00000 0 11706                   -*-1                                   LS100980
    66072  0 00000 0 11705                   -*-1                                   LS100990
    66073  256723316225             BCI      1,EXCISE          EXCISE               LS101000
                                                                                     LS101010
    66074  0 11703 0 77777   )037          -1,,-*-1                                   LS101020
    66075  0 11702 0 11062                PNAME,,-*-1                                LS101030
    66076  0 00000 0 11701                -*-1                                       LS101040
    66077  0 00000 0 11700                -*-1                                       LS101050
    66100 +256747517777          OCT 256747517777                                   LS101060
                                                                                     LS101070
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    66101  0 11676 0 77777   )038      -1,,-*-1                                  LS101080
    66102  0 11675 0 10440              SUBR,,-*-1                                LS101090

BINARY CARD NO. LISP0406
    66103  0 11673 0 11674              -*-1,,-*-2                                LS101100
    66104 -3 00002 0 14522         TXL EXPT,,2                                   LS101110
    66105  0 11672 0 11062              PNAME,,-*-1                               LS101120
    66106  0 00000 0 11671              -*-1                                      LS101130
    66107  0 00000 0 11670              -*-1                                      LS101140
    66110 +256747637777            OCT 256747637777          EXPT                LS101150
                                                                                 LS101160
    66111  0 11666 0 77777   )040      -1,,-*-1                                  LS101170
    66112  0 11665 0 11062              PNAME,,-*-1                               LS101180
    66113  0 00000 0 11664              -*-1                                      LS101190
    66114  0 00000 0 11663              -*-1                                      LS101200
    66115 +262567475177            OCT 262567475177          FEXPR               LS101210
                                                                                 LS101220
    66116  0 11661 0 77777   )041      -1,,-*-1                                  LS101230
    66117  0 11660 0 11062              PNAME,,-*-1                               LS101240
    66120  0 00000 0 11657              -*-1                                      LS101250
    66121  0 00000 0 11656              -*-1                                      LS101260
    66122 +263167777777            OCT 263167777777          FIX                 LS101270
                                                                                 LS101280
    66123  0 11654 0 77777   1111       -1,,-*-1                                  LS101290
    66124  0 11653 0 10440              $SUBR,,-*-1                               LS101300
    66125  0 11651 0 11652              -*-1,,-*-2                                LS101310
    66126 -3 00001 0 15467         TXL  FIXP,,1                                   LS101320
    66127  0 11650 0 11062              $PNAME,,-*-1                              LS101330
    66130  0 00000 0 11647              -*-1                                      LS101340

BINARY CARD NO. LISP0407
    66131  0 00000 0 11646              -*-1                                      LS101350
    66132 +263167477777            OCT  263167477777         FIXP                LS101360
                                  *                                              LS101370
    66133  0 11644 0 77777   )042      -1,,-*-1                                  LS101380
    66134  0 11643 0 11062              PNAME,,-*-1                               LS101390
    66135  0 00000 0 11642              -*-1                                      LS101400
    66136  0 00000 0 11641              -*-1                                      LS101410
    66137 +264346216377            OCT 264346216377          FLOAT               LS101420
                                                                                 LS101430
    66140  0 11637 0 77777   1112       -1,,-*-1                                  LS101440
    66141  0 11636 0 10440              $SUBR,,-*-1                               LS101450
    66142  0 11634 0 11635              -*-1,,-*-2                                LS101460
    66143 -3 00001 0 15454         TXL  FLOATP,,1                                 LS101470
    66144  0 11633 0 11062              $PNAME,,-*-1                              LS101480
    66145  0 00000 0 11632              -*-1                                      LS101490
    66146  0 00000 0 11631              -*-1                                      LS101500
    66147  264346216347            BCI  1,FLOATP                                 LS101510
                                  *                                              LS101520
    66150  0 11627 0 77777   )043      -1,,-*-1                                  LS101530
    66151  0 11626 0 11062              PNAME,,-*-1                               LS101540
    66152  0 00000 0 11625              -*-1                                      LS101550
    66153  0 00000 0 11624              -*-1                                      LS101560
    66154 +266264225177            OCT 266264225177          FSUBR               LS101570
                                                                                 LS101580
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    66155   0 11622 0 77777   )044      -1,,-*-1                                    LS101590
    66156   0 11621 0 11062             $PNAME,,-*-1                                LS101600

BINARY CARD NO. LISP0408
    66157   0 00000 0 11620             -*-1                                        LS101610
    66160   0 00000 0 11617             -*-1                                        LS101620
    66161   266445215127            BCD 1FUNARG             FUNARG              LS101630
                                                                                    LS101640
    66162   0 11615 0 77777   )045      -1,,-*-1                                    LS101650
    66163   0 11614 0 11630             FSUBR,,-*-1                                 LS101660
    66164   0 11612 0 11613             -*-1,,-*-2                                  LS101670
    66165  -3 00000 0 16316         TXL $LAMP,,0                                    LS101680
    66166   0 11611 0 11062             PNAME,,-*-1                                 LS101690
    66167   0 00000 0 11610             -*-1                                        LS101700
    66170   0 11606 0 11607             -*-1,,-*-2                                  LS101710
    66171   266445236331            BCD 1FUNCTI                                     LS101720
    66172   0 00000 0 11605             -*-1                                        LS101730
    66173  -064577777777            OCT 464577777777        ON                  LS101740
                                                                                    LS101750
    66174   0 11603 0 77777   )046      -1,,-*-1                                    LS101760
    66175   0 11602 0 10440             $SUBR,,-*-1                                 LS101770
    66176   0 11600 0 11601             -*-1,,-*-2                                  LS101780
    66177  -3 00000 0 11014         TXL GENSYM,,0                                   LS101790
    66200   0 11577 0 11062             $PNAME,,-*-1                                LS101800
    66201   0 00000 0 11576             -*-1                                        LS101810
    66202   0 00000 0 11575             -*-1                                        LS101820
    66203   272545627044            BCD 1GENSYM                                     LS101830
                                                                                    LS101840
    66204   0 11573 0 77777   )231      -1,,-*-1                                    LS101850

BINARY CARD NO. LISP0409
    66205   0 11572 0 10440              SUBR,,-*-1                                 LS101860
    66206   0 11570 0 11571             -*-1,,-*-2                                  LS101870
    66207  -3 00002 0 12762         TXL C$GET,,2                                    LS101880
    66210   0 11567 0 11062             PNAME,,-*-1                                 LS101890
    66211   0 00000 0 11566             -*-1                                        LS101900
    66212   0 00000 0 11565             -*-1                                        LS101910
    66213  +272563777777            OCT 272563777777        GET                 LS101920
                                                                                    LS101930
    66214   0 11563 0 77777   )047      -1,,-*-1                                    LS101940
    66215   0 11562 0 11630                  $FSUBR,,-*-1                           LS101950
    66216   0 11560 0 11561             -*-1,,-*-2                                  LS101960
    66217  -3 00001 0 17410         TXL      GOGOGO,,1      GO TO GO FSUBR         LS101970
    66220   0 11557 0 11062             PNAME,,-*-1                                 LS101980
    66221   0 00000 0 11556             -*-1                                        LS101990
    66222   0 00000 0 11555             -*-1                                        LS102000
    66223  +274677777777            OCT 274677777777        GO                  LS102010
                                                                                    LS102020
    66224   0 11553 0 77777   II3          -1,,-*-1                                LS102030
    66225   0 11552 0 10440              $SUBR,,-*-1                                LS102040
    66226   0 11550 0 11551             -*-1,,-*-2                                  LS102050
    66227  -3 00002 0 15434         TXL      GRTRTP,,2                              LS102060
    66230   0 11547 0 11062              $PNAME,,-*-1                               LS102070
    66231   0 00000 0 11546             -*-1                                        LS102080
    66232   0 11545 0 11544             -*-2,,-*-1                                  LS102090
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BINARY CARD NO. LISP0410
    66233  0 00000 0 11543                    -*-2                                    LS102100
    66234  275125216325              BCI      1,GREATE                                LS102110
    66235 -114777777777              OCT      514777777777       GREATERP             LS102120
                                                                                      LS102130
    66236  0 11541 0 77777   )052        -1,,-*-1                                    LS102140
    66237  0 11540 0 10440               SUBR,,-*-1                                  LS102150
    66240  0 11536 0 11537               -*-1,,-*-2                                  LS102160
    66241 -3 00001 0 07246          TXL  INTRN1,,1                                   LS102170
    66242  0 11535 0 11062               PNAME,,-*-1                                 LS102180
    66243  0 00000 0 11534               -*-1                                        LS102190
    66244  0 00000 0 11533               -*-1                                        LS102200
    66245  314563255145             BCD  1INTERN                                    LS102210
                                                                                      LS102220
    66246  0 11531 0 77777   )054        -1,,-*-1                                    LS102230
    66247  0 11530 0 11630               FSUBR,,-*-1                                 LS102240
    66250  0 11526 0 11527               -*-1,,-*-2                                  LS102250
    66251 -3 00000 0 16332          TXL  LABP,,0                                     LS102260
    66252  0 11525 0 11062               PNAME,,-*-1                                 LS102270
    66253  0 00000 0 11524               -*-1                                        LS102280
    66254  0 00000 0 11523               -*-1                                        LS102290
    66255 -032122254377              OCT  432122254377       LABEL                   LS102300
                                                                                      LS102310
    66256  0 11521 0 77777   )055        -1,,-*-1                                    LS102320
    66257  0 11520 0 11062               PNAME,,-*-1                                 LS102330
    66260  0 00000 0 11517               -*-1                                        LS102340

BINARY CARD NO. LISP0411
    66261  0 00000 0 11516               -*-1                                        LS102350
    66262  432144222421             BCD  1LAMBDA                                    LS102360
                                   *                                                  LS102370
    66263  0 11514 0 77777   )LAP         -1,,-*-1                                    LS102380
    66264  0 11513 0 10440               SUBR,,-*-1                                  LS102390
    66265  0 11511 0 11512               -*-1,,-*-2                                  LS102400
    66266 -3 00002 0 76703          TXL  C$LAP,,2                                    LS102410
    66267  0 11510 0 11062               PNAME,,-*-1                                 LS102420
    66270  0 00000 0 11507               -*-1                                        LS102430
    66271  0 00000 0 11506               -*-1                                        LS102440
    66272 -032147777777              OCT  432147777777       LAP                     LS102450
                                   *                                                  LS102460
    66273  0 11504 0 77777   PVV1        -1,,-*-1            LEFTSHIFT               LS102470
    66274  0 11503 0 10440               SUBR,,-*-1                                  LS102480
    66275  0 11501 0 11502               -*-1,,-*-2                                  LS102490
    66276 -3 00002 0 13745          TXL  LSHIFT,,2                                   LS102500
    66277  0 11500 0 11062               PNAME,,-*-1                                 LS102510
    66300  0 00000 0 11477               -*-1                                        LS102520
    66301  0 11476 0 11475               -*-2,,-*-1                                  LS102530
    66302  0 00000 0 11474               -*-2                                        LS102540
    66303  432526636230             BCI  1,LEFTSH                                   LS102550
    66304 +312663777777              OCT  312663777777                               LS102560
                                                                                      LS102570
    66305  0 11472 0 77777   LI4         -1,,-*-1                                    LS102580
    66306  0 11471 0 10440               $SUBR,,-*-1                                 LS102590
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BINARY CARD NO. LISP0412
    66307   0 11467 0 11470                  -*-1,,-*-2                                  LS102600
    66310  -3 00002 0 15444          TXL     LESSTP,,2                                   LS102610
    66311   0 11466 0 11062                  $PNAME,,-*-1                                LS102620
    66312   0 00000 0 11465                  -*-1                                        LS102630
    66313   0 00000 0 11464                  -*-1                                        LS102640
    66314  -032562624777             OCT     432562624777        LESSP                   LS102650
                                *                                                        LS102660
    66315   0 11462 0 77777   )057           -1,,-*-1                                    LS102670
    66316   0 11461 0 11630                  FSUBR,,-*-1                                 LS102680
    66317   0 11457 0 11460                  -*-1,,-*-2                                  LS102690
    66320  -3 00000 0 17050          TXL     EVLIS,,0                                    LS102700
    66321   0 11456 0 11062                  PNAME,,-*-1                                 LS102710
    66322   0 00000 0 11455                  -*-1                                        LS102720
    66323   0 00000 0 11454                  -*-1                                        LS102730
    66324  -033162637777             OCT     433162637777        LIST                    LS102740
                                                                                         LS102750
    66325   0 11452 0 77777   )PJ17          -1,,-*-1            LITER                   LS102760
    66326   0 11451 0 10440                  SUBR,,-*-1                                  LS102770
    66327   0 11447 0 11450          PZE     -*-1,,-*-2                                  LS102780
    66330  -3 00001 0 13307          TXL     LITER,,1                                    LS102790
    66331   0 11446 0 11062                  PNAME,,-*-1                                 LS102800
    66332   0 00000 0 11445                  -*-1                                        LS102810
    66333   0 00000 0 11444                  -*-1                                        LS102820
    66334  -033163255177             OCT     433163255177                                LS102830
                                                                                         LS102840

BINARY CARD NO. LISP0413
    66335   0 11442 0 77777   )234A          -1,,-*-1                                    LS102850
    66336   0 11441 0 10440                  SUBR,,-*-1                                  LS102860
    66337   0 11437 0 11440                  -*-1,,-*-2                                  LS102870
    66340  -3 00000 0 77722          TXL     LOADER,,0                                   LS102880
    66341   0 11436 0 11062                  PNAME,,-*-1                                 LS102890
    66342   0 00000 0 11435                  -*-1                                        LS102900
    66343   0 00000 0 11434                  -*-1                                        LS102910
    66344  -034621247777             OCT     434621247777        LOAD                    LS102920
                                *                                                        LS102930
    66345   0 11432 0 77777   )PJ37           -1,,-*-1            LOGAND                  LS102940
    66346   0 11431 0 11630                  FSUBR,,-*-1                                 LS102950
    66347   0 11427 0 11430                  -*-1,,-*-2                                  LS102960
    66350  -3 00000 0 13664          TXL     LOGAND,,                                    LS102970
    66351   0 11426 0 11062                  PNAME,,-*-1                                 LS102980
    66352   0 00000 0 11425                  -*-1                                        LS102990
    66353   0 00000 0 11424                  -*-1                                        LS103000
    66354   434627214524              BCI     1,LOGAND                                    LS103010
                                *                                                        LS103020
    66355   0 11422 0 77777   )PJ36          -1,,-*-1            LOGOR                   LS103030
    66356   0 11421 0 11630                  FSUBR,,-*-1                                 LS103040
    66357   0 11417 0 11420                  -*-1,,-*-2                                  LS103050
    66360  -3 00000 0 13650          TXL     LOGOR,,                                     LS103060
    66361   0 11416 0 11062                  PNAME,,-*-1                                 LS103070
    66362   0 00000 0 11415                  -*-1                                        LS103080
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BINARY CARD NO. LISP0414
    66363  0 00000 0 11414                    -*-1                                    LS103090
    66364 -034627465177             OCT      434627465177       BCD LOGOR            LS103100
                          *                                                           LS103110
    66365  0 11412 0 77777   )PJ38            -1,,-*-1           LOGXOR               LS103120
    66366  0 11411 0 11630                    FSUBR,,-*-1                             LS103130
    66367  0 11407 0 11410                    -*-1,,-*-2                              LS103140
    66370 -3 00000 0 13700           TXL      LOGXOR,,0                               LS103150
    66371  0 11406 0 11062                    PNAME,,-*-1                             LS103160
    66372  0 00000 0 11405                    -*-1                                    LS103170
    66373  0 00000 0 11404                    -*-1                                    LS103180
    66374  434627674651              BCI      1,LOGXOR                                LS103190
                                                                                      LS103200
    66375  0 11402 0 77777  )PJ7         -1,,-*-1                LPAR                LS103210
    66376  0 11401 0 11062               PNAME,,-*-1                                  LS103220
    66377  0 11376 0 11400               -*-1,,-*-3                                   LS103230
    66400  0 00000 0 11377               -*-1                                         LS103240
    66401 -034721517777           OCT 434721517777           BCD LPAR              LS103250
    66402  0 11375 0 12521               APVAL1,,-*-1                                 LS103260
    66403  0 00000 0 11374               -*-1                                         LS103270
    66404  0 00000 0 07522               H74                                          LS103280
                          *                                                           LS103290
    66405  0 11372 0 77777   )065         -1,,-*-1                                   LS103300
    66406  0 11371 0 10440               SUBR,,-*-1                                   LS103310
    66407  0 11367 0 11370               -*-1,,-*-2                                   LS103320
    6641C -3 00002 0 10440           TXL MAPCAR,,2                                   LS103330

BINARY CARD NO. LISP0415
    66411  0 11366 0 11062               PNAME,,-*-1                                  LS103340
    66412  0 00000 0 11365               -*-1                                         LS103350
    66413  0 00000 0 11364               -*-1                                         LS103360
    66414 -042147777777           OCT 442147777777       MAP                       LS103370
                                                                                      LS103380
    66415  0 11362 0 77777   )069B        -1,,-*-1                                   LS103390
    66416  0 11361 0 10440               SUBR,,-*-1                                   LS103400
    66417  0 11357 0 11360               -*-1,,-*-2                                   LS103410
    66420 -3 00002 0 10465           TXL MAPCON,,2                                   LS103420
    66421  0 11356 0 11062               PNAME,,-*-1                                  LS103430
    66422  0 00000 0 11355               -*-1                                         LS103440
    66423  0 00000 0 11354               -*-1                                         LS103450
    66424  442147234645           BCD 1MAPCON                                        LS103460
                                                                                      LS103470
    66425  0 11352 0 77777   )069A        -1,,-*-1                                   LS103480
    66426  0 11351 0 10440               SUBR,,-*-1                                   LS103490
    66427  0 11347 0 11350               -*-1,,-*-2                                   LS103500
    66430 -3 00002 0 04756           TXL MAPLIS,,2                                   LS103510
    66431  0 11346 0 11062               PNAME,,-*-1                                  LS103520
    66432  0 00000 0 11345               -*-1                                         LS103530
    66433  0 11344 0 11343               -*-2,,-*-1                                   LS103540
    66434  0 00000 0 11342               -*-2                                         LS103550
    66435  442147433162           BCD 1MAPLIS                                        LS103560
    66436 -237777777777           OCT 637777777777          MAPLIST                 LS103570
                                                                                      LS103580
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BINARY CARD NO. LISP0416
    66437  0 11340 0 77777  II7          -1,,-*-1                                LS103590
    66440  0 11337 0 11630               $FSUBR,,-*-1                            LS103600
    66441  0 11335 0 11336               -*-1,,-*-2                              LS103610
    66442 -3 00002 0 15151        TXL    MAX,,2                                  LS103620
    66443  0 11334 0 11062               $PNAME,,-*-1                            LS103630
    66444  0 00000 0 11333               -*-1                                    LS103640
    66445  0 00000 0 11332               -*-1                                    LS103650
    66446 -042167777777           OCT    442167777777       MAX                  LS103660
                          *                                                      LS103670
    66447  0 11330 0 77777  II8          -1,,-*-1                                LS103680
    66450  0 11327 0 11630               $FSUBR,,-*-1                            LS103690
    66451  0 11325 0 11326               -*-1,,-*-2                              LS103700
    66452 -3 00002 0 15143        TXL    MIN,,2                                  LS103710
    66453  0 11324 0 11062               $PNAME,,-*-1                            LS103720
    66454  0 00000 0 11323               -*-1                                    LS103730
    66455  0 00000 0 11322               -*-1                                    LS103740
    66456 -043145777777           OCT    443145777777       MIN                  LS103750
                          *                                                      LS103760
    66457  0 11320 0 77777  )070      -1,,-*-1                                   LS103770
    66460  0 11317 0 10440               $SUBR,,-*-1                             LS103780
    66461  0 11315 0 11316               -*-1,,-*-2                              LS103790
    66462 -3 00001 0 15625        TXL    MNSPRG,,1                               LS103800
    66463  0 11314 0 11062               $PNAME,,-*-1                            LS103810
    66464  0 00000 0 11313               -*-1                                    LS103820

BINARY CARD NO. LISP0417
    66465  0 00000 0 11312               -*-1                                    LS103830
    66466 -043145646277           OCT    443145646277       MINUS                LS103840
                          *                                                      LS103850
    66467  0 11310 0 77777  II16         -1,,-*-1                                LS103860
    66470  0 11307 0 10440               $SUBR,,-*-1                             LS103870
    66471  0 11305 0 11306               -*-1,,-*-2                              LS103880
    66472 -3 00001 0 15501        TXL    MINUSP,,1                               LS103890
    66473  0 11304 0 11062               $PNAME,,-*-1                            LS103900
    66474  0 00000 0 11303               -*-1                                    LS103910
    66475  0 00000 0 11302               -*-1                                    LS103920
    66476  443145646247           BCI    1,MINUSP                                LS103930
                          *                                                      LS103940
                          *                                                      LS103950
    66477  0 11300 0 77777  )PJ26         -1,,-*-1           MKNAM                LS103960
    66500  0 11277 0 10440               SUBR,,-*-1                              LS103970
    66501  0 11275 0 11276               -*-1,,-*-2                              LS103980
    66502 -3 00000 0 13140        TXL    MKNAM,,                                 LS103990
    66503  0 11274 0 11062               PNAME,,-*-1                             LS104000
    66504  0 00000 0 11273               -*-1                                    LS104010
    66505  0 00000 0 11272               -*-1                                    LS104020
    66506 -044245214477           OCT    444245214477       BCD MKNAM            LS104030
                                                                                 LS104040
    66507  0 11270 0 77777  )071      -1,,-*-1                                   LS104050
    66510  0 11267 0 10440               SUBR,,-*-1                              LS104060
    66511  0 11265 0 11266               -*-1,,-*-2                              LS104070
    66512 -3 00002 0 10515        TXL NCONC,,2                                   LS104080
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BINARY CARD NO. LISP0418
    66513  0 11264 0 11062              PNAME,,-*-1                                  LS104090
    66514  0 00000 0 11263              -*-1                                         LS104100
    66515  0 00000 0 11262              -*-1                                         LS104110
    66516 -052346452377           OCT 452346452377          NCONC                  LS104120
                                                                                   LS104130
    66517  0 11260 0 77777   )074       -1,,-*-1                                   LS104140
    66520  0 11257 0 10440              $SUBR,,-*-1                                  LS104150
    66521  0 11255 0 11256              -*-1,,-*-2                                   LS104160
    66522 -3 00001 0 10770           TXL NCTS,,1                                    LS104170
    66523  0 11254 0 11062              $PNAME,,-*-1                                 LS104180
    66524  0 00000 0 11253              -*-1                                         LS104190
    66525  0 00000 0 11252              -*-1                                         LS104200
    66526 -054663777777           OCT 454663777777          NOT                    LS104210
                                                                                   LS104220
    66527  0 11250 0 77777   )075       -1,,-*-1                                   LS104230
    66530  0 11247 0 10440              SUBR,,-*-1                                   LS104240
    66531  0 11245 0 11246              -*-1,,-*-2                                   LS104250
    66532 -3 00001 0 16311           TXL NULLP,,1                                   LS104260
    66533  0 11244 0 11062              PNAME,,-*-1                                  LS104270
    66534  0 00000 0 11243              -*-1                                         LS104280
    66535  0 00000 0 11242              -*-1                                         LS104290
    66536 -056443437777           OCT 456443437777          NULL                   LS104300
                                                                                   LS104310
    66537  0 11240 0 77777   1113        -1,,-*-1                                   LS104320
    66540  0 11237 0 10440               $SUBR,,-*-1                               LS104330

BINARY CARD NO. LISP0419
    66541  0 11235 0 11236                  -*-1,,-*-2                             LS104340
    66542 -3 00001 0 15446           TXL     NUMBRP,,1                              LS104350
    66543  0 11234 0 11062                  $PNAME,,-*-1                           LS104360
    66544  0 00000 0 11233                  -*-1                                   LS104370
    66545  0 11232 0 11231                  -*-2,,-*-1                             LS104380
    66546  0 00000 0 11230                  -*-2                                   LS104390
    66547  456444222551              BCI     1,NUMBER                             LS104400
    66550 -077777777777               OCT     477777777777      NUMBERP            LS104410
                                   *                                               LS104420
    66551  0 11226 0 77777   )PJ25          -1,,-*-1                  NUMOB        LS104430
    66552  0 11225 0 10440                 SUBR,,-*-1                             LS104440
    66553  0 11223 0 11224                 -*-1,,-*-2                             LS104450
    66554 -3 00000 0 13062           TXL     NUMOB,,                               LS104460
    66555  0 11222 0 11062                  PNAME,,-*-1                           LS104470
    66556  0 00000 0 11221                  -*-1                                  LS104480
    66557  0 00000 0 11220                  -*-1                                  LS104490
    66560 -056444462277               OCT     456444462277      BCD NUMOB       LS104500
                                                                                   LS104510
    66561  0 11216 0 77777   )079A      -1,,-*-1                                   LS104520
    66562  0 11215 0 12521             APVAL1,,-*-1                               LS104530
    66563  0 11213 0 11214             -*-1,,-*-2                                 LS104540
    66564  0 00000 0 13155                 -OBLIST                                LS104550
    66565  0 11212 0 11062             PNAME,,-*-1                                LS104560
    66566  0 00000 0 11211             -*-1                                       LS104570
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BINARY CARD NO. LISP0420
    66567  0 00000 0 11210              -*-1                                    LS104580
    66570  462243316263           BCD 1OBLIST              OBLIST             LS104590
                                 *                                             LS104600
    66571  0 11206 0 77777   )PJ28       -1,,-*-1           OCTAL              LS104610
    66572  0 11205 0 11062               PNAME,,-*-1                           LS104620
    66573  0 00000 0 11204               -*-1                                  LS104630
    66574  0 00000 0 11203               -*-1                                  LS104640
    66575 -062363214377           OCT     462363214377       BCD OCTAL          LS104650
                                                                               LS104660
    66576  0 11201 0 77777   II9         -1,,-*-1                              LS104670
    66577  0 11200 0 10440               $SUBR,,-*-1                           LS104680
    66600  0 11176 0 11177               -*-1,,-*-2                            LS104690
    66601 -3 00001 0 15534         TXL     ONEP,,1                             LS104700
    66602  0 11175 0 11062               $PNAME,,-*-1                          LS104710
    66603  0 00000 0 11174               -*-1                                  LS104720
    66604  0 00000 0 11173               -*-1                                  LS104730
    66605 -064525477777           OCT     464525477777       ONEP               LS104740
                                 *                                             LS104750
    66606  0 11171 0 77777   )PJ18     -1,,-*-1               OPCHAR             LS104760
    66607  0 11170 0 10440              SUBR,,-*-1                             LS104770
    66610  0 11166 0 11167         PZE -*-1,,-*-2                             LS104780
    66611 -3 00001 0 13321         TXL OPCHAR,,1                              LS104790
    66612  0 11165 0 11062              PNAME,,-*-1                           LS104800
    66613  0 00000 0 11164              -*-1                                  LS104810
    66614  0 00000 0 11163              -*-1                                  LS104820

BINARY CARD NO. LISP0421
    66615  464723302151           BCD 1OPCHAR                                LS104830
                                                                               LS104840
    66616  0 11161 0 77777   )079      -1,,-*-1                              LS104850
    66617  0 11160 0 11630              FSUBR,,-*-1                           LS104860
    66620  0 11156 0 11157              -*-1,,-*-2                            LS104870
    66621 -3 00000 0 16463         TXL $EVOR,,0                               LS104880
    66622  0 11155 0 11062              $PNAME,,-*-1                          LS104890
    66623  0 00000 0 11154              -*-1                                  LS104900
    66624  0 00000 0 11153              -*-1                                  LS104910
    66625 -065177777777           OCT 465177777777           CR             LS104920
                                 *                                             LS104930
    66626  0 11151 0 77777   )PJ24       -1,,-*-1             PACK           LS104940
    66627  0 11150 0 10440               SUBR,,-*-1                          LS104950
    66630  0 11146 0 11147               -*-1,,-*-2                          LS104960
    66631 -3 00001 0 13023         TXL     PACK,,1                           LS104970
    66632  0 11145 0 11062               PNAME,,-*-1                         LS104980
    66633  0 00000 0 11144               -*-1                                LS104990
    66634  0 00000 0 11143               -*-1                                LS105000
    66635 -072123427777           OCT     472123427777       BCD PACK         LS105010
                                                                               LS105020
    66636  0 11141 0 77777   )080      -1,,-*-1                              LS105030
    66637  0 11140 0 10440              SUBR,,-*-1                            LS105040
    66640  0 11136 0 11137              -*-1,,-*-2                            LS105050
    66641 -3 00002 0 10402         TXL PAIR,,2                                LS105060
    66642  0 11135 0 11062              PNAME,,-*-1                           LS105070
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BINARY CARD NO. LISP0422
    66643  0 00000 0 11134              -*-1                                    LS105080
    66644  0 00000 0 11133              -*-1                                    LS105090
    66645 -072131517777           OCT 472131517777          PAIR              LS105100
                                                                               LS105110
    66646  0 11131 0 77777   )234C     -1,,-*-1                                LS105120
    66647  0 11130 0 10440              SUBR,,-*-1                              LS105130
    66650  0 11126 0 11127              -*-1,,-*-2                              LS105140
    66651 -3 00000 0 02305        TXL PAUSEF,,0                                LS105150
    66652  0 11125 0 11062              PNAME,,-*-1                             LS105160
    66653  0 00000 0 11124              -*-1                                    LS105170
    66654  0 00000 0 11123              -*-1                                    LS105180
    66655 -072164622577           OCT 472164622577      PAUSE                 LS105190
                                                                               LS105200
    66656  0 11121 0 77777   )PJ9      -1,,-*-1                 PERIOD         LS105210
    66657  0 11120 0 11062              PNAME,,-*-1                             LS105220
    66660  0 11115 0 11117              -*-1,,-*-3                              LS105230
    66661  0 00000 0 11116              -*-1                                    LS105240
    66662  472551314624           BCD 1PERIOD                                  LS105250
    66663  0 11114 0 12521              APVAL1,,-*-1                            LS105260
    66664  0 00000 0 11113        PZE -*-1                                     LS105270
    66665  0 00000 0 07461              H33                                     LS105280
                                                                               LS105290
    66666  0 11111 0 77777   )234B     -1,,-*-1                                LS105300
    66667  0 11110 0 10440              SUBR,,-*-1                              LS105310
    66670  0 11106 0 11107              -*-1,,-*-2                              LS105320

BINARY CARD NO. LISP0423
    66671 -3 00000 0 01701        TXL PSHLD8,,0                                LS105330
    66672  0 11105 0 11062              PNAME,,-*-1                             LS105340
    66673  0 00000 0 11104              -*-1                                    LS105350
    66674  0 00000 0 11103              -*-1                                    LS105360
    66675 -074322777777           OCT 474322777777      PLB                   LS105370
                                                                               LS105380
    66676  0 11101 0 77777   )081      -1,,-*-1                                LS105390
    66677  0 11100 0 11630                  $FSUBR,,-*-1                        LS105400
    66700  0 11076 0 11077              -*-1,,-*-2                              LS105410
    66701 -3 00002 0 15127        TXL      ADDP,,2                             LS105420
    66702  0 11075 0 11062                  $PNAME,,-*-1                        LS105430
    66703  0 00000 0 11074              -*-1                                    LS105440
    66704  0 00000 0 11073              -*-1                                    LS105450
    66705 -074364627777           OCT      474364627777      PLUS             LS105460
                                  *                                            LS105470
    66706  0 11071 0 77777   )PJ11     -1,,-*-1                 PLUS SIGN (PLUSS) LS105480
    66707  0 11070 0 11062        PZE PNAME,,-*-1                              LS105490
    66710  0 11065 0 11067              -*-1,,-*-3                              LS105500
    66711  0 00000 0 11066              -*-1                                    LS105510
    66712 -074364626277           OCT 474364626277          BCD PLUSS         LS105520
    66713  0 11064 0 12521              APVAL1,,-*-1                            LS105530
    66714  0 00000 0 11063        PZE -*-1                                     LS105540
    66715  0 00000 0 07446              H20                                     LS105550
                                                                               LS105560
    66716  0 11061 0 77777   )083      -1,,-*-1                                LS105570
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BINARY CARD NO. LISP0424
    66717  0 11060 0 11062              PNAME,,-*-1                                  LS105580
    66720  0 00000 0 11057              -*-1                                         LS105590
    66721  0 00000 0 11056              -*-1                                         LS105600
    66722 -074521442577           OCT 474521442577          PNAME                  LS105610
                                                                                   LS105620
    66723  0 11054 0 77777   )PJ33        -1,,-*-1          PRIN1                  LS105630
    66724  0 11053 0 10440               SUBR,,-*-1                               LS105640
    66725  0 11051 0 11052               -*-1,,-*-2                               LS105650
    66726 -3 00001 0 05446          TXL   $PRIN1,,1                                LS105660
    66727  0 11050 0 11062               PNAME,,-*-1                              LS105670
    66730  0 00000 0 11047               -*-1                                     LS105680
    66731  0 00000 0 11046               -*-1                                     LS105690
    66732 -075131450177           OCT   475131450177      BCI PRIN1              LS105700
                                                                                   LS105710
    66733  0 11044 0 77777   )087        -1,,-*-1                                 LS105720
    66734  0 11043 0 10440               SUBR,,-*-1                               LS105730
    66735  0 11041 0 11042               -*-1,,-*-2                               LS105740
    66736 -3 00001 0 05342          TXL PRINT,,1                                   LS105750
    66737  0 11040 0 11062               PNAME,,-*-1                              LS105760
    66740  0 00000 0 11037               -*-1                                     LS105770
    66741  0 00000 0 11036               -*-1                                     LS105780
    66742 -075131456377           OCT 475131456377          PRINT                  LS105790
                                                                                   LS105800
    66743  0 11034 0 77777   )PJ39        -1,,-*-1          PRINT2                 LS105810
    66744  0 11033 0 10440               SUBR,,-*-1                               LS105820

BINARY CARD NO. LISP0425
    66745  0 11031 0 11032               -*-1,,-*-2                               LS105830
    66746 -3 00001 0 05656          TXL   PRINT2,,1                                LS105840
    66747  0 11030 0 11062               PNAME,,-*-1                              LS105850
    66750  0 00000 0 11027               -*-1                                     LS105860
    66751  0 00000 0 11026               -*-1                                     LS105870
    66752  475131456302           BCI    1,PRINT2                                LS105880
                                                                                   LS105890
    66753  0 11024 0 77777   )089      -1,,-*-1                                   LS105900
    66754  0 11023 0 11630             FSUBR,,-*-1                              LS105910
    66755  0 11021 0 11022             -*-1,,-*-2                               LS105920
    66756 -3 00000 0 17242          TXL INTER,,0                                   LS105930
    66757  0 11020 0 11062             PNAME,,-*-1                              LS105940
    66760  0 00000 0 11017             -*-1                                     LS105950
    66761  0 00000 0 11016             -*-1                                     LS105960
    66762 -075146277777           OCT 475146277777          PROG                   LS105970
                                                                                   LS105980
    66763  0 11014 0 77777   IJ05        -1,,-*-1                                 LS105990
    66764  0 11013 0 10440             $SUBR,,-*-1                              LS106000
    66765  0 11011 0 11012             -*-1,,-*-2                               LS106010
    66766 -3 00001 0 06137          TXL   $PUNCH,,1                                LS106020
    66767  0 11010 0 11062             $PNAME,,-*-1                             LS106030
    66770  0 00000 0 11007             -*-1                                     LS106040
    66771  0 00000 0 11006             -*-1                                     LS106050
    66772 -076445233077           OCT   476445233077      PUNCH                  LS106060
                                  *                                            LS106070
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BINARY CARD NO. LISP0426
    66773   0 11004 0 77777   )090      -1,,-*-1                                  LS106080
    66774   0 11003 0 10440             SUBR,,-*-1                                LS106090
    66775   0 11001 0 11002             -*-1,,-*-2                                LS106100
    66776  -3 00003 0 10631         TXL APROP,,3                                  LS106110
    66777   0 11000 0 11062             PNAME,,-*-1                               LS106120
    67000   0 00000 0 10777             -*-1                                      LS106130
    67001   0 00000 0 10776             -*-1                                      LS106140
    67002  -075146477777                OCT 475146477777          PROP            LS106150
                                                                                  LS106160
    67003   0 10774 0 77777   )094      -1,,-*-1                                  LS106170
    67004   0 10773 0 11630             FSUBR,,-*-1                               LS106180
    67005   0 10771 0 10772             -*-1,,-*-2                                LS106190
    67006  -3 00000 0 16260         TXL CARP,,0                                   LS106200
    67007   0 10770 0 11062             PNAME,,-*-1                               LS106210
    67010   0 00000 0 10767             -*-1                                      LS106220
    67011   0 00000 0 10766             -*-1                                      LS106230
    67012  -106446632577                OCT 506446632577          QUOTE           LS106240
                                                                                  LS106250
    67013   0 10764 0 77777   IJ03        -1,,-*-1                                LS106260
    67014   0 10763 0 10440               $SUBR,,-*-1                           LS106270
    67015   0 10761 0 10762               -*-1,,-*-2                            LS106280
    67016  -3 00002 0 14421         TXL    QUOTEN,,2                             LS106290
    67017   0 10760 0 11062               $PNAME,,-*-1                          LS106300
    67020   0 00000 0 10757               -*-1                                  LS106310

BINARY CARD NO. LISP0427
    67021   0 10756 0 10755               -*-2,,-*-1                            LS106320
    67022   0 00000 0 10754               -*-2                                  LS106330
    67023   506446633125            BCI    1,QUOTIE                            LS106340
    67024  -056377777777            OCT    456377777777       QUOTIENT         LS106350
                                  *                                               LS106360
    67025   0 10752 0 77777   )096      -1,,-*-1                                  LS106370
    67026   0 10751 0 10440             SUBR,,-*-1                                LS106380
    67027   0 10747 0 10750             -*-1,,-*-2                                LS106390
    67030  -3 00000 0 06560         TXL READ,,0                                   LS106400
    67031   0 10746 0 11062             PNAME,,-*-1                               LS106410
    67032   0 00000 0 10745             -*-1                                      LS106420
    67033   0 00000 0 10744             -*-1                                      LS106430
    67034  -112521247777                OCT 512521247777          READ            LS106440
                                                                                  LS106450
    67035   0 10742 0 77777   II18        -1,,-*-1                                LS106460
    67036   0 10741 0 10440               $SUBR,,-*-1                           LS106470
    67037   0 10737 0 10740               -*-1,,-*-2                            LS106480
    67040  -3 00001 0 15634         TXL    RCPPRG,,1                             LS106490
    67041   0 10736 0 11062               $PNAME,,-*-1                          LS106500
    67042   0 00000 0 10735               -*-1                                  LS106510
    67043   0 00000 0 10734               -*-1                                  LS106520
    67044  -112523314777            OCT    512523314777       RECIP            LS106530
                                  *                                               LS106540
    67045   0 10732 0 77777   )234D     -1,,-*-1                                  LS106550
    67046   0 10731 0 10440             SUBR,,-*-1                                LS106560
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BINARY CARD NO. LISP0428
    67047   0 10727 0 10730            -*-1,,-*-2                                  LS106570
    67050  -3 00001 0 03312       TXL      RECLAM,,1                               LS106580
    67051   0 10726 0 11062            PNAME,,-*-1                                 LS106590
    67052   0 00000 0 10725            -*-1                                        LS106600
    67053   0 10724 0 10723            -*-2,,-*-1                                  LS106610
    67054   0 00000 0 10722            -*-2                                        LS106620
    67055   512523432131       BCD 1RECLAI                                         LS106630
    67056  -047777777777       OCT 447777777777      RECLAIM                       LS106640
                          *                                                       LS106650
    67057   0 10720 0 77777   1J04          -1,,-*-1                              LS106660
    67060   0 10717 0 10440               $SUBR,,-*-1                           LS106670
    67061   0 10715 0 10716               -*-1,,-*-2                            LS106680
    67062  -3 00002 0 14415       TXL      REMAIN,,2                             LS106690
    67063   0 10714 0 11062               $PNAME,,-*-1                          LS106700
    67064   0 00000 0 10713               -*-1                                  LS106710
    67065   0 10712 0 10711               -*-2,,-*-1                            LS106720
    67066   0 00000 0 10710               -*-2                                  LS106730
    67067   512544213145       BCI      1,REMAIN                                LS106740
    67070  +242551777777       OCT      242551777777       REMAINDER            LS106750
                          *                                                       LS106760
    67071   0 10706 0 77777   )250          -1,,-*-1                              LS106770
    67072   0 10705 0 10440               SUBR,,-*-1                            LS106780
    67073   0 10703 0 10704               -*-1,,-*-2                            LS106790
    67074  -3 00002 0 10534       TXL      REMPRP,,2                             LS106800

BINARY CARD NO. LISP0429
    67075   0 10702 0 11062               PNAME,,-*-1                           LS106810
    67076   0 00000 0 10701               -*-1                                  LS106820
    67077   0 10677 0 10700               -*-1,,-*-2                            LS106830
    67100   512544475146       BCD 1REMPRO                 REMPRO               LS106840
    67101   0 00000 0 10676               -*-1                                  LS106850
    67102  -077777777777       OCT      477777777777       P                    LS106860
                          *                                                       LS106870
    67103   0 10674 0 77777   )129          -1,,-*-1                              LS106880
    67104   0 10673 0 10440               SUBR,,-*-1                            LS106890
    67105   0 10671 0 10672               -*-1,,-*-2                            LS106900
    67106  -3 00000 0 01166       TXL      RESTRO,,0                             LS106910
    67107   0 10670 0 11062               PNAME,,-*-1                           LS106920
    67110   0 00000 0 10667               -*-1                                  LS106930
    67111   0 00000 0 10666               -*-1                                  LS106940
    67112   512562634651       BCI      1,RESTOR          RESTOR               LS106950
                          *                                                       LS106960
    67113   0 10664 0 77777   )102      -1,,-*-1                                LS106970
    67114   0 10663 0 10440               $SUBR,,-*-1                           LS106980
    67115   0 10661 0 10662               -*-1,,-*-2                            LS106990
    67116  -3 00001 0 17404       TXL      RETURN,,1                             LS107000
    67117   0 10660 0 11062            PNAME,,-*-1                              LS107010
    67120   0 00000 0 10657            -*-1                                     LS107020
    67121   0 00000 0 10656            -*-1                                     LS107030
    67122   512563645145       BCD 1RETURN                 RETURN               LS107040
                                                                                LS107050
                                                                                LS107060
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BINARY CARD NO. LISP0430
    67123   0 10654 0 77777   )100        -1,,-*-1                                    LS107070
    67124   0 10653 0 10440               SUBR,,-*-1                                  LS107080
    67125   0 10651 0 10652               -*-1,,-*-2                                  LS107090
    67126  -3 00000 0 10775          TXL  RPLACA,,0                                   LS107100
    67127   0 10650 0 11062               PNAME,,-*-1                                 LS107110
    67130   0 00000 0 10647               -*-1                                        LS107120
    67131   0 00000 0 10646               -*-1                                        LS107130
    67132   514743212321               BCD 1RPLACA                                    LS107140
                                                                                      LS107150
    67133   0 10644 0 77777   )101        -1,,-*-1                                    LS107160
    67134   0 10643 0 10440               SUBR,,-*-1                                  LS107170
    67135   0 10641 0 10642               -*-1,,-*-2                                  LS107180
    67136  -3 00000 0 11004          TXL  RPLACD,,0                                   LS107190
    67137   0 10640 0 11062               PNAME,,-*-1                                 LS107200
    67140   0 00000 0 10637               -*-1                                        LS107210
    67141   0 00000 0 10636               -*-1                                        LS107220
    67142   514743212324               BCD 1RPLACD                                    LS107230
                                                                                      LS107240
    67143   0 10634 0 77777   )PJ8        -1,,-*-1                 RPAR              LS107250
    67144   0 10633 0 11062          PZE  PNAME,,-*-1                                 LS107260
    67145   0 10630 0 10632               -*-1,,-*-3                                  LS107270
    67146   0 00000 0 10631               -*-1                                        LS107280
    67147  -1147215177777              OCT 514721517777          BCD RPAR           LS107290
    67150   0 10627 0 12521               APVAL1,,-*-1                                LS107300

BINARY CARD NO. LISP0431
    67151   0 00000 0 10626               -*-1                                        LS107310
    67152   0 00000 0 07462          H34                                            LS107320
                              *                                                       LS107330
    67153   0 10624 0 77777   )128            -1,,-*-1                               LS107340
    67154   0 10623 0 10440                   SUBR,,-*-1                             LS107350
    67155   0 10621 0 10622                   -*-1,,-*-2                             LS107360
    67156  -3 00000 0 01161          TXL      SAVEXX,,0                              LS107370
    67157   0 10620 0 11062                   PNAME,,-*-1                            LS107380
    67160   0 00000 0 10617                   -*-1                                   LS107390
    67161   0 00000 0 10616                   -*-1                                   LS107400
    67162   622165257777              VFD     H24/SAVE,012/7777  SAVE              LS107410
                              *                                                       LS107420
    67163   0 10614 0 77777   )SPCL           -1,,-*-1                               LS107430
    67164   0 10613 0 11062                   PNAME,,-*-1                            LS107440
    67165   0 00000 0 10612                   -*-1                                   LS107450
    67166   0 10610 0 10611                   -*-1,,-*-2                             LS107460
    67167   624725233121              BCI     1,SPECIA                               LS107470
    67170   0 00000 0 10607                   -*-1                                   LS107480
    67171   437777777777              VFD     H6/L,030/7777777777        SPECIAL    LS107490
                              *                                                       LS107500
    67172   0 10605 0 77777   )MOV           -1,,-*-1                               LS107510
    67173   0 10604 0 11062                   PNAME,,-*-1                            LS107520
    67174   0 10601 0 10603                   -*-1,,-*-3                             LS107530
    67175   0 00000 0 10602                   -*-1                                   LS107540
    67176   544446652577              VFD     H30/*MOVE,06/77    *MOVE               LS107550
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BINARY CARD NO. LISP0432
    67177  0 10600 0 10413                    SYM,,-*-1                          LS107560
    67200 -0 00000 0 57721          MZE       -C$MOV                             LS107570
                                                                                 LS107580
                          *
    67201  0 10576 0 77777  )RTRN              -1,,-*-1                           LS107590
    67202  0 10575 0 11062                    PNAME,,-*-1                        LS107600
    67203  0 10570 0 10574                    -*-1,,-*-5                         LS107610
    67204  0 10572 0 10573                    -*-1,,-*-2                         LS107620
    67205  545125636451             BCI       1,*RETUR                           LS107630
    67206  0 00000 0 10571                    -*-1                               LS107640
    67207  457777777777             VFD       H6/N,030/7777777777                LS107650
    67210  0 10567 0 10413                    SYM,,-*-1                          LS107660
    67211 -0 00000 0 57717          MZE       -C$RTRN                            LS107670
                                                                                 LS107680
                          *
    67212  0 10565 0 77777  )LST              -1,,-*-1                           LS107690
    67213  0 10564 0 11062                    PNAME,,-*-1                        LS107700
    67214  0 10561 0 10563                    -*-1,,-*-3                         LS107710
    67215  0 00000 0 10562                    -*-1                               LS107720
    67216  544331626377             VFD       H30/*LIST,06/77                    LS107730
    67217  0 10560 0 10413                    SYM,,-*-1                          LS107740
    67220 -0 00000 0 57720          MZE       -C$LSTR                            LS107750
                                                                                 LS107760
    67221  0 10556 0 77777   )106        -1,,-*-1                               LS107770
    67222  0 10555 0 10440                 SUBR,,-*-1                          LS107780
    67223  0 10553 0 10554                 -*-1,,-*-2                          LS107790
    67224 -3 00003 0 10662          TXL  APSSOC,,3                             LS107800

BINARY CARD NO. LISP0433
    67225  0 10552 0 11062                 PNAME,,-*-1                         LS107810
    67226  0 00000 0 10551                 -*-1                                LS107820
    67227  0 00000 0 10550                 -*-1                                LS107830
    67230  622162624623             BCD  1SASSOC                             LS107840
                                                                                 LS107850
    67231  0 10546 0 77777   )236        -1,,-*-1            SEARCH           LS107860
    67232  0 10545 0 10440                 SUBR,,-*-1                          LS107870
    67233  0 10543 0 10544                 -*-1,,-*-2                          LS107880
    67234 -3 00004 0 05144          TXL  SEARCH,,4                           LS107890
    67235  0 10542 0 11062                 PNAME,,-*-1                         LS107900
    67236  0 00000 0 10541                 -*-1                                LS107910
    67237  0 00000 0 10540                 -*-1                                LS107920
    67240  622521512330             BCD  1SEARCH                             LS107930
                                                                                 LS107940
    67241  0 10536 0 77777   )107        -1,,-*-1                            LS107950
    67242  0 10535 0 10440                 $SUBR,,-*-1                         LS107960
    67243  0 10533 0 10534                 -*-1,,-*-2                          LS107970
    67244 -3 00002 0 16413          TXL  SETP,,2                             LS107980
    67245  0 10532 0 11062                 $PNAME,,-*-1                        LS107990
    67246  0 00000 0 10531                 -*-1                                LS108000
    67247  0 00000 0 10530                 -*-1                                LS108010
    67250 -222563777777             OCT  622563777777          SET           LS108020
                                                                                 LS108030
    67251  0 10526 0 77777   )108        -1,,-*-1                            LS108040
    67252  0 10525 0 11630                 $FSUBR,,-*-1                        LS108050
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BINARY CARD NO. LISP0434
    67253   0 10523 0 10524            -*-1,,-*-2                                  LS108060
    67254  -3 COOCC 0 16356        TXL SETQP,,0                                    LS108070
    67255   0 10522 0 11062            PNAME,,-*-1                                 LS108080
    67256   0 COOOO 0 10521            -*-1                                        LS108090
    67257   0 OOOCC 0 10520            -*-1                                        LS108100
    67260 -222563507777            OCT 622563507777          SETQ                LS108110
                                   *                                             LS108120
    67261   0 10516 0 77777  )PJ14    -1,,-*-1                  SLASH             LS108130
    67262   C 10515 0 11062            PNAME,,-*-1                               LS108140
    67263   C 10512 0 10514            -*-1,,-*-3                                LS108150
    67264   0 COOCC 0 10513            -*-1                                      LS108160
    67265 -224321623077            OCT 624321623077          BCD SLASH           LS108170
    67266   0 10511 0 12521            APVAL1,,-*-1                              LS108180
    67267   C COOCC 0 10510            -*-1                                      LS108190
    6727C   0 COOCC 0 07507            H61                                       LS108200
                                                                                 LS108210
    67271   0 10506 0 77777   )109     -1,,-*-1                                  LS108220
    67272   C 10505 0 10440            SUBR,,-*-1                                LS108230
    67273   0 10503 0 10504            -*-1,,-*-2                                LS108240
    67274  -3 COOCC 0 04533        TXL SPEAK,,0                                  LS108250
    67275   0 10502 0 11062            PNAME,,-*-1                               LS108260
    67276   0 OOOCC 0 10501            -*-1                                      LS108270
    67277   0 OOOCC 0 10500            -*-1                                      LS108280
    67300 -224725214277            OCT 624725214277          SPEAK               LS108290
                                                                                 LS108300

BINARY CARD NO. LISP0435
    67301   0 10476 0 77777   )111     -1,,-*-1                                  LS108310
    67302   0 10475 0 11062            PNAME,,-*-1                               LS108320
    67303   0 OOOOO 0 10474            -*-1                                      LS108330
    67304   0 OOOOO 0 10473            -*-1                                      LS108340
    67305 -226346477777            OCT 626346477777                            LS108350
                                                                                 LS108360
    67306   0 10471 0 77777  )PJ15     -1,,-*-1                  STAR            LS108370
    67307   0 10470 0 11062            PNAME,,-*-1                               LS108380
    67310   C 10465 0 10467            -*-1,,-*-3                                LS108390
    67311   C OOOCC 0 10466            -*-1                                      LS108400
    67312 -226321517777            OCT 626321517777          BCD STAR            LS108410
    67313   C 10464 0 12521            APVAL1,,-*-1                              LS108420
    67314   0 OOOCC 0 10463            -*-1                                      LS108430
    67315   0 OOOOO 0 07502            H54                                       LS108440
                                                                                 LS108450
    67316   0 10461 0 77777  )PJ21  PZE -1,,-*-1                  STARTREAD       LS108460
    67317   0 10460 0 10440            SUBR,,-*-1                                LS108470
    67320   C 10456 0 10457        PZE -*-1,,-*-2                                LS108480
    67321  -3 OOOCC 0 13212        TXL STREAD,,0                                 LS108490
    67322   0 10455 0 11062            PNAME,,-*-1                               LS108500
    67323   0 OOOCC 0 10454            -*-1                                      LS108510
    67324   0 10452 0 10453            -*-1,,-*-2                                LS108520
    67325   626321516351           BCD 1STARTR                                   LS108530
    67326   0 OOOOO 0 10451            -*-1                                      LS108540
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BINARY CARD NO. LISP0436
    67327 +252124777777              OCT 252124777777                                LS108550
                                                                                     LS108560
    67330   0 10447 0 77777   II15           -1,,-*-1                               LS108570
    67331   0 10446 0 10440                  $SUBR,,-*-1                            LS108580
    67332   0 10444 0 10445                  -*-1,,-*-2                             LS108590
    67333  -3 00001 0 15431          TXL     SUB1,,1                                LS108600
    67334   0 10443 0 11062                  $PNAME,,-*-1                           LS108610
    67335   0 00000 0 10442                  -*-1                                   LS108620
    67336   0 00000 0 10441                  -*-1                                   LS108630
    67337 -226422017777              OCT     626422017777        SUB1               LS108640
                                *                                                    LS108650
    67340   0 10437 0 77777   )113       -1,,-*-1                                   LS108660
    67341   0 10436 0 11062             PNAME,,-*-1                                LS108670
    67342   0 00000 0 10435             -*-1                                       LS108680
    67343   0 00000 0 10434             -*-1                                       LS108690
    67344 -226422517777              OCT 626422517777        SUBR                   LS108700
                                                                                     LS108710
    67345   0 10432 0 77777   )I14       -1,,-*-1                                   LS108720
    67346   0 10431 0 10440             SUBR,,-*-1                                 LS108730
    67347   0 10427 0 10430             -*-1,,-*-2                                 LS108740
    67350  -3 00002 0 10275          TXL SUBLIS,,2                                  LS108750
    67351   0 10426 0 11062             PNAME,,-*-1                                LS108760
    67352   0 00000 0 10425             -*-1                                       LS108770
    67353   0 00000 0 10424             -*-1                                       LS108780
    67354   626422433162             BCD 1SUBLIS                                    LS108790
                                                                                     LS108800

BINARY CARD NO. LISP0437
    67355   0 10422 0 77777   )115       -1,,-*-1                                   LS108810
    67356   0 10421 0 10440             SUBR,,-*-1                                 LS108820
    67357   0 10417 0 10420             -*-1,,-*-2                                 LS108830
    67360  -3 00003 0 10217          TXL SUBST,,3                                   LS108840
    67361   0 10416 0 11062             PNAME,,-*-1                                LS108850
    67362   0 00000 0 10415             -*-1                                       LS108860
    67363   0 00000 0 10414             -*-1                                       LS108870
    67364 -226422626377              OCT 626422626377          SUBST                LS108880
                                *                                                    LS108890
    67365   0 10412 0 77777   )SYM           -1,,-*-1                               LS108900
    67366   0 10411 0 11062               PNAME,,-*-1                            LS108910
    67367   0 00000 0 10410               -*-1                                   LS108920
    67370   0 00000 0 10407               -*-1                                   LS108930
    67371 -227044777777              OCT     627044777777        SYM              LS108940
                                *                                                    LS108950
    67372   0 10405 0 77777   )I36       -1,,-*-1                                   LS108960
    67373   0 10404 0 10440             SUBR,,-*-1                                 LS108970
    67374   0 10402 0 10403             -*-1,,-*-2                                 LS108980
    67375  -3 00001 0 77432          TXL SYMTAB,,1                                  LS108990
    67376   0 10401 0 11062             PNAME,,-*-1                                LS109000
    67377   0 00000 0 10400             -*-1                                       LS109010
    67400   0 00000 0 10377             -*-1                                       LS109020
    67401   627044632122             BCI 1,SYMTAB            SYMTAB               LS109030
                                *                                                    LS109040
    67402   0 10375 0 77777   )TAB           -1,,-*-1                               LS109050
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BINARY CARD NO. LISP0438
    67403   0 10374 0 10440                    SUBR,,-*-1                                  LS109060
    67404   0 10372 0 10373                    -*-1,,-*-2                                  LS109070
    67405  -3 00001 0 05765           TXL      TABTAB,,1                                   LS109080
    67406   0 10371 0 11062                    PNAME,,-*-1                                 LS109090
    67407   0 00000 0 10370                    -*-1                                        LS109100
    67410   0 00000 0 10367                    -*-1                                        LS109110
    67411   632122777777               VFD      H18/TAB,018/777777 TAB                    LS109120
                                                                                           LS109130
    67412   0 10365 0 77777  )PJ23        -1,,-*-1                    TERPRI             LS109140
    67413   0 10364 0 10440                 SUBR,,-*-1                                     LS109150
    67414   0 10362 0 10363           PZE  -*-1,,-*-2                                     LS109160
    67415  -3 00000 0 06026           TXL  TERPRI,,0                                      LS109170
    67416   0 10361 0 11062                 PNAME,,-*-1                                    LS109180
    67417   0 00000 0 10360                 -*-1                                           LS109190
    67420   0 00000 0 10357                 -*-1                                           LS109200
    67421   632551475131               BCD  1TERPRI                                        LS109210
                                                                                           LS109220
    67422   0 10355 0 77777   )122        -1,,-*-1                                       LS109230
    67423   0 10354 0 10440                 SUBR,,-*-1                                     LS109240
    67424   0 10352 0 10353                 -*-1,,-*-2                                     LS109250
    67425  -3 00000 0 01767           TXL      $TIME,,0                                   LS109260
    67426   0 10351 0 11062                 PNAME,,-*-1                                    LS109270
    67427   0 00000 0 10350                 -*-1                                           LS109280
    67430   0 00000 0 10347                 -*-1                                           LS109290

BINARY CARD NO. LISP0439
    67431 -233144257777                OCT  633144257777                                  LS109300
                                   *                                                       LS109310
    67432   0 10345 0 77777  )I34          -1,,-*-1                                       LS109320
    67433   0 10344 0 10440                 SUBR,,-*-1                                     LS109330
    67434   0 10342 0 10343                 -*-1,,-*-2                                     LS109340
    67435  -3 00000 0 01755           TXL  $TIME1,,0                                      LS109350
    67436   0 10341 0 11062                 PNAME,,-*-1                                    LS109360
    67437   0 00000 0 10340                 -*-1                                           LS109370
    67440   0 00000 0 10337                 -*-1                                           LS109380
    67441 -233144250177                OCT  633144250177                                  LS109390
                                                                                           LS109400
    67442   0 10335 0 77777   )I24          -1,,-*-1                                      LS109410
    67443   0 10334 0 11630                    $FSUBR,,-*-1                               LS109420
    67444   0 10332 0 10333                    -*-1,,-*-2                                 LS109430
    67445  -3 00002 0 15135           TXL      MULT,,2                                    LS109440
    67446   0 10331 0 11062                    $PNAME,,-*-1                               LS109450
    67447   0 00000 0 10330                    -*-1                                       LS109460
    67450   0 00000 0 10327                    -*-1                                       LS109470
    67451 -233144256277                OCT      633144256277       TIMES                LS109480
                                   *                                                       LS109490
    67452   0 10325 0 77777  )213           -1,,-*-1                                      LS109500
    67453   0 10324 0 11062                 $PNAME,,-*-1                                   LS109510
    67454   0 00000 0 10323                 -*-1                                           LS109520
    67455   0 00000 0 10322                 -*-1                                           LS109530
    67456   635121232577               VFD      H30/TRACE,06/77                           LS109540
                                   *                                                       LS109550
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BINARY CARD NO. LISP0440
    67457  0 10320 0 77777  )130          -1,,-*-1                                  LS109560
    67460  0 10317 0 10440                SUBR,,-*-1                                LS109570
    67461  0 10315 0 10316                -*-1,,-*-2                                LS109580
    67462 -3 00001 0 11136         TXL     TIMEST,,1                                LS109590
    67463  0 10314 0 11062                PNAME,,-*-1                               LS109600
    67464  0 00000 0 10313                -*-1                                      LS109610
    67465  0 00000 0 10312                -*-1                                      LS109620
    67466  637047253145            BCI     1,TYPEIN          TYPEIN                LS109630
                                  *                                                 LS109640
    67467  0 10310 0 77777  )135       -1,,-*-1                                    LS109650
    67470  0 10307 0 10440               SUBR,,-*-1                                LS109660
    67471  0 10305 0 10306               -*-1,,-*-2                                LS109670
    67472 -3 00001 0 15703         TXL TCNTM3,,1                                    LS109680
    67473  0 10304 0 11062               PNAME,,-*-1                               LS109690
    67474  0 00000 0 10303               -*-1                                      LS109700
    67475  0 10302 0 10301               -*-2,,-*-1                                LS109710
    67476  0 00000 0 10300               -*-2                                      LS109720
    67477  635121232523            BCI 1,TRACEC          TRACECOUNT                LS109730
    67500 -066445637777             OCT 466445637777                              LS109740
                                  *                                                 LS109750
                                  *                                                 LS109760
    67501  0 10276 0 77777   )127       -1,,-*-1                                    LS109770
    67502  0 10275 0 10440               SUBR,,-*-1                                LS109780
    67503  0 10273 0 10274               -*-1,,-*-2                                LS109790
    67504 -3 00000 0 04643         TXL UNCONT,,0                                    LS109800

BINARY CARD NO. LISP0441
    67505  0 10272 0 11062               PNAME,,-*-1                               LS109810
    67506  0 00000 0 10271               -*-1                                      LS109820
    67507  0 10270 0 10267               -*-2,,-*-1                                LS109830
    67510  0 00000 0 10266               -*-2                                      LS109840
    67511  644523466445            BCD 1UNCOUN                                   LS109850
    67512 -237777777777             OCT 637777777777          UNCOUNT             LS109860
                                                                                    LS109870
    67513  0 10264 0 77777   )PJ31       -1,,-*-1                 UNPACK          LS109880
    67514  0 10263 0 10440               SUBR,,-*-1                                LS109890
    67515  0 10261 0 10262               -*-1,,-*-2                                LS109900
    67516 -3 00001 0 13353         TXL     UNPACK,,1                               LS109910
    67517  0 10260 0 11062               PNAME,,-*-1                               LS109920
    67520  0 00000 0 10257               -*-1                                      LS109930
    67521  0 00000 0 10256               -*-1                                      LS109940
    67522  644547212342            BCI     1,UNPACK                              LS109950
                                  *                                                 LS109960
    67523  0 10254 0 77777  )133       -1,,-*-1                                    LS109970
    67524  0 10253 0 10440               SUBR,,-*-1                                LS109980
    67525  0 10251 0 10252               -*-1,,-*-2                                LS109990
    67526 -3 00001 0 04044         TXL GCTALK,,1                                    LS110000
    67527  0 10250 0 11062               PNAME,,-*-1                               LS110010
    67530  0 00000 0 10247               -*-1                                      LS110020
    67531  0 00000 0 10246               -*-1                                      LS110030
    67532  652551224662            BCI 1,VERBOS          VERBOS                    LS110040
                                                                                    LS110050
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BINARY CARD NO. LISP0442
    67533   0 10244 0 77777   I110          -1,,-*-1                                  LS110060
    67534   0 10243 0 10440                 $SUBR,,-*-1                               LS110070
    67535   0 10241 0 10242                 -*-1,,-*-2                                LS110080
    67536  -3 00001 0 15510         TXL     ZEROP,,1                                  LS110090
    67537   0 10240 0 11062                 $PNAME,,-*-1                              LS110100
    67540   0 00000 0 10237                 -*-1                                      LS110110
    67541   0 00000 0 10236                 -*-1                                      LS110120
    67542 -312551464777              OCT    712551464777        ZEROP                 LS110130
                              *                                                       LS110140
                              *                                                       LS110150
    67543   0 10234 0 77777   )140          -1,,-*-1                                  LS110160
    67544   0 10233 0 10440                 $SUBR,,-*-1                               LS110170
    67545   0 10231 0 10232                 -*-1,,-*-2                                LS110180
    67546  -3 00001 0 02047         TXL W$TAPES,,1                                    LS110190
    67547   0 10230 0 11062              PNAME,,-*-1                                  LS110200
    67550   0 00000 0 10227              -*-1                                         LS110210
    67551   0 00000 0 10226              -*-1                                         LS110220
    67552   632147257777             VFD H24/TAPE,012/7777                         LS110230
                              *                                                       LS110240
    67553   0 10224 0 77777   )141          -1,,-*-1                                  LS110250
    67554   0 10223 0 10440                 $SUBR,,-*-1                               LS110260
    67555   0 10221 0 10222                 -*-1,,-*-2                                LS110270
    67556  -3 00001 0 02075         TXL W$REW,,1                                      LS110280
    67557   0 10220 0 11062              PNAME,,-*-1                                  LS110290
    67560   0 00000 0 10217              -*-1                                         LS110300

BINARY CARD NO. LISP0443
    67561   0 00000 0 10216              -*-1                                         LS110310
    67562   512566314524             BCI 1,REWIND                                  LS110320
                              *                                                       LS110330
    67563   0 10214 0 77777   )142          -1,,-*-1                                  LS110340
    67564   0 10213 0 10440                 $SUBR,,-*-1                               LS110350
    67565   0 10211 0 10212                 -*-1,,-*-2                                LS110360
    67566  -3 00002 0 02147         TXL W$MPRT,,2                                     LS110370
    67567   0 10210 0 11062              PNAME,,-*-1                                  LS110380
    67570   0 00000 0 10207              -*-1                                         LS110390
    67571   0 00000 0 10206              -*-1                                         LS110400
    67572   444751314563             BCI 1,MPRINT                                  LS110410
                              *                                                       LS110420
    67573   0 10204 0 77777   )143          -1,,-*-1                                  LS110430
    67574   0 10203 0 10440                 $SUBR,,-*-1                               LS110440
    67575   0 10201 0 10202                 -*-1,,-*-2                                LS110450
    67576  -3 00001 0 02156         TXL W$MRD,,1                                      LS110460
    67577   0 10200 0 11062              PNAME,,-*-1                                  LS110470
    67600   0 00000 0 10177              -*-1                                         LS110480
    67601   0 00000 0 10176              -*-1                                         LS110490
    67602   445125212477             VFD H30/MREAD,06/77                           LS110500
                              *                                                       LS110510
    67603   0 10174 0 77777   )145          -1,,-*-1                                  LS110520
    67604   0 10173 0 10440                 $SUBR,,-*-1                               LS110530
    67605   0 10171 0 10172                 -*-1,,-*-2                                LS110540
    67606  -3 00001 0 02244         TXL W$SPACE,,1                                    LS110550
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BINARY CARD NO. LISP0444
    67607   0 10170 0 11062                 PNAME,,-*-1                    LS110560
    67610   0 00000 0 10167                 -*-1                           LS110570
    67611   0 00000 0 10166                 -*-1                           LS110580
    67612   624721232577            VFD H30/SPACE,O6/77                    LS110590
                          *                                                LS110600
    67613   0 10164 0 77777  )144          -1,,-*-1                       LS110610
    67614   0 10163 0 10440                 $SUBR,,-*-1                    LS110620
    67615   0 10161 0 10162                 -*-1,,-*-2                     LS110630
    67616  -3 00000 0 02257         TXL W$EJECT,,0                         LS110640
    67617   0 10160 0 11062                 PNAME,,-*-1                    LS110650
    67620   0 00000 0 10157                 -*-1                           LS110660
    67621   0 00000 0 10156                 -*-1                           LS110670
    67622   254125236377            VFD H30/EJECT,O6/77                    LS110680
                          *                                                LS110690
    67623   0 10154 0 77777  )146            -1,,-*-1                     LS110700
    67624   0 10153 0 11630                   $FSUBR,,-*-1                 LS110710
    67625   0 10151 0 10152                   -*-1,,-*-2                   LS110720
    67626  -3 00000 0 12345           TXL    EVALQT,,0                    LS110730
    67627   0 10150 0 11062                   PNAME,,-*-1                  LS110740
    67630   0 00000 0 10147                   -*-1                         LS110750
    67631   0 10146 0 10145                   -*-2,,-*-1                   LS110760
    67632   0 00000 0 10144                   -*-2                         LS110770
    67633   256521435064              BCI    1,EVALQU                     LS110780
    67634   466325777777              VFD    H18/OTE,O18/777777           LS110790
                          *                                                LS110800

BINARY CARD NO. LISP0445
    67635   0 10142 0 77777  )147            -1,,-*-1                     LS110810
    67636   0 10141 0 10440                   $SUBR,,-*-1                  LS110820
    67637   0 10137 0 10140                   -*-1,,-*-2                   LS110830
    67640  -3 00001 0 02126           TXL    BACKSP,,1                    LS110840
    67641   0 10136 0 11062                   PNAME,,-*-1                  LS110850
    67642   0 00000 0 10135                   -*-1                         LS110860
    67643   0 10134 0 10133                   -*-2,,-*-1                   LS110870
    67644   0 00000 0 10132                   -*-2                         LS110880
    67645   222123426247              BCI    1,BACKSP                     LS110890
    67646   212325777777              VFD    H18/ACE,O18/777777           LS110900
                          *                                                LS110910
    67647   0 10130 0 77777  )149            -1,,-*-1                     LS110920
    67650   0 10127 0 11630                   $FSUBR,,-*-1                 LS110930
    67651   0 10125 0 10126                   -*-1,,-*-2                   LS110940
    67652  -3 00000 0 02272           TXL    BACTRA,,0                    LS110950
    67653   0 10124 0 11062                   PNAME,,-*-1                  LS110960
    67654   0 00000 0 10123                   -*-1                         LS110970
    67655   0 10122 0 10121                   -*-2,,-*-1                   LS110980
    67656   0 00000 0 10120                   -*-2                         LS110990
    67657   222123426351              BCI    1,BACKTR                     LS111000
    67660  +212325777777              OCT    212325777777                 LS111010
                          *                                                LS111020
    67661   0 10116 0 77777  )150            -1,,-*-1                     LS111030
    67662   0 10115 0 10440                   $SUBR,,-*-1                  LS111040
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BINARY CARD NO. LISP0446
    67663   0 10113 0 10114                -*-1,,-*-2                    LS111050
    67664  -3 00001 0 11071        TXL     SYMNAM,,1                     LS111060
    67665   0 10112 0 11062                PNAME,,-*-1                   LS111070
    67666   0 00000 0 10111                -*-1                          LS111080
    67667   0 00000 0 10110                -*-1                          LS111090
    67670   627044452144           BCI     1,SYMNAM                      LS111100
                          *                                              LS111110
```

EJECT

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*                                                          LS111120
*                                                          LS111130
                                                           LS111140
```

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                                EJECT                                                                  LS111150
                           *    PROPERTY LISTS FOR ALPHABETIC OBJECTS                                  LS111160
                           *                                                                           LS111170
67671  0 00000 0 00000  HH00          0                                                               LS111180
                          * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111190
67672  0 00000 0 00001  HH01          1                                                               LS111200
                          * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111210
67673  0 00000 0 00002  HH02          2                                                               LS111220
                          * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111230
67674  0 00000 0 00003  HH03          3                                                               LS111240
                          * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111250
67675  0 00000 0 00004  HH04          4                                                               LS111260
                          * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111270
67676  0 00000 0 00005  HH05          5                                                               LS111280
                          * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111290
67677  0 00000 0 00006  HH06          6                                                               LS111300
                          * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111310
67700  0 00000 0 00007  HH07          7                                                               LS111320
                          * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111330
67701 +000000000010      HH10    OCT   10                                                              LS111340
                          * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111350
67702 +000000000011      HH11    OCT   11                                                              LS111360
                          * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111370
                          * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111380
67703  0 10074 0 11062   HH12   PZE PNAME,,-*-1          END OF FILE                                    LS111390
67704  0 10071 0 10073          PZE -*-1,,-*-3                                                        LS111400
67705  0 00000 0 10072          PZE -*-1                                                              LS111410
67706 -132546265377             OCT 532546265377         BCD $EOF$                                    LS111420
67707  0 10070 0 12521          PZE APVAL1,,-*-1                                                      LS111430
6771C  0 00000 0 10067          PZE -*-1                                                              LS111440

BINARY CARD NO. LISP0447
    67711  0 00000 0 07440      PZE H12                                                               LS111450
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111460
    67712  0 10065 0 11062 HH13 PZE PNAME,,-*-1          =                                           LS111470
    67713  0 00000 0 10064      PZE -*-1                                                              LS111480
    67714  0 00000 0 10063      PZE -*-1                                                              LS111490
    67715 +137777777777         OCT 137777777777                                                      LS111500
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111510
    67716  0 10061 0 11062 HH14     PNAME,,-*-1          8-4 MINUS                                   LS111520
    67717  0 00000 0 10060      PZE -*-1                                                              LS111530
    67720  0 00000 0 10057      PZE -*-1                                                              LS111540
    67721 +147777777777         OCT 147777777777                                                      LS111550
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111560
    67722  0 10055 0 11062 HH15     PNAME,,-*-1          ILLEGAL                                     LS111570
    67723  0 00000 0 10054      PZE -*-1                                                              LS111580
    67724  0 00000 0 10053      PZE -*-1                                                              LS111590
    67725  533143010553         BCD 1$IL15$                                                           LS111600
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111610
    67726  0 10051 0 11062 HH16     PNAME,,-*-1          ILLEGAL                                     LS111620
    67727  0 00000 0 10050      PZE -*-1                                                              LS111630
    67730  0 00000 0 10047      PZE -*-1                                                              LS111640
    67731  533143010653         BCD 1$IL16$                                                           LS111650
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111660
    67732  0 10045 0 11062 HH17     PNAME,,-*-1          ILLEGAL                                     LS111670
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    67733  0 00000 0 10044          PZE -*-1                                                    LS111680
    67734  0 00000 0 10043          PZE -*-1                                                    LS111690
    67735  533143010753             BCD 1$IL17$                                                 LS111700
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111710
    67736  0 10041 0 11062  HH20        PNAME,,-*-1            +                                LS111720

BINARY CARD NO. LISP0448
    67737  0 00000 0 10040          PZE -*-1                                                    LS111730
    67740  0 00000 0 10037          PZE -*-1                                                    LS111740
    67741 +207777777777             OCT 207777777777                                            LS111750
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111760
    67742  0 10035 0 11062  HH21        PNAME,,-*-1            A                                LS111770
    67743  0 00000 0 10034          PZE -*-1                                                    LS111780
    67744  0 00000 0 10033          PZE -*-1                                                    LS111790
    67745 +217777777777             OCT 217777777777                                            LS111800
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111810
    67746  0 10031 0 11062  HH22        PNAME,,-*-1            B                                LS111820
    67747  0 00000 0 10030          PZE -*-1                                                    LS111830
    67750  0 00000 0 10027          PZE -*-1                                                    LS111840
    67751 +227777777777             OCT 227777777777                                            LS111850
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111860
    67752  0 10025 0 11062  HH23        PNAME,,-*-1            C                                LS111870
    67753  0 00000 0 10024          PZE -*-1                                                    LS111880
    67754  0 00000 0 10023          PZE -*-1                                                    LS111890
    67755 +237777777777             OCT 237777777777                                            LS111900
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111910
    67756  0 10021 0 11062  HH24        PNAME,,-*-1            D                                LS111920
    67757  0 00000 0 10020          PZE -*-1                                                    LS111930
    67760  0 00000 0 10017          PZE -*-1                                                    LS111940
    67761 +247777777777             OCT 247777777777                                            LS111950
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS111960
    67762  0 10015 0 11062  HH25        PNAME,,-*-1            E                                LS111970
    67763  0 00000 0 10014          PZE -*-1                                                    LS111980
    67764  0 00000 0 10013          PZE -*-1                                                    LS111990

BINARY CARD NO. LISP0449
    67765 +257777777777             OCT 257777777777                                            LS112000
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS112010
    67766  0 10011 0 77777  HH26        -1,,-*-1               F                                LS112020
    67767  0 10010 0 12521              APVAL,,-*-1                                             LS112030
    67770  0 10006 0 10007              -*-1,,-*-2                                              LS112040
    67771  0 00000 0 00000              0                                                       LS112050
    67772  0 10005 0 11062              PNAME,,-*-1                                             LS112060
    67773  0 00000 0 10004          PZE -*-1                                                    LS112070
    67774  0 00000 0 10003          PZE -*-1                                                    LS112080
    67775 +267777777777             OCT 267777777777                                            LS112090
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS112100
    67776  0 10001 0 11062  HH27        PNAME,,-*-1            G                                LS112110
    67777  0 00000 0 10000          PZE -*-1                                                    LS112120
    70000  0 00000 0 07777          PZE -*-1                                                    LS112130
    70001 +277777777777             OCT 277777777777                                            LS112140
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS112150
    70002  0 07775 0 11062  HH30        PNAME,,-*-1            H                                LS112160
    70003  0 00000 0 07774          PZE -*-1                                                    LS112170
    70004  0 00000 0 07773          PZE -*-1                                                    LS112180
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    70005 +307777777777           OCT 307777777777                                    LS112190
                                      * * * * * * * * * * * * * * * * * * * * * * * * *LS112200
    70006   0 07771 0 11062  HH31     PNAME,,-*-1            I                        LS112210
    70007   0 00000 0 07770        PZE -*-1                                            LS112220
    70010   0 00000 0 07767        PZE -*-1                                            LS112230
    70011 +317777777777           OCT 317777777777                                    LS112240
                                      * * * * * * * * * * * * * * * * * * * * * * * * *LS112250
    70012   0 07765 0 11062  HH32     PNAME,,-*-1            +0                       LS112260

BINARY CARD NO. LISP0450
    70013   0 00000 0 07764        PZE -*-1                                            LS112270
    70014   0 00000 0 07763        PZE -*-1                                            LS112280
    70015   533143030253           BCD 1$IL32$                                         LS112290
                                      * * * * * * * * * * * * * * * * * * * * * * * * *LS112300
    70016   0 07761 0 11062  HH33     PNAME,,-*-1            .                        LS112310
    70017   0 00000 0 07760        PZE -*-1                                            LS112320
    70020   0 00000 0 07757        PZE -*-1                                            LS112330
    70021 +337777777777           OCT 337777777777                                    LS112340
                                      * * * * * * * * * * * * * * * * * * * * * * * * *LS112350
    70022   0 07755 0 11062  HH34     PNAME,,-*-1            )                        LS112360
    70023   0 00000 0 07754        PZE -*-1                                            LS112370
    70024   0 00000 0 07753        PZE -*-1                                            LS112380
    70025 +347777777777           OCT 347777777777                                    LS112390
                                      * * * * * * * * * * * * * * * * * * * * * * * * *LS112400
    70026   0 07751 0 11062  HH35     PNAME,,-*-1            ILLEGAL                  LS112410
    70027   0 00000 0 07750        PZE -*-1                                            LS112420
    70030   0 00000 0 07747        PZE -*-1                                            LS112430
    70031   533143030553           BCD 1$IL35$                                         LS112440
                                      * * * * * * * * * * * * * * * * * * * * * * * * *LS112450
    70032   0 07745 0 11062  HH36     PNAME,,-*-1            ILLEGAL                  LS112460
    70033   0 00000 0 07744        PZE -*-1                                            LS112470
    70034   0 00000 0 07743        PZE -*-1                                            LS112480
    70035   533143030653           BCD 1$IL36$                                         LS112490
                                      * * * * * * * * * * * * * * * * * * * * * * * * *LS112500
    70036   0 07741 0 11062  HH37     PNAME,,-*-1            ILLEGAL                  LS112510
    70037   0 00000 0 07740        PZE -*-1                                            LS112520
    70040   0 00000 0 07737        PZE -*-1                                            LS112530

BINARY CARD NO. LISP0451
    70041   533143030753           BCD 1$IL37$                                         LS112540
                                      * * * * * * * * * * * * * * * * * * * * * * * * *LS112550
    70042   0 07735 0 11062  HH40     PNAME,,-*-1            11 MINUS                 LS112560
    70043   0 00000 0 07734        PZE -*-1                                            LS112570
    70044   0 00000 0 07733        PZE -*-1                                            LS112580
    70045 -007777777777           OCT 407777777777                                    LS112590
                                      * * * * * * * * * * * * * * * * * * * * * * * * *LS112600
    70046   0 07731 0 11062  HH41     PNAME,,-*-1            J                        LS112610
    70047   0 00000 0 07730        PZE -*-1                                            LS112620
    70050   0 00000 0 07727        PZE -*-1                                            LS112630
    70051 -017777777777           OCT 417777777777                                    LS112640
                                      * * * * * * * * * * * * * * * * * * * * * * * * *LS112650
    70052   0 07725 0 11062  HH42     PNAME,,-*-1            K                        LS112660
    70053   0 00000 0 07724        PZE -*-1                                            LS112670
    70054   0 00000 0 07723        PZE -*-1                                            LS112680
    70055 -027777777777           OCT 427777777777                                    LS112690
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                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS112700
 70056  0 07721 0 11062  HH43        PNAME,,-*-1              L                                  LS112710
 70057  0 00000 0 07720          PZE -*-1                                                       LS112720
 70060  0 00000 0 07717          PZE -*-1                                                       LS112730
 70061 -037777777777             OCT 437777777777                                            LS112740
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS112750
 70062  0 07715 0 11062  HH44        PNAME,,-*-1              M                                  LS112760
 70063  0 00000 0 07714          PZE -*-1                                                       LS112770
 70064  0 00000 0 07713          PZE -*-1                                                       LS112780
 70065 -047777777777             OCT 447777777777                                            LS112790
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS112800
 70066  0 07711 0 11062  HH45        PNAME,,-*-1              N                                  LS112810

BINARY CARD NO. LISP0452
 70067  0 00000 0 07710          PZE -*-1                                                       LS112820
 70070  0 00000 0 07707          PZE -*-1                                                       LS112830
 70071 -057777777777             OCT 457777777777                                            LS112840
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS112850
 70072  0 07705 0 11062  HH46        PNAME,,-*-1              O                                  LS112860
 70073  0 00000 0 07704          PZE -*-1                                                       LS112870
 70074  0 00000 0 07703          PZE -*-1                                                       LS112880
 70075 -067777777777             OCT 467777777777                                            LS112890
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS112900
 70076  0 07701 0 11062  HH47        PNAME,,-*-1              P                                  LS112910
 70077  0 00000 0 07700          PZE -*-1                                                       LS112920
 70100  0 00000 0 07677          PZE -*-1                                                       LS112930
 70101 -077777777777             OCT 477777777777                                            LS112940
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS112950
 70102  0 07675 0 11062  HH50        PNAME,,-*-1              Q                                  LS112960
 70103  0 00000 0 07674          PZE -*-1                                                       LS112970
 70104  0 00000 0 07673          PZE -*-1                                                       LS112980
 70105 -107777777777             OCT 507777777777                                            LS112990
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS113000
 70106  0 07671 0 11062  HH51        PNAME,,-*-1              R                                  LS113010
 70107  0 00000 0 07670          PZE -*-1                                                       LS113020
 70110  0 00000 0 07667          PZE -*-1                                                       LS113030
 70111 -117777777777             OCT 517777777777                                            LS113040
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS113050
 70112  0 07665 0 11062  HH52        PNAME,,-*-1              -0                                 LS113060
 70113  0 00000 0 07664          PZE -*-1                                                       LS113070
 70114  0 00000 0 07663          PZE -*-1                                                       LS113080

BINARY CARD NO. LISP0453
 70115  533143050253             BCD 1$IL52$                                                 LS113090
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS113100
 70116  0 07661 0 11062  HH53        PNAME,,-*-1              $                                  LS113110
 70117  0 00000 0 07660          PZE -*-1                                                       LS113120
 70120  0 00000 0 07657          PZE -*-1                                                       LS113130
 70121 -137777777777             OCT 537777777777                                            LS113140
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS113150
 70122  0 07655 0 11062  HH54        PNAME,,-*-1              *                                  LS113160
 70123  0 07652 0 07654          PZE     -*-1,,-*-3                                             LS113170
 70124  0 00000 0 07653          PZE -*-1                                                       LS113180
 70125 -147777777777             OCT 547777777777                                            LS113190
 70126  0 07651 0 10413          PZE     SYM,,-*-1                                              LS113200
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 70127  0 00000 0 00327          PZE     -C$STAR                                  LS113210
                                 * * * * * * * * * * * * * * * * * * * * * * * * *LS113220
 70130  0 07647 0 11062  HH55      PNAME,,-*-1            ILLEGAL                  LS113230
 70131  0 00000 0 07646          PZE -*-1                                         LS113240
 70132  0 00000 0 07645          PZE -*-1                                         LS113250
 70133  533143050553             BCD 1$IL55$                                      LS113260
                                 * * * * * * * * * * * * * * * * * * * * * * * * *LS113270
 70134  0 07643 0 11062  HH56      PNAME,,-*-1            ILLEGAL                  LS113280
 70135  0 00000 0 07642          PZE -*-1                                         LS113290
 70136  0 00000 0 07641          PZE -*-1                                         LS113300
 70137  533143050653             BCD 1$IL56$                                      LS113310
                                 * * * * * * * * * * * * * * * * * * * * * * * * *LS113320
 70140  0 07637 0 11062  HH57      PNAME,,-*-1            ILLEGAL                  LS113330
 70141  0 00000 0 07636          PZE -*-1                                         LS113340
 70142  0 00000 0 07635          PZE -*-1                                         LS113350

BINARY CARD NO. LISP0454
 70143  533143050753             BCD 1$IL57$                                      LS113360
                                 * * * * * * * * * * * * * * * * * * * * * * * * *LS113370
 70144  0 07633 0 11062  HH60      PNAME,,-*-1            BLANK                    LS113380
 70145  0 00000 0 07632          PZE -*-1                                         LS113390
 70146  0 00000 0 07631          PZE -*-1                                         LS113400
 70147 -207777777777             OCT 607777777777                                 LS113410
                                 * * * * * * * * * * * * * * * * * * * * * * * * *LS113420
 70150  0 07627 0 11062  HH61      PNAME,,-*-1            /                        LS113430
 70151  0 00000 0 07626          PZE -*-1                                         LS113440
 70152  0 00000 0 07625          PZE -*-1                                         LS113450
 70153 -217777777777             OCT 617777777777                                 LS113460
                                 * * * * * * * * * * * * * * * * * * * * * * * * *LS113470
 70154  0 07623 0 11062  HH62      PNAME,,-*-1            S                        LS113480
 70155  0 00000 0 07622          PZE -*-1                                         LS113490
 70156  0 00000 0 07621          PZE -*-1                                         LS113500
 70157 -227777777777             OCT 627777777777                                 LS113510
                                 * * * * * * * * * * * * * * * * * * * * * * * * *LS113520
 70160  0 07617 0 77777  HH63      -1,,-*-1               T                        LS113530
 70161  0 07616 0 12521           APVAL,,-*-1                                      LS113540
 70162  0 07614 0 07615           -*-1,,-*-2                                       LS113550
 70163  0 00000 0 00001           1                                                LS113560
 70164  0 07613 0 11062           PNAME,,-*-1                                      LS113570
 70165  0 00000 0 07612          PZE -*-1                                         LS113580
 70166  0 00000 0 07611          PZE -*-1                                         LS113590
 70167 -237777777777             OCT 637777777777                                 LS113600
                                 * * * * * * * * * * * * * * * * * * * * * * * * *LS113610
 70170  0 07607 0 11062  HH64      PNAME,,-*-1            U                        LS113620

BINARY CARD NO. LISP0455
 70171  0 00000 0 07606          PZE -*-1                                         LS113630
 70172  0 00000 0 07605          PZE -*-1                                         LS113640
 70173 -247777777777             OCT 647777777777                                 LS113650
                                 * * * * * * * * * * * * * * * * * * * * * * * * *LS113660
 70174  0 07603 0 11062  HH65      PNAME,,-*-1            V                        LS113670
 70175  0 00000 0 07602          PZE -*-1                                         LS113680
 70176  0 00000 0 07601          PZE -*-1                                         LS113690
 70177 -257777777777             OCT 657777777777                                 LS113700
                                 * * * * * * * * * * * * * * * * * * * * * * * * *LS113710
```

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70200  0 07577 0 11062  HH66       PNAME,,-*-1          W                                  LS113720
70201  0 00000 0 07576          PZE -*-1                                                   LS113730
70202  0 00000 0 07575          PZE -*-1                                                   LS113740
70203 -267777777777              OCT 667777777777                                        LS113750
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS113760
70204  0 07573 0 11062  HH67       PNAME,,-*-1          X                                  LS113770
70205  0 00000 0 07572          PZE -*-1                                                   LS113780
70206  0 00000 0 07571          PZE -*-1                                                   LS113790
70207 -277777777777              OCT 677777777777                                        LS113800
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS113810
70210  0 07567 0 11062  HH70       PNAME,,-*-1          Y                                  LS113820
70211  0 00000 0 07566          PZE -*-1                                                   LS113830
70212  0 00000 0 07565          PZE -*-1                                                   LS113840
70213 -307777777777              OCT 707777777777                                        LS113850
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS113860
70214  0 07563 0 11062  HH71       PNAME,,-*-1          Z                                  LS113870
70215  0 00000 0 07562          PZE -*-1                                                   LS113880
70216  0 00000 0 07561          PZE -*-1                                                   LS113890

BINARY CARD NO. LISP0456
70217 -317777777777              OCT 717777777777                                        LS113900
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS113910
70220  0 07557 0 11062  HH72       PNAME,,-*-1          END OF RECORD                      LS113920
70221  0 07554 0 07556          PZE -*-1,,-*-3                                             LS113930
70222  0 00000 0 07555          PZE -*-1                                                   LS113940
70223 -132546515377              OCT 532546515377     BCD $EOR$                          LS113950
70224  0 07553 0 12521           PZE APVAL1,,-*-1                                        LS113960
70225  0 00000 0 07552           PZE -*-1                                                LS113970
70226  0 00000 0 07520           PZE H72                                                 LS113980
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS113990
70227  0 07550 0 11062  HH73       PNAME,,-*-1          ,                                  LS114000
70230  0 00000 0 07547          PZE -*-1                                                   LS114010
70231  0 00000 0 07546          PZE -*-1                                                   LS114020
70232 -337777777777              OCT 737777777777                                        LS114030
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS114040
70233  0 07544 0 11062  HH74       PNAME,,-*-1          (                                  LS114050
70234  0 00000 0 07543          PZE -*-1                                                   LS114060
70235  0 00000 0 07542          PZE -*-1                                                   LS114070
70236 -347777777777              OCT 747777777777                                        LS114080
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS114090
70237  0 07540 0 11062  HH75       PNAME,,-*-1          ILLEGAL                            LS114100
7024C  0 00000 0 07537          PZE -*-1                                                   LS114110
70241  0 00000 0 07536          PZE -*-1                                                   LS114120
70242  533143070553             BCD 1$IL75$                                             LS114130
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS114140
70243  0 07534 0 11062  HH76       PNAME,,-*-1          ILLEGAL                            LS114150
70244  0 00000 0 07533          PZE -*-1                                                   LS114160

BINARY CARD NO. LISP0457
70245  0 00000 0 07532           PZE -*-1                                                LS114170
70246  533143070653              BCD 1$IL76$                                             LS114180
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *LS114190
70247  0 07530 0 11062  HH77       PNAME,,-*-1          ILLEGAL                            LS114200
70250  0 00000 0 07527          PZE -*-1                                                   LS114210
70251  0 00000 0 07526          PZE -*-1                                                   LS114220
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70252  53314307C753          BCD 1$IL77$                              LS114230
                             *                                        LS114240
                             *                                        LS114250
70253  0 07531 0 77777  )H77      -1,,-HH77                           LS114260
70254  0 07535 0 77777  )H76      -1,,-HH76                           LS114270
70255  0 07541 0 77777  )H75      -1,,-HH75                           LS114280
70256  0 07545 0 77777  )H74      -1,,-HH74                           LS114290
70257  0 07551 0 77777  )H73      -1,,-HH73                           LS114300
70260  0 07560 0 77777  )H72      -1,,-HH72                           LS114310
70261  0 07564 0 77777  )H71      -1,,-HH71                           LS114320
70262  0 07570 0 77777  )H70      -1,,-HH70                           LS114330
70263  0 07574 0 77777  )H67      -1,,-HH67                           LS114340
70264  0 07600 0 77777  )H66      -1,,-HH66                           LS114350
70265  0 07604 0 77777  )H65      -1,,-HH65                           LS114360
70266  0 07610 0 77777  )H64      -1,,-HH64                           LS114370
70267  0 07620 0 77777  )H63      -1,,-HH63                           LS114380
70270  0 07624 0 77777  )H62      -1,,-HH62                           LS114390
70271  0 07630 0 77777  )H61      -1,,-HH61                           LS114400
70272  0 07634 0 77777  )H60      -1,,-HH60                           LS114410

BINARY CARD NO. LISP0458
70273  0 07640 0 77777  )H57      -1,,-HH57                           LS114420
70274  0 07644 0 77777  )H56      -1,,-HH56                           LS114430
70275  0 07650 0 77777  )H55      -1,,-HH55                           LS114440
70276  0 07656 0 77777  )H54      -1,,-HH54                           LS114450
70277  0 07662 0 77777  )H53      -1,,-HH53                           LS114460
70300  0 07666 0 77777  )H52      -1,,-HH52                           LS114470
70301  0 07672 0 77777  )H51      -1,,-HH51                           LS114480
70302  0 07676 0 77777  )H50      -1,,-HH50                           LS114490
70303  0 07702 0 77777  )H47      -1,,-HH47                           LS114500
70304  0 07706 0 77777  )H46      -1,,-HH46                           LS114510
70305  0 07712 0 77777  )H45      -1,,-HH45                           LS114520
70306  0 07716 0 77777  )H44      -1,,-HH44                           LS114530
70307  0 07722 0 77777  )H43      -1,,-HH43                           LS114540
70310  0 07726 0 77777  )H42      -1,,-HH42                           LS114550
70311  0 07732 0 77777  )H41      -1,,-HH41                           LS114560
70312  0 07736 0 77777  )H40      -1,,-HH40                           LS114570
70313  0 07742 0 77777  )H37      -1,,-HH37                           LS114580
70314  0 07746 0 77777  )H36      -1,,-HH36                           LS114590
70315  0 07752 0 77777  )H35      -1,,-HH35                           LS114600
70316  0 07756 0 77777  )H34      -1,,-HH34                           LS114610
70317  0 07762 0 77777  )H33      -1,,-HH33                           LS114620
70320  0 07766 0 77777  )H32      -1,,-HH32                           LS114630

BINARY CARD NO. LISP0459
70321  0 07772 0 77777  )H31      -1,,-HH31                           LS114640
70322  0 07776 0 77777  )H30      -1,,-HH30                           LS114650
70323  0 10002 0 77777  )H27      -1,,-HH27                           LS114660
70324  0 10012 0 77777  )H26      -1,,-HH26                           LS114670
70325  0 10016 0 77777  )H25      -1,,-HH25                           LS114680
70326  0 10022 0 77777  )H24      -1,,-HH24                           LS114690
70327  0 10026 0 77777  )H23      -1,,-HH23                           LS114700
70330  0 10032 0 77777  )H22      -1,,-HH22                           LS114710
70331  0 10036 0 77777  )H21      -1,,-HH21                           LS114720
70332  0 10042 0 77777  )H20      -1,,-HH20                           LS114730
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70333  0 10046 0 77777  )H17       -1,,-HH17                    LS114740
70334  0 10052 0 77777  )H16       -1,,-HH16                    LS114750
70335  0 10056 0 77777  )H15       -1,,-HH15                    LS114760
70336  0 10062 0 77777  )H14       -1,,-HH14                    LS114770
70337  0 10066 0 77777  )H13       -1,,-HH13                    LS114780
70340  0 10075 0 77777  )H12       -1,,-HH12                    LS114790
70341  0 10076 1 77777   )H11           -1,1,-HH11              LS114800
70342  0 10077 1 77777   )H10           -1,1,-HH10              LS114810
70343  0 10100 1 77777   )H07           -1,1,-HH07              LS114820
70344  0 10101 1 77777   )H06           -1,1,-HH06              LS114830
70345  0 10102 1 77777   )H05           -1,1,-HH05              LS114840
70346  0 10103 1 77777   )H04           -1,1,-HH04              LS114850

BINARY CARD NO. LISP0460
70347  0 10104 1 77777   )H03           -1,1,-HH03              LS114860
70350  0 10105 1 77777   )H02           -1,1,-HH02              LS114870
70351  0 10106 1 77777   )H01           -1,1,-HH01              LS114880
70352  0 10107 1 77777   )H00           -1,1,-HH00              LS114890
70353                  UPERML BSS      0                        LS114900
```

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                    EJECT                                                                   LS114910
                    HEAD    C                                                               LS114920
               *    SYN CARDS CAUSE MANY SYMBOLS TO HAVE 0-HEADED EQUIVALENTS               LS114930
               *                                                                            LS114940
07426  H00     SYN -)H00                                                                    LS114950
07427  H01     SYN -)H01                                                                    LS114960
07430  H02     SYN -)H02                                                                    LS114970
07431  H03     SYN -)H03                                                                    LS114980
07432  H04     SYN -)H04                                                                    LS114990
07433  H05     SYN -)H05                                                                    LS115000
07434  H06     SYN -)H06                                                                    LS115010
07435  H07     SYN -)H07                                                                    LS115020
07436  H10     SYN -)H10                                                                    LS115030
07437  H11     SYN -)H11                                                                    LS115040
07440  H12     SYN -)H12                                                                    LS115050
07441  H13     SYN -)H13                                                                    LS115060
07442  H14     SYN -)H14                                                                    LS115070
07443  H15     SYN -)H15                                                                    LS115080
07444  H16     SYN -)H16                                                                    LS115090
07445  H17     SYN -)H17                                                                    LS115100
07446  H20     SYN -)H20                                                                    LS115110
07447  H21     SYN -)H21                                                                    LS115120
07450  H22     SYN -)H22                                                                    LS115130
07451  H23     SYN -)H23                                                                    LS115140
07452  H24     SYN -)H24                                                                    LS115150
07453  H25     SYN -)H25                                                                    LS115160
07454  H26     SYN -)H26                                                                    LS115170
07455  H27     SYN -)H27                                                                    LS115180
07456  H30     SYN -)H30                                                                    LS115190
07457  H31     SYN -)H31                                                                    LS115200
07460  H32     SYN -)H32                                                                    LS115210
07461  H33     SYN -)H33                                                                    LS115220
07462  H34     SYN -)H34                                                                    LS115230
07463  H35     SYN -)H35                                                                    LS115240
07464  H36     SYN -)H36                                                                    LS115250
07465  H37     SYN -)H37                                                                    LS115260
07466  H40     SYN -)H40                                                                    LS115270
07467  H41     SYN -)H41                                                                    LS115280
07470  H42     SYN -)H42                                                                    LS115290
07471  H43     SYN -)H43                                                                    LS115300
07472  H44     SYN -)H44                                                                    LS115310
07473  H45     SYN -)H45                                                                    LS115320
07474  H46     SYN -)H46                                                                    LS115330
07475  H47     SYN -)H47                                                                    LS115340
07476  H50     SYN -)H50                                                                    LS115350
07477  H51     SYN -)H51                                                                    LS115360
07500  H52     SYN -)H52                                                                    LS115370
07501  H53     SYN -)H53                                                                    LS115380
07502  H54     SYN -)H54                                                                    LS115390
07503  H55     SYN -)H55                                                                    LS115400
07504  H56     SYN -)H56                                                                    LS115410
07505  H57     SYN -)H57                                                                    LS115420
07506  H60     SYN -)H60                                                                    LS115430
07507  H61     SYN -)H61                                                                    LS115440
07510  H62     SYN -)H62                                                                    LS115450
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07511  H63     SYN -)H63                                    LS115460
07512  H64     SYN -)H64                                    LS115470
07513  H65     SYN -)H65                                    LS115480
07514  H66     SYN -)H66                                    LS115490
07515  H67     SYN -)H67                                    LS115500
07516  H70     SYN -)H70                                    LS115510
07517  H71     SYN -)H71                                    LS115520
07520  H72     SYN -)H72                                    LS115530
07521  H73     SYN -)H73                                    LS115540
07522  H74     SYN -)H74                                    LS115550
07523  H75     SYN -)H75                                    LS115560
07524  H76     SYN -)H76                                    LS115570
07525  H77     SYN -)H77                                    LS115580
12551   AND    SYN -)002                                    LS115590
12541   F1     SYN -)003                                    LS115600
12531   F18    SYN -)004                                    LS115610
12521   APVAL  SYN -)005                                    LS115620
12521  APVAL1  SYN     -)005                                LS115630
12514   ARRAY  SYN     -I11                                 LS115640
12504   ATOM   SYN -)007                                    LS115650
12474   F29    SYN -)008                                    LS115660
07454   F      SYN H26                                      LS115670
07511   T      SYN H63                                      LS115680
12454   CAR    SYN -)011                                    LS115690
12444   CDR    SYN -)012                                    LS115700
07521   COMMA  SYN H73                                      LS115710
12237   COND   SYN -)016                                    LS115720
12227   CONSN  SYN -)017                                    LS115730
12102  DUMP    SYN     -DMPOB                               LS115740
12217   F12    SYN -)019                                    LS115750
12207   COPYN  SYN -)020                                    LS115760
12177   F35    SYN -)021                                    LS115770
12040   EQ     SYN -)030                                    LS115780
12010   F8     SYN -)032                                    LS115790
12000   F21    SYN -)034                                    LS115800
11746   F19    SYN -)035                                    LS115810
11736  EVLISL  SYN -)036                                    LS115820
11704   EXPR   SYN -)037                                    LS115830
11677   F32    SYN -)038                                    LS115840
11667   FEXPR  SYN -)040                                    LS115850
11662   BIN    SYN -)041                                    LS115860
11662   FIX    SYN -)041                                    LS115870
11645   FLOAT  SYN -)042                                    LS115880
11630   FSUBR  SYN -)043                                    LS115890
11623  FUNARG  SYN -)044                                    LS115900
11616   FUNCT  SYN -)045                                    LS115910
11604  SYMGEN  SYN -)046                                    LS115920
11574   CGET   SYN -)231                                    LS115930
11564   GO     SYN -)047                                    LS115940
11542   F16    SYN -)052                                    LS115950
11532   LABEL  SYN -)054                                    LS115960
11522  LAMBDA  SYN -)055                                    LS115970
11515  LAP     SYN     -)LAP                                LS115980
11463   LIST   SYN -)057                                    LS115990
11443   LOADA  SYN -)234A                                   LS116000
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11373  PMAPCA SYN -)065                                  LS116010
11341   MAXP  SYN     -I17                               LS116020
11321   MINUS SYN -)070                                  LS116030
11331   MINP  SYN     -I18                               LS116040
11271   F3    SYN -)071                                  LS116050
00000   NIL   SYN 0                                      LS116060
11261   NOT   SYN -)074                                  LS116070
11251   NULL  SYN -)075                                  LS116080
11217   OBLBA SYN -)079A                                 LS116090
11162   OR    SYN -)079                                  LS116100
11142   F2    SYN -)08C                                  LS116110
11132   PAUSE SYN -)234C                                 LS116120
11112   PLB   SYN -)234B                                 LS116130
11102   PLUS  SYN -)081                                  LS116140
11062   PNAME SYN -)083                                  LS116150
11045   F4    SYN -)087                                  LS116160
11025   PROG  SYN -)089                                  LS116170
11005   PROPO SYN -)090                                  LS116180
10775   QUOTE SYN -)094                                  LS116190
10753   F13   SYN -)096                                  LS116200
10733   RCLAM SYN -)234D                                 LS116210
10655  PRPLCA SYN -)100                                  LS116220
10645  PRPLCD SYN -)101                                  LS116230
10665  RETATM SYN -)102                                  LS116240
10557   SASCO SYN -)106                                  LS116250
10566  SLIST  SYN     -)LST                             LS116260
10615  SPECAL SYN     -)SPCL                            LS116270
10606  SMOVE  SYN     -)MOV                             LS116280
10577  SRETUR SYN     -)RTRN                            LS116290
10547   SRCH  SYN -)236                                  LS116300
10537   SET   SYN -)107                                  LS116310
10527   SETQ  SYN -)108                                  LS116320
10477   STOP  SYN -)111                                  LS116330
10507   F34   SYN -)109                                  LS116340
10440   SUBR  SYN -)113                                  LS116350
10433   F17   SYN -)114                                  LS116360
10423   F30   SYN -)115                                  LS116370
10356   F27   SYN -)122                                  LS116380
10413  SYM    SYN     -)SYM                             LS116390
10336   TIMES SYN -)124                                  LS116400
10326  TRACE  SYN     -)213                             LS116410
10277   F36   SYN -)127                                  LS116420
12434   CAAR  SYN -)201                                  LS116430
12424   CDAR  SYN -)202                                  LS116440
12414   CADR  SYN -)203                                  LS116450
12404   CDDR  SYN -)204                                  LS116460
12374   CAAAR SYN -)205                                  LS116470
12364   CAADR SYN -)206                                  LS116480
12354   CADAR SYN -)207                                  LS116490
12344   CADDR SYN -)208                                  LS116500
12334   CDAAR SYN -)209                                  LS116510
12324   CDADR SYN -)210                                  LS116520
12314   CDDAR SYN -)211                                  LS116530
12304   CDDDR SYN -)212                                  LS116540
10707  REMPP  SYN     -)250                             LS116550
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12167  PJ1     SYN -)PJ1                                          LS116560
12572  PJ2     SYN -)PJ2                                          LS116570
11770  PJ4     SYN -)PJ4                                          LS116580
12020  PJ5     SYN -)PJ5                                          LS116590
12247  PJ6     SYN -)PJ6                                          LS116600
11403  PJ7     SYN -)PJ7                                          LS116610
10635  PJ8     SYN -)PJ8                                          LS116620
11122  PJ9     SYN -)PJ9                                          LS116630
12112  PJ10    SYN -)PJ10                                         LS116640
11072  PJ11    SYN -)PJ11                                         LS116650
12464  PJ12    SYN -)PJ12                                         LS116660
10517  PJ14    SYN -)PJ14                                         LS116670
10472  PJ15    SYN -)PJ15                                         LS116680
12154  PJ16    SYN -)PJ16                                         LS116690
11453  PJ17    SYN -)PJ17                                         LS116700
11172  PJ18    SYN -)PJ18                                         LS116710
12132  PJ19    SYN -)PJ19                                         LS116720
10462  PJ21    SYN -)PJ21                                         LS116730
10366  PJ23    SYN -)PJ23                                         LS116740
11152   PJ24   SYN     -)PJ24                                     LS116750
11227   PJ25   SYN     -)PJ25                                     LS116760
11301   PJ26   SYN     -)PJ26                                     LS116770
12261   PJ27   SYN     -)PJ27                                     LS116780
11207   PJ28   SYN     -)PJ28                                     LS116790
12072   PJ30   SYN     -)PJ30                                     LS116800
10265   PJ31   SYN     -)PJ31                                     LS116810
12274   PJ32   SYN     -)PJ32                                     LS116820
11055   PJ33   SYN     -)PJ33                                     LS116830
12060   PJ34   SYN     -)PJ34                                     LS116840
12050   PJ35   SYN     -)PJ35                                     LS116850
11423   PJ36   SYN     -)PJ36                                     LS116860
11433   PJ37   SYN     -)PJ37                                     LS116870
11413   PJ38   SYN     -)PJ38                                     LS116880
11035   PJ39   SYN     -)PJ39                                     LS116890
11760  ERSETO  SYN     -)PJ41                                     LS116900
11505   PVW1   SYN     -PVV1          LEFTSHIFT                   LS116910
11207   OCT    SYN     PJ28                                       LS116920
10743   RECIP  SYN     -II18                                      LS116930
15402   ADD1   SYN     Q$ADD1                                     LS116940
15127   ADDP   SYN     Q$ADDP                                     LS116950
16054   APP2   SYN A$APP2                                        LS116960
15721   APPLY  SYN A$APPLY                                       LS116970
10631   APROP  SYN R$PROP                                        LS116980
16276   ATOMP  SYN R$ATOMP                                       LS116990
16260   CARP   SYN R$CARP                                        LS117000
16270   CDRP   SYN R$CDRP                                        LS117010
07215   CELL   SYN I$CELL                                        LS117020
13623   CHACT  SYN     F$CHACT                                    LS117030
13172   CLEAR  SYN     F$CLEAR                                    LS117040
05111   COPY   SYN R$COPY                                        LS117050
10166   CP1    SYN C$CP1                                         LS117060
13622   CURC   SYN     F$CURC                                     LS117070
13621   CURC1  SYN     F$CURC1                                    LS117080
04653   DECON  SYN E$DECON                                       LS117090
13325   DIGIT  SYN     F$DIGIT                                    LS117100
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16512   EQP    SYN R$EQP                                    LS117110
05225   EQUAL  SYN L$EQUAL                                  LS117120
13334   EROR1  SYN      F$EROR1                             LS117130
16521   EVAL   SYN A$EVAL                                   LS117140
12224   EVALQ  SYN      S$EVALQ                             LS117150
16435   EVAND  SYN R$EVA8                                   LS117160
16222   EVCON  SYN A$EVCON                                  LS117170
17050  EVLIS   SYN      A$EVLIS                             LS117180
16463   EVOR   SYN R$EVR8                                   LS117190
14522   EXPT   SYN      Q$EXPT                              LS117200
15467   FIXP   SYN      Q$FIXP                              LS117210
01170   INPUT  SYN      B$INPUT                             LS117220
17242   INTER  SYN R$INTER                                  LS117230
16332   LABP   SYN R$LABP                                   LS117240
16316   LAMP   SYN R$LAMP                                   LS117250
13307   LITER  SYN      F$LITER                             LS117260
13650   LOGOR  SYN      H$LOGOR                             LS117270
15151   MAX    SYN      Q$MAX                               LS117280
10440   MAP    SYN MAPCAR                                   LS117290
15143   MIN    SYN      Q$MIN                               LS117300
13140   MKNAM  SYN      F$MKNAM                             LS117310
13624   MKNO   SYN      F$MKNO                              LS117320
15135   MULT   SYN      Q$MULT                              LS117330
10515   NCONC  SYN R$NCONC                                  LS117340
10770   NOTS   SYN R$NOTS                                   LS117350
16311   NULLP  SYN R$NULLP                                  LS117360
07450   NUMBR  SYN      F$NUMBR                             LS117370
13062   NUMOB  SYN      F$NUMOB                             LS117380
07371   NUTRN  SYN T$NUTRN                                  LS117390
15534   ONEP   SYN      Q$ONEP                              LS117400
13023   PACK   SYN      F$PACK                              LS117410
10402   PAIR   SYN A$PAIR                                   LS117420
14573   POWR   SYN G$POWR                                   LS117430
05356   PRINO  SYN      T$PRINO                             LS117440
05446   PRIN1  SYN T$PRIN1                                  LS117450
05662   PRIN2  SYN      T$PRIN2                             LS117460
05342   PRINT  SYN T$PRINT                                  LS117470
10631   PROP   SYN R$PROP                                   LS117480
06153   PUN2   SYN      T$PUN2                              LS117490
06137   PUNCH  SYN      T$PUNCH                             LS117500
06654   RD     SYN I$RD                                     LS117510
06560   READ   SYN I$READ                                   LS117520
06605   READ1  SYN I$READ1                                  LS117530
16413   SETP   SYN R$SETP                                   LS117540
16356   SETQP  SYN      R$SETQP                             LS117550
02661   SETUP  SYN      E$SETUP                             LS117560
15431   SUB1   SYN      Q$SUB1                              LS117570
10217   SUBST  SYN R$SUBST                                  LS117580
15566   UNFIX  SYN      Q$UNFIX                             LS117590
07361   VALUE  SYN I$VALUE                                  LS117600
15510   ZEROP  SYN      Q$ZEROP                             LS117610
10662  APSSOC  SYN SASSOC                                   LS117620
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                TTL     LAP  -  LISP ASSEMBLY PROGRAM                                  LS117630
      76703 BLAP  ORG     32195                                                        LS117640
                HEAD    C                    THIS IS THE COMPILER AND ASMBLR         LS117650
               *                                                                      LS117660
               * LAP IS THE ASSEMBLER. ONE ARG IS LISTING.  IT IS LIST OF INSTRUC-   LS117670
               * TIONS, NON-ATOMIC OR NIL. THE ATOMIC SYMBOLS ARE LOCATION SYMBOLS   LS117680
               * SECOND ARG IS START OF SYMBIL TABLE WHICH IS AN A-LIST.             LS117690
               * THE FIRST ITEM IS ORG AS FOLLOWS-                                   LS117700
               *      NIL= IN BPS                                                    LS117710
               *      ATOM= AT SYMBOLIC LOCATION                                     LS117720
               *      NUM= ATTHIS NUMBER                                             LS117730
               *      (NAME TYPE NUM) = IN BPS, AND PUT TXL ON PROP LIST OF NAME     LS117740
               *      WITH FLAG TYPE AND NUM IB DEC. OF TXL.                         LS117750
               * INSTRUCTION FORMAT IS (OP ADDR TAG DEC)                             LS117760
               * FIELD FORMAT IS AS FOLLOWS-                                        LS117770
               *      TEMP SYMBOL                                                    LS117780
               *      NUMBER                                                         LS117790
               *      SYM SUBR OR FSUBR                                              LS117800
               *      (E NAME) FOR IMMEDIATE AS IN TXL FILTER                        LS117810
               *      (QUOTE NAME) FOR ITEM IN DEC OF WORD ON QTLST                  LS117820
               *      POINTER TO COMMON WORD.MAKES ONE IF NONE ALREADY               LS117830
               *      SUM OF ANY OF ABOVE                                            LS117840
               * LAP IS IDENTITY FUNCTION                                           LS117850
               *      LAP DOES NOT USE IX1. IX2,4 ARE SCARTCH                        LS117860
               * ERRORS IN LAP AS FOLLOWS-                                          LS117870
               *      *L  1*  UNABLE TO EVALUATE ORIGIN                             LS117880
               *      *L  2*  OUT OF BPS DISCOVERED AFTER PASS I                    LS117890
               *      *L  3* UNDEFINED SYMBOL                                       LS117900
               *      *L  4*  FIELD WAS RECURSIVE                                   LS117910
               *                                                                    LS117920

BINARY CARD NO. LISP0461
    76703  0634 CC 4 77073  LAP     SXA     LAX,4                                   LS117930
    76704  0634 CC 2 77074          SXA     LAX+1,2                                 LS117940
    76705  0601 CC 0 20052          STO     LIST            THIS IS THE INPUT       LS117950
    76706 -0600 CC 0 20054          STQ     TAB             START OF SYMBOL TABLE   LS117960
    76707  0074 CC 4 06026          TSX TERPRI,4                                    LS117970
    76710 -0534 CC 4 20052          LXD LIST,4                                      LS117980
    76711  0500 CC 4 00000          CLA     0,4                                     LS117990
    76712  0622 CC 0 77450          STD     REST            SAVE REST OF LISTING    LS118000
    76713  0734 CC 2 00000          PAX     0,2             ORIGIN IN IX2           LS118010
    76714 -3 00000 2 76743          TXL     INBP,2,0        NIL MEANS  BPS ASSEMBLY LS118020
    76715  0500 CC 2 00000          CLA     0,2                                     LS118030
    76716  0734 CC 4 00000          PAX     0,4             CAR OF ORIGIN           LS118040
    76717 -3 77776 4 76741          TXL INBP1,4,-2      NOT ATOM MEANS BPS MODE     LS118050
    76720 -0625 CC 0 77454          STL     MODE            NOISE = NOT BPS         LS118060
    76721 -0754 CC 2 00000          PXD     0,2             MAKE NUMBER TEST        LS118070
    76722  0074 CC 4 15446          TSX     NUMBRP,4                                LS118080
    76723 -0100 CC 0 76734          TNZ     LSQ             IF A NUMBER             LS118090
    76724 -0754 CC 2 00000          PXD     0,2             ORIGIN TO AC            LS118100
    76725  0560 CC 4 00545          LDQ     $QSYMD,4        (QUOTE SYM)             LS118110
    76726  0074 CC 4 12762          TSX     GET,4                                   LS118120
    76727 -0100 CC 0 76734          TNZ     LSQ             ORIGIN WAS FOUND        LS118130
    76730 -0634 CC 4 02313          SXD     $ERROR,4                                LS118140
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BINARY CARD NO. LISP0462
    76731 -0754 00 2 00000          PXD     0,2             SHOW IT                         LS118150
    76732  0074 00 4 02314          TSX     $ERROR+1,4      UNDEFINED ORIGIN                LS118160
    76733  54436C600154             BCI     1,*L  1*                                        LS118170
    76734 -0754 00 2 00000  LSQ     PXD     0,2                                             LS118180
    76735  0074 00 4 15343          TSX     NUMVAL,4        GET NUMERICAL VALUE             LS118190
    76736 -0734 00 4 00000  LSO     PDX     0,4                                             LS118200
    76737  0500 00 4 00000          CLA     0,4             PUTS SYM IN AC FOR NOT BPS MODE LS118210
    76740  0020 00 0 76751          TRA     LAPP1                                           LS118220
                            *                                                               LS118230
    76741 -0754 00 4 00000  INBP1   PXD 0,4                                                 LS118240
    76742  0074 00 4 05446          TSX $PRIN1,4                                            LS118250
    76743 -0520 00 0 03073  INBP    NZT     BPLACE          TEST IF EXCISABLE PROGRAM       LS118260
    76744  0500 00 0 03065          CLA     $ORG                                            LS118270
    76745  0520 00 0 03073          ZET     BPLACE                                          LS118280
    76746  0500 00 0 03054          CLA     $XORG                                           LS118290
    76747  0600 00 0 77454          STZ     MODE            INDICATES BPS MODE              LS118300
    76750  0074 00 4 77102          TSX     JUST,4          JUSTIFY AC                      LS118310
    76751  0601 00 0 77451  LAPP1   STO     STAR            UPDATE MARKER                   LS118320
    76752  0601 00 0 77452          STO     START           RESET MARKER                    LS118330
    76753  0600 00 0 77453          STZ     PASWD           INDICATE PASS 1                 LS118340
    76754  0500 00 0 77435          CLA LPBLNK                                              LS118350
    76755  0074 00 4 05662          TSX $PRIN2,4                                            LS118360
    76756 -0774 00 4 77436          AXC LAPPRT,4                                            LS118370

BINARY CARD NO. LISP0463
    76757 -0754 00 4 00000          PXD 0,4                                                 LS118380
    76760  0074 00 4 05342          TSX $PRINT,4                                            LS118390
    76761  0074 00 4 77110          TSX     PASS,4                                          LS118400
    76762  0500 00 0 20054          CLA     TAB                                             LS118410
    76763  0520 00 0 77434          ZET LAPTAB                                              LS118420
    76764  0074 00 4 05342          TSX     $PRINT,4        PRINT SYMBOL TABLE              LS118430
    76765  0520 00 0 77454          ZET     MODE                                            LS118440
    76766  0020 00 0 76774          TRA     LAPP2                                           LS118450
    76767  0534 00 4 77451          LXA     STAR,4                                          LS118460
    76770 -0520 00 0 03073          NZT     BPLACE          TEST FOR OUT OF BPS             LS118470
    76771  0522 00 0 04577          XEC     LBPTP                                           LS118480
    76772  0520 00 0 03073          ZET     BPLACE                                          LS118490
    76773  0522 00 0 04576          XEC     LTBPFJ          CHECK                           LS118500
    76774  0534 00 4 77452  LAPP2   LXA     START,4         RESET STAR FOR SECOND PASS      LS118510
    76775  0634 00 4 77451          SXA     STAR,4                                          LS118520
    76776 -0534 00 4 20052          LXD     LIST,4                                          LS118530
    76777  0500 00 4 00000          CLA     0,4                                             LS118540
    77000  0622 00 0 77450          STD     REST            USED BY PASS AGAIN              LS118550
    77001 -0625 00 0 77453          STL     PASWD           NOISE MEANS PASS 2              LS118560
    77002  0074 00 4 77110          TSX     PASS,4          FOR PASS 2                      LS118570
    77003  0520 00 0 77454          ZET     MODE                                            LS118580
    77004  0020 00 0 77067          TRA     LEND            IF NOT IN BPS MODE              LS118590

BINARY CARD NO. LISP0464
    77005  0534 00 4 77451          LXA     STAR,4          RSET ORG FOR NEXT ASSEMBLY      LS118600
    77006 -0520 00 0 03073          NZT     BPLACE          TEST IF  BPS OR EXCISABLE AREA  LS118610
    77007  0634 00 4 03065          SXA     $ORG,4                                          LS118620
    77010  0520 00 0 03073          ZET     BPLACE                                          LS118630
    77011  0634 00 4 03054          SXA     $XORG,4                                         LS118640
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77012 -0534 CO 4 20052          LXD     LIST,4                                          LS118650
77013  0500 CC 4 00000          CLA     0,4             CWR OF LISTING                  LS118660
77014  0734 CO 4 CCOOO          PAX     0,4                                             LS118670
77015  C500 OO 4 00000          CLA     0,4             GETS CWR OF ORIGIN              LS118680
77016  0734 CO 2 00000          PAX     0,2             CAR OF ORIGIN                   LS118690
77017 -0734 CO 4 OCOOO          PDX     0,4             CDR OF ORIGIN                   LS118700
77020  3 77776 2 77067          TXH     LEND,2,-2       IF ATOM THEN NO TXL NEEDED      LS118710
77021 -0634 CO 2 77076          SXD     NAME,2          CAR OF ORG IS NAME              LS118720
77022  0500 CC 4 00000          CLA     0,4                                             LS118730
77023  0734 CO 2 00000          PAX     0,2             CADR OF ORIGIN IS TYPE          LS118740
77024 -0634 CC 2 77077          SXD     TYPE,2          STORE TYPE                      LS118750
77025 -0320 CO 0 00514          ANA     $DMASK          CDDR IS NOE IN AC               LS118760
77026  0074 CO 4 12703          TSX     CADARX,4        CADAR PUTS PART OF NUM IN DECR OF AC LS118770
77027  0622 CC C 77100          STD     INDC            FOR TXL WORD                    LS118780
77030  0534 00 4 77452          LXA     START,4                                         LS118790
77031  0634 CO 4 77100          SXA     INDC,4          COMPLETES TXL WORD              LS118800
77032  0500 CC 0 77076          CLA     NAME                                            LS118810

BINARY CARD NC. LISP0465
77033  C560 CO 0 77077          LDQ     TYPE                                            LS118820
77034  0074 CO 4 12762          TSX     GET,4                                           LS118830
77035  0100 CC 0 77047          TZE     MKIND           IF THERE WAS NO OLD TXL         LS118840
77036 -0734 00 2 00000          PDX     0,2             SAVE POINTER TO TXL             LS118850
77037  0500 CO 2 00000          CLA     0,2             CWR OF OLD TXL                  LS118860
77040  0737 CO 4 00000          PAC     0,4             POINTER TO OLD BIN PTROG.       LS118870
77041  0500 CO 0 77452          CLA     START           START OF NEW PROGRAM            LS118880
77042 -0501 CO 0 77101          ORA     PATCH           MAKE TRA INSTRUCTION            LS118890
77043  0601 CO 4 00000          STO     C,4             CLOBBER OLD PROG.               LS118900
77044  0500 CO 0 77100          CLA     INDC                                            LS118910
77045  0601 CO 2 00000          STO     0,2             ON TOP OF OLD TXL               LS118920
77046  0020 CO 0 77067          TRA     LEND                                            LS118930
77047  0500 CC 0 77100  MKIND   CLA     INDC                                            LS118940
77050 -0534 CO 4 77077          LXD     TYPE,4          SYM SHOULD HAVE NO TXL ON POINTER LS118950
77051 -3 10412 4 77054          TXL     IND2,4,$SYM-1                                   LS118960
77052  3 10413 4 77054          TXH     IND2,4,$SYM                                     LS118970
77053 -0320 CO 0 00513          ANA     $AMASK                                          LS118980
77054  0074 CO 4 04451   IND2   TSX     $CONSW,4                                        LS118990
77055  0131 CO 0 00000          XCA                     SAVE AC                         LS119000
77056 -0534 CO 2 77076          LXD     NAME,2          NAME OF SUBR OR TYOE            LS119010
77057  0500 CO 2 00000          CLA     0,2                                             LS119020
77060 -0320 CO 0 00514          ANA     $DMASK          CDR OF NAME NOW IN AC           LS119030

BINARY CARD NO. LISP0466
77061  0131 CO 0 00000          XCA                                                     LS119040
77062  0074 CO 4 04471          TSX     $CONS,4         CONS (TXL,RESTOF PROPERTY LIST) LS119050
77063  0131 CC 0 00000          XCA                                                     LS119060
77064  0500 CC 0 77077          CLA     TYPE                                            LS119070
77065  0074 CC 4 04471          TSX     $CONS,4         CONS,TYPE,RST OF ATM)           LS119080
77066  0622 CO 2 00000          STD     0,2             RPLACD OF PROPERTY 9IST         LS119090
77067  0500 CC 0 20054   LEND   CLA     TAB                                             LS119100
77070  0600 CC 0 20052          STZ     LIST                                            LS119110
77071  0600 CO 0 20054          STZ     TAB                                             LS119120
77072  0600 CC 0 77447          STZ     INST                                            LS119130
                        *       DONT STORE ZERO IN QTLST                                LS119140
77073  0774 CO 4 00000  LAX     AXT     **,4                                            LS119150
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77074  0774 00 2 00000          AXT     **,2                                                    LS119160
77075  0020 00 4 00001          TRA     1,4                                                     LS119170
                        * ALL LAP REGISTERS FOLLOW,INCL. THOSE USED BY SUBROUTINES             LS119180
77076  0 00000 0 00000  NAME                             NAME OF FUNCTION                      LS119190
77077  0 00000 0 00000  TYPE                             SUBR FSUBR ETC                        LS119200
77100 -3 00000 0 00000  INDC    TXL     **,,**           FOR TSL WORD                          LS119210
77101  0020 00 0 00000  PATCH   TRA     **               FOR CLOBBER INSTRUCTION               LS119220
                        *       ADDR(REM)=IX4 SAVED.DECR=REST OF LIST FIELD                    LS119230
                        *                                                                      LS119240
                        *  JUST REDUCES THE AC MOD 2**15.THE RESULT IS 15 BITS IN ADDR OF AC   LS119250
                        *   IT IS ALWAYS POSITIVE                                              LS119260
77102  0120 00 0 77105  JUST    TPL     *+3                                                     LS119270
77103  0760 00 0 00006          COM                                                             LS119280
77104  0402 00 0 00425          SUB     $Q1                                                     LS119290
77105 -0320 00 0 00513          ANA     $AMASK                                                  LS119300
77106 -0140 00 4 00001          TNO     1,4                                                     LS119310

BINARY CARD NO. LISP0467
77107  0020 00 4 00001          TRA     1,4                                                     LS119320
                        *                                                                      LS119330
                        *  PASS DOES BOTH PASSES FOR LAP                                       LS119340
                        *       FIRST PASS MAKES SYMBOL TABLE AND UPDATES ON INSTRUCTIONS       LS119350
                        *       SECOND PASS IGNORES SYMBOLS ASSEMBLES AND UPDTS INSTRUCTIONS   LS119360
77110  0634 00 4 77145  PASS    SXA     PAUX,4                                                  LS119370
77111 -0534 00 4 77450  LOP1    LXD     REST,4                                                  LS119380
77112 -3 00000 4 77145          TXL     PAUX,4,0         IF NO MORE LISTING                     LS119390
77113  0500 00 4 00000          CLA     0,4                                                     LS119400
77114  0622 00 0 77450          STD     REST             RESET REST OF LISTING                  LS119410
77115  0734 00 4 00000          PAX     0,4                                                     LS119420
77116 -0634 00 4 77447          SXD     INST,4                                                  LS119430
77117 -3 00000 4 77137          TXL     AMBL,4,0         IF NIL                                 LS119440
77120  0500 00 4 00000          CLA     0,4                                                     LS119450
77121  0734 00 4 00000          PAX     0,4                                                     LS119460
77122 -3 77776 4 77137          TXL     AMBL,4,-2        IF NOT ATOM                            LS119470
77123  0520 00 0 77453          ZET     PASWD                                                   LS119480
77124  0020 00 0 77111          TRA     LOP1             IF PASS 2                              LS119490
77125  0500 00 0 77451          CLA     STAR             OTHERWISE ADD     TO TABLE             LS119500
77126  0560 00 0 00540          LDQ     $OCTD                                                   LS119510
77127  0074 00 4 13624          TSX     $MKNO,4          MAKE A NUMBER                          LS119520
77130  0131 00 0 00000          XCA                                                             LS119530
77131  0500 00 0 77447          CLA     INST                                                    LS119540
77132  0074 00 4 04471          TSX     $CONS,4          (NAME.VALUE)                           LS119550
77133  0560 00 0 20054          LDQ     TAB                                                     LS119560
77134  0074 00 4 04471          TSX     $CONS,4                                                 LS119570

BINARY CARD NO. LISP0468
77135  0601 00 0 20054          STO     TAB                                                     LS119580
77136  0020 00 0 77111          TRA     LOP1                                                    LS119590
77137  0520 00 0 77453  AMBL    ZET     PASWD            LAND HERE IF INSTRUCTION NOT SYMBOL    LS119600
77140  0074 00 4 77147          TSX     AINS,4           ON PASS 2 ONLY                         LS119610
77141  0534 00 4 77451          LXA     STAR,4                                                  LS119620
77142  1 00001 4 77143          TXI     *+1,4,1          UPDATE * AFTER INSTRUCTION IS ASSEMBLELS119630
77143  0634 00 4 77451          SXA     STAR,4                                                  LS119640
77144  0020 00 0 77111          TRA     LOP1                                                    LS119650
77145  0774 00 4 00000  PAUX    AXT     **,4                                                    LS119660
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77146  0020 00 4 00001          TRA    1,4                                          LS119670
                                *                                                   LS119680
                                * AINS IS THE INSTRUCTION ASSEMBLER. ARG IS IN INST. VAL IS IN AC  LS119690
77147  0634 00 4 77165  AINS     SXA    AINX,4                                       LS119700
77150  0074 00 4 77167           TSX    AFELD,4                                      LS119710
77151  0601 60 0 77451           STO*   STAR                                         LS119720
77152  0074 00 4 77167           TSX    AFELD,4                                      LS119730
77153  0074 00 4 77102           TSX    JUST,4                                       LS119740
77154 -0602 60 0 77451           ORS*   STAR            THIS IS ADDRESS FIELD        LS119750
77155  0074 00 4 77167           TSX    AFELD,4                                      LS119760
77156  0767 00 0 00017           ALS    15                                           LS119770
77157  0140 00 0 77160           TOV    *+1                                          LS119780
77160 -0602 60 0 77451           ORS*   STAR            TAG FIELD                    LS119790
77161  0074 00 4 77167           TSX    AFELD,4                                      LS119800
77162  0074 00 4 77102           TSX    JUST,4                                       LS119810

BINARY CARD NO. LISP0469
77163  0767 00 0 00022           ALS    18              NO OVERFLOW AFTER JUST       LS119820
77164 -0602 60 0 77451           ORS*   STAR                                         LS119830
77165  0774 00 4 00000  AINX     AXT    **,4                                         LS119840
77166  0020 00 4 00001           TRA    1,4                                          LS119850
                                *                                                   LS119860
                                * AFELD IS THE FIELD EVALUATOR. A LIST OF FIELDS IS EXPECTED IN INST.  LS119870
                                * IT EVALUATES THE FIRST AND SETS INST TO THE REST. IF NO MORE FIELDS LELS119880
                                * ARE LEFT, IT GOES TOAINX, THE EXIT POINT OF AINS  LS119890
                                * AFELD HAS CERTAIN PRIVATE CELLS,SEE AFTER LAP.) THE LIST AFELD IS A  LS119900
                                * SLIGHTLY RECURSIVE DEVISE WHICH HAS SPECIAL CELLS AND CANNOT REENTER ILS119910
                                * ITSELF WITHOUT ERROR.                             LS119920
77167  0634 00 4 77404  AFELD    SXA    FELX,4                                       LS119930
77170  0600 00 0 77457           STZ    NOCUR                                        LS119940
77171 -0534 00 4 77447           LXD    INST,4                                       LS119950
77172 -3 00000 4 77165           TXL    AINX,4,0        IF NO MORE FIELDS            LS119960
77173  0500 00 4 00000           CLA    0,4                                          LS119970
77174  0622 00 0 77447           STD    INST            REST OF FIELDS               LS119980
77175  0734 00 2 00000           PAX    0,2                                          LS119990
77176  0500 00 2 00000  LEM      CLA    0,2                                          LS120000
77177  0734 00 4 00000           PAX    0,4                                          LS120010
77200 -3 77776 4 77257           TXL    NATM,4,-2       IF NOT ATOMIC FIELD          LS120020
77201  3 00000 2 77207           TXH    LAPP3,2,0                                    LS120030
77202 -0520 00 0 03073           NZT    BPLACE          TEST IF  BPS OR EXCISABLE AREA  LS120040
77203  0500 00 0 03065           CLA    $ORG                                         LS120050
77204  0520 00 0 03073           ZET    BPLACE          TEST IF  BPS OR EXCISABLE AREA  LS120060
77205  0500 00 0 03054           CLA    $XORG                                        LS120070
77206  0020 00 0 77404           TRA    FELX                                         LS120080
77207 -0754 00 2 00000  LAPP3    PXD    0,2                                          LS120090
77210  0560 00 0 77462           LDQ    LSAC            FN ARG FOR SASSOC            LS120100

BINARY CARD NO. LISP0470
77211 -0600 00 0 04063           STQ    $ARG3                                        LS120110
77212  0560 00 0 20054           LDQ    TAB                                          LS120120
77213  0074 00 4 10662           TSX    SASSOC,4        LOOK UP IN SYM TABLE         LS120130
77214  0100 00 0 77222           TZE    NTAB            NOT IN TAB                   LS120140
77215  0074 00 4 16270           TSX    $CDRP,4                                      LS120150
77216  0074 00 4 15343  NEVAL    TSX    NUMVAL,4                                     LS120160
77217 -0734 00 4 00000           PDX    0,4                                          LS120170
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77220  0500 00 4 00000          CLA     0,4                                    LS120180
77221  0020 00 0 77404          TRA     FELX                                   LS120190
77222 -0754 00 2 00000  NTAB    PXD     0,2                                    LS120200
77223  0074 00 4 15446          TSX     NUMBRP,4                               LS120210
77224  0100 00 0 77227          TZE     *+3                IF NOT A NUMBER     LS120220
77225 -0754 00 2 00000          PXD     0,2                LISP NUMBER IN AC   LS120230
77226  0020 00 0 77216          TRA     NEVAL                                  LS120240
77227 -0634 00 2 77461          SXD     ERCC,2             SAVE ATOM           LS120250
77230  0500 00 2 00000  LOP2    CLA     0,2      LOOP FOR SYM,SUBR,FSUBR       LS120260
77231 -0734 00 2 00000          PDX     0,2                                    LS120270
77232  0734 00 4 00000          PAX     0,4                                    LS120280
77233  3 00000 2 77240          TXH     PA,2,0             IF NOT NIL          LS120290
77234 -0634 00 4 02313          SXD     $ERROR,4                               LS120300
77235  0500 00 0 77461          CLA     ERCC                                   LS120310
77236  0074 00 4 02314          TSX     $ERROR+1,4                             LS120320

BINARY CARD NO. LISP0471
77237  544360600354             BCI     1,*L  3*           UNDEFINED SYMBOL    LS120330
77240 -3 10412 4 77242  PA      TXL     *+2,4,$SYM-1                           LS120340
77241 -3 10413 4 77253          TXL     FINX,4,$SYM                            LS120350
77242 -3 10437 4 77244          TXL     *+2,4,$SUBR-1                          LS120360
77243 -3 10440 4 77246          TXL     FIND,4,$SUBR                           LS120370
77244 -3 11627 4 77230          TXL     LOP2,4,$FSUBR-1                        LS120380
77245  3 11630 4 77230          TXH     LOP2,4,$FSUBR                          LS120390
77246  0500 00 2 00000  FIND    CLA     0,2                                    LS120400
77247  0734 00 4 00000          PAX     0,4                                    LS120410
77250  0500 00 4 00000          CLA     0,4                                    LS120420
77251 -0320 00 0 00513          ANA     $AMASK                                 LS120430
77252  0020 00 0 77404          TRA     FELX                                   LS120440
                        *                                                      LS120450
77253  0500 00 2 00000  FINX    CLA     0,2                                    LS120460
77254  0734 00 4 00000          PAX     0,4                                    LS120470
77255  0500 00 4 00000          CLA     0,4                                    LS120480
77256  0020 00 0 77404          TRA     FELX                                   LS120490
                        *                                                      LS120500
77257 -3 07452 4 77266  NATM    TXL     NTE,4,$H25-1                           LS120510
77260  3 07453 4 77266          TXH     NTE,4,$H25         FOR (E EXP)         LS120520
77261 -0754 00 2 00000          PXD     0,2                ENTIRE FIELD        LS120530
77262  0074 00 4 12721          TSX     CADRXX,4                               LS120540
77263  0074 00 4 77406          TSX     PRO,4                                  LS120550
77264  0771 00 0 00022          ARS     18                 PROTECT LITERAL ON PROS LIST LS120560

BINARY CARD NO. LISP0472
77265  0020 00 0 77404          TRA     FELX                                   LS120570
77266 -3 10774 4 77325  NTE     TXL     NQT,4,$QUOTE-1     LAND HERE FOR NOT (E... LS120580
77267  3 10775 4 77325          TXH     NQT,4,$QUOTE       ABOVE AND THIS FOR (QUOTE... LS120590
77270 -0734 00 2 00000          PDX     0,2                AC HAS CWR OF FIELD LS120600
77271  0500 00 2 00000          CLA     0,2                                    LS120610
77272  0734 00 2 00000          PAX     0,2                POINTER TO EQ QUANTITY LS120620
77273 -0534 00 4 20053          LXD     QTLST,4                                LS120630
77274 -3 00000 4 77310          TXL     NON,4,0            TEST FOR NO LIST    LS120640
77275  0500 00 4 00000  FLOOP   CLA     0,4                AN EQUAL TYPE SEARCH LS120650
77276  0601 00 0 77455          STO     HOLD               TEMPORARY SAVING OF REST LS120660
77277  0734 00 4 00000          PAX     0,4                                    LS120670
77300  0500 00 4 00000          CLA     0,4                                    LS120680
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 77301 -0320 CO C 00514          ANA     $DMASK          LITERAL QUANTITY FOR EQUAL COMPARISON LS120690
 77302  0131 CO C 00000          XCA                                                           LS120700
 77303 -0754 CO 2 00000          PXD     0,2             THE NEW ITEM                          LS120710
 77304  0074 CO 4 05225          TSX     $EQUAL,4        TEST FOR EQUALITY                     LS120720
 77305 -0100 CO 0 77323          TNZ     CNQT            IF ALREADY ON LIST                    LS120730
 77306 -0534 CO 4 77455          LXD     HOLD,4                                                LS120740
 77307  3 00000 4 77275          TXH     FLOOP,4,0       IF NOT HEAD OF QTLIST                 LS120750
 77310 -0754 CO 2 00000  NON     PXD     0,2             NEED TO MAKE ENTRY                    LS120760
 77311  0131 CO C 00000          XCA                                                           LS120770
 77312  0754 CO C 00000          PXA     0,0                                                   LS120780

BINARY CARD NO. LISP0473
 77313  0074 CO 4 04471          TSX     $CONS,4         CONS(NIL EXP)                         LS120790
 77314  0601 CO C 77455          STO     HOLD            NEEDS NO PROTECTION AS SEEN BY WHAT FOLS120800
                         *               FOLLOWS                                               LS120810
 77315  0560 CO C 20053          LDQ     QTLST                                                 LS120820
 77316  0074 CO 4 04471          TSX     $CONS,4         CONS((NIL.EXP, ...                    LS120830
 77317  0601 CO C 20053          STO     QTLST                                                 LS120840
 77320 -0535 CO 4 77455          LDC     HOLD,4          WANT TRUE POINTER                     LS120850
 77321  0754 CO 4 00000  TRP     PXA     0,4                                                   LS120860
 77322  0020 CO C 77404          TRA     FELX                                                  LS120870
                         *       THIS IS POINTER TO A NIL.EXP WORD IN FREE STORAGE              LS120880
 77323  0535 CO 4 77455  CNQT    LAC     HOLD,4                                                LS120890
 77324  0020 CO C 77321          TRA     TRP                                                   LS120900
 77325 -3 10614 4 77356  NQT     TXL     FDLST,4,SPECAL-1                                      LS120910
 77326  3 10615 4 77356          TXH     FDLST,4,SPECAL  (SPECIAL NAME)                        LS120920
 77327  0560 CO C 00544          LDQ     QSPECD          SPECIAL IN MQ                         LS120930
 77330 -0320 CO C 00514          ANA     $DMASK          (NAME) IN AC                          LS120940
 77331  0074 CO 4 16260          TSX     $CARP,4                                               LS120950
 77332  0074 CO 4 12762          TSX     GET,4                                                 LS120960
 77333 -0100 CO 0 77353          TNZ     SPP             JUST NEED TO ASSURE PROTECTION        LS120970
 77334  0560 CO C 00424          LDQ     $ZERO                                                 LS120980
 77335  0074 CO 4 04471          TSX     $CONS,4         AC HAS ZERO IF YOU ARE HERE           LS120990
 77336  0601 CO C 20055          STO     LCOM            PROTECTED TEMP CELL                   LS121000
 77337 -0754 CO 2 00000          PXD     0,2             (SPECIAL NAME)                        LS121010
 77340  0074 CO 4 12721          TSX     CADRXX,4                                              LS121020

BINARY CARD NO. LISP0474
 77341 -0734 CO 2 00000          PDX     0,2                                                   LS121030
 77342  0074 CO 4 16270          TSX     $CDRP,4                                               LS121040
 77343  0131 CO C 00000          XCA                                                           LS121050
 77344  0500 CO C 20055          CLA     LCOM                                                  LS121060
 77345  0074 CO 4 04471          TSX     $CONS,4                                               LS121070
 77346  0131 CO C 00000          XCA                                                           LS121080
 77347  0500 CO C 00544          CLA     QSPECD                                                LS121090
 77350  0074 CO 4 04471          TSX     $CONS,4                                               LS121100
 77351  0622 CO 2 00000          STD     0,2             RPLACD OF NAME                        LS121110
 77352  0074 CO 4 12721          TSX     CADRXX,4        POINTER TO (NIL)                      LS121120
 77353  0074 CO 4 77406  SPP     TSX     PRO,4                                                 LS121130
 77354 -0737 CO 4 00000          PDC     0,4                                                   LS121140
 77355  0020 CO C 77321          TRA     TRP                                                   LS121150
 77356 -0520 CO C 77457  FDLST   NZT     NOCUR           NO RE-ENTRY TO AFELD LIST IS ALLOWED  LS121160
 77357  0020 CO C 77363          TRA     *+4                                                   LS121170
 77360 -0634 CO 4 02313          SXD     $ERROR,4                                              LS121180
 77361  0074 CO 4 02314          TSX     $ERROR+1,4                                            LS121190
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    77362  544360600454          BCI     1,*L  4*      NO RECURSIVE FIELDS ALLOWED          LS121200
    77363 -0625 CO 0 77457       STL     NOCUR         PREVENT RECURSION                    LS121210
    77364  0600 CO 0 77456       STZ     SUM           RESET SUM WORD                       LS121220
    77365  0534 CO 4 77404       LXA     FELX,4                                             LS121230
    77366  0634 CO 4 77460       SXA     REM,4         SAVES THE RETURN FOR AFELD           LS121240

BINARY CARD NO. LISP0475
    77367  0500 CO 2 00000  LOPL  CLA     0,2                                              LS121250
    77370  0622 CO 0 77460       STD     REM                                              LS121260
    77371  0734 CO 2 00000       PAX     0,2                                              LS121270
    77372 -0774 CO 4 77374       AXC     *+2,4                                            LS121280
    77373  0634 CO 4 77404       SXA     FELX,4        REENTER THE EVALUATOR              LS121290
    77374  0020 CO 0 77176       TRA     LEM                                              LS121300
    77375  0400 CO 0 77456       ADD     SUM                                              LS121310
    77376  0601 CO 0 77456       STO     SUM                                              LS121320
    77377 -0534 CO 2 77460       LXD     REM,2         REST OF FIELDS                     LS121330
    77400   3 00000 2 77367      TXH     LOPL,2,0      IF THERE ARE MORE FIELDS (SUBFLDS) LS121340
    77401  0600 CO 0 77457       STZ     NOCUR         ALLOWS ENTRY TO LIST AFELD AGAIN   LS121350
    77402  0534 CO 4 77460       LXA     REM,4                                            LS121360
    77403  0020 CO 4 00001       TRA     1,4                                              LS121370
    77404  0774 CO 4 00000  FELX  AXT     **,4                                             LS121380
    77405  0020 CO 4 00001       TRA     1,4                                              LS121390
                           *                                                              LS121400
    77406  0634 CO 4 77422  PRO   SXA     PX,4                                             LS121410
    77407  0601 CO 0 77446       STO     PTR           SAVE ARGUMENT                      LS121420
    77410  0622 CO 0 77421       STD     PH            SET UP TXH                         LS121430
    77411  0402 CO 0 00476       SUB     $QD1          AND                                LS121440
    77412  0622 CO 0 77420       STD     PL            TXL SIEVE                          LS121450
    77413  0500 CO 0 20056       CLA     PROS          GET PROTECTED LIST                 LS121460
    77414 -0734 CO 4 00000  PNL   PDX     0,4                                              LS121470

BINARY CARD NO. LISP0476
    77415 -3 00000 4 77425       TXL     PMK,4,0       END OF LIST, SO MAKE NEW ENTRY     LS121480
    77416  0500 CO 4 00000       CLA     0,4                                              LS121490
    77417  0734 CO 4 00000       PAX     0,4                                              LS121500
    77420 -3 00000 4 77414  PL    TXL     PNL,4,**                                         LS121510
    77421  3 00000 4 77414  PH    TXH     PNL,4,**      FALL THROUGH IF FOUND              LS121520
    77422  0774 CO 4 00000  PX    AXT     **,4                                             LS121530
    77423  0500 CO 0 77446       CLA     PTR           RESTORE AC                         LS121540
    77424  0020 CO 4 00001       TRA     1,4                                              LS121550
                           *                                                              LS121560
    77425  0560 CO 0 20056  PMK   LDQ     PROS          MAKE A NEW ITEM                    LS121570
    77426  0500 CO 0 77446       CLA     PTR                                              LS121580
    77427  0074 CO 4 04471       TSX     $CONS,4                                          LS121590
    77430  0601 CO 0 20056       STO     PROS          STORE NEW LIST                     LS121600
    77431  0020 CO 0 77422       TRA     PX            AND RETURN                         LS121610
                           *                                                              LS121620
                           *     SYMTAB SETS LAPTAB -- IF LAPTAB = 0, THEN SYMBOL TABLE LS121630
                           *     IS NOT PRINTED BY LAP                                    LS121640
                           *                                                              LS121650
    77432  0601 CO 0 77434  SYMTAB STO LAPTAB                                            LS121660
    77433  0020 CO 4 00001       TRA 1,4                                                  LS121670
                           *                                                              LS121680
    77434   0 00000 0 00000  LAPTAB                                                      LS121690
    77435 -207777777777      LPBLNK OCT 607777777777                                    LS121700
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    77436  0 00341 0 00337  LAPPRT     -*-3,,-*-1                                                LS121710
    77437  0 00000 0 00340             -*-1                                                      LS121720
    77440  0 00327 5 77777             -1,5,-STAR                                                LS121730
    77441  0 00336 0 77777             -1,,-*-1                                                  LS121740
    77442  0 00335 0 11062             $PNAME,,-*-1                                              LS121750

BINARY CARD NO. LISP0477
    77443  0 00000 0 00334             -*-1                                                      LS121760
    77444  0 00000 0 00333             -*-1                                                      LS121770
    77445  465131273145          BCI 1,ORIGIN                                                   LS121780
                                 *                                                              LS121790
                                 *                                                              LS121800
    77446  0 00000 0 00000  PTR                                                                 LS121810
                                 *                                                              LS121820
                                 *                                                              LS121830
    77447  0 00000 0 00000  INST                HOLDS CURRENT INSTRUCTION OR FRACTION          LS121840
    77450  0 00000 0 00000  REST                REMAINDER OF LISTING. PASS ALTERS THISLS121850
    77451  0 00000 0 00000  STAR                * DTRECT ADDRESS POINTER TO CURRENT LOLS121860
    77452  0 00000 0 00000  START               RESET CELL FOR *                               LS121870
    77453  0 00000 0 00000  PASWD               ZERO MEANS PASS 1. NOISE = PASS 2              LS121880
    77454  0 00000 0 00000  MODE                ZERO MEANS BPS ASSEMBLY                        LS121890
    77455  0 00000 0 00000  HOLD                SCRATCH CELL FOR AFELD ONLY,WATCH OUT          LS121900
    77456  0 00000 0 00000  SUM                 FOR USE BY AFELD LIST ONLY                     LS121910
    77457  0 00000 0 00000  NOCUR               FOR AFELD LIST ONLY.PREVENTS RECURSIONLS121920
    77460  0 00000 0 00000  REM                 FOR AFELD LIST ONLY.                           LS121930
    77461  0 00000 0 00000  ERCC                                                               LS121940
    77462 -3 00000 0 77463  LSAC    TXL    *+1,,0                                             LS121950
    77463 -0754 00 0 00000          PXD    0,0                                                LS121960
    77464  0020 00 4 00001          TRA    1,4                                                LS121970
                                    HEAD   0                                                  LS121980
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                        EJECT                                                   LS121990
                    *                                                           LS122000
                    *       BUTCH, A HOME FOR PATCHES                           LS122010
                    *                                                           LS122020
77465  0 00000 0 00000   BUTCH                                                  LS122030
                00151   BUTCHL EQU     NILSXX-*+1          LENGTH OF BUTCH REGION LS122040
                                                                                LS122050
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```
                    EJECT
00371  ENDEND END     CONTIN                                    LS122060
                                                                 LS122070
```

BINARY CARD NO. TRA00371

77777 IS THE FIRST LOCATION NOT USED BY THIS PROGRAM

REFERENCES TO DEFINED SYMBOLS

```
 7454      F 70352
 7511      T 70353
12040     EQ 64664,70353
12541     F1  4110,64630,70353
11142     F2 64737,70353
11271     F3 64727,70353
11045     F4  5437,64744,70353
12010     F8  5336,64666,70353
11564     GO  4153,64707,70353
11162     OR  4175,64736,70353
  424     Q0   425
  425     Q1  2670, 2707, 2713, 2720, 3531, 3535, 3620, 4555, 5573, 5742,11527,13250,14156,14166,14213,14561,15427
              15430,15547,15667,77104
  426     Q2
  427     Q3
  430     Q4 14226
  431     Q5 13336,14203
  432     Q6  7137
  433     Q7  7031
  434     Q8 10064
  435     Q9 12060
 6654     RD  6561, 6606, 6634, 6637,70353
12551    AND  4105,64627,70353
 3061    BBT  2717, 2773, 3017
 2363    BEX  2361, 2402
 3057    BFS  2710, 2715, 2722, 2734, 2740, 2751, 2764, 2777
 3063    BFW  2724, 2753, 2755, 3012
11662    BIN   532,70353
  356    BSR   270,  310, 1143, 1235, 7063
12454    CAR 64636,70353
12444    CDR 64637,70353
10166    CP1  7333,65564,70353
 4652    CTG  4520
 2442    DCT  4722, 7260,14436,15652
16512    EQP 65743,70353
 2431    ERM  2330
 2426    ERO  2335, 2413
 2422    ERT  2326, 2347
 2312    ERX  2321, 2322
12217    F12 64660,70353
10753    F13  4211,64752,70353
11542    F16 64711,70353
10433    F17  4224,65002,70353
12531    F18 64631,70353
11746    F19 64670,70353
12000    F21 64667,70353
10356    F27 65005,70353
12474    F29 64635,70353
10423    F30 65003,70353
11677    F32 64675,70353
10507    F34 64767,70353
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12177    F35 64661,70353
10277    F36 65014,70353
11662    FIX 13635,13636,15375,15401,15551,15552,64677,70353
 4617    FRX  4614
 7426    H00   556,13246,13312,65020,70353
 7427    H01   552,65021,70353
 7430    H02   552,65022,70353
 7431    H03   553,65023,70353
 7432    H04   553,65024,70353
 7433    H05   554,65025,70353
 7434    H06   554,65026,70353
 7435    H07   555,65027,70353
 7436    H10   555,65030,70353
 7437    H11   561,65031,70353
 7440    H12   557,65032,65723,67711,70353
 7441    H13 65033,65767,70353
 7442    H14   562,65035,70353
 7443    H15 65034,70353
 7444    H16 65036,70353
 7445    H17 65037,70353
 7446    H20 65040,66715,70353
 7447    H21 65041,70353
 7450    H22 65042,70353
 7451    H23 65043,70353
 7452    H24 65044,70353
 7453    H25 65045,70353,77257,77260
 7454    H26 65046,70353
 7455    H27 65047,70353
 7456    H30 65050,70353
 7457    H31 65051,70353
 7460    H32 65052,70353
 7461    H33   563,65053,66665,70353
 7462    H34   564,65054,67152,70353
 7463    H35 65055,70353
 7464    H36 65056,70353
 7465    H37 65057,70353
 7466    H40   565,65060,65627,70353
 7467    H41 65061,70353
 7470    H42 65062,70353
 7471    H43 65063,70353
 7472    H44 65064,70353
 7473    H45 65065,70353
 7474    H46 65066,70353
 7475    H47 65067,70353
 7476    H50 65070,70353
 7477    H51 65071,70353
 7500    H52 65072,70353
 7501    H53 65073,65675,70353
 7502    H54 65074,67315,70353
 7503    H55 65075,70353
 7504    H56 65076,70353
 7505    H57 65077,70353
 7506    H60 65100,65323,70353
 7507    H61 65101,67270,70353
 7510    H62 65102,70353
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 7511    H63 65103,70353
 7512    H64 65104,70353
 7513    H65 65105,70353
 7514    H66 65106,70353
 7515    H67 65107,70353
 7516    H70 65110,70353
 7517    H71 65111,70353
 7520    H72   560,65112,65733,70226,70353
 7521    H73 65113,65540,70353
 7522    H74   566,65114,66404,70353
 7523    H75 65115,70353
 7524    H76 65116,70353
 7525    H77 65117,70353
65264    II1 64633,70353
66224    II3 64710
66305    II4 64715
66437    II7   550,64723,70353
66447    II8   550,64724,70353
66576    II9 64735
11515    LAP 64714,70353
 3072    LBT  2714, 2716, 2736
  363    LCH   216, 1115,12111
10440    MAP 70353
15151    MAX 66442,70353
 3056    MFS  3002
15143    MIN 66452,70353
    0    NIL 64730,70353
11261    NOT 64731,70353
11207    OCT   540,70353
 3065    ORG  2663, 4546, 4564,76744,77007,77203
12167    PJ1 65120,70353
12572    PJ2 65121,70353
11770    PJ4 65122,70353
12020    PJ5 65123,70353
12247    PJ6 65124,70353
11403    PJ7 65125,70353
10635    PJ8 65126,70353
11122    PJ9 65127,70353
11112    PLB 64741,70353
  436    Q10  3767, 4673, 7432,10064,13114
  437    Q12  7142
  440    Q13
  441    Q14
  442    Q17
  443    Q20  1534, 2677
  444    Q21   456
  445    Q22
  446    Q36 13505
  447    Q63   465, 6560,13362
  450    Q64  5556
  476    QD1  3005, 3022, 5262, 5303, 7132,10712,10775,13315,13330,15442,15451,15465,15477,15530,16311,16512,17242
             17406,17430,17717,77411
  477    QD2  2463
  500    QD5  6124
  501    QD6 11544
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  502    GD7 10064
  510    GF1 15425,15426,15546,15646
  505    GP5  2366,12624
  472    GT1 13637,14072
  473    GT2  5510,13642
  474    GT4  5513
  475    GT5 13634
  362    RCH   234, 1103, 1223, 1517, 1553,12107
  351    RDS   233,  305, 1176, 1236,12105
  353    REW   176,  307,  766, 1004
 1207    RTX  1177, 1505
  355    SDN   314,  315
10537    SET 14007,14010,64765,70353
 1720    SLF
10413    SYM   545,65007,65225,67177,67210,67217,70126,70353,77051,77052,77240,77241
 3060    TBT  2706, 2745
  360    TCO   222,  223,  250,  251, 1072, 1073, 1224, 1225, 1536, 1537,12103
  357    TEF   230,  260, 1100, 1217, 1227
 3055    TFS  2653, 2704, 2731, 2747, 2760
 3062    TFW  2721, 2742
 3064    TPG  2662, 2727
  361    TRC   227,  257, 1077, 1117, 1231
  354    WEF   311,  765,11415,11422
  352    WRS   306, 1102, 1516, 1552
15402   ADD1 65201,70353
15127   ADDP 66701,70353
16054   APP2 15762,70353
 4061   ARG1  4765, 5002,13002,13011
 4062   ARG2 10535,10536,10544,10546,10726,10747,13003
 4063   ARG3  5152, 5204, 5216, 5217,10221,10545,10561,10651,10654,10655,10656,11664,12317,12560,12765,13016,14003
              14012,14361,14376,14427,14442,14453,14471,14507,14515,14525,15344,15357,15746,15753,15764,16010,16031
              16047,16063,16136,16147,16374,16417,16567,16570,16764,17022,17344,17506,17535,17577,20031,77211
 4064   ARG4  5154, 5202, 5212, 5215, 5222,11654,12603,14014,17600,20027
 4065   ARG5 14016,17601,20025
 4066   ARG6 17602,20023
 4067   ARG7 17603,20021
 4070   ARG8 17604,20017
 4071   ARG9 17605,20015
12504   ATOM 64634,70353
 2407   BACD  2355, 2420
 2433   BACE  2417
  532   BIND   533
 4551   BKOR
76703   BLAP  3052
 4567   BLKB  4544, 4552
 4570   BLKC  4553
 4573   BLKX  4543
12434   CAAR 64640,70353
12414   CADR 64642,70353
16260   CARP 65327,67006,70353,77331
12424   CDAR 64641,70353
12404   CDDR 64643,70353
16270   CDRP 65337,70353,77215,77342
 7215   CELL 70353
11574   CGET 65016,70353
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 4510   CNSX  4471
 4626   CNTA  4622
 4640   CNTB  4625
 4651   CNTM  4515, 4522, 4536, 4540, 4623, 4645
 4650   CNTS  4516, 4521, 4535, 4635,12570,12600,12637,12643
 4636   CNTX  4626
 4637   CNTY  4627
12237   CONC  4124,17311,17312,64654,70353
 4471   CONS  2377, 5137, 5220, 6630, 7335, 7340, 7343, 7346,10202,10353,10401,10431,11054,11056,11061,11064,12430
              12433,12614,13012,13157,13166,13375,13631,14256,14260,14263,14270,14273,14307,14447,14456,16026,16030
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NO ERROR IN ABOVE ASSEMBLY.

17054 LINES OUTPUT THIS JOB.

$ID KACALA*0005L26908*500P*1000C*15M*TAPES$ 509500 09/20/67 ON 14-37-43 OFF 14-43-07

TYPE OF PROCESS	COMPILER	ASSEMBLER	LOADER	EXECUTION	UTILITY	OTHER	TOTAL TIME
TIME FOR EACH	000.00	005.32	000.00	000.00	000.07	000.00	005.40