END OF FIRST PASS
PC=10314
IR=111362
A=0
B=0
T=111362

SYSTEMS ENGINEERING LABORATORIES PROGRAM LIBRARY

SOFTWARE DESCRIPTION

CATALOG NO. 044004E

DATE 20 January 1971

PROGRAM TITLE: 810A/B Macro-Assembler
(Stand-Alone Version)

PURPOSE: To provide a translation of programs written in SYSTEMS 810A/B Assembler Language into a machine language equivalent suitable for loading and execution.

CONFIGURATION:
Minimum: SYSTEMS 810A/B, ASR-33, 8K Memory
Optional: High Speed Paper Tape Reader/Punch, Line Printer, Card Reader, 7-track Magnetic Tape.

SOFTWARE ENVIRONMENT: Stand-Alone

PROGRAM LANGUAGE: SYSTEMS 810A/B Assembler Language

SIZE: No Mag Tape I/O - 14056$_8$
7-Track Mag Tape I/O - 15012$_8$
9-Track Mag Tape I/O - 15041$_8$

NOTE

The stand-alone version of the macro-assembler requires the use of one of the following I/O packages:

- No Magnetic Tape I/O - SYSTEMS Catalog No. 314001A
- 7-Track Magnetic Tape I/O - SYSTEMS Catalog No. 334001A
- 9-Track Magnetic Tape I/O - SYSTEMS Catalog No. 334002A

USE: The following procedure provides details for using the SYSTEMS 810A/B Macro-Assembler (Stand-Alone Version) with the required I/O package:

I - ASSEMBLY

Software packages required to assemble source programs written in SYSTEMS 810A/B Assembler Language include:

(1) • Catalog No. 044004 - SYSTEMS 810A/B Macro-Assembler (Stand-Alone Version)

(2) Plus one of the following:

- Catalog No. 314001 - SYSTEMS 810A/B Assembler I/O Package (No Mag Tape I/O)
- Catalog No. 334001 - SYSTEMS 810A/B Assembler I/O Package (7-Track Mag Tape I/O)
- Catalog No. 334002 - SYSTEMS 810A/B Assembler I/O Package (9-Track Mag Tape I/O)

(3) Plus the following:

- Catalog No. 300000 - SYSTEMS 810A/B Standard Bootstrap Package
- Catalog No. 300001 - SYSTEMS 810A/B Standard Load/Dump Package

The procedure required to assemble includes:

1) MASTER CLEAR the computer;

2) Reset all control switches;

3) Manually enter the following Binary Bootstrap Loader into memory locations $0\text{-}17_8$:

Octal Location	Instruction Code
0	13010U
1	00X000
2	17030U
3	000022
4	111006
5	111002
6	17030U
7	001016
10	17430U
11	033016
12	000022
13	000026
14	113017
15	111006
16	107671
17	007673

U=1 (ASR-33)	X=4 (ASR-33)
U=2 (High-Speed Paper Tape)	X=1 (High-Speed Paper Tape)

4) Position the SYSTEMS 810A/B Standard Bootstrap Package (Catalog No. 300000) in the proper input device (ASR-33 teletypewriter or high-speed paper tape reader);

5) MASTER CLEAR the computer;

6) Set control switch 0 (zero) if input is from the high-speed paper tape reader, or reset control switch 0 if input is from the ASR-33;

7) Depress START twice - the Standard Bootstrap Package will be loaded;

8) Position the SYSTEMS 810A/B Standard Load/Dump Package (Catalog No. 300001) in the proper input device;

9) MASTER CLEAR the computer;

10) Enter(006060_8 for the 810B) into the P-Counter;

11) Enter 036000_8 into the A-Accumulator;

12) Depress START twice;

13) The Standard Load/Dump Package will be loaded and the following will be typed on the console typewriter. (Indicating "Load Complete; End Job," memory high load address and next available map zero location):

```
LC
EJ
40000   00001
```

14) Position the SYSTEMS 810A/B Stand-Alone Macro Assembler paper tape (Catalog No. 044004) in the proper input device;

15) MASTER CLEAR the computer;

16) Enter 036060_8 (~~036057_8 for the 810B~~) into the P-Counter;

17) Enter 002000_8 into the A-Accumulator;

18) Set control switch 0 (zero) if input is from the high speed paper tape reader, or reset control switch 0 if input is from the ASR-33;

19) Set control switch 2;

20) Depress START twice;

21) The paper tape will be loaded and the names of the unresolved external subroutines will be printed on the teletype:

```
EJ
@ 00000BUF
@  0000 H$WR
@ 00000LINE
@ 00000B$WR
@ 00000P$PO
@ 00000A$DE7
@ 00000E$OF7
@ 00000B$EF7
@ 00000B$SP7
@ 00000S$ST7
   13235 00667
```

22) Position the required I/O package paper tape (Catalog No. 314001, 334001, or 334002) in the proper input device;

23) Depress START once;

24) The paper tape will be loaded and the following will be printed on the teletype for the indicated I/O package:

- Catalog No. 314001 - No Magnetic Tape I/O:

```
EJ
@ 00000B$WR
@ 00000A$DE7
@ 00000E$OF7
@ 00000B$EF7      Disregard these unresolved subroutines
@ 00000B$SP7
@ 00000S$ST7
14056  00732
```

- Catalog No. 334001 - 7-Track Magnetic Tape I/O:

```
LC
EJ
15012  00756
```

- Catalog No. 334002 - 9-Track Magnetic Tape I/O:

```
LC
EJ
15041 00762
```

25) Reset control switch 2;

26) MASTER CLEAR the computer;

27) Enter 001000$_8$ (000777$_8$ for the 810B) into the P-Counter (this is the Assembler start address);

28) Make the appropriate control switch settings for the desired options: (See Table - page 6)

0, 2, 4, 7 1st Pass for listings
0, 2, 4, 7, 10 2nd Pass " "
0, 1, 6, 8 1st Pass of Tape
0, 1, 6, 8, 10 2nd " " "

CSW	SET	RESET
0	Two Pass Assembly	One Pass Assembly
1	No Symbolic Output	Symbolic Output
2	No Object Output	Object Output
3	Print error list only (CSW 1 reset)	Complete listing (CSW 1 reset)
4	Listing output on ASR-33 (CSW 1 reset)	Listing output on 4P (CSW 1 reset)
5	Paper tape source input	Card source input
6	Object output on ASR-33 (CSW 2 reset)	Object output on HSPT (CSW 2 reset)
7	List symbol table (CSW 1 reset)	No symbol table list
8	Paper tape SI from ASR-33 (CSW 5 set)	Paper tape SI from HSPT (CSW 5 set)
9	SI from ASR-33 keyboard	No SI from ASR-33 keyboard
10	Two-Pass Assembly (When Pass 1 is completed, assembler will HALT at 007440_8. Set control switch at this time, reload source, press START).	One Pass Assembly
11	SI from Mag Tape (7-track, transport 1, unless CSW 14 is set).	No SI from Mag Tape
12	BO to Mag Tape (7- or 9-track depending on I/O package used).	No BO to Mag Tape
13	SO to Mag Tape (7- or 9-track depending on I/O package used).	No SO to Mag Tape
14	SI from 9-track MT, Transport 1 (CSW 11 must be set)	No SI from 9-track MT
*15	Channel assembly	No channel assembly

(*Note - Early models of the 810A were directly connected to I/O devices. If one of these "channel machines" is being used, thiscontrol swtich must be set.)

29) Load the source program in the appropriate input device;

30) Depress START twice. During Pass 1, the assembler will read all source input and HALT at location 007400g. At this time, the user should reposition the source input file in the proper input device, set control switch 10, and depress START to initiate assembly Pass 2.

NOTE

The last record of the source input file must always be a $ character in column 1, followed by all blank characters.

NOTE

This assembler does not support concurrent 7- and 9-track magnetic tape operation.

METHOD:

(I) PREPARING PAPER TAPE SOURCE

If the user is preparing an original card-image source input paper tape via ASR-33, and a punch error occurs, the record in error may be deleted by punching an "up arrow" character ( ) before punching the line-feed, carriage return for that line of source. This will cause the entire line including the "up arrow" ( ) to be ignored by the assembler. The corrected line of code should follow immediately.

(II) ASSEMBLER ERROR MESSAGES

Assembler error "flags" appear in the source listing between the instruction memory location (second column) and the instruction octal equivalent (third column). Errors are denoted by one letter, signifying:

U = Undefined Symbol
M = Multiply Defined Symbols
A = Address Field Missing Where Required
Q = Undefined Operation Code
D = Data Conversion Error
T = Symbol Table Overflow
E = Any Other Type of Detected Error

Errors will cause the affected fields to be set to zero. More than one error may occur for any one line of code, but only the last errors detected will be flagged.

(III) SYMBOL TABLE SIZE

The symbol table contains all defined symbols in the assembly program plus all literal constants, subroutine names, and modifier instructions.

Symbol table size is approximated by the following formula:

$$400 + 1365\ (N-1) = S + L + C + M,$$

Where:

N = Number of 4096-word (4K) memory modules
S = Number of symbolic addresses
L = Number of unique literal constants defined
C = Number of unique subroutine names called
M = Number of times an "undefined" symbol appears in the variable field of an instruction combined with constants by (+) or (-) operators.

(IV) MAGNETIC TAPE PROCESSING

- 7-Track Magnetic Tape
  - Mag Tape source input assumed to be 80-character records (1 CPW), recorded at a density of 556 BPI in BCD mode.
  - Binary object output is formatted as 165-character records (3 CPW) at 556 BPI
  - Mag Tape source output will be 102 character records (1 CPW) recorded at 556 BPI in BCD mode.
- 9-Track Magnetic Tape
  - Mag Tape source input is assumed to be 40-character records (2 CPW) recorded at a density of 800 BPI in binary mode.
  - Binary object output is formatted as 110-character records (2 CPW) at 800 BPI.
  - Mag tape source output will be 102-character records (1 CPW) recorded at 800 BPI in binary mode.
- All mag tape records consist of 8-bit, full-ASCII characters.
- Mag Tape source input is assumed to be on tape transport #1.
- Mag Tape object output is assumed to be on tape transport #2.
- Mag Tape source output is assumed to be on tape transport #3.

- The assembler will process continuous source program modules on magnetic tape until a EOJ code (record with $ character in Column 1) is encountered.

NOTE

Additional reference information on the operation and use of the SYSTEMS 810A/B Macro Assembler may be obtained from the following publications:

- SYSTEMS 810A GENERAL PURPOSE COMPUTER REFERENCE MANUAL (Publications No. 301-095049-007)
- SYSTEMS 810A/B ASSEMBLER REFERENCE MANUAL (Publications No. 323-095052-002)
- SYSTEMS 810A/B ASSEMBLER TECHNICAL MANUAL (Publications No. 322-095094-001)

```
00001                  *     044004E  810A/B MACRØ ASSEMBLER        (1/20/71)                    00000010
00002                  *                                                                         00000020
00003                  *                                                                         00000030
00004                  *                                                                         00000040
00005                  *                                                                         00000050
00006                  *                                                                         00000060
00007                  ****** UNIT AND CHANNEL INSTRUCTIØNS ØN UNIT I/Ø MACHINES **************00000070
00008                  *                                                                         00000080
00009                  *****        SET CØNTRØL SWITCH 16 FØR CHANNEL ASSEMBLY                   00000090
00010                  *                                                                         00000100
00011                  *                                                                         00000110
00012                  *************************************************************************00000120
00013                  *                                                                         00000130
00014                  *                                                                         00000140
00015                  *                                                                         00000150
00016                  *  SENSE SWITCH SETTINGS                                                  00000160
00017                  *                                                                         00000170
00018                  *     0     SET 2 PASS RESET 1 PASS                                       00000180
00019                  *     1     SET NØ SYMBØLIC RESET-SYMBØLIC ØUTPUT                         00000190
00020                  *     2     SET NØ ØBJECT RESET-ØBJECT ØUTPUT                             00000200
00021                  *     3     SET ERRØR LIST ØNLY                                           00000210
00022                  *     4     SET LIST ØN AS33 RESET- LIST ØN PRINTER                       00000220
00023                  *     5   SET PAPER TAPE SØURCE RESET CARD SØURCE                         00000230
00024                  *     6     SET ØBJECT ØN AS33 RESET-ØBJECT ØN H S                        00000240
00025                  *     7     SET LIST SYMBØL TABLE                                         00000250
00026                  *     8     SET SØURCE ØN 33 RESET SØURCE ØN HS                           00000260
00027                  *     9     SET SØURCE ØN KEYBØARD                                        00000270
00028                  *     10    SET PASS 2 AFTER PASS 2                                       00000280
00029                  *     11 SET MAG TAPE SØURCE ØN TRANSPØRT 1                               00000290
00030                  *     12 SET MAG TAPE ØBJECT ØN TRANSPØRT 2                               00000300
00031                  *     13 SET MAG TAPE ØN TRANSPØRT 3 - SYMBØLIC                           00000310
00032                  *     14    SET, WITH 11 = 9-TRK TAPE; RESET (11 ØNLY) = 7-TRK MAG TAPE   00000320
00033                  *     15    SET CHANNEL ASSEMBLY                                          00000330
00034  00000 00000000        REL                                                                 00000340
00035  00000 70000000        ØRG   0                                                             00000350
00036  00000 11100612        BRU   MNEM          START ASSEMBLY PASS 1     11/01/67     JDJ    *B00003600
```

```
                         *************************************************************      00003700
                         * CHANGE MADE SØ THAT ALL CØRE IS USED FØR SYMBØL TABLE PREVIØUSLY     00003800
                         * WENT MEMH-106    JPD                                                 00003900
                         *************************************************************      00004000
00001 00000000 HIGH DATA 0              END ØF SYMBØL TABLE        9/11/67      JDJ     *B  00004100
                         *  F IRST  LØCATIØN AFTER ALL SUBRØUTINES  J P D                       00004200
00002 00000001 LØW  BSS  1              FIRST LØCATIØN ØF SYMBØL TABLE                          00004300
                         *************************************************************      00004400
                         *************************************************************      00004500
00003 57500000 SSLØ EAC  $BUF                                                                   00004600
                         *************************************************************      00004700
00004 35400476 L006 DAC  BUFF+'74                                                               00004800
00005 35400415 L008 DAC  BUFF+'13                                                               00004900
00006 00000000 RECC HLT                 RECØRD CØUNTER           MDL 2/11/69 *C                 00005000
00007 25400000 PRNT DAC  **                                                                     00005100
00010 12107170      SPB  CLIN           CØUNT LINES                                             00005200
00011 12107207      SPB  HDNG           PRINTER HEADING            9/12/67    JDJ               00005300
00012 01077774      LAA  =-4                                       10/26/67   JDJ   *B          00005400
00013 55100000      CALL H$WR           PRINT A LINE             09/18/67   JDJ                 00005500
00014 35400370      DAC  LNØ-1                                                                  00005600
00015 00000146 PRT4 DATA 102                                                                    00005700
00016 11300007      BRU* PRNT                                                                   00005800
00017 25400000 TLØW DAC  0                                                                      00005900
00020 35400374 ALNØ DAC  LNØ+3          UNITS PØSITIØN ØF ADDER  10/17/67   JDJ     *B          00006000
                         *                                                                      00006100
                         *                                                                      00006200
00021 00000000 THIG ZZZ  **             ENTER CØMPUTE MEM HUGH     9/11/67    JDJ    *B         00006300
00022 02077777      LBA  =-1            JUST INSIDE MEMØRY       10/26/67   JDJ   *B            00006400
00023 16010000      AMB  ='10000        ADD 4K, ZERØ INCLUDED      9/11/67    JDJ    *B         00006500
00024 01400003      LAA  3,1            RETRIEVE CØNTENTS TØ SAVE  9/11/67    JDJ    *B         00006600
00025 03100042      STA  TMHI           SAVE IF VALID LØCATIØN     9/11/67    JDJ    *B         00006700
00026 01077777      LAA  =-1            STØRE A LØT ØF BITS      10/26/67   JDJ   *B            00006800
00027 03400003      STA  3,1            XX002 ØCTAL IN 4K MØDULES  9/11/67    JDJ    *B         00006900
00030 01400003      LAA  3,1                                       9/11/67    JDJ    *B         00007000
00031 04100001      STB  HIGH           SET MEM HIGH TØ THIS       9/11/67    JDJ    *B         00007100
                         *              A-REG = 0 ØR -1                                      *E00007200
```

```
00073                    *                          B-REG = 7777,17777,27777,ETC, THRU 67777        *E 00007300
00074  00032 00000027           ABA                 RESULT = 0,7777,17777,ETC, THRU 67777           *E 00007400
00075  00033 00000022           SAZ                 SKIP IF END ØN A LESS-THAN-32K MACHINE          *E 00007500
00076  00034 06067777           SMA   ='67777       END ØN A 32K MAHCINE                            *E 00007600
00077  00035 00000023           SAN                 32K - SKIP IF MØRE CØRE LEFT FØR SYMBØL TABLE *E 00007700
00078  00036 11300021           BRU*  THIG          EXIT                    9/11/67  JDJ  *B     00007800
00079  00037 01100042           LAA   TMHI           RESTØRE                9/11/67  JDJ  *B     00007900
00080  00040 03400003           STA   3,1           LØCATIØN XX002          9/12/67  JDJ  *B     00008000
00081  00041 11100023           BRU   THIG+2        GØ TRY MEM PLUS 4K MØRE 9/12/67  JDJ  *B     00008100
00082  00042 00000000 TMHI      DATA  0             TEMP STØRAGE MEM HIGH    9/11/67  JDJ  *B     00008200
00083  00043 35400201 L044      DAC   BSLC          PUNCH BUFFER START ADDR,                        00008300
00084  00044 00000000 DZRØ      DATA  0                                                             00008400
00085  00045 00000261 K261      DATA  '261          ØNE FØR TØP ØF FØRM     11/18/67  JDJ  *B     00008500
00086  00046 35401003 CDJB      DAC   C5BL          MNEMBLER ØP CØDE TABLE  10/23/67  JDJ  *B     00008600
00087  00047 35405434           DAC   MBEG          MACRØ NAMES             10/23/67  JDJ  *B     00008700
00088  00050 35401021           DAC   ØP30          SYSTEM NAMES            10/23/67  JDJ  *B     00008
00089  00051 35401021           DAC   ØP30          FØRM NAMES              10/23/67  JDJ  *B     00008
00090  00052 35401021           DAC   ØP30          EQUIVILANCE NAMES       10/23/67  JDJ  *B     00009
00091  00053 35401021           DAC   ØP30          USER SPECIAL NAMES      10/23/67  JDJ  *B     00009
00092  00054 35401021           DAC   ØP30          UNASSIGNED NAMES        10/23/67  JDJ  *B     00009
00093  00055 35401021           DAC   ØP30          UNASSIGNED NAMES        10/23/67  JDJ  *B     00009
00094  00056 00000002 NSRH      BSS   2             NAME PACK 2 CHAR PER WØRD 10/23/67  JDJ  *B     00009400
00095  00060 00000001 EQ        BSS   1                                                             00009500
00096  00061 00000001 T         BSS   1                                                             00009600
00097                    *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  00009700
00098                    *     FØLLØWING RESERVED FØR BTC LØCATIØNS IF LØCATED AT 1000 JPD         00009800
00099  00062 00000012           BSS   10                                                            00009900
00100                    *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  00010000
00101  00074 00000003 ID        BSS   3                                                             00010100
00102  00077 00000001 IM        BSS   1                                                             00010200
00103  00100 00000001 DIT2      BSS   1                                                             00010300
00104  00101 00000001 DIT3      BSS   1                                                             00010400
00105  00102 00000001 DIT4      BSS   1                                                             00010500
00106  00103 00000001 DIT5      BSS   1                                                             00010600
00107  00104 00000001 FET9      BSS   1                                                             00010700
00108  00105 00000002 HØLD      BSS   2                                                             00010800
```

```
00109  00107 00000001 DFL  BSS  1                                                    00010900
00110  00110 00000001 DITJ BSS  1                                                    00011000
00111  00111 00000001 DIT1 BSS  1                                                    00011100
00112  00112 00000001 DIT6 BSS  1                                                    00011200
00113  00113 00000001 SIGN BSS  1                                                    00011300
00114  00114 00000004 DIT7 BSS  4                                  10/70 KSS *E      00011400
00115  00120 00000001 SLIT BSS  1                                                    00011500
00116  00121 00000001 BCIL BSS  1                                                    00011600
00117  00122 35402566 LITI DAC  LITR                                                 00011700
00118  00123 35402415 MERR DAC  MR24                                                 00011800
00119  00124 35400371 LLNØ DAC  LNØ                                                  00011900
00120  00125 35406212 PS99 DAC  EDP                                                  00012000
00121  00126 00000001 PASS BSS  1          PASS FLAG(1ST=NØN 0,2ND=0                 00012100
00122  00127 00000010 NACA BSS  8                                                    00012200
00123  00137 00000001 T1MP BSS  1                                                    00012300
00124  00140 00000001 T2MP BSS  1                                                    00012400
00125  00141 00000001 T3MP BSS  1                                                    00012500
00126  00142 00000001 T4MP BSS  1                                                    00012600
00127  00143 00000001 MIND BSS  1          - INDICATØR                               00012700
00128  00144 00000003 S1   BSS  3                                                    00012800
00129  00147 00000001 TMPY BSS  1                                                    00012900
00130  00150 00000001 ENDF BSS  1                                                    00013000
00131  00151 00000001 SFLA BSS  1                                                    00013100
00132  00152 00000001 MAPF BSS  1                                                    00013200
00133  00153 00000001 SIZE BSS  1                                                    00013300
00134  00154 00000001 CNTR BSS  1                                                    00013400
00135  00155 00000001 PDEV BSS  1                                                    00013500
00136  00156 00000001 TØTL BSS  1                                                    00013600
00137  00157 00000001 IND  BSS  1                                                    00013700
00138  00160 00000001 SCNT BSS  1                                                    00013800
00139  00161 00000001 SCLT BSS  1          SCAN LIT.FLAG(ØFF=0,ØN=NØ                 00013900
00140  00162 00000001 SCTM BSS  1          SCAN TERM,CHAR(SP ØR,)                    00014000
00141  00163 00000001 SCFØ BSS  1          SCAN FLD ØCC FLAG(BLANK=0                 00014100
00142  00164 00000001 SCDF BSS  1          SCAN ADDR DEF FLAG DEF=0)                 00014200
00143  00165 00000001 SCCC BSS  1          SCAN CARD CØL PØS(11-72)                  00014300
00144  00166 00000165 CØLP EQU  SCCC                                                 00014400
```

```
00145  00166 00000001 SCSN BSS  1            SIGN ØF SUB-ADDR(+=0,-=NØ
00146  00167 00000001 SCSA BSS  1            SCAN SUB-ADDRESS
00147  00170 00000001 SCAD BSS  1            SCAN ADDRESS
00148  00171 00000001 SCRL BSS  1            SCAN REL FLAG(ABS=0,REL=-
00149  00172 00000171 REL  EQU  SCRL
00150  00172 00000001 RLC  BSS  1            REL LØC CNTR FLAG(ABS=0)
00151  00173 00000001 LC   BSS  1            LØCATIØN CØUNTER
00152  00174 00000001 LØAD BSS  1            LØAD ØP CØDE
00153  00175 00000001 DATA BSS  1            INSTR.ØR DATA BEING ASSEM
00154  00176 00000001 BAD  BSS  1            CØDE FØR ADD-ØN
00155  00177 00000001 PUNF BSS  1            PUNCH FLAG(INIT=0,LEAD=NØ
00156  00200 00000001 BLØC BSS  1            BUFFER WØRD PØINTER
00157                 *      PUNCH BUFFER
00158  00201 00000001 BSLC BSS  1            BUFFER START LØC(FRØM LC)
00159  00202 00000001 BSIZ BSS  1            BUFFER SIZE(0 TØ -21)
00160  00203 00000001 SCØD BSS  1
00161  00204 00000154      BSS  108          BUFFER DATA WØRDS
00162  00360 00000002 CKSM BSS  2
00163  00362 00000360 PBUF EQU  CKSM         (ADD ,IGNØRE ØVERFLØW)
00164  00362 00000001 TMP0 BSS  1
00165  00363 00000362 CCNT EQU  TMP0
00166  00363 00000001 TMP1 BSS  1            TEMPØRARY STØRAGE
00167  00364 00000363 PS61 EQU  TMP1
00168  00364 00000001 TMP2 BSS  1            TEMPØRARY STØRAGE
00169  00365 00000364 PS62 EQU  TMP2
00170  00365 00000001 TMP3 BSS  1
00171  00366 00000365 SYM  EQU  TMP3
00172  00366 00000001 TMP4 BSS  1
00173  00367 00000001 TMP5 BSS  1            TEMPØRARY STØRAGE
00174  00370 00000367 TASS EQU  TMP5
00175                 *      START PRINT BUFFER
00176  00370 00000001      BSS  1
00177  00371 00000004 LNØ  BSS  4            LINE NUMBER
00178  00375 00000001      BSS  1
00179  00376 00000004      BSS  4
00180  00402 00000004 BUFF BSS  4            ØCTAL ADDRESS
```

```
00181  00406 00000402 BUF  EQU  BUFF                                                    00018100
00182  00406 00000001      BSS  1            ERRØR FLAG(SP ØR /)                       00018200
00183  00407 00000006      BSS  6            ØCTAL INSTUCTIØN                          00018300
00184  00415 00000240      DATA '240         BLANK FØR CØL 1 LINE PRNT                 00018400
00185                 *     CARD INPUT BUFFER START                                    00018500
00186  00416 00000004      BSS  4            SYMBØLIC LØCATIØN                         00018600
00187  00422 00000001      BSS  1            ERRØR FLAG(SP ØR/)                        00018700
00188  00423 00000004      BSS  4            SYMBØLIC ØPERATIØN                        00018800
00189  00427 00000001      BSS  1            ERRØR FLAG(SP ØR/)                        00018900
00190  00430 00000016      BSS  14           VARIABLE FIELD                            00019000
00191  00446 00000031      BSS  25                                                     00019100
00192  00477 00000027      BSS  23           CØMMENTS                                  00019200
00193  00526 00000010      BSS  8            IDENT                                     00019300
00194  00536 00000536 BFEN EQU  *            INPUT CARD AREA+1      9406/67 JDJ        00019400
00195  00536 00000001      BSS  1            ERRØR SPALER            01/13/68 JDJ *B    00019500
00196                 * SWITCHES USED BY MACRØ SUBRØUTINES          10/23/67   JDJ  *B  00019600
00197  00537 00000000 F8PB DATA 0            GPLT LH-RH DATA INDICATØR 10/23/67 JDJ *B  00019700
00198  00540 00000000 U8BT DATA 0            UNLA LH-RH INDICATØR      10/23/67 JDJ *B  00019800
00199  00541 00000000 PNUM DATA 0            PARAMETER NUMBER FØR SCPL 10/23/67 JDJ *B  00019900
00200  00542 00000000 P4BD DATA 0            ACCUMULATED DECIMAL PBCD  10/23/67 JDJ *B  00020000
00201  00543 00000000 A999 DATA 0      AT SIGN 999 ERRØR FLAG ØVERFLØ  10/23/67 JDJ *B  00020100
00202  00544 00000000 HPXX DATA 0            HIGHEST INT LABEL BY G4ØD 10/23/67 JDJ *B  00020200
00203  00545 00000000 TAXX DATA 0            WØRK AREA FRØM            10/23/67 JDJ *B  00020300
00204  00546 00000000 NATF DATA 0            NAME TABLE ØVERFLØW CNCR  10/23/67 JDJ *B  00020400
00205  00547 00000000 MLØC DATA 0            PRESENTS ØF LØCATIØN FLD  10/23/67 JDJ *B  00020500
00206  00550 00000000 LLFD DATA 0            SIZE ØF LØCATIØN FIELD    10/23/67 JDJ *B  00020600
00207  00551 00000000 MØPC DATA 0            PRESENTS ØF ØP CØDE FIELD 10/23/67 JDJ *B  00020700
00208  00552 00000000 LØPC DATA 0            SIZE ØF ØP CØDE FIELD     10/23/67 JDJ *B  00020800
00209  00553 00000000 TØPC DATA 0            TYPE ØF ØP CØDE           10/23/67 JDJ *B  00020900
00210  00554 00000000 MVFD DATA 0            PRESENTS ØF VARIABLE FLD  10/23/67 JDJ *B  00021000
00211  00555 00000000 MCØL DATA 0            CØMMENT CARD              10/23/67 JDJ *B  00021100
00212  00556 00000000 MIØC DATA 0            INDIRECT ØP CØDE          10/23/67 JDJ *B  00021200
00213  00557 00000000 ERRM DATA 0            GENERAL ERRØR NØTATIØN    10/23/67 JDJ *B  00021300
00214  00560 00000000 EØMR DATA 0            END ØF MACRØ CØDE BIT     10/23/67 JDJ *B  00021400
00215  00561 00000000 PFWD DATA 0            PACK FLIP-FLØP SW LH-RH   10/23/67 JDJ *B  00021500
00216  00562 00000000 PDSW DATA 0            PADDING SW FØR PACK       10/23/67 JDJ *B  00021600
```

```
00217  00563 00000000 HFUL DATA 0          HALF FULL WØRD IN PACK     10/23/67   JDJ    *B    00021700
00218  00564 00000000 ADØN DATA 0          ADD-ØN SW FØR MLAB         10/23/67   JDJ    *B    00021800
00219  00565 00000000 NØPR DATA 0          NØ PRØCESS CURRENT EXPND   10/23/67   JDJ    *B    00021900
00220  00566 00000000 MDMR DATA 0          MULTIPLY DEFINED NAME MLAB 10/23/67   JDJ    *B    00022000
00221  00567 00000000 UDMR DATA 0          UNDEFINED NAME FØR MLAB    10/23/67   JDJ    *B    00022100
00222  00570 00000000 PAFD DATA 0          PRESENT-ABSENTS ØF FIELD   10/24/67   JDJ    *B    00022200
00223  00571 00000000 LEDP DATA 0          LENGTH ØF DATA PACKED      10/24/67   JDJ    *B    00022300
00224  00572 00000000 PFCT DATA 0          PFXF CHARS READ CNTR       10/24/67   JDJ    *B    00022400
00225  00573 00000000 PXWK DATA 0          TEMP DATA STØRAGE   PXFX   10/24/67   JDJ    *B    00022500
00226  00574 00000000 SPDL DATA 0          SPACE DELIMITER IND PVFD   10/24/67   JDJ    *B    00022600
00227  00575 00000000 STCP DATA 0          PACK CØUNTER FØR CØMMENTS  10/24/67   JDJ    *B    00022700
00228  00576 00000000 DCUN DATA 0          CHARACTERS UNLACED BY DCØM 10/24/67   JDJ    *B    00022800
00229  00577 00000000 CDCT DATA 0          CØUNT CØNTRØL SW FØR DCØM  10/24/67   JDJ    *B    00022900
00230  00600 00000000 DCMX DATA 0          DCØM UNLACE MAX CØNTRØL    10/24/67   JDJ    *B    00023000
00231  00601 00000000 DCAS DATA 0          DCØM ASCII BASE CØUNTER    10/24/67   JDJ    *B    00023100
00232  00602 00000000 EMSW DATA 0                                                              00023200
00233  00603 00000000 EXPN DATA 0          EXPAND MACRØ SW            10/24/67   JDJ    *B    00023300
00234  00604 00000000 MBYP DATA 0          MACRØ BY PASS SWITCH       10/24/67   JDJ    *B    00023400
00235  00605 00000000 MINP DATA 0          MACRØ IN STØRAGE PRØCESS   10/24/67   JDJ    *B    00023500
00236  00606 00000000 PBIN DATA 0          CØNVT PAR TØ BIN            11/07/67    JDJ    *B   00023600
00237  00607 00000000 LSUP DATA 0          LIST-NØ LIST ØPTIØN                12/19/67 JDJ *C00023700
00238  00610 25400000 DAC  DAC  **                                                             00023800
00239  00611 00177316 L000 DATA PASS-DAC                                                       *E00023900
00240  00612 01300003 MNEM LAA* SSLØ       ØBTAIN LAST LØCATIØN USED BY ASSEMBLER              00024000
00241  00613 03100002      STA  LØW        SAVE FØR FIRST LØCATIØN ØF SYMBØL                   00024100
00242  00614 12100021      SPB  THIG       GØ CØMPUTE MEM HIGH        9/12/67    JDJ    *B    00024200
00243  00615 01077777      LAA  =-1                                   10/26/67   JDJ   *B     00024300
00244  00616 03107020      STA  PIDI       SET $PID INDICATØR  TØ NØ        JDJ               00024400
00245  00617 12107005      SPB  ZRPG        SET PAGE TØ ØNE               JDJ                 00024500
00246  00620 01100017      LAA  TLØW       RESTØRE FIRST LØCATIØN ØF                           00024600
00247  00621 03300002      STA* LØW        SYMBØL TABLE IF RESTART ØF PASS 2                   00024700
00248  00622 12103706      SPB  SSSS       ØF PASS 2                                           00024800
00249  00623 25401200      DAC  '1200                                                CKA       00024900
00250  00624 11106513      BRU  END2                                  11/01/67   JDJ    *B    00025000
00251  00625 01070400      LAA  ='170400                              11/01/67     JDJ     *B00025100
00252  00626 02070410      LBA  ='170410                                                       00025200
```

```
1253  00627 12103706        SPB   SSSS          TEST FØR CHANNEL ASSEMBLY - CØNTRØL SWITCH      00025300
1254  00630 25401700        DAC   '1700                                                         00025400
1255  00631 11100634        BRU   *+3                                                           00025500
1256  00632 01030601        LAA   ='130601                      11/01/67    JDJ     *B00025600
1257  00633 02030600        LBA   ='130600                      11/01/67    JDJ     *B 00025700
1258  00634 04101503        STB   LPIE                          11/01/67    JDJ     *B 00025800
1259  00635 03101504        STA   LPID                          11/01/67      JDJ   *B00025900
1260                  * SET MACRØ TØ RESTART                    11/02/67    JDJ  *B   00026000
1261  00636 01104406        LAA   NPAD    SET PACK ADR TØ BEGIN 11/02/67    JDJ  *B   00026100
1262  00637 03104404        STA   PDAD                          11/02/67    JDJ  *B   00026200
1263  00640 01104410        LAA   BANT    SET NAME TABLE ADR TØ BEG 11/02/67 JDJ  *B   00026300
1264  00641 03104407        STA   LANL                          11/02/67    JDJ  *B   00026400
1265  00642 02077777 EX01   LBA   =-1      SET FØRM IN ERRØR     10/26/67    JDJ  *B   00026500
1266  00643 04105671        STB   FDER    IF FDAT PRECEEDS FØRM  9/07/67  JDJ          00026600
1267  00644 01000260        LAA   ='260   '26 ŻERØ              10/17/67    JDJ  *B   00026700
1268  00645 03101760        STA   CERW-3  ŻERØ THE CØUNTER      10/17/67    JDJ  *B   00026800
1269  00646 03101761        STA   CERW-2                        10/17/67    JDJ  *B   00026900
  70  00647 03101762        STA   CERW-1                        10/17/67    JDJ  *B   00027000
  71  00650 03101763        STA   CERW                          10/17/67    JDJ  *B   00027100
  72  00651 01000001        LAA   =1      SET AT SIGN BASE TØ 1 11/17/67    JDJ  *B   00027200
  73  00652 03100544        STA   HPXX    TØ RESET TABLE        11/17/67    JDJ  *B   00027300
      00653 0  .0003        CLA           RESET BASE TØ INVALID 11/17/67    JDJ  *B   00027400
 275  00654 03112251        STA   AHTU+1  IN PØSITIØN 1         11/17/67    JDJ  *B   00027500
 276  00655 12104465        SPB   PAST    GØ RESET TABLE TØ 1 TØ 16 11/17/67 JDJ  *B   00027600
 277  00656 00000003        CLA                                                           00027700
 278  00657 03100006        STA   RECC    RESET RECØRD CØUNTER  MDL 2/11/69 *C         00027800
 279  00660 03300002        STA*  LØW                                      CKA         00027900
 280  00661 02100611        LBA   LOOO                                                    00028000
 281  00662 03500610        STA   DAC,1                                                   00028100
 282  00663 00000026        IBS                                                           00028200
 283  00664 11100663        BRU   *-2                                                     00028300
 284  00665 02077720        LBA   ='-60                         10/26/67    JDJ  *B   00028400
 285  00666 52100000        STB   $LINE                                                   00028500
 286  00667 02077777        LBA   =-1                           10/26/67    JDJ  *B   00028600
 287  00670 04100203        STB   SCØD                                                    00028700
 288  00671 00130400        SNS   0       1 PASS/2 PASS         11/03/67      JDJ  *B 00028800
```

```
00672 00000020       ASC             SET FØR 1ST PASS                                          00028900
00673 03100126       STA   PASS      1ST PASS/2ND PASS                                         00029000
00674 12102032       SPB   CLØT      PUNCH INTIALIZE                                           00029100
00675 01000260       LAA   ='260                                  10/26/67   JDJ   *B          00029200
00676 03100372       STA   LNØ+1                                                               00029300
00677 03100373       STA   LNØ+2                                                               00029400
00700 03100374       STA   LNØ+3                                                               00029500
00701 03100371       STA   LNØ                                                                 00029600
00702 00000003 EX02  CLA                                                                       00029700
00703 03107741       STA   LSFG      RESET ASR LISTING FLAG      09/22/67   JDJ                00029800
00704 03102541       STA   AUGM                                                               *E00029900
00705 03100060       STA   EQ                                                                  00030000
00706 03100175       STA   DATA                                                                00030100
00707 03100174       STA   LØAD                                                                00030200
00710 03100143       STA   MIND                                                                00030300
00711 03100121       STA   BCIL                                                                00030400
00712 03100120       STA   SLIT                                                                00030500
00713 03105746       STA   FDØP      CLEAR FDAT PRØCESSØR        09/20/67   JDJ                00030600
00714 01000146       LAA   =102                                   10/26/67   JDJ   *B          00030700
00715 03100015       STA   PRT4      RESET TØ 102 CHARACTERS     09/22/67   JDJ                00030800
00716 01000240       LAA   ='240     SPACE                        10/26/67   JDJ   *B          00030900
00717 03100370       STA   LNØ-1                                                               00031000
00720 03100375       STA   LNØ+4                                                               00031100
00721 01100603       LAA   EXPN      GET MACRØ EXPAND SW          11/02/67   JDJ   *B          00031200
00722 00000024       SAP             PLUS MEANS NØ                11/02/67   JDJ   *B          00031300
00723 11105462       BRU   MBE4      MINUS MEANS YES              11/02/67   JDJ   *B          00031400
00724 12101513       SPB   CARD      INPUT SØURCE STATEMENT      09/22/67   JDJ                00031500
00725 14100006       IMS   RECC      INCREMENT RECØRD CØUNTER MDL 2/11/69 *C                   00031600
00726 01100604       LAA   MBYP      GET MACRØ BY PASS SW         11/02/67   JDJ   *B          00031700
00727 00000024       SAP             PLUS NØ                      11/02/67   JDJ   *B          00031800
00730 11105465       BRU   MBE5      MINUS YES DØ BY PASS         11/02/67   JDJ   *B          00031900
00731 01100605       LAA   MINP      GET MACRØ IN STØRAGE PRØC 11/02/67   JDJ   *B             00032000
00732 00000024       SAP             PLUS MEANS NØ                11/02/67   JDJ   *B          00032100
00733 11105424       BRU   MISP      MINUS GØ STØRE PRØTØTYPE  11/02/67   JDJ   *B             00032200
               *************************                                                       00032300
               * CHANGE MADE SØ THAT BLANK CARD IS NØT IGNØRED                                 00032400
```

```
                         ************************                                               00032500
00734 01100126        LAA  PASS                  LABEL REMØVED BY JDJ                           00032600
00735 00000022        SAZ                                                                       00032700
00736 11100741        BRU  ØPER           GØ EXAMINE NEW RECØRD     09/22/67   JDJ              00032800
00737 02100020        LBA  ALNØ           ADDRESS ØF LINE CØUNTER  10/17/67   JDJ       *B     00032900
00740 12101066        SPB  DAFA           GØ CØUNT IN DECIMAL BY 1 10/17/67   JDJ       *B     00033000
               *           ØP=CØDE PRØCESSØR                                                    00033100
00741 01077777 ØPER   LAA  =-1            RESET FLAG                 10/26/67   JDJ   *B       00033200
00742 03102266        STA  FLG1           FØR NØN UNIT I/Ø INST     09/18/67   JDJ              00033300
00743 01000240        LAA  ='240          SPACE                      10/26/67   JDJ   *B       00033400
00744 03100404        STA  BUFF+2                                                               00033500
00745 03100376        STA  BUFF-4                                                               00033600
00746 03100415        STA  BUFF+'13                                                             00033700
00747 01000013        LAA  =11                                       10/26/67   JDJ   *B       00033800
00750 03100165        STA  SCCC           SET CØL CTR TØ 11                                     00033900
00751 01100416        LAA  BUFF+'14                                                  CKA       00034000
00752 15000252        CMA  ='252          *                          10/26/67   JDJ   *B       00034100
00753 11100755        BRU  *+2                                                                  00034200
00754 11101030        BRU  CMNT                                                                 00034300
00755 15000255        CMA  ='255          -                          10/26/67   JDJ   *B       00034400
00756 11100760        BRU  *+2                                                                  00034500
00757 11101024        BRU  ØP11           - IN CØLUMN 1                                         00034600
00760 15000244        CMA  ='244          $                          10/26/67   JDJ   *B       00034700
00761 11100763        BRU  *+2                                                                  00034800
00762 11106445        BRU  DØLR           $ CARD PRØCESSØR          09/18/67   JDJ              00034900
00763 01100427        LAA  BUF+'25                                                              00035000
00764 06000240        SMA  ='240          SPACE                      10/26/67   JDJ   *B       00035100
00765 00000022        SAZ                                                                       00035200
00766 11101021        BRU  ØP30           CØLUMN 10 NØT BLANK                                   00035300
00767 01077770 C5LK   LAA  =-8            CØL 5 LØØK-UP ØN TYPE     11/02/67   JDJ       *B     00035400
00770 03112041        STA  WØRK           SET TEMP STØRAGE CØUNTER 11/02/67   JDJ       *B     00035500
00771 02000000        LBA  =0             CLEAR AUGMENT TØ TRØT     11/02/67   JDJ       *B     00035600
00772 01100422        LAA  BUFF+11+5      GET CØL 5 ØR TYPE         11/02/67   JDJ       *B     00035700
00773 15512105 C5L1   CMA  TYPE,1         TEST FØR VALID            11/02/67   JDJ       *B     00035800
00774 11100776        BRU  *+2            NØ, ØR MAYBE UNASSIGNED   11/02/67   JDJ       *B     00035900
00775 11700046        BRU* CDTB,1         YES, GØ TØ CØMPUTED ADDRES11/02/67   JDJ       *B     00036000
```

```
00361  00776 00000026       IBS                INCREMENT AUGMENT          11/02/67   JDJ   *B   00036100
00362  00777 00000033       NØP                IBS WILL SKIP ØN PLUS      11/17/67   JDJ   *B   00036200
00363  01000 14112041       IMS   WØRK         BUMP CØUNTER               11/02/67   JDJ   *B   00036300
00364  01001 11100773       BRU   C5L1         GØ TRY NEXT LØCATIØN       11/02/67   JDJ   *B   00036400
00365  01002 11101021       BRU   ØP30         PRØCESS AS ŻERØ ØP CØDE    11/02/67   JDJ   *B   00036500
00366  01003 01100426 C5BL  LAA   BUF+'24                                  11/07/67    JDJ  *B   00036600
00367  01004 06000252       SMA   ='252        *                          10/26/67   JDJ  *B    00036700
00368  01005 00000022       SAŻ                INDIRECT FLAG ØN                                  00036800
00369  01006 11101011       BRU   ØP10         NØ                                                00036900
00370  01007 01002000       LAA   ='2000                                   10/26/67   JDJ  *B    00037000
00371  01010 03100175       STA   DATA                                                           00037100
00372  01011 12101117 ØP10  SPB   GNØP         GØ GENERATE ØP CØDE        10/16/67    JDJ   *B   00037200
00373  01012 11101021       BRU   ØP30         INVALID CHARACTERS         10/16/67    JDJ   *B   00037300
00374  01013 02101132       LBA   L027         =EXIT-ØPT1 PSEUDØ-ØP                              00037400
00375  01014 15501343 ØP20  CMA   ØPT1,1       ØP TABLE LØØK UP                                  00037500
00376  01015 11101017       BRU   *+2                                                            00037600
00377  01016 11101141       BRU   ØP40         MATCH FØUND                                       00037700
00378  01017 00000026       IBS                                                                  00037800
00379  01020 11101014       BRU   ØP20                                                           00037900
00380  01021 01000321 ØP30  LAA   ='321        Q ERRØR CØDE                10/26/67   JDJ  *B    00038000
00381  01022 03100404       STA   BUFF+2                                                         00038100
00382  01023 11107764       BRU   MREF         ŻERØ ØP-CØDE               09/18/67   JDJ        00038200
00383  01024 00000003 ØP11  CLA                                            12/02/68 MDL *C       00038300
00384  01025 03107016       STA   LPCT                                     12/02/68 MDL *C       00038400
00385  01026 01000261       LAA   ='261                                    12/02/68 MDL *C       00038500
00386  01027 03100370       STA   LNØ-1                                    12/02/68 MDL *C       00038600
00387  01030 01100126 CMNT  LAA   PASS                                     12/02/68 MDL *C       00038700
00388  01031 00000022       SAŻ                                            12/02/68 MDL *C       00038800
00389  01032 11100702       BRU   EX02                                     12/02/68 MDL *C       00038900
00390  01033 00130403       SNS   3            PRINT ERRØR LINES ØNLY                10/70 KSS *E00039000
00391  01034 11100702       BRU   EX02         YES                                   10/70 KSS *E00039100
00392  01035 00130401       SNS   1                                        12/02/68 MDL *C       00039200
00393  01036 11100702       BRU   EX02                                     12/02/68 MDL *C       00039300
00394  01037 12107170       SPB   CLIN                                     12/02/68 MDL *C       00039400
00395  01040 12107207       SPB   HDNG                                     12/02/68 MDL *C       00039500
00396  01041 02077761       LBA   =-15                                     12/02/68 MDL *C       00039600
```

```
01042 01000240      LAA  ='240                                     12/02/68 MDL *C       00039700
01043 03500415      STA  BUFF-4+15,1                               12/02/68 MDL *C       00039800
01044 00000026      IBS                                            12/02/68 MDL *C       00039900
01045 11101043      BRU  *-2                                       12/02/68 MDL *C       00040000
01046 01000146      LAA  =102                                      12/02/68 MDL *C       00040100
01047 00130404      SNS  4                                         12/02/68 MDL *C       00040200
01050 01000110      LAA  =72                                       12/02/68 MDL *C       00040300
01051 03101064      STA  WCT                                       12/02/68 MDL *C       00040400
01052 00000003      CLA                                            12/02/68 MDL *C       00040500
01053 00130415      SNS  13                                        12/02/68 MDL *C       00040600
01054 11101061      BRU  MGT                                       12/02/68 MDL *C       00040700
01055 00130404      SNS  4                                         12/02/68 MDL *C       00040800
01056 11101060      BRU  ASR                                       12/02/68 MDL *C       00040900
01057 06000003      SMA  =3                                        12/02/68 MDL *C       00041000
01060 05000010 ASR  AMA  =8                                        12/02/68 MDL *C       00041100
01061 06000011 MGT  SMA  =9                                        12/02/68 MDL *C       00041200
01062 55100000      CALL H$WR                                      12/02/68 MDL *C       00041300
01063 35400370      DAC  LNØ-1                                     12/02/68 MDL *C       00041400
01064 00000000 WCT  DATA **                                        12/02/68 MDL *C       00041500
01065 11100702      BRU  EX02                                      12/02/68 MDL *C       00041600
               *                                                   10/16/67     JDJ   *B 00041700
               * SUBRØUTINE TØ INCREMENT A DECIMAL INTEGER CNTR    10/16/67     JDJ   *B 00041800
               *                                                   10/16/67     JDJ   *B 00041900
01066 00000000 DAFA ***  **             ENTER SUBRØUTINE           10/16/67     JDJ   *B 00042000
01067 01077774      LAA  =-4            SET LØØP CØUNTER TØ -4     10/16/67     JDJ   *B 00042100
01070 03112041      STA  WØRK           TEMP STØRAGE               10/16/67     JDJ   *B 00042200
01071 01400000 DAF1 LAA  0,1            GET I-TH DIGIT             10/16/67     JDJ   *B 00042300
01072 05000001      AMA  =1             INCREMENT BY 1             10/16/67     JDJ   *B 00042400
01073 03400000      STA  0,1            STØRE IN SAME DIGIT PØS    10/16/67     JDJ   *B 00042500
01074 15000272      CMA  ='272          '272 ØR 10 BASE ASCII      10/16/67     JDJ   *B 00042600
01075 11301066      BRU* DAFA           EXIT ØN NØ 9 ØVERFLØW      10/16/67     JDJ   *B 00042700
01076 01000260      LAA  ='260          SET PØS TØ ZERØ AND CARRY10/16/67       JDJ   *B 00042800
01077 03400000      STA  0,1                                       10/16/67     JDJ   *B 00042900
01100 16077777      AMB  =-1            DECREMENT TØ NEXT DIGIT    10/16/67     JDJ   *B 00043000
01101 14112041      IMS  WØRK           TEST IF FØUR ADDS WITH 9   10/16/67     JDJ   *B 00043100
01102 11101071      BRU  DAF1           GØ CYCLE NEXT DIGIT        10/16/67     JDJ   *B 00043200
```

```
00433  01103 11301066       BRU* DAFA      EXIT WITH ZERØ, ØVERFLØW 10/16/67   JDJ    *B  00043300
00434  01104 25400000 FRD2  DAC  0                                                          00043400
00435  01105 12107260       SPB  SCL       CHECK FØR ALPHA CHAR     09/18/67  JDJ         00043500
00436  01106 11101113       BRU  FRD3      VALID, EXIT+1            10/16/67   JDJ    *B  00043600
00437  01107 15000252       CMA  ='252     *                         10/26/67  JDJ  *B     00043700
00438  01110 11301104       BRU* FRD2      INVALID, EXIT+0          10/16/67   JDJ    *B  00043800
00439  01111 11101113       BRU  *+2                                                        00043900
00440  01112 11301104       BRU* FRD2      INVALID, EXIT+0          10/16/67   JDJ    *B  00044000
00441  01113 00001316 FRD3  LSL  11        GRNERTATE                 11/14/67  JDJ     *B  00044100
00442  01114 00000514       FRL  5                                                          00044200
00443  01115 14101104       IMS  FRD2      SET EXIT ADDRESS TØ +1   10/16/67   JDJ    *B  00044300
00444  01116 11301104       BRU* FRD2                                                       00044400
00445                       *                                      10/16/67   JDJ    *B  00044500
00446  01117 00000000 GNØP  ***  **        ENTER GENERAL 3 ALPHA ØP 10/16/67  JDJ    *B  00044600
00447  01120 02100423       LBA  BUF+'21   FIRST CHAR               10/25/67    JDJ       00044700
00448  01121 01100424       LAA  BUF+'22   SECØND CHAR              10/25/67    JDJ       00044800
00449  01122 12101104       SPB  FRD2      REMØVED LABEL DUMB       10/16/67   JDJ    *B  00044900
00450  01123 11301117       BRU* GNØP      ERRØR CHARACTER          10/16/67   JDJ    *B  00045000
00451  01124 01100425       LAA  BUF+'23   THIRD CHAR               10/25/67    JDJ       00045100
00452  01125 12101104       SPB  FRD2      PACK                     10/25/67    JDJ       00045200
00453  01126 11301117       BRU* GNØP      ERRØR CHARACTER          10/16/67   JDJ    *B  00045300
00454  01127 00000004       TBA            SET ANSWER               10/25/67    JDJ       00045400
00455  01130 14101117       IMS  GNØP      SET TØ EXIT+1            10/16/67   JDJ    *B  00045500
00456  01131 11301117       BRU* GNØP      EXIT WITH ALPHA ØR * ØPC 10/16/67   JDJ    *B  00045600
00457  01132 00177630 L027  DATA EXIT-ØPT1  PSEUDØ-ØP                                      *E00045700
00458  01133 00177660 L028  DATA ØPT3-ØPT1  MEM, REF, INSTR,                               *E00045800
00459  01134 00177675 L029  DATA ØPT4-ØPT1  AUGMENTED INSTR,                               *E00045900
00460  01135 00177743 L030  DATA ØPT5-ØPT1  SHIFT INSTR,                                   *E00046000
00461  01136 00177754 L031  DATA ØPT6-ØPT1  I/Ø CLASS 1                                    *E00046100
00462  01137 00177766 L032  DATA ØPT7-ØPT1  I/Ø CLASS 2                                    *E00046200
00463  01140 00177770 L033  DATA ØPT8-ØPT1  I/Ø CLASS 3                                    *E00046300
00464                       *                                                               00046400
00465  01141 00000004 ØP40  TBA                                                           00046500
00466  01142 15101133       CMA  L028      =ØPT3-ØPT1 MEM REF INSTR                        00046600
00467  01143 11701513       BRU* ØPT2,1    TØ PSEUDØ ØP PRØCESSØRS                         00046700
00468  01144 00000033       NØP                                                            00046800
```

```
01145 02501513        LBA  ØPT2,1        BINARY ØP CØDE                                      00046900
01146 16100175        AMB  DATA                                                              00047000
01147 04100175        STB  DATA                                                              00047100
01150 15101134        CMA  L029          =ØPT4-ØPT1 AUGMNTD INSTR                            00047200
01151 11107764        BRU  MREF          MEMØRY FEFERENCING INSTR 09/18/67   JDJ             00047300
01152 00000033        NØP                                                                    00047400
01153 15101135        CMA  L030          =ØPT5-ØPT1 SHIFT INSTR                              00047500
01154 12102541        SPB  AUGM          AUGMENTED INSTR  -  SET FLAG                       *E00047600
01155 00000033        NØP                                                                    00047700
01156 15101136        CMA  L031          =ØPT6-ØPT1 I/Ø CLASS 1                              00047800
01157 11102550        BRU  MR60          SHIFT INSTRUCTIØN         09/18/67   JDJ            00047900
01160 00000033        NØP                                                                    00048000
01161 15101137        CMA  L032          =ØPT7-ØPT1 I/Ø CLASS 2                              00048100
01162 11102164        BRU  IØCA          CLASS 1 I/Ø INSTRUCTIØN   09/18/67   JDJ            00048200
01163 00000033        NØP                                                                    00048300
01164 15101140        CMA  L033          =ØPT8-ØPT1 I/Ø CLASS 3                              00048400
01165 11102217        BRU  IØCB          CLASS 2 I/Ø INSTRUCTIØN   09/18/67   JDJ            00048500
01166 00000033        NØP                *                                         CKA       00048600
01167 15102131        CMA  CKA1          CHECKING  FØR  UNIT  I/Ø  CLASS           CKA       00048700
01170 11102276        BRU  IØCC          UNIT I/Ø CLASS            09/18/67   JDJ            00048800
01171 00000033        NØP                *                                         CKA       00048900
01172 11102162        BRU  CHAS          UNIT I/Ø CLASS            09/18/67   JDJ            00049000
                 *                                                                           00049100
01173 00001173   EXIT EQU  *                                                                 00049200
                 *         PSEUDØ-ØP NAMES                                                   00049300
01173 00002123        DATA '002123       ABS                                                 00049400
01174 00044254        DATA '044254       REL                                                 00049500
01175 00037107        DATA '037107       ØRG                                                 00049600
01176 00013065        DATA '013065       EQU                                                 00049700
01177 00010043        DATA '010043       DAC                                                 00049800
01200 00012043        DATA '012043       EAC                                                 00049900
01201 00010064        DATA '010064       DAT-A                                               00050000
01202 00005163        DATA '005163       BSS                                                 00050100
01203 00004263        DATA '004263       BES                                                 00050200
01204 00006054        DATA '006054       CAL-L                                               00050300
01205 00034055        DATA '034055       NAM-E                                               00050400
```

```
00505  01206 00065532       DATA '065532     ZZZ                                                      00050500
00506  01207 00124512       DATA '124512     ***                                                      00050600
00507  01210 00032060       DATA '032060     MAP                                                      00050700
00508  01211 00032762       DATA '032762     MØR                                                      00050800
00509  01212 00100256       DATA '100256      EN                                                      00050900
00510  01213 00012704       DATA '012704     END                                                      00051000
00511  01214 00014762       DATA '014762     FØR-M                          9/06/67  JDJ      413200051100
00512  01215 00014201       DATA '014201     FDA-T                          9/06/67  JDJ      413300051200
00513  01216 00032043       DATA '032043     MAC-R                          10/16/67    JDJ    *B 00051300
00514  01217 00012641 EMCT  DATA '012641     EMA-C  ERRØR IF FØUND          10/16/67    JDJ    *B 00051400
00515  01220 00030463       DATA '030463     LIS-T                                12/19/67 JDJ *C00051500
00516  01221 00034754       DATA '034754     NØL-S                                12/19/67 JDJ *C00051600
00517  01222 00100000       DATA '100000     (BLANK CARD)                                         00051700
00518                 *                                                                           00051800
00519                 *         MEMØRY REFERENCING INSTRUCTIØNS                                   00051900
00520  01223 00001223 ØPT3  EQU  *                                                                00052000
00521  01223 00002641       DATA '002641     AMA                                                  00052100
00522  01224 00002642       DATA '002642     AMB                                                  00052200
00523  01225 00046641       DATA '046641     SMA                                                  00052300
00524  01226 00033031       DATA '033031     MPY                                                  00052400
00525  01227 00010466       DATA '010466     DIV                                                  00052500
00526  01230 00030041       DATA '030041     LAA                                                  00052600
00527  01231 00030101       DATA '030101     LBA                                                  00052700
00528  01232 00047201       DATA '047201     STA                                                  00052800
00529  01233 00047202       DATA '047202     STB                                                  00052900
00530  01234 00005125       DATA '005125     BRU                                                  00053000
00531  01235 00047002       DATA '047002     SPB                                                  00053100
00532  01236 00022663       DATA '022663     IMS                                                  00053200
00533  01237 00006641       DATA '006641     CMA                                                  00053300
00534                 *                                                                           00053400
00535                 *         AUGMENTED INSTRUCTIØNS                                            00053500
00536  01240 00001240 ØPT4  EQU  *                                                                00053600
00537  01240 00044701       DATA '044701     RNA                                                  00053700
00538  01241 00030163       DATA '030163     LCS                                                  00053800
00539  01242 00022123       DATA '022123     IBS                                                  00053900
00540  01243 00046072       DATA '046072     SAZ                                                  00054000
```

```
01244 00046060      DATA '046060      SAP                                                   00054100
01245 00046056      DATA '046056      SAN                                                   00054200
01246 00046746      DATA '046746      SØF                                                   00054300
01247 00046063      DATA '046063      SAS                                                   00054400
01250 00046717      DATA '046717      SNØ                                                   00054500
01251 00030742      DATA '030742      LØB                                                   00054600
01252 00002101      DATA '002101      ABA                                                   00054700
01253 00036101      DATA '036101      ØBA                                                   00054800
01254 00034247      DATA '034247      NEG                                                   00054900
01255 00003143      DATA '003143      ASC                                                   00055000
01256 00006723      DATA '006723      CNS                                                   00055100
01257 00006601      DATA '006601      CLA                                                   00055200
01260 00050042      DATA '050042      TAB                                                   00055300
01261 00022042      DATA '022042      IAB                                                   00055400
01262 00007142      DATA '007142      CSB                                                   00055500
01263 00050101      DATA '050101      TBA                                                   00055600
01264 00020624      DATA '020624      HLT                                                   00055700
01265 00034760      DATA '034760      NØP                                                   00055800
01266 00050751      DATA '050751      TØI                                                   00055900
01267 00033144      DATA '033144      MSD                                                   00056000
01270 00040756      DATA '040756      PØN                                         CKA       00056100
01271 00040746      DATA '040746      PØF                                         CKA       00056200
01272 00050126      DATA '050126      TBV                                         CKA       00056300
01273 00051302      DATA '051302      TVB                                         CKA       00056400
01274 00037323      DATA '037323      ØVS   810B                8/28/67 JDJ          457020000056500
01275 00047230      DATA '047230      STX   810B                8/28/67 JDJ          457040000056600
01276 00030470      DATA '030470      LIX   810B                8/28/67 JDJ          457060000056700
01277 00061030      DATA '061030      XPX   810B                8/28/67 JDJ          457080000056800
01300 00061002      DATA '061002      XPB   810B                8/28/67 JDJ          457100000056900
01301 00047402      DATA '047402      SXB   810B                8/28/67 JDJ          457120000057000
01302 00050070      DATA '050070      TAX   810B                8/28/67 JDJ          457140000057100
01303 00051401      DATA '051401      TXA   810B                8/28/67 JDJ          457160000057200
01304 00050120      DATA '050120      TBP   810B                 11/14/67    JDJ    *B   00057300
01305 00051002      DATA '051002      TPB   810B                 11/14/67    JDJ    *B   00057400
                  *                                                                     00057500
                  *                                                                     00057600
```

```
00577                    *          SHIFT INSTRUCTIØN                                                    00057700
00578  01306 00001306 ØPT5 EQU   *                                                                      00057800
00579  01306 00031141       DATA '031141        LSA                                                     00057900
00580  01307 00015101       DATA '015101        FRA                                                     00058000
00581  01310 00014601       DATA '014601        FLA                                                     00058100
00582  01311 00045154       DATA '045154        RSL                                                     00058200
00583  01312 00015114       DATA '015114        FRL                                                     00058300
00584  01313 00031154       DATA '031154        LSL                                                     00058400
00585  01314 00014614       DATA '014614        FLL                                                     00058500
00586  01315 00045141       DATA '045141        RSA                                                     00058600
00587  01316 00023423       DATA '023423        IXS  810B                8/28/67 JDJ       4691000058700
00588                    *                                                                             00058800
00589                    *          I/Ø INSTRUCTIØNS                                                     00058900
00590  01317 00001317 ØPT6 EQU   *                                                                      00059000
00591  01317 00047256       DATA '047256        SUN                                                     00059100
00592  01320 00046156       DATA '046156        SCN                                                     00059200
00593  01321 00032743       DATA '032743        MØC                                                     00059300
00594  01322 00032443       DATA '032443        MIC                                                     00059400
00595  01323 00051256       DATA  '051256       TUN                                                     00059500
00596  01324 00050156       DATA '050156        TCH                                                     00059600
00597  01325 00002743       DATA '002743        AØC                                                     00059700
00598  01326 00002443       DATA '002443        AIC                                                     00059800
00599  01327 00005203       DATA '005203        BTC                                                     00059900
00600  01330 00046723       DATA '046723        SNS                                                     00060000
00601                    *                                                                             00060100
00602  01331 00001331 ØPT7 EQU   *                                                                      00060200
00603  01331 00002164       DATA '002164        ACT                                                     00060300
00604  01332 00050270       DATA '050270        TEX                                                     00060400
00605                    *                                                                             00060500
00606  01333 00001333 ØPT8 EQU   *                                                                      00060600
00607  01333 00040445       DATA '040445        PIE                                                     00060700
00608  01334 00040444       DATA '040444        PID                                                     00060800
00609  01335 00001335 ØPT9 EQU   *                                                CKA                   00060900
00610  01335 00002460       DATA '002460        AIP                               CKA                   00061000
00611  01336 00002760       DATA '002760        AØP                               CKA                   00061100
00612  01337 00032460       DATA '032460        MIP                               GKA                   00061200
```

```
00613  01340 00032760       DATA '032760       MØP                                          CKA      00061300
00614  01341 00006265       DATA '006265       CEU                                          CKA      00061400
00615  01342 00050265       DATA '050265       TEU                                          CKA      00061500
00616  01343 00001343 ØPT1  EQU  *                                                                    00061600
00617                *            PSEUDØ-ØPS                                                         00061700
00618  01343 35402435       DAC  PS34          ABS                                                    00061800
00619  01344 35402436       DAC  PS35          REL                                                    00061900
00620  01345 35402474       DAC  PS56          ØRG                                                    00062000
00621  01346 35402476       DAC  PS60          EQU                                                    00062100
00622  01347 35402335       DAC  PS02          DAC                                                    00062200
00623  01350 35402422       DAC  PS30          EAC                                                    00062300
00624  01351 35405763       DAC  DAT1          DAT-A                                                  00062400
00625  01352 35402446       DAC  PS42          BSS                                                    00062500
00626  01353 35402462       DAC  PS46          BES                                                    00062600
00627  01354 35407457       DAC  CALL          CAL-L                                                  00062700
00628  01355 35407517       DAC  NAME          NAM-E                                                  00062800
00629  01356 35407764       DAC  MREF          ŻŻŻ                                                    00062900
00630  01357 35407764       DAC  MREF          ***                                                    00063000
00631  01360 35407656       DAC  MAP           MAP                                                    00063100
00632  01361 35407660       DAC  PS70          MØR                                                    00063200
00633  01362 35406247       DAC  END            EN                                                    00063300
00634  01363 35406247       DAC  END           END                                                    00063400
00635  01364 35405606       DAC  FØRM          FØR-M                    9/06/67  JDJ       5092000063500
00636  01365 35405474       DAC  FDAT          FDA-T                    9/06/67  JDJ       5093000063600
00637  01366 35405405       DAC  MACR          MAC-R  BEGIN MACRØ CNTRL 10/16/67    JDJ     *B  00063700
00638  01367 35403723       DAC  EMAC          EMA-C  ERRØR IF FØUND    10/16/67    JDJ     *B  00063800
00639  01370 35405747       DAC  LIS           LIS-T                          12/19/67          00063900
00640  01371 35405752       DAC  NØL           NØL-S                                            00064000
00641  01372 35402444 ØP80  DAC  PS37          (BLANK CARD)                                     00064100
00642                *                                                                          00064200
00643                *            MEMØRY REFERENCING INSTRUCTIØNS                                00064300
00644  01373 00050000       DATA '050000       AMA                                              00064400
00645  01374 00160000       DATA '160000       AMB                                              00064500
00646  01375 00060000       DATA '060000       SMA                                              00064600
00647  01376 00070000       DATA '070000       MPY                                              00064700
00648  01377 00100000       DATA '100000       DIV                                              00064800
```

```
00649  01400 00010000      DATA '010000       LAA                          00065900
00650  01401 00020000      DATA '020000       LBA                          00066000
00651  01402 00030000      DATA '030000       STA                          00066100
00652  01403 00040000      DATA '040000       STB                          00066200
00653  01404 00110000      DATA '110000       BRU                          00066300
00654  01405 00120000      DATA '120000       SPB                          00066400
00655  01406 00140000      DATA '140000       IMS                          00066500
00656  01407 00150000      DATA '150000       CMA                          00066600
00657                 *                                                   00066700
00658                 *          AUGMENTED INSTRUCTIØNS                   00066800
00659  01410 00000001      DATA '000001       RNA                          00066900
00660  01411 00000031      DATA '000031       LCS                          00067000
00661  01412 00000026      DATA '000026       IBS                          00067100
00662  01413 00000022      DATA '000022       SAZ                          00067200
00663  01414 00000024      DATA '000024       SAP                          00067300
00664  01415 00000023      DATA '000023       SAN                          00067400
00665  01416 00000025      DATA '000025       SØF                          00067500
00666  01417 00000021      DATA '000021       SAS                          00067600
00667  01420 00000032      DATA '000032       SNØ                          00067700
00668  01421 00000036      DATA '000036       LØB                          00067800
00669  01422 00000027      DATA '000027       ABA                          00067900
00670  01423 00000030      DATA '000030       ØBA                          00068000
00671  01424 00000002      DATA '000002       NEG                          00068100
00672  01425 00000020      DATA '000020       ASC                          00068200
00673  01426 00000034      DATA '000034       CNS                          00068300
00674  01427 00000003      DATA '000003       CLA                          00068400
00675  01430 00000005      DATA '000005       TAB                          00068500
00676  01431 00000006      DATA '000006       IAB                          00068600
00677  01432 00000007      DATA '000007       CSB                          00068700
00678  01433 00000004      DATA '000004       TBA                          00068800
00679  01434 00000000      DATA '000000       HLT                          00068900
00680  01435 00000033      DATA '000033       NØP                          00069000
00681  01436 00000035      DATA '000035       TØI                          00069100
00682  01437 00000037      DATA '000037       MSD                          00069200
00683  01440 00002040      DATA '002040       PØN              CKA         00069300
00684  01441 00002041      DATA '002041       PØF              CKA         00069400
```

```
00685  01442 00000042    DATA '000042     TBV                                   CKA      00068500
00686  01443 00000043    DATA '000043     TVB                                   CKA      00068600
00687  01444 00000037    DATA '000037     ØVS  810B              8/28/67 JDJ        5510200068700
00688  01445 00000044    DATA '000044     STX  810B              8/28/67 JDJ        5510400068800
00689  01446 00000045    DATA '000045     LIX  810B              8/28/67 JDJ        5510600068900
00690  01447 00000046    DATA '000046     XPX  810B              8/28/67 JDJ        5510800069000
00691  01450 00000047    DATA '000047     XPB  810B              8/28/67 JDJ        5511000069100
00692  01451 00000050    DATA '000050     SXB  810B              8/28/67 JDJ        5511200069200
00693  01452 00000052    DATA '000052     TAX  810B              8/28/67 JDJ        5511400069300
00694  01453 00000053    DATA '000053     TXA  810B              8/28/67 JDJ        5511600069400
00695  01454 00000040    DATA '000040     TBP  810B              8/28/67 JDJ        5511800069500
00696  01455 00000041    DATA '000041     TPB  810B              8/28/67 JDJ        5512000069600
00697                  *                                                             00069700
00698                  *                                                             00069800
00699                  *        SHIFT INSTRUCTIØNS                                   00069900
00700  01456 00000011    DATA '000011     LSA                                        00070000
00701  01457 00000012    DATA '000012     FRA                                        00070100
00702  01460 00000017    DATA '000017     FLA                                        00070200
00703  01461 00000015    DATA '000015     RSL                                        00070300
00704  01462 00000014    DATA '000014     FRL                                        00070400
00705  01463 00000016    DATA '000016     LSL                                        00070500
00706  01464 00000013    DATA '000013     FLL                                        00070600
00707  01465 00000010    DATA '000010     RSA                                        00070700
00708  01466 00000051    DATA '000051     IXS  810B              8/28/67 JDJ        5621000070800
00709                  *                                                             00070900
00710                  *        I/Ø INSTRUCTIØNS                                     00071000
00711  01467 00170000    DATA '170000     SUN                                        00071100
00712  01470 00170200    DATA '170200     SCN                                        00071200
00713  01471 00170230    DATA '170230     MØC                                        00071300
00714  01472 00170240    DATA '170240     MIC                                        00071400
00715  01473 00130100    DATA '130100     TUN                                        00071500
00716  01474 00130300    DATA '130300     TCN                                        00071600
00717  01475 00170210    DATA '170210     AØC                                        00071700
00718  01476 00170220    DATA '170220     AIC                                        00071800
00719  01477 00170250    DATA '170250     BTC                                        00071900
00720  01500 00130400    DATA '130400     SNS                                        00072000
```

```
01501 00170600      DATA '170600       ACT                                                        00072100
01502 00130700      DATA '130700       TEX                                                        00072200
01503 00000000 LPIE HLT                                                                           00072300
01504 00000000 LPID HLT                                                                           00072400
01505 00170200      DATA '170200       AIP                                              CKA       00072500
01506 00170000      DATA '170000       AØP                                              CKA       00072600
01507 00170600      DATA '170600       MIP                                              CKA       00072700
01510 00170400      DATA '170400       MØP                                              CKA       00072800
01511 00130000      DATA '130000       CEU                                              CKA       00072900
01512 00130200      DATA '130200       TEU                                              CKA       00073000
01513 00001513 ØPT2 EQU  *                                                                        00073100
               *BASIC CARD READ                                                                   00073200
01513 25400000 CARD DAC  **                                                                       00073300
01514 12103706      SPB  SSSS                                                                     00073400
01515 25401100      DAC  '1100                                                                    00073500
01516 11101567      BRU  PTI3                                                                     000736[illegible]
01517 01000002      LAA  =2                                          10/26/67   JDJ  *B           000737[illegible]
01520 12103706      SPB  SSSS                                                                     000738[illegible]
01521 25400500      DAC  '500                                                                     000739[illegible]
01522 11101563      BRU  PTI1          PAPER TAPE INPUT                                           000740[illegible]
01523 01000003      LAA  =3                                          10/26/67   JDJ  *B           000741[illegible]
01524 12103706      SPB  SSSS          TEST FØR MAG TAPE SØURCE                         FEC       00074200
01525 25401300      DAC  '1300         INPUT                                            FEC       00074300
               ***********************************************************************            00074400
               *  C HANG E MADE TØ ALLØW MAGNETIC TAPE INPUT  JPD                                 00074500
               ***********************************************************************            00074600
01526 01000007      LAA  =7            MAG TAPE 1 AS INPUT           11/07/67   JDJ  *B           00074700
01527 00130416      SNS  14            SKIP IF NØT 9-TRACK MAG TAPE           11/70 RLD *E00074800
01530 11101535      BRU  TRK9          9-TRACK MAG TAPE                       11/70 RLD *E00074900
01531 55100000 PTI2 CALL H$WR          READ A CARD                  09/18/67   JDJ              00075000
01532 35400416      DAC  BUFF+'14                                                                 00075100
01533 25400120      DAC  80                                                                       00075200
01534 11301513      BRU* CARD                                                                     00075300
01535 55100000 TRK9 CALL B$WR          800 BPI, 2 CHAR/WØRD 9-TRACK           11/70 RLD *E00075400
01536 35400466      DAC  BUFF+52       UPPER HALF 80 CHAR BUFFER              11/70 RLD *E00075500
01537 00000050      DATA 40            80 CHARACTERS                          11/70 RLD *E00075600
```

```
00757  01540 02077730       LBA  =-40          INDEX                                    11/70 RLD *E00075700
00758  01541 01500536 GØØN  LAA  BUFF+92,1     2 CHARACTERS - 8 BITS EACH               11/70 RLD *E00075800
00759  01542 03101562       STA  STA1          SAVE A-REG                               11/70 RLD *E00075900
00760  01543 00001015       RSL  8             DRØP SECØND CHARACTER                    11/70 RLD *E00076000
00761  01544 03301561       STA* BAUD          80 CHARACTER BUFFER                      11/70 RLD *E00076100
00762  01545 14101561       IMS  BAUD                                                   11/70 RLD *E00076200
00763  01546 01101562       LAA  STA1          SAME TWØ CHARACTERS                      11/70 RLD *E00076300
00764  01547 00001016       LSL  8             DRØP FIRST CHARACTER                     11/70 RLD *E00076400
00765  01550 00001015       RSL  8                                                      11/70 RLD *E00076500
00766  01551 03301561       STA* BAUD                                                   11/70 RLD *E00076600
00767  01552 14101561       IMS  BAUD                                                   11/70 RLD *E00076700
00768  01553 00000026       IBS                INDEX                                    11/70 RLD *E00076800
00769  01554 11101541       BRU  GØØN          CØNTINUE                                 11/70 RLD *E00076900
00770  01555 02101560       LBA  INIT          RESTØRE INITIAL ADDRESS                  11/70 RLD *E00077000
00771  01556 04101561       STB  BAUD                                                   11/70 RLD *E00077100
00772  01557 11301513       BRU* CARD          EXIT                                     11/70 RLD *E00077200
00773  01560 35400416 INIT  DAC  BUFF+12       FIRST CHAR ADDRESS - 80 CHAR BUFFER      11/70 RLD *E00077300
00774  01561 35400416 BAUD  DAC  BUFF+12                                               11/70 RLD *E00077400
00775  01562 00000000 STA1  DATA 0                                                     11/70 RLD *E00077500
00776  01563 12103706 PTI1  SPB  SSSS          SKIP  FØR  HSR  INPUT                                 00077600
00777  01564 25401000       DAC  '1000                                                                00077700
00778  01565 01000005       LAA  =5            TELETYPE TAPE INPUT       10/26/67  JDJ  *B          00077800
00779  01566 11101531       BRU  PTI2                                                                 00077900
00780  01567 01000001 PTI3  LAA  =1                                      11/07/67  JDJ  *B          00078000
00781  01570 11101531       BRU  PTI2                                                                 00078100
00782  01571 01100174 PM10  LAA  LØAD                                                                 00078200
00783  01572 02040400       LBA  ='140400                                10/26/67  JDJ  *B          00078300
00784  01573 00000027       ABA                                                                       00078400
00785  01574 06040400       SMA  ='140400                                10/26/67  JDJ  *B          00078500
00786  01575 00000022       SAZ                                                                       00078600
00787  01576 11101606       BRU  PM14          NØT LITERAL REFERENCE                                  00078700
00788  01577 02100174       LBA  LØAD                                                                 00078800
00789  01600 01100175       LAA  DATA                                                                 00078900
00790  01601 00000024       SAP                                                                       00079000
00791  01602 00000020       ASC                                                                       00079100
00792  01603 00000006       IAB                                                                       00079200
```

```
01604 06000400       SMA   ='400                                         10/26/67   JDJ  *B    00079300
01605 11101670       BRU   PM12                                                                00079400
01606 01100174 PM14  LAA   LØAD          DØ NØT REFØRMAT LØAD-                                 00079500
01607 02100175       LBA   DATA          PRINT THE SAME CHARS AS                               00079600
01610 00001015       RSL   8             ARE PUNCHED ØN BINARY                                 00079700
01611 00000113       FLL   1             TAPE- (QQR0000XI)                                     00079800
01612 00000716       LSL   7                                                                   00079900
01613 11101677       BRU   PM13                                                                00080000
01614 25400000 LIN   DAC   **                                                                  00080100
01615 01100404 L05   LAA   BUFF+2                                                              00080200
01616 06000240       SMA   ='240         SPACE                           10/26/67   JDJ  *B    00080300
01617 00000022       SAZ                 LINE ERRØR                                            00080400
01620 11101742       BRU   CERS          CØUNT ERRØRS                    10/25/67   JDJ   *B   00080500
01621 00130403 CERT  SNS   3             TEST FØR PRINT ØF ERRØR LINE            JDJ           00080600
01622 11301614       BRU*  LIN           YES - DØ NØT PRINT NØN-ERRØR LINE   11/70 RLD *E00080700
01623 00130401       SNS   1             LIST ØUTPUT                                           00080800
01624 11301614       BRU*  LIN                                                                 00080900
01625 01100607       LAA   LSUP          GET LIST ØPTIØN INDICATØR         12/19/67 JDJ *C00081000
01626 00000022       SAZ                 0=LIST                            12/19/67 JDJ *C00081100
01627 11301614       BRU*  LIN           -1=NØ LIST                        12/19/67 JDJ *C00081200
01630 01100126 L09   LAA   PASS                                                                00081300
01631 00000022       SAZ                                                                       00081400
01632 11301614       BRU*  LIN                                                                 00081500
01633 02100175       LBA   DATA                                                                00081600
01634 00000113       FLL   1                                                                   00081700
01635 01077773       LAA   =-5                                           10/26/67   JDJ  *B    00081800
01636 12101765       SPB   ØØUT                                                                00081900
01637 35400415       DAC   BUFF+'13                                                            00082000
01640 01100173 L11   LAA   LC                                                                  00082100
01641 00000024       SAP                                                                       00082200
01642 11101710       BRU   L12           NØ LC EDIT                                            00082300
01643 01100174       LAA   LØAD                                                                00082400
01644 02040000       LBA   ='140000                                      10/26/67   JDJ  *B    00082500
01645 00000027       ABA                                                                       00082600
01646 06040000       SMA   ='40000                                       10/26/67   JDJ  *B    00082700
01647 00000022       SAZ                                                                       00082800
```

```
00829  01650 11101571       BRU  PM10        NØT MEMØRY REF                                    00082900
00830  01651 01100174 PM11  LAA  LØAD                                                         00083000
00831  01652 02017000       LBA  ='17000                          10/26/67   JDJ  *B          00083100
00832  01653 00000027       ABA                                                               00083200
00833  01654 15013000       CMA  ='13000                          10/26/67   JDJ  *B          00083300
00834  01655 11101657       BRU  *+2                                                          00083400
00835  01656 11101606       BRU  PM14        NØ REFØRMAT FØR DAC                              00083500
00836  01657 15017000       CMA  ='17000                          10/26/67   JDJ  *B          00083600
00837  01660 11101662       BRU  *+2                                                          00083700
00838  01661 11101606       BRU  PM14        NØ REFØRMAT FØR EAC                              00083800
00839  01662 01100015       LAA  PRT4        GET LENGTH ØF PRINT LINE 09/18/67   JDJ          00083900
00840  01663 15000025       CMA  ='25                             10/26/67   JDJ  *B          00084000
00841  01664 11101666       BRU  *+2                                                          00084100
00842  01665 11101606       BRU  PM14        NØ REFØRMAT FØR CALL-NAME                        00084200
00843  01666 01100174       LAA  LØAD                                                         00084300
00844  01667 02100175       LBA  DATA                                                         00084400
00845  01670 00001015 PM12  RSL  8           REFØRMAT LØAD TØ PRINT                           00084500
00846  01671 00000113       FLL  1           ØP-CØDE, X, I, R AS 3 HIGH-                      00084600
00847  01672 00001116       LSL  9           ØRDER ØCTAL CHARS.                               00084700
00848  01673 00000024       SAP              (000000XIR)                                      00084800
00849  01674 05000400       AMA  ='400                            10/26/67   JDJ  *B          00084900
00850  01675 00000116       LSL  1                                                            00085000
00851  01676 00000215       RSL  2                                                            00085100
00852  01677 00000005 PM13  TAB                                                              00085200
00853  01700 01077775       LAA  =-3                              10/26/67   JDJ  *B          00085300
00854  01701 12101765       SPB  ØØUT                                                         00085400
00855  01702 35400410       DAC  BUFF+6                                                       00085500
00856  01703 02100173       LBA  LC                                                           00085600
00857  01704 00000113       FLL  1                                                            00085700
00858  01705 01077773       LAA  =-5                              10/26/67   JDJ  *B          00085800
00859  01706 12101765       SPB  ØØUT                                                         00085900
00860  01707 35400404       DAC  BUFF+2                                                       00086000
00861                *****************************************************                00086100
00862                *  C HANG E MADE FØR SYMBØLIC ØUTPUT                  *                00086200
00863                *****************************************8***********                00086300
00864  01710 12103706 L12   SPB  SSSS                                                         00086400
```

```
00865  01711 25401500       DAC  '1500          SNS 13 IS SYMBØLIC ØN MAG TAPE                          00086500
00866  01712 11110263       BRU  MSYM                                                                   00086600
00867  01713 12103706       SPB  SSSS           TEST SYMBØLIC ØN PRINTER                                00086700
00868  01714 25400400       DAC  '400                                                                   00086800
00869  01715 11101720       BRU  L00-1          YES,BYPASS LINE PRINTER                                 00086900
00870  01716 12100007       SPB  PRNT           LINE PRINTER ØUTPUT                                     00087000
00871  01717 11301614 AFSY  BRU* LIN                                                                   00087100
00872  01720 02100004       LBA  L006           =BUFF+'74 BUFFER END ADDR                               00087200
00873  01721 01400000 L00   LAA  0,1            BUFFER END WØRD SCAN BACKWARD                           00087300
00874  01722 06000240       SMA  ='240                                    10/26/67  JDJ  *B             00087400
00875  01723 00000022       SAZ                                                                         00087500
00876  01724 11101732       BRU  L01                                                                    00087600
00877  01725 16077777       AMB  =-1                                      10/26/67  JDJ  *B             00087700
00878  01726 00000004       TBA                 BUFFER END INDEX                                        00087800
00879  01727 06100005       SMA  L008           =BUFF+'13                                               00087900
00880  01730 00000022       SAZ                                                                         00088000
00881  01731 11101721       BRU  L00                                                                    00088100
00882  01732 12107724 L01   SPB  LSCK           GØ CHECK FØR LISTING DEL 09/18/67  JDJ                 00088200
00883                       ************************************************************            00088300
00884                       * CHANGE MADE TØ ALLØW PRINTING CØRRECTLY ØN ASR33,  JPD    *            00088400
00885                       ************************************************************            00088500
00886  01733 03101740       STA  LST+2                                                                  00088600
00887  01734 01077777       LAA  =-1            TYPE ØUT LDN              10/26/67  JDJ  *B             00088700
00888  01735 14101740       IMS  LST+2                                                                  00088800
00889  01736 55100000 LST   CALL H$WR           ASR HANDLER ØR PRØPER DEV 09/18/67  JDJ                 00088900
00890  01737 35400370       DAC  LNØ-1                                                                  00089000
00891  01740 25400000       DAC  **                                                                     00089100
00892  01741 11301614       BRU* LIN                                                                    00089200
00893                       * CØUNT THE NUMBER ØF ERRØR FLAGS AS SHØWN      10/17/67  JDJ  *B           00089300
00894  01742 01100126 CERS  LAA  PASS           TEST FØR FINAL PASS       10/17/67  JDJ  *B           00089400
00895  01743 00000022       SAZ                ØNLY CØUNT ØN FINAL PASS  10/17/67  JDJ  *B           00089500
00896  01744 11101623       BRU  CERT+2        RETURN TØ TEST PRINTING             10/70 RLD *E00089600
00897  01745 02101750       LBA  AERC          ADDRESS ØF ERRØR CØUNT    10/17/67  JDJ  *B           00089700
00898  01746 12101066       SPB  DAFA          CØUNT ERRØRS              10/17/67  JDJ  *B           00089800
00899  01747 11101623       BRU  CERT+2        RETURN TØ TEST PRINTING             10/70 RLD *E00089900
00900  01750 35401763 AERC  DAC  CERW          ADDRESS ØF CØUNT WØRDS    10/17/67  JDJ  *B           00090000
```

```
00901  01751 00000305 EMSG DATA '305,'322,'322,'317,'322,'323,'240     ERRØRSB    JDJ    *B   00090100
00901  01752 00000322
00901  01753 00000322
00901  01754 00000317
00901  01755 00000322
00901  01756 00000323
00901  01757 00000240
00902  01760 00000260       DATA '260,'260,'260    CØUNTER SET TØ ZERØ  10/17/67   JDJ    *B   00090200
00902  01761 00000260
00902  01762 00000260
00903  01763 00000260 CERW DATA '260,'240     LAST WØRD IS ADDRESSED   10/17/67   JDJ    *B   00090300
00903  01764 00000240
00904                 *          ØCTAL ØUTPUT                                              00090400
00905  01765 25400000 ØØUT DAC   **                                                        00090500
00906  01766 03100364       STA   TMP2                                                    00090600
00907  01767 00000003 ØØ10 CLA                                                           00090700
00908  01770 00000313       FLL   3                                                       00090800
00909  01771 05000260       AMA   ='260                              10/26/67   JDJ  *B   00090900
00910  01772 04100363       STB   TMP1                                                    00091000
00911  01773 02100364       LBA   TMP2                                                    00091100
00912  01774 16301765 ØØ22 AMB*  ØØUT                                                    00091200
00913  01775 03400000       STA   0,1                                                     00091300
00914  01776 02100363       LBA   TMP1                                                    00091400
00915  01777 14100364       IMS   TMP2                                                    00091500
00916  02000 11101767       BRU   ØØ10                                                    00091600
00917  02001 14101765       IMS   ØØUT                                                    00091700
00918  02002 11301765       BRU*  ØØUT                                                    00091800
00919                 * PUNCH LEADER/TRAILER TAPE                                        00091900
00920  02003 25400000 LEDR DAC   0                                                       00092000
00921  02004 00130402       SNS   2                                                     *E00092100
00922  02005 11302003       BRU*  LEDR         RETURN, NØ ØBJECT ØUTPUT                 *E00092200
00923  02006 12103706       SPB   SSSS                                        FEC       00092300
00924  02007 25401400       DAC   '1400        ØMIT LEADER IF MAG TAPE        FEC       00092400
00925  02010 11302003       BRU*  LEDR         ØBJECT ØUTPUT                  FEC       00092500
00926  02011 02077644       LBA   =-92                               10/26/67   JDJ  *B   00092600
00927  02012 03500360       STA   PBUF,1                                                  00092700
```

```
00928  02013 00000026       IBS                                                                  00092800
00929  02014 11102012       BRU  *-2                                                             00092900
00930  02015 01100126       LAA  PASS                                                            00093000
00931  02016 00000022       SAZ                  PASS 2                                          00093100
00932  02017 11302003       BRU* LEDR                                                            00093200
00933  02020 01077776       LAA  =-2                                  10/26/67   JDJ  *B         00093300
00934  02021 12103706       SPB  SSSS                                                            00093400
00935  02022 25400600       DAC  '600                                                            00093500
00936  02023 01077773       LAA  =-5                                  10/26/67   JDJ  *B         00093600
00937  02024 03100155       STA  PDEV                                                            00093700
00938  02025 55100000       CALL H$WR            ØUTPUT LEADER TØ DEVICE  09/18/67   JDJ         00093800
00939  02026 35400224       DAC  PBUF-92                                                         00093900
00940  02027 00000134       DATA 92                                                              00094000
00941  02030 01100155       LAA  PDEV                                                           *E00094100
00942  02031 11302003       BRU* LEDR                                                            00094200
00943                *                                                                          00094300
00944                *       CLØSE ØUT PUNCH BUFFER                                             00094400
00945                *                                                                          00094500
00946  02032 25400000 CLØT DAC  **                                                             00094600
00947  02033 01077776       LAA  =-2                                  10/26/67   JDJ  *B         00094700
00948  02034 12103706       SPB  SSSS                                                            00094800
00949  02035 25400600       DAC  '600                                                            00094900
00950  02036 01077773       LAA  =-5                                  10/26/67   JDJ  *B         00095000
00951  02037 12103706       SPB  SSSS                                                FEC         00095100
00952  02040 25401400       DAC  '1400                                               FEC         00095200
00953  02041 01077772       LAA  =-6                                  10/26/67   JDJ  *B         00095300
00954  02042 03100155       STA  PDEV                                                            00095400
00955  02043 01100177       LAA  PUNF            PUNCH FLAG                                      00095500
00956  02044 00000022       SAZ                                                                  00095600
00957  02045 11102051       BRU  CL02                                                            00095700
00958  02046 12102003       SPB  LEDR            PUNCH LEADER             09/18/67   JDJ         00095800
00959  02047 01100043       LAA  L044            SET PUNCH FLAG NØN-ZERØ                          00095900
00960  02050 03100177       STA  PUNF            WITH BUFFER START ADDRESS                       00096000
00961  02051 01100202 CL02 LAA  BSIZ                                                            00096100
00962  02052 00000022       SAZ                  PUNCH BUFFER EMPTY                              00096200
00963  02053 11102055       BRU  *+2             NØ                                              00096300
```

```
00964  02054 11102117       BRU  CL04          YES                                          00096400
00965  02055 00130402       SNS  2                                                          00096500
00966  02056 11102117       BRU  CL04          SET(NØ BINARY PUNCH)                         00096600
00967  02057 01077624       LAA  =-108                          10/26/67   JDJ  *B          00096700
00968  02060 03100154       STA  CNTR                                                       00096800
00969  02061 02100154 CKS1  LBA  CNTR                                                       00096900
00970  02062 01500360       LAA  PBUF,1                                                     00097000
00971  02063 14100154       IMS  CNTR                                                       00097100
00972  02064 02500361       LBA  PBUF+1,1                                                   00097200
00973  02065 00001016       LSL  8                                                          00097300
00974  02066 00000030       ØBA                                                             00097400
00975  02067 05100156       AMA  TØTL                                                       00097500
00976  02070 03100156       STA  TØTL                                                       00097600
00977  02071 14100154       IMS  CNTR                                                       00097700
00978  02072 11102061       BRU  CKS1                                                       00097800
00979  02073 00000002       NEG                                                             00097900
00980  02074 03100156       STA  TØTL                                                       00098000
00981  02075 00001015       RSL  8                                                          00098100
00982  02076 03100360       STA  PBUF                                                       00098200
00983  02077 01100156       LAA  TØTL                                                       00098300
00984  02100 00001016       LSL  8                                                          00098400
00985  02101 00001015       RSL  8                                                          00098500
00986  02102 03100361       STA  PBUF+1                                                     00098600
00987  02103 12103706       SPB  SSSS                                                       00098700
00988  02104 25401400       DAC  '1400                                                      00098800
00989  02105 11110477       BRU  ØBMG          YES                                          00098900
00990  02106 01100155       LAA  PDEV                                                       00099000
00991  02107 55100000       CALL H$WR          CLØSE ØUT BUFFER         09/18/67   JDJ      00099100
00992  02110 35400203       DAC  BSLC+2                                                     00099200
00993  02111 00000157       DATA 111                                                        00099300
00994  02112 00000003 MØBJ  CLA                                                            00099400
00995  02113 02077624       LBA  =-108                          10/26/67   JDJ  *B          00099500
00996  02114 03500360       STA  PBUF,1                                                     00099600
00997  02115 00000026       IBS                                                             00099700
00998  02116 11102114       BRU  *-2                                                        00099800
00999  02117 01077624 CL04  LAA  =-108                          10/26/67   JDJ  *B          00099900
```

```
)1000  02120 03100200       STA  BLØC          RESET BUFFER WØRD PØINTER                          00100000
)1001  02121 01100173       LAA  LC            LØC CØUNTER                                        00100100
)1002  02122 03100201       STA  BSLC          START LØAD ADDRESS                                 00100200
)1003  02123 00000003       CLA                RESET                                              00100300
)1004  02124 03100202       STA  BSIZ                                                             00100400
)1005  02125 03100156       STA  TØTL                                                             00100500
)1006  02126 03100360       STA  CKSM                                                             00100600
)1007  02127 03100361       STA  CKSM+1                                                           00100700
)1008  02130 11302032       BRU* CLØT                                                             00100800
)1009  02131 00177772 CKA1  DATA ØPT9-ØPT1     UNIT I/Ø CLASS INSTRUCTIØNS                        *E00100900
)1010                       *                                                                     00101000
)1011                       *          DATA WØRD TØ PUNCH BUFFER                                  00101100
)1012                       *                                                                     00101200
)1013  02132 25400000 PNCH  DAC  **            PRØCESS PUNCH DATA EXIT                            00101300
)1014  02133 01100126       LAA  PASS          PASS FLAG                                          00101400
01015  02134 00000022       SAZ                                                                   00101500
)1016  02135 11302132       BRU* PNCH          PASS 1 EXIT                                        00101600
)1017  02136 01100174       LAA  LØAD                                                             00101700
)1018  02137 00001015       RSL  8                                                                00101800
)1019  02140 02100200       LBA  BLØC          BUFFER LØCATIØN                                    00101900
01020  02141 03500360       STA  PBUF,1        TØ PUNCH BUFFER                                    00102000
01021  02142 14100200       IMS  BLØC                                                             00102100
01022  02143 01100175       LAA  DATA                                                             00102200
01023  02144 00001015       RSL  8                                                                00102300
01024  02145 03500361       STA  PBUF+1,1      TØ PUNCH BUFFER                                    00102400
01025  02146 14100200       IMS  BLØC                                                             00102500
01026  02147 01100175       LAA  DATA                                                             00102600
01027  02150 00001016       LSL  8                                                                00102700
01028  02151 00001015       RSL  8                                                                00102800
01029  02152 03500362       STA  PBUF+2,1                                                         00102900
01030  02153 01100202       LAA  BSIZ          DECREMENT                                          00103000
01031  02154 06000001       SMA  =1            BUFFER                  10/26/67   JDJ  *B         00103100
01032  02155 03100202       STA  BSIZ          SIZE                                               00103200
01033  02156 14100200       IMS  BLØC          CHECK FØR FULL BUFFER                              00103300
01034  02157 11102161       BRU  *+2                                                              00103400
01035  02160 12102032       SPB  CLØT          ØUTPUT FULL BUFFER      09/18/67   JDJ             00103500
```

```
01036  02161 11302132       BRU* PNCH          EXIT PUNCH DATA PRØCESS                          00103600
01037                  *INPUT/ØUTPUT CLASS A INSTRUCTIØNS                                      00103700
01038                  *     I/Ø* C,W,M                                                        00103800
01039                  *          SNS,SUN,SCN,AØC,AIC,MØC,MIC,BTC,TUN,TCN,                   00103900
01040  02162 00000003 CHAS CLA                  SET  FLAG  FØR                        CKA     00104000
01041  02163 03102266       STA  FLG1          UNIT  I/Ø  INSTRUCTUØN  CLASS         CKA     00104100
01042  02164 12102307 IØCA  SPB  SDAB          GET CHAN/SWITCH FIELD                         00104200
01043  02165 01102266       LAA  FLG1          CHECK  FØR  UNIT  I/Ø                 CKA     00104300
01044  02166 00000023       SAN                                                      CKA     00104400
01045  02167 11102200       BRU  I001+3        YES                                   CKA     00104500
01046  02170 01100175       LAA  DATA          INSRUCTIØN                                    00104600
01047  02171 00000032       SNØ                TEST                                          00104700
01048  02172 11102175       BRU  I001          NØ                                            00104800
01049  02173 00000716       LSL  7                                                           00104900
01050  02174 00000023       SAN                SNS                                           00105000
01051  02175 00000113 I001  FLL  1             NØ                                            00105100
01052  02176 00001413       FLL  12            CHECK FIELD WIDTH                             00105200
01053  02177 11102202       BRU  *+3                                                 CKA     00105300
01054  02200 01100175       LAA  DATA          SHIFT  FØR  UNIT  I/Ø                 CKA     00105400
01055  02201 00001213       FLL  10                                                  CKA     00105500
01056  02202 00000022       SAZ                FIELD WIDTH EXCEEDED                          00105600
01057  02203 12102330       SPB  FWER          YES                                           00105700
01058  02204 01102266       LAA  FLG1                                                CKA     00105800
01059  02205 00000022       SAZ                                                      CKA     00105900
01060  02206 11102213       BRU  BERR                                                CKA     00106000
01061  02207 01100170       LAA  SCAD                                                CKA     00106100
01062  02210 00001216       LSL  10                                                  CKA     00106200
01063  02211 00001215       RSL  10                                                  CKA     00106300
01064  02212 12102317       SPB  IØAT                                                CKA     00106400
01065  02213 01100170 BERR  LAA  SCAD                                                CKA     00106500
01066  02214 00001416       LSL  12            TRUNCATE                                      00106600
01067  02215 00001415       RSL  12            CHAN/SW FIELD                                 00106700
01068  02216 12102317       SPB  IØAT          I/Ø ADD AND SCAN END TEST                     00106800
01069                  *I/Ø CLASS B                                                          00106900
01070                  *     I/Ø* W,M                                                        00107000
01071                  *ACT TEX                                                              00107100
```

```
01072  02217 01102266 IØCB LAA  FLG1          CHECK FLAG FØR UNIT I/Ø                          CKA     00107200
01073  02220 00000022       SAZ                                                               CKA     00107300
01074  02221 11102270       BRU  ZØRØ          NØ                                             CKA     00107400
01075  02222 02100165       LBA  SCCC          YES,  CHECK FØR WAIT(W)                        CKA     00107500
01076  02223 14100165       IMS  SCCC          MERGE (R), ØR MAP (M)                          CKA     00107600
01077  02224 01500415       LAA  BUFF+'13,1                                                   CKA     00107700
01078  02225 15000315       CMA  ='315         M                          10/26/67   JDJ  *B     00107800
01079  02226 11102230       BRU  *+2                                                          CKA     00107900
01080  02227 11102241       BRU  CKA2          SET MAP BIT RØUTINE                            CKA     00108000
01081  02230 15000327       CMA  ='327         W                          10/26/67   JDJ  *B     00108100
01082  02231 11102233       BRU  *+2                                                          CKA     00108200
01083  02232 11102245       BRU  CKA3          SET WAIT BIT RØUTINE                           CKA     00108300
01084  02233 15000322       CMA  ='322         R                          10/26/67   JDJ  *B     00108400
01085  02234 11102236       BRU  *+2                                                          CKA     00108500
01086  02235 11102251       BRU  CKA4          SET MERGE BIT RØUTINE                          CKA     00108600
01087  02236 12102330 BABA  SPB  FWER          ERRØR NØT W ØR R           09/18/67   JDJ             00108700
01088  02237 01000240       LAA  ='240                                    MDL 12/30/68 *C     00108800
01089  02240 11102304       BRU  IØ02                                                         CKA     00108900
01090  02241 01100175 CKA2  LAA  DATA          SET                                            CKA     00109000
01091  02242 05001000       AMA  ='1000        MAP BIT                    10/26/67   JDJ  *B     00109100
01092  02243 03100175       STA  DATA                BIT                                      CKA     00109200
01093  02244 11102254       BRU  ZULU          LØØK AT NEXT CHARACTER                         CKA     00109300
01094  02245 01100175 CKA3  LAA  DATA          SET                                            CKA     00109400
01095  02246 05000100       AMA  ='100         WAIT BIT                   10/26/67   JDJ  *B     00109500
01096  02247 03100175       STA  DATA                FLAG                                     CKA     00109600
01097  02250 11102254       BRU  ZULU          LØØK AT NEXT CHARACTER                         CKA     00109700
01098  02251 01100175 CKA4  LAA  DATA          SET                                            CKA     00109800
01099  02252 05004000       AMA  ='4000        MERGE BIT FØR AIP INST     10/26/67   JDJ  *B     00109900
01100  02253 03100175       STA  DATA                BIT                                      CKA     00110000
01101  02254 02100165 ZULU  LBA  SCCC          RØUTINE TØ TEST                                CKA     00110100
01102  02255 14100165       IMS  SCCC          NEXT CHARACTER                                 CKA     00110200
01103  02256 01500415       LAA  BUFF+'13,1                                                   CKA     00110300
01104  02257 15000254       CMA  ='254         CØMMA                      10/26/67   JDJ  *B     00110400
01105  02260 11102262       BRU  *+2           NØ                                             CKA     00110500
01106  02261 11102222       BRU  IØCB+3        YES A CØMMA                                    CKA     00110600
01107  02262 15000240       CMA  ='240         SPACE                      10/26/67   JDJ  *B     00110700
```

```
02263 11102236      BRU   BABA     NØ, SØ ERRØR                              CKA   00110800
02264 11102304      BRU   IØ02                                               CKA   00110900
02265 11102236      BRU   BABA     NØ, SØ ERRØR                              CKA   00111000
02266 00000000 FLG1 DATA  0        FLAG 0= UNIT I/Ø( -177777 = NØN UNIT     CKA   00111100
02267 00000000 TS1  DATA  0        TEMP  STØRAGE                             CKA   00111200
02270 12102307 ZØRØ SPB   SDAB     GET  WAIT  FLAG                           CKA   00111300
02271 00001713      FLL   15       CHECK FIELD WIDTH                               00111400
02272 00000022      SAZ            EXCEEDED                                        00111500
02273 12102330      SPB   FWER     YES                                             00111600
02274 00000713      FLL   7        PØSITIØN WAIT FLAG                              00111700
02275 12102317      SPB   IØAT     I/Ø ADD AND SCAN END TEST                       00111800
               *I/Ø CLASS C                                                        00111900
               * I/ Ø*M                                                            00112000
               *PIE,PID                                                            00112100
02276 12102307 IØCC SPB   SDAB     GET MAP BIT                                     00112200
02277 00001713      FLL   15       CHECK FIELD WIDTH                               00112300
02300 00000022      SAZ            EXCEEDED                                        00112400
02301 12102330      SPB   FWER     YES                                             00112500
02302 00001213      FLL   10       PØSITIØN MAP BIT                                00112600
02303 11107644      BRU   FECP     ØMIT 'A' ØN PIE,PID       09/18/67   JDJ        00112700
02304 03100162 IØ02 STA   SCTM                               MDL  12/30/68 *C      00112800
02305 12102630      SPB   LABP                               MDL  12/30/68 *C      00112900
02306 11102407      BRU   MR22     EXIT                                            00113000
02307 25400000 SDAB DAC   **                                                       00113100
02310 12106556      SPB   SCAN     GET SUB FIELD             09/18/67   JDJ        00113200
02311 00000005      TAB            SAVE FIELD                                      00113300
02312 01100164      LAA   SCDF     DEFINE FLAG                                     00113400
02313 05100171      AMA   SCRL     RELØCATIØN FLAG                                 00113500
02314 00000022      SAZ            DEFINE ABSØLUTE FIELD                           00113600
02315 12102330      SPB   FWER     NØ                                              00113700
02316 11302307      BRU*  SDAB     EXIT                                            00113800
02317 25400000 IØAT DAC   **       I/Ø ADD AND SCAN END TEST                       00113900
02320 02100175      LBA   DATA                                                     00114000
02321 00000030      ØBA                                                            00114100
02322 03100175      STA   DATA                                                     00114200
02323 01100162      LAA   SCTM                                                     00114300
```

```
01144  02324 06000254       SMA  ='254          CØMMA                          10/26/67   JDJ  *B    00114400
01145  02325 00000022       SAZ                 SCAN ENDED                                           00114500
01146  02326 11102237       BRU  CKA2-2                                   MDL  12/30/68 *C          00114600
01147  02327 11302317       BRU* IØAT           EXIT                                                 00114700
01148                 *                                                                             00114800
01149                 *       SET ERRØR FLAG                                                        00114900
01150                 *                                                                             00115000
01151  02330 25400000 FWER DAC  **                                                                  00115100
01152  02331 01000305       LAA  ='305          E                              10/26/67   JDJ  *B    00115200
01153  02332 03100404       STA  BUFF+2                                                           00115300
01154  02333 00000003       CLA                 CLEAR FIELD EXCESS                                00115400
01155  02334 11302330       BRU* FWER           EXIT                                              00115500
01156                 *       DAC PSEUDØ-ØP PRØCESSØR                                               00115600
01157  02335 12102630 PS02 SPB  LABP            PRØCESS LABEL                  09/18/67   JDJ       00115700
01158  02336 02053000       LBA  ='53000                                       10/26/67   JDJ  *B    00115800
01159  02337 04100174       STB  LØAD                                                             00115900
01160  02340 01040000       LAA  ='40000                                       10/26/67   JDJ  *B    00116000
01161  02341 03100176       STA  BAD                                                              00116100
01162  02342 01100175       LAA  DATA                                                             00116200
01163  02343 00000516       LSL  5              MØVE INDIRECT BIT                                 00116300
01164  02344 03100175       STA  DATA                                                             00116400
01165  02345 12106556 PS04 SPB  SCAN            SCAN THE VARIABLE FIELD        09/18/67   JDJ       00116500
01166  02346 00000024       SAP                                                                   00116600
01167  02347 12102330       SPB  FWER           ERRØR ØVER 14 BIT ADDRS        09/18/67   JDJ       00116700
01168  02350 01100170       LAA  SCAD                                                             00116800
01169  02351 05100175 PS10 AMA  DATA                                                             00116900
01170  02352 00000025       SØF                                                                   00117000
01171  02353 00000020       ASC                                                                   00117100
01172  02354 03100175       STA  DATA                                                             00117200
01173  02355 01100171       LAA  SCRL                                                             00117300
01174  02356 00000022       SAZ                                                                   00117400
01175  02357 01020000       LAA  ='20000                                  MDL  1/31/69 *C         00117500
01176  02360 05100174 PS98 AMA  LØAD                                                             00117600
01177  02361 03100174       STA  LØAD                                                             00117700
01178  02362 01100162       LAA  SCTM           TERMINAL CHARACTER                                00117800
01179  02363 00001416       LSL  12                                                               00117900
```

```
01180  02364 00000023       SAN                  SKIP IF CØMMA                                          00118000
01181  02365 11102407       BRU   MR22           NØ INDEX TAG.,ØUTPUT                                   00118100
01182  02366 12106556       SPB   SCAN           SCAN NEXT ADDRESS FIELD  09/18/67   JDJ                00118200
01183  02367 15000001       CMA   =1                                     10/26/67   JDJ  *B            00118300
01184  02370 00000023       SAN                                                                         00118400
01185  02371 11102373       BRU   PS20           INDEX=0,1                                              00118500
01186  02372 12102330       SPB   FWER           ERRØR INDEX ØVER 1       09/18/67   JDJ                00118600
01187  02373 00001016 PS20  LSL   8                                                                     00118700
01188  02374 00000005       TAB                  SAVE INDEX BIT                                         00118800
01189  02375 01100164       LAA   SCDF           DEFINED FLAG                                           00118900
01190  02376 05100171       AMA   SCRL           REL/ABS FLAG                                           00119000
01191  02377 00000022       SAZ                                                                         00119100
01192  02400 11102415       BRU   MR24           ERRØR,,,NØT DEFINED ABS,                               00119200
01193                 *                                                                                00119300
01194  02401 16100174 MR21  AMB   LØAD                                                                  00119400
01195  02402 04100174       STB   LØAD                                                                  00119500
01196  02403 01100162 MR2A  LAA   SCTM           TERMINAL CHARACTER                                     00119600
01197  02404 00001416       LSL   12                                                                    00119700
01198  02405 00000024       SAP                                                                         00119800
01199  02406 11102415       BRU   MR24           ERRØR,,,CØMMA TERMINATØR                               00119900
01200  02407 01100163 MR22  LAA   SCFØ           FIELD ØCCUPIED FLAG                                    00120000
01201  02410 00000022       SAZ                                                                         00120100
01202  02411 11102416       BRU   MR26                                                                  00120200
01203  02412 01000301 MR99  LAA   ='301          A                        10/26/67   JDJ  *B            00120300
01204  02413 03100404       STA   BUFF+2                                                                00120400
01205  02414 11102416       BRU   MR26                                                                  00120500
01206  02415 12102330 MR24  SPB   FWER           ERRØR FIELD VACANT       09/18/67   JDJ                00120600
01207  02416 12101614 MR26  SPB   LIN            LIST THE LINE            09/18/67   JDJ                00120700
01208  02417 14100173       IMS   LC             ADVANCE LØCATIØN CØUNTER                               00120800
01209  02420 12102132       SPB   PNCH           SET DATA INTØ PUNCH BUF  09/18/67   JDJ                00120900
01210  02421 11100702       BRU   EX02           PRØCESS NEXT CARD        09/18/67   JDJ                00121000
01211                 *                          PŻ99 REMØVED             MDL 1/31/69 *C                00121100
01212                 *      EAC PSEUDØ-ØP       PRØCESSØR                                              00121200
01213  02422 12102630 PS30  SPB   LABP           PRØCESS THE LABEL FIELD  09/18/67   JDJ                00121300
01214  02423 02057000       LBA   ='57000                                 10/26/67   JDJ  *B            00121400
01215  02424 04100174       STB   LØAD                                                                  00121500
```

```
02425 01050000       LAA  ='50000                                   10/26/67   JDJ  *B   00121600
02426 03100176       STA  BAD                                                             00121700
02427 01100175       LAA  DATA          CHECK FØR INDIRECT BIT                            00121800
02430 00000022       SAZ                                                                  00121900
02431 11102433       BRU  *+2                                                             00122000
02432 11102345       BRU  PS04          NØ INDIRECT BIT                                   00122100
02433 12102330       SPB  FWER          INDIRECT NØT ALLØWED      09/18/67   JDJ          00122200
02434 11102344 PS32  BRU  PS04-1        A REG CØNTAINS ZERØ                               00122300
                *         ABS PSEUDØ-ØP PRØCESSØR                                         00122400
02435 00000003 PS34  CLA                                                                  00122500
02436 03100172 PS35  STA  RLC           SET REL/ABS LØC,FLAG=ABS                          00122600
02437 12102630       SPB  LABP          PRØCESS LABEL FIELD       09/18/67   JDJ          00122700
02440 12106556       SPB  SCAN          PRØCESS VARIABLE FIELD    09/18/67   JDJ          00122800
02441 01100163       LAA  SCFØ          FIELD ØCCUPIED FLAG                               00122900
02442 00000022       SAZ                                                                  00123000
02443 12102330 PS36  SPB  FWER          ERRØR ØCCUPIED FIELD      09/18/67   JDJ          00123100
02444 12101614 PS37  SPB  LIN           LIST THE LINE             09/18/67   JDJ          00123200
02445 11100702       BRU  EX02          PRØCESS THE NEXT RECØRD   09/18/67   JDJ          00123300
                *                                                                         00123400
                *         BSS PSEUDØ/ØP PRØCESSØR                                         00123500
02446 12102630 PS42  SPB  LABP          PRØCESS LABEL FIELD       09/18/67   JDJ          00123600
02447 12106556       SPB  SCAN          SCAN THE VARIABLE FIELD   09/18/67   JDJ          00123700
02450 03100175       STA  DATA                                                            00123800
02451 12107746       SPB  PSCK          TEST FØR DEF/ØCC/TERM     09/18/67   JDJ          00123900
02452 12101614       SPB  LIN           LIST A LINE               09/18/67   JDJ          00124000
02453 01100175       LAA  DATA                                                            00124100
02454 05100173       AMA  LC            INCREMENT LØC. CØUNTER                            00124200
02455 03100173       STA  LC                                                              00124300
02456 02100172       LBA  RLC                                                             00124400
02457 04100171       STB  SCRL                                                            00124500
02460 12102524       SPB  PS65          ØUTPUT ØRG                                        00124600
02461 11100702       BRU  EX02          PRØCESS NEXT RECØRD       09/18/67   JDJ          00124700
                *                                                                         00124800
                *         BES PSEUDØ-ØP PRØCESSØR                                         00124900
02462 12106556 PS46  SPB  SCAN          SCAN THE VARIABLE FIELD   09/18/67   JDJ          00125000
02463 03100175       STA  DATA                                                            00125100
```

```
01252  02464 05100173       AMA  LC            INCREMENT LØC, CØUNTER                          00125200
01253  02465 03100173 PS50  STA  LC                                                            00125300
01254  02466 02100172       LBA  RLC                                                           00125400
01255  02467 04100171       STB  SCRL                                                          00125500
01256  02470 12102524       SPB  PS65          ØUTPUT ØRG                                      00125600
01257  02471 12102630 PS51  SPB  LABP          PRØCESS LAVEL FIELD      09/18/67   JDJ         00125700
01258  02472 12107746 PS52  SPB  PSCK          TEST FØR DEF/ØCC/TERM    09/18/67   JDJ         00125800
01259  02473 11102444       BRU  PS37          GØ LIST THEN PRØC NEXT   09/18/67   JDJ         00125900
01260                       *                                                                  00126000
01261                       *          ØRG PSEUDØ-ØP PRØCESSØR                                 00126100
01262  02474 12106556 PS56  SPB  SCAN          SCAN THE VARIABLE FIELD  09/18/67   JDJ         00126200
01263  02475 11102465 PS57  BRU  PS50                                                          00126300
01264                       *                                                                  00126400
01265                       *          EQU PSEUDØ-ØP PRØCESSØR                                 00126500
01266  02476 01100173 PS60  LAA  LC                                                            00126600
01267  02477 03100137       STA  T1MP          SAVE LC                                         00126700
01268  02500 04100060       STB  EQ                                                            00126800
01269  02501 01100172       LAA  RLC                                                           00126900
01270  02502 03100140       STA  T2MP          SAVE RLC                                        00127000
01271  02503 12106556       SPB  SCAN          SCAN THE VARIABLE FIELD  09/18/67   JDJ         00127100
01272  02504 03100173       STA  LC            SET ITEMS DEFINITIØN                            00127200
01273  02505 02100171       LBA  SCRL          ITEMS RELATIVE FLAG                             00127300
01274  02506 04100172       STB  RLC                                                           00127400
01275  02507 12102524       SPB  PS65          ØUTPUT ØRG                                      00127500
01276  02510 12102630       SPB  LABP          PRØCESS THE LABEL FIELD  09/18/67   JDJ         00127600
01277  02511 01100137       LAA  T1MP                                                          00127700
01278  02512 03100173       STA  LC            RESET LC AND RLC                                00127800
01279  02513 02100140       LBA  T2MP                                                          00127900
01280  02514 04100172       STB  RLC                                                           00128000
01281  02515 04100171       STB  SCRL                                                          00128100
01282  02516 12102524       SPB  PS65          ØUTPUT ØRG                                      00128200
01283  02517 01100170       LAA  SCAD                                                          00128300
01284  02520 03100175       STA  DATA                                                          00128400
01285  02521 00000003       CLA                                                                00128500
01286  02522 03100174       STA  LØAD                                                          00128600
01287  02523 11102472       BRU  PS52          TEST AND LIST LINE                              00128700
```

```
01288  02524 25400000 PS65 DAC  **                                                    00128800
01289  02525 03100175      STA  DATA                                                  00128900
01290  02526 01100172      LAA  RLC                                                   00129000
01291  02527 00000022      SAZ                                                        00129100
01292  02530 11102535      BRU  PSRC                                                  00129200
01293  02531 05040000 PSBK AMA  ='140000                          10/26/67  JDJ  *B   00129300
01294  02532 03100174      STA  LØAD                                                  00129400
01295  02533 12102132      SPB  PNCH          PUNCH BINARY ØUTPUT     09/21/67  JDJ    00129500
01296  02534 11302524      BRU* PS65                                                  00129600
01297  02535 01100171 PSRC LAA  SCRL                                                  00129700
01298  02536 00000022      SAZ                                                        00129800
01299  02537 01020000      LAA  ='20000       '020000                 11/03/67  JDJ  *00129900
01300  02540 11102531      BRU  PSBK                                                  00130000
01301                *                                                             00130100
01302  02541 00000000 AUGM DATA 0             AUGMENTED INSTRUCTIØN FLAG (NØN-ZERØ = SET)  *E00130200
01303                *      AUGMENTED INSTRUCTIØNS                                  00130300
01304  02542 12102630 MR50 SPB  LABP          PRØC LABEL FLD          11/07/67  JDJ  *B  00130400
01305  02543 12106556      SPB  SCAN          SCAN THE VARIABLE       09/21/67  JDJ    00130500
01306  02544 01100163      LAA  SCFØ          FIELD ØCCUPANCY FLAG                       00130600
01307  02545 00000022      SAZ                                                        00130700
01308  02546 11102412      BRU  MR99          ERRØR--ADDRESS PRESENT                  00130800
01309  02547 11102416      BRU  MR26          ADDRESS FIELD VACANT                    00130900
01310                *                                                             00131000
01311                *      SHIFT INSTRUCTIØN PRØCESSØR                             00131100
01312  02550 12102630 MR60 SPB  LABP          PRØCESS LABEL FIELD     09/21/67  JDJ    00131200
01313  02551 12106556      SPB  SCAN          SCAN VARIABLE FIELD     09/21/67  JDJ    00131300
01314  02552 06000020      SMA  =16                                   10/26/67  JDJ  *B  00131400
01315  02553 00000023      SAN                SHIFT CØUNT                             00131500
01316  02554 11102415      BRU  MR24          ERRØR,,,T00 LARGE                       00131600
01317  02555 01100164      LAA  SCDF          DEFINED ADDRESS FLAG                    00131700
01318  02556 05100171      AMA  SCRL          ABSØLUTE/REL FLAG                       00131800
01319  02557 00000022      SAZ                                                        00131900
01320  02560 11102412      BRU  MR99          ERRØR--ADDRESS TYPE                     00132000
01321  02561 02100170      LBA  SCAD                                                  00132100
01322  02562 00000613      FLL  6             PØSITIØN SHIFT CØUNT                    00132200
01323  02563 16100175      AMB  DATA                                                  00132300
```

```
01324  02564 04100175       STB  DATA                                                    00132400
01325  02565 11102403       BRU  MR2A                                                    00132500
01326                  *                                                                 00132600
01327                  *    LITERAL PRØCESSØR                                            00132700
01328  02566 01100175 LITR LAA  DATA                                                    00132800
01329  02567 00000024       SAP                                                          00132900
01330  02570 12102330       SPB  FWER          INDRIECT NØT ALLØWED     09/21/67  JDJ    00133000
01331  02571 01100174 LIT1 LAA  LØAD                                                    00133100
01332  02572 05000400       AMA  ='100400                               10/26/67  JDJ *B 00133200
01333  02573 03100174       STA  LØAD                                                    00133300
01334  02574 00000003       CLA                                                          00133400
01335  02575 03100163       STA  SCFØ                                                    00133500
01336  02576 01100077       LAA  IM                                                      00133600
01337  02577 00000022       SAŻ                                                          00133700
01338  02600 11102602       BRU  *+2                                                     00133800
01339  02601 11102605       BRU  *+4           IM=0                                      00133900
01340  02602 06000001       SMA  =1                                     10/26/67  JDJ *B 00134000
01341  02603 00000022       SAŻ                IM=1                                      00134100
01342  02604 11102407       BRU  MR22                                                    00134200
01343  02605 01100121       LAA  BCIL                                                    00134300
01344  02606 00000022       SAŻ                                                          00134400
01345  02607 11102626       BRU  BCI1                                                    00134500
01346  02610 01100074       LAA  ID                                                      00134600
01347  02611 00000005       TAB                                                          00134700
01348  02612 01100120       LAA  SLIT                                                    00134800
01349  02613 00000022       SAŻ                                                          00134900
01350  02614 11102620       BRU  *+4                                                     00135000
01351  02615 00000004       TBA                                                          00135100
01352  02616 00000024       SAP                                                          00135200
01353  02617 11102407       BRU  MR22                                                    00135300
01354  02620 00000004       TBA                                                          00135400
01355  02621 03100175       STA  DATA                                                    00135500
01356  02622 01100104       LAA  FET9                                                    00135600
01357  02623 00001416       LSL  12                                                      00135700
01358  02624 00000024       SAP                                                          00135800
01359  02625 12102330       SPB  FWER          LITERAL ERRØR            09/21/67  JDJ    00135900
```

```
01360  02626 14100163 BCI1 IMS  SCFØ                                                    00136000
01361  02627 11102407      BRU  MR22                                                    00136100
01362                *                                                                 00136200
01363                * LABEL PRØCESS                                                   00136300
01364  02630 25400000 LABP DAC  **                                                     00136400
01365  02631 02077774      LBA  =-4                                 10/26/67  JDJ *B    00136500
01366  02632 01500422 LA00 LAA  BUFF+'20,1                                            00136600
01367  02633 06000240      SMA  ='240          SPACE                10/26/67  JDJ *B    00136700
01368  02634 00000022      SAZ                                                         00136800
01369  02635 11102652      BRU  LA10                                                   00136900
01370  02636 00000026      IBS                                                         00137000
01371  02637 11102632      BRU  LA00                                                   00137100
01372  02640 11302630      BRU* LABP                                                   00137200
01373  02641 01500422 LA01 LAA  BUFF+'20,1                                            00137300
01374  02642 15000244      CMA  ='244          $                    10/26/67  JDJ *B    00137400
01375  02643 11103063      BRU  LA12                                                   00137500
01376  02644 11102663      BRU  LA03                                                   00137600
01377  02645 15000272      CMA  ='272          DEC 10 IN ASCII      10/26/67  JDJ *B    00137700
01378  02646 15000257      CMA  ='257          DEC -1 IN ASCII      10/26/67  JDJ *B    00137800
01379  02647 11102657      BRU  LA02           NØN-NUMERIC                            00137900
01380  02650 11102657      BRU  LA02           NØN-NUMERIC                            00138000
01381  02651 11102663      BRU  LA03           NUMERIC                                00138100
01382  02652 00000004 LA10 TBA                                                         00138200
01383  02653 06077774      SMA  =-4                                 10/26/67  JDJ *B    00138300
01384  02654 00000022      SAZ                                                         00138400
01385  02655 12102330      SPB  FWER           TØØ MANY CHARACTERS  09/21/67  JDJ      00138500
01386  02656 01500422      LAA  BUFF+'20,1                                            00138600
01387  02657 15000333 LA02 CMA  ='333          Z+1                  10/26/67  JDJ *B    00138700
01388  02660 15000277      CMA  ='277          AT SIGN ØR A-1       10/26/67  JDJ *B    00138800
01389  02661 00000033      NØP                                      09/21/67  JDJ      00138900
01390  02662 12102330      SPB  FWER           NØT ALPHABETIC       09/21/67  JDJ      00139000
01391  02663 00000026 LA03 IBS                                                         00139100
01392  02664 11102641      BRU  LA01                                                   00139200
01393  02665 00000005      TAB                                                         00139300
01394  02666 01100420      LAA  BUFF+'16                                              00139400
01395  02667 00001216      LSL  10                                                     00139500
```

```
02670 00000614       FRL  6                                                                   00139600
02671 01007777       LAA  ='7777                                      10/26/67   JDJ  *B     00139700
02672 00000027       ABA                                                                      00139800
02673 03100366       STA  SYM+1                                                               00139900
02674 01100416       LAA  BUFF+'14                                                            00140000
02675 00001216       LSL  10                                                                  00140100
02676 02100417       LBA  BUFF+'15                                                            00140200
02677 00000614       FRL  6                                                                   00140300
02700 01007777       LAA  ='7777                                      10/26/67   JDJ  *B     00140400
02701 00000027       ABA                                                                      00140500
02702 03100365       STA  SYM                                                                 00140600
02703 02100002       LBA  LØW                                                                 00140700
02704 01400000 LA11  LAA  0,1                                                                 00140800
02705 00000022       SAZ                                                                      00140900
02706 11102730       BRU  LA04                                                                00141000
02707 01100365       LAA  SYM                                                                 00141100
02710 03400000       STA  0,1                                                                 00141200
02711 01100172       LAA  RLC                                                                 00141300
02712 00000022       SAZ                                                                      00141400
02713 01020000       LAA  ='20000                                     10/26/67   JDJ  *B     00141500
02714 05100366       AMA  SYM+1                                                               00141600
02715 03400001       STA  1,1                                                                 00141700
02716 01100173       LAA  LC                                                                  00141800
02717 03400002       STA  2,1                                                                 00141900
02720 16000003       AMB  =3                                          10/26/67   JDJ  *B     00142000
02721 00000004       TBA                                                                      00142100
02722 06100001       SMA  HIGH                                                                00142200
02723 00000023       SAN                  END ØF ASSIGN TABLE                                 00142300
02724 11302630       BRU* LABP            YES,EXIT LABEL PRØCESS                              00142400
02725 00000003       CLA                                                                      00142500
02726 03400000       STA  0,1                                                                 00142600
02727 11302630       BRU* LABP                                                                00142700
02730 00000416 LA04  LSL  4                                                                   00142800
02731 00000415       RSL  4                                                                   00142900
02732 15100365       CMA  SYM                                                                 00143000
02733 11102735       BRU  *+2                                                                 00143100
```

```
02734 11102756      BRU  LA06                                                  00143200
02735 16000003 LA15 AMB  =3                                10/26/67  JDJ  *B   00143300
02736 00000004      TBA                                                        00143400
02737 15100001      CMA  HIGH                                                  00143500
02740 11102704      BRU  LA11                                                  00143600
02741 11102754      BRU  LA05                                                  00143700
               *    STØP WHEN SYMBØL TABLE FULL           8/17/67 JDJ   0011841000143800
02742 01077777      LAA  =-1           TELETYPE            10/26/67  JDJ  *B   00143900
02743 55100000      CALL H$WR          ØUTPUT             8/17/67 JDJ   0011843000144000
02744 35402751      DAC  *+5           BUFFER ADDRESS     8/17/67 JDJ   0011844000144100
02745 00000003      DATA 3             3 CHARACTERS       8/17/67 JDJ   0011845000144200
02746 01000324      LAA  ='324         ERRØR CØDE T        10/26/67  JDJ  *B   00144300
02747 00000000      HLT                PAUSE              8/17/67 JDJ   0011851000144400
02750 11102754      BRU  LA05          CØNTINUE ØVERRIDE  8/17/67 JDJ   0011852000144500
02751 00000261      DATA '261,'' S'','' T''               8/17/67 JDJ   0011853000144600
02752 00120323
02753 00120324
02754 03100404 LA05 STA  BUFF+2                                                00144700
02755 11302630      BRU* LABP                                                  00144800
02756 01400001 LA06 LAA  1,1                                                   00144900
02757 00000416      LSL  4                                                     00145000
02760 00000415      RSL  4                                                     00145100
02761 06100366      SMA  SYM+1         2ND WØRD ØF LABEL EQUALS                00145200
02762 00000022      SAZ                2ND WØRD ØF TASS ITEM                   00145300
02763 11102735      BRU  LA15          NØ                                      00145400
02764 01400001 LA07 LAA  1,1                                                   00145500
02765 00000023      SAN                                                        00145600
02766 11103046      BRU  LA08                                                  00145700
02767 01100174      LAA  LØAD                                                  00145800
02770 03100141      STA  T3MP                                                  00145900
02771 01100175      LAA  DATA                                                  00146000
02772 03100142      STA  T4MP                                                  00146100
02773 01400000      LAA  0,1                                                   00146200
02774 00001715      RSL  15                                                    00146300
02775 00001716      LSL  15                                                    00146400
02776 05400002      AMA  2,1                                                   00146500
```

```
02777 03100175       STA  DATA                                                         00146600
03000 01400000       LAA  0,1                                                          00146700
03001 00000116       LSL  1                                                            00146800
03002 00001515       RSL  13                                                           00146900
03003 00001116       LSL  9                                                            00147000
03004 03100174       STA  LØAD                                                         00147100
03005 01100172       LAA  RLC                                                          00147200
03006 00000022       SAZ                                                               00147300
03007 01020000       LAA  ='20000                                 10/26/67   JDJ  *B   00147400
03010 05100174       AMA  LØAD                                                         00147500
03011 05040000       AMA  ='140000                                10/26/67   JDJ  *B   00147600
03012 03100174       STA  LØAD                                                         00147700
03013 04100147       STB  TMPY                                                         00147800
03014 12102132       SPB  PNCH           PUNCH ØUTPUT            09/21/67   JDJ        00147900
03015 01000025       LAA  ='25                                    10/26/67   JDJ  *B   00148000
03016 03100015       STA  PRT4           SET LISTING DELIMITER '2509/21/67   JDJ        00148100
03017 00130400       SNS  0                                      RFH                   00148200
03020 12101614       SPB  LIN            LIST A LIN              09/21/67   JDJ        00148300
03021 01000240       LAA  ='240          SPACE                    10/26/67   JDJ  *B   00148400
03022 03100415       STA  BUFF+'13                                                     00148500
03023 01000146       LAA  =102                                    10/26/67   JDJ  *B   00148600
03024 03100015       STA  PRT4           RESET LISTING TØ 102    09/21/67   JDJ        00148700
03025 02100147       LBA  TMPY                                                         00148800
03026 01400003 LA99  LAA  3,1                                                          00148900
03027 03400000       STA  0,1                                                          00149000
03030 00000022       SAZ                                                               00149100
03031 11103040       BRU  *+7                                                          00149200
03032 01100141       LAA  T3MP                                                         00149300
03033 03100174       STA  LØAD                                                         00149400
03034 01100142       LAA  T4MP                                                         00149500
03035 03100175       STA  DATA                                                         00149600
03036 02100147       LBA  TMPY                                                         00149700
03037 11102704       BRU  LA11                                                         00149800
03040 01400004       LAA  4,1                                                          00149900
03041 03400001       STA  1,1                                                          00150000
03042 01400005       LAA  5,1                                                          00150100
```

```
03043 03400002      STA  2,1                                                       00150200
03044 16000003      AMB  =3                                 10/26/67   JDJ  *B    00150300
03045 11103026      BRU  LA99                                                      00150400
03046 01400002 LA08 LAA  2,1                                                       00150500
03047 15100173      CMA  LC                                                        00150600
03050 11103052      BRU  *+2                                                       00150700
03051 11302630      BRU* LABP                                                      00150800
03052 01400001      LAA  1,1                                                       00150900
03053 00000116      LSL  1                                                         00151000
03054 00000024      SAP                                                            00151100
03055 11103061      BRU  LA14                                                      00151200
03056 00000020      ASC                                                            00151300
03057 00000115      RSL  1                                                         00151400
03060 03400001      STA  1,1                                                       00151500
03061 01000315 LA14 LAA  ='315       ERRØR CØDE M           10/26/67   JDJ  *B    00151600
03062 11102754      BRU  LA05                                                      00151700
03063 15000240 LA12 CMA  ='240       SPACE                  10/26/67   JDJ  *B    00151800
03064 12102330      SPB  FWER        NØT A SPACE           09/21/67   JDJ         00151900
03065 11102663      BRU  LA03                                                      00152000
03066 11103064      BRU  *-2                                                       00152100
               *                                                                   00152200
               *                                                                   00152300
03067 25400000 FDEF DAC  **                                                        00152400
03070 00000003 FED3 CLA                                                            00152500
03071 03100107      STA  DFL                                                       00152600
03072 01100157      LAA  IND                                                       00152700
03073 05000001      AMA  =1                                 10/26/67   JDJ  *B    00152800
03074 03100157      STA  IND                                                       00152900
03075 12107241      SPB  SCF         FETCH NEXT CHARACTER  09/21/67   JDJ         00153000
03076 03100104      STA  FET9                                                      00153100
03077 12107266      SPB  SCD         CHECK FØR DIGIT       09/21/67   JDJ         00153200
03100 11103117      BRU  FDE1        CHARACTER IS 0-9                              00153300
03101 12107260      SPB  SCL         CHECK FØR A LETTER    09/21/67   JDJ         00153400
03102 11103123      BRU  FDE2        CHAR IS ALPHA                                 00153500
03103 15000240      CMA  ='240       SPACE                  10/26/67   JDJ  *B    00153600
03104 11103106      BRU  FED4                                                      00153700
```

```
01538  03105 11103110       BRU  FED5                                                          00153800
01539  03106 03100107 FED4  STA  DFL          SAVE SPECIAL CHARACTER                          00153900
01540  03107 11303067       BRU* FDEF         A=+ NØN-ZERØ FØR SPEC.                          00154000
01541  03110 00000006 FED5  IAB                                                               00154100
01542  03111 01100165       LAA  SCCC                                                         00154200
01543  03112 15000014       CMA  =12                                  10/26/67   JDJ  *B     00154300
01544  03113 11103115       BRU  *+2                                                          00154400
01545  03114 11103070       BRU  FED3                                                         00154500
01546  03115 00000006       IAB                                                               00154600
01547  03116 11103106       BRU  FED4                                                         00154700
01548  03117 06000260 FDE1  SMA  ='260        ASCII 0                   10/26/67   JDJ  *B     00154800
01549  03120 03100103       STA  DIT5         SAVE DIGIT                                      00154900
01550  03121 00000003       CLA                                                               00155000
01551  03122 11303067       BRU* FDEF         A=0 FØR DIGIT EXIT                              00155100
01552  03123 00000002 FDE2  NEG                                                               00155200
01553  03124 11303067       BRU* FDEF         A NEG FØR ALPHA CHAR                            00155300
01554                       ***************************************************             00155400
01555                       * I/Ø REMØVED AND NØW AVAILABLE AS A SUBRØUTINE -  JPD           00155500
01556                       ***************************************************             00155600
01557                       *                                                               00155700
01558                       ***************************************************************00155800
01559                       *    DATA PRØCESSØR                                             00155900
01560                       *                                                               00156000
01561  03125 00000004 DP2   TBA                                                             00156100
01562  03126 11103170       BRU  DP1                                                          00156200
01563  03127 00000005 DALF  TAB                                                             00156300
01564  03130 01100157       LAA  IND                                                          00156400
01565  03131 00000022       SAZ               ADDRESS  CØNSTANT                               00156500
01566  03132 11103125       BRU  DP2                                                          00156600
01567  03133 02100165       LBA  SCCC         CØLUMN CØUNTER                                  00156700
01568  03134 16077777       AMB  =-1          BACK UP BY 1            10/26/67   JDJ  *B     00156800
01569  03135 01100113       LAA  SIGN         LEADING SIGN                                    00156900
01570  03136 00000024       SAP                                                               00157000
01571  03137 16077777       AMB  =-1          BACK UP BY 1 MØRE       10/26/67   JDJ  *B     00157100
01572  03140 04100165       STB  SCCC                                                         00157200
01573  03141 01030000       LAA  ='30000                              10/26/67   JDJ  *B     00157300
```

```
01574  03142 03100176       STA  BAD                                                    00157400
01575  03143 12106556       SPB  SCAN          SCAN THE VARIABLE FIELD  09/21/67  JDJ  00157500
01576  03144 03100074       STA  ID                                                     00157600
01577  03145 01100162       LAA  SCTM                                                   00157700
01578  03146 03100104       STA  FET9                                                   00157800
01579  03147 01100165       LAA  SCCC                                                   00157900
01580  03150 05077777       AMA  =-1                                 10/26/67  JDJ *B   00158000
01581  03151 03100165       STA  SCCC          BACK UP CØLUMN CTR.                      00158100
01582  03152 00000003       CLA                                                         00158200
01583  03153 11303154       BRU* DIP                                                    00158300
01584  03154 25400000 DIP   DAC  **                                                     00158400
01585  03155 02077770       LBA  =-8                                 10/26/67  JDJ *B   00158500
01586  03156 00000003       CLA                                                         00158600
01587  03157 03500104       STA  ID*8,1        0 TØ IM,ID(3),T2,T3,T4,T5                00158700
01588  03160 00000026       IBS                  AND T6                                 00158800
01589  03161 11103157       BRU  *-2                                                    0015890
01590  03162 03100110       STA  DITJ                                                   0015900
01591  03163 01077777       LAA  =-1                                 10/26/67  JDJ *B   0015910
01592  03164 03100157       STA  IND           0 TØ FIRST CHAR INDICATØR                0015920
01593  03165 12103067 DI1   SPB  FDEF          DEFINE TYPE ØF CHARACTER 09/21/67  JDJ  0015930
01594  03166 00000024       SAP                                                         00159400
01595  03167 11103127       BRU  DALF                                                   00159500
01596  03170 00000022 DP1   SAZ                                                        00159600
01597  03171 11103226       BRU  DI2           CHARACTER NØT NUMERIC                    00159700
01598                       *                                                           00159800
01599                       * CØNVERT DIGIT TØ BINARY-TRIPLE PRECISIØN                  00159900
01600  03172 14100102       IMS  DIT4          T4=T4+1                                  00160000
01601  03173 14100110       IMS  DITJ          SET TJ NØN-ZERØ                          00160100
01602  03174 02000002       LBA  =2                                  10/26/67  JDJ *B   00160200
01603  03175 04100105       STB  HØLD                                                   00160300
01604  03176 01077775       LAA  =-3                                 10/26/67  JDJ *B   00160400
01605  03177 03100112       STA  DIT6                                                   00160500
01606  03200 02500074 DI25  LBA  ID,1          TRIPLE PREC, MPY BY 10                   00160600
01607                       ************************************************************00160700
01608                       *  HARDWARE MULTIPLY REMØVED J PD                           00160800
01609                       ************************************************************00160900
```

```
01610  03201 01000012       LAA  =10                                10/26/67  JDJ  *B   00161000
01611  03202 12110175       SPB  MTPY                                                    00161100
01612  03203 00000006       IAB                                                          00161200
01613  03204 05100103       AMA  DIT5                                                    00161300
01614  03205 00000006       IAB                                                          00161400
01615  03206 00000007       CSB                                                          00161500
01616  03207 05100044       AMA  DZRØ                                                    00161600
01617  03210 00000006       IAB                                                          00161700
01618  03211 04100103       STB  DIT5                                                    00161800
01619  03212 02100105       LBA  HØLD                                                    00161900
01620  03213 03500074       STA  ID,1                                                    00162000
01621  03214 00000006       IAB                                                          00162100
01622  03215 06000001       SMA  =1                                 10/26/67  JDJ  *B   00162200
01623  03216 03100105       STA  HØLD          HØLD=HØLD-1                               00162300
01624  03217 00000006       IAB                                                          00162400
01625  03220 14100112       IMS  DIT6                                                    00162500
01626  03221 11103200       BRU  DI25          REPEAT                                    00162600
01627  03222 01100103       LAA  DIT5                                                    00162700
01628  03223 00000022       SAZ                                                          00162800
01629  03224 11103403       BRU  DI6           ØVERFLØW                                  00162900
01630  03225 11103165       BRU  DI1                                                     00163000
01631  03226 01100077 DI2   LAA  IM                                                      00163100
01632  03227 06000005       SMA  =5                                 10/26/67  JDJ  *B   00163200
01633  03230 00000022       SAZ                IM=REAL                                   00163300
01634  03231 11103405       BRU  DI3                                                     00163400
01635                *                                                                  00163500
01636                * CØNSTANT ALREADY DEFINED AS REAL                                 00163600
01637  03232 01100107       LAA  DFL                                                     00163700
01638  03233 00000022       SAZ                CHAR NØT A DELIMETER                      00163800
01639  03234 11103276       BRU  DI9           FINISH REAL CØNVERSIØN                    00163900
01640                *                                                                  00164000
01641                * ALPHA CHARACTER WITHIN CØNSTANT                                   00164100
01642  03235 01100104 DI31  LAA  FET9          LAST CHAR READ                            00164200
01643  03236 15000306       CMA  ='306         F                       10/26/67  JDJ  *B   00164300
01644  03237 15000301       CMA  ='301         A                       10/26/67  JDJ  *B   00164400
01645  03240 11103403       BRU  DI6           ILLEGAL CHARACTER                         00164500
```

```
01646  03241 11103403       BRU  DI6          ILLEGAL CHARACTER                                  00164600
01647  03242 06000300       SMA  ='300        AT SIGN                  10/26/67   JDJ  *B     00164700
01648  03243 03100077       STA  IM           SET PRØPER MØDE                                    00164800
01649                *                                                                          00164900
01650                *CØNVERT SCALE FACTØR ØR EXPØNENT                                          00165000
01651  03244 12103067 DI32  SPB  FDEF         DEFINE TYPE ØF CHARACTER 09/21/67   JDJ          00165100
01652  03245 00000022       SAZ                                                                00165200
01653  03246 11103250       BRU  *+2                                                           00165300
01654  03247 11103264       BRU  DI33         DIGIT FØLLØWS ALPHA                              00165400
01655  03250 01100104       LAA  FET9                                                          00165500
01656  03251 06000253       SMA  ='253        +                        10/26/67   JDJ  *B     00165600
01657  03252 00000022       SAZ                                                                00165700
01658  03253 11103255       BRU  *+2                                                           00165800
01659  03254 11103261       BRU  DI34         PLUS CHAR                                        00165900
01660  03255 06000002       SMA  =2                                    10/26/67   JDJ  *B     00166000
01661  03256 00000022       SAZ               MINUS CHAR                                       00166100
01662  03257 11103276       BRU  DI9          FINISH REAL CØNVERSIØN                           00166200
01663  03260 14100100       IMS  DIT2         SET MINUS INDICATØR                              00166300
01664  03261 12103067 DI34  SPB  FDEF         DEFINE THE CHARACTER     09/21/67   JDJ          00166400
01665  03262 00000022       SAZ               DIGIT FØLLØWS SIGN                               00166500
01666  03263 11103276       BRU  DI9          FINISH REAL CØNVERSIØN                           00166600
01667  03264 02100101 DI33  LBA  DIT3                                                          00166700
01668                *****************************************************************       00166800
01669                *  HARDWARE MULTIPLY REREMØVED JPD                                        00166900
01670  03265 01000012       LAA  =10                                   10/26/67   JDJ  *B     00167000
01671  03266 12110175       SPB  MTPY                                                          00167100
01672  03267 00000006       IAB                                                                00167200
01673  03270 05100103       AMA  DIT5                                                          00167300
01674  03271 03100101       STA  DIT3                                                          00167400
01675  03272 12103067       SPB  FDEF         DEFINE THE CHARACTER     09/21/67   JDJ          00167500
01676  03273 00000022       SAZ                                                                00167600
01677  03274 11103276       BRU  *+2                                                           00167700
01678  03275 11103264       BRU  DI33                                                          00167800
01679                *                                                                          00167900
01680                * FINISH CØNVERSIØN                                                        00168000
01681  03276 01100074 DI9   LAA  ID                                                            00168100
```

```
01682  03277 02100075       LBA   ID+1                                                    00168200
01683  03300 00000030       ØBA                                                           00168300
01684  03301 02100076       LBA   ID+2                                                    00168400
01685  03302 00000030       ØBA                                                           00168500
01686  03303 00000022       SAZ                                                           00168600
01687  03304 11103306       BRU   *+2                                                     00168700
01688  03305 11103441       BRU   DI91          FINISHED-CØNSTANT IS 0                    00168800
01689  03306 01100100       LAA   DIT2                                                    00168900
01690  03307 00000022       SAZ                                                           00169000
01691  03310 11103312       BRU   *+2                                                     00169100
01692  03311 11103315       BRU   DI92          PØSITIVE SCALE ØR EXP.                    00169200
01693  03312 01100101       LAA   DIT3                                                    00169300
01694  03313 00000002       NEG                                                           00169400
01695  03314 03100101       STA   DIT3                                                    00169500
01696                 *                                                                  00169600
01697                 * HANDLE MØDES ØF CØNVERSIØN                                      00169700
01698  03315 01100077 DI92  LAA   IM                                                      00169800
01699  03316 15000004       CMA   =4                                  10/26/67  JDJ *B    00169900
01700  03317 11103507       BRU   DI93          B,C                                       00170000
01701  03320 11103330       BRU   DI94          D                                         00170100
01702  03321 01100074       LAA   ID                                                      00170200
01703  03322 00000022       SAZ                                                           00170300
01704  03323 11103325       BRU   *+2                                                     00170400
01705  03324 11103330       BRU   DI94          E                                         00170500
01706  03325 01077777      MLAA   =-1          SET  ØDE TØ DBL PREC      10/26/67  JDJ *B    00170600
01707  03326 05100077       AMA   IM                                                      00170700
01708  03327 03100077       STA   IM                                                      00170800
01709  03330 01100101 DI94  LAA   DIT3                                                    00170900
01710  03331 06100102       SMA   DIT4                                                    00171000
01711  03332 03100102       STA   DIT4          T4=T3-T4                                  00171100
01712  03333 06000114 DID2  SMA   =76                                 10/26/67  JDJ *B    00171200
01713  03334 00000024       SAP                                                           00171300
01714  03335 11103337       BRU   *+2                                                     00171400
01715  03336 11103403       BRU   DI6           EXPØNENT TØØ LARGE                        00171500
01716  03337 01000055       LAA   =45                                 10/26/67  JDJ *B    00171600
01717  03340 03100100       STA   DIT2          T2 EQUALS 45                              00171700
```

```
01718  03341 12103653 DI95 SPB  NØRM                                                    00171800
01719  03342 01100102      LAA  DIT4                                                    00171900
01720  03343 00000022      SAZ                                                          00172000
01721  03344 11103346      BRU  *+2                                                     00172100
01722  03345 11103455      BRU  DI99          FINISH CØNVERSIØN                         00172200
01723  03346 00000024      SAP                                                          00172300
01724  03347 11103450      BRU  DI96          NEGATIVE PØWER ØF TEN                     00172400
01725  03350 01077777      LAA  =-1                                 10/26/67  JDJ *B    00172500
01726  03351 05100102      AMA  DIT4                                                    00172600
01727  03352 03100102      STA  DIT4          PØSITIVE PØWER ØF TEN                     00172700
01728  03353 01000004      LAA  =4                                  10/26/67  JDJ *B    00172800
01729  03354 05100100      AMA  DIT2                                                    00172900
01730  03355 03100100      STA  DIT2          T=-T2+4                                   00173000
01731  03356 12103640      SPB  RSID          RIGHT SHIFT ID                            00173100
01732                      *                                                            00173200
01733                      * REDUCE EXP MØDIFIER TØ ZERØ AND UPDATE CØNSTANT            00173300
01734  03357 02077775      LBA  =-3                                 10/26/67  JDJ *B    00173400
01735  03360 01500077      LAA  ID+3,1        SAVE ID                                   00173500
01736  03361 03500117      STA  DIT7+3,1                                                00173600
01737  03362 00000026      IBS                                                          00173700
01738  03363 11103360      BRU  *-3                                                     00173800
01739  03364 12103640      SPB  RSID                                                    00173900
01740  03365 12103640      SPB  RSID                                                    00174000
01741  03366 02100076      LBA  ID+2                                                    00174100
01742  03367 16100116      AMB  DIT7+2                                                  00174200
01743  03370 01100075      LAA  ID+1                                                    00174300
01744  03371 00000007      CSB                                                          00174400
01745  03372 05100115      AMA  DIT7+1                                                  00174500
01746  03373 04100076      STB  ID+2                                                    00174600
01747  03374 00000005      TAB                                                          00174700
01748  03375 01100074      LAA  ID                                                      00174800
01749  03376 00000007      CSB                                                          00174900
01750  03377 05100114      AMA  DIT7                                                    00175000
01751  03400 04100075      STB  ID+1                                                    00175100
01752  03401 03100074      STA  ID                                                      00175200
01753  03402 11103341      BRU  DI95                                                    00175300
```

```
01754  03403 01077777 DI6  LAA  =-1                          10/26/67  JDJ  *B   00175400
01755  03404 11303154      BRU* DIP                                               00175500
01756  03405 00000003 DI3  CLA                                                    00175600
01757  03406 03100102      STA  DIT4      T4=0                                    00175700
01758  03407 01000005      LAA  =5                           10/26/67  JDJ  *B   00175800
01759  03410 03100077      STA  IM        SET IM=REAL                             00175900
01760  03411 01100104      LAA  FET9                                              00176000
01761  03412 15000247      CMA  ='247     APØS               10/26/67  JDJ  *B   00176100
01762  03413 11103415      BRU  *+2                                               00176200
01763  03414 11103554      BRU  DI4       CHAR='                                  00176300
01764  03415 15000256      CMA  ='256     PERIØD             10/26/67  JDJ  *B   00176400
01765  03416 11103420      BRU  *+2                                               00176500
01766  03417 11103165      BRU  DI1       CHAR=,                                  00176600
01767  03420 01100110      LAA  DITJ                                              00176700
01768  03421 00000022      SAZ                                                    00176800
01769  03422 11103424      BRU  *+2                                               00176900
01770  03423 11103403      BRU  DI6       NØT A CØNSTANT                          00177000
01771  03424 01100107      LAA  DFL                                               00177100
01772  03425 00000022      SAZ                                                    00177200
01773  03426 11103430      BRU  *+2                                               00177300
01774  03427 11103235      BRU  DI31      NØT A DELIMITER                         00177400
01775  03430 01100076 DI7  LAA  ID+2                                              00177500
01776  03431 03100074      STA  ID                                                00177600
01777  03432 00000003      CLA                                                    00177700
01778  03433 03100076      STA  ID+2                                              00177800
01779  03434 01000001      LAA  =1                           10/26/67  JDJ  *B   00177900
01780  03435 03100077      STA  IM                                                00178000
01781  03436 01100113 DI8  LAA  SIGN                                              00178100
01782  03437 00000024      SAP                                                    00178200
01783  03440 12103623      SPB  NEGC                                              00178300
01784  03441 01100165 DI91 LAA  SCCC      CARD CØLUMN PØSITIØN                    00178400
01785  03442 05077777      AMA  =-1                          10/26/67  JDJ  *B   00178500
01786  03443 03100165      STA  SCCC      SCCC=SCCC-1                             00178600
01787  03444 00000003      CLA                                                    00178700
01788  03445 11303154      BRU* DIP                                               00178800
01789  03446 01100102 DID3 LAA  DIT4                                              00178900
```

```
03447 11103333      BRU  DID2                                                00179000
03450 01000001 DI96 LAA  =1        NEG EXPØNENT          10/26/67  JDJ  *B   00179100
03451 05100102      AMA  DIT4                                                00179200
03452 03100102      STA  DIT4                                                00179300
03453 12106165      SPB  DIID      DIVIDE ID BY 10       09/21/67  JDJ       00179400
03454 11103341      BRU  DI95                                                00179500
03455 01100100 DI99 LAA  DIT2                                                00179600
03456 00000024      SAP                                                      00179700
03457 11103461      BRU  *+2                                                 00179800
03460 11103467      BRU  *+7                                                 00179900
03461 04100105      STB  HØLD                                                00180000
03462 02000777      LBA  ='777                           10/26/67  JDJ  *B   00180100
03463 00000027      ABA                                                      00180200
03464 03100100      STA  DIT2                                                00180300
03465 01100105      LAA  HØLD                                                00180400
03466 00000002      NEG                                                      00180500
03467 06000377      SMA  ='377     EXPØNENT TØ LARGE     10/26/67  JDJ  *B   00180600
03470 00000024      SAP                                                      00180700
03471 11103473      BRU  *+2                                                 00180800
03472 11103403      BRU  DI6                                                 00180900
03473 01100113      LAA  SIGN                                                00181000
03474 00000024      SAP                                                      00181100
03475 12103623      SPB  NEGC                                                00181200
03476 01100075      LAA  ID+1                                                00181300
03477 02100076      LBA  ID+2                                                00181400
03500 00001112      FRA  9                                                   00181500
03501 00001111      LSA  9                                                   00181600
03502 04100076      STB  ID+2                                                00181700
03503 02100100      LBA  DIT2                                                00181800
03504 00000030      ØBA                                                      00181900
03505 03100075      STA  ID+1                                                00182000
03506 11103441      BRU  DI91      FINISHED                                  00182100
               *                                                             00182200
               * FIXED PØINT CØNVERSIØN                                      00182300
03507 01000055 DI93 LAA  =45                             10/26/67  JDJ  *B   00182400
03510 03100100      STA  DIT2                                                0018250
```

```
01826  03511 12103653 DI97 SPB  NØRM                                                                00182600
01827  03512 01100102      LAA  DIT4                                                                00182700
01828  03513 00000022      SAZ                                                                      00182800
01829  03514 11103516      BRU  *+2                                                                 00182900
01830  03515 11103522      BRU  DI98                                                                00183000
01831  03516 06000001      SMA  =1                                  10/26/67   JDJ  *B              00183100
01832  03517 03100102      STA  DIT4                                                                00183200
01833  03520 12106165      SPB  DIID     DIVIDE ID BY 10            09/21/67   JDJ                  00183300
01834  03521 11103511      BRU  DI97                                                                00183400
01835  03522 01100101 DI98 LAA  DIT3                                                                00183500
01836  03523 06100100      SMA  DIT2                                                                00183600
01837  03524 00000024      SAP                                                                      00183700
01838  03525 11103550      BRU  D990                                                                00183800
01839  03526 15000020      CMA  =16     TEST FØR SNGL PRES NUM      10/26/67   JDJ  *B              00183900
01840  03527 11103536      BRU  ØKDP    TRUE DØUBLE PRECISIØN                                       00184000
01841  03530 00000033      NØP                                                                      00184100
01842  03531 06000017      SMA  =15                                 10/26/67   JDJ  *B              00184200
01843  03532 02100074      LBA  ID      SET DØUBLE PRECISIØN CELLS                                  00184300
01844  03533 04100075      STB  ID+1    FØR SINGLE PRECISIØN NØ,                                    00184400
01845  03534 02100044      LBA  DZRØ                                                                00184500
01846  03535 04100074      STB  ID                                                                  00184600
01847  03536 00000611 ØKDP LSA  6       PØSITIØN SHIFT CØUNT                                        00184700
01848  03537 02000012      LBA  =12                                 10/26/67   JDJ  *B              00184800
01849  03540 00000030      ØBA                                                                      00184900
01850  03541 03103544      STA  *+3                                                                 00185000
01851  03542 01100074      LAA  ID                                                                  00185100
01852  03543 02100075      LBA  ID+1                                                                00185200
01853  03544 25400000      DAC  **      FRA XX                                                      00185300
01854  03545 03100074      STA  ID                                                                  00185400
01855  03546 04100075      STB  ID+1                                                                00185500
01856  03547 11103436      BRU  DI8                                                                 00185600
01857  03550 01100165 D990 LAA  SCCC                                                                00185700
01858  03551 05077777      AMA  =-1                                 10/26/67   JDJ  *B              00185800
01859  03552 03100165      STA  SCCC    BACK UP CØLUMN CØUNTER                                      00185900
01860  03553 11103403      BRU  DI6                                                                 00186000
01861                *                                                                             00186100
```

```
01862                    * PRIME IS FIRST CHARACTER-CØNVERT FRØM ØCTAL                                  00186200
01863  03554 12103067 DI4  SPB  FDEF          DEFINE THE CHARACTER     09/21/67   JDJ                 00186300
01864  03555 00000024      SAP                                                                         00186400
01865  03556 11103403      BRU  DI6                                                                    00186500
01866  03557 00000022      SAZ                                                                         00186600
01867  03560 11103562      BRU  *+2                                                                    00186700
01868  03561 11103577      BRU  DI41                                                                   00186800
01869  03562 01100107      LAA  DFL                                                                    00186900
01870  03563 15000247      CMA  ='247          APØS                      10/26/67   JDJ  *B          00187000
01871  03564 11103566      BRU  *+2                                                                    00187100
01872  03565 11103620      BRU  DI42           CHAR IS '                                               00187200
01873  03566 15000253      CMA  ='253          PLUS                      10/26/67   JDJ  *B          00187300
01874  03567 11103571      BRU  *+2                                                                    00187400
01875  03570 11103554      BRU  DI4            CHAR IS +                                               00187500
01876  03571 06000255      SMA  ='255          MINUS                     10/26/67   JDJ  *B          00187600
01877  03572 00000022      SAZ                                                                         00187700
01878  03573 11103403      BRU  DI6                                                                    00187800
01879  03574 01077665      LAA  =-75           CHAR IS                   10/26/67   JDJ  *B          00187900
01880  03575 03100113      STA  SIGN                                                                   00188000
01881  03576 12103067      SPB  FDEF           DEFINE THE CHARACTER      09/21/67   JDJ               00188100
01882  03577 01100103 DI41 LAA  DIT5                                                                   00188200
01883  03600 06000010      SMA  ='10                                     10/26/67   JDJ  *B          00188300
01884  03601 00000023      SAN                                                                         00188400
01885  03602 11103403      BRU  DI6                                                                    00188500
01886  03603 00000003      CLA                                                                         00188600
01887  03604 02100076      LBA  ID+2                                                                   00188700
01888  03605 00000313      FLL  3                                                                      00188800
01889  03606 00000022      SAZ                                                                         00188900
01890  03607 11103403      BRU  DI6                                                                    00189000
01891  03610 00000006      IAB                                                                         00189100
01892  03611 02100103      LBA  DIT5                                                                   00189200
01893  03612 00000030      ØBA                                                                         00189300
01894  03613 03100076      STA  ID+2                                                                   00189400
01895  03614 12103067      SPB  FDEF           DEFINE THE CHARACTER      09/21/67   JDJ               00189500
01896  03615 00000022      SAZ                                                                         00189600
01897  03616 11103430      BRU  DI7                                                                    00189700
```

```
01898  03617 11103577       BRU  DI41                                                    00189800
01899  03620 00000003 DI42   CLA                                                       00189900
01900  03621 03100077       STA  IM                                                    00190000
01901  03622 11110076       BRU  STRA          RETURN TØ DATA PRØCESSØR 09/21/67  JDJ  00190100
01902                 *           DØUBLE PRECISIØN NEGATE CØNTENTS ØF ID, ID+1, ID+2   00190200
01903  03623 25400000 NEGC DAC  **                                                      00190300
01904  03624 00000003       CLA                                                        00190400
01905  03625 03100113       STA  SIGN                                                  00190500
01906  03626 00000005       TAB                CLEAR SIGN ØF B                         00190600
01907  03627 06100076       SMA  ID+2          0 - LØW ØRDER BITS                      00190700
01908  03630 00001712       FRA  15            DRAG SIGN                               00190800
01909  03631 04100076       STB  ID+2                                                  00190900
01910  03632 06100075       SMA  ID+1                                                  00191000
01911  03633 00001712       FRA  15                                                    00191100
01912  03634 04100075       STB  ID+1                                                  00191200
01913  03635 06100074       SMA  ID                                                    00191300
01914  03636 03100074       STA  ID                                                    00191400
01915  03637 11303623       BRU* NEGC                                                  00191500
01916  03640 25400000 RSID  DAC  **            RIGHT SHIFT ID BY ØNE                   00191600
01917  03641 02100076       LBA  ID+2                                                  00191700
01918  03642 01100075       LAA  ID+1                                                  00191800
01919  03643 00000112       FRA  1                                                     00191900
01920  03644 04100076       STB  ID+2                                                  00192000
01921  03645 02100075       LBA  ID+1                                                  00192100
01922  03646 01100074       LAA  ID                                                    00192200
01923  03647 00000112       FRA  1                                                     00192300
01924  03650 04100075       STB  ID+1                                                  00192400
01925  03651 03100074       STA  ID                                                    00192500
01926  03652 11303640       BRU* RSID                                                  00192600
01927  03653 25400000 NØRM  DAC  **                                                    00192700
01928  03654 01100074       LAA  ID                                                    00192800
01929  03655 00000116       LSL  1                                                     00192900
01930  03656 00000024       SAP                                                        00193000
01931  03657 11303653       BRU* NØRM                                                  00193100
01932  03660 01077777       LAA  *-1                          10/26/67  JDJ  *B       00193200
01933  03661 05100100       AMA  DIT2                                                  00193300
```

```
01934  03662 03100100       STA  DIT2                                                    00193400
01935  03663 12103665       SPB  LSID                                                    00193500
01936  03664 11103654       BRU  NØRM+1                                                  00193600
01937  03665 25400000 LSID  DAC  **          SHIFT LEFT 1 PLACE                         00193700
01938  03666 02100075       LBA  ID+1                                                    00193800
01939  03667 00000113       FLL  1                                                       00193900
01940  03670 01100074       LAA  ID                                                      00194000
01941  03671 00000113       FLL  1                                                       00194100
01942  03672 03100074       STA  ID                                                      00194200
01943  03673 00000003       CLA                                                          00194300
01944  03674 02100076       LBA  ID+2                                                    00194400
01945  03675 00000117       FLA  1                                                       00194500
01946  03676 04100076       STB  ID+2                                                    00194600
01947  03677 00000005       TAB                                                          00194700
01948  03700 01100075       LAA  ID+1                                                    00194800
01949  03701 00000216       LSL  2                                                       00194900
01950  03702 00000115       RSL  1                                                       00195000
01951  03703 00000030       ØBA                                                          00195100
01952  03704 03100075       STA  ID+1                                                    00195200
01953  03705 11303665       BRU* LSID                                                    00195300
01954                *     SENSE   SWITCH   RØUTINE                                     00195400
01955                *                                                                  00195500
01956  03706 25400000 SSSS  DAC  0           * SENSE  SWITCH  RØUTINE                   00195600
01957  03707 03103722       STA  SSSA        *                                          00195700
01958  03710 01303706       LAA* SSSS        *    SPB   SSSS                            00195800
01959  03711 05000016       AMA  ='16                              10/26/67   JDJ  *B   00195900
01960  03712 03103714       STA  *+2         *                                          00196000
01961  03713 00000031       LCS              *                                          00196100
01962  03714 00000033       NØP              *  SHIFT INSTRUCTIØN                       00196200
01963  03715 00000023       SAN                                                         00196300
01964  03716 14103706       IMS  SSSS        *                                          00196400
01965  03717 01103722       LAA  SSSA        *                                          00196500
01966  03720 14103706       IMS  SSSS        *                                          00196600
01967  03721 11303706       BRU* SSSS        *                                          00196700
01968  03722 00000000 SSSA  DATA 0                                                      00196800
01969                * END ØF MACRØ PRØTØTYPE IS IN ERRØR HERE          10/16/67   JDJ  *B  00196900
```

```
01970  03723 11101021 EMAC BRU  ØP30          ERRØR WHEN FØUND HERØ     10/16/67   JDJ   *B  00197000
01971                 * MACRØ PRØCESSING SYSTEM BEGINS HERE             10/16/67   JDJ   *B  00197100
01972                 *                                                                     00197200
01973                 * SUBRØUTINE DCTY, TØ DECØDE THE TYPE FIELD        10/23/67   JDJ   *B  00197300
01974  03724 25400000 DCTY DAC  0             ENTER SUBRØUTINE          10/23/67   JDJ   *B  00197400
01975  03725 01000005      LAA  =5            SET SCF SCAN PØINTER      10/23/67   JDJ   *B  00197500
01976  03726 03100165      STA  SCCC          TØ CØL 5                  10/23/67   JDJ   *B  00197600
01977  03727 00000003      CLA                SET TEMP CØUNTER          10/23/67   JDJ   *B  00197700
01978  03730 03112041      STA  WØRK          TØ ZERØ, TYPE CØDE FØUND  10/23/67   JDJ   *B  00197800
01979  03731 12107241      SPB  SCF           GØ GET CØL 5 USING SCF    10/23/67   JDJ   *B  00197900
01980  03732 02077770      LBA  =-8           SET TABLE SCANNER TØ MAX  10/23/67   JDJ   *B  00198000
01981  03733 15512115 DCT2 CMA  TYPE+8,1      TEST FØR A VALID TYPE                        00198100
01982  03734 11103736      BRU  *+2           NØT FØUND                 10/23/67   JDJ   *B  00198200
01983  03735 11103743      BRU  DCT1          GØ GENERATE CTL WØRD      10/23/67   JDJ   *B  00198300
01984  03736 14112041      IMS  WØRK          INCREMENT CØUNTER         10/23/67   JDJ   *B  00198400
01985  03737 00000026      IBS                INCREMENT INDEX TØ ZERØ   10/23/67   JDJ   *B  00198500
01986  03740 11103733      BRU  DCT2          GØ SEARCH SØME MØRE TABLE 10/23/67   JDJ   *B  00198600
01987  03741 01000002      LAA  ='2           ERRØR BIT 14 ØF CTL WØRD  10/23/67   JDJ   *B  00198700
01988  03742 11103745      BRU  *+3           GØ MERGE BIT TØ CTL       10/23/67   JDJ   *B  00198800
01989  03743 01112041 DCT1 LAA  WØRK          LØAD TYPE CØDE            10/23/67   JDJ   *B  00198900
01990  03744 00000516      LSL  5             SHIFT TYPE CØDE TØ 8-10   10/23/67   JDJ   *B  00199000
01991  03745 12103747      SPB  GCTL          MERGE A INTØ CTL WØRD     11/28/67   JDJ   *B  00199100
01992  03746 11303724      BRU* DCTY          EXIT FRØM SUBRØUTINE      10/23/67   JDJ   *B  00199200
01993                 *                                                 10/23/67   JDJ   *B  00199300
01994                 * SUBRØUTINE GCTL, TØ MERGE A WITH THE CURRENT CTL10/24/67   JDJ   *B  00199400
01995  03747 25400000 GCTL DAC  0             ENTER SUBRØUTINE          10/24/67   JDJ   *B  00199500
01996  03750 02104405      LBA  CTAD          GET CTL WD ADDRESS        10/24/67   JDJ   *B  00199600
01997  03751 02400000      LBA  0,1           GET CTL WØRD DATA         10/24/67   JDJ   *B  00199700
01998  03752 00000030      ØBA                MERGE A WITH CTL WØRD     10/24/67   JDJ   *B  00199800
01999  03753 02104405      LBA  CTAD          RESTØRE INDEX             10/24/67   JDJ   *B  00199900
02000  03754 03400000      STA  0,1           RESTØRE CTL WITH NEW BITS 10/24/67   JDJ   *B  00200000
02001  03755 11303747      BRU* GCTL          EXIT FRØM SUBRØUTINE      10/24/67   JDJ   *B  00200100
02002                 * SUBRØUTINE STDS, TØ PACK DETAIL LINE            10/24/67   JDJ   *B  00200200
02003  03756 25400000 STDS DAC  0             ENTER SUBRØUTINE          10/24/67   JDJ   *B  00200300
02004  03757 02104404      LBA  PDAD          GET BEG ADR ØF LIND       10/24/67   JDJ   *B  00200400
02005  03760 04104405      STB  CTAD          MØVE TØ CTL ADR AS NEEDED 10/24/67   JDJ   *B  00200500
```

```
03761 14103404       IMS  PDAD      SET PACKER TØ NEXT WØRD    11/14/67  JDJ *B  00200600
03762 00000003       CLA            ZERØ A                     10/24/67  JDJ *B  00200700
03763 03400000       STA  0,1       CLEAR CTL WØRD             10/24/67  JDJ *B  00200800
03764 01000001       LAA  =1        SET SCF TØ CØL 1           10/24/67  JDJ *B  00200900
03765 03100165       STA  SCCC      SET SCF PØINTER TØ CØL 1   10/24/67  JDJ *B  00201000
03766 12107241       SPB  SCF       GET CØLUMN 1               10/24/67  JDJ *B  00201100
03767 15000252       CMA  ='252     TEST FØR AN ASTRISK        10/24/67  JDJ *B  00201200
03770 11103772       BRU  *+2       NØ, CØNTINUE               10/24/67  JDJ *B  00201300
03771 11104044       BRU  STD1      GØ PACK A CØMMENT CARD     10/24/67  JDJ *B  00201400
03772 15000240       CMA  ='240     TEST FØR A SPACE IN CØL 1  10/24/67  JDJ *B  00201500
03773 11103775       BRU  *+2       NØ, CØNTINUE               10/24/67  JDJ *B  00201600
03774 11104003       BRU  STD2      YES, GØ DECØDE CØL 5       10/24/67  JDJ *B  00201700
03775 12104057       SPB  PFXF      DECØDE AND PACK LØCATIØN   10/24/67  JDJ *B  00201800
03776 01100570       LAA  PAFD      PRES ØR ABS ØF FIELD       10/24/67  JDJ *B  00201900
03777 00000316       LSL  3         PØSITIØN MERGE IN LENGTH   10/24/67  JDJ *B  00202000
04000 05100571       AMA  LEDP      ADD IN LENGTH              10/24/67  JDJ *B  00202100
04001 00001416       LSL  12        PØSITIØN TØ BITS 0,1-3     10/24/67  JDJ *B  00202200
04002 12103747       SPB  GCTL      MERGE WITH CTL WØRD        10/24/67  JDJ *B  00202300
04003 12103724 STD2  SPB  DCTY      DECØDE CØL 5               11/07/67  JDJ *B  00202400
04004 01000011       LAA  =9        CØLUMN 9                   10/24/67  JDJ *B  00202500
04005 03100165       STA  SCCC      SET SCF TØ CØL 9 INDIRECT  10/24/67  JDJ *B  00202600
04006 12107241       SPB  SCF       GØ GET A CHARACTER         10/24/67  JDJ *B  00202700
04007 15000252       CMA  ='252     TEST FØR ASTERISK          10/24/67  JDJ *B  00202800
04010 11104012       BRU  *+2       NØ CØNTINUE                10/24/67  JDJ *B  00202900
04011 11104035       BRU  STD3      GØ MERGE AS INDIRECT CLR   10/24/67  JDJ *B  00203000
04012 01000006 STD5  LAA  =6        SET SCF TØ CØL 6           10/24/67  JDJ *B  00203100
04013 03100165       STA  SCCC      TØ GET ØP CØDE             11/14/67  JDJ *B  00203200
04014 12107241       SPB  SCF       GET NEXT CHAR              10/24/67  JDJ *B  00203300
04015 15000240       CMA  ='240     TEST FØR A SPACE           10/24/67  JDJ *B  00203400
04016 11104020       BRU  *+2       NØ CØNTINUE                10/24/67  JDJ *B  00203500
04017 11104026       BRU  STD4      YES GØ PACK VAR FIELD      10/24/67  JDJ *B  00203600
04020 12104057       SPB  PFXF      GØ PACK ØP CØDE FIELD      10/24/67  JDJ *B  00203700
04021 01100570       LAA  PAFD      GET PRESENTS               10/24/67  JDJ *B  00203800
04022 00000316       LSL  3         SHIFT TØ PØSITIØN          10/24/67  JDJ *B  00203900
04023 05100571       AMA  LEDP      ADD IN LENGTH              10/24/67  JDJ *B  00204000
04024 00001016       LSL  8         PØSITIØN TØ BITS 4, 5-7    10/24/67  JDJ *B  00204100
```

```
02042  04025  12103747        SPB   GCTL          MERGE WITH CØNTRØL WØRD   10/24/67   JDJ   *B   002(
02043  04026  01000013  STD4  LAA   =11           SET PØINTER TØ CØL 11     10/24/67   JDJ   *B   00204
02044  04027  03100165        STA   SCCC          SET SCF TØ GET CØL 11     11/18/67   JDJ   *B   00204
02045  04030  12104301        SPB   PVFD          GØ PACK THE VARIABLE FLD  10/24/67   JDJ   *B   002045
02046  04031  14100562  STD6  IMS   PDSW          TURN ØN THE PAD INDICATØR 10/24/67   JDJ   *B   002046
02047  04032  01000076        LAA   ='76          EØD CØDE                  10/24/67   JDJ   *B   002047
02048  04033  12104162        SPB   PACK          PAD AND PACK THE LINE     10/24/67   JDJ   *B   002048
02049  04034  11303756        BRU*  STDS          EXIT FRØM SUBRØUTINE      10/24/67   JDJ   *B   0020490
02050  04035  02100165  STD3  LBA   SCCC          GET SCCC LØCATIØN         10/24/67   JDJ   *B   00205000
02051  04036  16077777        AMB   =-1           DECREMENT BACK TØ CØL 9   10/24/67   JDJ   *B   00205100
02052  04037  01000240        LAA   ='240         SET CHAR TØ SPACE         10/24/67   JDJ   *B   00205200
02053  04040  03500416        STA   BUF+12,1      RESET TØ SPACE            10/24/67   JDJ   *B   00205300
02054  04041  01000004        LAA   ='4           SET INDIRECT BIT 13       10/24/67   JDJ   *B   00205400
02055  04042  12103747        SPB   GCTL          MERGE TØ CURRENT CTL WØRD 10/24/67   JDJ   *B   00205500
02056  04043  11104012        BRU   STD5          RETURN TØ EXAMINE ØP CØDE 10/24/67   JDJ   *B   00205600
02057  04044  01000010  STD1  LAA   ='10          CØMMENT BIT 12            10/24/67   JDJ   *B   00205700
02058  04045  12103747        SPB   GCTL          MERGE INTØ CTL WØRD       10/24/67   JDJ   *B   00205800
02059  04046  01077747        LAA   =-25          PACK IN 25 CHARACTERS     10/24/67   JDJ   *B   00205900
02060  04047  03100575        STA   STCP          SET LØØP CØUNTER          10/24/67   JDJ   *B   00206000
02061  04050  01000252        LAA   ='252         SET A TØ AN ASTRISK FIRST 10/24/67   JDJ   *B   00206100
02062  04051  11104053        BRU   *+2           GET STARTED INTØ LØØP     10/24/67   JDJ   *B   00206200
02063  04052  12107241        SPB   SCF           GET A CHARACTER           10/24/67   JDJ   *B   00206300
02064  04053  12104162        SPB   PACK          PACK A CHARACTER          10/24/67   JDJ   *B   00206400
02065  04054  14100575        IMS   STCP          INCREMENT CØUNTER         10/24/67   JDJ   *B   00206500
02066  04055  11104052        BRU   *-3           LØØP FØR 25 CYCLES        10/24/67   JDJ   *B   00206600
02067  04056  11104031        BRU   STD6          FINISHED PACKING CØMMENTS 10/24/67   JDJ   *B   00206700
02068                  *                                                    10/25/67   JDJ   *B   00206800
02069                  *                                                    10/24/67   JDJ   *B   00206900
02070                  * SUBRØUTINE PFXF, TØ PACK A FIXED FIELD INTØ MEM    10/24/67   JDJ   *B   00207000
02071  04057  25400000  PFXF  DAC   0             ENTER SUBRØUTINE          11/07/67   JDJ   *B   00207100
02072  04060  02000000        LBA   =0            CLEAR SEVERAL INDICATØRS  10/24/67   JDJ   *B   00207200
02073  04061  04100572        STB   PFCT          CHARS READ BY PFXF        10/24/67   JDJ   *B   00207300
02074  04062  04100571        STB   LEDP          LØCATIØNS PACKED BY PFXF  10/24/67   JDJ   *B   00207400
02075  04063  04100570        STB   PAFD          P-A CTL WØRD FØR PRESENTS 10/24/67   JDJ   *B   00207500
02076  04064  14100572  PXF1  IMS   PFCT          INCREMENT CHARS READ SCF  10/24/67   JDJ   *B   00207600
02077  04065  00000005        TAB                 SAVE A IN B               10/24/67   JDJ   *B   00207700
```

```
02078  04066 01100572       LAA  PFCT          GET CHARS READ              10/24/67   JDJ   *B   00207800
02079  04067 15104161       CMA  PFCM          CHARS MAX, NØRMALLY 4       10/24/67   JDJ   *B   00207900
02080  04070 00000033       NØP                NØ                          10/24/67   JDJ   *B   00208000
02081  04071 11104103       BRU  PXF2          NØ, CØNTINUE TØ READ        10/24/67   JDJ   *B   00208100
02082  04072 01100571 PXF5  LAA  LEDP          GET NUMBER ØF CHARS PACKD   10/24/67   JDJ   *B   00208200
02083  04073 00000022       SAZ                TEST FØR ZERØ PACKED        10/24/67   JDJ   *B   00208300
02084  04074 11104076       BRU  *+2           NØ, THEN SET FIELD PRESENT  10/24/67   JDJ   *B   00208400
02085  04075 11104100       BRU  PXF3          YES LEAVE FIELD ABSENT      10/24/67   JDJ   *B   00208500
02086  04076 01000001       LAA  =1            1= PRESET                   10/24/67   JDJ   *B   00208600
02087  04077 03100570       STA  PAFD          SET TØ YES A FIELD FØUND    10/24/67   JDJ   *B   00208700
02088  04100 01000004 PXF3  LAA  =4            RESET NUM TØ SCAN AS 4       11/07/67   JDJ    *B  00208800
02089  04101 03104161       STA  PFCM          RESET SCAN NUMBER           10/24/67   JDJ   *B   00208900
02090  04102 11304057       BRU* PFXF          EXIT FRØM SUBRØUTINE        10/24/67   JDJ   *B   00209000
02091  04103 00000004 PXF2  TBA                RESTØRE A SAVED IN B        10/24/67   JDJ   *B   00209100
02092  04104 15104657 PXF8  CMA  PSGN          USER LIST CØDE PND SIGN     10/24/67   JDJ   *B   00209200
02093  04105 11104107       BRU  *+2           NØ-CØNTINUE LØØKING         10/24/67   JDJ   *B   00209300
02094  04106 11104127       BRU  PXF4          YES-PRØCESS AS MACRØ SYMB   10/24/67   JDJ   *B   00209400
02095                 * - * - * - * - * - * - * - * - * - * - * - * - * - * - * - * - * - *     *D   00209500
02096                 *                  TEST FØR CØNDITIØNAL ASSEMBLY SYMBØLS                   *D   00209600
02097  04107 15104661       CMA  ASBL          ='274 @                                           *D   00209700
02098  04110 11104112       BRU  *+2           NØT =                                             *D   00209800
02099  04111 11104127       BRU  PXF4          =                                                 *D   00209900
02100  04112 15104662       CMA  DSBL          ='276 @                                           *D   00210000
02101  04113 11104115       BRU  *+2           NØT =                                             *D   00210100
02102  04114 11104127       BRU  PXF4          =                                                 *D   00210200
02103                 * - * - * - * - * - * - * - * - * - * - * - * - * - * - * - * - * - *     *D   00210300
02104  04115 15104660       CMA  ATSN          INTERNAL AT SIGN LAVEL      10/24/67   JDJ   *B   00210400
02105  04116 11104120       BRU  *+2           NØ, TRY FØR SPACE           10/24/67   JDJ   *B   00210500
02106  04117 11104127       BRU  PXF4          YES, PRØCESS AS MACRØ SYMB  10/24/67   JDJ   *B   00210600
02107  04120 15000240       CMA  ='240         SPACE                       10/24/67   JDJ   *B   00210700
02108  04121 11104123       BRU  *+2           NØ, CØNTINUE AS NØRMAL CHR  10/24/67   JDJ   *B   00210800
02109  04122 11104072       BRU  PXF5          YES, MUST BE END ØF FIELD   10/24/67   JDJ   *B   00210900
02110  04123 12104162       SPB  PACK          PACK THE CHAR INT MEM       10/24/67   JDJ   *B   00211000
02111  04124 14100571       IMS  LEDP          INCREMENT CHARS PACKED      10/24/67   JDJ   *B   00211100
02112  04125 12107241       SPB  SCF           GET ANØTHER CHAR IN STRNG   10/24/67   JDJ   *B   00211200
02113  04126 11104064       BRU  PXF1          GØ PRØCESS NEXT CHAR EXAM   10/24/67   JDJ   *B   00211300
```

```
02114  04127  12104162 PXF4  SPB   PACK          PACK THE CHAR IN MEM        10/24/67  JDJ  *B  00211400
02115  04130  00000003       CLA                 SET TØ CLEAR                10/24/67  JDJ  *B  00211500
02116  04131  03100542       STA   P4BD          RCD ACCUM FIELD             10/24/67  JDJ  *B  00211600
02117  04132  14100571       IMS   LEDP          INCREMENT CHARS PACKED      10/24/67  JDJ  *B  00211700
02118  04133  14100572 PXF6  IMS   PFCT          INCREMENT CHARS READ        10/24/67  JDJ  *B  00211800
02119  04134  01100572       LAA   PFCT          GET CHAR CØUNT              10/24/67  JDJ  *B  00211900
02120  04135  15104161       CMA   PFCM          CHAR READ VS MAX            10/24/67  JDJ  *B  00212000
02121  04136  00000033       NØP                                           10/24/67  JDJ  *B  00212100
02122  04137  11104144       BRU   PXF7          NØ, GET ANØTHER CHAR        10/24/67  JDJ  *B  00212200
02123  04140  01100606       LAA   PBIN          ØVER, GET ACUMBIN VALUE     10/24/67  JDJ  *B  00212300
02124  04141  12104162       SPB   PACK          PACK THE BINARY LENGTH      10/24/67  JDJ  *B  00212400
02125  04142  14100571       IMS   LEDP          INCREMENT DATA CHAR PACKD   10/24/67  JDJ  *B  00212500
02126  04143  11104072       BRU   PXF5          GØ TEST LØCATIØNS PACKED    10/24/67  JDJ  *B  00212600
02127  04144  12107241 PXF7  SPB   SCF           GET NEX CHAR                10/24/67  JDJ  *B  00212700
02128  04145  12107266       SPB   SCD           TEST FØR NUMERIC            10/24/67  JDJ  *B  00212800
02129  04146  11104150       BRU   *+2           YES IT IS A DIGIT           10/24/67  JDJ  *B  00[illegible]
02130  04147  11104153       BRU   PXF9          NØ IT IS NØT A DIGIT        10/24/67  JDJ  *B  00[illegible]
02131  04150  12104252       SPB   PBCD          PACK DIGIT INTØ 4 BITS      10/24/67  JDJ  *B  00[illegible]
02132  04151  12104261       SPB   MDBN          CØNVERT ACCUM DEC TØ BIN    10/24/67  JDJ  *B  00[illegible]
02133  04152  11104133       BRU   PXF6          GØ CYCLE FØR ANØTHER CHAR   10/24/67  JDJ  *B  00[illegible]
02134  04153  03100573 PXF9  STA   PXWK          TEMP WØRK                   10/24/67  JDJ  *B  00[illegible]
02135  04154  01100606       LAA   PBIN          GET BINARY VALUE            10/24/67  JDJ  *B  00213500
02136  04155  12104162       SPB   PACK          PACK BINARY SIZE INTØ MEM   10/24/67  JDJ  *B  00213600
02137  04156  14100571       IMS   LEDP            INCR DATA PACKED          11/14/67  JDJ  *B  00213700
02138  04157  01100573       LAA   PXWK          GET SAVED CHAR              10/24/67  JDJ  *B  00213800
02139  04160  11104104       BRU   PXF8          GØ TEST THE TYPE ØF CHAR    10/24/67  JDJ  *B  00213900
02140  04161  00000004 PFCM  DATA  4             MAXIMUM CHAR TØ READ PFXF   10/24/67  JDJ  *B  00214000
02141                  *                                                    10/24/67  JDJ  *B  00214100
02142                  *                                                    10/23/67  JDJ  *B  00214200
02143                  * SUBRØUTINE PACK, TØ STØRE ELEMENTS ØF PRØTØS        10/23/67  JDJ  *B  00214300
02144  04162  25400000 PACK  DAC   0               ENTER SUBRØUTINE          10/23/67  JDJ  *B  00214400
02145  04163  03112041       STA   WØRK          SAVE A IN TEMP WØRK         10/23/67  JDJ  *B  00214500
02146  04164  00000005 PAK5  TAB                 MØVE CHAR TØ B              10/23/67  JDJ  *B  00214600
02147  04165  01100561       LAA   PFWD          GET PACKING IND             10/23/67  JDJ  *B  00214700
02148  04166  00000024       SAP                 0=EMPTY NEXT WØRD           10/23/67  JDJ  *B  00214800
02149  04167  11104215       BRU   PAK1          -1=FULL WØRD                10/23/67  JDJ  *B  00214900
```

```
02150  04170  00000004        TBA                MØVE CHAR TØ A FØR MERGE  10/23/67  JDJ  *B  00215000
02151  04171  00001016        LSL   8            SET CHAR TØ A 0-7         10/23/67  JDJ  *B  00215100
02152  04172  03100563        STA   HFUL         STØRE HALF FULL WØRD      10/23/67  JDJ  *B  00215200
02153  04173  01077777        LAA   =-1          SET FLIP-FLØP SW          10/23/67  JDJ  *B  00215300
02154  04174  03100561        STA   PFWD         TØ WØRD WILL BE FULL      10/23/67  JDJ  *B  00215400
02155  04175  01000001 PAK6   LAA   =1           GET A ØNE TØ TEST PAD     10/23/67  JDJ  *B  00215500
02156  04176  15100562        CMA   PDSW         TEST THE PAD SW           10/23/67  JDJ  *B  00215600
02157  04177  11104203        BRU   PAK2         2, THEN SET CLØSE RESET   10/23/67  JDJ  *B  00215700
02158  04200  11104207        BRU   PAK3         1, THEN SET TØ CLØSE PACK 10/23/67  JDJ  *B  00215800
02159  04201  01112041 PAK4   LAA   WØRK         0, NØRMAL PACKING, RESTØR 10/23/67  JDJ  *B  00215900
02160  04202  11304162        BRU*  PACK         EXIT FRØM SUBRØUTINE      10/23/67  JDJ  *B  00216000
02161  04203  00000003 PAK2   CLA                SETUP TØ RESET CLØSE      10/23/67  JDJ  *B  00216100
02162  04204  03100562        STA   PDSW         RESET PAD SW              10/23/67  JDJ  *B  00216200
02163  04205  03100561        STA   PFWD         PACKING WØRD TØ EMPTY     10/23/67  JDJ  *B  00216300
02164  04206  11104201        BRU   PAK4         GØ SETUP TØ EXIT          10/23/67  JDJ  *B  00216400
02165  04207  14100562 PAK3   IMS   PDSW         SET PAD SW TØ CLØSE PAD   10/23/67  JDJ  *B  00216500
02166  04210  01100561        LAA   PFWD         GET PACKING SW            10/23/67  JDJ  *B  00216600
02167  04211  00000023        SAN                -1= NEED TØ SPACE FILL    10/23/67  JDJ  *B  00216700
02168  04212  11104203        BRU   PAK2         QUIT WITH FULL WØRD GØNE  10/23/67  JDJ  *B  00216800
02169  04213  01000240        LAA   ='240       LØAD A WITH A SPACE       10/23/67  JDJ  *B  00216900
02170  04214  11104164        BRU   PAK5         GØ INSERT FILL ØF SPACE   10/23/67  JDJ  *B  00217000
02171  04215  00000003 PAK1   CLA                SET PACKING SW            10/23/67  JDJ  *B  00217100
02172  04216  03100561        STA   PFWD         TØ EMPTY                  10/23/67  JDJ  *B  00217200
02173  04217  01100563        LAA   HFUL         GET PARTICAL WØRD         10/23/67  JDJ  *B  00217300
02174  04220  00000030        ØBA                MERGE IN NEW CHAR         10/23/67  JDJ  *B  00217400
02175  04221  02104404        LBA   PDAD         GET ADDRESS ØF NEXT CELL  10/23/67  JDJ  *B  00217500
02176  04222  03400000        STA   0,1          STØRE DØUBLE WØRD IN MACR 10/23/67  JDJ  *B  00217600
02177  04223  14104404        IMS   PDAD         SET PRØTØ ADR TØ NX CELL  10/23/67  JDJ  *B  00217700
02178  04224  00000004        TBA                MØVE ADDRESS SØ END TEST  10/23/67  JDJ  *B  00217800
02179  04225  15112040        CMA   PMAX         LAST PØSITIØN IN AREA     10/23/67  JDJ  *B  00217900
02180  04226  11104175        BRU   PAK6         GØ TEST PAD SW, IN-BØUNDS 10/23/67  JDJ  *B  00218000
02181  04227  00000033        NØP                                          10/23/67  JDJ  *B  00218100
02182  04230  01077777        LAA   =-1          SET TØ ØUTPUT TØ ASR      10/23/67  JDJ  *B  00218200
02183  04231  55100000        CALL  H$WR         ØUTPUT TØ ASR             10/23/67  JDJ  *B  00218300
02184  04232  35404236        DAC   MØVF         MACRØ ØVF TØ ASR          10/23/67  JDJ  *B  00218400
02185  04233  00000014        DATA  12           12 WØRDS, 3 ARE CØNTRØL   10/23/67  JDJ  *B  00218500
```

```
02186  04234  00000000        HLT                                          10/23/67  JDJ  *B  00218600
02187  04235  11100612        BRU  MNEM            CØMPLETLY RESTART ASSEM 10/23/67  JDJ  *B  00218700
02188  04236  00000261 MØVF   DATA '261,'315,'301,'303,'322,'317,'240      10/23/67  JDJ  *B  00218800
02188  04237  00000315
02188  04240  00000301
02188  04241  00000303
02188  04242  00000322
02188  04243  00000317
02188  04244  00000240
02189  04245  00000317        DATA '317,'326,'306,'215,'212                10/23/67  JDJ  *B  00218900
02189  04246  00000326
02189  04247  00000306
02189  04250  00000215
02189  04251  00000212
02190                  * THE ABØVE MESSAGE IS MACRØ ØVF                     10/23/67  JDJ  *B  00219000
02191                  * SUBRØUTINE PBCD TØ PACK A 12-15 INTØ BCD 4 BIT      10/23/67  JDJ  *B  00219100
02192  04252  25400000 PBCD   DAC  0              ENTER SUBRØUTINE          10/23/67  JDJ  *B  00219200
02193  04253  00001416        LSL  12             SHIFT ØFF ASCII BAIS      10/23/67  JDJ  *B  00219300
02194  04254  00000005        TAB                 MØVE A TØ B FØR PACKING   10/23/67  JDJ  *B  00219400
02195  04255  01100542        LAA  P4BD           GET ACCUMULATED BCD       10/23/67  JDJ  *B  00219500
02196  04256  00000413        FLL  4              CØNCATENATE 4 BITS ØF BCD 10/23/67  JDJ  *B  00219600
02197  04257  03100542        STA  P4BD           STØRE ACCUMULATED DECIMAL 10/23/67  JDJ  *B  00219700
02198  04260  11304252        BRU* PBCD           EXIT FRØM SUBRØUTINE      10/23/67  JDJ  *B  00219800
02199                  *                                                    10/23/67  JDJ  *B  00219900
02200                  * SUBRØUTINE MDBN CØNVERT 2 DEC DIGITS TØ BINARY     10/23/67  JDJ  *B  00220000
02201  04261  25400000 MDBN   DAC  0              ENTER SUBRØUTINE          10/23/67  JDJ  *B  00220100
02202  04262  00000003        CLA                 ŻERØ ADDER                10/23/67  JDJ  *B  00220200
02203  04263  02100542        LBA  P4BD           SET B WITH VALUE IN DEC   10/23/67  JDJ  *B  00220300
02204  04264  00001413        FLL  12             MØVE TENS INTØ ADDER      10/23/67  JDJ  *B  00220400
02205  04265  03100606        STA  PBIN           STØRE VALUE IN TEMP ANSR  10/23/67  JDJ  *B  00220500
02206  04266  00000211        LSA  2         4X   CØNVERT TØ TENS 2(4X*X)   10/23/67  JDJ  *B  00220600
02207  04267  05100606        AMA  PBIN           4X*X                      10/23/67  JDJ  *B  00220700
02208  04270  00000111        LSA  1              2(4X*X)                   10/23/67  JDJ  *B  00220800
02209  04271  03100606        STA  PBIN           STØRE TENS                10/23/67  JDJ  *B  00220900
02210  04272  00000003        CLA                 SET UP TØ ADD UNITS       10/23/67  JDJ  *B  00221000
02211  04273  00000413        FLL  4              GET UNITS                 10/23/67  JDJ  *B  00221100
```

```
02212  04274 05100606       AMA  PBIN          ADD UNITS TØ PARTICAL ANS 10/23/67  JDJ  *B  00221200
02213  04275 00000024       SAP               TEST FØR PØSITIVE VALUE   10/23/67  JDJ  *B  00221300
02214  04276 00000020       ASC               NØ, SET TØ MAGNITUDE      10/23/67  JDJ  *B  00221400
02215  04277 03100606       STA  PBIN         STØRE MAGNITUDE ØF ANSR   10/23/67  JDJ  *B  00221500
02216  04300 11304261       BRU* MDBN         EXIT FRØM SUBRØUTINE      10/23/67  JDJ  *B  00221600
02217                    *                                             10/23/67  JDJ  *B  00221700
02218                    * SUBRØUTINE PVFD, TØ PACK THE VARIABLE FIELD  10/24/67  JDJ  *B  00221800
02219  04301 25400000 PVFD DAC  0             ENTER SUBRØUTINE          10/24/67  JDJ  *B  00221900
02220  04302 00000003       CLA               SET SPACE DELIMITER       10/24/67  JDJ  *B  00222000
02221  04303 03100574       STA  SPDL         TØ THE ØFF STATUS         10/24/67  JDJ  *B  00222100
02222  04304 12107241       SPB  SCF          GET A CHARACTER           10/24/67  JDJ  *B  00222200
02223  04305 15000240       CMA  ='240        IS IT A SPACE             10/24/67  JDJ  *B  00222300
02224  04306 11104310       BRU  *+2          NØ CØNTINUE               10/24/67  JDJ  *B  00222400
02225  04307 11104352       BRU  PVF1         YES TRY FØR ANØTHER SPACE 10/24/67  JDJ  *B  00222500
02226  04310 03104377 PVF9  STA  PVWK         NØ, SAVE CHAR IN TEMP WØRK10/24/67  JDJ  *B  00222600
02227  04311 01000020       LAA  ='20         BIT 11 ØN                 10/24/67  JDJ  *B  00222700
02228  04312 12103747       SPB  GCTL         MERGE PRES ØF VAR FIELD   11/14/67  JDJ  *B  00222800
02229  04313 01104377       LAA  PVWK         RESTØRE A                 10/24/67  JDJ  *B  00222900
02230  04314 15000240 PVF5  CMA  ='240        LØØK FØR A SPACE          10/24/67  JDJ  *B  00223000
02231  04315 11104317       BRU  *+2          NØ, PACK THEN EXAMINE     10/24/67  JDJ  *B  00223100
02232  04316 11104357       BRU  PVF2         YES, TEST SPACE DELIMITER 10/24/67  JDJ  *B  00223200
02233  04317 12104162 PVF7  SPB  PACK         PACK THE CHAR             10/24/67  JDJ  *B  00223300
02234  04320 15104657       CMA  PSGN         USER CHAR PØUND SIGN      10/24/67  JDJ  *B  00223400
02235  04321 11104323       BRU  *+2          NØ, CØNTINUE              10/24/67  JDJ  *B  00223500
02236  04322 11104364       BRU  PVF3         YES READ MØRE CHAR        10/24/67  JDJ  *B  00223600
02237  04323 15104660       CMA  ATSN         INTERNAL AT SIGN          10/24/67  JDJ  *B  00223700
02238  04324 11104326       BRU  *+2          NØ, CØNTINUE              10/24/67  JDJ  *B  00223800
02239  04325 11104364       BRU  PVF3         YES, READ MØRE CHAR       10/24/67  JDJ  *B  00223900
02240  04326 15000247       CMA  ='247        CHAR AN APØS              10/24/67  JDJ  *B  00224000
02241  04327 11104331       BRU  *+2          NØ, CØNTINUE              10/24/67  JDJ  *B  00224100
02242  04330 11104333       BRU  PVF4         YES, LØØK FØR ANØTHER APS 10/24/67  JDJ  *B  00224200
02243  04331 12107241       SPB  SCF          GET NEXT CHAR             10/24/67  JDJ  *B  00224300
02244  04332 11104314       BRU  PVF5         GØ CYCLE CHAR             10/24/67  JDJ  *B  00224400
02245  04333 12107241 PVF4  SPB  SCF          GET ANØTHER CHAR          10/24/67  JDJ  *B  00224500
02246  04334 15000247       CMA  ='247        IS IT AN APØS             10/24/67  JDJ  *B  00224600
02247  04335 11104314       BRU  PVF5         NØ  THEN CYCLE            10/24/67  JDJ  *B  00224700
```

```
02248  04336 11104340       BRU  *+2          YES CØNTINUE                  10/24/67  JDJ  *B  00224800
02249  04337 11104314       BRU  PVF5         NØ  THEN CYCLE                10/24/67  JDJ  *B  00224900
02250  04340 00000005       TAB               SAVE A IN B                   10/24/67  JDJ  *B  00225000
02251  04341 01100574       LAA  SPDL         GET THE SPACE DELIMITER       10/24/67  JDJ  *B  00225100
02252  04342 00000024       SAP               0=ØFF                         10/24/67  JDJ  *B  00225200
02253  04343 11104350       BRU  PVF6         -1=ØN                         10/24/67  JDJ  *B  00225300
02254  04344 01077777       LAA  *-1          SET TØ TURN SPACE DEL ØN       10/24/67  JDJ  *B  00225400
02255  04345 03100574 PVF8  STA  SPDL         STØRE STATUS ØF ØPSITE        10/24/67  JDJ  *B  00225500
02256  04346 00000004       TBA               RESTØRE A                     10/24/67  JDJ  *B  00225600
02257  04347 11104317       BRU  PVF7         GØ PACK APØS                  10/24/67  JDJ  *B  00225700
02258  04350 00000003 PVF6  CLA               SET TØ TURN ØFF SPACE DEL     10/24/67  JDJ  *B  00225800
02259  04351 11104345       BRU  PVF8         STØRE SPACE DEL               10/24/67  JDJ  *B  00225900
02260  04352 12107241 PVF1  SPB  SCF          GET CØLUMN 12                 10/24/67  JDJ  *B  00226000
02261  04353 15000240       CMA  ='240        SPACE                         10/24/67  JDJ  *B  00226100
02262  04354 11104310       BRU  PVF9         NØ, USE AS BEGINNING          10/24/67  JDJ  *B  00226200
02263  04355 11304301 PV10  BRU* PVFD         EXIT FRØM SUBRØUTINE          10/24/67  JDJ  *B  00226
02264  04356 11104310       BRU  PVF9         NØ USE AS BEGINNING           10/24/67  JDJ  *B  00226
02265  04357 00000005 PVF2  TAB               SAVE A IN B                   10/24/67  JDJ  *B  00226
02266  04360 01100574       LAA  SPDL         GET SPACE DEL                 10/24/67  JDJ  *B  002266
02267  04361 00000023       SAN               TEST FØR DEL                  10/24/67  JDJ  *B  002267
02268  04362 11104355       BRU  PV10         0=ØFF, THEN EXIT              10/24/67  JDJ  *B  00226800
02269  04363 11104346       BRU  PVF8+1       -1=ØN, ACCEPT SPACE           10/24/67  JDJ  *B  00226900
02270  04364 00000003 PVF3  CLA               SET DEC ACCUM TØ ZERØ         11/14/67  JDJ  *B  00227000
02271  04365 03100542       STA  P4BD         CLEAR FRR PBCD NULL           11/14/67  JDJ  *B  00227100
02272  04366 12104252       SPB  PBCD         PACK THE DECIMAL DIGIT        10/24/67  JDJ  *B  00227200
02273  04367 12107241       SPB  SCF          GET NEXT CHAR                 10/24/67  JDJ  *B  00227300
02274  04370 12107266       SPB  SCD          TEST FØR DIGIT                10/24/67  JDJ  *B  00227400
02275  04371 11104366       BRU  *-3          GØ PACK DECIMAL AND READ      10/24/67  JDJ  *B  00227500
02276  04372 03104377       STA  PVWK         SAVE A IN MEMØRY              10/24/67  JDJ  *B  00227600
02277  04373 12104261       SPB  MDBN         CØNVERT DEC TØ BINARY         10/24/67  JDJ  *B  00227700
02278  04374 12104162       SPB  PACK         PACK THE CHARACTER            10/24/67  JDJ  *B  00227800
02279  04375 01104377       LAA  PVWK         RESTØRE A FRØM MEMØRY         10/24/67  JDJ  *B  00227900
02280  04376 11104314       BRU  PVF5         GØ PRØCESS CHAR               10/24/67  JDJ  *B  00228000
02281                       *                                               10/24/67  JDJ  *B  00228100
02282  04377 00000001 PVWK  BSS  1            PVFD TEMP WØRD STØRAGE        10/24/67  JDJ  *B  00228200
02283                       * ADDRESS ØR PØINTERS USED BY MACRØ SUBRØUTINES  10/23/67  JDJ  *B  00228300
```

```
02284  04400 25400000 RPAD DAC  0          RELATIVE PØINTER FØR GPLT 10/23/67  JDJ  *B  00228400
02285  04401 25400000 ULAD DAC  0          ABSØLUTE PØINTER FØR UNLA 10/23/67  JDJ  *B  00228500
02286  04402 25400000 IMAG DAC  0          RELATIVE PØINTER FØR PIMG 10/23/67  JDJ  *B  00228600
02287  04403 25400000 RCLM DAC  0          REL PØINTER FØR P4LC      10/23/67  JDJ  *B  00228700
02288  04404 25400000 PDAD DAC  0          ABS PACK PRØTØ ADDRESS    10/23/67  JDJ  *B  00228800
02289  04405 25400000 CTAD DAC  0          ABS CTL WD ADRS    DCTY   10/23/67  JDJ  *B  00228900
02290  04406 35410542 NPAD DAC  MARA       BEG ADDRESS ØF MACRØ AREA 10/23/67  JDJ  *B  00229000
02291  04407 25400000 LANL DAC  0          LAST ADR ASGN TØ NAME TAB 10/23/67  JDJ  *B  00229100
02292  04410 35412115 BANT DAC  TYPM       BEGINNING ADR ØF NAME TAB 10/23/67  JDJ  *B  00229200
02293                 * SUBRØUTINE EXCL, TØ EXPAND THE MACRØ CTL WØRD 10/23/67  JDJ  *B  00229300
02294  04411 25400000 EXCL DAC  0          ENTER SUBRØUTINE          10/23/67  JDJ  *B  00229400
02295  04412 02104401      LBA  ULAD       ADDRESS ØF CTL WØRD       10/23/67  JDJ  *B  00229500
02296  04413 14104401      IMS  ULAD       SET UNLA TØ FIRST DATA WD 10/23/67  JDJ  *B  00229600
02297  04414 00000003      CLA             ZERØ A FØR                10/23/67  JDJ  *B  00229700
02298  04415 03100540      STA  U8BT       UNLA FLIP-FLØP SW         10/23/67  JDJ  *B  00229800
02299  04416 01400000      LAA  0,1        GET CØNTRØL WØRD          11/15/67  JDJ  *B  00229900
02300  04417 03100547      STA  MLØC       SET LØCATIØN INDICATØR    11/15/67  JDJ  *B  00230000
02301  04420 00000116      LSL  1          SHIFT ØFF BIT 0           11/15/67  JDJ  *B  00230100
02302  04421 02000000      LBA  =0         CLEAR B                   11/15/67  JDJ  *B  00230200
02303  04422 00000314      FRL  3          PØSITIØN LENGTH ØF LØC    11/15/67  JDJ  *B  00230300
02304  04423 04100550      STB  LLFD       STØRE LENGTH ØF LØCATIØN  11/15/67  JDJ  *B  00230400
02305  04424 03100551      STA  MØPC       STØRE ØP CØDE PRESENTS    11/15/67  JDJ  *B  00230500
02306  04425 00000116      LSL  1          SHIFT ØFF BIT 4           11/15/67  JDJ  *B  00230600
02307  04426 02000000      LBA  =0         CLEAR B                   11/15/67  JDJ  *B  00230700
02308  04427 00000314      FRL  3          PØSITIØN LENGTH ØF ØP     11/15/67  JDJ  *B  00230800
02309  04430 04100552      STB  LØPC       STØRE LENGTH ØF ØP CØDE                      00230900
02310  04431 02000000      LBA  =0         CLEAR B                   11/15/67  JDJ  *B  00231000
02311  04432 00000314      FRL  3          PØSITIØN TYPE CØDE        11/15/67  JDJ  *B  00231100
02312  04433 04100553      STB  TØPC        TYPE ØP CØDE             11/15/67  JDJ  *B  00231200
02313  04434 03100554      STA  MVFD       VAR FIELD PRESENT         11/15/67  JDJ  *B  00231300
02314  04435 02077774      LBA  =-4        SET LØØP CØUNTER          11/15/67  JDJ  *B  00231400
02315  04436 00000116      LSL  1          SET BIT IN SIGN           11/15/67  JDJ  *B  00231500
02316  04437 03500561      STA  MCØL+4,1   STØRE MCØL,MIØC,ERRM,EØMR 11/15/67  JDJ  *B  00231600
02317  04440 00000026      IBS             CØUNT 4 TIMES             11/15/67  JDJ  *B  00231700
02318  04441 11104436      BRU  *-3        CØNTINUE TØ  STØRE        11/15/67  JDJ  *B  00231800
02319  04442 11304411      BRU* EXCL       EXIT FRØM SUBRØUTINE      10/23/67  JDJ  *B  00231900
```

```
02320                    *                                                    10/23/67   JDJ   *B   00232000
02321                    *                                                    10/23/67   JDJ   *B   00232100
02322                    * SUBRØUTINE PP2W, TØ PACK THE PARAMETER LIST        10/23/67   JDJ   *B   00232200
02323                    *                                                    10/23/67   JDJ   *B   00232300
02324  04443 25400000 PP2W DAC  0              ENTER SUBRØUTINE              10/23/67   JDJ   *B   00232400
02325  04444 01077740      LAA  =-32           SET TEMP CØUNTER FØR SAVE      10/23/67   JDJ   *B   00232500
02326  04445 03112041      STA  WØRK           ING THE LIST                   10/23/67   JDJ   *B   00232600
02327  04446 02077700      LBA  =-64           SEL SCANNER TØ CARD GET        10/23/67   JDJ   *B   00232700
02328  04447 04112042      STB  WØRK+1         SAVE IN TEMP WØRK              11/17/67   JDJ   *B   00232800
02329  04450 02112042 PPW1 LBA  WØRK+1         GET IMAGE PØINTER              11/17/67   JDJ   *B   00232900
02330  04451 01500530      LAA  BUF+22+64,1    AREA ADJUSTED, GET CHAR I      10/23/67   JDJ   *B   00233000
02331  04452 00001016      LSL  8              MØVE LH TØ BITS 0-7            10/23/67   JDJ   *B   00233100
02332  04453 02500531      LBA  BUF+23+64,1    CHAR I-TH PLUS 1               10/23/67   JDJ   *B   00233200
02333  04454 00000030      ØRA                 MERGE CHARS I AND I+1          10/23/67   JDJ   *B   00233300
02334  04455 14112042      IMS  WØRK+1         SET PØINTER TØ                 10/23/67   JDJ   *B   00233400
02335  04456 14112042      IMS  WØRK+1         SECØND SET ØF PAIR             10/23/67   JDJ   *B   00
02336  04457 00000033      NØP                                                10/23/67   JDJ   *B   00
02337  04460 02112041      LBA  WØRK           GET PACKER PØINTER             10/23/67   JDJ   *B   00
02338  04461 03512105      STA  PLST+32,1      PACK FRØM LEFT TØ RIGHT        10/23/67   JDJ   *B   00233
02339  04462 14112041      IMS  WØRK                                          11/07/67   JDJ   *B   002339
02340  04463 11104450      BRU  PPW1           GØ CYCLE THRØUGH LIST          10/23/67   JDJ   *B   00234
02341  04464 11304443      BRU* PP2W           EXIT FRØM SUBRØUTINE           10/23/67   JDJ   *B   00234100
02342                    *                                                    10/23/67   JDJ   *B   00234200
02343                    *                                                    10/23/67   JDJ   *B   00234300
02344                    * SUBRØUTINE PAST, TØ GENERATE THE INTERNAL TAGS     10/23/67   JDJ   *B   00234400
02345  04465 25400000 PAST DAC  0              ENTER SUBRØUTINE              10/23/67   JDJ   *B   00234500
02346  04466 01100543      LAA  A999           TEST FØR ASSIGNMENT ØVF        10/23/67   JDJ   *B   00234600
02347  04467 00000024      SAP                 0=ØK SØ FAR                    10/23/67   JDJ   *B   00234700
02348  04470 11104544      BRU  PST1           ERRØR, EXIT FRØM SUBRØUTIN     10/23/67   JDJ   *B   00234800
02349  04471 02100544      LBA  HPXX           HIGHEST INT LAB PER MACRØ      10/23/67   JDJ   *B   00234900
02350  04472 00000004      TBA                 GET INDICATØR TØ TEST          11/15/67   JDJ   *B   00235000
02351  04473 00000022      SAZ                 TEST IF ANY INTERNAL LAB       11/15/67   JDJ   *B   00235100
02352  04474 11104476      BRU  *+2            YES, CØNTINUE                  11/15/67   JDJ   *B   00235200
02353  04475 11304465      BRU* PAST           NØ,EXIT                        11/15/67   JDJ   *B   00235300
02354  04476 00000003      CLA                  RESET                         11/15/67   JDJ   *B   00235400
02355  04477 03100544      STA  HPXX           HIGHEST INT LAB USED           11/15/67   JDJ   *B   00235500
```

```
02356  04500  03112250        STA   AHTU          SET TØ INVALID BASE          11/17/67  JDJ  *B  00235600
02357  04501  02512250        LBA   AHTU,1        GET DECIMAL WØRD 3 DIGITS    10/23/67  JDJ  *B  00235700
02358  04502  00000413        FLL   4             SETUP HUNDREDS TØ BE STØR    10/23/67  JDJ  *B  00235800
02359  04503  03112043        STA   WØRK+2         HUNDREDS IN DECIMAL          10/23/67  JDJ  *B  00235900
02360  04504  00000003        CLA                                              10/24/67  JDJ  *B  00236000
02361  04505  00000413        FLL   4             MØVE IN TENS                 10/24/67  JDJ  *B  00236100
02362  04506  03112042        STA   WØRK+1        AND STØRE                    10/24/67  JDJ  *B  00236200
02363  04507  00000003        CLA                                              10/24/67  JDJ  *B  00236300
02364  04510  00000413        FLL   4             MØVE IN UNITS                10/24/67  JDJ  *B  00236400
02365  04511  03112041        STA   WØRK          AND STØRE FØR TØTAL BASE     10/24/67  JDJ  *B  00236500
02366  04512  01077760        LAA   =-16          SET LØØP CØUNTER             10/24/67  JDJ  *B  00236600
02367  04513  03112044        STA   WØRK+3        TØ CYCLE 16 ADDITIØNS        10/24/67  JDJ  *B  00236700
02368  04514  02000000  PST2  LBA   =0            SET B TØ ZERØ                10/24/67  JDJ  *B  00236800
02369  04515  14112041        IMS   WØRK          INCREMENT UNTTS              11/15/67  JDJ  *B  00236900
02370  04516  01112041        LAA   WØRK          GET UNITS CURRENT VALUE      10/24/67  JDJ  *B  00237000
02371  04517  15000011        CMA   =9            DIGIT ØVERFLØW               11/15/67  JDJ  *B  00237
02372  04520  00000033        NØP                 NØ                           10/24/67  JDJ  *B  00237
02373  04521  11104545        BRU   PST3          NØ GØ GENERATE DEC WØRD      10/24/67  JDJ  *B  00237
02374  04522  00000003        CLA                 ZERØ ØVERFLØW                11/15/67  JDJ  *B  00237
02375  04523  00000412        FRA   4             PØSITIØN UNITS DIGIT         10/24/67  JDJ  *B  00237
02376  04524  03112041        STA   WØRK          SET UNITS TØ ZERØ            10/24/67  JDJ  *B  00237
02377  04525  14112042        IMS   WØRK+1        INCREMENT TENS               11/15/67  JDJ  *B  00237
02378  04526  01112042        LAA   WØRK+1        GET TENS PØSITIØN            10/24/67  JDJ  *B  00237800
02379  04527  15000011        CMA   =9            DIGIT ØVERFLØW               11/15/67  JDJ  *B  00237900
02380  04530  00000033        NØP                 NØ                           10/24/67  JDJ  *B  00238000
02381  04531  11104562        BRU   PST4          NØ GØ GENERATE DEC WØRD      10/24/67  JDJ  *B  00238100
02382  04532  00000003        CLA                 ZERØ ØVERFLØW                11/15/67  JDJ  *B  00238200
02383  04533  00000412        FRA   4             MØVE DECIMAL ZERØ            10/24/67  JDJ  *B  00238300
02384  04534  03112042        STA   WØRK+1        STØRE ZERØ IN TENS           10/24/67  JDJ  *B  00238400
02385  04535  14112043        IMS   WØRK+2        INCREMENT HUNDREDS           11/15/67  JDJ  *B  00238500
02386  04536  01112043        LAA   WØRK+2        GET HUNDREDS                 10/24/67  JDJ  *B  00238600
02387  04537  15000011        CMA   =9            DIGIT ØVERFLØW               11/15/67  JDJ  *B  00238700
02388  04540  00000033        NØP                 NØ                           10/24/67  JDJ  *B  00238800
02389  04541  11104564        BRU   PST5          NØ, GØ GENERATE DEC WØRD     10/24/67  JDJ  *B  00238900
02390  04542  01077777        LAA   =-1           TURN ØN A999 ERRØR FLAG      10/24/67  JDJ  *B  00239000
02391  04543  03100543        STA   A999          SET ØVERFLØW FLAG            10/24/67  JDJ  *B  00239100
```

```
 2392  04544 11304465 PST1 BRU* PAST          EXIT FRØM SUBRØUTINE      10/24/67  JDJ  *B  00239200
 2393  04545 03112041 PST3 STA  WØRK          SAVE CURRENT UNITS        10/24/67  JDJ  *B  00239300
 2394  04546 00000412       FRA  4           MØVE TØ DECIMAL BUILD     10/24/67  JDJ  *B  00239400
 2395  04547 01112042       LAA  WØRK+1      GET TENS DIGIT            10/24/67  JDJ  *B  00239500
 2396  04550 00000412 PST6 FRA  4           MØVE IN TENS              10/24/67  JDJ  *B  00239600
 2397  04551 01112043       LAA  WØRK+2      GET HUNDREDS              10/24/67  JDJ  *B  00239700
 2398  04552 00000412 PST7 FRA  4           MØVE IN HUNDREDS          10/24/67  JDJ  *B  00239800
 2399  04553 00000004       TBA              GET DECIMAL WØRD          10/24/67  JDJ  *B  00239900
 2400  04554 00000116       LSL  1           LEFT JUSTIFY              10/24/67  JDJ  *B  00240000
 2401  04555 02112044       LBA  WØRK+3      GET TABLE PØINTER         10/24/67  JDJ  *B  00240100
 2402  04556 03512271       STA  AHTU+17,1   STØRE IN TABLE            11/17/67  JDJ  *B  00240200
 2403  04557 14112044       IMS  WØRK+3      INCREMENT LØØP CØUNTER    10/24/67  JDJ  *B  00240300
 2404  04560 11104514       BRU  PST2        MØRE CYCLES NECESSARY     10/24/67  JDJ  *B  00240400
 2405  04561 11104544       BRU  PST1        GØ EXIT FRØM SUBRØUTINE   10/24/67  JDJ  *B  00240500
 2406  04562 03112042 PST4 STA  WØRK+1      STØRE TENS                10/24/67  JDJ  *B  00240600
 2407  04563 11104550       BRU  PST6        GØ GENERATE DEC WØRD      10/24/67  JDJ  *B  00240700
 2408  04564 03112043 PST5 STA  WØRK+2      STØRE HUNDREDS            10/24/67  JDJ  *B  00240800
 2409  04565 11104552       BRU  PST7        GØ GENERATE DEC WØRD      10/24/67  JDJ  *B  00240900
 2410                       *                                          10/24/67  JDJ  *B  00241000
 2411                       * SUBRØUTINE EMPT, TØ EXPAND A MACRØ PRØTØTYPE 10/25/67  JDJ  *B  00241100
 2412  04566 25400000 EMPT DAC  0           ENTER SUBRØUTINE          10/25/67  JDJ  *B  00241200
 2413  04567 01100602       LAA  EMSW        GET INITICAL SW           10/25/67  JDJ  *B  00241300
 2414  04570 00000024       SAP              0= FIRST TIME             10/25/67  JDJ  *B  00241400
 2415  04571 11104576       BRU  EMP1        -1= IN PRØCESS            10/25/67  JDJ  *B  00241500
 2416  04572 01077777       LAA  =-1         TURN SW ØN                10/25/67  JDJ  *B  00241600
 2417  04573 03100602       STA  EMSW        WITH A -1                 10/25/67  JDJ  *B  00241700
 2418  04574 12104443       SPB  PP2W        PACK THE PAR LIST         10/25/67  JDJ  *B  00241800
 2419  04575 12104465       SPB  PAST        PØSITIØN THE INTERNAL TAB 10/25/67  JDJ  *B  00241900
 2420  04576 12104411 EMP1 SPB  EXCL        EXPAND THE CTL WØRD       10/25/67  JDJ  *B  00242000
 2421  04577 01000001       LAA  =1          SET THE IMAGE PØINTER 1   10/25/67  JDJ  *B  00242100
 2422  04600 03104402       STA  IMAG        SET TØ CØLUMN 1           10/25/67  JDJ  *B  00242200
 2423  04601 01000240       LAA  ='240       BLANK THE IMAGE AREA      10/25/67  JDJ  *B  00242300
 2424  04602 02077660       LBA  =-80        SET INDEX TØ FULL SCALE   10/25/67  JDJ  *B  00242400
 2425  04603 03500535       STA  BUF+11+80,1 STØRE ALL BLANKS          10/25/67  JDJ  *B  00242500
 2426  04604 00000026       IBS              IN THE ENTIRE             10/25/67  JDJ  *B  00242600
 2427  04605 11104603       BRU  *-2         IMAGE AREA                10/25/67  JDJ  *B  00242700
```

```
04606 01100560      LAA  EØMR     GET EØM INDICATØR            10/25/67  JDJ  *B  00242800
04607 00000024      SAP           ZERØ SIGN BIT MEANS NØ       11/15/67  JDJ  *B  00242900
04610 11104647      BRU  EMP2     1= YES IT IS EØM             10/25/67  JDJ  *B  00243000
04611 01100555      LAA  MCØL     GET CØMMENT SWITCH           10/25/67  JDJ  *B  00243100
04612 00000024      SAP           ZERØ SIGN BIT MEANS NØ       11/15/67  JDJ  *B  00243200
04613 11104651      BRU  EMP3     1= YES IT IS A CØMMENT       10/25/67  JDJ  *B  00243300
04614 01100547      LAA  MLØC     GET PRESENTS ØF LØCATIØN     10/25/67  JDJ  *B  00243400
04615 00000024      SAP           ZERØ SIGN BIT MEANS NØ       11/15/67  JDJ  *B  00243500
04616 11104721      BRU  EMP4     1= YES PRØCESS THE LØCATIØ10/25/67     JDJ  *B  00243600
04617 12104755 EMP5 SPB  C5XP     EXPAND CØLUMN 5 TYPE CØDE    10/25/67  JDJ  *B  00243700
04620 01100551      LAA  MØPC     GET PRESENTS ØF ØP CØDE      10/25/67  JDJ  *B  00243800
04621 00000024      SAP           ZERØ SIGN BIT MEANS NØ       11/15/67  JDJ  *B  00243900
04622 11104727      BRU  EMP6     1= YES PRØCESS               10/25/67  JDJ  *B  00244000
04623 01100556 EMP7 LAA  MIØC     GET INDIRECT ØP CØDE         10/25/67  JDJ  *B  00244100
04624 00000024      SAP           ZERØ SIGN BIT MEANS NØ       11/15/67  JDJ  *B  00244200
04625 11104737      BRU  EMP8     1= YES PRØCESS INDIRECT      10/25/67  JDJ  *B  00244300
04626 01100557 EMP9 LAA  ERRM     GET ERRØR BIT                10/25/67  JDJ  *B  00244400
04627 00000024      SAP           ZERØ SIGN BIT MEANS NØ       11/15/67  JDJ  *B  00244500
04630 12102330      SPB  FWER     1= YES PRØCESS ERRØR         10/25/67  JDJ  *B  00244600
04631 01100554      LAA  MVFD     0= NØ GET VAR PRESENTS       10/25/67  JDJ  *B  00244700
04632 00000024      SAP           ZERØ SIGN BIT MEANS NØ       11/15/67  JDJ  *B  00244800
04633 11104744      BRU  EM12     1= YES PRØCESS               10/25/67  JDJ  *B  00244900
04634 12105127      SPB  UNLA     GET NEXT CHAR FRØM STRING    10/25/67  JDJ  *B  00245000
04635 15000076      CMA  ='76     TEST FØR END ØF DETAIL       10/25/67  JDJ  *B  00245100
04636 11104640      BRU  *+2      NØ CØNTINUE                  10/25/67  JDJ  *B  00245200
04637 11104664      BRU  TFLG     GØ TEST SKIP/NØ-SKIP FLAG                   *D  00245300
04640 01000332      LAA  ='332    NØ SØFTWARE ERRØR Z          10/25/67  JDJ  *B  00245400
04641 03100404      STA  BUF+2    PLACE A 8 IN ØUTPUT AREA     10/25/67  JDJ  *B  00245500
04642 00000003 EM14 CLA           ZERØ SWITCHES                10/25/67  JDJ  *B  00245600
04643 03100603      STA  EXPN     EXPAND MACRØ SW              10/25/67  JDJ  *B  00245700
04644 03100602      STA  EMSW     TURNØFF INITIAL SW           10/25/67  JDJ  *B  00245800
04645 03104663      STA  BFLG     CLEAR SKIP/NØ-SKIP FLAG                     *D  00245900
04646 11304566      BRU* EMPT     RETURN                                      *D  00246000
04647 14104566 EMP2 IMS  EMPT     SET TØ EXIT+1                11/28/67  JDJ  *B  00246100
04650 11104642      BRU  EM14     GØ CLØSE EMPT SUBRØUTINE     10/25/67  JDJ  *B  00246200
04651 12105127 EMP3 SPB  UNLA     GET A CHARACTER ØF CØMMNT    10/25/67  JDJ  *B  00246300
```

```
04652 15000076      CMA  =*76         TEST FØR END ØF DETAIL    11/09/67    JDJ    *B 00246400
04653 11104655      BRU  *+2          NØ CØNTINUE               10/25/67   JDJ   *B   00246500
04654 11104664      BRU  TFLG          GØ TEST SKIP/NØ-SKIP FLAG                     *D 00246600
04655 12104764      SPB  PIMG         NØ ØUTPUT CHARACTER       10/25/67   JDJ   *B   00246700
04656 11104651      BRU  EMP3         GØ CYCLE TØ EØL SENTINAL  10/25/67   JDJ   *B   00246800
04657 00000243 PSGN DATA '243         PØUND SIGN - SYMBØL LIST                        00246900
04660 00000300 ATSN DATA '300         AT SIGN - INTERNAL LABEL                        00247000
04661 00000274 ASBL DATA '274                                                      *D 00247100
04662 00000276 DSBL DATA '276                                                      *D 00247200
04663 00000000 BFLG DATA 0            CØNDITIØNAL ASSEMBLY FLAG                    *D 00247300
               * - * - * - * - * - * - * - * - * - * - * - * - * - * - * - * - *   *D 00247400
               *        DETERMINE WHETHER NEXT LINE ØF CØDE SHØULD BE ASSEMBLED    *D 00247500
04664 01104663 TFLG LAA  BFLG         CØNDITIØNAL ASSEMBLY FLAG                    *D 00247600
04665 00000023      SAN               SKIP IF SET                                  *D 00247700
04666 11104747      BRU  EM13         NØT SET, CØNTINUE                            *D 00247800
04667 00000020      ASC               CHANGE SIGN                                  *D 00[illegible]
04670 00000022      SAZ               SKIP IF A=0                                  *D 00[illegible]
04671 11104677      BRU  TST2                                                      *D 00[illegible]
04672 01100416      LAA  BUF+12       CØLUMN 1 IN CARD IMAGE                       *D 0024[illegible]
04673 06000240      SMA  ='240                                                     *D 002483[illegible]
04674 00000022      SAZ               SKIP IF IT WAS A BLANK                       *D 002484[illegible]
04675 11104703      BRU  BUMP                                                      *D 00248500
04676 11104702      BRU  BMP2         GØ SKIP TØ NEXT '76 IN MACRØ PRØTØTYPE       *D 00248600
04677 01100416 TST2 LAA  BUF+12       CØLUMN 1 IN CARD IMAGE                       *D 00248700
04700 06000240      SMA  ='240                                                     *D 00248800
04701 00000022      SAZ               SKIP IF IT WAS A BLANK                       *D 00248900
04702 12104713 BMP2 SPB  SK76         SKIP TØ NEXT '76 IN PRØTØTYPE                *D 00249000
04703 01100540 BUMP LAA  U8BT         RH-LH INDICATØR                              *D 00249100
04704 00000023      SAN                                                            *D 00249200
04705 11104711      BRU  ZFLG         DØN'T INCREMENT PRØTØTYPE PØINTER            *D 00249300
04706 14104401      IMS  ULAD          BUMP PRØTØTYPE PØINTER                      *D 00249400
04707 00000003      CLA                                                            *D 00249500
04710 03100540      STA  U8BT                                                      *D 00249600
04711 03104663 ZFLG STA  BFLG         CLEAR FLAG                                   *D 00249700
04712 11104576      BRU  EMP1         GØ EXPAND CØNTRØL WØRD                       *D 00249800
               *                                                                   *D 00249900
```

```
02500  04713 25400000 SK76 DAC  **          SKIP TØ NEXT '76 IN PRØTØTYPE                    *D [ 25.00
02501  04714 12105127 NX76 SPB  UNLA        FETCH A CHARACTER                                *D 00250100
02502  04715 15000076       CMA  ='76                                                        *D 00250200
02503  04716 11104714       BRU  NX76       NØT =                                            *D 00250300
02504  04717 11304713       BRU* SK76       =, RETURN                                        *D 00250400
02505  04720 11104714       BRU  NX76       NØT =                                            *D 00250500
02506                * - * - * - * - * - * - * - * - * - * - * - * - * - * - * - * - * - *    *D 00250600
02507  04721 01077777 EMP4 LAA  =-1          TURN ØN CØUNT CØNTRL SW   10/25/67   JDJ   *B   00250700
02508  04722 03100577       STA  CDCT       FØR DCØM                  10/25/67   JDJ   *B   00250800
02509  04723 01100550       LAA  LLFD       GET LENGTH BY PFXF        10/25/67   JDJ   *B   00250900
02510  04724 03100600       STA  DCMX       SET TØ FIXED VALUE DCØM   10/25/67   JDJ   *B   00251000
02511  04725 12105004       SPB  DCØM       EXPAND THE LØCATIØN FIELD 10/25/67   JDJ   *B   00251100
02512  04726 11104617       BRU  EMP5       GØ EXPAND CØL 5           10/25/67   JDJ   *B   00251200
02513  04727 01000006 EMP6 LAA  =6          IMAGE PØINTER             10/25/67   JDJ   *B   00251300
02514  04730 03104402       STA  IMAG       IMAGE ØUTPUT BEGIN        10/25/67   JDJ   *B   00251400
02515  04731 01077777       LAA  =-1        TURN ØN CØUNT CØNTRØL     10/25/67   JDJ   *B   00 515[0
02516  04732 03100577       STA  CDCT       FØR DCØM ØP CØDE          10/25/67   JDJ   *B   00 51[0
02517  04733 01100552       LAA  LØPC       GET SIZE ØF ØP CØDE       10/25/67   JDJ   *B   00 517[
02518  04734 03100600       STA  DCMX       SET ØT PRØPE LENGTH       10/25/67   JDJ   *B   00 518[
02519  04735 12105004       SPB  DCØM       GØ EXPAND THE ØP CØDE     10/25/67   JDJ   *B   00 5190
02520  04736 11104623       BRU  EMP7       GØ TEST FØR INDIRECT BIT  10/25/67   JDJ   *B   00 52000
02521  04737 01000011 EMP8 LAA  =9          SET IMAGE PØINTER TØ 9    10/25/67   JDJ   *B   00 52100
02522  04740 03104402       STA  IMAG       INDIRECT BIT              10/25/67   JDJ   *B   00252200
02523  04741 01000252       LAA  ='252      LAØD A WITH ASTRISK       10/25/67   JDJ   *B   00252300
02524  04742 12104764       SPB  PIMG       TØ BE PLACED IN AREA      10/25/67   JDJ   *B   00252400
02525  04743 11104626       BRU  EMP9       GØ TEST FØR ERRØR BIT     10/25/67   JDJ   *B   00252500
02526  04744 01000013 EM12 LAA  =11         SET IMAGE ØUTPUT          10/25/67   JDJ   *B   00252600
02527  04745 03104402       STA  IMAG       TØ CØLUMN 11              10/25/67   JDJ   *B   00252700
02528  04746 12105004       SPB  DCØM       GØ EXPAND THE VARIABLE FL 10/25/67   JDJ   *B   00252800
02529  04747 01000307 EM13 LAA  ='307       G TØ INDICATE             01/13/68 JDJ *C        00252900
02530  04750 03100375       STA  LNØ+4      GENERATED CØDE            01/13/68 JDJ *C        00253000
02531  04751 01100540       LAA  U8BT       GET UNLA LH-RH SW         01/13/68 JDJ *C        00253100
02532  04752 00000024       SAP             PLUS MEANS EMPTY          10/25/67   JDJ   *B   00253200
02533  04753 14104401       IMS  ULAD       MINUS MEANS PADDED, INCRMT10/25/67   JDJ   *B   00253300
02534  04754 11304566 EM10 BRU* EMPT        EXIT FRØM SUBRØUTINE      10/25/67   JDJ   *B   00253400
02535                * TAG NAMED EM11 WAS REMØVED BEFØRE CØDING       10/25/67   JDJ   *B   00253500
```

```
02536                    *                                                    10/25/67   JDJ   *B    00253600
02537                    *                                                    10/24/67   JDJ   *B    00253700
02538                    * SUBRØUTINE C5XP TØ RESTØRE CØLUMN 5 AS TYPE        10/23/67   JDJ   *B    00253800
02539  04755 25400000 C5XP DAC  0              ENTER SUBRØUTINE              10/23/67   JDJ   *B    00253900
02540  04756 02100553      LBA  TØPC          TYPE ØP CØDE FRØM CTL WRD     10/23/67   JDJ   *B    00254000
02541  04757 01512105      LAA  TYPE,1        GET PRØPER CHARACTER          10/23/67   JDJ   *B    00254100
02542  04760 02000005      LBA  =5            SET IMAGE PØINTER TØ CØL5     10/23/67   JDJ   *B    00254200
02543  04761 04104402      STB  IMAG          STØRE THRU B FØR PIMG         10/23/67   JDJ   *B    00254300
02544  04762 12104764      SPB  PIMG          PLACE RESTØRED CHARA IN 5     10/23/67   JDJ   *B    00254400
02545  04763 11304755      BRU* C5XP                                        10/23/67   JDJ   *B    00254500
02546                    *                                                    10/23/67   JDJ   *B    00254600
02547                    * SUBRØUTINE TØ PLACE A 0-15 IN THE IMAGE AREA      10/23/67   JDJ   *B    00254700
02548  04764 25400000 PIMG DAC  0              ENTER SUBRØUTINE              10/23/67   JDJ   *B    00254800
02549  04765 02104402      LBA  IMAG          GET REL ADR ØF IMAGE          10/23/67   JDJ   *B    00254900
02550  04766 03500415      STA  BUF+11,1      STØRE CHAR IN NEXT SPACE      10/23/67   JDJ   *B    00255000
02551  04767 00000006      IAB                SAVE A                        01/22/68 JDJ *C       00255
02552  04770 15000110      CMA  =72           TEST FØR END                  01/22/68 JDJ *C       00255
02553  04771 00000033      NØP                ØF IMAGE AREA                 01/22/68 JDJ *C       00255
02554  04772 11104774      BRU  *+2           NØ                            01/22/68 JDJ *C       00255
02555  04773 11104777      BRU  PIM1          YES ERRØR                     01/22/68 JDJ *C       00255
02556  04774 00000006      IAB                                                                    00255
02557  04775 14104402      IMS  IMAG          MØVE PØINTER UP PLUS 1        10/23/67   JDJ   *B    00255700
02558  04776 11304764      BRU* PIMG          EXIT FRØM SUBRØUTINE          10/23/67   JDJ   *B    00255800
02559  04777 12102330 PIM1 SPB  FWER          ERRØR,TØØ MUCH DATA           01/13/68 JDJ *C       00255900
02560  05000 12101614      SPB  LIN           LIST THE ERRØR                01/23/68 JDJ *        00256000
02561  05001 12102132      SPB  PNCH                                        MDL 1/31/69 *C        00256100
02562  05002 14100173      IMS  LC            RESERVE A WØRD                01/23/68 JDJ *        00256200
02563  05003 11104647      BRU  EMP2          EXIT TØ ERRØR                 01/23/68 JDJ *        00256300
02564                    * SUBRØUTINE DCØM, TØ EXPAND A DETAIL LINE           10/25/67   JDJ   *B    00256400
02565  05004 25400000 DCØM DAC  0              ENTER SUBRØUTINE              10/25/67   JDJ   *B    00256500
02566  05005 00000003      CLA                SET ZERØ CHARS                10/25/67   JDJ   *B    00256600
02567  05006 03100576      STA  DCUN          UNLACED BY DCØM EXPANSIØN     10/25/67   JDJ   *B    00256700
02568  05007 01100577 DCM1 LAA  CDCT          CØUNT CØNTRØL SW              10/25/67   JDJ   *B    00256800
02569  05010 00000024      SAP                0 = NØ USE CØNTINUØUS         10/25/67   JDJ   *B    00256900
02570  05011 11105034      BRU  DCM2          -1= YES USE FIXED NUMBER      10/25/67   JDJ   *B    00257000
02571  05012 12105127 DCM6 SPB  UNLA          GET A PACKED CHAR             10/25/67   JDJ   *B    00257100
```

```
02572  05013 15000076        CMA   ='76     TEST FØR END ØF DETAIL     10/25/67  JDJ  *B    00257200
02573  05014 11105016        BRU   *+2      NØ, CØNTINUE               10/25/67  JDJ  *B    0 257300
02574  05015 11105041        BRU   DCM3     YES, SETUP EXIT            10/25/67  JDJ  *B    0 257400
02575  05016 15104657        CMA   PSGN     TEST FØR USER INSERTIØN    10/25/67  JDJ  *B    0 257500
02576  05017 11105021        BRU   *+2      NØ, CØNTINUE               10/25/67  JDJ  *B    00257600
02577  05020 11105047        BRU   DCM4     YES, GØ INSERT USER INFØ   10/25/67  JDJ  *B    00257700
02578                 *                     TEST FØR CØNDITIØNAL ASSEMBLY SYMBØLS             *D 00257800
02579  05021 15104661        CMA   ASBL     ='274 @                                           *D 00257900
02580  05022 11105024        BRU   *+2      NØT=                                              *D 00258000
02581  05023 11105044        BRU   DC20     =                                                 *D 00258100
02582  05024 15104662        CMA   DSBL     ='276 @                                           *D 00258200
02583  05025 11105027        BRU   *+2      NØT =                                             *D 00258300
02584  05026 11105044        BRU   DC20     =                                                 *D 00258400
02585  05027 15104660        CMA   ATSN     TEST FØR INTERNAL LABEL    10/25/67  JDJ  *B    00258500
02586  05030 11105032        BRU   *+2      NØ, CØNTINUE               10/25/67  JDJ  *B    00258600
02587  05031 11105066        BRU   DCM5     YES GET GENERATED LBAEL    10/25/67  JDJ  *B    00258700
02588  05032 12104764 DC10   SPB   PIMG     NØ THEN ØUTPUT NØRMAL      10/25/67  JDJ  *B    00258800
02589  05033 11105007        BRU   DCM1     CØNTINUE TØ UNLACE         10/25/67  JDJ  *B    00258900
02590  05034 14100576 DCM2   IMS   DCUN     INCREMENT CØUNT UNLACED    10/25/67  JDJ  *B    00259000
02591  05035 01100576        LAA   DCUN     GET CHARS CØUNTED          10/25/67  JDJ  *B    00259100
02592  05036 15100600        CMA   DCMX     TEST IF PRØPER NUMBER PUT  10/25/67  JDJ  *B    00259200
02593  05037 00000033        NØP            NØ CØNTINUE                10/25/67  JDJ  *B    00259300
02594  05040 11105012        BRU   DCM6     NØ, GØ GET MØRE DATA       10/25/67  JDJ  *B    00259400
02595  05041 00000003 DCM3   CLA            YES, TURN ØFF CØUNT CØNTRØ 10/25/67  JDJ  *B    00259500
02596  05042 03100577        STA   CDCT     SET SW TØ ZERØ             10/25/67  JDJ  *B    00259600
02597  05043 11305004        BRU*  DCØM     EXIT FRØM SUBRØUTINE       10/25/67  JDJ  *B    00259700
02598  05044 00001516 DC20   LSL   13       PØSITIØN IT                                       *D 00259800
02599  05045 03104663        STA   BFLG     SET CØNDITIØNAL ASSEMBLY FLAG                     *D 00259900
02600  05046 11105047        BRU   DCM4     CØNTINUE                                          *D 00260000
02601                 *                                                                        *D 00260100
02602  05047 14100576 DCM4   IMS   DCUN     INCREMENT UNLACE CØUNTER   10/25/67  JDJ  *B    00260200
02603  05050 12105127        SPB   UNLA     GET NEXT CHAR FRØM STRING  10/25/67  JDJ  *B    00260300
02604  05051 15000020        CMA   =16      IS DIGIT IN LIMITS         10/25/67  JDJ  *B    00260400
02605  05052 00000033        NØP            NØ VALID                   10/25/67  JDJ  *B    00260500
02606  05053 11105055        BRU   *+2      NØ VALID CØNTINUE          10/25/67  JDJ  *B    00260600
02607  05054 11105074        BRU   DCM7     ERRØR ØN PAR NUMBER        10/25/67  JDJ  *B    00260700
```

```
02608  05055 03100541       STA  PNUM          SET DESIRED PAR NUMBER     10/25/67  JDJ  *B  00260800
02609  05056 12105147       SPB  SCPL          FIND PAR NUMBER IN PNUM    10/25/67  JDJ  *B  00260900
02610  05057 11105074       BRU  DCM7          ERRØR NØT IN GIVEN LIST    10/25/67  JDJ  *B  00261000
02611  05060 12105175 DCM8  SPB  GPLT          GET PAR INFØ FRØM LIST     10/25/67  JDJ  *B  00261100
02612  05061 12105114       SPB  PDEL          GØ TEST FØR DELIMITER      11/08/67  JDJ *B   00261200
02613  05062 11105064       BRU  *+2           NØ CØNTINUE                10/25/67  JDJ  *B  00261300
02614  05063 11105007       BRU  DCM1          YES END ØF PAR NUMBER XX   10/25/67  JDJ  *B  00261400
02615  05064 12104764       SPB  PIMG          ØUTPUT PAR TØ GIVEN FIELD  10/25/67  JDJ  *B  00261500
02616  05065 11105060       BRU  DCM8          GØ GET MØRE ØF PARAMETER   10/25/67  JDJ  *B  00261600
02617  05066 12104764 DCM5  SPB  PIMG          ØUTPUT NØRMAL CHAR         10/25/67  JDJ  *B  00261700
02618  05067 14100576       IMS  DCUN          INCREMENT UNLACE CØUNTER   10/25/67  JDJ  *B  00261800
02619  05070 12105127       SPB  UNLA          GET NEXT CHAR              10/25/67  JDJ  *B  00261900
02620  05071 15000020       CMA  =16           IS VALUE INTERNAL TØ BIG   10/25/67  JDJ  *B  00262000
02621  05072 00000033       NØP                NØ CØNTINUE                10/25/67  JDJ  *B  00262100
02622  05073 11105077       BRU  DCM9          NØ VALID CØNTINUE          10/25/67  JDJ  *B  00262200
02623  05074 12102330 DCM7  SPB  FWER          ERRØR IN INTERNAL LABEL    10/25/67  JDJ  *B  00262300
02624  05075 01000272       LAA  ='272         LØAD A WITH A CØLØN ILLGL  10/25/67  JDJ  *B  00262400
02625  05076 11105032       BRU  DC10          GØ ØUTPUT CHAR AS NØ GØØD  10/25/67  JDJ  *B  00262500
02626  05077 12105215 DCM9  SPB  G4BD          GØ GET THE INTERNAL LAVEL  10/25/67  JDJ  *B  00262600
02627  05100 01077775       LAA  =-3           SET ASCII BASE             10/25/67  JDJ  *B  00262700
02628  05101 03100601       STA  DCAS          CØUNTER TØ LØØP 3 TIMES    10/25/67  JDJ  *B  00262800
02629  05102 02100545 DC11  LBA  TAXX          GET HUNDREDS, TENS, UNITS  10/25/67  JDJ  *B  00262900
02630  05103 00000003       CLA                ZERØ ACCUM FIELD           11/17/67  JDJ  *B  00263000
02631  05104 00000413       FLL  4             PØSITIØN TØ BIAS           10/25/67  JDJ  *B  00263100
02632  05105 04100545       STB  TAXX          RESTØRE WITH TENS, UNITS   10/25/67  JDJ  *B  00263200
02633  05106 05000060       AMA  ='60          CØNVERT TØ NUMERIC BASE    10/25/67  JDJ  *B  00263300
02634  05107 12105235       SPB  T6A8          CØNVERT TØ FULL ASCII      10/25/67  JDJ  *B  00263400
02635  05110 12104764       SPB  PIMG          ØUTPUT CHAR GENERATED      10/25/67  JDJ  *B  00263500
02636  05111 14100601       IMS  DCAS          INCREMENT LØØP CØUNTER     10/25/67  JDJ  *B  00263600
02637  05112 11105102       BRU  DC11          NØ CØNTINUE                10/25/67  JDJ  *B  00263700
02638  05113 11105007       BRU  DCM1          YES 3 HAVE BEEN ØUTPUT     10/25/67  JDJ  *B  00263800
02639                       *                                             10/25/67  JDJ  *B  00263900
02640                       *                                             11/08/67  JDJ *B   00264000
02641                       * SUBRØUTINE PDEL, TØ TEST FØR,() AND BRANCH  11/08/67  JDJ  *B  00264100
02642  05114 25400000 PDEL  DAC  0               ENTER SUBRØUTINE           11/08/67  JDJ  *B  00264200
02643  05115 15000254       CMA  ='254          TEST FØR A CØMMA           11/08/67  JDJ  *B  00264300
```

```
02644  05116 11105120       BRU  *+2            NØ                          11/08/67  JDJ  *B  00264400
02645  05117 11105125       BRU  PDE1           YES, SET EXIT               11/08/67  JDJ  *B  00264500
02646  05120 15000250       CMA  ='250          TEST FØR LEFT PARN          11/08/67  JDJ  *B  00264600
02647  05121 11105123       BRU  *+2            NØ                          11/08/67  JDJ  *B  00264700
02648  05122 11105125       BRU  PDE1           YES, SET EXIT               11/08/67  JDJ  *B  00264800
02649  05123 15000251       CMA  ='251          TEST FØR RIGHT PARN         11/08/67  JDJ  *B  00264900
02650  05124 11105126       BRU  *+2            NØ                    N     11/08/67  JDJ  *B  00265000
02651  05125 14105114 PDE1  IMS  PDEL           YES, SET EXIT               11/08/67  JDJ  *B  00265100
02652  05126 11305114       BRU* PDEL           NØ, EXIT NØRMAL             11/08/67  JDJ  *B  00265200
02653                       *                                               10/23/67  JDJ   *B  00265300
02654                       * SUBRØUTINE UNLA, TØ GET THE NEXT 8 BIT CHAR   10/23/67  JDJ   *B  00265400
02655                       *                                               10/23/67  JDJ   *B  00265500
02656  05127 25400000 UNLA  DAC  0              ENTER SUBRØUTINE            10/23/67  JDJ   *B  00265600
02657  05130 02104401       LBA  ULAD           SET INDEX TØ ABS ADDRESS    10/23/67  JDJ   *B  00265700
02658  05131 01100540       LAA  U8BT           GET LH-RH FLIP-FLØP SW      10/23/67  JDJ   *B  00265800
02659  05132 00000022       SAZ                 0= BITS 0-7                 10/23/67  JDJ   *B  00265900
02660  05133 11105141       BRU  UNL1           -1= BITS 8-15               10/23/67  JDJ   *B  00266000
02661  05134 01077777       LAA  =-1            SET FLIP-FLØP TØ RH WØRD    10/23/67  JDJ   *B  00266100
02662  05135 03100540       STA  U8BT           ØF BITS 8-15                10/23/67  JDJ   *B  00266200
02663  05136 01400000       LAA  0,1            BASE 0 PLUS ABS PØSITIØN    10/23/67  JDJ   *B  00266300
02664  05137 00001015 UNL2  RSL  8              PØSITIØN LH TØ BITS 8-15    10/23/67  JDJ   *B  00266400
02665  05140 11305127       BRU* UNLA           EXIT FRØM SUBRØUTINE        10/23/67  JDJ   *B  00266500
02666  05141 00000003 UNL1  CLA                 SET FLIP-FLØP TØ RH ØFF     10/23/67  JDJ   *B  00266600
02667  05142 03100540       STA  U8BT           SAME WØRD                   10/23/67  JDJ   *B  00266700
02668  05143 01400000       LAA  0,1            GET FULL WØRD               10/23/67  JDJ   *B  00266800
02669  05144 14104401       IMS  ULAD           PØINT TØ NEXT FULL WØRD     10/23/67  JDJ   *B  00266900
02670  05145 00001016       LSL  8              SHIFT ØFF BITS 0-7          10/23/67  JDJ   *B  00267000
02671  05146 11105137       BRU  UNL2           GØ PØSITIØN 8-15 TØ 8-15    10/23/67  JDJ   *B  00267100
02672                       *                                               10/23/67  JDJ   *B  00267200
02673                       *                                               10/23/67  JDJ   *B  00267300
02674                       * SUBRØUTINE SCPL, TØ LØCATE PARAMETER NUMBER XX 10/23/67 JDJ   *B  00267400
02675  05147 25400000 SCPL  DAC  0              ENTER SUBRØUTINE            10/23/67  JDJ   *B  00267500
02676  05150 00000003       CLA                 SET DØUBLE WØRD             10/23/67  JDJ   *B  00267600
02677  05151 03100537       STA  F8PB           FLIP-FLØP TØ LH FØR GPLT    10/23/67  JDJ   *B  00267700
02678  05152 03105173       STA  SCP1           ZERØ PAR CØUNT              10/23/67  JDJ   *B  00267800
02679  05153 03104400       STA  RPAD           ZERØ REL PAR LØCATIØN       11/17/67  JDJ   *B  00267900
```

```
02680  05154 01077702       LAA  =-62          SET THE END ØF A CARD      10/23/67  JDJ  *B  00268000
02681  05155 03105174       STA  SCP2          INDICATØR TØ BEG ØF CARD   10/23/67  JDJ  *B  00268100
02682  05156 14105173 SCP3  IMS  SCP1          INCREMENT CØUNTER          11/09/67  JDJ  *B  00268200
02683  05157 01105173       LAA  SCP1          PAR CØUNTER                10/23/67  JDJ  *B  00268300
02684  05160 15100541       CMA  PNUM          TEST FØR DESIRED PAR       10/23/67  JDJ  *B  00268400
02685  05161 11105164       BRU  *+3           GØ GET ELEMENT BY GPLT     10/23/67  JDJ  *B  00268500
02686  05162 14105147       IMS  SCPL          SET EXIT AS VALID PAR      10/23/67  JDJ  *B  00268600
02687  05163 11305147       BRU* SCPL          EXIT AS AN ERRØR CØNDITIØN 10/23/67  JDJ  *B  00268700
02688  05164 12105175 SCP4  SPB  GPLT          GØ GET CHAR FRØM PAR LIST  10/23/67  JDJ  *B  00268800
02689  05165 14105174       IMS  SCP2          TEST FØR END ØF CARD       10/23/67  JDJ  *B  00268900
02690  05166 11105170       BRU  *+2           TEST DELIMITER             11/15/67  JDJ  *B  00269000
02691  05167 11305147       BRU* SCPL          EXIT AS ERRØR              11/15/67  JDJ  *B  00269100
02692  05170 12105114       SPB  PDEL          GØ TEST FØR DELIMITER      11/08/67  JDJ  *B  00269200
02693  05171 11105164       BRU  SCP4          GØ SEARCH FØR A CØMMA      10/23/67  JDJ  *B  00269300
02694  05172 11105156       BRU  SCP3          FØUND CØMMA, IS IT WANTED  10/23/67  JDJ  *B  00269400
02695  05173 00000000 SCP1  DATA 0             TEMP PAR CØUNTER           10/23/67  JDJ  *B  00
02696  05174 00000000 SCP2  DATA 0             TEMP END ØF CARD INDICATØR 10/23/67  JDJ  *B  00
02697                *                                                    10/23/67  JDJ  *B  00
02698                * SUBRØUTINE GPLT, TØ GET THE PARAMETER FØR USAGE    10/23/67  JDJ  *B  00269
02699                *                                                    10/23/67  JDJ  *B  00269
02700  05175 25400000 GPLT DAC  0             ENTER SUBRØUTINE           10/23/67  JDJ  *B  00270
02701  05176 02104400       LBA  RPAD          SET INDEX TØ REL PAR ADR   10/23/67  JDJ  *B  00270100
02702  05177 01100537       LAA  F8PB          GET FLIP-FLØP SWITCH BITS  10/23/67  JDJ  *B  00270200
02703  05200 00000022       SAZ                TEST IF 0=BITS 0-7         10/23/67  JDJ  *B  00270300
02704  05201 11105207       BRU  GPL1          -1=BITS 8-15               10/23/67  JDJ  *B  00270400
02705  05202 01077777       LAA  =-1           SET FLIP-FLØP TØ RH WØRD   10/23/67  JDJ  *B  00270500
02706  05203 03100537       STA  F8PB          ØF BITS 8-15               10/23/67  JDJ  *B  00270600
02707  05204 01512045       LAA  PLST,1        GET DØUBLE WØRD FRØM LIST  10/23/67  JDJ  *B  00270700
02708  05205 00001015 GPL2  RSL  8             PØSITIØN BITS 0-7 TØ 8-15  10/23/67  JDJ  *B  00270800
02709  05206 11305175       BRU* GPLT          EXIT FRØM SUBRØUTINE       10/23/67  JDJ  *B  00270900
02710  05207 00000003 GPL1  CLA                SET FLIP-FLØP TØ BITS 0-7  10/23/67  JDJ  *B  00271000
02711  05210 03100537       STA  F8PB          ØF THE NEXT FULL WØRD      10/23/67  JDJ  *B  00271100
02712  05211 01512045       LAA  PLST,1        GET DØUBLE WØRD            10/23/67  JDJ  *B  00271200
02713  05212 14104400       IMS  RPAD          SET PØINTER TØ NEXT WØRD   10/23/67  JDJ  *B  00271300
02714  05213 00001016       LSL  8             SHIFT ØFF BITS 0-7         10/23/67  JDJ  *B  00271400
02715  05214 11105205       BRU  GPL2          GØ PØSITIØN WØRD           10/23/67  JDJ  *B  00271500
```

```
02716                    *                                                  10/23/67  JDJ  *B  00271600
02717                    * SUBRØUTINE G4BD TØ RETRIEVE THE INTERVAL SYMBL   10/23/67  JDJ  *B  00271700
02718  05215 25400000 G4BD DAC  0              ENTER SUBRØUTINE            10/23/67  JDJ  *B  00271800
02719  05216 00000005      TAB                 SAVE A IN B                 10/23/67  JDJ  *B  00271900
02720  05217 01100543      LAA  A999           GET INTERVAL ØVERFLØW FIG   10/23/67  JDJ  *B  00272000
02721  05220 00000024      SAP                 0=NØ ERRØR YET              10/23/67  JDJ  *B  00272100
02722  05221 11105232      BRU  G4B1           PRØCESS ERRØR SITUATIØN     10/23/67  JDJ  *B  00272200
02723  05222 00000004 G4B2 TBA                 VALID, RESTØRE A            10/23/67  JDJ  *B  00272300
02724  05223 15100544      CMA  HPXX           TEST FØR NEXT HIGHEST ASN   10/23/67  JDJ  *B  00272400
02725  05224 00000033      NØP                 NØ, CØNTINUE                10/23/67  JDJ  *B  00272500
02726  05225 11105227      BRU  *+2            NØ, SAME                    10/23/67  JDJ  *B  00272600
02727  05226 03100544      STA  HPXX           ASSUME THE NEW VALUE        10/23/67  JDJ  *B  00272700
02728  05227 01512250      LAA  AHTU,1         GET INTERNAL LABEL          10/23/67  JDJ  *B  00272800
02729  05230 03100545      STA  TAXX           STØRE LABEL IN TEMP WØRK    10/23/67  JDJ  *B  00272900
02730  05231 11305215      BRU* G4BD           EXIT FRØM SUBRØUTINE        10/23/67  JDJ  *B  00273000
02731  05232 02000000 G4B1 LBA  =0             CLEAR B TØ PRØDUCE ERRØR    10/23/67  JDJ  *B  00273100
02732  05233 12102330      SPB  FWER           SET THE ERRØR FLAG          10/23/67  JDJ  *B  00273200
02733  05234 11105222      BRU  G4B2           RETURN TØ MAIN SUB FLØW     10/23/67  JDJ  *B  00273300
02734                    *                                                  10/23/67  JDJ  *B  00273400
02735                    * SUBRØUTINE TØ CØNVERT TØ 8 BIT ASCII             10/23/67  JDJ  *B  00273500
02736                    *                                                  10/23/67  JDJ  *B  00273600
02737  05235 25400000 T6A8 DAC  0              ENTER SUBRØUTINE            10/23/67  JDJ  *B  00273700
02738  05236 15000037      CMA  ='37           TEST FØR BIAS PØINT         10/23/67  JDJ  *B  00273800
02739  05237 00000033      NØP                                             10/23/67  JDJ  *B  00273900
02740  05240 11105243      BRU  *+3            NUMBER ØR SPECIAL           10/23/67  JDJ  *B  00274000
02741  05241 05000200      AMA  ='200          ADD ASCII BASE              10/23/67  JDJ  *B  00274100
02742  05242 11305235      BRU* T6A8           EXIT FRØM SUBRØUTINE        10/23/67  JDJ  *B  00274200
02743  05243 05000300      AMA  ='300          ADD BASE ALPHA              10/23/67  JDJ  *B  00274300
02744  05244 11305235      BRU* T6A8           EXIT FRØM SUBRØUTINE        10/23/67  JDJ  *B  00274400
02745                    *                                                  10/23/67  JDJ  *B  00274500
02746                    * SUBRØUTINE CMCR, TØ SET END ØF MACRØ INDICATØR   10/23/67  JDJ  *B  00274600
02747  05245 25400000 CMCR DAC  0              ENTER SUBRØUTINE            10/23/67  JDJ  *B  00274700
02748  05246 01100546      LAA  NATF           NAME TABLE ØVERFLØW SW      10/23/67  JDJ  *B  00274800
02749  05247 00000024      SAP                 0=NØ ERRØR                  10/23/67  JDJ  *B  00274900
02750  05250 11105255      BRU  CMC1           -1= ERRØR                   10/23/67  JDJ  *B  00275000
02751  05251 02104404      LBA  PDAD           GET NEXT PRØTØ PACK ADR     10/23/67  JDJ  *B  00275100
```

```
02752  05252 01000001       LAA  =1          SETUP TØ STØRE SENTIANEL  10/23/67  JDJ  *B  00275200
02753  05253 03400000       STA  0,1         STØRE EØM INDICATØR       10/23/67  JDJ  *B  00275300
02754  05254 14104404       IMS  PDAD        SET PACK ADR TØ NX FL WD  10/23/67  JDJ  *B  00275400
02755  05255 00000003 CMC1  CLA              SET MACRØ IN-PRØCESS      10/23/67  JDJ  *B  00275500
02756  05256 03100605       STA  MINP        INDICATØR TØ ØN           10/23/67  JDJ  *B  00275600
02757  05257 11305245       BRU* CMCR        EXIT FRØM SUBRØUTINE      10/23/67  JDJ  *B  00275700
02758                       *                                          10/23/67  JDJ  *B  00275800
02759                       * SUBRØUTINE MLAB, TØ ADD-ØN ØR SEARCH A NAME TAB  10/24/67  JDJ  *B  00275900
02760  05260 25400000 MLAB  DAC  0           ENTER SUBRØUTINE          10/24/67  JDJ  *B  00276000
02761  05261 00000024       SAP              TEST ADD-ØN INDICATØR     10/24/67  JDJ  *B  00276100
02762  05262 11105266       BRU  MLA1        GØ SET UNDEFINED IND 0    10/24/67  JDJ  *B  00276200
02763  05263 01100546       LAA  NATF        GET NAME TABL FULL IND    10/24/67  JDJ  *B  00276300
02764  05264 00000024       SAP              TEST FØR ERRØR SITUATIØN  10/24/67  JDJ  *B  00276400
02765  05265 11105302       BRU  MLA2        GØ SET NØ PRØCESS TØ ØN   10/24/67  JDJ  *B  00276500
02766  05266 00000003 MLA1  CLA              CLEAR UNDEFINED           10/24/67  JDJ  *B  00276600
02767  05267 03100567       STA  UDMR        TURN ØFF UNDEFINED        10/24/67  JDJ  *B  00[illegible]
02768  05270 01104410       LAA  BANT        BEG ABS ADR ØF MACRØ NAME 10/24/67  JDJ  *B  00[illegible]
02769  05271 00000005       TAB              SAVE ANS SET INDEX        10/24/67  JDJ  *B  00[illegible]
02770  05272 15112247 MLA8  CMA  ETMP        TEST FØR END ØF MACRØ NAM 10/24/67  JDJ  *B  00[illegible]
02771  05273 11105306       BRU  MLA3        GØ TEST FØR END ØF ASGNMT 10/24/67  JDJ  *B  00[illegible]
02772  05274 00000033       NØP              YES                       10/24/67  JDJ  *B  00[illegible]
02773  05275 01100564       LAA  ADØN        YES, TEST FØR ADD-ØN      10/24/67  JDJ  *B  00277300
02774  05276 00000024       SAP              0=YES ADD-ØN MØDE         10/24/67  JDJ  *B  00277400
02775  05277 11105304       BRU  MLA4        -1=NØ, THE SEARCH MØDE    10/24/67  JDJ  *B  00277500
02776  05300 01077777       LAA  =-1         SETUP TØ TURN ØN          10/24/67  JDJ  *B  00277600
02777  05301 03100546       STA  NATF        TEH NAME TABLE FULL IND   10/24/67  JDJ  *B  00277700
02778  05302 03100565 MLA2  STA  NØPR        TURN ØN THE NØ PRØCESS    10/24/67  JDJ  *B  00277800
02779  05303 11305260 MLA5  BRU* MLAB        EXIT FRØM SUBRØUTINE      10/24/67  JDJ  *B  00277900
02780  05304 03100567 MLA4  STA  UDMR        SET THE UNDEFINDED IND ØN 10/24/67  JDJ  *B  00278000
02781  05305 11105303       BRU  MLA5        EXIT                      10/24/67  JDJ  *B  00278100
02782  05306 15104407 MLA3  CMA  LANL        LAST ADDRESS ASSIGNED     10/24/67  JDJ  *B  00278200
02783  05307 11105326       BRU  MLA6        GØ TEST NAME FØR MATCH    10/24/67  JDJ  *B  00278300
02784  05310 00000033       NØP                                        10/24/67  JDJ  *B  00278400
02785  05311 00000006       IAB              MØVE ADR TØ INDEX ABS     10/24/67  JDJ  *B  00278500
02786  05312 01100564       LAA  ADØN        GET ADD-ØN INDICATØR      10/24/67    JDJ  *B00278600
02787  05313 00000024       SAP              Ø=ADD-ØN MØDE             10/24/67  JDJ  *B  00278700
```

```
05314 11105304      BRU  MLA4         -1=SEARCH MØDE              10/24/67  JDJ  *B  00278800
05315 01100056      LAA  NSRH         GET LEFT HALF ØF NAME       10/24/67  JDJ  *B  00278900
05316 03400000      STA  0,1          STØRE IN TABLE              10/24/67  JDJ  *B  00279000
05317 01100057      LAA  NSRH+1       GET RIGHT HALF              10/24/67  JDJ  *B  00279100
05320 03400001      STA  1,1          STØRE IN RIGHT HALF         10/24/67  JDJ  *B  00279200
05321 01104404      LAA  PDAD         ABS ADR ØF NEXT CTL WØRD    10/24/67  JDJ  *B  00279300
05322 03400002      STA  2,1          STØRE IN TAB ADR NX CTL     10/24/67  JDJ  *B  00279400
05323 16000003      AMB  =3           INCREMENT B BY 3 TØ NX WD   10/24/67  JDJ  *B  00279500
05324 04104407      STB  LANL         STØRE MACRØ NAME LAST ASN   10/24/67  JDJ  *B  00279600
05325 11105303      BRU  MLA5         EXIT                        10/24/67  JDJ  *B  00279700
05326 00000006 MLA6 IAB               NØVE ADR TØ INDEX           10/24/67  JDJ  *B  00279800
05327 01100056      LAA  NSRH         GET LH ØF NAME CHARS 1,2    10/24/67  JDJ  *B  00279900
05330 15400000      CMA  0,1          TEST FØR MATCH              10/24/67  JDJ  *B  00280000
05331 11105333      BRU  *+2          NØT FØUND                   10/24/67  JDJ  *B  00280100
05332 11105336      BRU  MLA7         LEFT HALF EQUAL CHAR 1,2    10/24/67  JDJ  *B  00280200
05333 16000003 MLA9 AMB  =3           SET INDEX TØ NEXT CELLS     10/24/67  JDJ  *B  00280300
05334 00000006      IAB               SNAP VALUE AND INDEX        10/24/67  JDJ  *B  00280400
05335 11105272      BRU  MLA8         GØ TEST FØR END ØF TABLE    10/24/67  JDJ  *B  00280500
05336 01100057 MLA7 LAA  NSRH+1       GET RIGHT HALF NAME 3,4     10/24/67  JDJ  *B  00280600
05337 15400001      CMA  1,1          RIGHT HALF ØF TABLE         10/24/67  JDJ  *B  00280700
05340 11105333      BRU  MLA9         NØ, GØ TEST EØT             10/24/67  JDJ  *B  00280800
05341 11105343      BRU  *+2          YES, TEST MØDE              10/24/67  JDJ  *B  00280900
05342 11105333      BRU  MLA9         NØ, GØ TEST EØT             10/24/67  JDJ  *B  00281000
05343 01100564      LAA  ADØN         GET ADD-ØN IND              10/24/67  JDJ  *B  00281100
05344 00000024      SAP               0=ADD-ØN                    10/24/67  JDJ  *B  00281200
05345 11105355      BRU  ML10         -1=SEARCH, GØ MULTI DEF     10/24/67  JDJ  *B  00281300
05346 01000000      LAA  ='100000     BIT 0 AS MULTI DEF IND      10/24/67  JDJ  *B  00281400
05347 04112041      STB  WØRK         TEMP SAVE B                 10/24/67  JDJ  *B  00281500
05350 02400002      LBA  2,1          GET ADR TØ MERGE MULTI      10/24/67  JDJ  *B  00281600
05351 00000030      ØBA               ADD IN MULTI DEFINED        11/07/67  JDJ  *B  00281700
05352 02112041      LBA  WØRK         RESTØRE B                   10/24/67  JDJ  *B  00281800
05353 03400002      STA  2,1          STØRE AS MULTI DEF          11/28/67  JDJ  *B  00281900
05354 11105302      BRU  MLA2         GØ TURN ØN NØ PRØCESS IND   10/24/67  JDJ  *B  00282000
05355 01400002 ML10 LAA  2,1          GET ADDRESS ØF CTL          10/24/67  JDJ  *B  00282100
05356 03100566      STA  MDMR         STØRE MAINLY BIT 0 AS IND   10/24/67  JDJ  *B  00282200
05357 00000116      LSL  1            SHIFT ØFF SIGN              10/24/67  JDJ  *B  00282300
```

```
02824  05360 00000115       RSL  1              BIT TØ ZERØ                    10/24/67  JDJ  *B  00282400
02825  05361 03104401       STA  ULAD           TRANSFER ADR TØ UNLA SUBR      10/24/67  JDJ  *B  00282500
02826  05362 11105303       BRU  MLA5           EXIT                           10/24/67  JDJ  *B  00282600
02827                    *                                                    11/02/67  JDJ  *B  00282700
02828                    *                                                    10/24/67  JDJ  *B  00282800
02829                    * SUBRØUTINE EMØP TØ TEST FØR ØP CØDE EMA-C          11/02/67  JDJ  *B  00282900
02830  05363 25400000 EMØP DAC  0               ENTER SUBRØUTINE               11/02/67  JDJ  *B  00283000
02831  05364 12101117       SPB  GNØP           GEN ØP CØDE                    11/14/67  JDJ  *B  00283100
02832  05365 11305363       BRU* EMØP           NØT ALPHA ERRØR                11/14/67  JDJ  *B  00283200
02833  05366 15101217       CMA  EMCT           ALPHA TEST FØR EMA             11/14/67  JDJ  *B  00283300
02834  05367 11305363       BRU* EMØP           NØT EMA                        11/14/67  JDJ  *B  00283400
02835  05370 14105363       IMS  EMØP            YES EMA ØP CØDE SET EXIT      11/14/67  JDJ  *B  00283500
02836  05371 11305363       BRU* EMØP           NØT EMA  CØNTINUE              11/14/67  JDJ  *B  00283600
02837                    *                                                    11/02/67  JDJ  *B  00283700
02838                    * SUBRØUTINE P4LC, TØ PACK A NAME FØR SEARCHING      10/23/67  JDJ  *B  00283800
02839  05372 25400000 P4LC DAC  0               ENTER SUBRØUTINE               10/23/67  JDJ  *B  00
02840  05373 02104403       LBA  RCLM           REL ADR ØF INPUT IMAGE         10/23/67  JDJ  *B  00
02841  05374 01500415       LAA  BUF+11,1       CHAR 1                         10/23/67  JDJ  *B  00
02842  05375 00001016       LSL  8               PØSITIØN CHAR 1               10/23/67  JDJ  *B  00
02843  05376 05500416       AMA  BUF+12,1       CHAR 2                         10/23/67  JDJ  *B  00
02844  05377 03100056       STA  NSRH           STØRE CHARS 1 AND 2            10/23/67  JDJ  *B  00284400
02845  05400 01500417       LAA  BUF+13,1       CHAR 3                         10/23/67  JDJ  *B  00284500
02846  05401 00001016       LSL  8              PØSITIØN CHAR 3                10/23/67  JDJ  *B  00284600
02847  05402 05500420       AMA  BUF+14,1       CHAR 4                         10/23/67  JDJ  *B  00284700
02848  05403 03100057       STA  NSRH+1         STØRE CHARS 3 AND 4            10/23/67  JDJ  *B  00284800
02849  05404 11305372       BRU* P4LC           EXIT FRØM SUBRØUTINE           10/23/67  JDJ  *B  00284900
02850                    *                                                    10/23/67  JDJ  *B  00285000
02851  05405 01100126 MACR  LAA  PASS           TEST FØR FINAL PASS            11/02/67  JDJ  *B  00285100
02852  05406 00000022       SAZ                 0= FINAL                       11/02/67  JDJ  *B  00285200
02853  05407 11105413       BRU  *+4       NØ   NØN ZERØ PASS 1 ØF X           11/02/67  JDJ  *B  00285300
02854  05410 01077777       LAA  =-1       YES  FINAL PASS SET BY PASS ØN      11/02/67  JDJ  *B  00285400
02855  05411 03100604       STA  MBYP           STØRE INDICATØR                11/15/67  JDJ  *B  00285500
02856  05412 11105460       BRU  MBE3           MACRØ BY PASS ØN               11/02/67  JDJ  *B  00285600
02857  05413 01000001       LAA  =1             SET P4LC TØ                    11/02/67  JDJ  *B  00285700
02858  05414 03104403       STA  RCLM           STØRE LØCATIØN IN 2 WØRDS      11/02/67  JDJ  *B  00285800
02859  05415 12105372       SPB  P4LC           PACK THE LØCATIØN FIELD        11/02/67  JDJ  *B  00285900
```

```
02860  05416 00000003       CLA                SET MLAB TØ                    11/02/67  JDJ  *B  00286000
02861  05417 03100564       STA   ADØN         THE ADD-ØN MØDE                11/02/67  JDJ  *B  00286100
02862  05420 12105260       SPB   MLAB         ADD CØLS 1-4 TØ THE MACRØ      11/02/67  JDJ  *B  00286200
02863  05421 01077777       LAA   =-1          SET MACRØ IN STØRAGE           11/02/67  JDJ  *B  00286300
02864  05422 03100605       STA   MINP         PRØCESS TØ ØN = - 1            11/02/67  JDJ  *B  00286400
02865  05423 11100702       BRU   EX02         GØ GET MØRE SØURCE INPUT       11/02/67  JDJ  *B  00286500
02866  05424 12105363 MISP  SPB   EMØP         TEST FØR EMA-C ØP CØDE         11/02/67  JDJ  *B  00286600
02867  05425 11105430       BRU   *+3          NØT EMA-C, TEST NØ PRØCESS     11/02/67  JDJ  *B  00286700
02868  05426 12105245       SPB   CMCR         YES, EMA-C CLØSE ØUT           11/02/67  JDJ  *B  00286800
02869  05427 11100702       BRU   EX02         GØ GET SØURCE INPUT            11/02/67  JDJ  *B  00286900
02870  05430 01100565       LAA   NØPR         GET NØ PRØCESS ERRØR SW        11/02/67  JDJ  *B  00287000
02871  05431 00000023       SAN                -1 MEANS YES ERRØR CØND        11/02/67  JDJ  *B  00287100
02872  05432 12103756       SPB   STDS         PACK THE MACR LINE             11/02/67  JDJ  *B  00287200
02873  05433 11100702       BRU   EX02         GØ GET MØRE SØURCE INPUT       11/02/67  JDJ  *B  00287300
02874  05434 01000006 MBEG  LAA   =6           SET P4LC TØ CØL 6 ØP CØDE      11/02/67  JDJ  *B  00287400
02875  05435 03104403       STA   RCLM         TØ NAME ØF MACRØ               11/02/67  JDJ  *B  00287500
02876  05436 12105372       SPB   P4LC         PACK THE NAME FØR MLAB         11/02/67  JDJ  *B  00287600
02877  05437 01077777       LAA   =-1          SET MLAB TØ SEARCH EXTRACT     11/02/67  JDJ  *B  00287700
02878  05440 03100564       STA   ADØN         MØDE ØF LØØK-UP                11/02/67  JDJ  *B  00287800
02879  05441 12105260       SPB   MLAB         GØ FIND NAME                   11/02/67  JDJ  *B  00287900
02880  05442 12102630       SPB   LABP         GØ ASSIGN LØC A VALUE          11/02/67  JDJ  *B  00288000
02881  05443 01100566       LAA   MDMR         GET MULTI DEFINED IND          11/02/67  JDJ  *B  00288100
02882  05444 00000024       SAP                PLUS NØT MULTI DEF             11/02/67  JDJ  *B  00288200
02883  05445 11105454       BRU   MBE1         MINUS IT IS MULTI DEF          11/02/67  JDJ  *B  00288300
02884  05446 01100567       LAA   UDMR         UNDEFINED INDICATØR            11/02/67  JDJ  *B  00288400
02885  05447 00000023       SAN                PLUS DEFINED                   11/02/67  JDJ  *B  00288500
02886  05450 11105456       BRU   MBE2         MINUS UNDEFINED                11/02/67  JDJ  *B  00288600
02887  05451 01000325       LAA   ='325        U ERRØR CØDE                   11/02/67  JDJ  *B  00288700
02888  05452 03100404       STA   BUF+2        SET ERRØR FLAG                 11/02/67  JDJ  *B  00288800
02889  05453 11105460       BRU   MBE3                                        11/02/67  JDJ  *B  00288900
02890  05454 01000315 MBE1  LAA   ='315        M ERRØR CØDE                   11/02/67  JDJ  *B  00289000
02891  05455 03100404       STA   BUF+2        STØRE ERRØR FLAG               11/02/67  JDJ  *B  00289100
02892  05456 01077777 MBE2  LAA   =-1          SET EXPAND SW TØ ØN            11/02/67  JDJ  *B  00289200
02893  05457 03100603       STA   EXPN         -1 IS ØN, 0 IS ØFF             11/02/67  JDJ  *B  00289300
02894  05460 12101614 MBE3  SPB   LIN          LIST THE LINE ØF MACRØ         11/02/67  JDJ  *B  00289400
02895  05461 11100702       BRU   EX02         GØ SET-UP TØ EXPAND STATE      11/02/67  JDJ  *B  00289500
```

```
02896  05462 12104566 MBE4 SPB  EMPT          EXPAND ENTIRE MACRØ        11/02/67   JDJ   *B    00289500
02897  05463 11100741      BRU  ØPER          PRØCESS GENERATED          01/13/68 JDJ *C         00289700
02898  05464 11100702      BRU  EX02          RETURN TØ IGNØRE EØM CØDE  11/28/67   JDJ     *B 00289800
02899  05465 12105363 MBE5 SPB  EMØP          TEST FØR EMA-C             11/02/67   JDJ   *B    00289900
02900  05466 11105471      BRU  *+3           NØT EMA-C LIST LINE        11/02/67   JDJ   *B    00290000
02901  05467 00000003      CLA                SET MACRØ BY PASS TØ ØFF   11/02/67   JDJ   *B    00290100
02902  05470 03100604      STA  MBYP          STØRE STATUS DESIRED       11/02/67   JDJ   *B    00290200
02903  05471 02100020      LBA  ALNØ          GET LØCATIØN ØF LINE       11/15/67    JDJ   *B   00290300
02904  05472 12101066      SPB  DAFA          CØUNTER,INCR+1 IN DECIMAL  11/15/67    JDJ   *B   00290400
02905  05473 11105460      BRU  MBE3          GØ LIST MACRØ LINE         11/02/67   JDJ   *B    00290500
02906                *  FDAT PSEUDØ ØPERATIØN PRØCESSØR                 09/20/67   JDJ           00290600
02907  05474 00000003 FDAT CLA                SET FDAT ØUTPUT TØ NØT YE09/20/67   JDJ           00290700
02908  05475 03105745      STA  FØUT          ŻERØ INDICATØR             09/20/67   JDJ           00290800
02909  05476 03105741      STA  FDTB          ŻERØ TABLE CØUNTER         09/20/67   JDJ           00290900
02910  05477 02077770      LBA  =-8                                      09/20/67   JDJ           00291000
02911  05500 03505716      STA  FVAL+8,1      CLEAR                      09/20/67   JDJ           00291100
02912  05501 00000026      IBS                FVAL                       09/20/67   JDJ           00291200
02913  05502 11105500      BRU  *-2           TABLE TØ ŻERØ              09/20/67   JDJ           00291300
02914  05503 01077777      LAA  =-1     -1    SET DATA PRØCESSØR         09/20/67   JDJ           00291400
02915  05504 03105746      STA  FDØP          TØ THE FDAT MØDE           09/20/67   JDJ           00291500
02916  05505 11105763      BRU  DAT1          GØ PRØCESS THE FDAT        09/20/67   JDJ           00291600
02917                *                                                  09/20/67   JDJ           00291700
02918                *  SUBRØUTINE TØ CØMPUTE FDAT WØRD AND ØUTPUT      09/20/67   JDJ           00291800
02919                *                                                  09/20/67   JDJ           00291900
02920  05506 00000000 FDLS ***  **            ENTER                      09/20/67   JDJ           00292000
02921  05507 00000003      CLA                ŻERØ INDICATØRS, ETC       09/20/67   JDJ           00292100
02922  05510 03105742      STA  BITS          TEMP FDAT WØRD IN PRØCESS09/20/67   JDJ           00292200
02923  05511 03105741      STA  FDTB          CLEAR CØUNT ØF ELEMENTS    09/20/67   JDJ           00292300
02924  05512 02105674      LBA  FNFL          SET PØINTER TØ LAST WØRD   09/20/67   JDJ           00292400
02925  05513 04105705      STB  FDCT          STØRE CØUNT BACKWARDS      09/20/67   JDJ           00292500
02926  05514 01505674 DA21 LAA  FSIŻ-1,1      GET SIZE ØF RIGHT FIELD    09/20/67   JDJ           00292600
02927  05515 00000022      SAŻ                TEST FØR ŻERØ LENGTH       09/20/67   JDJ           00292700
02928  05516 11105520      BRU  *+2           NØ PRØCESS VALUE           09/20/67   JDJ           00292800
02929  05517 11105546      BRU  DA22          IGNØRE ŻERØ LENGTH FIELDS09/20/67   JDJ           00292900
02930  05520 00000002      NEG                SET TØ MINUS               09/20/67   JDJ           00293000
02931  05521 05002000      AMA  ='2000        16 ØFF SHIFTED BY LSL 0    09/20/67   JDJ           00293100
```

```
05522 00000021           SAS                  TEST 16-LENGTH               09/20/67   JDJ   00293200
05523 11105556           BRU   DA23           NIMUS, LENGTH .GT. 16        09/20/67   JDJ   00293300
05524 11105556           BRU   DA23           ZERØ, LENGTH .EQ. 16         09/20/67   JDJ   00293400
05525 02105743           LBA   LSL0           SET UP MASK                  09/20/67   JDJ   00293500
05526 00000030           ØBA                  MERGE BITS                   09/20/67   JDJ   00293600
05527 03105537           STA   FLSL           STØRE INSTRUCTIØN            09/20/67   JDJ   00293700
05530 02105705           LBA   FDCT           SET PØINTER                  09/20/67   JDJ   00293800
05531 01505674           LAA   FSIZ-1,1       GET SIZE ØF FIELD            09/20/67   JDJ   00293900
05532 02105744           LBA   RSL0           SET UP RSL MASK              09/20/67   JDJ   00294000
05533 00000030           ØBA                  MERGE BITS                   09/20/67   JDJ   00294100
05534 03105542           STA   FRSL           STØRE INSTRUCTIØN            09/20/67   JDJ   00294200
05535 02105705           LBA   FDCT           SET PØINTER TØ VALUE         09/20/67   JDJ   00294300
05536 01505705           LAA   FVAL-1,1       GET FIELD VALUE              09/20/67   JDJ   00294400
05537 00000016 FLSL LSL    0              REMØVE MSB                   09/20/67   JDJ   00294500
05540 00000005           TAB                  SAVE VALUE                   09/20/67   JDJ   00294600
05541 01105742           LAA   BITS           LAST GENERATED FØRMATIØN     09/20/67   JDJ   00294700
05542 00000015 FRSL RSL    0              SET TØ MERGE                 09/20/67   JDJ   00294800
05543 00000006           IAB                  SWAP FØR PØSSIBLE INVALID09/20/67   JDJ   00294900
05544 00000030 DA24 ØBA                   MERGE LEFT BITS              09/20/67   JDJ   00295000
05545 03105742           STA   BITS           HØLD FØR NEXT CYCLE          09/20/67   JDJ   00295100
05546 01105705 DA22 LAA    FDCT           REDUCE NUMBER ØF FIELDS      09/20/67   JDJ   00295200
05547 06000001           SMA   =1             BY 1                         09/20/67   JDJ   00295300
05550 03105705           STA   FDCT           STØRE FDCT-1                 09/20/67   JDJ   00295400
05551 00000021           SAS                  TEST FØR END ØF FØRM         09/20/67   JDJ   00295500
05552 11105561           BRU   DA25           MINUS, PRØBABLY AND ERRØR09/20/67   JDJ   00295600
05553 11105561           BRU   DA25           END ØF GENERATIØN            09/20/67   JDJ   00295700
05554 00000005           TAB                  SET PØINTER TØ NEXT TØ       09/20/67   JDJ   00295800
05555 11105514           BRU   DA21           LAST FIELD, ETC, RECYCLE     09/20/67   JDJ   00295900
05556 01505705 DA23 LAA    FVAL-1,1       GET FULL VALUE 16 BITS       09/20/67   JDJ   00296000
05557 02105742           LBA   BITS           GET LAST BITS                09/20/67   JDJ   00296100
05560 11105544           BRU   DA24           MERGE ALL BITS               09/20/67   JDJ   00296200
05561 00000003 DA25 CLA                                                    09/20/67   JDJ   00296300
05562 03105705           STA   FDCT           SET TØ ZERØ CØUNT BACK       09/20/67   JDJ   00296400
05563 01105742           LAA   BITS           MØVE BITS                    09/20/67   JDJ   00296500
05564 03100175           STA   DATA           TØ DATA                      09/20/67   JDJ   00296600
05565 01105671           LAA   FDER           TEST FØRCED ERRØR            09/20/67   JDJ   00296700
```

```
05566 00000024      SAP                                      09/20/67   JDJ          00296800
05567 12102330      SPB  FWER          ERRØR                 09/20/67   JDJ          00296900
05570 12101614      SPB  LIN           NØT ERRØR             09/20/67   JDJ          00297000
05571 14100173      IMS  LC            INCREMENT LØCATIØN CØUNT 09/20/67 JDJ         00297100
05572 12102132      SPB  PNCH          PUNCH ØUTPUT BUFFER   09/20/67   JDJ          00297200
05573 01077777      LAA  =-1    -1     SET LISTING DELIMITER 09/20/67   JDJ          00297300
05574 03100415      STA  BUFF+'13                            09/20/67   JDJ          00297400
05575 01000025      LAA  ='25          '25 CHARACTERS        09/20/67   JDJ          00297500
05576 03100015      STA  PRT4          LINE PRINTER          09/20/67   JDJ          00297600
05577 03107741      STA  LSFG          ASR                   09/20/67   JDJ          00297700
05600 00000003      CLA                ZERØ VALUE TABLE      09/20/67   JDJ          00297800
05601 02077770      LBA  =-8           SET TØ 8 FIELDS       09/20/67   JDJ          00297900
05602 03505716      STA  FVAL+8,1      ENTIRE TABLE          09/20/67   JDJ          00298000
05603 00000026      IBS                                      09/20/67   JDJ          00298100
05604 11105602      BRU  *-2           LØØP THRØUGH TABLE    09/20/67   JDJ          00298200
05605 11305506      BRU* FDLS          EXIT FRØM FDSL        09/20/67   JDJ          0[illegible]
               *                                                                     002[illegible]
               *  FØRM PSEUDØ ØPERATIØN PRØCESSØR            9/06/67  JDJ            0029[illegible]
05606 00000003 FØRM CLA                ZERØ INITIAL VALUES   9/06/67  JDJ            00298[illegible]
05607 02077751      LBA  =-23          SIZE ØF INITIAL CØNSTANTS 11/14/67  JDJ  *B   002987[illegible]
05610 03505720      STA  FMAX+1,1      CLEAR FRØM FDER TØ FMAX  9/06/67  JDJ         002988[illegible]
05611 00000026      IBS                INCREMENT             9/06/67  JDJ            00298900
05612 11105610      BRU  *-2           LØØP THRØUGH INDICATØRS  9/06/67  JDJ         00299000
05613 03100606      STA  PBIN          CLEAR BIN ACUM         11/14/67  JDJ    *B    00299100
05614 00000003 F005 CLA                ZERØ BCD PACKER        11/14/67  JDJ    *B    00299200
05615 03100542      STA  P4BD          CLEAR DEC ACUM         11/14/67  JDJ    *B    00299300
05616 12104252 F003 SPB  PBCD                                                        00299400
05617 12107241 F001 SPB  SCF           FETCH A CHARACTER     9/06/67  JDJ            00299500
05620 15000240      CMA  ='240         SPACE IS TERMINATØR    10/26/67  JDJ   *B     00299600
05621 11105623      BRU  *+2           NØ                    9/06/67  JDJ            00299700
05622 11105632      BRU  F004          YES, GØ SET SPACE IND  9/06/67  JDJ           00299800
05623 15000254      CMA  ='254         NØ TEST FØR A CØMMA    10/26/67  JDJ   *B     00299900
05624 11105626      BRU  *+2           NØ                    9/06/67  JDJ            00300000
05625 11105634      BRU  F002          YES, PRØCESS SUB FIELD 9/06/67  JDJ           00300100
05626 12107266      SPB  SCD           NØ, GØ TEST FØR DIGIT  9/06/67  JDJ           00300200
05627 11105616      BRU  F003          YES, 0-9              9/06/67  JDJ            00300300
```

```
03004  05630 12105720       SPB  FFER          NØ, ERRØR, ALPHA IN LIST 9/06/67  JDJ          00300400
03005  05631 11105614       BRU  F005          SET VALUE TØ ZERØ         11/14/67   JDJ  *B    00300500
03006  05632 01077777 F004  LAA  =-1           SPACE IND TURN ØN         10/26/67   JDJ  *B    00300600
03007  05633 03105672       STA  FSPA          SET SPACE FLAG, STØP SCAN9/06/67  JDJ          00300700
03008  05634 14105674 F002  IMS  FNFL          CØUNT SUBFIELDS           9/06/67  JDJ          00300800
03009  05635 01000010       LAA  =8            MAX NUM ØF FIELDS         10/26/67   JDJ  *B    00300900
03010  05636 15105674       CMA  FNFL          8 VS. FIELDS CØUNTED      9/06/67  JDJ          00301000
03011  05637 11105665       BRU  F006          MØRE THAN EIGHT, ERRØR    9/06/67  JDJ          00301100
03012  05640 00000033       NØP                EQUAL TØ MAX, ØK          9/06/67  JDJ          00301200
03013  05641 12104261       SPB  MDBN          CØNVERT DEC TØ BINARY     11/14/67   JDJ  *B    00301300
03014  05642 15000020       CMA  =16           A HAS BINARY FIELD SIZE   10/26/67   JDJ  *B    00301400
03015  05643 00000033       NØP                LT. 16 IS ØK              9/06/67  JDJ          00301500
03016  05644 11105647       BRU  *+3           EQ. 16 IS ØK, SPECIAL CAS9/06/67  JDJ          00301600
03017  05645 12105720 F007  SPB  FFER          ERRØR, TURN ØN FLAGS      9/06/67  JDJ          00301700
03018  05646 00000003       CLA                ZERØ FIELD SIZE           9/06/67  JDJ          00301800
03019  05647 02105674       LBA  FNFL          NUMBER ØF FIELDS          11/14/67   JDJ  *B    00 0190
03020  05650 00000616       LSL  6             PØSITIØN BITS FØR LSL N   11/14/67   JDJ  *B    00 0200
03021  05651 03105674       STA  FSIZ-1,1      STØRE SIZE IN SHIFT TABLE 11/14/67   JDJ  *B    00 021
03022  05652 01100606       LAA  PBIN          TEST SUM TØ 16 BITS       11/14/67   JDJ  *B    00 0220
03023  05653 05105717       AMA  FMAX          ACCUMULATE                9/06/67  JDJ          00 02300
03024  05654 03105717       STA  FMAX          SIZE ØF SUBFIELDS         9/06/67  JDJ          00 02400
03025  05655 15000020       CMA  =16           SUM MØRE THAN MAX ØF 16   10/26/67   JDJ  *B    00 02500
03026  05656 00000033       NØP                NØ  ØK  < 16              9/06/67  JDJ          00302600
03027  05657 11105661       BRU  *+2           NØ  ØK SPECIAL CASE = 16 9/06/67  JDJ          00302700
03028  05660 12105720       SPB  FFER          ERRØR  SET FLAGS          9/06/67  JDJ          00302800
03029  05661 01105672       LAA  FSPA        GET TERMINATØR INDICATØR                          00302900
03030  05662 00000024       SAP                TEST FØR SPACE INDICATØR 9/06/67  JDJ          00303000
03031  05663 11105667       BRU  F008          YES, GØ TERMINATE FØRM    9/06/67  JDJ          00303100
03032  05664 11105614       BRU  F005          MUST BE A CØMMA, GØ ZERØ  11/14/67   JDJ  *B    00303200
03033  05665 03105674 F006  STA  FNFL          ERRØR  TØØ MANY FIELDS SE9/06/67  JDJ          00303300
03034  05666 11105645       BRU  F007          TØ THE MAX ØF 8, SET FLAG9/06/67  JDJ          00303400
03035  05667 12101614 F008  SPB  LIN           LIST LINE AS CØMMENT      9/06/67  JDJ          00303500
03036  05670 11100702       BRU  EX02          GØ PRØCESS NEXT RECØRD    9/06/67  JDJ          00303600
03037                *       DATA AND CØNSTANTS FØR FØRM PSEUDØ ØPERATIØN9/06/67  JDJ          00303700
03038                *       DØ NØT REØRDER THE FØLLØWING CØNSTANTS      9/06/67  JDJ          00303800
03039  05671 00000000 FDER  DATA 0             FDAT IS FØRCED TØ ERRØR   9/06/67  JDJ          00303900
```

```
03040  05672 00000000 FSPA DATA 0          SPACE SCAN INDICATØR      9/06/67  JDJ          00304000
03041  05673 00000000 FDIG DATA 0          DIGIT FØUND IN SCAN LIST  9/06/67  JDJ          00304100
03042  05674 00000000 FNFL DATA 0          NUMBER ØF FIELDS IN BNRY  9/06/67  JDJ          00304200
03043  05675 00000010 FSIZ BSS  8          SHIFT TABLE IN BINARY     9/06/67  JDJ          00304300
03044  05705 00000000 FDCT DATA 0          FDAT CØUNTER FØR WØRDS    9/06/67  JDJ          00304400
03045  05706 00000010 FVAL BSS  8          FDAT VALUES IN TABLE      09/20/67   JDJ        00304500
03046  05716 00000000 FDMX DATA 0          CØUNT DIGITS CØMING IN    9/06/67  JDJ          00304600
03047  05717 00000000 FMAX DATA 0          ACCUMULATED SIZE ØF FØRM  9/06/67  JDJ          00304700
03048                 *  END ØF FIXED ØRDERING ØF CØNSTANTS          9/06/67  JDJ          00304800
03049  05720 00000000 FFER ***  **         FØRM ERRØR RØUTINE        9/06/67  JDJ          00304900
03050  05721 12102330      SPB  FWER       GENERAL E TYPE ERRØR      9/06/67  JDJ          00305000
03051  05722 01077777      LAA  =-1        FDAT NØW IS IN ERRØR       10/26/67   JDJ  *B    00305100
03052  05723 03105671      STA  FDER       FDAT ERRØR INDICATØR      9/06/67  JDJ          00305200
03053  05724 11305720      BRU* FFER       EXIT TØ MAIN PRØGRAM      9/06/67  JDJ          00305300
03054                 *  SUBRØUTINE TØ STØRE DATA INTØ THE FDAT VALUE 09/20/67   JDJ        00305400
03055                 *  TABLE ØF ELEMENTS                           09/20/67   JDJ        00
03056  05725 00000000 FDST ***  **                                    09/20/67   JDJ        00
03057  05726 14105741      IMS  FDTB       CØUNT FDAT FIELDS         09/20/67   JDJ        00
03058  05727 01105674      LAA  FNFL                                 09/20/67   JDJ        00
03059  05730 15105741      CMA  FDTB       FNFL VS FDTB              09/20/67   JDJ        00305900
03060  05731 11105737      BRU  DA20       ERRØR TØØ MANY FIELDS     09/20/67   JDJ        00306000
03061  05732 00000033      NØP             LAST FIELD                09/20/67   JDJ        00306100
03062  05733 02105741      LBA  FDTB       NØT FULL YES SET PØINTER  09/20/67   JDJ        00306200
03063  05734 01100175      LAA  DATA       GET CØNVERTED DATA        09/20/67   JDJ        00306300
03064  05735 03505705      STA  FVAL-1,1   STØRE IN PRØPER CELL      09/20/67   JDJ        00306400
03065  05736 11305725      BRU* FDST       EXIT                      09/20/67   JDJ        00306500
03066  05737 12102330 DA20 SPB  FWER       ERRØR EXCESS DATA         09/20/67   JDJ        00306600
03067  05740 11305725      BRU* FDST       EXIT FRØM STØRE RØUTINE   09/20/67   JDJ        00306700
03068  05741 00000000 FDTB DATA 0          CØUNT ØF ELEMENTS         09/20/67   JDJ        00306800
03069  05742 00000000 BITS DATA 0          TEMPØRARY STØRAGE         09/20/67   JDJ        00306900
03070  05743 00000016 LSLO LSL  0          LSL MASK INSTRUCTIØN      09/20/67   JDJ        00307000
03071  05744 00000015 RSLO RSL  0          RSL MASK INSTRUCTIØN      09/20/67   JDJ        00307100
03072  05745 00000000 FØUT DATA 0          ØUTPUT FØRM DATA          09/27/67    JDJ       00307200
03073  05746 00000000 FDØP DATA 0          FDAT ØP CØDE IN CØNTRØL   09/27/67    JDJ       00307300
03074                 *                                                                    00307400
03075                 *    LIST  PSEUDØ ØPERATIØN PRØCESSØR                12/19/67 JDJ *C00307500
```

```
03076  05747 00000003 LIS  CLA                SET MØDE TØ LIST                12/19/67 JDJ *C00307600
03077  05750 03100607      STA  LSUP           INDICATØR                       12/19/67 JDJ *C00307700
03078  05751 11100702      BRU  EX02           GØ GET NEXT RECØRD              12/19/67 JDJ *C00307800
03079                *     NØ LIST PSEUDØ ØPERATIØN PRØCESSØR                  12/19/67 JDJ *C00307900
03080  05752 01077777 NØL  LAA  =-1            SET MØDE TØ NØ-LIST             12/19/67 JDJ *C00308000
03081  05753 11105750      BRU  LIS+1          GØ STØRE IN SWITCH              12/19/67 JDJ *C00308100
03082                *                                                         12/19/67 JDJ *C00308200
03083                *     DATA PSEUDØ-ØP PRØCESSØR                                       00308300
03084  05754 01100165 STAR LAA  SCCC                                                     00308400
03085  05755 05077777      AMA  =-1                                    11/07/67  JDJ *B   00308500
03086  05756 03100165      STA  SCCC           BACK UP CØLUMN CTR                     00308600
03087  05757 12106556      SPB  SCAN           SCAN THE VARIABLE FIELD 09/21/67  JDJ      00308700
03088  05760 03100074      STA  ID                                                    00308800
03089  05761 01100104      LAA  FET9                                                  00308900
03090  05762 11106023      BRU  STRX                                                  00309000
03091  05763 00000003 DAT1 CLA                                                        00309100
03092  05764 03100077      STA  IM                                                    00309200
03093  05765 12102630      SPB  LABP           PRØCESS THE LABEL FIELD 09/21/67  JDJ      00309300
03094  05766 01000240      LAA  ='240                                  12/02/68 MDL *C    00309400
03095  05767 03100404      STA  BUFF+2                                 12/02/68 MDL *C    00309500
03096  05770 00000003 DAT2 CLA                                         12/02/68 MDL *C    00309600
03097  05771 03100143      STA  MIND                                                  00309700
03098  05772 12107241      SPB  SCF            FETCH A CHARACTER       09/21/67  JDJ      00309800
03099  05773 15000252      CMA  ='252          *                        10/26/67  JDJ *B   00309900
03100  05774 11105776      BRU  *+2                                                   00310000
03101  05775 11105754      BRU  STAR                                                  00310100
03102  05776 02077760      LBA  =-16                                   10/26/67  JDJ *B   00310200
03103  05777 04100113      STB  SIGN                                                  00310300
03104  06000 15000255      CMA  ='255          -                        10/26/67  JDJ *B   00310400
03105  06001 11106003      BRU  *+2                                                   00310500
03106  06002 11106012      BRU  DAT8                                                  00310600
03107  06003 03100113      STA  SIGN                                                  00310700
03108  06004 15000253      CMA  ='253          +                        10/26/67  JDJ *B   00310800
03109  06005 11106007      BRU  *+2                                                   00310900
03110  06006 11106012      BRU  DAT8                                                  00311000
03111  06007 01100165      LAA  SCCC                                                  00311100
```

```
06010 05077777       AMA   =-1                                   10/26/67   JDJ  *B     00311200
06011 03100165       STA   SCCC           BACK UP CØLUMN CTR                            00311300
06012 12103154 DAT8  SPB   DIP            CALL DIP                                      00311400
06013 14100165       IMS   SCCC                                 12/02/68 MDL *C         00311500
06014 00000022       SAZ                                                                00311600
06015 11106115       BRU   DAT5           ERRØR                                         00311700
06016 01100104       LAA   FET9           LAST CHAR READ                                00311800
06017 03100162       STA   SCTM                                 MDL 2/12/69 *C          00311900
06020 15000254       CMA   ='254          CØMMA                  10/26/67   JDJ  *B     00312000
06021 11106023       BRU   *+2                                                          00312100
06022 11106036       BRU   DAT7           DELIMITER IS CØMMA                            00312200
06023 15000240 STRX  CMA   ='240          SPACE                  10/26/67   JDJ  *B     00312300
06024 11106026       BRU   *+2                                                          00312400
06025 11106032       BRU   DA13           SET FDAT IF IN CØNTRØL   09/20/67   JDJ       00312500
06026 15000257       CMA   ='257          TEST FØR SLASH           09/20/67   JDJ       00312600
06027 11106035       BRU   DAT6           ERRØR NØT DELIMITER      09/20/67   JDJ       00312700
06030 11106032       BRU   *+2            SLASH SET TØ ØUTPUT      09/20/67   JDJ       00312800
06031 11106035       BRU   DAT6           ERRØR NØT DELIMITER      09/20/67   JDJ       00312900
06032 01077777 DA13  LAA   ='-1    -1     TURN FDAT ØUTPUT IND ØN  09/20/67   JDJ       00313000
06033 03105745       STA   FØUT           STØRE MINUS              09/20/67   JDJ       00313100
06034 11106036       BRU   DAT7           GØ TEST FØR LITERAL      09/20/67   JDJ       00313200
06035 12102330 DAT6  SPB   FWER           DELIMITER IS NØT SPACE,/ 09/21/67   JDJ       00313300
06036 01100120 DAT7  LAA   SLIT                                                         00313400
06037 00000022       SAZ                                                                00313500
06040 11106135       BRU   XXX1           GØ TEST IF FDAT IS CNTRL 09/20/67   JDJ       00313600
06041 01100074 DA10  LAA   ID                                      09/20/67   JDJ       00313700
06042 03100175       STA   DATA                                                         00313800
06043 01105746       LAA   FDØP           IS FDAT IN CØNTRØL       09/20/67   JDJ       00313900
06044 00000024       SAP                                           09/20/67   JDJ       00314000
06045 11106143       BRU   DA11           MINUS IS FDAT IN CØNTRØL 09/20/67   JDJ       00314100
               *     DATA STATEMENT IN CØNTRØL                     09/20/67   JDJ       00314200
06046 12101614 DA12  SPB   LIN            LIST A LINE              09/20/67   JDJ       00314300
06047 14100173       IMS   LC                                                           00314400
06050 12102132       SPB   PNCH           SET DATA INTØ PUNCH BUFF 09/21/67   JDJ       00314500
06051 01077777       LAA   =-1                                   10/26/67   JDJ  *B     00314600
06052 03100415       STA   BUFF+'13       SET LISTING DELIMITER                         00314700
```

```
06053 01000025        LAA  ='25                                  10/26/67   JDJ  *B   00314800
06054 12107742 LS10  SPB  LS7        SET LISTING DELIMETER     09/21/67   JDJ       00314900
06055 01000003 DA14  LAA  =3                                     10/26/67   JDJ  *B   00315000
06056 15100077        CMA  IM                                                          00315100
06057 11106073        BRU  DAT3                                                        00315200
06060 11106073        BRU  DAT3                                                        00315300
06061 00000003 DAT4  CLA                                                               00315400
06062 03100077        STA  IM                                                          00315500
06063 01100162        LAA  SCTM                                 12/02/68 MDL *C       00315600
06064 15000254        CMA  ='254      CØMMA                     10/26/67   JDJ  *B   00315700
06065 11106067        BRU  *+2                                                         00315800
06066 11105766        BRU  DAT2-2                               12/02/68 MDL *C       00315900
06067 15000257        CMA  ='257      SLASH                     09/20/67   JDJ       00316000
06070 11106072        BRU  *+2        NØ NEXT LINE              09/20/67   JDJ       00316100
06071 11105766        BRU  DAT2-2                               12/02/68 MDL *C       00316200
06072 11100702        BRU  EX02       PRØCESS NEXT RECØRD       09/21/67   JDJ       00316300
06073 01105746 DAT3  LAA  FDØP       TEST IF FDAT IS CØNTRØL   09/20/67   JDJ       00316400
06074 00000024        SAP                                       09/20/67   JDJ       00316500
06075 11106154        BRU  DA15       MINUS YES THEN ERRØR DØBL09/20/67   JDJ       00316600
06076 01100075        LAA  ID+1       DØUBLE PRECISIØN DATA     09/20/67   JDJ       00316700
06077 03100175        STA  DATA                                                        00316800
06100 12101614        SPB  LIN        LIST A LINE               09/21/67   JDJ       00316900
06101 14100173        IMS  LC                                                          00317000
06102 12102132        SPB  PNCH       SET DATA INTØ PUNCH BUFF 09/21/67   JDJ       00317100
06103 01100077        LAA  IM                                                          00317200
06104 06000004        SMA  =4                                   10/26/67   JDJ  *B   00317300
06105 00000022        SAZ                                                              00317400
06106 11106061        BRU  DAT4                                                        00317500
06107 01100076        LAA  ID+2                                                        00317600
06110 03100175        STA  DATA                                                        00317700
06111 12101614        SPB  LIN        LIST A LINE               09/21/67   JDJ       00317800
06112 14100173        IMS  LC                                                          00317900
06113 12102132        SPB  PNCH       SET DATA INTØ PUNCH BUFF 09/21/67   JDJ       00318000
06114 11106061        BRU  DAT4                                                        00318100
06115 00000003 DAT5  CLA                                                               00318200
06116 03100077        STA  IM                                                          00318300
```

```
06117 03100100      STA  IM+1                                                          00318400
06120 03100101      STA  IM+2                                                          00318500
06121 01100104 D1AT LAA  FET9                                                          00318600
06122 15000254      CMA  ='254       CØMMA                      10/26/67   JDJ  *B     00318700
06123 11106125      BRU  *+2                                                           00318800
06124 11106035      BRU  DAT6                                                          00318900
06125 15000240      CMA  ='240       SPACE                      10/26/67   JDJ  *B     00319000
06126 11106130      BRU  *+2                                                           00319100
06127 11106035      BRU  DAT6                                                          00319200
06130 15000257      CMA  ='257       SLASH                      09/20/67   JDJ         00319300
06131 11106133      BRU  *+2         NØ SEARCH                  09/20/67   JDJ         00319400
06132 11106035      BRU  DAT6        YES SET ERRØR SWITCH       09/20/67   JDJ         00319500
06133 12107241      SPB  SCF         FETCH A CHARACTER          09/21/67   JDJ         00319600
06134 11106122      BRU  D1AT+1                                                        00319700
                  *                                                                    00319800
06135 01105746 XXX1 LAA  FDØP        TEST IF FDAT CØNTRØL       09/20/67   JDJ         [illegible]
06136 00000024      SAP                                         09/20/67   JDJ         003[illegible]
06137 11106141      BRU  *+2         MINUS IS FDAT CØNTRØL      09/20/67   JDJ         003[illegible]
06140 11107777      BRU  XXXX        PLUS IS DATA CØNTRØL       09/20/67   JDJ         00[illegible]
06141 12102330      SPB  FWER        ERRØR LITERAL ILLEGAL      09/20/67   JDJ         003203[illegible]
06142 11106041      BRU  DA10        GØ PRØCESS REMAINDER       09/20/67   JDJ         003204[illegible]
                  *      GØ STØRE GENERATE AND ØUTPUT FDAT ELEMENT  09/20/67   JDJ     00320500
06143 12105725 DA11 SPB  FDST        STØRE IN TABLE ØF VALUES   09/20/67   JDJ         00320600
06144 01105745      LAA  FØUT        TEST IF TERMINATØR FDAT    09/20/67   JDJ         00320700
06145 00000024      SAP                                         09/20/67   JDJ         00320800
06146 11106150      BRU  *+2         ØUTPUT FDAT STATEMENT      09/20/67   JDJ         00320900
06147 11106055      BRU  DA14        GØ TEST PRECISIØN          09/20/67   JDJ         00321000
06150 00000003      CLA              SET THE FDAT ØUTPUT IND    09/20/67   JDJ         00321100
06151 03105745      STA  FØUT        TØ ZERØ ØR FINISHED GEN    09/20/67   JDJ         00321200
06152 12105506      SPB  FDLS        ØUTPUT FØRMATTED WØRD      09/27/67   JDJ         00321300
06153 11106055      BRU  DA14        GØ TEST PRECISIØN          09/20/67   JDJ         00321400
06154 12102330 DA15 SPB  FWER        DØUBLE PRECISIØN FDAT      09/20/67   JDJ         00321500
06155 11106061      BRU  DAT4        SET TØ SINGLE USE MSB      09/20/67   JDJ         00321600
06156 03100104 DA18 STA  FET9                                   MDL 1/31/69 *C         00321700
06157 01105746      LAA  FDØP        FDAT IN CØNTRØL                                   00321800
06160 00000024      SAP                                         09/20/67   JDJ         00321900
```

```
03220  06161 12105506       SPB  FDLS          MINUS YES ØUTPUT          09/20/67   JDJ          00322000
03221  06162 11100702       BRU  EX02          PRØCESS NEXT RECØRD       09/20/67   JDJ          00322100
03222  06163 12105506 DA19  SPB  FDLS          ØUTPUT FDAT WØRD          09/20/67   JDJ          00322200
03223  06164 11106012       BRU  DAT8          GØ PRØCESS NEXT SET       09/20/67   JDJ          00322300
03224  06165 25400000 DIID  DAC  **                                                              00322400
03225  06166 12103640       SPB  RSID          RIGHT SHIFT MULTIPLE WØRD 09/21/67   JDJ          00322500
03226  06167 01077730       LAA  *-40                                    10/26/67   JDJ  *B     00322600
03227  06170 03100061       STA  T                                                               00322700
03228  06171 01100100       LAA  DIT2                                                            00322800
03229  06172 06077776       SMA  *-2                                     10/26/67   JDJ  *B     00322900
03230  06173 03100100       STA  DIT2                                                            00323000
03231  06174 01100074 DVD1  LAA  ID                                                              00323100
03232  06175 06050000       SMA  *'50000       10 AT B 4                 10/26/67   JDJ  *B     00323200
03233  06176 00000023       SAN                                                                  00323300
03234  06177 03100074       STA  ID                                                              00323400
03235  06200 00000023       SAN                                                                  00323500
03236  06201 14100076       IMS  ID+2                                                            00323600
03237  06202 12103665       SPB  LSID          LEFT SHIFT MUL WØRD       11/07/67   JDJ  *B     00323700
03238  06203 14100061       IMS  T                                                               00323800
03239  06204 11106174       BRU  DVD1                                                            00323900
03240  06205 01100074       LAA  ID                                                              00324000
03241  06206 00000416       LSL  4                                                               00324100
03242  06207 00000415       RSL  4                                                               00324200
03243  06210 03100074       STA  ID                                                              00324300
03244  06211 11306165       BRU* DIID                                                            00324400
03245                *                                                                         00324500
03246                *                                                                         00324600
03247                *                                                                         00324700
03248                *                                                                         00324800
03249                *         TERMINATE(CLØSEØUT) PUNCHING                                    00324900
03250                *                                                                         00325000
03251  06212 25400000 EDP   DAC  **              END PUNCHING EXIT                             00325100
03252  06213 00130402       SNS  2               SWITCH 2                                      00325200
03253  06214 11306212       BRU* EDP             SET(NØ BINARY PUNCH)                          00325300
03254  06215 00130403       SNS  3               SWITCH 3                                      00325400
03255  06216 11306212       BRU* EDP             SET(ØFFLINE LIST EXIT)                        00325500
```

```
03256  06217 00130414       SNS  12                                                    *E00325600
03257  06220 11106226       BRU  MTP2                                                  *E00325700
03258  06221 12102003       SPB  LEDR          PUNCH TRAILER TAPE       09/21/67  JDJ     00325800
03259                *       LEDR RETURNS DEVICE # IN A-REGISTER                       *E00325900
03260  06222 15077776       CMA  =-2                                                   *E00326000
03261  06223 11306212       BRU* EDP           RETURN                                  *E00326100
03262  06224 55100000       CALL PSPØ          TURN PUNCH PØWER ØFF                    *E00326200
03263  06225 11306212       BRU* EDP           EXIT                                      00326300
03264  06226 00000000 MTP2  BSS  0                                                     *E00326400
03265  06226 01000010       LAA  =8            DEVICE NUMBER                           *E00326500
03266  06227 12110467       SPB  TEØF                                                  *E00326600
03267  06230 11306212       BRU* EDP                                                   *E00326700
03268  06231 15000254 C2AL  CMA  ='254         CØMMA                    10/26/67  JDJ  *B   00326800
03269  06232 11107476       BRU  CAL4          LØØK FØR A SPACE         09/21/67  JDJ       00326900
03270  06233 11106235       BRU  *+2                                                   00327000
03271  06234 11107476       BRU  CAL4          LØØK FØR A SPACE         09/21/67  JDJ       00327100
03272  06235 12106556       SPB  SCAN          SCAN THE VARIABLE FIELD  09/21/67  JDJ       0032
03273  06236 15000001       CMA  =1                                     10/26/67  JDJ  *B   0032
03274  06237 12102330       SPB  FWER          INDEX ERRØR              09/21/67  JDJ       0032
03275  06240 11106242       BRU  *+2                                                   0032
03276  06241 12102330       SPB  FWER          INDEX ERRØR              09/21/67  JDJ       0032760
03277  06242 00001016       LSL  8                                                     00327700
03278  06243 05100174       AMA  LØAD                                                  00327800
03279  06244 03100174       STA  LØAD                                                  00327900
03280  06245 01100162       LAA  SCTM                                                  00328000
03281  06246 11107476       BRU  CAL4          LØØK FØR A SPACE         09/21/67  JDJ       00328100
03282                *END PRØCESSØR                                                   00328200
03283  06247 12102630 END   SPB  LABP          LABP LABEL PRØCESSØR     09/21/67  JDJ       00328300
03284  06250 01100126       LAA  PASS                                                  00328400
03285  06251 00000022       SAZ                PASS 2                                  00328500
03286  06252 11106432       BRU  END1          PASS 1                                  00328600
03287  06253 01100151       LAA  SFLA          SUBR, FLAG                              00328700
03288  06254 00000023       SAN                SUBR                                    00328800
03289  06255 11106260       BRU  *+3                                                   00328900
03290  06256 01037777       LAA  ='37777                                10/26/67  JDJ  *B   00329000
03291  06257 11106261       BRU  *+2                                                   00329100
```

```
03292  06260 12106556       SPB  SCAN          SCAN VARIABLE FIELD      09/21/67   JDJ          00329200
03293  06261 03100175       STA  DATA                                                          00329300
03294  06262 02100172       LBA  RLC                                                           00329400
03295  06263 01100163       LAA  SCFØ                                                          00329500
03296  06264 00000023       SAN                                                                00329600
03297  06265 04100171       STB  SCRL                                                          00329700
03298  06266 01100171       LAA  SCRL                                                          00329800
03299  06267 00000022       SAZ                                                                00329900
03300  06270 01020000       LAA  ='20000                                 10/26/67   JDJ  *B     00330000
03301  06271 05041000       AMA  ='141000                                10/26/67   JDJ  *B     00330100
03302  06272 03100174       STA  LØAD                                                          00330200
03303  06273 03100150       STA  ENDF                                                          00330300
03304  06274 01100170       LAA  SCAD                                                          00330400
03305  06275 03100175       STA  DATA          ØUTPUT END-JUMP CØDE                            00330500
03306  06276 12102132       SPB  PNCH          DATA TØ PUNCH BUFFER     09/21/67   JDJ          00330600
03307  06277 12102032       SPB  CLØT          CLØSE ØUT BUFFER         09/21/67   JDJ          00330700
03308  06300 12101614       SPB  LIN           LIST A LINE              09/21/67   JDJ          00330800
03309  06301 01100155       LAA  PDEV                                                          *E00 30900
03310  06302 15077776       CMA  =-2                                                           *E00 31000
03311  06303 11106305       BRU  *+2                                                           *E00 31100
03312  06304 55100000       CALL P$PØ          TURN PUNCH ØFF                                  *E00 31200
03313                *SYMBØL TABLE TYPE ØUT                                                    00 31300
03314  06305 01000025 SYPE  LAA  ='25                                   10/26/67   JDJ  *B     00331400
03315  06306 03100015       STA  PRT4          SET LISTING DELIMITER '2509/21/67   JDJ          00331500
03316  06307 01077777       LAA  =-1                                     10/26/67   JDJ  *B     00331600
03317  06310 03100415       STA  BUFF+'13      PRINT BUFFER END SENTINEL                       00331700
03318  06311 03100173       STA  LC            TØ PREVENT ØCTAL EDIT                           00331800
03319  06312 01000240       LAA  ='240         SPACE                    10/26/67   JDJ  *B     00331900
03320  06313 02077761       LBA  =-15            11/20/67   JDJ   *B                          00332000
03321  06314 03500410       STA  BUFF+6,1                                                      00332100
03322  06315 00000026       IBS                                                                00332200
03323  06316 11106314       BRU  *-2                                                           00332300
03324  06317 02100002       LBA  LØW           ASSIGN TABLE START ADDR                         00332400
03325  06320 01400000 SY00  LAA  0,1           1ST WD TASS ITEM                                00332500
03326  06321 00000022       SAZ                ZERØ                                            00332600
03327  06322 11106335       BRU  SY09          NØ                                              00332700
```

```
03328  06323 11106414       BRU  EN12                                                                  00332800
03329  06324 12103706 SY12  SPB  SSSS                                                                  00332900
03330  06325 25400700       DAC  '700                                                                  00333000
03331  06326 11106350       BRU  SY13                                                                  00333100
03332  06327 11106406       BRU  SY01                                                                  00333200
03333  06330 00000116 SY99  LSL  1                                                                     00333300
03334  06331 00000023       SAN                                                                        00333400
03335  06332 11106324       BRU  SY12       NØT MULTIPLE DEFINED                                       00333500
03336  06333 01000315       LAA  ='315      ERRØR CØDE M              10/26/67   JDJ  *B               00333600
03337  06334 11106347       BRU  SY13-1     ERRØR-MULTIPLE DEFINED                                     00333700
03338  06335 04100367 SY09  STB  TASS       TASS INDEX                                                 00333800
03339  06336 00000032       SNØ            TASS SYMBØL                                                00333900
03340  06337 00000024       SAP            ITEM                                                       00334000
03341  06340 11106406       BRU  SY01       NØ                                                         00334100
03342  06341 01000240       LAA  ='240      SPACE                     10/26/67   JDJ  *B  .            00334200
03343  06342 03100371       STA  LNØ                                                                   00[illegible]
03344  06343 01400001       LAA  1,1                                                                   0033[illegible]
03345  06344 00000023       SAN            SKIP IF UNDEFINED                                          00334[illegible]
03346  06345 11106330       BRU  SY99       SYMBØL IS DEFINED                                          00334[illegible]
03347  06346 01000325       LAA  ='325      U ERRØR                   10/26/67   JDJ  *B               00334[illegible]
03348  06347 03100371       STA  LNØ                                                                   00334[illegible]
03349  06350 12107712 SY13  SPB  SY14       MØDIFY THE ØUTPUT AREA    09/21/67   JDJ                  00334900
03350  06351 01400000       LAA  0,1                                                                   00335000
03351  06352 00000612       FRA  6          1ST AND 2ND CHAR                                           00335100
03352  06353 00001116       LSL  9          PØSITIØN 2ND CHAR                                          00335200
03353  06354 00000032       SNØ            6TH BIT ØN                                                 00335300
03354  06355 00000020       ASC            NØ,TURN ØN 7TH BIT                                         00335400
03355  06356 00001115       RSL  9                                                                     00335500
03356  06357 03100401       STA  BUFF-1                                                                00335600
03357  06360 00000004       TBA            1ST CHAR                                                   00335700
03358  06361 00000032       SNØ            6TH BIT ØN                                                 00335800
03359  06362 00000020       ASC            NØ, TURN ØN 7TH BIT                                    X   00335900
03360  06363 00001115       RSL  9                                                                 X   00336000
03361  06364 03100400       STA  BUFF-2                                                            X   00336100
03362  06365 02100367 SY02  LBA  TASS                                                                  00336200
03363  06366 01400001       LAA  1,1                                                                   00336300
```

```
03364  06367 00000612 SY10 FRA  6            3RD AND 4TH CHAR                                    00336400
03365  06370 00001116      LSL  9            PØSITIØN 2ND CHAR                                   00336500
03366  06371 00000032      SNØ               6TH BIT ØN                                          00336600
03367  06372 00000020      ASC               NØ,TURN ØN 7TH BIT                                  00336700
03368  06373 00001115      RSL  9                                                                00336800
03369  06374 03100403      STA  BUFF+1                                                           00336900
03370  06375 00000004      TBA               3RD CHAR                                            00337000
03371  06376 00000032      SNØ               6TH BIT ØN                                          00337100
03372  06377 00000020      ASC               NØ,TURN ØN 7TH BIT                                  00337200
03373  06400 00001115      RSL  9                                                                00337300
03374  06401 03100402      STA  BUFF                                                             00337400
03375  06402 02100367 SY11 LBA  TASS                                                             00337500
03376  06403 02400002      LBA  2,1                                                              00337600
03377  06404 04100175      STB  DATA         DEFINITIØN                                          00337700
03378  06405 12101614      SPB  LIN          LINE ØUTPUT SYM AND DEF  09/21/67   JDJ            00337800
03379  06406 01100367 SY01 LAA  TASS         INCREMENT                                           00337900
03380  06407 05000003      AMA  =3           TASS INDEX                10/26/67   JDJ  *B      00338000
03381  06410 00000005      TAB               AND SAVE                                            00338100
03382  06411 06100001      SMA  HIGH                                                             00338200
03383  06412 00000024      SAP               END ØF TASS                                         00338300
03384  06413 11106320      BRU  SY00         NØ,LØØP                                             00338400
03385                *  ØUTPUT THE CØUNT ØF ERRØR FLAGS          10/17/67   JDJ    *B          00338500
03386  06414 12107712 EN12 SPB  SY14         CLEAR INPUT AREA         10/17/67   JDJ    *B     00338600
03387  06415 00000003      CLA                                                                   00338700
03388  06416 03100175      STA  DATA         SET EDIT TØ ZERØ    11/20/67   JDJ    *B          00338800
03389  06417 02077764      LBA  =-12         MØVE MESSAGE TØ PRINT    10/17/67   JDJ    *B     00338900
03390  06420 01501765      LAA  EMSG+12,1                             10/17/67   JDJ    *B     00339000
03391  06421 03500405      STA  LNØ+12,1                              10/17/67   JDJ    *B     00339100
03392  06422 00000026      IBS               ERRØRSBXXXXB             10/17/67   JDJ    *B     00339200
03393  06423 11106420      BRU  *-3          LØØP                     10/17/67   JDJ    *B     00339300
03394  06424 12101614      SPB  LIN          GØ PRINT THE LINE        10/17/67   JDJ    *B     00339400
03395                *                                                                          00339500
03396                *                    CØUNTER RESET AT BEGINNING  MDL 1/31/69 *C          00339600
03397                *                    ØF PRØGRAM                  MDL 1/31/69 *C          00339700
03398                *                                                MDL 1/31/69 *C          00339800
03399  06425 01107015      LAA  LPGE         SET PAGE CØUNT HEADING                    JDJ     00339900
```

```
03400  06426 03107016       STA  LPCT          WILL ØCCUR ØN NEXT END                          JDJ      00340000
03401  06427 01300002       LAA* LØW           RESTØRE BEGINNING ØF TAB 10/17/67   JDJ    *B    00340100
03402  06430 03100017       STA  TLØW          TABLE FØR RESTART ØF PASS 2                     00340200
03403                  *     MAG TAPE TEST AND ADVANCE PAST          MDL 2/9/69 *C           00340300
03404                  *     END ØF FILE REMØVED.                    MDL 2/9/69 *C           00340400
03405  06431 11100642       BRU  EX01          START PASS 1            09/21/67   JDJ          00340500
03406  06432 01100152 END1  LAA  MAPF                                                         00340600
03407  06433 00000022       SAZ                                                               00340700
03408  06434 11106436       BRU  *+2                                                          00340800
03409  06435 11106440       BRU  *+3                                                          00340900
03410  06436 01100173       LAA  LC                                                           00341000
03411  06437 03100153       STA  SIZE                                                         00341100
03412                  *                        CEU INSTRUCTIØNS REMØVED      MDL  1/4/69 *C  00341200
03413  06440 12103706       SPB  SSSS          MAG TAPE SØURCE                                00341300
03414  06441 25401300       DAC  '1300                                                        00341400
03415  06442 11110522       BRU  ØBK                                                          00341
03416  06443 00000000       HLT                                                               00341
03417  06444 11106513       BRU  END2                                                         00341
03418  06445 02100417 DØLR  LBA  BUFF+'15      CØLUMN 2                9/06/67   JDJ          00341
03419  06446 01100420       LAA  BUFF+'16      CØLUMN 3                9/06/67   JDJ          00341
03420  06447 00001316       LSL  11                                    9/06/67   JDJ          00342
03421  06450 00000514       FRL  5             B IS NØW CØL 2,3        9/06/67   JDJ          00342100
03422  06451 01100421       LAA  BUFF+'17      CØLUMN 4                9/06/67   JDJ          00342200
03423  06452 00001316       LSL  11                                    9/06/67   JDJ          00342300
03424  06453 00000514       FRL  5             B IS NØW CØL 2,3,4      9/06/67   JDJ          00342400
03425  06454 00000004       TBA                                        9/06/67   JDJ          00342500
03426  06455 15107017       CMA  KPID          PID LITERAL 5 BIT TASCII 9/06/67  JDJ          00342600
03427  06456 11106460       BRU  *+2           NØT A $PID CARD         9/06/67   JDJ          00342700
03428  06457 11106764       BRU  PAGE          YES IT IS A $PID CARD    9/06/67   JDJ          00342800
03429  06460 02050000       LBA  ='150000                               10/26/67   JDJ  *B     00342900
03430  06461 04100177       STB  PUNF                                                         00343000
03431  06462 00000003       CLA                                                               00343100
03432  06463 03100126       STA  PASS                                                         00343200
03433  06464 03100202       STA  BSIZ                                                         00343300
03434  06465 01100172       LAA  RLC                                                          00343400
03435  06466 00000024       SAP                                                               00343500
```

```
03436  06467 16020000       AMB   ='20000                                  10/26/67   JDJ  *B      00343600
03437  06470 04100174       STB   LØAD          ØUTPUT EØJ CØDE                                    00343700
03438  06471 12102132       SPB   PNCH          DATA TØ PUNCH BUFFER      09/21/67   JDJ           0343800
03439  06472 12102032 DØL2  SPB   CLØT          CLØSE ØUT BUFFER          09/21/67   JDJ           0343900
03440  06473 12106212       SPB   EDP           TERMINATE TAPE            09/21/67   JDJ           0344000
03441                       *                   CEU INSTRUCTIØNS REMØVED      MDL  1/4/69 *C      00344100
03442  06474 12103706       SPB   SSSS                                                             00344200
03443  06475 25401300       DAC   '1300         MAG TAPE SØURCE                                    00344300
03444  06476 11106500       BRU   *+2           YES                                                00344400
03445  06477 11106503       BRU   ENEM                                                             00344500
03446  06500 01000007       LAA   =7                                       10/26/67   JDJ  *B      00344600
03447  06501 55100000       CALL  A$DE7         ADVANCE PAST EØF                                   00344700
03448  06502 12110533       SPB   TSTB                                                             00344800
03449  06503 12103706 ENEM  SPB   SSSS          TEST FØR MAG SYMBØLIC ØUT9/06/67  JDJ             00344900
03450  06504 25401500       DAC   '1500         SNS 13                    9/06/67  JDJ            00345000
03451  06505 11106510       BRU   WEØF          YES WRITE  AN EØF         9/06/67  JDJ            00345100
03452  06506 00000000 PAUS  HLT                 STØP, GØ TØ MNEM          9/06/67  JDJ            00345200
03453  06507 11100612       BRU   MNEM          TØ START PASS 1                                    00345300
03454  06510 01077767 WEØF  LAA   =-9           WRITE ØN 3                 10/26/67   JDJ  *B      00345400
03455  06511 55100000       CALL  E$ØF7         WRITE TAPE MARK ØCTAL 17 9/06/67  JDJ             00345500
03456  06512 11106506       BRU   PAUS          GØ STØP FØR RESTART       9/06/67  JDJ            00345600
03457                       ********************************************************             00345700
03458                       * CHANGE TØ ALLØW A SKIP TØ TØP ØF FØRM AT THE BEGINNING ØF EACH S/R  00345800
03459                       ********************************************************             00345900
03460  06513 00000003 END2  CLA                 BEGIN PASS 2                                       00346000
03461  06514 03100126       STA   PASS          SET PASS 2                                         00346100
03462  06515 03100173       STA   LC            RESET LØC CØUNT                                    00346200
03463  06516 03100172       STA   RLC           SET ABS MØDE                                       00346300
03464  06517 03100607       STA   LSUP          SET MØDE TØ LIST                    12/19/67 JDJ *C00346400
03465  06520 03112251       STA   AHTU+1        SET BASE TØ ZERØ          11/18/67   JDJ  *B      00346500
03466  06521 01000001       LAA   =1            SET PAST TØ PRØCESS       11/18/67   JDJ  *B      00346600
03467  06522 03100544       STA   HPXX          NEXT VALUE AS 1 TØ GET    11/18/67   JDJ  *B      00346700
03468  06523 12104465       SPB   PAST          THE TABLE TØ 1-16         11/18/67   JDJ  *B      00346800
03469  06524 02077777       LBA   =-1           SET FØRM IN ERRØR         10/26/67   JDJ  *B      00346900
03470  06525 04105671       STB   FDER          IF FDAT PRECEEDS FØRM     9/07/67  JDJ            00347000
03471  06526 00000003       CLA                 LEADER TØ BLANKS      11/20/67    JDJ   *B        00347100
```

```
03472  06527 12102003       SPB  LEDR          ØUTPUT BLANK TAPE          09/21/67   JDJ            00347200
03473  06530 12103706       SPB  SSSS          SYMBØLIC ØUT PUT                                     00347300
03474  06531 25400100       DAC  '100                                                              00347400
03475  06532 11106550       BRU  TTRT          NØ                                                  00347500
03476  06533 01107020       LAA  PIDI          TEST FØR PAGE EJECT                  JDJ            00347600
03477  06534 00000023       SAN                BYPASS                               JDJ            00347700
03478  06535 11106550       BRU  TTRT              EXIT                             JDJ            00347800
03479  06536 12103706       SPB  SSSS          MAG TAPE ØUT SYMBØLIC    9/06/67  JDJ              00347900
03480  06537 25401500       DAC  '1500         SNS 13                   9/06/67  JDJ              00348000
03481  06540 11106551       BRU  TFR1                                   9/06/67  JDJ              00348100
03482  06541 12103706       SPB  SSSS          ØUTPUT ØN PRINTER                                    00348200
03483  06542 25400400       DAC  '400                                                              00348300
03484  06543 11106550       BRU  TTRT          NØ                                                  00348400
03485  06544 01077774       LAA  =-4           YES TØP ØF FØRM           10/26/67   JDJ  *B        00348500
03486  06545 55100000       CALL H$WR          TØP ØF FØRM CØNTRØL      09/21/67   JDJ              00348600
03487  06546 35400045       DAC  K261                                    11/07/67   JDJ  *B        00
03488  06547 00000001       DATA 1                                                                 00
03489  06550 11100702 TTRT  BRU  EX02          GØ PRØCESS NEXT CARD     09/21/67   JDJ            00
03490                 *                                                 9/06/67  JDJ              00
03491  06551 12106755 TFR1  SPB  CLAX          CLEAR BUFFER             9/06/67  JDJ              00
03492  06552 01000261       LAA  ='261         ASCII 1                   10/26/67   JDJ  *B        00
03493  06553 03110317       STA  AXB           FIRST CØNTRØL WØRD       9/06/67  JDJ              00349300
03494  06554 12110307       SPB  WMGT          WRITE MAG TAPE 9         9/06/67  JDJ              00349400
03495  06555 11106550       BRU  TTRT                                   9/06/67  JDJ              00349500
03496                 *                                                                            00349600
03497                 *          SCAN SUBRØUTINE                                                   00349700
03498                 *                                                                            00349800
03499  06556 25400000 SCAN  DAC  **            VARIABLE FIELD SCAN EXIT                           00349900
03500  06557 00000025       SØF                TURN ØFF ØVERFLØW                                   00350000
03501  06560 00000033       NØP                                                                    00350100
03502  06561 00000003       CLA                                                                    00350200
03503  06562 03100164       STA  SCDF          DEFINED FLAG = DEFINED                              00350300
03504  06563 03100163       STA  SCFØ          FIELD ØCCUPANCY = VACANT                            00350400
03505  06564 03100170       STA  SCAD          ADDRESS = 0                                         00350500
03506  06565 03100171       STA  SCRL          RELØCATE FLAG = ABSØLUTE                            00350600
03507  06566 03100161       STA  SCLT          LITERAL FLAG ØFF                                    00350700
```

```
03508  06567 03100166       STA  SCSN      SUBADDRESS SIGN = +                                  00350800
03509  06570 00000003 SC10  CLA                                                                00350900
03510  06571 03100167       STA  SCSA      SUBADRESS = 0                                        00351000
03511  06572 12107241 SC12  SPB  SCF       FETCH NEXT CHARACTER                                 00351100
03512  06573 00000006       IAB            SAVE A-REG                                           *E00351200
03513  06574 01102541       LAA  AUGM                                                           *E00351300
03514  06575 00000022       SAZ            CØNTINUE IF FLAG NØT SET                             *E00351400
03515  06576 11106600       BRU  AUGT      GØ CHECK FIELD ØCCUPIED FLAG                         *E00351500
03516  06577 11106603       BRU  AUGB      CØNTINUE                                             *E00351600
03517  06600 01100163 AUGT  LAA  SCFØ      FIELD ØCCUPIED FLAG                                  *E00351700
03518  06601 00000022       SAZ            SKIP IF NØT SET                                      *E00351800
03519  06602 11102412       BRU  MR99      ERRØR - ADDRESS PRESENT                              *E00351900
03520  06603 00000006 AUGB  IAB            RESTØRE A-REG                                        *E00352000
03521  06604 12107260       SPB  SCL       CHECK FØR LETTER                                     00352100
03522  06605 11107306       BRU  SYMP      CHAR = A-Z                                           00352200
03523  06606 12107266       SPB  SCD       CHECK FØR DIGIT                                      00352300
03524  06607 11106713       BRU  SC40      CHAR = 0-9                                           00352400
03525  06610 00000005       TAB                                                                 00352500
03526  06611 00000003       CLA                                                                 00352600
03527  06612 03100143       STA  MIND                                                           00352700
03528  06613 00000004       TBA                                                                 00352800
03529  06614 15000244       CMA  ='244     $                          10/26/67  JDJ  *B        00352900
03530  06615 11106617       BRU  *+2                                                            00353000
03531  06616 11106650       BRU  SC11                                                           00353100
03532  06617 15000247       CMA  ='247     CØMMA                      10/26/67  JDJ  *B        00353200
03533  06620 11106622       BRU  *+2       NØ                                                   00353300
03534  06621 11106706       BRU  SC36      YES                                                  00353400
03535  06622 15000252       CMA  ='252     ASTRISK                    10/26/67  JDJ  *B        00353500
03536  06623 11106625       BRU  *+2       NØ                                                   00353600
03537  06624 11106742       BRU  SC54      YES                                                  00353700
03538  06625 15000275       CMA  ='275     EQUAL =                    10/26/67  JDJ  *B        00353800
03539  06626 11106630       BRU  *+2       NØ                                                   00353900
03540  06627 11106732       BRU  SC50      YES                                                  00354000
03541  06630 00000005 SC16  TAB            CHAR TØ INDEX SAVE                                   00354100
03542  06631 15000253       CMA  ='253     +                          10/26/67  JDJ  *B        00354200
03543  06632 11106634       BRU  *+2       NØ                                                   00354300
```

```
06633 11106667      BRU  SC30      YES                                               00354400
06634 15000255      CMA  ='255     -                          10/26/67  JDJ  *B      00354500
06635 11106637      BRU  *+2       NØ                                                00354600
06636 11106670      BRU  SC31      YES                                               00354700
06637 15000254      CMA  ='254     ,                          10/26/67  JDJ  *B      00354800
06640 11106642      BRU  *+2       NØ                                                00354900
06641 11106661      BRU  SC26      YES,CØMMA FIELD TERMINATØ                         00355000
06642 15000240      CMA  ='240     SPACE                      10/26/67  JDJ  *B      00355100
06643 11106645      BRU  *+2       NØ                                                00355200
06644 11106655      BRU  SC24      YES,SPACE FIELD TERM,                             00355300
06645 12102330 SC20 SPB  FWER      ERRØR, NØT SPACE         09/21/67  JDJ            00355400
06646 12107241 SC22 SPB  SCF       FETCH NEXT CHARACTER                              00355500
06647 11106630      BRU  SC16      SCAN UNTIL TERMINATØR                             00355600
06650 01100174 SC11 LAA  LØAD                                                        00355700
06651 02017000      LBA  ='17000                          10/26/67  JDJ  *B      00355800
06652 00000027      ABA                                                              0L
06653 00000020      ASC                                                              003
06654 11107461      BRU  CA1L-2    TØ CALL PSEUDØ-ØP                                 00
                   *                                                                 003562
06655 01100165 SC24 LAA  SCCC      CARD CØLUMN PØSITIØN                              003563
06656 15000014      CMA  =12                              10/26/67  JDJ  *B      003564
06657 11106661      BRU  SC26      NØ                                                00356500
06660 11106572      BRU  SC12      IGNØRE SPACE IN CØLUMN 11                         00356600
06661 04100162 SC26 STB  SCTM      SET TERMINATØR CHARACTER                          00356700
06662 12107274      SPB  SCA       ADJUST ADDR,FØR SIGN                              00356800
06663 00000025      SØF            ØVERFLØW                                          00356900
06664 12102330      SPB  FWER      ERRØR ADDRESS ØVER 15 BIT09/21/67  JDJ            00357000
06665 01100170      LAA  SCAD      NØ,PICK UP SCAN ADDRESS                           00357100
06666 11306556      BRU* SCAN      EXIT SCAN                                         00357200
                   *                                                                 00357300
                   *                                                                 00357400
06667 00000003 SC30 CLA            SET SIGN +                                        00357500
06670 00000005 SC31 TAB            SIGN TØ INDEX                                     00357600
06671 12107274      SPB  SCA       ADJUST ADDR,FØR SIGN                              00357700
06672 04100166      STB  SCSN      NEW SUB FIELD SIGN                                00357800
06673 00000004      TBA                                                              00357900
```

```
06674 00000022       SAZ                                                                00358000
06675 01000000       LAA   ='100000                             10/26/67   JDJ  *B     00358100
06676 03100143       STA   MIND                                                         00358200
06677 11106570       BRU   SC10        PRØCESS NEXT SUB FIELD                           00358300
                *                                                                       00358400
                *                      ØCTAL NUMBER PRØCESSØR                           00358500
06700 00001516  SC34 LSL   13          SET ØCTAL DIGIT LEFT                             00358600
06701 02100167       LBA   SCSA                                                         00358700
06702 00000314       FRL   3           DIGIT INTØ SUBADDR.                              00358800
06703 04100167       STB   SCSA                                                         00358900
06704 00000022       SAZ                                                                00359000
06705 11106645       BRU   SC20        ERRØR,,,ØVER 16 BITS                             00359100
06706 12107241  SC36 SPB   SCF         FETCH NEXT CHARACTER                             00359200
06707 15000267       CMA   ='267       7                        10/26/67   JDJ  *B     00359300
06710 12107266       SPB   SCD         CHECK FØR 0-6                                    00359400
06711 11106700       BRU   SC34        CHAR = 0-7                                       00359500
06712 11106630       BRU   SC16        CHECK FØR TERM.CHAR.                             00359600
                *                                                                       00359700
                *                      DECIMAL INTEGER PRØCESSØR                        00359800
06713 06000260  SC40 SMA   ='260       ASCII 0                  10/26/67   JDJ  *B     00359900
06714 03100162       STA   SCTM        REMØVE ASCII BIAS                                00360000
06715 01100167       LAA   SCSA        EFFECTIVELY MULTIPLY THE                         00360100
06716 00001612       FRA   14          SUBADDR, BY 10                                   00360200
06717 04100167       STB   SCSA                                                         00360300
06720 00000217       FLA   2                                                            00360400
06721 16100167       AMB   SCSA                                                         00360500
06722 16100162       AMB   SCTM        ADD CHAR TØ PRØDUCT                              00360600
06723 04100167       STB   SCSA                                                         00360700
06724 00000022       SAZ                                                                00360800
06725 11106645       BRU   SC20                                                         00360900
06726 12107241       SPB   SCF         FETCH NEXT CHARACTER                             00361000
06727 12107266       SPB   SCD         CHECK CHAR FØR DIGIT                             00361100
06730 11106713       BRU   SC40        CHAR = 0-9                                       00361200
06731 11106630       BRU   SC16        CHECK FØR TERM.CHAR.                             00361300
                *                                                                       00361400
                *          SET FØR LITERAL PRØCESS                                      00361500
```

```
03616  06732 01106732 SC50 LAA  *                                                    00361600
03617  06733 03100120      STA  SLIT                                                 00361700
03618  06734 01100060      LAA  EQ                                                   00361800
03619  06735 00000022      SAZ                                                       00361900
03620  06736 11106645      BRU  SC20                                                 00362000
03621  06737 00000003      CLA                                                       00362100
03622  06740 03100077      STA  IM                                                   00362200
03623  06741 11105770      BRU  DAT2       BACK INTØ DATA PSEUDØ    09/21/67  JDJ    00362300
03624                *                                                            00362400
03625  06742 12107241 SC54 SPB  SCF        FETCH NEXT CHAR                           00362500
03626  06743 15000252      CMA  =!252      *                         10/26/67  JDJ *B 00362600
03627  06744 11106746      BRU  *+2        NØ                                        00362700
03628  06745 11106646      BRU  SC22       FETCH AND CHECK FØR TERM,                 00362800
03629  06746 00000005      TAB             CHAR,TØ INDEX SAVE                        00362900
03630  06747 01100172      LAA  RLC                                                  00363000
03631  06750 03100171      STA  SCRL                                                 00
03632  06751 01100173      LAA  LC                                                   00
03633  06752 03100167      STA  SCSA       SET SUBADDR, = LØC.CNTR,                  00
03634  06753 00000004      TBA             RESTØRE CHARACTER                         00
03635  06754 11106631      BRU  SC16+1     CHECK FØR TERM.CHAR,                      00
03636                *                                                            00
03637                *                                                            00363700
03638  06755 00000000 CLAX ZZZ  0          ENTER                                     00363800
03639  06756 02077632      LBA  =-102                            10/26/67  JDJ *B 00363900
03640  06757 01000240      LAA  =!240      SPACE                 10/26/67  JDJ *B 00364000
03641  06760 03510465      STA  AXB+102,1     CLEAR              JDJ               00364100
03642  06761 00000026      IBS             LØØP                                      00364200
03643  06762 11106760      BRU  *-2                                                  00364300
03644  06763 11306755      BRU* CLAX       EXIT                                      00364400
03645                *                                                            00364500
03646  06764 02077666 PAGE LBA  =-74       MØVE 74 CHAR          9/06/67  JDJ       00364600
03647  06765 01500536      LAA  BFEN,1     TØ TITLE AREA         9/06/67  JDJ       00364700
03648  06766 03507162      STA  PGID-5,1                         9/06/67  JDJ       00364800
03649  06767 00000026      IBS             LØØP                  9/06/67  JDJ       00364900
03650  06770 11106765      BRU  *-3        BACK 74 TIMES         9/06/67  JDJ       00365000
03651  06771 00000003      CLA             SET PAGE INDICATØR                        00365100
```

```
06772 03107020      STA  PIDI         TØ VALID,I.E. $PID READ                            00365200
06773 03100542      STA  P4BD         CLEAR BCD VALUE             11/14/67   JDJ    *B   00365300
06774 01100422      LAA  BUFF+'20     GET CØL 5                   11/14/67   JDJ    *B   00365400
06775 12104252      SPB  PBCD         PACK                        11/14/67   JDJ    *B   00365500
06776 01100423      LAA  BUFF+'21     GET CØL 6                   11/14/67   JDJ    *B   00365600
06777 12104252      SPB  PBCD         PACK                        11/14/67   JDJ    *B   00365700
07000 12104261      SPB  MDBN         CØNVERT LINES TØ BINARY     11/14/67   JDJ    *B   00365800
07001 03107015      STA  LPGE         STØRE FØR USAGE             11/14/67   JDJ    *B   00365900
07002 12107005      SPB  ZRPG         GØ ZERØ PAGE               9/06/67  JDJ             00366000
07003 12107207      SPB  HDNG         HEADING                    9/06/67  JDJ             00366100
07004 11100702      BRU  EX02         PRØCESS NEXT RECØRD        9/06/67  JDJ             00366200
                *                                                                        00366300
07005 00000000 ZRPG ***  **           ENTER RØUTINE              9/06/67  JDJ             00366400
07006 01000260      LAA  ='260        ASCII 0                     10/26/67   JDJ   *B    00366500
07007 03107035      STA  PGBG+12      PAGE                       9/06/67  JDJ             00366600
07010 03107036      STA  PGBG+13      CØUNT                      9/06/67  JDJ             00366700
07011 03107037      STA  PGBG+14      AREA                       9/06/67  JDJ             00366800
07012 01000261      LAA  ='261        ASCII 1                     10/26/67   JDJ   *B    00366900
07013 03107040      STA  PGBG+15      IN PRINT AREA FØR HEADING9/06/67  JDJ               00367000
07014 11307005      BRU* ZRPG         EXIT TØ MAIN PRØGRAM       9/06/67  JDJ             00367100
                *                                                                        00367200
07015 00000000 LPGE DATA 0            LINES PER PAGE IN $PIN     9/06/67  JDJ             00367300
07016 00000000 LPCT DATA 0            LINES CØUNTED TØWARD LPGE9/06/67  JDJ               00367400
07017 00040444 KPID DATA '40444      PID                                                 00367500
07020 00000001 PIDI BSS  1            PAGE ID CARD INDICATØR                             00367600
                *                                                                        00367700
07021 00000261 PGBG DATA '261,'240,'240,'240,'240,'240                                   00367800
07022 00000240
07023 00000240
07024 00000240
07025 00000240
07026 00000240
07027 00000320      DATA '320,'301,'307,'305,'240,'240     PAGE                           00367900
07030 00000301
07031 00000307
07032 00000305
```

```
03679  07033 00000240
03679  07034 00000240
03680  07035 00000004       BSS  4                                                    00368000
03681  07041 00000240       DATA '240,'240,'240,'240,'240,'240,'240                   00368100
03681  07042 00000240
03681  07043 00000240
03681  07044 00000240
03681  07045 00000240
03681  07046 00000240
03681  07047 00000240
03682  07050 00000112       BSS  74                                                   00368200
03683  07162 00000240       DATA '240,'240,'240,'240,'240                             00368300
03683  07163 00000240
03683  07164 00000240
03683  07165 00000240
03683  07166 00000240
03684  07167 00000001 PGID BSS  1              END PAGE AREA                         0036
03685                 * CBBBBBPAGEBBXXXXBBBBBBBIII,,,   FØRMAT ØF HEADING LINE       0036
03686                 *                                                              00368
03687                 * SUBRØUTINE CLIN RETURNS TØ A+0 IF LINE CØUNT                  00368
03688                 *  IS EQUAL TØ THE $PID VALUE, ØR TØ A+1 IF LESS               00368
03689                 *  THAN THE $PID VALUE,  PAGE CØUNT IS INCREMENTED             00368900
03690                 *  IF LINE CØUNT EQUALS $PID VALUE.                            00369000
03691  07170 00000000 CLIN ***  **             INCREMENT LINE CØUNT                  00369100
03692  07171 01107020      LAA  PIDI           GET $PID INDICATØR                    00369200
03693  07172 00000024      SAP                 TEST FØR $PID CARD                    00369300
03694  07173 11107204      BRU  CLN1           NØNE YET,IGNØRE HEADING               00369400
03695  07174 14107016      IMS  LPCT           INCREMENT IN BINARY       11/14/67  JDJ  *B  00369500
03696  07175 01107016      LAA  LPCT           TØ MATCH THE $PID CARD                00369600
03697  07176 15107015      CMA  LPGE           CØUNT VS $PID VALUE                   00369700
03698  07177 11107204      BRU  CLN1           NØT YET EXIT TØ ADDRESS+1             00369800
03699  07200 00000033      NØP                 EQUAL                                 00369900
03700  07201 02107206      LBA  APGB           ADDRESS ØF CØUNTER       10/17/67  JDJ  *B  00370000
03701  07202 12101066      SPB  DAFA           GØ CØUNT IN DECIMAL BY 1 10/17/67  JDJ  *B  00370100
03702  07203 11307170 CLN2 BRU* CLIN           EXIT NØRMAL                  JDJ      00370200
03703  07204 14107170 CLN1 IMS  CLIN           SET TØ ADDRESS + 1                    00370300
```

```
03704  07205 11307170       BRU* CLIN          EXIT A+1                                                    00370400
03705  07206 35407040 APGB  DAC  PGBG+15       UNITS PØSITIØN ØF ADDER  10/17/67   JDJ    *B           00370500
03706  07207 00000000 HDNG  *** **             ENTER HEADING RØUTINE                                       00370600
03707  07210 00000003       CLA                                                                          00370700
03708  07211 03107016       STA  LPCT          ZERØ LINE CØUTER              JDJ                           00370800
03709  07212 01100126       LAA  PASS          GET PASS                                                    00370900
03710  07213 00000022       SAZ                ZERØ LAST, ØTHERWISE NØ                                     00371000
03711  07214 11307207       BRU* HDNG          NØT FINAL PASS                                              00371100
03712  07215 00130401       SNS  1             TEST FØR NØ SYMBØLIC LIST 01/22/68 JDJ *C                   00371200
03713  07216 11307207       BRU* HDNG                                    01/22/68 JDJ *C                   00371300
03714  07217 12103706       SPB  SSSS                                                                      00371400
03715  07220 25401500       DAC  '1500         SNS 13 SYS MAG ØUTPUT                                       00371500
03716  07221 11107232       BRU  HMGT          GØ WRITE MAG HEADING                                        00371600
03717  07222 12103706       SPB  SSSS          TRY FØR NØ PRINTER                                          00371700
03718  07223 25400400       DAC  '400                                                                      00371800
03719  07224 11307207       BRU* HDNG          NØNE                                                        00371900
03720  07225 01077774       LAA  =-4     -4    YES                       11/01/67    JDJ    *B           00372000
03721  07226 55100000       CALL H$WR          WRITE TØ PRINTER          11/07/67   JDJ  *B               00372100
03722  07227 35407021       DAC  PGBG          PAGE HEADING                                                00372200
03723  07230 00000146       DATA 102                                                                       00372300
03724  07231 11307207       BRU* HDNG                                                                      00372400
03725  07232 02077632 HMGT  LBA  =-102                                  10/26/67   JDJ  *B               00372500
03726  07233 01507167       LAA  PGBG+102,1    MØVE HEADING TØ                                             00372600
03727  07234 03510465       STA  AXB+102,1     AXB MAG TAPE BUFFER                                         00372700
03728  07235 00000026       IBS                                                                            00372800
03729  07236 11107233       BRU  *-3                                                                       00372900
03730  07237 12110307       SPB  WMGT          WRITE TAPE                                                  00373000
03731  07240 11307207       BRU* HDNG          EXIT                                                        00373100
03732                *      FETCH NEXT CHARACTER RØUTINE                                                   00373200
03733  07241 25400000 SCF   DAC  **            FETCH NEXT CHARACTER EXIT                                   00373300
03734  07242 02100165       LBA  SCCC          CARD CØLUMN PØSITIØN                                        00373400
03735  07243 14100165       IMS  SCCC          INCREMENT CØLUMNPØSITIØN                                    00373500
03736  07244 01000112       LAA  =74           C,C, 73 END ØF CARD TEST                 9/70 RLD *E        00373600
03737  07245 15100165       CMA  SCCC          CØL 73                    01/13/68 JDJ *C                   00373700
03738  07246 11107256       BRU  LAS           C,C, 73 END ØF CARD                       9/70 RLD *E      00373800
03739  07247 11107256       BRU  LAS           C,C, 73 END ØF CARD                       9/70 RLD *E      00373900
```

```
03740  07250 01500415       LAA  BUFF+'13,1   NEXT BUFFER CHARACTER                                  00374000
03741  07251 15000240       CMA  ='240        SPACE                    10/26/67  JDJ  *B          00374100
03742  07252 11107254       BRU  *+2          NØ                                                     00374200
03743  07253 11107255       BRU  *+2          CHAR = SPACE                                           00374300
03744  07254 04100163       STB  SCFØ         SET FIELD AS ØCCUPIED                                  00374400
03745  07255 11307241       BRU* SCF          EXIT FETCH NEXT CHARACTER                              00374500
03746  07256 01000240 LAS   LAA  ='240        FØRCE C.C. 73 TØ A SPACE          9/70 RLD *E00374600
03747  07257 11307241       BRU* SCF          EXIT - END ØF CARD                9/70 RLD *E00374700
03748                *                                                                              00374800
03749                *                                                                              00374900
03750  07260 25400000 SCL   DAC  **           CHECK CHAR. FØR LETTER                                 00375000
03751  07261 15000333       CMA  ='333        Z+1                      10/26/67  JDJ  *B          00375100
03752  07262 15000277       CMA  ='277        A-2 TØ INCLUDE AT SIGN   10/26/67  JDJ  *B          00375200
03753  07263 00000033       NØP               NØT A LETTER             11/07/67   JDJ    *B 00375300
03754  07264 14107260       IMS  SCL          SET NØN-LETTER EXIT      11/07/67   JDJ  *B     00375400
03755  07265 11307260       BRU* SCL          EXIT                                                   00375500
03756                *                                                                              00375600
03757                *                                                                              00375700
03758  07266 25400000 SCD   DAC  **           CHECK CHAR. FØR DIGIT                                  00376000
03759  07267 15000272       CMA  ='272        ASCII 10                 10/26/67  JDJ  *B          00376000
03760  07270 15000257       CMA  ='257        ASCII -1                 10/26/67  JDJ  *B          00376000
03761  07271 00000033       NØP               SET NØN-DIGIT EXIT       11/07/67   JDJ    *B 00376100
03762  07272 14107266       IMS  SCD                                   11/07/67    JDJ    *B 00376200
03763  07273 11307266       BRU* SCD                                                               00376300
03764                *                                                                              00376400
03765                *                                                                              00376500
03766  07274 25400000 SCA   DAC  **           ADJUST SUB-ADDR. FØR SIGN                              00376600
03767  07275 01100166       LAA  SCSN         SIGN ØF SUB-ADDRESS                                    00376700
03768  07276 05077777       AMA  =-1                                   10/26/67  JDJ  *B          00376800
03769  07277 03100166       STA  SCSN         ADJUSTED                                               00376900
03770  07300 01100167       LAA  SCSA                                                                00377000
03771  07301 14100166       IMS  SCSN         SIGN = -                                               00377100
03772  07302 00000002       NEG                                                                      00377200
03773  07303 05100170       AMA  SCAD         ADD SUB-ADDR. TØ ADDR.   11/07/67   JDJ    *B 00377300
03774  07304 03100170       STA  SCAD                                                                00377400
03775  07305 11307274       BRU* SCA          EXIT                                                   00377500
```

```
                              *           SYMBØL PRØCESS                                                     00377600
07306 02077776 SYMP LBA  =-2                                          10/26/67   JDJ  *B   00377700
07307 04100362      STB  CCNT          SET SYM WØRD INDEX                                       00377800
07310 11107313      BRU  *+3           CØNTINUE                                                 00377900
07311 12107443      SPB  ALNM          NEXT CHAR ALPHANUMERIC                                   00378000
07312 11107335      BRU  SP00          NØ                                                       00378100
07313 00001216      LSL  10                                                                     00378200
07314 00000005      TAB                                                                         00378300
07315 04100367      STB  TMP5          SAVE CHARACTER                                           00378400
07316 01004040      LAA  ='4040                                       10/26/67   JDJ  *B   00378500
07317 03100366      STA  SYM+1         2ND WØRD SYMBØL                                          00378600
07320 00000613      FLL  6                                                                      00378700
07321 02100362      LBA  CCNT          SYM WØRD INDEX                                           00378800
07322 03500367      STA  SYM+2,1       SYMBØL WØRD                                              00378900
07323 12107443      SPB  ALNM          NEXT CHAR ALPHANUMERIC                                   00379000
07324 11107335      BRU  SP00          NØ                                                       00379100
07325 02100367      LBA  TMP5          PREVIØUS CHARACTER                                       00379200
07326 00001213      FLL  10                                                                     00379300
07327 00000415      RSL  4             PRESENT CHARACTER                                        00379400
07330 02100362      LBA  CCNT          SYM WØRD INDEX                                           00379500
07331 03500367      STA  SYM+2,1       SYMBØL WØRD                                              00379600
07332 14100362      IMS  CCNT          INCR,AND TEST SYM WD INDEX                               00379700
07333 11107311      BRU  SYMP+3        LØØP                                                     00379800
07334 11107336      BRU  SP00+1        CØNTINUE                                                 00379900
07335 04100165 SP00 STB  CØLP          BACKUP CØLUMN PØINTER                                    00380000
07336 02100002      LBA  LØW           TASS START                                               00380100
07337 01400000 SP01 LAA  0,1           1ST WD TASS ITEM                                         00380200
07340 00000022      SAZ                ZERØ                                                     00380300
07341 11107370      BRU  SP02          NØ                                                       00380400
07342 01100173      LAA  LC                                                                     00380500
07343 03400002      STA  2,1           ZERØ ØUT DEFINITIØN                                      00380600
07344 01100365      LAA  SYM           1ST WD SYM                                               00380700
07345 05100176      AMA  BAD                                                                    00380800
07346 04100147      STB  TMPY                                                                   00380900
07347 02100143      LBA  MIND          - INDICATØR                                              00381000
07350 00000030      ØBA                                                                         00381100
```

```
03812  07351  02100147        LBA   TMPY                                                    00381200
03813  07352  03400000        STA   0,1          1ST WD TASS AREA                           00381300
03814  07353  01100366        LAA   SYM+1        2ND WD SYM                                 00381400
03815  07354  00000020        ASC                UNDEF FLAG                                 00381500
03816  07355  03400001        STA   1,1          2ND WD TASS                                00381600
03817  07356  16000003        AMB   =3           INCR TASS INDEX          10/26/67  JDJ *B  00381700
03818  07357  00000004        TBA                SAVE                                       00381800
03819  07360  06100001        SMA   HIGH         HIGH CØRE                                  00381900
03820  07361  00000023        SAN                TASS INDEX LIMIT                           00382000
03821  07362  11107365        BRU   *+3          NØ                                         00382100
03822  07363  00000003        CLA                ZERØ SENTINEL                              00382200
03823  07364  03400000        STA   0,1          TØ NEXT TASS ITEM                          00382300
03824  07365  00130400        SNS   0                                                       00382400
03825  07366  11107416        BRU   SP05+3       CØNTINUE                                   00382500
03826  07367  11107440        BRU   SP09                                                    00382600
03827  07370  00000416  SP02  LSL   4                                                       00382700
03828  07371  00000415        RSL   4                                                       00382800
03829  07372  15100365        CMA   SYM          1ST WD TASS AND SYM EQUAL                  00382900
03830  07373  11107375        BRU   *+2          NØ                                         00383000
03831  07374  11107405        BRU   SP04         YES                                        00383100
03832  07375  16000003  SP03  AMB   =3           INCR TASS INDEX          10/26/67  JDJ *B  00383200
03833  07376  00000004        TBA                                                           00383300
03834  07377  06100001        SMA   HIGH         HIGH CØRE CELL                             00383400
03835  07400  00000024        SAP                TASS INDEX LIMIT REACHED                   00383500
03836  07401  11107337        BRU   SP01         NØ,LØØP                                    00383600
03837  07402  01000325  SP10  LAA   ='325        U                        10/26/67  JDJ *B  00383700
03838  07403  03100404        STA   BUFF+2                                                  00383800
03839  07404  11107440        BRU   SP09         CØNTINUE                                   00383900
03840  07405  01400001  SP04  LAA   1,1          2ND WD TASS ITEM                           00384000
03841  07406  00000416        LSL   4                                                       00384100
03842  07407  00000415        RSL   4                                                       00384200
03843  07410  06100366        SMA   SYM+1        2ND WD SYM                                 00384300
03844  07411  00000022        SAZ                EQUAL 2ND WD TASS                          00384400
03845  07412  11107375        BRU   SP03         NØ,LØØP                                    00384500
03846  07413  01400001  SP05  LAA   1,1                                                     00384600
03847  07414  00000023        SAN                TASS ITEM DEFINED                          00384700
```

```
07415 11107424      BRU  SP06          YES                                          00384800
07416 01100126      LAA  PASS                                                       00384900
07417 00000022      SAZ                2ND PASS                                     00385000
07420 11107440      BRU  SP09          NØ                                           00385100
07421 00130400      SNS  0                                                          00385200
07422 11107402      BRU  SP10                                                       00385300
07423 11107375      BRU  SP03                                                       00385400
07424 00000032 SP06 SNØ                DØUBLY DEFINED                               00385500
07425 11107430      BRU  SP07          NØ                                           00385600
07426 01000315      LAA  ='315         M                      10/26/67   JDJ  *B    00385700
07427 03100404      STA  BUFF+2                                                     00385800
07430 00000216 SP07 LSL  2                                                          00385900
07431 00000023      SAN                RELØCATABLE                                  00386000
07432 11107436      BRU  SP08          NØ                                           00386100
07433 01100171      LAA  REL           FLIP                                         00386200
07434 00000020      ASC                RELØCATIØN                                   00386300
07435 03100171      STA  REL           FLAG                                         00386400
07436 01400002 SP08 LAA  2,1           DEFINITIØN                                   00386500
07437 11107441      BRU  SP09+1        CØNTINUE                                     00386600
07440 00000003 SP09 CLA                                                             00386700
07441 03100167      STA  SCSA                                                       00386800
07442 11106646      BRU  SC22                                                       00386900
07443 25400000 ALNM DAC  **                                                         00387000
07444 12107241      SPB  SCF                                                        00387100
07445 15000244      CMA  ='244         $                      10/26/67   JDJ  *B    00387200
07446 11307443      BRU* ALNM          LESS THAN, NØN AN EXIT                       00387300
07447 11107455      BRU  AL00          EQUAL                                        00387400
07450 12107260      SPB  SCL           ALPH                                         00387500
07451 11107455      BRU  AL00          YES                                          00387600
07452 12107266      SPB  SCD           NUMERIC                                      00387700
07453 11107455      BRU  AL00          YES                                          00387800
07454 11307443      BRU* ALNM          NØN AN EXIT                                  00387900
07455 14107443 AL00 IMS  ALNM          SET AN EXIT                                  00388000
07456 11307443      BRU* ALNM          AN EXIT                                      00388100
07457 12102630 CALL SPB  LABP          PRØCESS THE LABEL FIELD  09/21/67   JDJ      00388200
07460 01012000      LAA  ='112000                                                   00388300
```

```
03884  07461 11107506       BRU  BWT                                                          *E 0388400
03885  07462 00000000 BWT2   BSS  0                                                          *E00388500
03886  07462 04100175       STB  DATA          SET INDIRECT BIT                               00388600
03887  07463 03100174 CA1L   STA  LØAD                                                       00388700
03888  07464 01100172       LAA  RLC                                                        00388800
03889  07465 00000023       SAN                                                             00388900
03890  07466 11107470       BRU  *+2                                                        00389000
03891  07467 01020000       LAA  ='20000                          10/26/67   JDJ  *B       00389100
03892  07470 05100174       AMA  LØAD                                                       00389200
03893  07471 03100174       STA  LØAD                                                       00389300
03894  07472 01040000       LAA  ='40000                          10/26/67   JDJ  *B       00389400
03895  07473 03100127       STA  NACA                                                       00389500
03896  07474 12107557       SPB  FTCH          PICK UP SUBR NAME          09/21/67   JDJ    00389600
03897  07475 11106231       BRU  C2AL                             09/21/67   JDJ          00389700
03898  07476 06000240 CAL4   SMA  ='240         SPACE                      10/26/67   JDJ  *B 00389800
03899  07477 00000022       SAZ                                                             00
03900  07500 12102330       SPB  FWER          ERRØR DELIMITER NØT SPACE09/21/67   JDJ      00
03901  07501 12101614       SPB  LIN           LIST A LINE                09/21/67   JDJ      00
03902  07502 14100173       IMS  LC            ADVANCE LØC CØUNTER                           00
03903  07503 12102132       SPB  PNCH          DATA TØ PUNCH BUFFER       09/21/67   JDJ      00390
03904  07504 12110041       SPB  CAL2          SET UP CALL SEQUENCE       09/21/67   JDJ      00390
03905  07505 11100702       BRU  EX02          GØ PRØCESS NEXT RECØRD     09/21/67   JDJ      00390500
03906                 *                                                                     *E00390600
03907  07506 00000000 BWT    BSS  0                                                         *E00390700
03908  07506 03107557       STA  FTCH          SAVE A-REGISTER                              *E00390800
03909  07507 02100044       LBA  DZRØ          =0                                           *E00390900
03910  07510 01100426       LAA  BUF+'24       CØLUMN 9                                     *E00391000
03911  07511 06000252       SMA  ='252         = *                                          *E00391100
03912  07512 00000022       SAZ                SKIP IF IT WAS AN ASTERISK                   *E00391200
03913  07513 11107515       BRU  *+2           NØT AN ASTERISK                              *E00391300
03914  07514 02000000       LBA  ='100000                                                   *E00391400
03915  07515 01107557       LAA  FTCH          RESTØRE A-REGISTER                           *E00391500
03916  07516 11107462       BRU  BWT2                                                       *E00391600
03917                 *                                                                     *E00391700
03918  07517 12102630 NAME   SPB  LABP          GØ PRØCESS THE LABEL       09/21/67   JDJ    00391800
03919  07520 02000000       LBA  ='100000                                                   00391900
```

```
03920  07521 01100172       LAA  RLC                                                    00392100
03921  07522 00000022       SAZ                                                         00392200
03922  07523 16020000       AMB  ='20000                  10/26/67   JDJ  *B           00392300
03923  07524 04100174       STB  LØAD                                                   00392400
03924  07525 00000003       CLA                                                         00392500
03925  07526 03100127       STA  NACA                                                   00392600
03926  07527 12107557       SPB  FTCH     PICK UP SUBR NAME       09/21/67   JDJ        00392700
03927  07530 06000254       SMA  ='254    CØMMA                    10/26/67   JDJ  *B     00392800
03928  07531 00000022       SAZ                                                         00392900
03929  07532 11107552       BRU  NAM3     DELIMITER NØT CØMMA                           00393000
03930  07533 03100175       STA  DATA                                                   00393100
03931  07534 00130400       SNS  0                                                      00393200
03932  07535 11107537       BRU  *+2      2-PASS                                        00393300
03933  07536 11107545       BRU  NAM2-1                           12/02/68 MDL *C       00393400
03934  07537 12106556       SPB  SCAN     PRØCESS VARIABLE FIELD  09/21/67   JDJ        00393500
03935  07540 01100170       LAA  SCAD                                                   00393600
03936  07541 03100175       STA  DATA                                                   00393700
03937  07542 01100163       LAA  SCFØ     VARIABLE FIELD EMPTY    12/02/68 MDL *C       00393800
03938  07543 00000022       SAZ                                   12/02/68 MDL *C       00393900
03939  07544 11107546       BRU  *+2      NØ                      12/02/68 MDL *C       00394000
03940  07545 12102330       SPB  FWER     YES                     12/02/68 MDL *C       00394100
03941  07546 12101614 NAM2  SPB  LIN      LIST A LINE             09/21/67   JDJ        00394200
03942  07547 12102132       SPB  PNCH     DATA TØ PUNCH BUFFER    09/21/67   JDJ        00394300
03943  07550 12110041       SPB  CAL2     SET UP CALLING SEQUENCE 09/21/67   JDJ        00394400
03944  07551 11100702       BRU  EX02     GØ PRØCESS NEXT CARD    09/21/67   JDJ        00394500
03945  07552 05000014 NAM3  AMA  ='14                             10/26/67   JDJ  *B     00394600
03946  07553 00000022       SAZ                                                         00394700
03947  07554 12102330       SPB  FWER     DELIMITER NØT, ØR SPACE 09/21/67   JDJ        00394800
03948  07555 03100175       STA  DATA                                                   00394900
03949  07556 11107546       BRU  NAM2                                                   00395000
03950  07557 25400000 FTCH  DAC  0                                                      00395100
03951  07560 02077772       LBA  =-6                              10/26/67   JDJ  *B     00395200
03952  07561 04100147       STB  TMPY                                                   00395300
03953  07562 01000040       LAA  ='40     NØ ASCII SPACE          10/26/67   JDJ  *B     00395400
03954  07563 03500137       STA  NACA+8,1 INITIALIZE TØ SPACES                        00395500
03955  07564 00000026       IBS                                                         00395600
```

```
07565 11107563      BRU  *-2                                                              395600
07566 12107241      SPB  SCF        FETCH A CHARACTER         09/21/67   JDJ             00395700
07567 12107260      SPB  SCL        CHECK FØR A LETTER        09/21/67   JDJ             00395800
07570 11107601      BRU  FTC2       CHAR= A-Z                                            00395900
07571 12107266      SPB  SCD        CHECK FØR A DIGIT         09/21/67   JDJ             00396000
07572 11107601      BRU  FTC2       CHAR = 0 - 9                                         00396100
07573 15000244      CMA  ='244      $                          10/26/67   JDJ   *B       00396200
07574 11107576      BRU  *+2                                                             00396300
07575 11107601      BRU  FTC2       CHAR = $                                             00396400
07576 12102330      SPB  FWER       ILLEGAL CHARACTER         09/21/67   JDJ             00396500
07577 01000240      LAA  ='240      SPACE                      10/26/67   JDJ   *B       00396600
07600 11307557      BRU* FTCH       EXIT                                                 00396700
07601 00001216 FTC2 LSL  10                                                              00396800
07602 00001215      RSL  10                                                              00396900
07603 02100147      LBA  TMPY                                                            00397000
07604 03500137      STA  NACA+8,1                                                        0
07605 00000026      IBS                                                                  00
07606 11107611      BRU  *+3                                                             00
07607 12107241      SPB  SCF        READ A DELIMITER          09/21/67   JDJ             00
07610 11307557      BRU* FTCH       EXIT                                                 00397
07611 04100147      STB  TMPY                                                            00397
07612 12107241      SPB  SCF        FETCH A CHARACTER         09/21/67   JDJ             00397
07613 15000240      CMA  ='240      SPACE                      10/26/67   JDJ   *B       00397800
07614 11107616      BRU  *+2                                                             00397900
07615 11307557      BRU* FTCH       EXIT                                                 00398000
07616 15000254      CMA  ='254      CØMMA                      10/26/67   JDJ   *B       00398100
07617 11107621      BRU  *+2                                                             00398200
07620 11307557      BRU* FTCH       EXIT                                                 00398300
07621 11107601      BRU  FTC2                                                            00398400
07622 03100175 CAL3 STA  DATA                                                            00398500
07623 12102132      SPB  PNCH       DATA TØ PUNCH BUFFER      09/21/67   JDJ             00398600
07624 02100147      LBA  TMPY                                                            00398700
07625 00000026      IBS                                                                  00398800
07626 11107630      BRU  *+2                                                             00398900
07627 11310041      BRU* CAL2       EXIT FRØM CALL ADDRESS    09/21/67   JDJ             00399000
07630 01500137      LAA  NACA+8,1                                                        00399100
```

```
03992  07631 00001016       LSL  8                                                    00399200
03993  07632 03100174       STA  LØAD                                                 00399300
03994  07633 00000026       IBS                                                       00399400
03995  07634 01500137       LAA  NACA+8,1                                             00399500
03996  07635 00001016       LSL  8                                                    00399600
03997  07636 03100175       STA  DATA                                                 00399700
03998  07637 00000026       IBS                                                       00399800
03999  07640 01500137       LAA  NACA+8,1                                             00399900
04000  07641 04100147       STB  TMPY          SAVE INDEX                             00400000
04001  07642 05100175       AMA  DATA                                                 00400100
04002  07643 11107622       BRU  CAL3                                                 00400200
04003  07644 02100175 FECP  LBA  DATA                            FEC  9-16-66        00400300
04004  07645 00000030       ØBA                                   FEC  9-16-66        00400400
04005  07646 03100175       STA  DATA                             FEC  9-16-66        00400500
04006  07647 01100162       LAA  SCTM                             FEC  9-16-66        00400600
04007  07650 06000254       SMA  =!254         CØMMA              10/26/67  JDJ  *B   00400700
04008  07651 00000022       SAŻ                                   FEC  9-16-66        00400800
04009  07652 11107654       BRU  *+2                              FEC  9-16-66        00400900
04010  07653 12102330       SPB  FWER          ERRØR              09/21/67  JDJ       00401000
04011  07654 12102630       SPB  LABP          PRØCESS THE LABEL  09/21/67  JDJ       00401100
04012  07655 11102416       BRU  MR26          GØ CLØSE ØUT RECØRD 09/21/67  JDJ      00401200
04013  07656 14100152 MAP   IMS  MAPF          SET MAP FLAG                           00401300
04014  07657 11100702       BRU  EX02          GØ PRØCESS NEXT LINE 09/21/67  JDJ     00401400
04015                *      MØR PSEUDØ-ØP      PRØCESSØR                              00401500
04016  07660 12102630 PS70  SPB  LABP          PRØCESS LABEL FIELD 09/21/67  JDJ      00401600
04017  07661 12106556       SPB  SCAN          SCAN THE VARIABLE FIELD 09/21/67 JDJ   00401700
04018  07662 01100163       LAA  SCFØ                                                 00401800
04019  07663 00000022       SAŻ                FIELD EXISTS                           00401900
04020  07664 12102330       SPB  FWER          YES, ERRØR         09/21/67  JDJ       00402000
04021  07665 12101614       SPB  LIN           PRINT LINE         09/21/67  JDJ       00402100
04022  07666 00000000       HLT                WAIT FØR INPUT                         00402200
04023  07667 11100702       BRU  EX02          GET NEXT CARD      09/21/67  JDJ       00402300
04024  07670 00000003 STR5  CLA                                                      00402400
04025  07671 03100077       STA  IM                                                   00402500
04026  07672 01100120       LAA  SLIT                                                 00402600
04027  07673 00000022       SAŻ                                                       00402700
```

```
04028  07674 11110070       BRU  SPT1          GØ MØVE DATA TØ ID          09/21/67   JDJ          00402800
04029  07675 12107241       SPB  SCF           FETCH A CHARACTER           09/21/67   JDJ          00402900
04030  07676 15000254       CMA  ='254         CØMMA                        10/26/67    JDJ  *B     00403000
04031  07677 11107701       BRU  *+2                                                               00403100
04032  07700 11106012       BRU  DAT8          BACK TØ SCAN WITH DIP       09/21/67   JDJ          00403200
04033  07701 15000240       CMA  ='240         SPACE                        10/26/67    JDJ  *B     00403300
04034  07702 11107704       BRU  *+2                                                               00403400
04035  07703 11106156       BRU  DA18          GØ TEST IF FDAT CØNTRØL     09/20/67   JDJ          00403500
04036  07704 15000257       CMA  ='257         SLASH                       09/20/67   JDJ          00403600
04037  07705 11107710       BRU  *+3                                       MDL 1/31/69 *C          00403700
04038  07706 11106163       BRU  DA19          YES ØUTPUT FDAT WØRD        09/20/67   JDJ          00403800
04039  07707 11100702       BRU  EX02          PRØCESS NEXT CARD           09/21/67   JDJ          00403900
04040  07710 12102330       SPB  FWER          ERRØR                       09/21/67   JDJ          00404000
04041  07711 11100702       BRU  EX02          PRØCESS NEXT CARD           09/21/67   JDJ          00404100
04042  07712 00000000 SY14  ***  **            ENTER SUBRØUTINE            09/21/67   JDJ          00404200
04043  07713 04107723       STB  SVX1          SAVE X1                     09/21/67   JDJ          00
04044  07714 02077660       LBA  =-80                                       10/26/67    JDJ  *B     00
04045  07715 01000240       LAA  ='240         SPACE                        10/26/67    JDJ  *B     00
04046  07716 03500522       STA  BUFF+'120,1                                                CKA     00
04047  07717 00000026       IBS                                                             CKA     00
04048  07720 11107716       BRU  *-2                                                        CKA     00404
04049  07721 02107723       LBA  SVX1          RESTØRE X1                  09/21/67   JDJ          00404900
04050  07722 11307712       BRU* SY14          EXIT                        09/21/67   JDJ          00405000
04051  07723 00000000 SVX1  DATA 0             TEMP STØRAGE                09/21/67   JDJ          00405100
04052                 *          (ASR) LISTING DELEMETER CHECK SUBRØUTINE                RFH      00405200
04053  07724 00000000 LSCK  ***  **            ENTER SUBRØUTINE            09/22/67   JDJ          00405300
04054  07725 01107741       LAA  LSFG          GET DELIMITER FLAG          09/22/67   JDJ          00405400
04055  07726 00000022       SAZ                SET/RESET                                RFH      00405500
04056  07727 11107734       BRU  *+5           SET                                      RFH      00405600
04057  07730 00000004       TBA                                                         RFH      00405700
04058  07731 06100124       SMA  LLNØ                                                   RFH      00405800
04059  07732 05000003       AMA  =3                                         10/26/67    JDJ  *B     00405900
04060  07733 11307724       BRU* LSCK          EXIT TØ CALL                09/22/67   JDJ          00406000
04061  07734 03101740       STA  LST+2         DELIMITER TØ CALL           09/22/67   JDJ          00406100
04062  07735 00000003       CLA                RESET FLAG                               RFH      00406200
04063  07736 03107741       STA  LSFG                                                   RFH      00406300
```

```
04064  07737 14107724       IMS  LSCK          SET EXIT TØ                09/22/67  JDJ          00406400
04065  07740 11307724       BRU* LSCK          RETURN PLUS ØNE            09/22/67  JDJ          00406500
04066  07741 00000000 LSFG  ŻŻŻ  **            DELIMETER FLAG                       RFH          00406600
04067                       ********************************************************          00406700
04068                       * CHANGE MADE TØ ALLØW PRINTING CØRRECTLY ØN ASR33.   JPD          00406800
04069                       ********************************************************          00406900
04070  07742 00000000 LS7   ***  **            ENTER SET DELIMITER        09/22/67  JDJ          00407000
04071  07743 03100015       STA  PRT4          LINE PRINTER               09/22/67  JDJ          00407100
04072  07744 03107741       STA  LSFG          ASR                        09/22/67  JDJ          00407200
04073  07745 11307742       BRU* LS7           EXIT                       09/22/67  JDJ          00407300
04074                       *                                                                   00407400
04075                       *          CHECK FØR DEFINED/ØCCUPIED/SPACE TERM                    00407500
04076  07746 25400000 PSCK  DAC  **                                                            00407600
04077                       *                                                                   00407700
04078                       *                                                                   00407800
04079                       *                                                                   00407900
04080  07747 01100164       LAA  SCDF          DEFINED FLAG                                     00408000
04081  07750 00000022       SAŻ                                                                 00408100
04082  07751 12102330       SPB  FWER          ERRØR -- UNDEFINED VAR     09/22/67  JDJ          00408200
04083  07752 01100163       LAA  SCFØ          ØCCUPIED FLAG                                    00408300
04084  07753 00000022       SAŻ                                                                 00408400
04085  07754 11107757       BRU  *+3                                                            00408500
04086  07755 01000301       LAA  ='301         A                          10/26/67  JDJ  *B     00408600
04087  07756 03100404       STA  BUFF+2                                                         00408700
04088  07757 01100162       LAA  SCTM          TERM, CHARACTER                                  00408800
04089  07760 00001416       LSL  12                                                             00408900
04090  07761 00000024       SAP                SKIP IF A SPACE                                  00409000
04091  07762 12102330       SPB  FWER          ERRØR, CØMMA TERMINATØR    09/22/67  JDJ          00409100
04092  07763 11307746       BRU* PSCK          EXIT                                             00409200
04093                       *                                                                   00409300
04094                       *                                                                   00409400
04095                       *                                                                   00409500
04096                       *          MEMØRY REFERENCING INSTRUCTIØNS                          00409600
04097  07764 12102630 MREF  SPB  LABP          PRØCESS LABEL FIELD        09/22/67  JDJ          00409700
04098  07765 00000003       CLA                                                                 00409800
04099  07766 02100175       LBA  DATA                                                           00409900
```

```
04100  07767 00000513       FLL  5                                                                00410000
04101  07770 04100175       STB  DATA                                                             00410100
04102  07771 00001016       LSL  8                                                                00410200
04103  07772 05040000       AMA  ='40000                    10/26/67   JDJ  *B                    00410300
04104  07773 03100174       STA  LØAD                                                             00410400
04105  07774 01030000       LAA  ='30000                    10/26/67   JDJ  *B                    00410500
04106  07775 03100176       STA  BAD                                                              00410600
04107  07776 12106556       SPB  SCAN       SCAN VARIABLE FIELD  09/22/67   JDJ                  00410700
04108  07777 01100172 XXXX  LAA  RLC                          8/15/67   JDJ       *B             00410800
04109  10000 00000023       SAN                                                                   00410900
04110  10001 11110011       BRU  M999                                                             00411000
04111  10002 01100171       LAA  SCRL                                                             00411100
04112  10003 00000022       SAZ                                                                   00411200
04113  10004 11110006       BRU  *+2                                                              00411300
04114  10005 11110011       BRU  M999                                                             00411400
04115  10006 01020000       LAA  ='20000                    10/26/67   JDJ  *B                    00
04116  10007 05100174       AMA  LØAD                                                             00
04117  10010 03100174       STA  LØAD                                                             00
04118  10011 01100120 M999  LAA  SLIT                       8/15/67   JDJ       *B             00
04119  10012 00000022       SAZ                                                                   00411
04120  10013 11102566       BRU  LITR       LITERAL INSTRUCTIØN  09/22/67   JDJ                  00412
04121  10014 01100126       LAA  PASS                                                             00412100
04122  10015 00000022       SAZ             1 PASS ASSY ØR PASS 2                                 00412200
04123  10016 11110020       BRU  *+2        PASS 1                                                00412300
04124  10017 11110023       BRU  *+4        PASS 2                                                00412400
04125  10020 01100170       LAA  SCAD                                                             00412500
04126  10021 00000024       SAP                                                                   00412600
04127  10022 12102330       SPB  FWER       ERRØR, ADDRESS SCAN  09/22/67   JDJ                  00412700
04128  10023 01100170       LAA  SCAD                                                             00412800
04129  10024 02077777       LBA  ='77777                    10/26/67   JDJ  *B                    00412900
04130  10025 00000027       ABA                                                                   00413000
04131  10026 05100175       AMA  DATA       ADD ADDR. TØ INSTR.                                   00413100
04132  10027 03100175       STA  DATA                                                             00413200
04133  10030 01100162       LAA  SCTM       TERMINAL CHARACTER                                    00413300
04134  10031 00001416       LSL  12                                                               00413400
04135  10032 00000023       SAN                                                                   00413500
```

```
04136  10033 11102407       BRU  MR22      FIELD ØCCUPIED              09/22/67  JDJ          00413600
04137  10034 12106556       SPB  SCAN      SCAN FØR INDEX              09/22/67  JDJ          00413700
04138  10035 15000001       CMA  =1                                    10/26/67  JDJ  *B     00413800
04139  10036 00000023       SAN                                                              00413900
04140  10037 11102373       BRU  PS20      WØRK ØN INDWX BIT           09/22/67  JDJ          00414000
04141  10040 11102415       BRU  MR24      ERRØR, VACANT FIELD         09/22/67  JDJ          00414100
04142  10041 25400000 CAL2  DAC  0                                                            00414200
04143  10042 01077777       LAA  =-1                                   10/26/67  JDJ  *B     00414300
04144  10043 03100415       STA  BUFF+'13  SET TYPE LISTING DELIM                            00414400
04145  10044 01000025       LAA  ='25                                  10/26/67  JDJ  *B     00414500
04146  10045 03100015       STA  PRT4      SET LISTING DELIMITER       09/22/67  JDJ          00414600
04147  10046 01100153       LAA  SIZE                                                        00414700
04148  10047 05100130       AMA  NACA+1                                                      00414800
04149  10050 03100130       STA  NACA+1                                                      00414900
04150  10051 02077770       LBA  =-8                                   10/26/67  JDJ  *B     00415000
04151  10052 01500137       LAA  NACA+8,1                                                    00415100
04152  10053 03100174       STA  LØAD                                                        00415200
04153  10054 00000026       IBS                                                              00415300
04154  10055 04100147       STB  TMPY                                                        00415400
04155  10056 01500137       LAA  NACA+8,1                                                    00415500
04156  10057 11107622       BRU  CAL3      GØ SET A TØ DATA            09/22/67  JDJ          00415600
04157  10060 01077776       LAA  =-2                                   10/26/67  JDJ  *B     00415700
04158  10061 03100105       STA  HØLD                                                        00415800
04159  10062 12107241 SPLT  SPB  SCF       FETCH A CHARACTER           09/22/67  JDJ          00415900
04160  10063 15000247       CMA  ='247     APØS                        10/26/67  JDJ  *B     00416000
04161  10064 11110066       BRU  *+2                                                         00416100
04162  10065 11110150       BRU  STR4                                                        00416200
04163  10066 12102330       SPB  FWER      ERRØR, NØT A CØMMA          09/22/67  JDJ          00416300
04164  10067 03100175       STA  DATA                                                        00416400
04165  10070 01100175 SPT1  LAA  DATA                                                        00416500
04166  10071 03100074       STA  ID                                                          00416600
04167  10072 01105746       LAA  FDØP      TEST IF FDAT CØNTRØL        09/20/67  JDJ          00416700
04168  10073 00000024       SAP            PLUS NØ                     09/20/67  JDJ          00416800
04169  10074 11103403       BRU  DI6       MINUS YES SET DIP IN ERR    09/20/67  JDJ          00416900
04170  10075 11102571       BRU  LIT1      LITERAL STRING              09/22/67  JDJ          00417000
04171  10076 01020240 STRA  LAA  ='120240   2 BLANKS                    10/26/67  JDJ  *B     00417100
```

```
04172  10077 03100121      STA  BCIL                                                               00417200
04173  10100 03100175      STA  DATA                                                               00417300
04174  10101 01077776      LAA  =-2                                    10/26/67   JDJ  *B          00417400
04175  10102 03100105      STA  HØLD                                                               00417500
04176  10103 12107241 STR1 SPB  SCF        FETCH A CHARACTER          09/22/67   JDJ              00417600
04177  10104 03100104      STA  FET9                                                               00417700
04178  10105 15000247      CMA  ='247      APØS                        10/26/67   JDJ  *B          00417800
04179  10106 11110110      BRU  *+2                                                                00417900
04180  10107 11110136      BRU  STR2                                                               00418000
04181  10110 02100175 STR3 LBA  DATA                                                               00418100
04182  10111 00001016      LSL  8                                                                  00418200
04183  10112 00001014      FRL  8                                                                  00418300
04184  10113 04100175      STB  DATA                                                               00418400
04185  10114 14100105      IMS  HØLD                                                               00418500
04186  10115 11110103      BRU  STR1                                                               0 418600
04187  10116 01100120      LAA  SLIT                                                               0
04188  10117 00000022      SAZ                                                                     0
04189  10120 11110060      BRU  SPLT-2     LITERAL FLAG IS ØN                                      0
04190  10121 01105746      LAA  FDØP       TEST FØR FDAT CØNTRØL      09/20/67   JDJ              0 419
04191  10122 00000023      SAN             MINUS IS FDAT CØNTRØL      09/20/67   JDJ              0041
04192  10123 11110126      BRU  DA16       NØT FDAT CØNTRØL           09/20/67   JDJ              0041
04193  10124 12105725      SPB  FDST       STØRE VALUE IN TABLE       09/20/67   JDJ              00419 00
04194  10125 11110076      BRU  STRA       GØ TEST FØR CØMMA SHØULD   09/20/67   JDJ              00419400
04195  10126 12101614 DA16 SPB  LIN        LIST A LINE                09/20/67   JDJ              00419500
04196  10127 14100173      IMS  LC                                                                 00419600
04197  10130 12102132      SPB  PNCH       DATA TØ PUNCH BUFFER       09/22/67   JDJ              00419700
04198  10131 01077777      LAA  =-1                                    10/26/67   JDJ  *B          00419800
04199  10132 03100415      STA  BUFF+'13   SET LISTING DELIMITER                                   00419900
04200  10133 01000025      LAA  ='25                                   10/26/67   JDJ  *B          00420000
04201  10134 12107742 LS9  SPB  LS7        SET LISTING DELIMITER      09/22/67   JDJ              00420100
04202  10135 11110076      BRU  STRA                                                               00420200
04203  10136 03100106 STR2 STA  HØLD+1                                                             00420300
04204  10137 12107241      SPB  SCF        FETCH A CHARACTER          09/22/67   JDJ              00420400
04205  10140 15000247      CMA  ='247      APØS                        10/26/67   JDJ  *B          00420500
04206  10141 11110143      BRU  *+2                                                                00420600
04207  10142 11110150      BRU  STR4                                                               00420700
```

```
10143 01100165      LAA  SCCC                                                     00420800
10144 06000001      SMA  =1                             10/26/67   JDJ  *B        00420900
10145 03100165      STA  SCCC                                                     00421000
10146 01100106      LAA  HØLD+1                                                   00421100
10147 11110110      BRU  STR3                                                     00421200
10150 01100105 STR4 LAA  HØLD                                                     00421300
10151 05000002      AMA  =2                             10/26/67   JDJ  *B        00421400
10152 00000022      SAZ                                                           00421500
10153 11110155      BRU  *+2                                                      00421600
10154 11107670      BRU  STR5      CØNT READ LITERAL STRING 09/22/67  JDJ         00421700
10155 01100175      LAA  DATA                                                     00421800
10156 02020240      LBA  ='120240  2 SPACES             10/26/67   JDJ  *B        00421900
10157 00001013      FLL  8                                                        00422000
10160 03100175      STA  DATA                                                     00422100
10161 01100120      LAA  SLIT                                                     00422200
10162 00000022      SAZ                                                           00422300
10163 11110070      BRU  SPT1      LITERAL FLAG IS ØN                             00422400
10164 01105746      LAA  FDØP      TEST IF FDAT IN CØNTRØL  09/20/67  JDJ         00422500
10165 00000023      SAN            MINUS YES                09/20/67  JDJ         00422600
10166 11110171      BRU  DA17      PRUS NØ MUST BE DATA ØP  09/20/67  JDJ         00422700
10167 12105725      SPB  FDST      FDAT GØ STØRE INVALID    09/20/67  JDJ         00422800
10170 11107670      BRU  STR5      SET TØ SINGLE PRECISIØN  09/20/67  JDJ         00422900
10171 12101614 DA17 SPB  LIN       LIST A LINE              09/20/67  JDJ         00423000
10172 14100173      IMS  LC                                                       00423100
10173 12102132      SPB  PNCH      DATA TØ PUNCH BUFFER     09/22/67  JDJ         00423200
10174 11107670      BRU  STR5      GØ PRØCESS LITERAL INPUT 09/22/67  JDJ         00423300
               ************************************************************       00423400
               * INSERTIØN ØF FØLLØWING SUBRØUTINE SØ THAT NØT NECESSARY TØ      00423500
               * TØ HAVE A HARDWARE MULTIPLY TØ ASSEMBLE   JPD                   00423600
               ************************************************************       00423700
               *                                                                  00423800
               * SØFTWARE SIMULATIØN ØF MULTIPLY TWØ NUMBERS TØ BE MULTIPLIED IN 00423900
               *  A + B REGISTERS                                                 00424000
               *  RESULTS IN A + B                                                00424100
               *                                                                  00424200
10175 00000000 MTPY ZZZ  **                                                       00424300
```

```
04244  10176 03110257       STA  SAVA                                                  00424400
04245  10177 00000003       CLA                                                        00424500
04246  10200 03110260       STA  CHEK                                                  00424600
04247  10201 03110261       STA  ADD                                                   00424700
04248  10202 01077761       LAA  *-15          11/01/67    JDJ  *B                     00424800
04249  10203 03110262       STA  CØUN                                                  00424900
04250  10204 01110257       LAA  SAVA                                                  00425000
04251  10205 00000024       SAP                                                        00425100
04252  10206 11110245       BRU  NEGA                                                  00425200
04253  10207 00000004 CØNØ  TBA                                                       00425300
04254  10210 00000024       SAP                                                        00425400
04255  10211 11110251       BRU  NEGB                                                  00425500
04256  10212 01000001 LØØP  LAA  *1            11/01/67    JDJ      *B00425600
04257  10213 00000027       ABA                                                        00425700
04258  10214 00000022       SAZ                                                        00
04259  10215 11110242       BRU  ØNE                                                   00
04260  10216 01110261       LAA  ADD                                                   00
04261  10217 00000112 SHIF  FRA  1                                                     00
04262  10220 00000024       SAP                                                        00
04263  10221 00000020       ASC                                                        00
04264  10222 03110261       STA  ADD                                                   00426500
04265  10223 14110262       IMS  CØUN                                                  00426600
04266  10224 11110212       BRU  LØØP                                                  00426700
04267  10225 03110257 ØUT   STA  SAVA                                                  00426800
04268  10226 01110260       LAA  CHEK                                                  00426900
04269  10227 00000023       SAN                                                        00427000
04270  10230 11110240       BRU  ØUT1                                                  00427100
04271  10231 01110257       LAA  SAVA                                                  00427200
04272  10232 00000006       IAB                                                        00427300
04273  10233 00000002       NEG                                                        00427400
04274  10234 00000006       IAB                                                        00427500
04275  10235 00000007       CSB                                                        00427600
04276  10236 00000002       NEG                                                        00427700
04277  10237 11310175       BRU* MTPY                                                  00427800
04278  10240 01110257 ØUT1  LAA  SAVA                                                  00427900
04279  10241 11310175       BRU* MTPY
```

```
04280  10242 01110261 ØNE  LAA  ADD                                                    00428000
04281  10243 05110257      AMA  SAVA                                                   00428100
04282  10244 11110217      BRU  SHIF                                                   00428200
04283  10245 03110260 NEGA STA  CHEK                                                   00428300
04284  10246 00000002      NEG                                                         00428400
04285  10247 03110257      STA  SAVA                                                   00428500
04286  10250 11110207      BRU  CØNØ                                                   00428600
04287  10251 00000002 NEGB NEG                                                         00428700
04288  10252 00000005      TAB                                                         00428800
04289  10253 01110260      LAA  CHEK                                                   00428900
04290  10254 00000020      ASC                                                         00429000
04291  10255 03110260      STA  CHEK                                                   00429100
04292  10256 11110212      BRU  LØØP                                                   00429200
04293  10257 00000000 SAVA ŻŻŻ  **                                                     00429300
04294  10260 00000000 CHEK ŻŻŻ  **                                                     00429400
04295  10261 00000000 ADD  ŻŻŻ  **                                                     00429500
04296  10262 00000000 CØUN ŻŻŻ  **                                                     00429600
04297                      *                                                        00429700
04298                      * WRITE SYMBØLIC ØUTPUT ØN MAGNETIC TAPE BCD 1 CHAR/WØRD  00429800
04299                      *                                                        00429900
04300                      *                                                        00430000
04301  10263 04110315 MSYM STB  AXB-2          SAVE B AS X1              JDJ  8/11/67      *B  00430100
04302  10264 12107170      SPB  CLIN           CØUNT LINES                                   00430200
04303  10265 12107207      SPB  HDNG           MAG TAPE HED,NØT LABEL    9/67/12     JDJ     00430300
04304  10266 02077632      LBA  =-102                                     10/26/67    JDJ *B  00430400
04305  10267 01500536      LAA  LNØ-1+102,1    MØVE BUF LNØ TØ AXB BUF   JDJ  8/11/67      *B  00430500
04306  10270 03510465      STA  AXB+102,1                                JDJ  8/11/67      *B  00430600
04307  10271 00000026      IBS                                           JDJ  8/11/67      *B  00430700
04308  10272 11110267      BRU  *-3                                      JDJ  8/11/67      *B  00430800
04309                      *                                             9/06/67  JDJ        00430900
04310  10273 01000146      LAA  =102                                      10/26/67    JDJ *B  00431000
04311  10274 15100015      CMA  PRT4           102 TØ LENGTH ØF BUFF     9/06/67  JDJ        00431100
04312  10275 11110277      BRU  *+2            NØ THEN ASSUME '25        9/06/67  JDJ        00431200
04313  10276 11110305      BRU  W102           WRITE 102 FULL CHAR       9/06/67  JDJ        00431300
04314  10277 02077657      LBA  =-81           CLEAR ØFF 81 CHARACTERS   9/06/67  JDJ        00431400
04315  10300 01000240      LAA  ='240          SPACE                      10/26/67    JDJ *B  00431500
```

```
04316  10301 03510465       STA  AXB+102,1     CLEAR RIGHT SIDE          9/06/67  JDJ            00431600
04317  10302 00000026       IBS                LØØP                      9/06/67  JDJ            00431700
04318  10303 11110301       BRU  *-2                                     9/06/67  JDJ            00431800
04319  10304 02110315       LBA  AXB-2         RESTØRE B                 JDJ  8/11/67       *B    00431900
04320  10305 12110307 W102  SPB  WMGT          WRITE MAG TAPE 9          9/06/67  JDJ            00432000
04321  10306 11101717       BRU  AFSY          RETURN TØ MAIN PRØGRAM    JDJ  8/11/67       *B    00432100
04322  10307 00000000 WMGT  ***  **            WRITE MAG TAPE 102 FRØM AXB                        00432200
04323  10310 01077767       LAA  =-9           WRITE ØN MAG TAPE 3        10/26/67   JDJ  *B      00432300
04324  10311 55100000       CALL H$WR          EXECUTE                   JDJ  8/11/67       *B    00432400
04325  10312 35410317       DAØ  AXB           AUXERILLARY BUFFER        JDJ  8/11/67       *B    00432500
04326  10313 00000146       DATA 102           WRITE 102                 JDJ  8/11/67       *B    00432600
04327  10314 11310307       BRU* WMGT                                                             00432700
04328  10315 00000002       BSS  2             SAVE AND EXTRA SPACE      JDJ  8/11/67       *B    00432800
04329  10317 00000146 AXB   BSS  102                                     JDJ  8/11/67       *B    00432900
04330  10465 00000002       BSS  2             SPACERS                   JDJ  8/11/67       *B.   00433000
04331                       *                                                                     0(
04332  10467 00000000 TEØF  ***  **                                                              *E00
04333  10470 03100367       STA  TMP5          SAVE LØGICAL DEVICE NUMBER                         *E00433
04334  10471 55100000       CALL E$ØF7         WRITE EØF                                          *E004334
04335  10472 12110533       SPB  TSTB          TEST STATUS                                        *E004335
04336  10473 01100367       LAA  TMP5                                                             *E004336
04337  10474 55100000       CALL B$EF7         BACKSPACE FILE                                     *E00433700
04338  10475 12110533       SPB  TSTB          TEST STATUS                                        *E00433800
04339  10476 11310467       BRU* TEØF          RETURN                                             *E00433900
04340                       ***************************************************                   00434000
04341                       ***************************************************                   00434100
04342                       * FØLLØWING INSERTED TØ ALLØW MAGNETIC TAPE INPUT - BINARY ØBJECT      00434200
04343                       ***************************************************                   00434300
04344                       * MAG TAPE ØBJECT ØUT-WRITE BINARY 3 CHARACTERS PER WØRD               00434400
04345                       *                                                                     00434500
04346  10477 02077622 ØBMG  LBA  =-110         PACK 2 CHAR PER WØRD       10/26/67   JDJ  *B      00434600
04347  10500 01500362       LAA  PBUF+2,1                                                         00434700
04348  10501 00001016       LSL  8                                                                00434800
04349  10502 00000026       IBS                                                                   00434900
04350  10503 05500362       AMA  PBUF+2,1                                                         00435000
04351  10504 16077777       AMB  =-1                                      10/26/67   JDJ  *B      00435100
```

```
04352  10505 00000006       IAB                                                                    00435200
04353  10506 00000110       RSA   1                                                                00435300
04354  10507 00000006       IAB                                                                    00435400
04355  10510 03500273       STA   SCØD+56,1                                                        00435500
04356  10511 00000117       FLA   1                                                                00435600
04357  10512 00000026       IBS                                                                    00435700
04358  10513 00000026       IBS                                                                    00435800
04359  10514 11110500       BRU   ØBMG+1                                                           00435900
04360  10515 01077770 WWRE  LAA   =-8          WRITE ØN TRANS 1          10/26/67   JDJ  *B      00436000
04361  10516 55100000       CALL  R$WR                                                             00436100
04362  10517 35400204       DAC   SCØD+1                                                           00436200
04363  10520 00000067       DATA  55                                                               00436300
04364  10521 11102112       BRU   MØBJ                                                             00436400
04365  10522 01100006 ØBK   LAA   RECC                              MDL 2/11/69 *C               00436500
04366  10523 00000002       NEG                RECØRD CØUNTER      MDL 2/11/69 *C               00436600
04367  10524 03100006       STA   RECC         RECØRD CØUNTER      MDL 2/11/69 *C               00436700
04368  10525 01000007 ØBK1  LAA   =7                                MDL 2/11/69 *C               00436800
04369  10526 55100000       CALL  B$SP7        BACK SPACE RECØRD   MDL 2/11/69 *C               00436900
04370  10527 12110533       SPB   TSTB                            MDL 2/11/69 *C               00437000
04371  10530 14100006       IMS   RECC                            MDL 2/11/69 *C               00437100
04372  10531 11110525       BRU   ØBK1                           MDL 2/11/69 *C               00437200
04373  10532 11106513       BRU   END2                            MDL 2/11/69 *C               00437300
04374  10533 00000000 TSTB  ***   **                                                             00437400
04375  10534 55100000       CALL  S$ST7                                                            00437500
04376  10535 00000000 TSTW  ***   **                                                             00437600
04377  10536 01110535       LAA   *-1                                                              00437700
04378  10537 00000024       SAP                                                                    00437800
04379  10540 11110534       BRU   TSTB+1                                                           00437900
04380  10541 11310533       BRU*  TSTB                                                             00438000
04381  10542 00001274 MARA  BSS   700          MACRØ STØRAGE AREA        10/23/67   JDJ  *B      00438100
04382  12036 00000002       BSS   2            SAFETY STØPPER AREA       10/23/67   JDJ  *B      00438200
04383  12040 37412035 PMAX  EAC   *-3          ADDRESS ØF END ØF MACRØ   10/23/67   JDJ  *B      00438300
04384                       *                                            10/23/67   JDJ  *B      00438400
04385  12041 00000004 WØRK  BSS   4            GENERAL USAGE BY IND SUB  10/23/67   JDJ  *B      00438500
04386  12045 00000040 PLST  BSS   32           STØRAGE AREA FØR LIST PAR 10/23/67   JDJ  *B      00438600
04387  12105 00000000       FØRM  8,8                                    10/23/67   JDJ  *B      00438700
```

```
04388  12105 00000240 TYPE FDAT 0,''  ''/0,'' M''/0,'' S''/0,'' F''     11/09/67   JDJ   *B   00438800
04388  12106 00000315
04388  12107 00000323
04388  12110 00000306
04389  12111 00000305      FDAT 0,'' E''/0,'' U''/0,''  ''/0,''  ''     11/09/67    JDJ   *B  00438900
04389  12112 00000325
04389  12113 00000240
04389  12114 00000240
04390  12115 00000132 TYPM BSS  90           NAME MACRØ TAB 30 NAMES   10/24/67   JDJ   *B   00439000
04391  12247 00012246 ETM1 EQU  *-1          END ØF NAME TABLE         10/23/67   JDJ   *B   00439100
04392  12247 37412246 ETMP EAC  ETM1         ABS ADR ØF END ØF TABLE   10/23/67   JDJ   *B   00439200
04393  12250 00000000 AHTU DATA 0            INTERNAL MACRØ LABELS     11/17/67   JDJ   *B   00439300
04394  12251 00000020      BSS  16           BASE PLUS LAST ASSIGNED   11/17/67   JDJ   *B   00439400
04395  12271 70400612 FINI END  MNEM                                               00439500
```

ERRØRS 0000 00000

...EXTERNALS...

A$DE7	3447								
B$EF7	4337								
B$SP7	4369								
B$WR	754	4361							
BUF	46								
E$ØF7	3455	4334							
H$WR	55	413	750	889	938	991	1440	2183	3486
	3721	4324							
LINE	285								
P$PØ	3262	3312							
S$ST7	4375								

...SYMBØLICS...

```
A999        * 201    2346    2391    2720
ADD          4247    4260    4264    4280   * 4295
ADØN        *  218    2773    2786    2811    2861    2878
AERC         897   *  900
AFSY        *  871    4321
AHTU         275    2356    2357    2402    2728    3465   * 4393
AL00        3874    3876    3878  * 3880
ALNM        3780    3790  * 3870    3873    3879    3880    3881
ALNØ        *   60     329    2903
APGB        3700  * 3705
ASBL        2097  * 2471    2579
ASR          409  *  411
ATSN        2104    2237  * 2470    2585
AUGB        3516  * 3520
AUGM         299     476  * 1302    3513
AUGT        3515  * 3517
AXB         3493    3641    3727    4301    4306    4316    4319    4325   * 4329
BABA        * 1087  1108    1110
BAD         *  154  1161    1217    1574    3808    4106
BANT         263  * 2292    2768
BAUD         761     762     766     767     771   *  774
BCI1        1345  * 1360
BCIL        *  116     304    1343    4172
BERR        1060  * 1065
BFEN        *  194  3647
BFLG        2459  * 2473    2476    2497    2599
BITS        2922    2947    2951    2961    2965   * 3069
BLØC        *  156  1000    1019    1021    1025    1033
BMP2        2486  * 2490
BSIZ        *  159     961    1004    1030    1032    3433
BSLC          83  *  158     992    1002
BUF         *  181     350     366     447     448     451    2053    2330    2332
            2425    2455    2482    2487    2550    2841    2843    2845    2847
            2888    2891    3910
BUFF          48      49  *  180     181     335     336     337     340     357
             381     398     751     755     758     773     774     802     820
             855     860    1077    1103    1153    1204    1366    1373    1386
            1394    1400    1402    1447    1485    2974    3095    3147    3317
            3321    3356    3361    3369    3374    3418    3419    3422    3654
```

```
CØLP        * 144     3800
CØNØ        * 4253    4286
CØUN          4249    4265    * 4296
CTAD          1996    1999      2005    * 2289
D1AT        * 3186    3197
D990          1838  * 1857
DA10        * 3137    3204
DA11          3141  * 3206
DA12        * 3143
DA13          3125  * 3130
DA14        * 3150    3210      3214
DA15          3166  * 3215
DA16          4192  * 4195
DA17          4227  * 4230
DA18        * 3217    4035
DA19        * 3222    4038
DA20          3060  * 3066
DA21        * 2926    2959
DA22          2929  * 2952
DA23          2933    2934    * 2960
DA24        * 2950    2962
DA25          2956    2957    * 2963
DAC         *  238     239      281
DAF1        *  423     432
DAFA           330  *  420      427      433      898     2904     3701
DALF        * 1563    1595
DAT1           624    2916    * 3091
DAT2        * 3096    3159      3162     3623
DAT3          3152    3153    * 3164
DAT4        * 3154    3175      3181     3216
DAT5          3117  * 3182
DAT6          3127    3129    * 3133     3189     3192     3195
DAT7          3122    3132    * 3134
DAT8          3106    3110    * 3114     3223     4032
DATA        *  153     301      371      470      471      789      796      816      844
              1022    1026     1046     1054     1090     1092     1094     1096     1098
              1100    1140     1142     1162     1164     1169     1172     1218     1238
              1241    1251     1284     1289     1323     1324     1328     1355     1460
              1466    1496     2966     3063     3138     3168     3177     3293     3305
              3377    3388     3886     3930     3936     3948     3985     3997     4001
```

```
DI93          1700    * 1824
DI94          1701      1705    * 1709
DI95        * 1718      1753      1795
DI96          1724    * 1791
DI97        * 1826      1834
DI98          1830    * 1835
DI99          1722    * 1796
DID2        * 1712      1790
DID3        * 1789
DIID          1794      1833    * 3224      3244
DIP           1583    * 1584      1755      1788      3114
DIT1        *  111
DIT2        *  103      1663      1689      1717      1729      1730      1796      1803      1818
              1825      1836      1933      1934      3228      3230
DIT3        *  104      1667      1674      1693      1695      1709      1835
DIT4        *  105      1600      1710      1711      1719      1726      1727      1757      1789
              1792      1793      1827      1832
DIT5        *  106      1549      1613      1618      1627      1673      1882      1892
DIT6        *  112      1605      1625
DIT7        *  114      1736      1742      1745      1750
DITJ        *  110      1590      1601      1767
DØL2        * 3439
DØLR           349    * 3418
DP1           1562    * 1596
DP2         * 1561      1566
DSBL          2100    * 2472      2582
DVD1        * 3231      3239
DŽRØ        *   84      1616      1845      3909
EDP            120    * 3251      3253      3255      3261      3263      3267      3440
EM10        * 2534
EM12          2449    * 2526
EM13          2478    * 2529
EM14        * 2456      2462
EMAC           638    * 1970
EMCT        *  514      2833
EMØP        * 2830      2832      2834      2835      2836      2866      2899
EMP1          2415    * 2420      2498
EMP2          2430    * 2461      2563
EMP3          2433    * 2463      2468
EMP4          2436    * 2507
```

```
EMP5        * 2437      2512
EMP6          2440    * 2513
EMP7        * 2441      2520
EMP8          2443    * 2521
EMP9        * 2444      2525
EMPT        * 2412      2460      2461      2534      2896
EMSG        *  901      3390
EMSW        *  232      2413      2417      2458
EN12          3328    * 3386
END            633       634    * 3283
END1          3286    * 3406
END2           250      3417    * 3460      4373
ENDF        *  130      3303
ENEM          3445    * 3449
EØMR        *  214      2428
EQ          *   95       300      1268      3618
ERRM        *  213      2444
ETM1        * 4391      4392
ETMP          2770    * 4392
EX01        *  265      3405
EX02        *  297       389       391       393       416      1210      1233      1247      2865
              2869      2873      2895      2898      3036      3078      3163      3221      3489
              3662      3905      3944      4014      4023      4039      4041
EXCL        * 2294      2319      2420
EXIT           457    *  492
EXPN        *  233       312      2457      2893
F001        * 2995
F002          3001    * 3008
F003        * 2994      3003
F004          2998    * 3006
F005        * 2992      3005      3032
F006          3011    * 3033
F007        * 3017      3034
F008          3031    * 3035
F8PB        *  197      2677      2702      2706      2711
FDAT           636    * 2907
FDCT          2925      2938      2943      2952      2954      2964    * 3044
FDE1          1533    * 1548
FDE2          1535    * 1552
FDEF        * 1524      1540      1551      1553      1593      1651      1664      1675      1863
```

```
GNØP          372  *  446     450     453     455     456    2831
GØØN       *  758     769
GPL1         2704  * 2710
GPL2       * 2708    2715
GPLT         2611    2688  * 2700    2709
HDNG           53     395    3661  * 3706    3711    3713    3719    3724    3731
             4303
HFUL       *  217    2152    2173
HIGH       *   41      71    1422    1435    3382    3819    3834
HMGT         3716  * 3725
HØLD       *  108    1603    1619    1623    1800    1804    4158    4175    4185
             4203    4211    4213
HPXX       *  202     273    2349    2355    2724    2727    3467
ID         *  101    1346    1576    1587    1606    1620    1681    1682    1684
             1702    1735    1741    1743    1746    1748    1751    1752    1775
             1776    1778    1813    1814    1817    1820    1843    1844    1846
             1851    1852    1854    1855    1887    1894    1907    1909    1910
             1912    1913    1914    1917    1918    1920    1921    1922    19[illegible]
             1925    1928    1938    1940    1942    1944    1946    1948    19[illegible]
             3088    3137    3167    3176    3231    3234    3236    3240    32[illegible]
             4166
IM         *  102    1336    1631    1648    1698    1707    1708    1759    1780
             1900    3092    3151    3155    3172    3183    3184    3185    3622
             4025
IMAG       * 2286    2422    2514    2522    2527    2543    2549    2557
IND        *  137    1527    1529    1564    1592
INIT          770  *  773
IØ01         1045    1048  * 1051
IØ02         1089    1109  * 1128
IØAT         1064    1068    1118  * 1139    1147
IØCA          482  * 1042
IØCB          485  * 1072    1106
IØCC          488  * 1122
K261       *   85    3487
KPID         3426  * 3675
L00           869  *  873     881
L000       *  239     280
L006       *   48     872
L008       *   49     879
L01           876  *  882
```

```
L027            374   * 457
L028        *   458     466
L029        *   459     472
L030        *   460     475
L031        *   461     478
L032        *   462     481
L033        *   463     484
L044        *    83     959
L05         *   802
L09         *   813
L11         *   821
L12             823   * 864
LA00        *  1366    1371
LA01        *  1373    1392
LA02           1379    1380   * 1387
LA03           1376    1381   * 1391    1520
LA04           1410   * 1428
LA05           1437    1445   * 1447    1517
LA06           1432   * 1449
LA07        *  1455
LA08           1457   * 1505
LA10           1369   * 1382
LA11        *  1408    1436     1498
LA12           1375   * 1518
LA14           1512   * 1516
LA15        *  1433    1454
LA99        *  1489    1504
LABP           1129    1157     1213    1227    1236    1257    1276    1304    1312
            *  1364    1372     1424    1427    1448    1508    2880    3093    3283
               3882    3918     4011    4016    4097
LANL            264   * 2291    2782    2796
LAS            3738    3739   * 3746
LC          *   151     821      856    1001    1208    1242    1243    1252    1253
               1266    1272     1278    1418    1506    2562    2971    3144    3170
               3179    3318     3410    3462    3632    3805    3902    4196    4231
LEDP        *   223    2021     2040    2074    2082    2111    2117    2125    2137
LEDR        *   920     922      925     932     942     958    3258    3472
LIN         *   801     807      809     812     815     871     892    1207    1232
               1240    1483     2560    2894    2970    3035    3143    3169    3178
               3308    3378     3394    3901    3941    4021    4195    4230
```

```
LIS              639     * 3076       3081
LIT1          * 1331       4170
LITI          *  117
LITR              117     * 1328       4120
LLFD          *  206       2304       2509
LLNØ          *  119       4058
LNØ                56         60        119     *  177        293        294        295        296        310
                  311        386        414        890       2530       3343       3348       3391       4305
LØAD          *  152        302        782        788        795        824        830        843       1017
                 1159       1176       1177       1194       1195       1215       1286       1294       1331
                 1333       1458       1471       1475       1477       1494       3278       3279       3302
                 3437       3557       3887       3892       3893       3923       3993       4104       4116
                 4117       4152
LØØP          * 4256       4266       4292
LØPC          *  208       2309       2517
LØW           *   43        241        247        279       1407       3324       3401       3801
LPCT              384       3400     * 3674       3695       3696       3708
LPGE             3399       3659     * 3673       3697
LPID              259     *  724
LPIE              258     *  723
LS10          * 3149
LS7              3149     * 4070       4073       4201
LS9           * 4201
LSCK              882     * 4053       4060       4064       4065
LSFG              298       2977       4054       4063     * 4066       4072
LSID             1935     * 1937       1953       3237
LSLO             2935     * 3070
LST               886        888     *  889       4061
LSUP          *  237        810       3077       3464
M999             4110       4114     * 4118
MACR              637     * 2851
MAP               631     * 4013
MAPF          *  132       3406       4013
MARA             2290     * 4381
MBE1             2883     * 2890
MBE2             2886     * 2892
MBE3             2856       2889     * 2894       2905
MBE4              314     * 2896
MBE5              319     * 2899
MBEG               87     * 2874
```

```
MBYP      * 234     317    2855    2902
MCØL      * 211    2316    2431
MDBN      2132    * 2201    2216    2277    3013    3658
MDMR      * 220    2822    2881
MERR      * 118
MGT       407     * 412
MIND      * 127     303    3097    3527    3582    3810
MINP      * 235     320    2756    2864
MIØC      * 212    2441
MISP      322     * 2866
ML10      2813    * 2821
MLA1      2762    * 2766
MLA2      2765    * 2778    2820
MLA3      2771    * 2782
MLA4      2775    * 2780    2788
MLA5      * 2779    2781    2797    2826
MLA6      2783    * 2798
MLA7      2802    * 2806
MLA8      * 2770    2805
MLA9      * 2803    2808    2810
MLAB      * 2760    2779    2862    2879
MLØC      * 205    2300    2434
MNEM      36      * 240    2187    3453    4395
MØBJ      * 994    4364
MØPC      * 207    2305    2438
MØVF      2184    * 2188
MR21      * 1194
MR22      1130     1181   * 1200    1342    1353    1361    4136
MR24      118      1192     1199  * 1206    1316    4141
MR26      1202     1205   * 1207    1309    4012
MR2A      * 1196   1325
MR50      * 1304
MR60      479     * 1312
MR99      * 1203   1308    1320    3519
MREF      382      473     629     630    * 4097
MSYM      866     * 4301
MTP2      3257    * 3264
MTPY      1611     1671   * 4243    4277    4279
MVFD      * 210    2313    2447
NACA      * 122    3895    3925    3954    3971    3991    3995    3999    4148
```

```
                4149      4151      4155
NAM2            3933    * 3941      3949
NAM3            3929    * 3945
NAME             628    * 3918
NATF          *  204      2748      2763      2777
NEGA            4252    * 4283
NEGB            4255    * 4287
NEGC            1783      1812    * 1903      1915
NØL              640    * 3080
NØPR          *  219      2778      2870
NØRM            1718      1826    * 1927      1931      1936
NPAD             261    * 2290
NSRH          *   94      2789      2791      2799      2806      2844      2848
NX76          * 2501      2503      2505
ØBK             3415    * 4365
ØBK1          * 4368      4372
ØBMG             989    * 4346      4359
ØKDP            1840    * 1847
ØNE             4259    * 4280
ØØ10          *  907       916
ØØ22          *  912
ØØUT             819       854       859    *  905       912       917       918
ØP10             369    *  372
ØP11             346    *  383
ØP20          *  375       379
ØP30              88        89        90        91        92        93       353       365       373
                380      1970
ØP40             377    *  465
ØP80          *  641
ØPER             328    *  332      2897
ØPT1             375       457       458       459       460       461       462       463    *  616
                1009
ØPT2             467       469    *  731
ØPT3             458    *  520
ØPT4             459    *  536
ØPT5             460    *  578
ØPT6             461    *  590
ØPT7             462    *  602
ØPT8             463    *  606
ØPT9          *  609      1009
```

```
PM12             794    *  845
PM13             800    *  852
PM14             787    *  795      835      838      842
PMAX            2179    * 4383
PNCH          * 1013      1016     1036     1209     1295     1479     2561     2972     3145
                3171      3180     3306     3438     3903     3942     3986     4197     4232
PNUM          *  199      2608     2684
PP2W          * 2324      2341     2418
PPW1          * 2329      2340
PRNT          *   51        58      870
PRT4          *   57       308      839     1481     1487     2976     3315     4071     4146
                4311
PS02             622    * 1157
PS04          * 1165      1221     1223
PS10          * 1169
PS20            1185    * 1187     4140
PS30             623    * 1213
PS32          * 1223
PS34             618    * 1225
PS35             619    * 1226
PS36          * 1231
PS37             641    * 1232     1259
PS42             625    * 1236
PS46             626    * 1250
PS50          * 1253      1263
PS51          * 1257
PS52          * 1258      1287
PS56             620    * 1262
PS57          * 1263
PS60             621    * 1266
PS61          *  167
PS62          *  169
PS65            1246      1256     1275     1282   * 1288     1296
PS70             632    * 4016
PS98          * 1176
PS99          *  120
PSBK          * 1293      1300
PSCK            1239      1258   * 4076     4092
PSGN            2092      2234   * 2469     2575
PSRC            1292    * 1297
```

```
PST1      2348   * 2392    2405
PST2    * 2368     2404
PST3      2373   * 2393
PST4      2381   * 2406
PST5      2389   * 2408
PST6    * 2396     2407
PST7    * 2398     2409
PTI1       740   *  776
PTI2    *  750      779     781
PTI3       736   *  780
PUNF    *  155      955     960    3430
PV10    * 2263     2268
PVF1      2225   * 2260
PVF2      2232   * 2265
PVF3      2236     2239  * 2270
PVF4      2242   * 2245
PVF5    * 2230     2244    2247    2249    2280
PVF6      2253   * 2258
PVF7    * 2233     2257
PVF8    * 2255     2259    2269
PVF9    * 2226     2262    2264
PVFD      2045   * 2219    2263
PVWK      2226     2229    2276    2279  * 2282
PXF1    * 2076     2113
PXF2      2081   * 2091
PXF3      2085   * 2088
PXF4      2094     2099    2102    2106  * 2114
PXF5    * 2082     2109    2126
PXF6    * 2118     2133
PXF7      2122   * 2127
PXF8    * 2092     2139
PXF9      2130   * 2134
PXWK    *  225     2134    2138
RCLM    * 2287     2840    2858    2875
RECC    *   50      278     316    4365    4367    4371
REL     *  149     3862    3864
RLC     *  150     1226    1244    1254    1269    1274    1280    1290    1413
           1472     3294    3434    3463    3630    3888    3920    4108
RPAD    * 2284     2679    2701    2713
RSID      1731     1739    1740  * 1916    1926    3225
```

```
RSLO        2940    * 3071
S1        *  128
SAVA        4244      4250      4267      4271      4278      4281      4285    * 4293
SC10      *  3509      3583
SC11        3531    * 3557
SC12      *  3511      3566
SC16      *  3541      3556      3596      3613      3635
SC20      *  3554      3591      3609      3620
SC22      *  3555      3628      3869
SC24        3553    * 3563
SC26        3550      3565    * 3567
SC30        3544    * 3575
SC31        3547    * 3576
SC34      *  3586      3595
SC36        3534    * 3592
SC40        3524    * 3599      3612
SC50        3540    * 3616
SC54        3537    * 3625
SCA         3568      3577    * 3766      3775
SCAD      *   147      1061      1065      1168      1283      1321      3304      3505      3571
            3773      3774      3935      4125      4128
SCAN        1132      1165      1182      1228      1237      1250      1262      1271      1385
            1313      1575      3087      3272      3292    * 3499      3572      3934      4017
            4107      4137
SCCC      *   143       144       339      1075      1076      1101      1102      1542      1567
            1572      1579      1581      1784      1786      1857      1859      1976      2010
            2026      2032      2044      2050      3084      3086      3111      3113      3115
            3563      3734      3735      3737      4208      4210
SCD         1532      2128      2274      3002      3523      3594      3611    * 3758      3762
            3763      3877      3960
SCDF      *   142      1134      1189      1317      3503      4080
SCF         1530      1979      2011      2027      2033      2063      2112      2127      2222
            2243      2245      2260      2273      2995      3098      3196      3511      3555
            3592      3618      3625    * 3733      3745      3747      3871      3957      3974
            3977      4029      4159      4176      4204
SCFØ      *   141      1200      1229      1306      1335      1360      3295      3504      3517
            3744      3937      4018      4083
SCL          435      1534      3521    * 3750      3754      3755      3875      3958
SCLT      *   139      3507
SCNT      *   138
```

```
STAR        * 3084      3101
STCP        *  227      2060      2065
STD1          2014    * 2057
STD2          2017    * 2024
STD3          2030    * 2050
STD4          2036    * 2043
STD5        * 2031      2056
STD6        * 2046      2067
STDS        * 2003      2049      2872
STR1        * 4176      4186
STR2          4180    * 4203
STR3        * 4181      4212
STR4          4162      4207    * 4213
STR5        * 4024      4217      4229      4233
STRA          1901    * 4171      4194      4202
STRX          3090    * 3123
SVX1          4043      4049    * 4051
SY00        * 3325      3384
SY01          3332      3341    * 3379
SY02        * 3362
SY09          3327    * 3338
SY10        * 3364
SY11        * 3375
SY12        * 3329      3335
SY13          3331      3337    * 3349
SY14          3349      3386    * 4042      4050
SY99        * 3333      3346
SYM         *  171      1399      1406      1411      1416      1430      1452      3786      3789
              3796      3807      3814      3829      3843
SYMP          3522    * 3777      3798
SYPE        * 3314
T           *   96      3227      3238
T1MP        *  123      1267      1277
T2MP        *  124      1270      1279
T3MP        *  125      1459      1493
T4MP        *  126      1461      1495
T6A8          2634    * 2737      2742      2744
TASS        *  174      3338      3362      3375      3379
TAXX        *  203      2629      2632      2729
TEØF          3266    * 4332      4339
```

```
TFLG            2453    2466  * 2476
TFR1            3481  * 3491
THIG          *   63      78      81      242
TLØW          *   59     246    3400
TMHI            67      79  *   82
TMP0          *  164     165
TMP1          *  166     167     910      914
TMP2          *  168     169     906      911      915
TMP3          *  170     171
TMP4          *  172
TMP5          *  173     174    3784     3792     4333     4336
TMPY          *  129    1478    1488     1497     3809     3812     3952     3970     3976
               3987    4000    4154
TØPC          *  209    2312    2540
TØTL          *  136     975     976      980      983     1005
TRK9            749  *  754
TS1           *  1112
TST2            2481  * 2487
TSTB            3448    4335    4338     4370  * 4374     4379     4380
TSTW          *  4376
TTRT            3475    3478    3484  * 3489     3495
TYPE             358    1981    2541  * 4388
TYPM            2292  * 4390
U8BT          *  198    2298    2491     2496     2531     2658     2662     266
UDMR          *  221    2767    2780     2884
ULAD          *  2285   2295    2296     2494     2533     2657     2669     282
UNL1            2660  * 2666
UNL2          *  2664    2671
UNLA            2450    2463    2501     2571     2603     2619  * 2656     266
W102            4313  * 4320
WCT              404  *  415
WEØF            3451  * 3454
WMGT            3494    3730    4320  * 4322     4327
WØRK             355     363     422      431     1978     1984     1989     2145     2159
               2326    2328    2329     2334     2335     2337     2339     2359     2362
               2365    2367    2369     2370     2376     2377     2378     2384     2385
               2386    2393    2395     2397     2401     2403     2406     2408     2815
               2818  * 4385
WWRE          *  4360
XXX1            3136  * 3199
```

XXXX	3202	* 4108			
ŻFLG	2493	* 2497			
ŻØRØ	1074	* 1113			
ŻRPG	245	3660	* 3664	3671	
ŻULU	1093	1097	* 1101		