Digitek Fortran Compiler for
Raystream 636 computer (15 bit words)

SYSTEM TAPE 430
TIME 21 03
DATE 28 MAY 1963
LOG NO. DC1385 PROB NO. 160X PROG NO. 773 EST TIME 3 MINS PAGES 100
CF2103 052863 DC1385,160X,773,3,100 DIGITEK

```
*       XEQ

  EXECUTION 2103  052863
```

```
 14        WORK BREAK
                EQU    14
  2        SPECIAL LOC OFFSET
                EQU    2
354        SPECIAL BREAK
354        W0
                EQU    354
355        W0 INDIRECT
                EQU    355
356        W1
                EQU    356
357        W1 INDIRECT
                EQU    357
360        W2
                EQU    360
361        W2 INDIRECT
                EQU    361
362        W3
                EQU    362
363        W3 INDIRECT
                EQU    363
364        W4
                EQU    364
365        W4 INDIRECT
                EQU    365
366        W5
                EQU    366
370        TARGET LIST
                EQU    370
371        POP ADDRESS INDIRECT
371        POP ADDR INDIRECT
                EQU    371
372        ADDRESS POINTED TO INDIRECT
                EQU    372
373        FAIL MESSAGE INDIRECT
                EQU    373
374        CRRNT QJOTE SPECIA_
374        CRRNT QUOTE SPEC
                EQU    374
376        CRRNT CHAR SPECIAL
                EQU    376
377        SYMBOLIC CENTRAL
                EQU    377
  0        BASE
  0        BASES
  0        SAVE START
                EQU    0
  1        START
  1        SAVE TOP
                EQU    1
  2        TOP
  2        TOPS
  2        SAVE BOTTOM
                EQU    2
  3        BOTTOM
```

Qt Quote ← My writing lefthanded (broke my arm)
Sta statement
Stat Static
Pop Program Operator
PntR List ident & rel loc
Bif ?

```
3       BOTTOMS
                EQU   3
4       CODE
4       CODES
                EQU   4
5       LIMIT
                EQU   5
0       ADR INST
                EQU   0
1       STO INST
                EQU   1
2       UNSCRIPTED ADR INST
                EQU   2
17      ABS INST
                EQU   17
4       BRM INST
                EQU   4
6       BRU INST
                EQU   6
5       LBL INST
                EQU   5
0       CHS LINK
                EQU   0
1       ADD LINK
                EQU   1
2       SUB LINK
                EQU   2
3       MPY LINK
                EQU   3
4       DIV LINK
                EQU   4
5       EXP LINK
                EQU   5
6       SPROG LINK
                EQU   6
7       IF LINK
                EQU   7
10      COMPUTED GO TO LINK
                EQU   10
11      ASSIGNED GO TO LINK
                EQU   11
12      ASSIGN LINK
                EQU   12
13      OVERFLOW LINK
                EQU   13
14      IF SENSE SWITCH LINK
                EQU   14
15      IF SENSE LIGHT LINK
                EQU   15
16      SENSE LIGHT LINK
                EQU   16
17      PAUSE LINK
                EQU   17
20      EXIT LINK
                EQU   20
```

```
 21        PRINT SPROG LINK
                EQU    21
 22        PUNCH TAPE SPROG LINK
                EQU    22
 23        ACCEPT TAPE SPROG LINK
                EQU    23
 24        TYPE SPROG LINK
                EQU    24
 25        READ DRUM SPROG LINK
                EQU    25
 26        WRITE DRUM SPROG LINK
                EQU    26
 27        STOP I-O LINK
                EQU    27
 30        IOT LINK
                EQU    30
 31        IOL UNSCRIPTED ARRAY LINK
                EQU    31
 32        DO LINK
                EQU    32
  1        INCR ONE
                EQU    1
 77        DECR ONE
                EQU    77
 76        DECR TWO
                EQU    76
  3        INCR THREE
                EQU    3
  4        INCR FOUR
                EQU    4
  5        INCR FIVE
                EQU    5
 23        INCR NINETEEN
                EQU    23
514        Q2 AND Q4 TRUE
                EQU    614
 31        LINK MODE BIT
                EQU    31
132        TOP FIVE BITS
                EQU    132
220        BOTTOM 9 BITS
                EQU    220
240        BOTTOM TEN BITS
                EQU    240
140        BOTTOM SIX POP ADR
140        LOWER SIX BITS POPA
                EQU    140
 26        CASE BIT POPA
 26        CASE BIT TRANSL TBL POP ADR
                EQU    26
 27        CONT BIT TRANSL TBL POP ADR
                EQU    27
 30        SPEC BIT TRANSL TBL POP ADR
                EQU    30
151        FLAG FIELD TRANSL TBL POP ADR
```

```
                EQU   151
77453   NEG OF LIST STAT SIZE
                EQU   -325
    0   START READER
    0   START READER OPA ADR
    0   READ CHAR OPA ADR
                EQU   0
    1   CLEAR READER
    1   CLEAR READER OPA ADR
                EQU   1
   74   LINKBITS
                EQU   74
   10   TYPER ADR
                EQU   10
   32   LINK SET BIT
                EQU   32
    0   SUBROUTINE QT
                EQU   0
    0   NO
                EQJ   0
    1   IJKLMN FLAG
                EQU   00001
    2   LETTER OR DIGIT FLAG
                EQU   00002
    4   LETTER FLAG
                EQU   00004
   10   COMMA-VIRGULE-R PAREN FLAG
                EQU   00010
   20   ILLEGAL-CAR RETURN FLAG
                EQU   00020
   40   DIGIT FLAG
                EQU   00040
20117   ML CAR RETURN
                EQJ   20117
10474   ML UPPER CASE
                EQU   10474
 4472   ML LOWER CASE
                EQU   04472
20000   OP BREAK TESTER
                EQU   20000
77776   MINUS TWO
                EQU   -2
  300   Q4 ONLY
                EQU   300
```

```
                        DOG   2
                        SOG   2
 2     34400            SBL1  0
 3     14037            LOC   DB SAVE INT BL
 4     70000            BRU
 5     15422            LOC   DB PROCESS INT
       6          ACTIVE STA TRIGGER
 5          0           PZE
       7          END OF STA TRIGGER
 7          0           PZE
      10          SAVE ICC
10          0           PZE
      11          SAVE CC
11          0           PZE
      12          SAVE AC
12          0           PZE
      13          SAVE LC
13          0           PZE
      14          FEX EXIT
14          0           PZE
      15          ADDRESS
15          0           PZE
      16          TARGET
16          0           PZE
      17          POP ADDRESS
17          0           PZE
      20          ADDRESS POINTED TO
20          0           PZE
      21          FAIL MESSAGE
21          0           PZE
      22          CRRNT QUOTE CHAR
22          0           PZE
      23          CRRNT CHAR
23          0           PZE
      24          ACTUAL CHAR
24          0           PZE
      25          CENTRAL 1
25          0           PZE
      26          CENTRAL 2
26          0           PZE
      27          ACCUM 1
27          0           PZE
      30          ACCUM 2
30          0           PZE
      31          INPUT CHAR CNT
31          0           PZE
      32          INPJT STOP CNT
32          0           PZE
      33          READ STOP CNT
33          0           PZE
      34          SCAN MODE
34          0           PZE
      35          LINE CNT
35          0           PZE
      36          CASE WORD
```

870

int
address area

```
36          0           PZE
      37        INT TEMP
      37        TEMP 1
      37        DP MPY A
      37        MDP TOGGLE
37          0           PZE
      40        CONST TEMP A
      40        SER TEMP 1
40          0           PZE
      41        SER TEMP 2
41          0           PZE
      42        SER TEMP 3
      42        DP MPY B
      42        INPUT TEMP 1
      42        REASSIGN TEMP 1
      42        MDP TEMP 1
42          0           PZE
      43        INT TEMP 1
      43        INPUT TEMP 2
      43        REASSIGN TEMP 2
      43        MDP TEMP 2
      43        COUNT OF COPY
43          0           PZE
      44        INPUT TEMP 3
      44        REASSIGN TEMP 3
      44        MDP TEMP 3
44          0           PZE
      45        INPUT TEMP 4
      45        REASSIGN TEMP 4
      45        MDP TEMP 4
45          0           PZE
      46        REASSIGN TEMP 5
      46        NORMALIZE TEMP 1
      46        TYPE ONE TEMP 1
      46        COMP TEMP
      46        LINK MODE
46          0           PZE
      47        LINES THIS PAGE
47          0           PZE
      50        TYPER CASE TRIGGER
50          0           PZE
      51        LAST STA TRIGGER
51          0           PZE
      52        INITIAL LINE COUNT
      52        INITIAL LINE CNT
52          0           PZE
      53        INITIAL INPUT CHAR CNT
53          0           PZE
      54        LOCATION
54          0           PZE
      55        DP ZERO
55          0           OCT   0
      56        DP ONE
      56        SKIP BLANKS FLAG
      56        FALSE Q WORD
```

```
                56          UNDEFINED
                56          FX FLAG
                56          MADE LBL
                56          ZERO
56                  0           OCT   0
                57          DOUBLE DEFINED
                57          ONE
                57          POP PQ
                57          LOWER CASE BIT
57                  1           OCT   1
                60          DP TWO
60                  0           OCT   0
                61          TRUE Q WORD
                61          QT SEPARATOR
                61          TWO
61                  2           OCT   2
                62          THREE
                62          SIZE MASK
62                  3           OCT   3
                63          FOJR
63                  4           OCT   4
                64          FIVE
64                  5           OCT   5
                55          SIXTY FOJR
                65          LEFT SHIFTER 6
                65          BLOCK SIZE
55                100           OCT   100
                66          POS FULL SCALE
                66          MAX INTEGER ALLOWED
                66          MAX ARRAY SIZE ALLOWED
                66          MAX LBL ALLOWED
66                37777           OCT   37777
67                77777           OCT   77777
                70          DP LEFT SHIFTER 14
70                  0           OCT   0
                71          HIGH ORDER BIT
71                40000           OCT   40000
                72          LOCAL DMY FLAG
                72          CODE MASK
72                76000           OCT   76000
                73          RUN TIME ADR FX ONE INST
73                22000           OCT   22000
                                  DOG   100
                                  SOG   100
               100          LAST ACTIVE CHAR CNT
100                 0           PZE
               101          QUOTE TRIGGER
101                 0           PZE
               102          QUOTE CHAR CNT
102                 0           PZE
               103          LEAD BLANKS TRIGGER
               103          LEAD ZERO TRIGGER
               103          SCANED DIGIT
103                 0           PZE
               104          SOL TEMP
```

```
104          0          PZE
     105           PUNCH CHAR
105          0          PZE
     106           SIX
106          6          OCT    6
     107           NINE
107         11          DEC    9
     110           TEN
110         12          DEC    10
     111           NO OF NON JUMP POPS -1
111         55          DEC    45
     112           BOTTOM 9 MASK
     112           LBL ADDRESS MASK
112        777          OCT    777
     113           INPUT BUFFER LENGTH
113        555          DEC    365
     114           BLANK INDEX
114         55          OCT    55
     115           LOW SIX BITS MASK
     115           LOW 6 BITS MASK
115         77          OCT    77
     116           ARRAY FLAG
     116           ARRAY ID FLAG
     115           NEG FJLL SCALE
     116           JSE BLANKS FLAG
     116           SAVE BLANKS FLAG
     116           ALL ONES
     116           ALL ONES MASK
     116           MINUS ONE
116      77777          OCT    77777
117      12040          OCT    12040
     120           DP LEFT SHIFTER 3
120          0          OCT    0
     121           LEFT SHIFTER 3
     121           FOJRTH BIT ONE
     121           SCALAR ID FLAG
121         10          OCT    00010
122         10          OCT    00010
     123           CONST FLAG
     123           NOT ADDRESS MASK
     123           TOP SIX MASK
123      77000          OCT    77000
     124           LEFT SHIFTER 12
124      10000          OCT    10000
     125           MAX SHIFT ALLOWED
125        300          DEC    192
     126           DP LEFT SHIFTER 5
     126           SPROG TITLE
125          0          OCT
     127           MPROG TITLE
     127           GAP SIZE
     127           LEFT SHIFTER 5
     127           BLOCK END CHAR
     127           THIRTY TWO
127         40          OCT    40
```

```
      130         LINK CODE
130     70000           OCT   70000
      131         NOT EXPON MASK
131     77700           OCT   77700
      132         LBL INST FLAG
      132         TEN B4 EXACT 1
132     50000           OCT   50000
      133         TEN B4 EXACT 2
133         0           OCT   00000
      134         ONE TENTH B-3
134     63146           OCT   63146
135     31465           OCT   31465
      136         TEN B4
136     50000           OCT   50000
137         2           OCT   00002
      140         EIGHT BIT MASK
140       377           OCT   377
      141         LINK MODE SET BIT
      141         DUMMY BIT
      141         LOCATION PNTR MAKER
141      2000           OCT   02000
      142         MODE MASK
      142         ALL BUT LETTER MODE
      142         LEFT SHIFTER 9
      142         FL FLAG
142      1000           OCT   01000
      143         LEFT SHIFTER 11
143      4000           OCT   4000
      144         GLOBAL SPROG ID FLAG
      144         ADDRESS MASK
      144         TWELVE BIT MASK
144      7777           OCT   7777
145      4362           OCT   4362
      146         LIST STAT START ADR
      146         MAX SHIFT COUNT
145       200           OCT   200
      147         SHIFT COUNT
147         0           PZE
      150         EXPONENT
150         0           PZE
      151         QSF ADDRESS
151         0           PZE
      152         QSF WORD
152         0           PZE
      153         QSF COUNTER
153         0           PZE
      154         ALLOCATION QT ADR
154       101           LOC   ALLOCATION QT
      155         NUMBER QT ADR
155       110           LOC   NUMBER QT
      156         SUBSCRIPTS QT ADR
156       104           LOC   SUBSCRIPTS QT
      157         ID CONFLICT QT ADR
157        72           LOC   ID CONFLICT QT
      160         SYNTAX QT ADR
```

```
150          76          LOC    SYNTAX QT
     161          TAPE END CHAR
161          41          OCT    41
     162          GAP CHAR
162          42          OCT    00042
     163          STA LBL PNTR
163           0          PZE
     164          SIXTY
164          74          DEC    60
     165          QUOTE TBL OFFSET
165        6025          LOC    QUOTE TBL
     166          SEVEN
166           7          OCT    7
     167          BOTTOM 10 MASK
167        1777          OCT    01777
     170          CHARACTERISTIC A
170           0          PZE
     171          CHARACTERISTIC B
171           0          PZE
     172          DIGITS SCANNED CNT A
172           0          PZE
     173          DIGITS SCANED CNT B
173           0          PZE
     174          DP PUNCH WORD
     174          PRINT 5 TEMP
     174          DIGITS JSED CNT A
174           0          PZE
     175          PUNCH WORD
     175          DIGITS JSED CNT B
175           0          PZE
     176          CHARS THIS LINE
176           0          PZE
```

```
                        SOG    200
                        DOG    200
         200        LBL LIST
  200          0        PZE
  201          0        PZE
  202          0        PZE
         203        LBL BOTTOM
  203          0        PZE
  204          1        OCT    00001
         205        LBL LIMIT
         205        LOCATION LIST
  205          0        PZE
  206          0        PZE
  207          0        PZE
  210          0        PZE
  211       2001        OCT    02001
         212        SCALAR LIST
  212          0        PZE
  213          0        PZE
  214          0        PZE
  215          0        PZE
  216       4012        OCT    04012
         217        SPECIAL SCALAR LIST
  217          0        PZE
  220          0        PZE
  221          0        PZE
  222          0        PZE
  223       6212        OCT    06212
         224        CONST LIST
         224        ERROR SYMBOL LIST
  224          0        PZE
  225          0        PZE
  226          0        PZE
  227          0        PZE
  230      10222        OCT    10222
         231        ARRAY LIST
  231          0        PZE
  232          0        PZE
  233          0        PZE
  234          0        PZE
  235      12040        OCT    12040
         236        GLOBAL SPROG LIST
  236          0        PZE
  237          0        PZE
  240          0        PZE
  241          0        PZE
  242      14362        OCT    14362
         243        GLOBAL DMY LIST
  243          0        PZE
  244          0        PZE
  245          0        PZE
  246          0        PZE
  247      16022        OCT    16022
         250        LOCAL SPROG LIST
  250          0        PZE
```

BASE
START → ent
TOP ent
BOTTOM → ent
CODE
LIMIT

init to LIST when START

init to END OF CORE

SIZE <1 or 2 [illegible] entry is this size

0: 3rd entry tells the size

SIZE

identifies the list

indicates scalar

```
251           0          PZE
252           0          PZE
253           0          PZE
254       20342          OCT    20342
      255          LOCAL DMY LIST
255           0          PZE
256           0          PZE
257           0          PZE
260           0          PZE
261       22332          OCT    22332
      262          COMMON LIST
      262          DIMENS LIST
262           0          PZE
263           0          PZE
264           0          PZE
265           0          PZE
266       24002          OCT    24002
      267          EQJIV DATA LIST
267           0          PZE
270           0          PZE
271           0          PZE
272           0          PZE
273       26002          OCT    26002
      274          DO LOOPS OPEN LIST
      274          MODE LIST
      274          EQUIV OPUT LIST
274           0          PZE
275           0          PZE
276           0          PZE
      277          MODE BOTTOM
277           0          PZE
300       30001          OCT    30001
      301          CODE LIST
      301          EQUIV TEMP LIST
301           0          PZE
302           0          PZE
      303          CODE TOP
303           0          PZE
      304          CODE BOTTOM
304           0          PZE
305       32001          OCT    32001
      306          EQUIV HOLD LIST
306           0          PZE
307           0          PZE
310           0          PZE
311           0          PZE
312       34002          OCT    34002
      313          WORK LIST
313           0          PZE
314           0          PZE
315           0          PZE
      316          WORK BOTTOM
316           0          PZE
317       36001          OCT    36001
      320          EXIT LIST
```

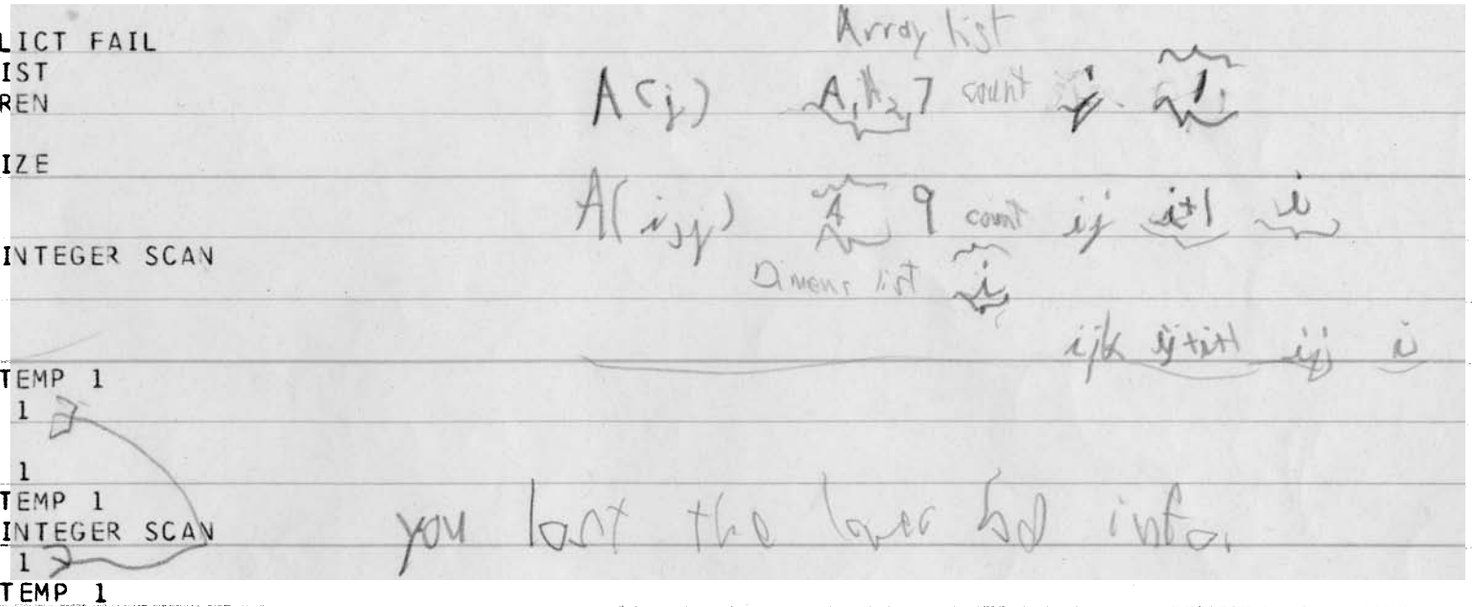
```
320           0          PZE
321           0          PZE
      322          EXIT TOP
322           0          PZE
      323          EXIT BOTTOM
323           0          PZE
324       40001          OCT    40001
      325          END OF CORE
325        7577          OCT    7577
      326          ARRAY CNT
      326          ARRAY STAT SIZE
326           0          PZE
      327          ERROR POSITION
327           0          PZE
      330          DP CHECK SUM
330           0          PZE
      331          CHECK SUM
331           0          PZE
      332          WORDS TO GO
332           0          PZE
      333          BLOCK CNT
333           0          PZE
      334          COMMON BREAK
334           0          PZE
      335          PROGRAM BREAK
335           0          PZE
      336          LOCATION CNT
336           0          PZE
      337          OFFSET
337           0          PZE
340           0          PZE
      341          ARRAY SIZE
341           0          PZE
      342          ARRAY SIZE 2
342           0          PZE
      343          DIMENS TEMP 1
343           0          PZE
344           0          PZE
      345          BUCKET
345           0          PZE
      346          JUMP STA TRIGGER
346           0          PZE
      347          FAIL CNT
347           0          PZE
      350          PEEK TRIGGER
350           0          PZE
      351          ALL DOLLARS
      351          THREE ONES
351        2041          OCT    2041
```

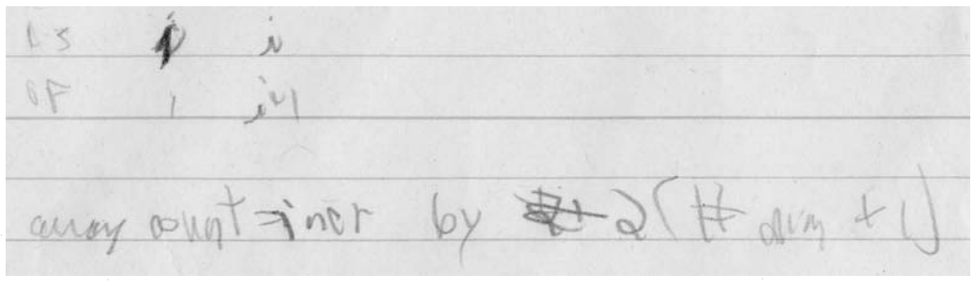
```
        352          START OF COMPILER
  352      70000            BRU
  353      15454            LOC    DB INITIALIZE        (Debug routine)
  354      57401            LPQ1   1
  355          0            LOC    0
  356      70000            BRU
  357       4124            LOC    INITIALIZE LISTS
  360      42000            OPA    START READER
  361      42001            OPA    CLEAR READER
  362         20            ZRN
  363      70000            BRU
  364       5217            LOC    INTERPRETER
  365        456            FET    ZERO
  366       1732            STS    WORDS TO GO
  367       1731            STS    CHECK SUM
  370       1736            STS    LOCATION CNT
  371       1733            STS    BLOCK CNT
  372       1746            STS    JUMP STA TRIGGER
  373       1406            STS    ACTIVE STA TRIGGER
  374       1451            STS    LAST STA TRIGGER
  375       1423            STS    CRRNT CHAR
  376       1431            STS    INPUT CHAR CNT
  377       1734            STS    COMMON BREAK
  400       1726            STS    ARRAY STAT SIZE
  401       1032            STO    INPUT STOP CNT
  402        513            FET    INPUT BUFFER LENGTH
  403       1033            STO    READ STOP CNT
  404        457            FET    ONE
  405       1435            STS    LINE CNT
  406       1036            STO    CASE WORD
  407      47463            PRC    CAR RETURN
        410          JOB CARD XLATE
  410      51626            JRS    STA INITIALIZE
  411      14065            CSA    ASTERISK
  412      40415            JAF    NO JOB CARD ENTRY
  413      51736            JRS    RELEASE AND PRINT
        414          HEAD STA XLATE
  414      51626            JRS    STA INITIALIZE
        415          NO JOB CARD ENTRY
  415      54147            JRS    SAVE LIST DATA
  416      71576            FEX    ILLEGAL STA XLATE
  417      51666            JRS    LBL FIELD XLATE
  420       7301            MOF    CODE LIST
  421      54147            JRS    SAVE LIST DATA
        422          SUBROUTINE STA XLATE
  422      70430            FEX    FUNCTION STA XLATE
  423      15400            QSF    SUBROUTINE QT
  424      50461            JRS    SPROG HEAD GEN      <--
  425      14061            CSA    LEFT PAREN
  426      40444            JAF    HEAD EXIT
  427      20434            JUN    DMY SEQ SCAN
```

```
        430      FUNCTION STA XLATE
430    70451           FEX   MAIN PROG XLATE
431    15403           QSF   FUNCTION QT
432    50461           JRS   SPROG HEAD GEN
433    14461           CSF   LEFT PAREN
        434      DMY SEQ SCAN
434    52644     $1    JRS   ID SCAN
435    35112           JAT   ID CONFLICT FAIL
436    10243           SER   GLOBAL DMY LIST
437    35112           JAT   ID CONFLICT FAIL
440     7643           MCO   GLOBAL DMY LIST
441    14046           CSA   COMMA
442    30434           JAT   $1
443    14444           CSF   RIGHT PAREN
        444      HEAD EXIT
444    14463           CSF   CAR RETURN
445    36301           ADR   CODE LIST
446    36713           CAR   WORK LIST
447    53303           JRS   PUNCH DATA
450    21573           JUN   CLEAN UP AND OPUT
        451      MAIN PROG XLATE
451    10751           LDP   ALL DOLLARS
452    11025           STD   CENTRAL 1
453    27527           FIL   MPROG TITLE
454    50465           JRS   HEAD GEN
455    53303           JRS   PUNCH DATA
456    36301           ADR   CODE LIST
457    36713           CAR   WORK LIST
460    20474           JUN   MAIN PROG ENTRY
        461      SPROG HEAD GEN
461    52607           JRS   SCALAR ID SCAN
462    45125           JAF   FAIL
463    17400           BIF   ADR INST
464    27526           FIL   SPROG TITLE
        465      HEAD GEN
465    27456           FIL   ZERO
466     7701           MCO   CODE LIST
467    25237           JUN   EXIT
        470      BODY STA XLATE
470    51626           JRS   STA INITIALIZE
471    54147           JRS   SAVE LIST DATA
472    71576           FEX   ILLEGAL STA XLATE
473    51666           JRS   LBL FIELD XLATE
        474      MAIN PROG ENTRY
474    54147           JRS   SAVE LIST DATA
475    70712           FEX   ASSIGNMENT STA XLATE
476    14020           CSA   G
477    30655           JAT   GO TO GROUP
500    14015           CSA   D
501    30517           JAT   DO OR DIMENSION
```

```
      502         IF STA XLATE
502      15413          QSF    IF QT
503      14061          CSA    LEFT PAREN
504      45125          JAF    FAIL
505      52453          JRS    EXP XLATE SET MODE
506      14444          CSF    RIGHT PAREN
507      26007          BLF    IF LINK
510      52745          JRS    LBL COMMA SCAN
511      17406          BIF    BRU INST
      512         IF STA EXITS
512      52745          JRS    LBL COMMA SCAN
513      17406          BIF    BRU INST
514      52750          JRS    LBL SCAN
515      17406          BIF    BRU INST
516      21566          JUN    JUMP EOL EXIT
      517         DO OR DIMENSION
517      14030          CSA    LETTER O
520      40561          JAF    DIMENSION STA XLATE
      521         DO STA XLATE
521      52750          JRS    LBL SCAN
522      52607          JRS    SCALAR ID SCAN
523      45125          JAF    FAIL
524      14456          CSF    EQUAL
525      50530          JRS    DO CONTROL XLATE
526       6674          MON    DO LOOPS OPEN LIST
527      21566          JUN    JUMP EOL EXIT
      530         DO CONTROL XLATE
530      52453          JRS    EXP XLATE SET MODE
531      14446          CSF    COMMA
532        754          FET    W0
533      17401          BIF    STO INST
534      53040          JRS    LBL MAKER BRU GEN
535      53044          JRS    LBL MAKER LBL GEN
536      52453          JRS    EXP XLATE SET MODE
537      14046          CSA    COMMA
540      30543          JAT    $1
541      27473          FIL    RUN TIME ADR FX ONE INST
542      20544          JUN    $3
543      52453   $1     JRS    EXP XLATE SET MODE
544        760   $3     FET    W2
545      17400          BIF    ADR INST
546      26032          BLF    DO LINK
547      53040          JRS    LBL MAKER BRU GEN
550       2360          SWT    W2
551      17405          BIF    LBL INST
552      17406          BIF    BRU INST
553      17405          BIF    LBL INST
554       7301          MOF    CODE LIST
555       6674          MON    DO LOOPS OPEN LIST
556       7301          MOF    CODE LIST
557       6674          MON    DO LOOPS OPEN LIST
560      25212          JUN    CLEAR ONE AND EXIT
```

```
      561        DIMENSION STA XLATE
561      15406          QSF    IMENSION QT
562      16662          RSV    DIMENS LIST
553      52644   $1     JRS    ID SCAN
554      35112          JAT    ID CONFLICT FAIL
565       7631          MCO    ARRAY LIST
566      14461          CSF    LEFT PAREN
557      10456          LDP    DP ONE
570      11341          STD    ARRAY SIZE
571      11337          STD    OFFSET
572        566          FET    SEVEN
573      52756   $4     JRS    SIGNED INTEGER SCAN
574      14045          CSA    VIRGULE
575      30602          JAT    $2
576      10456          LDP    DP ONE
577      11343          STD    DIMENS TEMP 1
600      10425          LDP    CENTRAL 1
601      20606          JUN    $3
602      10425   $2     LDP    CENTRAL 1
603      11343          STD    DIMENS TEMP 1
604      52756          JRS    SIGNED INTEGER SCAN
605      10425          LDP    CENTRAL 1
606      12343   $3     SDP    DIMENS TEMP 1
607       4427          SON    ACCUM 1
610      35104          JAT    ALLOCATION FAIL
611      11456          ADP    DP ONE
612      11025          STD    CENTRAL 1
613      10741          LDP    ARRAY SIZE
614      12425          MDP    CENTRAL 1
615      56066          SOL    MAX ARRAY SIZE ALLOWED
616      35104          JAT    ALLOCATION FAIL
617      11341          STD    ARRAY SIZE
620      14046          CSA    COMMA
621      40630          JAF    $7
622      11025          STD    CENTRAL 1
623       7562          MCO    DIMENS LIST
624      11737          ADP    OFFSET
625      11337          STD    OFFSET
626       2461          ADD    TWO
627      20573          JJN    $4
630      14444   $7     CSF    RIGHT PAREN
631        754          FET    WO
632       6631          MON    ARRAY LIST
633        726          FET    ARRAY CNT
634       6631          MON    ARRAY LIST
635       2726          ADD    ARRAY CNT
636       3062          SJB    THREE
637       1326          STO    ARRAY CNT
640        742          FET    ARRAY SIZE 2
641       6631          MON    ARRAY LIST
642      10737          LDP    OFFSET
643      11025          STD    CENTRAL 1
644       7631          MCO    ARRAY LIST
645      46262   $5     LCO    DIMENS _IST
646      40651          JAF    $6
```





```
547      7631          MCO    ARRAY _IST
550     20645          JJN    $5
551     14046   $6     CSA    COMMA
552     30563          JAT    $1
553     17262          REL    DIMENS _IST
554     21561          JUN    INACTIVE EOL EXIT
      655          GO TO GROUP
655     15411          QSF    OTO QT
555     13040          SOC    DIGIT FLAG
557     40663          JAF    COMPUTED OR ASSIGNED GO TO
      660          GO TO STA XLATE
560     52750          JRS    LBL SCAN
561     17406          BIF    BRU INST
562     21566          JUN    JUMP EOL EXIT
      663          COMPUTED OR ASSIGNED GO TO
563     14061          CSA    LEFT PAREN
564     40706          JAF    ASSIGNED GO TO STA XLATE
      665          COMPUTED GO TO STA XLATE
565     16713          RSV    WORK LIST
566     52750   $1     JRS    LBL SCAN
567     14046          CSA    COMMA
570     30666          JAT    $1
571     14444          CSF    RIGHT PAREN
572     52453          JRS    EXP XLATE SET MODE
573     26010          BLF    COMPUTED GO TO LINK
574     56713          CNT    WORK LIST
575     12460          MDP    DP TWO
576       427          FET    ACCUM I
577     57017          BAF    ABS INST
700     16313   $2     TOT    WORK LIST
701     40704          JAF    $3
702     17406          BIF    BRU INST
703     20700          JUN    $2
704     17313   $3     REL    WORK LIST
705     21566          JUN    JUMP EOL EXIT
      706          ASSIGNED GO TO STA XLATE
705     52434          JRS    VAR XLATE
707     17400          BIF    ADR INST
710     26011          BLF    ASSIGNED GO TO LINK
711     21566          JUN    JUMP EOL EXIT
```

```
      712        ASSIGNMENT STA XLATE
712      70725           FEX    ARITH FUN DEF STA XLATE
713      16701           RSV    CODE LIST
714      52434           JRS    VAR XLATE
715      17401           BIF    STO INST
716      36306           ADR    EQUIV HOLD LIST
717      37301           COF    CODE LIST
720      14456           CSF    EQUAL
721      52453           JRS    EXP XLATE SET MODE
722      36301           ADR    CODE LIST
723      36706           CAR    EQUIV HOLD LIST
724      21563           JUN    ACTIVE EOL EXIT
      725        ARITH FUN DEF STA XLATE
725       4406           SON    ACTIVE STA TRIGGER
726      40755           JAF    FORMAT STA XLATE
727      70755           FEX    FORMAT STA XLATE
730      52644           JRS    ID SCAN
731      35112           JAT    ID CONFLICT FAIL
732      14461           CSF    LEFT PAREN
733       7650           MCO    LOCAL SPROG LIST
734      53040           JRS    LBL MAKER BRU GEN
735      53044           JRS    LBL MAKER LBL GEN
736        754           FET    WO
737       6650           MON    LOCAL SPROG LIST
740      52663  $1       JRS    SYMBOL SCAN
741      10255           SER    LOCAL DMY LIST
742      35112           JAT    ID CONFLICT FAIL
743       7655           MCO    LOCAL DMY LIST
744      14046           CSA    COMMA
745      30740           JAT    $1
746      14444           CSF    RIGHT PAREN
747      14456           CSF    EQUAL
750      52453           JRS    EXP XLATE SET MODE
751      26020           BLF    EXIT LINK
752      17405           BIF    LBL INST
753      17255           REL    LOCAL DMY LIST
754      21561           JUN    INACTIVE EOL EXIT
```

```
      755       FORMAT STA XLATE
 755     71134          FEX    CALL STA XLATE
 756     15414          QSF    FORMAT QT
 757     14461          CSF    LEFT PAREN
 760       431          FET    INPUT CHAR CNT
 761     51025          JRS    FORMAT LIST SCAN
 762       452          FET    INITIAL LINE CNT
 763      1035          STO    LINE CNT
 764      3057          SUB    ONE
 765      2031          SWT    INPUT CHAR CNT
 766      3031          SUB    INPUT CHAR CNT
 767      2461          ADD    TWO
 770     10455          LDP    DP ZERO
 771      1030          STO    ACCUM 2
 772     12470          MDP    DP LEFT SHIFTER 14
 773       427          FET    ACCUM 1
 774       754          FET    WO
 775     57017          BAF    ABS INST
 776       516          FET    SAVE BLANKS FLAG
 777      1034          STO    SCAN MODE
1000       456          FET    ZERO
1001      1423          STS    CRRNT CHAR
1002      2461   $3     ADD    TWO
1003       456          FET    ZERO
1004     13020   $2     SOC    ILLEGAL-CAR RETURN FLAG
1005     31010          JAT    $1
1006       456          FET    ZERO
1007      1023          STO    CRRNT CHAR
1010      2424   $1     ADD    ACTUAL CHAR
1011      6356          RST    W1
1012     31015          JAT    $4
1013      3465          MPY    LEFT SHIFTER 6
1014     21004          JUN    $2
1015      6701   $4     MON    CODE LIST
1016      6356          RST    W1
1017     41002          JAF    $3
1020      1345          STO    BUCKET
1021      1345          STO    BUCKET
1022       456          FET    SKIP BLANKS FLAG
1023      1034          STO    SCAN MODE
1024     21561          JUN    INACTIVE EOL EXIT
      1025       FORMAT LIST SCAN
1025     14044   $1     CSA    RIGHT PAREN
1026     35237          JAT    EXIT
1027     14045   $2     CSA    VIRGULE
1030     31034          JAT    $3
1031     51045          JRS    FORMAT BASIC SCAN
1032     14045          CSA    VIRGULE
1033     41041          JAF    $4
1034     14045   $3     CSA    VIRGULE
1035     31034          JAT    $3
1036     14046          CSA    COMMA
1037     31027          JAT    $2
1040     21025          JUN    $1
1041     14046   $4     CSA    COMMA
```

```
1042      31027          JAT    $2
1043      14444          CSF    RIGHT PAREN
1044      25237          JUN    EXIT
      1045          FORMAT BASIC SCAN
1045      14064          CSA    DOLLAR
1046      31111          JAT    $7
1047      14062          CSA    MINUS
1050      31053          JAT    $1
1051      14057          CSA    PLUS
1052      41056          JAF    $2
1053      52766  $1      JRS    INTEGER*SCAN
1054      14431          CSF    P
1055      21063          JUN    $4
1056      13040  $2      SOC    DIGIT FLAG
1057      41074          JAF    $5
1060      52766          JRS    INTEGER SCAN
1061      14031          CSA    P
1062      41066          JAF    $3
1063      13040  $4      SOC    DIGIT FLAG
1064      41074          JAF    $5
1065      52766          JRS    INTEGER SCAN
1066       5026  $3      SOZ    CENTRAL 2
1067      35106          JAT    NUMBER FAIL
1070      14041          CSA    X
1071      31131          JAT    $11
1072      14021          CSA    H
1073      31117          JAT    $9
1074      14016  $5      CSA    E
1075      31106          JAT    $6
1076      14017          CSA    F
1077      31106          JAT    $6
1100      14022          CSA    I
1101      32766          JAT    INTEGER SCAN
1102      14012          CSA    A
1103      32766          JAT    INTEGER SCAN
1104      14461          CSF    LEFT PAREN
1105      21025          JUN    FORMAT LIST SCAN
1106      52766  $6      JRS    INTEGER SCAN
1107      14460          CSF    PERIOD
1110      22766          JJN    INTEGER SCAN
1111      53433  $7      JRS    NEXT ACTIVE CHAR
1112      13020          SOC    ILLEGAL-CAR RETURN FLAG
1113      35115          JAT    SYNTAX FAIL
1114      14064          CSA    DOLLAR
1115      41111          JAF    $7
1116      21131          JUN    $11
1117        516  $9      FET    SAVE BLANKS FLAG
1120       1034          STO    SCAN MODE
1121      13020          SOC    ILLEGAL-CAR RETURN FLAG
1122      35115          JAT    SYNTAX FAIL
1123        456          FET    SKIP BLANKS FLAG
1124       1034          STO    SCAN MODE
1125        456  $10     FET    ZERO
1126       1023          STO    CRRNT CHAR
1127       6026          RST    CENTRAL 2
```

```
1130      41117          JAF    $9
1131      13010   $11    SOC    COMMA-VIRGULE-R PAREN FLAG
1132      35237          JAT    EXIT
1133      21045          JUN    FORMAT BASIC SCAN
```

```
      1134        CALL STA XLATE
1134     71154          FEX    CONTINUE STA XLATE
1135     15416          QSF    CALL QT
1136     52644          JRS    ID SCAN
1137     41143          JAF    $1
1140     13544          SQT    GLOBAL SPROG ID FLAG
1141     31145          JAT    $2
1142     25112          JUN    ID CONFLICT FAIL
1143     26636  $1      BOP    GLOBAL SPROG LIST
1144      7636          MCO    GLOBAL SPROG LIST
1145     14061  $2      CSA    LEFT PAREN
1146     26006          BLF    SPROG LINK
1147     41152          JAF    $3
1150     52443          JRS    SPROG ARG SEQ XLATE
1151     14444          CSF    RIGHT PAREN
1152     17404  $3      BIF    BRM INST
1153     21563          JJN    ACTIVE EOL EXIT
      1154        CONTINUE STA XLATE
1154     71157          FEX    TYPE STA XLATE
1155     15420          QSF    CONTINUE QT
1156     21563          JJN    ACTIVE EOL EXIT
      1157        TYPE STA XLATE
1157     71163          FEX    ACCEPT PAIR
1160     15423          QSF    TYPE QT
1161     26024          BLF    TYPE SPROG LINK
1162     21221          JUN    LBL COMMA IOL XLATE
      1163        ACCEPT PAIR
1163     71172          FEX    READ DRUM STA XLATE
1164     15424          QSF    ACCEPT QT
1165     13040          SOC    DIGIT FLAG
1166     31170          JAT    ACCEPT STA XLATE
      1167        ACCEPT TAPE STA XLATE
1167     15427          QSF    TAPE QT
      1170        ACCEPT STA XLATE
1170     26023          BLF    ACCEPT TAPE SPROG LINK
1171     21221          JUN    LBL COMMA IOL XLATE
      1172        READ DRUM STA XLATE
1172     71201          FEX    WRITE DRUM STA XLATE
1173     15430          QSF    READ DRUM QT
1174     52453          JRS    EXP XLATE SET MODE
1175     14446          CSF    COMMA
1176     52453          JRS    EXP XLATE SET MODE
1177     26025          BLF    READ DRUM SPROG LINK
1200     21223          JUN    COMMA IOL XLATE
      1201        WRITE DRUM STA XLATE
1201     71210          FEX    PUNCH TAPE STA XLATE
1202     15433          QSF    WRITE DRUM QT
1203     52453          JRS    EXP XLATE SET MODE
1204     14446          CSF    COMMA
1205     52453          JRS    EXP XLATE SET MODE
1206     26026          BLF    WRITE DRUM SPROG LINK
1207     21223          JUN    COMMA IOL XLATE
```

```
     1210        PUNCH TAPE STA XLATE
1210      71215          FEX   PRINT STA XLATE
1211      15437          QSF   PUNCH QT
1212      15427          QSF   TAPE QT
1213      26022          BLF   PUNCH TAPE SPROG LINK
1214      21221          JUN   LBL COMMA IOL XLATE
     1215        PRINT STA XLATE
1215      71265          FEX   IF GROUP
1216      15441          QSF   PRINT QT
1217      26021          BLF   PRINT SPROG LINK
1220      21221          JUN   LBL COMMA IOL XLATE
     1221        LBL COMMA IOL XLATE
1221      52750          JRS   LBL SCAN
1222      17406          BIF   BRU INST
     1223        COMMA IOL XLATE
1223      14046          CSA   COMMA
1224      41226          JAF   IOL END
1225      51230          JRS   IOL XLATE
     1226        IOL END
1226      26027          BLF   STOP I-O LINK
1227      21563          JUN   ACTIVE EOL EXIT
     1230        IOL XLATE
1230      16701          RSV   CODE LIST
1231      14061  $4      CSA   LEFT PAREN
1232      41236          JAF   $1
1233      51230          JRS   IOL XLATE
1234      14444          CSF   RIGHT PAREN
1235      21246          JUN   $3
1236      52621  $1      JRS   UNSCRIPTED ARRAY SCAN
1237      41243          JAF   $2
1240      17402          BIF   UNSCRIPTED ADR INST
1241      26031          BLF   IOL UNSCRIPTED ARRAY LINK
1242      21246          JUN   $3
1243      52434  $2      JRS   VAR XLATE
1244      17400  $5      BIF   ADR INST
1245      26030          BLF   IOT LINK
1246      14046  $3      CSA   COMMA
1247      41260          JAF   $7
1250      52607          JRS   SCALAR ID SCAN
1251      41231          JAF   $4
1252      14056          CSA   EQUAL
1253      41244          JAF   $5
1254      36274          ADR   DO LOOPS OPEN LIST
1255      37301          COF   CODE LIST
1256      50530          JRS   DO CONTROL XLATE
1257      21262          JUN   $6
1260      36274  $7      ADR   DO LOOPS OPEN LIST
1261      37301          COF   CODE LIST
1262      36301  $6      ADR   CODE LIST
1263      36674          CAR   DO LOOPS OPEN LIST
1264      25237          JUN   EXIT
```

```
      1265        IF GROUP
1265      71311         FEX   ASSIGN STA XLATE
1266      15413         QSF   IF QT
1267      14061         CSA   LEFT PAREN
1270      31274         JAT   IF SENSE PAIR
      1271        IF OVERFLOW STA XLATE
1271      15443         QSF   OVERFLOW QT
1272      26013         BLF   OVERFLOW LINK
1273      21310         JUN   IF SENSE-OVERFLOW XLATE
      1274        IF SENSE PAIR
1274      15446         QSF   SENSE QT
1275      14034         CSA   S
1276      41303         JAF   IF SENSE LIGHT STA XLATE
      1277        IF SENSE SWITCH STA XLATE
1277      15450         QSF   WITCH QT
1300      52453         JRS   EXP XLATE SET MODE
1301      26014         BLF   IF SENSE SWITCH LINK
1302      21307         JUN   IF SENSE LIGHT-SWITCH XLATE
      1303        IF SENSE LIGHT STA XLATE
1303      15452         QSF   LIGHT QT
1304      52453         JRS   EXP XLATE SET MODE
1305      26015         BLF   IF SENSE LIGHT LINK
1306      21307         JUN   IF SENSE LIGHT-SWITCH XLATE
      1307        IF SENSE LIGHT-SWITCH XLATE
1307      14444         CSF   RIGHT PAREN
      1310        IF SENSE-OVERFLOW XLATE
1310      20512         JUN   IF STA EXITS
      1311        ASSIGN STA XLATE
1311      71323         FEX   SENSE LIGHT STA XLATE
1312      15454         QSF   ASSIGN QT
1313      52750         JRS   LBL SCAN
1314      14435         CSF   T
1315      14400         CSF   0
1316      52434         JRS   VAR XLATE
1317      17400         BIF   ADR INST
1320      26012         BLF   ASSIGN LINK
1321      17406         BIF   BRU INST
1322      21563         JUN   ACTIVE EOL EXIT
      1323        SENSE LIGHT STA XLATE
1323      71331         FEX   COMMON STA XLATE
1324      15446         QSF   SENSE QT
1325      15452         QSF   LIGHT QT
1326      52453         JRS   EXP XLATE SET MODE
1327      26016         BLF   SENSE LIGHT LINK
1330      21563         JUN   ACTIVE EOL EXIT
```

```
      1331        COMMON STA XLATE
1331      71347         FEX   EQUIVALENCE STA XLATE
1332      15456         QSF   COMMON QT
1333      52663   $1    JRS   SYMBOL SCAN
1334      10262         SER   COMMON LIST
1335      35104         JAT   ALLOCATION FAIL
1336      36267         ADR   EQUIV DATA LIST
1337      51443         JRS   EQUIV LIST SEARCH
1340      35104         JAT   ALLOCATION FAIL
1341      10212         SER   SCALAR LIST
1342      35104         JAT   ALLOCATION FAIL
1343       7662         MCO   COMMON LIST
1344      14046         CSA   COMMA
1345      31333         JAT   $1
1346      21561         JUN   INACTIVE EOL EXIT
      1347        EQUIVALENCE STA XLATE
1347      71542         FEX   RETURN STA XLATE
1350      15460         QSF   EQUIVALENCE QT
1351      51503         JRS   COPY EQUIV DATA
1352      16701         RSV   EQUIV TEMP LIST
1353      14461   $1    CSF   L PAREN
1354      51371         JRS   EQUIV SEG XLATE
1355      14444         CSF   R PAREN
1356      14046         CSA   COMMA
1357      31353         JAT   $1
1360      14463         CSF   CAR RETURN
1361      17301         REL   EQUIV TEMP LIST
1362      17267   $2    REL   EQUIV DATA LIST
1363      46667         SNE   EQUIV DATA LIST
1364      31362         JAT   $2
1365      36267   $3    ADR   EQUIV DATA LIST
1366      37306         COF   EQUIV HOLD LIST
1367      31365         JAT   $3
1370      21573         JUN   CLEAN UP AND OPUT
      1371        EQUIV SEG XLATE
1371      51434   $6    JRS   EQUIV SCAN AND SEARCH
1372      41410         JAF   $4
1373      51471         JRS   APPENDED INTEGER SCAN
1374       3356         SUB   W1
1375       1356         STO   W1
1376      21404         JUN   $3
1377      51434   $2    JRS   EQUIV SCAN AND SEARCH
1400      35104         JAT   ALLOCATION FAIL
1401       7701   $5    MCO   EQUIV TEMP LIST
1402      51471         JRS   APPENDED INTEGER SCAN
1403       6701         MON   EQUIV TEMP LIST
1404      14046   $3    CSA   COMMA
1405      31377         JAT   $2
1406        456         FET   ZERO
1407      21420         JUN   $1
1410       7701   $4    MCO   EQUIV TEMP LIST
1411      51471         JRS   APPENDED INTEGER SCAN
1412       6701         MON   EQUIV TEMP LIST
1413      14046         CSA   COMMA
1414      31371         JAT   $6
```

```
1415      16706          RSV   EQUIV HOLD LIST
1416        456          FET   ZERO
1417        457          FET   ONE
1420      46301   $1     LCO   EQUIV TEMP LIST
1421      45207          JAF   CLEAR TWO AND EXIT
1422       7706          MCO   EQUIV HOLD LIST
1423      16301          TOT   EQUIV TEMP LIST
1424       3360          SUB   W2
1425       6706          MON   EQUIV HOLD LIST
1426      10262          SER   COMMON LIST
1427      41420          JAF   $1
1430       1345          STO   BUCKET
1431       6354          RST   W0
1432      41420          JAF   $1
1433      25104          JJN   ALLOCATION FAIL
      1434         EQUIV SCAN AND SEARCH
1434      52663          JRS   SYMBOL SCAN
1435      10301          SER   EQUIV TEMP LIST
1436      35104          JAT   ALLOCATION FAIL
1437      36306          ADR   EQUIV HOLD LIST
1440      51443          JRS   EQUIV LIST SEARCH
1441      45203          JAF   EXIT FALSE
1442      25171          JUN   EXIT TRUE
      1443         EQUIV LIST SEARCH
1443      16701          RSV   EQUIV TEMP LIST
1444      10355   $1     SER   W0 INDIRECT
1445      31456          JAT   $3
1446      36301          ADR   EQUIV TEMP LIST
1447      37357          COF   W1 INDIRECT
1450      31444          JAT   $1
1451      36355   $2     ADR   W0 INDIRECT
1452      37301          COF   EQUIV TEMP LIST
1453      31451          JAT   $2
1454      17301          REL   EQUIV TEMP LIST
1455      25200          JUN   CLEAR ONE EXIT FALSE
1456      27061   $3     BNG   TWO
1457      36274          ADR   EQUIV OPUT LIST
1460      37361          COF   W2 INDIRECT
1461      36357   $4     ADR   W1 INDIRECT
1462      37301          COF   EQUIV TEMP LIST
1463      31461          JAT   $4
1464      17301          REL   EQUIV TEMP LIST
1465      36357          ADR   W1 INDIRECT
1466      37274          COF   EQUIV OPUT LIST
1467       2356          SWT   W1
1470      25166          JUN   CLEAR ONE EXIT TRUE
```

```
      1471        APPENDED INTEGER SCAN
1471       10460          LDP    DP TWO
1472       11025          STD    CENTRAL 1
1473       14061          CSA    L PAREN
1474       41501          JAF    $1
1475       52766          JRS    INTEGER SCAN
1476       56066          SOL    MAX ARRAY SIZE ALLOWED
1477       35104          JAT    ALLOCATION FAIL
1500       14444          CSF    R PAREN
1501         426  $1       FET    CENTRAL 2
1502       25212          JUN    CLEAR ONE AND EXIT
      1503        COPY EQUIV DATA
1503           0          XIT
1504       43043          STZ    COUNT OF COPY
1505       70000          BRU
1506        1515          LOC    $2
1507          64  $1       PAY
1510        1000          LDA    0
1511       54400          LX21   0
1512         306          LOC    EQUIV HOLD LIST
1513       70000          BRU
1514        5475          LOC    SOB LIST
1515        1043  $2       LDA    COUNT OF COPY
1516        6057          ADA    ONE
1517       61043          STA    COUNT OF COPY
1520       54400          LX21   0
1521         267          LOC    EQUIV DATA LIST
1522        6200          ADA 2  BASE
1523       20203          CMA 2  BOTTOM
1524       70002          TQ2
1525        1507          LOC    $1
1526        1201          LDA 2  START
1527        7200          SBA 2  BASE
1530        2201          LDB 2  START
1531        5200          SBB 2  BASE
1532       54400          LX21   0
1533         306          LOC    EQUIV HOLD LIST
1534        6201          ADA 2  START
1535       61201          STA 2  START
1536        4202          ADB 2  TOP
1537       71202          STB 2  TOP
1540       70000          BRU
1541        5237          LOC    EXIT
```

```
      1542        RETURN STA XLATE
1542     71546          FEX    PAUSE STA XLATE
1543     15464          QSF    RETURN QT
1544     26020          BLF    EXIT LINK
1545     21566          JUN    JUMP EOL EXIT
      1546        PAJSE STA XLATE
1546     71555          FEX    STOP STA XLATE
1547     15467          QSF    PAUSE QT
1550     13040          SOC    DIGIT FLAG
1551     41553          JAF    $1
1552     52766          JRS    INTEGER SCAN
1553     26017  $1      BLF    PAUSE LINK
1554     21563          JJN    ACTIVE EOL EXIT
      1555        STOP STA XLATE
1555     71576          FEX    ILLEGAL STA XLATE
1556     15471          QSF    STOP QT
1557     26020          BLF    EXIT LINK
1560     21566          JUN    JUMP EOL EXIT
      1561        INACTIVE EOL EXIT
1561     14463          CSF    CAR RETURN
1562     21573          JUN    CLEAN UP AND OPUT
      1563        ACTIVE EOL EXIT
1563     14463          CSF    CAR RETURN
1564       516          FET    MINUS ONE
1565     21570          JUN    JUMP ACTIVE EXIT
      1566        JUMP EOL EXIT
1566     14463          CSF    CAR RETURN
1567       456          FET    ZERO
      1570        JUMP ACTIVE EXIT
1570      1346          STO    JUMP STA TRIGGER
1571       516          FET    MINUS ONE
1572      1006          STO    ACTIVE STA TRIGGER
      1573        CLEAN UP AND OPUT
1573     51736  $1      JRS    RELEASE AND PRINT
1574     31573          JAT    $1
1575     21607          JUN    STA FINAL
      1576        ILLEGAL STA XLATE
1576     71612          FEX    END STA X_ATE
1577     14065          CSA    ASTERISK
1600     35125          JAT    FAIL
1601     51736  $1      JRS    PRINT A _IVE
1602     52002          JRS    PRINT ERROR MARKS
1603     31601          JAT    $1
1604     47463          PRC    CAR RETURN
1605     47373          PRQ    FAIL MESSAGE INDIRECT
1606     47463          PRC    CAR RETURN
      1607        STA FINAL
1607     51715          JRS    STA CLEAN UP
1610     51735          JRS    RELEASE AND PUNCH
1611     20470          JUN    BODY STA XLATE
```

```
     1612        END STA XLATE
1612      71621          FEX    NO END CARD FINISH
1613      14465          CSF    ASTERISK
1614        457          FET    ONE
1615       1051          STO    LAST STA TRIGGER
1616      15526          QSF    END QT
1617      51736          JRS    RELEASE AND PRINT
1620      21623          JUN    FINISH CODE OPUT
     1621        NO END CARD FINISH
1621        453          FET    INITIAL INPUT CHAR CNT
1622       1031          STO    INPUT CHAR CNT
     1623        FINISH CODE OPUT
1623      26020          BLF    EXIT LINK
1624      51735          JRS    RELEASE AND PUNCH
1625      22013          JJN    PRINT SUMMARY
     1626        STA INITIALIZE
1626        456          FET    ZERO
1627       1347          STO    FAIL CNT
1630        435          FET    LINE CNT
1631       1052          STO    INITIAL LINE COUNT
1632        431   $1     FET    INPUT CHAR CNT
1633       3113          SUB    INPUT BUFFER LENGTH
1634       4754          SON    WO
1635      31643          JAT    $2
1636       1031          STO    INPUT CHAR CNT
1637        432          FET    INPUT STOP CNT
1640       3113          SUB    INPUT BUFFER LENGTH
1641       1032          STO    INPUT STOP CNT
1642      21632          JJN    $1
1643       2513   $2     ADD    INPUT BUFFER LENGTH
1644       1453          STS    INITIAL INPUT CHAR CNT
1645       1033          STO    READ STOP CNT
1646      63510          BRS    NEXT INPUT CHAR
1647      14063          CSA    CAR RETURN
1650      31632          JAT    $1
     1651        COMMENT STA XLATE
1651      14014          CSA    C
1652      45237          JAF    EXIT
1653      51736          JRS    RELEASE AND PRINT
1654      21626          JJN    STA INITIALIZE
1655        431   $1     FET    INPUT CHAR CNT
1656       1033          STO    READ STOP CNT
1657      63510          BRS    NEXT INPUT CHAR
1660      14063          CSA    CAR RETURN
1661      41655          JAF    $1
1662        435          FET    LINE CNT
1663       2457          ADD    ONE
1664       1035          STO    LINE CNT
1665      21626          JUN    STA INITIALIZE
```

```
      1666          LBL FIELD XLATE
1666        464           FET   FIVE
1667      53112           JRS   DIGIT CONV INITIAL
1670      21572           JJN   $2
1671      63510   $1      BRS   NEXT INPUT CHAR
1672      13040   $2      SOC   DIGIT FLAG
1673      41676           JAF   $3
1674      53222           JRS   CONV ONE DIGIT
1675      21677           JUN   $5
1676      14455   $3      CSF   SPACE
1677       6354   $5      RST   W0
1700      41671           JAF   $1
1701      63510           BRS   NEXT INPUT CHAR
1702      14055           CSA   SPACE
1703      31705           JAT   $4
1704      14400           CSF   NO
1705        426   $4      FET   CENTRAL 2
1706       1163           STO   STA LBL PNTR
1707       5026           SOZ   CENTRAL 2
1710      35212           JAT   CLEAR ONE AND EXIT
1711      53052           JRS   REGISTER LBL
1712       1563           STS   STA LBL PNTR
1713      17405           BIF   LBL INST
1714      25212           JUN   CLEAR ONE AND EXIT
      1715          STA CLEAN UP
1715        563           FET   STA LBL PNTR
1716       4746           SON   JUMP STA TRIGGER
1717      45212           JAF   CLEAR ONE AND EXIT
1720      46674   $1      SNE   DO LOOPS OPEN LIST
1721      45212           JAF   CLEAR ONE AND EXIT
1722       7274           MOF   DO LOOPS OPEN LIST
1723       5756           SOE   W1
1724      31727           JAT   $2
1725       6674           MON   DO LOOPS OPEN LIST
1726      25212           JUN   CLEAR ONE AND EXIT
1727       1345   $2      STO   BUCKET
1730       7274           MOF   DO LOOPS OPEN LIST
1731       7274           MOF   DO LOOPS OPEN LIST
1732       6701           MON   CODE LIST
1733       6701           MON   CODE LIST
1734      21720           JUN   $1
```

```
     1735        RELEASE AND PUNCH
1735      23305          JUN    PUNCH CODE
     1736        RELEASE AND PRINT
     1736        PRINT A LINE
1735        453          FET    INITIAL INPUT CHAR CNT
1737       1031          STO    INPUT CHAR CNT
1740        452          FET    INITIAL LINE CNT
1741       1435          STS    LINE CNT
1742      47454          PRC    LINE MARK
1743      53773          JRS    PRINT 5 DEC
1744        431   $1     FET    INPUT CHAR CNT
1745       1033          STO    READ STOP CNT
1746      63510          BRS    NEXT INPUT CHAR
1747      14063          CSA    CAR RETURN
1750      31744          JAT    $1
1751        507          FET    NINE
1752      21754          JUN    $2
1753      63510   $3     BRS    NEXT INPUT CHAR
1754        431   $2     FET    INPUT CHAR CNT
1755       1033          STO    READ STOP CNT
1756      47776          PRC    CRRNT CHAR SPECIAL
1757        433          FET    READ STOP CNT
1750       5747          SOE    FAIL CNT
1761      41764          JAF    $4
1762        756          FET    W1
1763       1327          STO    ERROR POSITION
1764       1345   $4     STO    BUCKET
1765       2457          ADD    ONE
1755      14063          CSA    CAR RETURN
1757      41753          JAF    $3
1770        431          FET    INPUT CHAR CNT
1771       1053          STO    INITIAL INPUT CHAR CNT
1772        435          FET    LINE CNT
1773       1452          STS    INITIAL LINE CNT
1774       2457          ADD    ONE
1775       1035          STO    LINE CNT
1775      53447          JRS    CONTINUATION TEST
1777      45200          JAF    CLEAR OVE EXIT FALSE
2000       1031          STO    INPUT CHAR CNT
2001      25171          JJN    EXIT TRUE
     2002        PRINT ERROR MARKS
2002       5327          SOZ    ERROR POSITION
2003      35237          JAT    EXIT
2004       6327   $1     RST    ERROR POSITION
2005      32010          JAT    $2
2006      47455          PRC    SPACE
2007      22004          JJN    $1
2010      47447   $2     PRC    ERROR MARK
2011      47463          PRC    CAR RETURN
2012      25237          JJN    EXIT
```

```
      2013        PRINT SUMMARY
2013      16713          RSV    WORK LIST
2014       7274   $1      MOF    DO LOOPS OPEN LIST
2015      42023          JAF    $3
2016       7274          MOF    DO LOOPS OPEN LIST
2017       1345          STO    BUCKET
2020       7274          MOF    DO LOOPS OPEN LIST
2021       1345          STO    BUCKET
2022      22014          JUN    $1
2023       7200   $3     MOF    LBL LIST
2024      42036          JAF    $5
2025       7205          MOF    LOCATION LIST
2026       5456          SOE    UNDEFINED
2027      32032          JAT    $7
2030       5457          SOE    DOUBLE DEFINED
2031      42033          JAF    $4
2032        456   $7      FET    ZERO
2033       6701   $4      MON    CODE LIST
2034       1345          STO    BUCKET
2035      22023          JUN    $3
2036      53303   $5      JRS    PUNCH DATA
2037      46713          SNE    WORK LIST
2040      42046          JAF    OUTPUT CONSTANTS
2041      47121          PRQ    ERRORS QT
2042      53773   $6      JRS    PRINT 5 DEC
2043      52427          JRS    TEST FOR EOL PRINT
2044      46713          SNE    WORK LIST
2045      32042          JAT    $6
      2046        OUTPUT CONSTANTS
2046      17313          REL    WORK LIST
2047      36301          ADR    CODE LIST
2050      36624          CAR    CONST LIST
2051      53303          JRS    PUNCH DATA
      2052        ALLOCATE MEMORY
2052        736          FET    LOCATION CNT
2053      56617          CNT    SPECIAL SCALAR LIST
2054        427          FET    ACCUM 1
2055       2756          ADD    W1
2056        726          FET    ARRAY STAT SIZE
2057       2756          ADD    W1
2060      56636          CNT    GLOBAL SPROG LIST
2061        427          FET    ACCUM 1
2062       2756          ADD    W1
2063       1735          STS    PROGRAM BREAK
```

```
        2064       COMMON ALLOCATION
   2064      47124            PRQ   ID MAP QT
   2065      46262  $1        LCO   COMMON LIST
   2066      42112            JAF   COMMON OVERLAY
   2067      52350            JRS   CALC MEMORY REQUIRED
   2070       2734            ADD   COMMON BREAK
   2071       1334            STO   COMMON BREAK
   2072        456            FET   ZERO
   2073       3334            SUB   COMMON BREAK
   2074      36306  $2        ADR   EQUIV HOLD LIST
   2075      37267            COF   EQUIV DATA LIST
   2076      42105            JAF   $3
   2077      10306            SER   EQUIV HOLD LIST
   2100      42074            JAF   $2
   2101      27061            BNG   TWO
   2102        756            FET   W1
U  2103      36377            ADR   MAX EQUIV IN COMMON
   2104      52253            JRS   PROCESS EQUIV GROUP
   2105      52324  $3        JRS   SET AND PUBLISH
   2106      36267  $4        ADR   EQUIV DATA LIST
   2107      37306            COF   EQUIV HOLD LIST
   2110      32106            JAT   $4
   2111      22065            JUN   $1
        2112       COMMON OVERLAY
   2112        457            FET   ONE
   2113        456            FET   ZERO
   2114       3334            SUB   COMMON BREAK
   2115      52302            JRS   PROCESS EQUIV OUTPUT
        2116       PROGRAM ALLOCATION
   2116      46667  $3        SNE   EQUIV DATA LIST
   2117      42143            JAF   $4
   2120      16706            RSV   EQUIV HOLD LIST
   2121        466            FET   POS FULL SCALE
   2122      46267  $1        LCO   EQUIV DATA LIST
   2123      42137            JAF   $2
   2124       7706            MCO   EQUIV HOLD LIST
   2125      16267            TOT   EQUIV DATA LIST
   2126        754            FET   W0
   2127       6706            MON   EQUIV HOLD LIST
   2130       3356            SUB   W1
   2131       4754            SON   W0
   2132      42135            JAF   $5
   2133       2756            ADD   W1
   2134       2356            SWT   W1
   2135       1345  $5        STO   BUCKET
   2136      22122            JUN   $1
   2137        735  $2        FET   PROGRAM BREAK
   2140      36335            ADR   PROGRAM BREAK
   2141      52253            JRS   PROCESS EQUIV GROUP
   2142      22116            JUN   $3
   2143        466  $4        FET   POS FULL SCALE
   2144        516            FET   NEG FULL SCALE
   2145      52302            JRS   PROCESS EQUIV OUTPUT
   2146      17274            REL   EQUIV OPUT LIST
```

```
      2147        SCALAR ALLOCATION
2147       37617  $1     LCF    SPECIA_ SCA_AR LIST
2150       42155         JAF    $2
2151       52337         JRS    PUBLISH AND ALLOCATE
2152       27426         FIL    CENTRAL 2
2153       46217         LCO    SPECIAL SCALAR LIST
2154       22147         JUN    $1
2155         735  $2     FET    PROGRAM BREAK
2156       37612  $3     LCF    SCALAR LIST
2157       42164         JAF    ARRAY ALLOCATION
2160       52337         JRS    PUBLISH AND ALLOCATE
2161       46212         LCO    SCALAR LIST
2162       22156         JJN    $3
2163       53303         JRS    PUNCH DATA
      2164        ARRAY ALLOCATION
2164       37631  $1     LCF    ARRAY LIST
2165       42204         JAF    $3
2166       52337         JRS    PUBLISH AND ALLOCATE
2167       27426         FIL    CENTRAL 2
2170       46231         LCO    ARRAY LIST
2171       46231         LCO    ARRAY LIST
2172         425         FET    CENTRAL 1
2173        3063         SUB    FOUR
2174         754         FET    WO
2175        6701         MON    CODE LIST
2176       16231  $2     TOT    ARRAY LIST
2177        6701         MON    CODE LIST
2200        6354         RST    WO
2201       42176         JAF    $2
2202        1345         STO    BUCKET
2203       22164         JJN    $1
2204       53303  $3     JRS    PUNCH DATA
      2205        PROCESS LINKAGES
2205       46636         SNE    GLOBAL SPROG LIST
2206       42216         JAF    PRINT ID ERRORS
2207       47112         PRQ    SUBPROGRAMS REQUIRED QT
2210       46236  $1     LCO    GLOBAL SPROG LIST
2211       42216         JAF    PRINT ID ERRORS
2212       52403         JRS    PRINT SYMBOL
2213       52427         JRS    TEST FOR EOL PRINT
2214        7701         MCO    CODE LIST
2215       22210         JJN    $1
```

```
      2216        PRINT ID ERRORS
2215      46624         SNE    ERROR SYMBOL LIST
2217      42227         JAF    $2
2220      47121         PRQ    ERRORS QT
2221      47463         PRC    CAR RETURN
2222      46224   $3    LCO    ERROR SYMBOL LIST
2223      42227         JAF    $2
2224      52403         JRS    PRINT SYMBOL
2225      52427         JRS    TEST FOR EOL PRINT
2226      22222         JUN    $3
2227        735   $2    FET    PROGRAM BREAK
2230        734         FET    COMMON BREAK
2231      36301         ADR    CODE LIST
2232      36713         CAR    WORK LIST
2233      53303         JRS    PUNCH DATA
2234       5332         SOZ    WORDS TO GO
2235      32243         JAT    $1
2236      27731         FIL    CHECK SUM
2237        732         FET    WORDS TO GO
2240       2457         ADD    ONE
2241       1332         STO    WORDS TO GO
2242      53303         JRS    PUNCH DATA
2243        561   $1    FET    TAPE END CHAR
2244       1105         STO    PUNCH CHAR
2245      63421         BRS    PUNCH ONE CHAR
2246      53353         JRS    PUNCH GAP
2247        735         FET    PROGRAM BREAK
2250      47127         PRQ    FINIS QT
2251      52414         JRS    PRINT OCTAL
2252      20352         JJN    START OF COMPILER
      2253        PROCESS EQUIV GROUP
2253      46306   $1    LCO    EQUIV HOLD LIST
2254      42277         JAF    $2
2255      16306         TOT    EQUIV HOLD LIST
2256      52350         JRS    CALC MEMORY REQUIRED
2257        766         FET    W5
2260       2766         ADD    W5
2261       3362         SUB    W3
2262       1362         STO    W3
2263       2760         ADD    W2
2264        763         FET    W3 INDIRECT
2265       3356         SUB    W1
2266       4754         SON    W0
2267       1345         STO    BUCKET
2270      42272         JAF    $3
2271       1765         STS    W4 INDIRECT
2272       2356   $3    SWT    W1
2273       6674         MON    EQUIV OPUT LIST
2274       6674         MON    EQUIV OPUT LIST
2275       6674         MON    EQUIV OPUT LIST
2276      22253         JUN    $1
2277      17306   $2    REL    EQUIV HOLD LIST
2300       1345         STO    BUCKET
2301      25207         JUN    CLEAR TWO AND EXIT
```

```
      2302        PROCESS EQUIV OUTPUT
2302      16274   $1      TOT     EQUIV OPUT LIST
2303      45207           JAF     CLEAR TWO AND EXIT
2304      46274           LCO     EQUIV OPUT LIST
2305        760           FET     W2
2306       3025           SUB     CENTRAL 1
2307       4754           SON     WO
2310       1345           STO     BUCKET
2311      32317           JAT     $2
2312        756           FET     W1
2313       3026           SUB     CENTRAL 2
2314       4754           SON     WO
2315       1345           STO     BUCKET
2315      32321           JAT     $3
2317       7624   $2      MCO     ERROR SYMBOL LIST
2320      22302           JUN     $1
2321        426   $3      FET     CENTRAL 2
2322      52324           JRS     SET AND PUBLISH
2323      22302           JUN     $1
      2324        SET AND PUBLISH
2324        756           FET     W1
2325      53277           JRS     LOAD CENTRAL
2326        754           FET     WO
2327      52371           JRS     PUBLISH
2330      45207           JAF     CLEAR TWO AND EXIT
2331       1030           STO     ACCUM 2
2332        751           FET     THREE ONES
2333       1027           STO     ACCUM 1
2334      53750           JRS     PROCESS PNTR
2335      11372           STD     ADDRESS POINTED TO INDIRECT
2336      25237           JUN     EXIT
      2337        PUBLISH AND ALLOCATE
2337        735           FET     PROGRAM BREAK
2340      52371           JRS     PUBLISH
2341      45237           JAF     EXIT
2342      52350           JRS     CALC MEMORY REQUIRED
2343        735           FET     PROGRAM BREAK
2344       1026           STO     CENTRAL 2
2345       2735           ADD     PROGRAM BREAK
2346       1335           STO     PROGRAM BREAK
2347      25212           JUN     CLEAR ONE AND EXIT
```

```
     2350        CALC MEMORY REQUIRED
2350      10243          SER    GLOBAL DMY LIST
2351      32361          JAT    $4
2352      52545          JRS    ID CLASSIFY
2353      42363          JAF    $1
2354      13516          SOT    ARRAY ID FLAG
2355      32366          JAT    $3
2356      13521          SOT    SCALAR ID FLAG
2357      32364          JAT    $2
2360       7624          MCO    ERROR SYMBOL LIST
2361        456   $4     FET    ZERO
2362      25237          JUN    EXIT
2363      53063   $1     JRS    REGISTER SCALAR ID
2364        461   $2     FET    TWO
2365      25237          JUN    EXIT
2366      27063   $3     BNG    FOUR
2367       3461          MPY    TWO
2370      25237          JJN    EXIT
     2371        PUBLISH
2371        425          FET    CENTRAL 1
2372       5751          SOE    THREE ONES
2373      35175          JAT    CLEAR TWO EXIT FALSE
2374       1345          STO    BUCKET
2375      10224          SER    ERROR SYMBOL LIST
2376      42400          JAF    $1
2377      25175          JUN    CLEAR TWO EXIT FALSE
2400      52403   $1     JRS    PRINT SYMBOL
2401      52414          JRS    PRINT OCTAL
2402      25171          JUN    EXIT TRUE
```

```
      2403          PRINT SYMBOL
2403         457            FET    ONE
2404        1101            STO    QUOTE TRIGGER
2405         506            FET    SIX
2406        1102            STO    QUOTE CHAR CNT
2407       47455            PRC    SPACE
2410       47455            PRC    SPACE
2411       47025            PRQ    CENTRAL 1
2412       47455            PRC    SPACE
2413       25237            JUN    EXIT
      2414          PRINT OCTAL
2414        1030            STO    ACCUM 2
2415         464            FET    FIVE
2416         456  $1        FET    ZERO
2417        1027            STO    ACCUM 1
2420       12520            MDP    DP LEFT SHIFTER 3
2421         427            FET    ACCUM 1
2422        1022            STO    CRRNT QUOTE CHAR
2423       47774            PRC    CRRNT QUOTE SPEC
2424        6354            RST    WO
2425       42416            JAF    $1
2426       25212            JUN    CLEAR ONE AND EXIT
      2427          TEST FOR EOL PRINT
2427         564            FET    SIXTY
2430        5576            SOE    CHARS THIS LINE
2431       45212            JAF    CLEAR ONE AND EXIT
2432       47463            PRC    CAR RETURN
2433       25212            JUN    CLEAR ONE AND EXIT
      2434          VAR XLATE
2434       52644            JRS    ID SCAN
2435       43063            JAF    REGISTER SCALAR ID
2436       13521            SOT    SCALAR ID FLAG
2437       35237            JAT    EXIT
2440       13516            SOT    ARRAY ID FLAG
2441       32570            JAT    ARRAY XLATE
2442       25112            JUN    ID CONFLICT FAIL
```

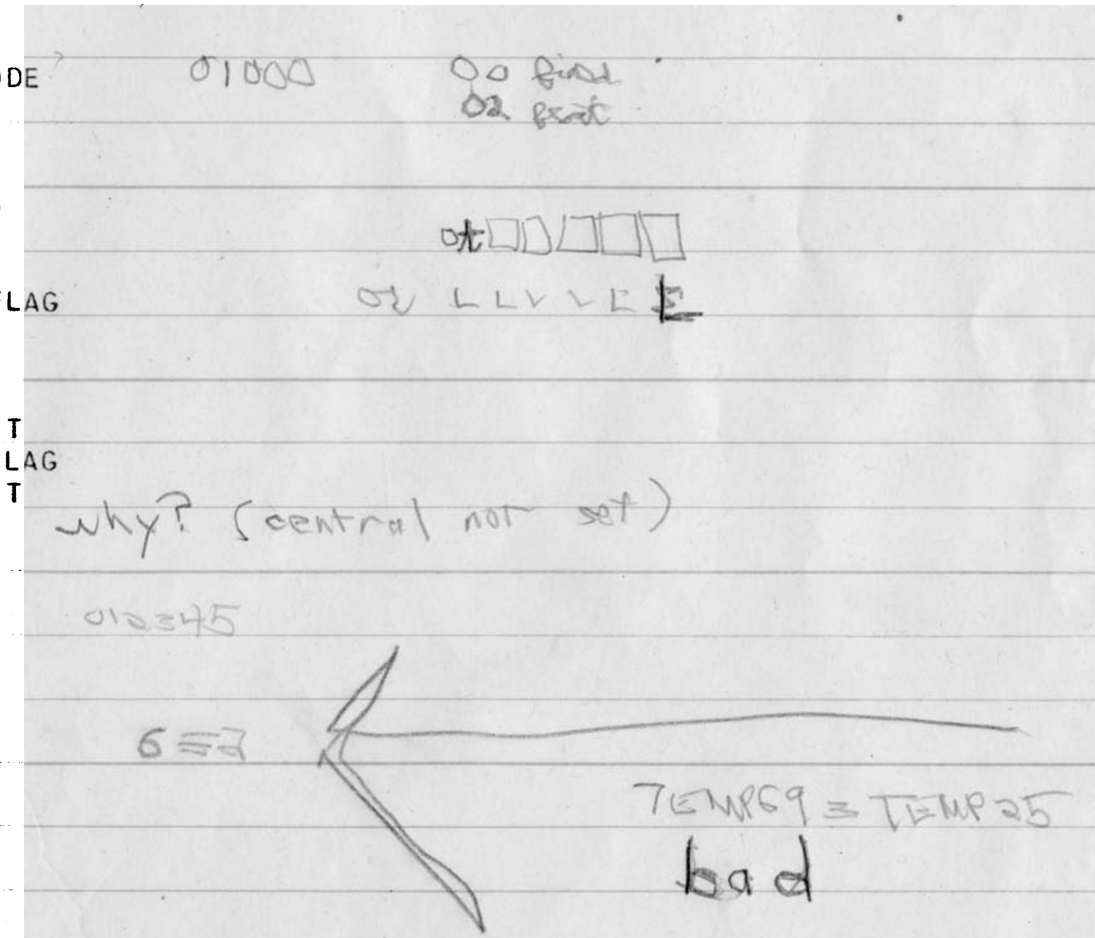
```
      2443        SPROG ARG SEQ XLATE
2443       52621  $1     JRS   UNSCRIPTED ARRAY SCAN
2444       42447         JAF   $2
2445       17402         BIF   UNSCRIPTED ADR INST
2446       22450         JUN   $3
2447       52453  $2     JRS   EXP XLATE SET MODE
2450       14046  $3     CSA   COMMA
2451       32443         JAT   $1
2452       25237         JUN   EXIT
      2453        EXP XLATE SET MODE
2453         456         FET   FX FLAG
2454        6674         MON   MODE LIST
2455       52461         JRS   EXP XLATE
2456       53704         JRS   SWEEP BY MODE
2457        7274         MOF   MODE LIST
2460       25212         JUN   CLEAR ONE AND EXIT
      2461        EXP XLATE
2461       14062         CSA   MINUS
2462       42465         JAF   $1
2463       26000         BLF   CHS LINK
2464       22476         JUN   $4
2465       14057  $1     CSA   PLUS
2466       52502         JRS   FACTOR XLATE
2467       14062  $2     CSA   MINUS
2470       42473         JAF   $3
2471       26002         BLF   SUB LINK
2472       22476         JUN   $4
2473       14057  $3     CSA   PLUS
2474       45237         JAF   EXIT
2475       26001         BLF   ADD LINK
2476        7301  $4     MOF   CODE LIST
2477       52502         JRS   FACTOR XLATE
2500        6701         MON   CODE LIST
2501       22467         JUN   $2
      2502        FACTOR XLATE
2502       52516         JRS   EXPONENTIAL XLATE
2503       32513         JAT   $4
2504       14045  $1     CSA   VIRGULE
2505       45237         JAF   EXIT
2506       26004         BLF   DIV LINK
2507        7301         MOF   CODE LIST
2510       52516  $2     JRS   EXPONENTIAL XLATE
2511        6701         MON   CODE LIST
2512       42504         JAF   $1
2513       26003  $4     BLF   MPY LINK
2514        7301         MOF   CODE LIST
2515       22510         JUN   $2
```

```
      2515          EXPONENTIAL XLATE
2516       52526           JRS    ELEMENT XLATE
2517       14065    $1     CSA    ASTERISK
2520       45203           JAF    EXIT FALSE
2521       14065           CSA    ASTERISK
2522       45171           JAF    EXIT TRUE
2523       52526           JRS    ELEMENT XLATE
2524       26005           BLF    EXP LINK
2525       22517           JUN    $1
      2526          ELEMENT XLATE
2526       13004           SOC    LETTER FLAG
2527       32535           JAT    $1
2530       14061           CSA    LEFT PAREN
2531       42564           JAF    FUN 4
2532       52461           JRS    EXP XLATE
2533       14444           CSF    RIGHT PAREN
2534       25237           JUN    EXIT
2535       52644    $1     JRS    ID SCAN
2536       32547           JAT    $2
2537       14061           CSA    LEFT PAREN
2540       42562           JAF    FUN 3
2541       10243           SER    GLOBAL DMY LIST
2542       35112           JAT    ID CONFLICT FAIL
2543       26636           BOP    GLOBAL SPROG LIST
2544       52723           JRS    MODE EVAL
2545        7636           MCO    GLOBAL SPROG LIST
2546       22554           JUN    FUNCTION XLATE
2547       13521    $2     SOT    SCALAR ID FLAG
2550       32565           JAT    FUN 5
2551       13516           SOT    ARRAY ID FLAG
2552       32560           JAT    FUN 6
2553       14461           CSF    LEFT PAREN
      2554          FUNCTION XLATE
2554       26006           BLF    SPROG LINK
2555       52443           JRS    SPROG ARG SEQ XLATE
2556       14444           CSF    RIGHT PAREN
2557       22565           JUN    FUN 5
      2560          FUN 6
2560       52570           JRS    ARRAY XLATE
2561       22565           JUN    FUN 5
      2562          FUN 3
2562       53063           JRS    REGISTER SCALAR ID
2563       22565           JUN    FUN 5
      2564          FUN 4
2564       52776           JRS    CONST SCAN
      2565          FUN 5
2565       53763           JRS    NOTE MODE
2566       17400           BIF    ADR INST
2567       25237           JUN    EXIT
```

```
      2570          ARRAY XLATE
2570       14061           CSA    LEFT PAREN
2571       45110           JAF    SUBSCRIPT FAIL
2572         754           FET    WO
2573       27061           BNG    TWO
2574        3062           SUB    THREE
2575        3061    $1     SUB    TWO
2576        5354           SOZ    WO
2577       35110           JAT    SUBSCRIPT FAIL
2600       52453           JRS    EXP XLATE SET MODE
2601       14046           CSA    COMMA
2602       32575           JAT    $1
2603       14444           CSF    RIGHT PAREN
2604        5461           SOE    TWO
2605       45110           JAF    SUBSCRIPT FAIL
2606       25207           JUN    CLEAR TWO AND EXIT
      2607          SCALAR ID SCAN
2607       52635           JRS    SET TRY
2610       52644           JRS    ID SCAN
2611       42615           JAF    $1
2612       13521           SOT    SCALAR ID FLAG
2613       32616           JAT    TRUE TRY
2614       22627           JUN    STO AND RESET TRY
2615       53063    $1     JRS    REGISTER SCALAR ID
      2616          TRUE TRY
2615        1364           STO    W4
2617        1345           STO    BUCKET
2620       25163           JUN    CLEAR TWO EXIT TRUE
      2621          UNSCRIPTED ARRAY SCAN
2521       52635           JRS    SET TRY
2622       52563           JRS    SYMBOL SCAN
2623       10231           SER    ARRAY LIST
2624       42630           JAF    RESET TRY
2625       14061           CSA    LEFT PAREN
2626       42616           JAF    TRUE TRY
      2527          STO AND RESET TRY
2527        1345           STO    BUCKET
      2630          RESET TRY
2630        1035           STO    LINE CNT
2631        1023           STO    CRRNT CHAR
2532        1024           STO    ACTUA_ CHAR
2633        1031           STO    INPUT CHAR CNT
2634       25203           JUN    EXIT FALSE
      2635          SET TRY
2635       13004           SOC    LETTER FLAG
2636       45203           JAF    EXIT FALSE
2637         431           FET    INPUT CHAR CNT
2640         424           FET    ACTUAL CHAR
2641         423           FET    CRRNT CHAR
2642         435           FET    LINE CNT
2643       25237           JUN    EXIT
```

```
        2644          ID SCAN
2644         52663           JRS    SYMBOL SCAN
        2645          ID CLASSIFY
2645         10255           SER    LOCAL DMY LIST
2646         32661           JAT    $1
2647         10217           SER    SPECIAL SCALAR LIST
2650         32661           JAT    $1
2651         10212           SER    SCALAR LIST
2652         32661           JAT    $1
2653         10231           SER    ARRAY LIST
2654         32661           JAT    $1
2655         10236           SER    GLOBAL SPROG LIST
2656         32661           JAT    $1
2657         10250           SER    LOCAL SPROG LIST
2660         45203           JAF    EXIT FALSE
2661         52723    $1     JRS    MODE EVAL
2662         25171           JUN    EXIT TRUE
        2663          SYMBOL SCAN
2663         13004           SOC    LETTER FLAG
2664         45115           JAF    SYNTAX FAIL
2665         10455           LDP    DP ZERO
2666           506           FET    SIX
2667           423           FET    CRRNT CHAR
2670          4142           AND    ALL BUT LETTER MODE
2671          3461           MPY    TWO
2672         52710    $1     JRS    ENCODE CHARACTER
2673         11025           STD    CENTRAL 1
2674         12526           MDP    DP LEFT SHIFTER 5
2675          6356           RST    W1
2676         32704           JAT    $2
2677         13002           SOC    LETTER OR DIGIT FLAG
2700         32672           JAT    $1
2701          2425           ADD    CENTRAL 1
2702          1025           STO    CENTRAL 1
2703         25212           JUN    CLEAR ONE AND EXIT
2704         13002    $2     SOC    LETTER OR DIGIT FLAG
2705         45207           JAF    CLEAR TWO AND EXIT
2706         52710           JRS    ENCODE CHARACTER
2707         22704           JUN    $2
        2710          ENCODE CHARACTER
2710             0           XIT
2711          1024           LDA    ACTUAL CHAR
2712         43023           STZ    CRRNT CHAR
2713         20106           CMA    SIX
2714         70041           FQ1
2715          2717           LOC    $1
2716          7063           SBA    FOUR
2717          6030    $1     ADA    ACCUM 2
2720         61030           STA    ACCUM 2
2721         70000           BRU
2722          5255           LOC    NO ANSWER
```

not global DMY



```
        2723         MODE EVAL
2723          0            XIT
2724      60132            POP    TOP FIVE BITS
2725      54025            LX2    CENTRAL 1
2726        451            CX2
2727      77776            LOC    MINUS TWO
2730      70044            FQ4
2731       2733            LOC    $1
2732      50023            IX2    INCR NINETEEN
2733      50004   $1       IX2    INCR FOUR
2734       1600            LDA12 0
2735       6157            LOC    CHAR TRANSL TBL
2736      17142            ANA    ALL BUT LETTER MODE
2737      54400            LX21   0
2740        316            LOC    WORK BOTTOM
2741      16200            ORA 2 0
2742      61200            STA 2 0
2743      70000            BRU
2744       5237            LOC    EXIT
        2745         LBL COMMA SCAN
2745      52750            JRS    LBL SCAN
2746      14446            CSF    COMMA
2747      25237            JUN    EXIT
        2750         LBL SCAN
2750      52766            JRS    INTEGER SCAN
2751      56066            SOL    MAX LBL ALLOWED
2752      35106            JAT    NUMBER FAIL
2753       5026            SOZ    CENTRAL 2
2754      35106            JAT    NUMBER FAIL
2755      23052            JUN    REGISTER LBL
        2756         SIGNED INTEGER SCAN
2756      14062            CSA    MINUS
2757      42765            JAF    $1
2760      52766            JRS    INTEGER SCAN
2761      10455            LDP    DP ZERO
2762      12025            SDP    CENTRAL 1
2763      11025            STD    CENTRAL 1
2764      25237            JUN    EXIT
2765      14057   $1       CSA    PLUS
        2766         INTEGER SCAN
2766      13040            SOC    DIGIT FLAG
2767      45115            JAF    SYNTAX FAIL
2770      53112            JRS    DIGIT CONV INITIAL
2771      53117            JRS    DIGIT CONV SCAN
2772      10425            LDP    CENTRAL 1
2773      56066            SOL    MAX INTEGER ALLOWED
2774      35106            JAT    NUMBER FAIL
2775      25237            JUN    EXIT
```

A I N O
0 1 E 14 19 20
20 or 19   19 20 S 14 19 20

puts mode bit into W6

```
      2776          CONST SCAN
2776       53112           JRS    DIGIT CONV INITIAL
2777       10455           LDP    DP ZERO
3000       11170           STD    CHARACTERISTIC A
3001       13040           SOC    DIGIT FLAG
3002       43016           JAF    $1
3003       53117           JRS    DIGIT CONV SCAN
3004       10572           LDP    DIGITS SCANNED CNT A
3005       11170           STD    CHARACTERISTIC A
3006       14060           CSA    PERIOD
3007       33021           JAT    $3
3010       14016           CSA    E
3011       33023           JAT    $4
3012       10425           LDP    CENTRAL 1
3013       56066           SOL    MAX INTEGER ALLOWED
3014       35106           JAT    NUMBER FAIL
3015       23100           JUN    REGISTER FX CONST
3015       14460    $1     CSF    PERIOD
3017       13040           SOC    DIGIT FLAG
3020       45115           JAF    SYNTAX FAIL
3021       53117    $3     JRS    DIGIT CONV SCAN
3022       14016           CSA    E
3023       10570    $4     LDP    CHARACTERISTIC A
3024       12174           SDP    DIGITS USED CNT A
3025       11170           STD    CHARACTERISTIC A
3026       43036           JAF    $5
3027       11040           STD    CONST TEMP A
3030       52756           JRS    SIGNED INTEGER SCAN
3031       10570           LDP    CHARACTERISTIC A
3032       11425           ADP    CENTRAL 1
3033       11170           STD    CHARACTERISTIC A
3034       10440           LDP    CONST TEMP A
3035       11025           STD    CENTRAL 1
3036       53123    $5     JRS    FL CONST MAKER
3037       23102           JUN    REGISTER FL CONST
```

```
     3040        LBL MAKER BRJ GEN
3040      53050          JRS    LBL MAKER
3041        754          FET    W0
3042      17406          BIF    BRU INST
3043      25237          JUN    EXIT
     3044        LBL MAKER LBL GEN
3044      53050          JRS    LBL MAKER
3045        754          FET    W0
3046      17405          BIF    LBL INST
3047      25237          JJN    EXIT
     3050        LBL MAKER
3050        456          FET    MADE LBL
3051      23055          JJN    REGISTER OR MAKE LBL
     3052        REGISTER LBL
3052      10200          SER    LBL LIST
3053      35237          JAT    EXIT
3054        425          FET    CENTRAL 2
     3055        REGISTER OR MAKE LBL
3055      26600          BOP    LBL LIST
3056       2356          SWT    W1
3057       6600          MON    LBL LIST
3060        456          FET    ZERO
3061       6605          MON    LOCATION LIST
3062      25237          JUN    EXIT
     3063        REGISTER SCALAR ID
3063      10262          SER    COMMON LIST
3064      33073          JAT    $1
3065      36267          ADR    EQUIV DATA LIST
3066      51443          JRS    EQUIV LIST SEARCH
3067      33073          JAT    $1
3070      26612          BOP    SCALAR LIST
3071       7612          MCO    SCALAR LIST
3072      23076          JUN    $2
3073       1345    $1    STO    BUCKET
3074      26617          BOP    SPECIAL SCALAR LIST
3075       7617          MCO    SPECIAL SCALAR LIST
3076      52723    $2    JRS    MODE EVAL
3077      25237          JUN    EXIT
     3100        REGISTER FX CONST
3100        456          FET    FX FLAG
3101      23103          JUN    REGISTER CONST
     3102        REGISTER FL CONST
3102        542          FET    FL FLAG
     3103        REGISTER CONST
3103      10224          SER    CONST LIST
3104      33110          JAT    $2
3105      26624          BOP    CONST LIST
3106       7624          MCO    CONST LIST
3107       2756          ADD    W1
3110       2356    $2    SWT    W1
3111      25212          JUN    CLEAR ONE AND EXIT
```

```
      3112        DIGIT CONV INITIAL
3112       10455          LDP    DP ZERO
3113       11172          STD    DIGITS SCANNED CNT A
3114       11174          STD    DIGITS USED CNT A
3115       11025          STD    CENTRAL 1
3116       25237          JUN    EXIT
      3117        DIGIT CONV SCAN
3117       13040  $1      SOC    DIGIT FLAG
3120       45237          JAF    EXIT
3121       53222          JRS    CONV ONE DIGIT
3122       23117          JJN    $1
      3123        FL CONST MAKER
3123         546          FET    MAX SHIFT COUNT
3124        1147          STO    SHIFT COUNT
3125       63206          BRS    NORMALIZE
3126         571          FET    CHARACTERISTIC B
3127        4754  $2      SON    WO
3130       43147          JAF    $1
3131        2457          ADD    ONE
3132       10534          LDP    ONE TENTH B-3
3133       63257          BRS    DOUBLE FX MULT
3134       63206          BRS    NORMALIZE
3135         547          FET    SHIFT COUNT
3136        3062          SUB    THREE
3137        1147          STO    SHIFT COUNT
3140       23127          JJN    $2
3141       10536  $3      LDP    TEN B4
3142       63257          BRS    DOUBLE FX MULT
3143       63206          BRS    NORMALIZE
3144         547          FET    SHIFT COUNT
3145        2463          ADD    FOUR
3146        1147          STO    SHIFT COUNT
3147        3057  $1      SJB    ONE
3150        4754          SON    WO
3151       43141          JAF    $3
3152        1345          STO    BUCKET
3153        5025          SOZ    CENTRAL 1
3154       35237          JAT    EXIT
3155           0          XIT
3156       24147          CEZ    SHIFT COUNT
3157       70004          TQ4
3160        5106          LOC    NUMBER FAIL
3161        1147          LDA    SHIFT COUNT
3162       20125          CMA    MAX SHIFT ALLOWED
3163       70001          TQ1
3164        5106          LOC    NUMBER FAIL
3165          12          ZRB
3166       75062          DVD    THREE
3167       71147          STB    SHIFT COUNT
3170       61150          STA    EXPONENT
3171        1062          LDA    THREE
3172        7147          SBA    SHIFT COUNT
3173       61147          STA    SHIFT COUNT
3174       54147          LX2    SHIFT COUNT
3175        2025          LDB    CENTRAL 1
```

```
3176      1026          LDA   CENTRAL 2
3177     36240          SCR 2 0
3200     17131          ANA   NOT EXPON MASK
3201     16150          ORA   EXPONENT
3202     71025          STB   CENTRAL 1
3203     61026          STA   CENTRAL 2
3204     70000          BRU
3205      5255          LOC   NO ANSWER
     3206         NORMALIZE
3206     34400          SBL1
3207      3221          LOC   $1
3210      2025          LDB   CENTRAL 1
3211      1026          LDA   CENTRAL 2
3212     77046          NMZ   NORMALIZE TEMP 1
3213     71025          STB   CENTRAL 1
3214     61026          STA   CENTRAL 2
3215      1147          LDA   SHIFT COUNT
3216      7046          SBA   NORMALIZE TEMP 1
3217     61147          STA   SHIFT COUNT
3220     70000          BRU
3221         0  $1       LOC   0
     3222         CONV ONE DIGIT
3222         0          XIT
3223      1023          LDA   CRRNT CHAR
3224     17401          ANA1  1
3225        17          OCT   17
3225     61103          STA   SCANED DIGIT
3227     35001          INM   INCR ONE
3230       173          LOC   DIGITS SCANED CNT B
3231     43023          STZ   CRRNT CHAR
3232      2025          LDB   CENTRAL 1
3233      1026          LDA   CENTRAL 2
3234     22121          CMB   FOURTH BIT ONE
3235     70003          TQ3
3236      5237          LOC   EXIT
3237     37044          SCL   4
3240     71025          STB   CENTRAL 1
3241     61026          STA   CENTRAL 2
3242      2132          LDB   TEN B4 EXACT 1
3243     71027          STB   ACCUM 1
3244      1133          LDA   TEN B4 EXACT 2
3245     61030          STA   ACCUM 2
3246     70000          BRU
3247      3257          LOC   DOUBLE FX MULT
3250     46103          ADC   SCANED DIGIT
3251     71025          STB   CENTRAL 1
3252     61026          STA   CENTRAL 2
3253     35001          INM   INCR ONE
3254       175          LOC   DIGITS USED CNT B
3255     70000          BRU
3256      5237          LOC   EXIT
```

don't catch error

terrible

```
     3257        DOUBLE FX MULT
3257     34400          SBL1  0
3260      3276          LOC   $1
3261      1025          LDA   CENTRAL 1
3262     76030          MUL   ACCUM 2
3263     71037          STB   DP MPY A
3264      1027          LDA   ACCUM 1
3265     76026          MUL   CENTRAL 2
3266     71042          STB   DP MPY B
3267      1025          LDA   CENTRAL 1
3270     76027          MUL   ACCUM 1
3271     46037          ADC   DP MPY A
3272     46042          ADC   DP MPY B
3273     71025          STB   CENTRAL 1
3274     61026          STA   CENTRAL 2
3275     70000          BRU
3276         0  $1       LOC   0
     3277        LOAD CENTRAL
3277     53750          JRS   PROCESS PNTR
3300     10772          LDP   ADDRESS POINTED TO INDIRECT
3301     11025          STD   CENTRAL 1
3302     25212          JUN   CLEAR ONE AND EXIT
     3303        PUNCH DATA
3303       456          FET   ZERO
3304     23306          JUN   PUNCH
     3305        PUNCH CODE
3305       516          FET   MINUS ONE
     3306        PUNCH
3306      1350          STO   PEEK TRIGGER
3307     16301  $2       TOT   CODE LIST
3310     45237          JAF   EXIT
3311      5332          SOZ   WORDS TO GO
3312     43321          JAF   $1
3313       465          FET   BLOCK SIZE
3314      1332          STO   WORDS TO GO
3315     53353          JRS   PUNCH GAP
3316       733          FET   BLOCK CNT
3317      1175          STO   PUNCH WORD
3320     53362          JRS   PUNCH ONE WORD
3321      4750  $1       SON   PEEK TRIGGER
3322     33331          JAT   $3
3323       736  $5       FET   LOCATION CNT
3324      2457          ADD   ONE
3325      1336          STO   LOCATION CNT
3326      1175  $4       STO   PUNCH WORD
3327     53362          JRS   PUNCH ONE WORD
3330     23307          JUN   $2
3331       754  $3       FET   WO
3332      4130          AND   LINK CODE
3333      5532          SOE   LBL INST FLAG
3334      1345          STO   BUCKET
3335     43323          JAF   $5
3336       456          FET   ZERO
3337      2356          SWT   W1
3340      4112          AND   LBL ADDRESS MASK
```

```
      3341      2541          ADD   LOCATION PNTR MAKER
      3342     53750          JRS   PROCESS PNTR
      3343      2356          SWT   W1
      3344      5372          SOZ   ADDRESS POINTED TO INDIRECT
U     3345     30000          JAT   $7
      3346      2457          ADD   ONE
      3347     23350          JJN   $6
      3350      1372    $6    STO   ADDRESS POINTED TO INDIRECT
      3351      1345          STO   BUCKET
      3352     23307          JUN   $2
```

```
      3353          PUNCH GAP
3353         527           FET    GAP SIZE
3354         562           FET    GAP CHAR
3355        1105           STO    PUNCH CHAR
3356       63421    $1     BRS    PUNCH ONE CHAR
3357        6354           RST    W0
3360       43356           JAF    $1
3361       25212           JUN    CLEAR ONE AND EXIT
      3362          PJNCH ONE WORD
3362       53406           JRS    PUNCH THREE CHARS
3363       10730           LDP    DP CHECK SUM
3364       11574           ADP    DP PUNCH WORD
3365         430           FET    ACCUM 2
3366        2427           ADD    ACCUM 1
3367        1331           STO    CHECK SUM
3370        6332           RST    WORDS TO GO
3371       45237           JAF    EXIT
3372         731           FET    CHECK SUM
3373        1175           STO    PUNCH WORD
3374       53406           JRS    PUNCH THREE CHARS
3375         527           FET    BLOCK END CHAR
3376        1105           STO    PUNCH CHAR
3377       63421           BRS    PUNCH ONE CHAR
3400         456           FET    ZERO
3401        1331           STO    CHECK SUM
3402         733           FET    BLOCK CNT
3403        2457           ADD    ONE
3404        1333           STO    BLOCK CNT
3405       25237           JUN    EXIT
      3406          PUNCH THREE CHARS
3406       10574           LDP    DP PUNCH WORD
3407         462           FET    THREE
3410         456           FET    ZERO
3411        1427    $1     STS    ACCUM 1
3412       12526           MDP    DP LEFT SHIFTER 5
3413         427           FET    ACCUM 1
3414        1105           STO    PUNCH CHAR
3415       63421           BRS    PUNCH ONE CHAR
3416        6356           RST    W1
3417       43411           JAF    $1
3420       25207           JUN    CLEAR TWO AND EXIT
      3421          PJNCH ONE CHAR
3421       34400           SBL1   0
3422        3430           LOC    $1
3423        3105           LDN    PUNCH CHAR
3424       42004           OPA    4
3425       70016    $2     TNB
3426        3425           LOC    $2
3427       70000           BRU
3430           0    $1     LOC    0
```

```
      3431          READY SCAN CHAR
3431       5023 3400 SOZ   CRRNT CHAR
3432      45237 0396 JAF   EXIT
      3433          NEXT ACTIVE CHAR
3433        431      FET   INPUT CHAR CNT
3434       1100      STO   LAST ACTIVE CHAR CNT
3435      63510 $2   BRS   NEXT INPUT CHAR
3435      15055      SCE   SPACE
3437      43442      JAF   $1
3440       4434      SON   SCAN MODE
3441      43435      JAF   $2
3442      15063 $1   SCE   CAR RETURN
3443      45237      JAF   EXIT
3444      53447 00000 JRS  CONTINUATION TEST
3445      45237 70000 JAF   EXIT
3446      23435 00000 JUN   $2
      3447          CONTINUATION TEST
3447       5051      SOZ   LAST STA TRIGGER
3450      45203      JAF   EXIT FALSE
3451        431      FET   INPUT CHAR CNT
3452        423      FET   CRRNT CHAR
3453        424      FET   ACTUAL CHAR
3454        464      FET   FIVE
3455      63510 $1   BRS   NEXT INPUT CHAR
3456      15063      SCE   CAR RETURN
3457      33455      JAT   $1
3460      15055 $2   SCE   SPACE
3461      43503      JAF   $3
3462      63510      BRS   NEXT INPUT CHAR
3463       6354      RST   WO
3464      43460      JAF   $2
3465      15055      SCE   SPACE
3466      33503      JAT   $3
3467      15000      SCE   NO
3470      33503      JAT   $3
3471        423      FET   CRRNT CHAR
3472       4061      AND   TWO
3473       5354      SOZ   WO
3474       1345      STO   BUCKET
3475      43503      JAF   $3
3476        456      FET   ZERO
3477       1023      STO   CRRNT CHAR
3500       1345      STO   BUCKET
3501       1345      STO   BUCKET
3502      25163      JUN   CLEAR TWO EXIT TRUE
3503       1345 $3   STO   BUCKET
3504       1024      STO   ACTUAL CHAR
3505       1023      STO   CRRNT CHAR
3506       1031      STO   INPUT CHAR CNT
3507      25203      JUN   EXIT FALSE
```

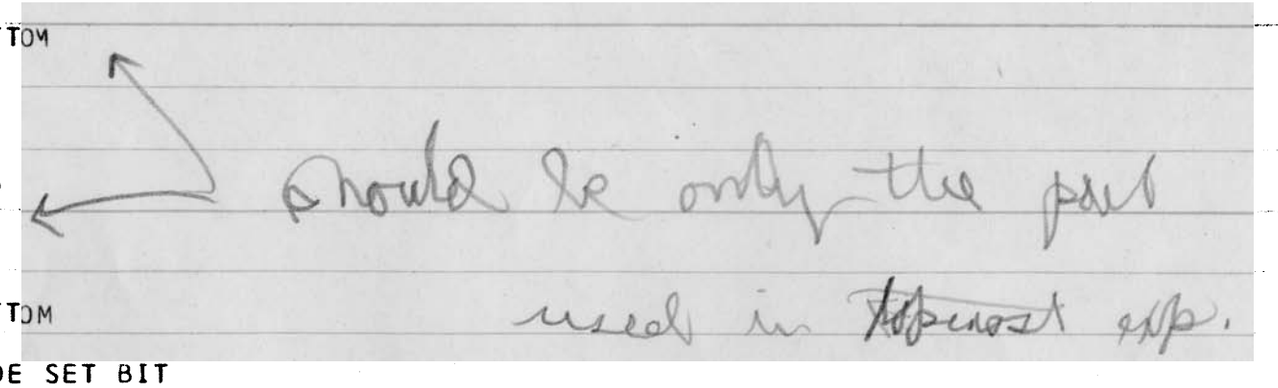
```
READY  SCAN CHAR
       SBL 1  0
       LOC    $1
       CEZ    CRRNT CHAR
       FQ4
$1     LOC
NEXT   ACTIVE CHAR
       SBL 1  0
       LOC    $3
       LDA    INPUT CHAR CNT
       STA    LAST ACTIVE CHAR CNT
       BRU
$2     LOC    NEXT INPUT CHAR
       LDA 1  1
       LOC    SPACE SPEC
       CEA    CRRNT CHAR
       FQ2
       LOC    $1
       LDA    SCAN MODE
       FAH
       LOC    $2
$1     LDA 1  1
       LOC    CAR RETURN SPEC
       CEA    CRRNT CHAR
       FQ2
       LOC    $4
       BRU
       LOC    INTERPRETER
       JRS    CONTINUATION TEST
       JAF    $5
       XIT
       BRU
       LOC    $2
$5     XIT                    00000
$4     BRU                    70000
$3     LOC    0               00000
```

```
     3510          NEXT INPUT CHAR
3510      34400           SBL1  0
3511       3703           LOC   INPUT EXIT
3512       1031           LDA   INPUT CHAR CNT
3513         12           ZRB
3514      21032           CEA   INPUT STOP CNT
3515      70042           FQ2
3516  •    3652           LOC   UNPACK CHAR
3517      47033           SBC   READ STOP CNT
3520      47113           SBC   INPUT BUFFER LENGTH
3521      70022           FAH
3522       5103           LOC   OVERFLOW FAIL
     3523          READ CHAR
3523      42000           OPA   READ CHAR OPA ADR
3524      70054  $1       FNI
3525       3524           LOC   $1
3526         11           ZRA
3527         21           NOA
3530      70057           FTP
3531       3533           LOC   PACK CHAR
3532         30           HLT
     3533          PACK CHAR
3533      17115           ANA   LOW 6 BITS MASK
3534          2           ABC
3535      54056           LX2   ZERO
3536      60140  $1       POP   BOTTOM SIX POP ADR
3537      23600           CEB12 0
3540       6157           LOC   CHAR TRANSL TBL
3541      70004           TQ4
3542       3550           LOC   $2
3543      50001  $3       IX2   INCR ONE
3544        451           CX2
3545      77712           OCT   -66
3546      70004           TQ4
3547       3536           LOC   $1
3550      60026  $2       POP   CASE BIT TRANSL TBL POP ADR
3551       1600           LDA12 0
3552       6157           LOC   CHAR TRANSL TBL
3553      15036           EOR   CASE WORD
3554      60027           POP   CONT BIT TRANSL TBL POP ADR
3555      17600           ANA12 0
3556       6157           LOC   CHAR TRANSL TBL
3557      70061           TAL
3560       3543           LOC   $3
3561      51042           SX2   INPUT TEMP 1
3562      60030           POP   SPEC BIT TRANSL TBL POP ADR
3563       1600           LDA12 0
3564       6157           LOC   CHAR TRANSL TBL
3565      60151           POP   FLAG FIELD TRANSL TBL POP ADR
3566      54600           LX212 0
3567       6157           LOC   CHAR TRANSL TBL
3570      70261           TAL 2
3571       3637           LOC   PROCESS STOP CODE
3572       1032           LDA   INPUT STOP CNT
3573         12           ZRB
```

```
3574     75113        DVD   INPUT BUFFER LENGTH
3575         1        BAC
3576     75064        DVD   FIVE
3577     61043        STA   INPUT TEMP 2
3600     54043        LX2   INPUT TEMP 2
3601         1        BAC
3602     76106        MUL   SIX
3603      6127        ADA   THIRTY TWO
3604     61043        STA   INPUT TEMP 2
3605      1042        LDA   INPUT TEMP 1
3606     64043        LDY   INPUT TEMP 2
3607     37040        SCL   0
3610     73044        SCB   INPUT TEMP 3
3611     61045        STA   INPUT TEMP 4
3612      1115        LDA   LOW 6 BITS MASK
3613     64043        LDY   INPUT TEMP 2
3614     37040        SCL   0
3615     15116        EOR   ALL ONES MASK
3616     17600        ANA12 0
3617      5712        LOC   ODD INPUT BUFFER
3620     16045        ORA   INPUT TEMP 4
3621     61600        STA12 0
3622      5712        LOC   ODD INPUT BUFFER
3623         3        XAB
3624     15116        EOR   ALL ONES MASK
3625     17600        ANA12 0
3626      5577        LOC   EVEN INPUT BUFFER
3627     16044        ORA   INPUT TEMP 3
3630     61600        STA12 0
3631      5577        LOC   EVEN INPUT BUFFER
3632     35001        INM   INCR ONE
3633        32        LOC   INPUT STOP CNT
3634      1042        LDA   INPUT TEMP 1
3635     70000        BRU
3636      3672        LOC   SET CRRNT CHAR
     3637         PROCESS STOP CODE
3637        30        HLT
3640     42000        OPA   START READER OPA ADR
3641     42001        OPA   CLEAR READER OPA ADR
3642        20        ZRN
     3643         PROCESS LOWER CASE
3643      1057        LDA   LOWER CASE BIT
3644     61036        STA   CASE WORD
3645     70000        BRU
3646      3523        LOC   READ CHAR
     3647         PROCESS UPPER CASE
3647     43036        STZ   CASE WORD
     3650         PROCESS DELETE
3650     70000        BRU
3651      3523        LOC   READ CHAR
     3652         UNPACK CHAR
3652     75113        DVD   INPUT BUFFER LENGTH
3653         1        BAC
3654     75064        DVD   FIVE
3655     61042        STA   INPUT TEMP 1
```

```
3655      54042         LX2   INPUT TEMP 1
3657          1         BAC
3660      76106         MUL   SIX
3661       6127         ADA   THIRTY TWO
3662      61042         STA   INPUT TEMP 1
3663       2600         LDB12 0
3664       5577         LOC   EVEN INPUT BUFFER
3665       1600         LDA12 0
3666       5712         LOC   ODD INPUT BUFFER
3667      64042         LDY   INPUT TEMP 1
3670      36040         SCR   0
3671      17115         ANA   LOW 6 BITS MASK
     3672         SET CRRNT CHAR
3672      61024         STA   ACTUAL CHAR
3673       6401         ADA1  1
3674       6157         LOC   CHAR TRANSL TBL
3675         64         PAY
3676       1000         LDA   0
3677      61023         STA   CRRNT CHAR
3700      35001         INM   INCR ONE
3701         31         LOC   INPUT CHAR CNT
3702      70000         BRU
     3703         INPUT EXIT
3703          0         LOC   0
```

```
      3704          SWEEP BY MODE
3704           0          XIT
3705        1400          LDA1  0
3705         304          LOC   CODE BOTTOM
3707           5          TCA
3710       61400          STA1  0
3711        3743          LOC   $2
3712        6400          ADA1  0
3713         303          LOC   CODE TOP
3714       70023          TAZ
3715        5237          LOC   EXIT
3716       64400          LDY1  0
3717         277          LOC   MODE BOTTOM
3720        1000          LDA   0
3721        6141          ADA   LINK MODE SET BIT
3722       61046          STA   LINK MODE
3723       54400          LX21  0
3724         303          LOC   CODE TOP
3725       50001   $1     IX2   INCR ONE
3726        1200          LDA 2 0
3727       17130          ANA   LINK CODE
3730       21130          CEA   LINK CODE
3731       70042          FQ2
3732        3742          LOC   $5
3733       60032          POP   LINK SET BIT
3734       24200          CEZ 2 0
3735       70044          FQ4
3736        3742          LOC   $5
3737        1200          LDA 2 0
3740        6046          ADA   LINK MODE
3741       61200          STA 2 0
3742         451   $5     CX2
3743           0   $2     LOC   0
3744       70004          TQ4
3745        3725          LOC   $1
3746       70000          BRU
3747        5237          LOC   EXIT
```



```
      3750        PROCESS PNTR
3750          0         XIT
3751      61020         STA    ADDRESS POINTED TO
3752      70000         BRU
3753       4204         LOC    FETCH STAT ADR
3754         64         PAY
3755       1000         LDA    0
3756      60020         POP    BOTTOM 9 BITS
3757       6020         ADA    ADDRESS POINTED TO
3760      61020         STA    ADDRESS POINTED TO
3761      70000         BRU
3762       5237         LOC    EXIT
      3763        NOTE MODE
3763          0         XIT
3764      17142         ANA    MODE MASK
3765      54400         LX21   0
3766        277         LOC    MODE BOTTOM
3767      16200         ORA 2  0
3770      61200         STA 2  0
3771      70000         BRU
3772       5237         LOC    EXIT
      3773        PRINT 5 DEC
3773       1030         STO    ACCUM 2
3774        464         FET    FIVE
3775        456         FET    ZERO
3776       1574         STS    PRINT 5 TEMP
3777      54013  $1     JRS    PEEL ONE DIGIT
4000       2427         ADD    ACCUM 1
4001       5354         SOZ    W0
4002      34005         JAT    $2
4003      47774         PRC    CRRNT QUOTE SPEC
4004      24006         JUN    $3
4005      47455  $2     PRC    SPACE
4006       6356  $3     RST    W1
4007      43777         JAF    $1
4010      47455         PRC    SPACE
4011      47455         PRC    SPACE
4012      25207         JUN    CLEAR TWO AND EXIT
      4013        PEEL ONE DIGIT
4013          0         XIT
4014       1030         LDA    ACCUM 2
4015       2174         LDB    PRINT 5 TEMP
4016      75401         DVD1   1
4017      23420         DEC    10000
4020      61027         STA    ACCUM 1
4021      61022         STA    CRRNT QUOTE CHAR
4022          1         BAC
4023      76110         MUL    TEN
4024      61030         STA    ACCUM 2
4025      71174         STB    PRINT 5 TEMP
4026      70000         BRU
4027       5237         LOC    EXIT
```

abs addr of W0

```
      4030          INITIALIZE QJOTE SCAN
4030         417          FET   POP ADDRESS
4031        5101          SOZ   QUOTE TRIGGER
4032       44034          JAF   $2
4033        2565          ADD   QUOTE TBL OFFSET
4034        1551   $2     STS   QSF ADDRESS
4035         462          FET   THREE
4036        1153          STO   QSF COUNTER
4037         755          FET   WO INDIRECT
4040        1152          STO   QSF WORD
4041        5101          SOZ   QUOTE TRIGGER
4042       45212          JAF   CLEAR ONE AND EXIT
4043       54046   $1     JRS   QUOTE SCAN NEXT CHAR
4044       34043          JAT   $1
4045       25212          JUN   CLEAR ONE AND EXIT
```

```
      4046          QUOTE SCAN NEXT CHAR
4046          0           XIT
4047       1152           LDA   QSF WORD
4050         12           ZRB
4051      37045           SCL   5
4052      61152           STA   QSF WORD
4053      35077           INM   DECR ONE
4054        153           LOC   QSF COUNTER
4055      24153           CEZ   QSF COUNTER
4056      70044           FQ4
4057       4067           LOC   $1
4060      35003           INM   INCR THREE
4061        153           LOC   QSF COUNTER
4062      35001           INM   INCR ONE
4063        151           LOC   QSF ADDRESS
4064      64151           LDY   QSF ADDRESS
4065       1000           LDA   0
4066      61152           STA   QSF WORD
4067      22064     $1    CMB   FIVE
4070      70043           FQ3
4071       4074           LOC   $6
4072       4063           ADB   FOUR
4073      34103           SBL   LEAD BLANKS TRIGGER
4074      24101     $6    CEZ   QUOTE TRIGGER
4075      70004           TQ4
4076       4112           LOC   $2
4077      24102           CEZ   QUOTE CHAR CNT
4100      70004           TQ4
4101       5203           LOC   EXIT FALSE
4102      35077           INM   DECR ONE
4103        102           LOC   QUOTE CHAR CNT
4104      24103           CEZ   LEAD BLANKS TRIGGER
4105      70044           FQ4
4106       4121           LOC   $5
4107       2057           LDB   ONE
4110      70000           BRU
4111       4115           LOC   $4
4112      23061     $2    CEB   QT SEPARATOR
4113      70004           TQ4
4114       5203           LOC   EXIT FALSE
4115      23057     $4    CEB   ONE
4116      70044           FQ4
4117       4121           LOC   $5
4120       2114           LDB   BLANK INDEX
4121      71022     $5    STB   CRRNT QUOTE CHAR
4122      70000           BRU
4123       5171           LOC   EXIT TRUE
```

5-bit char

<5 stays
else add 4

```
                4124            INITIALIZE LISTS
4124         34400              SBL1  0
4125          4146              LOC   IL 1
4126         54400              LX21  0
4127           146              LOC   LIST STAT START ADR
4130          1401              LDA1  1
                4131            LIST MEMORY
4131          6415              LOC   LIST MEMORY START
4132         61200    $1        STA 2 BASE
4133         61201              STA 2 START
4134         61202              STA 2 TOP
4135         61203              STA 2 BOTTOM
4136          1400              LDA1  0
4137           325              LOC   END OF CORE
4140         50005              IX2   INCR FIVE
4141           451              CX2
4142         77453              LOC   NEG OF LIST STAT SIZE
4143         70004              TQ4
4144          4132              LOC   $1
4145         70000              BRU
                4146            IL 1
4146             0              LOC   0
                4147            SAVE LIST DATA
4147         10423              LDP   (CRRNT CHAR, ACT CHAR)
4150         11011              STD   (SAVE CC,    )
4151             0              XIT
4152          1031              LDA   INPUT CHAR CNT
4153         61010              STA   SAVE ICC
4154          1023              LDA   CRRNT CHAR
4155         61011              STA   SAVE CC
4156          1035              LDA   LINE CNT
4157         61013              STA   SAVE LC
4160         54146              LX2   LIST STAT START ADR
4161         44401              LX11  1
4162          6332              LOC   LIST SAVE START
4163          1201    $1        LDA 2 START
4164          7200              SBA 2 BASE
4165         61100              STA 1 SAVE START
4166          1202              LDA 2 TOP
4167          7200              SBA 2 BASE
4170         61101              STA 1 SAVE TOP
4171          1203              LDA 2 BOTTOM
4172          7200              SBA 2 BASE
4173         61102              STA 1 SAVE BOTTOM
4174         50005              IX2   INCR FIVE
4175         40003              IX1   INCR THREE
4176           451              CX2
4177         77453              LOC   NEG OF LIST STAT SIZE
4200         70004              TQ4
4201          4163              LOC   $1
4202         70000              BRU
4203          5255              LOC   NO ANSWER
```

```
      4204        FETCH STAT ADR
4204      34400         SBL1   0
4205       4212         LOC    $1
4206      36012         SAR    12
4207      76064         MUL    FIVE
4210       6146         ADA    LIST STAT START ADR
4211      70000         BRU
4212          0   $1    LOC    0
      4213        SET UP BIF
4213          0         XIT
4214      70000         BRU
4215       4204         LOC    FETCH STAT ADR
4216       6063         ADA    FOUR
4217         64         PAY
4220       1000         LDA    0
4221      37006         SAL    6
4222      17072         ANA    CODE MASK
4223      70000         BRU
4224       5233         LOC    SOB WORK EXIT
      4225        XIT POP
4225      35077         INM    DECR ONE
4226        323         LOC    EXIT BOTTOM
4227      64054         LDY    LOCATION
4230      70000         BRU
      4231        BRS POP
4231      70200         BRU 2
4232          0         LOC    0
4233      70000         BRU
4234       5237         LOC    EXIT
      4235        MCO POP
4235        425         FET    CENTRAL 1
4236       6771         MON    POP ADDR INDIRECT
4237        426         FET    CENTRAL 2
4240       6771         MON    POP ADDR INDIRECT
4241      25237         JUN    EXIT
      4242        FIL POP
4242        771         FET    POP ADDRESS INDIRECT
4243       6701         MON    CODE LIST
4244      25237         JUN    EXIT
      4245        ADR POP
4245        417         FET    POP ADDRESS
4246      25237         JUN    EXIT
      4247        PRQ POP
4247        456         FET    ZERO
4250       1101         STO    QUOTE TRIGGER
4251      54030         JRS    INITIALIZE QUOTE SCAN
4252        456         FET    ZERO
4253       1103         STO    LEAD ZERO TRIGGER
4254      54046   $1    JRS    QUOTE SCAN NEXT CHAR
4255      45237         JAF    EXIT
4256      47774         PRC    CRRNT QUOTE SPEC
4257      24254         JUN    $1
      4260        QSF POP
4260        456         FET    ZERO
4261       1101         STO    QUOTE TRIGGER
```

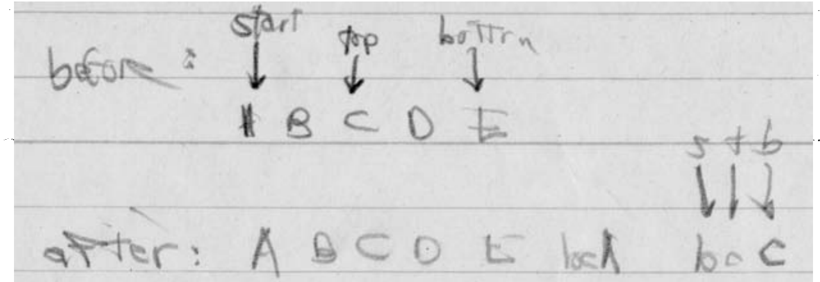
```
4262      53431          JRS    READY SCAN CHAR
4263      54030          JRS    INITIALIZE QUOTE SCAN
4264      54046   $1     JRS    QUOTE SCAN NEXT CHAR
4265      45237   .      JAF    EXIT
4266        422          FET    CRRNT QUOTE CHAR
4267       5424          SOE    ACTUAL CHAR
4270      45125          JAF    FAIL
4271       1345          STO    BUCKET
4272      53433          JRS    NEXT ACTIVE CHAR
4273      24264          JUN    $1
```

```
        4274      BIF POP
4274     54213          JRS    SET UP BIF
4275       417          FET    POP ADDRESS
4276      3524          MPY    LEFT SHIFTER 12
4277      2756          ADD    W1
4300      2360          SWT    W2
4301      4760          SON    W2
4302     34325          JAT    $3
4303     13523          SOT    CONST FLAG
4304     34325          JAT    $3
4305       754          FET    W0
4306     53277          JRS    LOAD CENTRAL
4307     52723          JRS    MODE EVAL
4310     13472          SOT    LOCAL DMY FLAG
4311     34325          JAT    $3
4312     10243          SER    GLOBAL DMY LIST
4313     44317          JAF    $1
4314      4167          AND    BOTTOM 10 MASK
4315      2541          ADD    DUMMY BIT
4316     24322          JUN    $2
4317     13516    $1    SOT    ARRAY FLAG
4320     44325          JAF    $3
4321     27062          BNG    THREE
4322      2762    $2    ADD    W3
4323      1362          STO    W3
4324      4142          AND    MODE MASK
4325      4167    $3    AND    BOTTOM 10 MASK
4326      2760          ADD    W2
4327      6701          MON    CODE LIST
4330     25212          JUN    CLEAR ONE AND EXIT
        4331      BLF POP
4331       417          FET    POP ADDRESS
4332       530          FET    LINK CODE
4333     24336          JUN    BLF-BAF
        4334      BAF POP
4334       417          FET    POP ADDRESS
4335      3543          MPY    LEFT SHIFTER 11
        4336      BLF-BAF
4336      2756          ADD    W1
4337      6701          MON    CODE LIST
4340     25212          JUN    CLEAR ONE AND EXIT
        4341      BNG POP
4341       754          FET    W0
4342      2771          ADD    POP ADDRESS INDIRECT
4343     53750          JRS    PROCESS PNTR
4344      1345          STO    BUCKET
4345       772          FET    ADDRESS POINTED TO INDIRECT
4346     25237          JUN    EXIT
```

```
        4347         CAR POP
4347         1016          STO    TARGET
4350        16371    $1    TOT    POP ADDRESS INDIRECT
4351        44354          JAF    $2
4352         6770          MON    TARGET LIST
4353        24350          JUN    $1
4354        17371    $2    REL    POP ADDRESS INDIRECT
4355        25237          JUN    EXIT
        4356         COF POP
4356        46771          SNE    POP ADDRESS INDIRECT
4357        45200          JAF    CLEAR ONE EXIT FALSE
4360        16755          RSV    WO INDIRECT
4361        36771          CAR    POP ADDRESS INDIRECT
4362        25171          JUN    EXIT TRUE
        4363         SOL POP
4363        11104          STD    SOL TEMP
4364        10771          LDP    POP ADDRESS INDIRECT
4365         4504          SON    SOL TEMP
4366        34371          JAT    $1
4367        12104          SDP    SOL TEMP
4370        24372          JUN    $2
4371        11504    $1    ADP    SOL TEMP
4372         4427    $2    SON    ACCUM 1
4373        10504          LDP    SOL TEMP
4374        35171          JAT    EXIT TRUE
4375        25203          JUN    EXIT FALSE
        4376         FEX POP
4376          417          FET    POP ADDRESS
4377         1014          STO    FEX EXIT
4400        25237          JUN    EXIT
        4401         LCF POP
4401           12          ZRB
4402        70000          BRU
4403         4405          LOC    LCO LCF
        4404         LCO POP
4404         2061          LDB    TWO
        4405         LCO LCF
4405        70000          BRU
4406         5461          LOC    EMPTY TEST
4407         1202          LDA 2 TOPS
4410         4202          ADB 2 TOPS
4411        71202          STB 2 TOPS
4412         6057          ADA    ONE
4413           64          PAY
4414         2000          LDB    0
4415        71025          STB    CENTRAL 1
4416         6057          ADA    ONE
4417           64          PAY
4420         2000          LDB    0
4421        71026          STB    CENTRAL 2
4422        70000          BRU
4423         5171          LOC    EXIT TRUE
```

} screwy

```
          4424          RSV POP
4424         1201             LDA 2 START
4425         7200             SBA 2 BASE
4426        70000             BRU
4427         5475             LOC   SOB LIST
4430         1202             LDA 2 TOP
4431         7200             SBA 2 BASE
4432        70000             BRU
4433         5475             LOC   SOB LIST
4434         2203             LDB 2 BOTTOM
4435        71202             STB 2 TOP
4436        71201             STB 2 START
4437        70000             BRU
4440         5237             LOC   EXIT
          4441          REL POP
4441         1201             LDA 2 START
4442        61202             STA 2 TOP
4443        61203             STA 2 BOTTOM
4444        21200             CEA 2 BASE
4445        70002             TQ2
4446         5237             LOC   EXIT
4447        64201             LDY 2 START
4450         1000             LDA   0
4451         6200             ADA 2 BASE
4452        61202             STA 2 TOP
4453        35277             INM 2 DECR ONE
4454            1             LOC   START
4455        64201             LDY 2 START
4456         1000             LDA   0
4457         6200             ADA 2 BASE
4460         2201             LDB 2 START
4461         5057             SBB   ONE
4462        61201             STA 2 START
4463        71203             STB 2 BOTTOM
4464        70000             BRU
4465         5237             LOC   EXIT
          4466          BOP POP
4466         1204             LDA 2 CODES
4467        17072             ANA   CODE MASK
4470         6203             ADA 2 BOTTOMS
4471         7200             SBA 2 BASES
4472         6057             ADA   ONE
4473        70000             BRU
4474         5233             LOC   SOB WORK EXIT
```



```
     4475        FET POP
4475      1200          LDA 2 0
4476     70000          BRU
4477      5233          LOC   SOB WORK EXIT
     4500        SWT POP
4500      2200          LDB 2 0
4501     61200          STA 2 0
4502         1          BAC
4503     70000          BRU
4504      5222          LOC   ARITH EXIT
     4505        STS POP
4505     61200          STA 2 0
4506     70000          BRU
4507      5237          LOC   EXIT
     4510        STO POP
4510     61200          STA 2 0
4511     70000          BRU
4512      5212          LOC   CLEAR ONE AND EXIT
     4513        ADD POP
4513      6200          ADA 2 0
4514     70000          BRU
4515      5222          LOC   ARITH EXIT
     4516        SJB POP
4516      7200          SBA 2 0
4517     70000          BRU
4520      5222          LOC   ARITH EXIT
     4521        MPY POP
4521     76200          MUL 2 0
4522     70000          BRU
4523      5222          LOC   ARITH EXIT
     4524        AND POP
4524     17200          ANA 2 0
4525     70000          BRU
4526      5222          LOC   ARITH EXIT
     4527        SON POP
4527      1200          LDA 2 0
4530     17071          ANA   HIGH ORDER BIT
4531     21071          CEA   HIGH ORDER BIT
4532     70000          BRU
4533      5242          LOC   ANS EXIT
     4534        SOZ POP
4534      1200          LDA 2 0
4535     21056          CEA   ZERO
4536     70000          BRU
4537      5242          LOC   ANS EXIT
     4540        SOE POP
4540     21200          CEA 2 0
4541     70000          BRU
4542      5242          LOC   ANS EXIT
     4543        RST POP
4543     35277          INM 2 DECR ONE
4544         0          LOC   0
4545      1200          LDA 2 0
4546     21056          CEA   ZERO
4547     70000          BRU
```

4550 5242 LOC ANS EXIT

```
      4551        CNT POP✓
4551       1203         LDA 2 BOTTOM
4552         12         ZRB
4553      47202         SBC 2 TOP
4554      37054         SCL   14
4555      70000         BRU
4556       5227         LOC   DP EXIT
      4557        SNE POP✓
4557      70000         BRU
4560       5461         LOC   EMPTY TEST
4561      70000         BRU
4562       5171         LOC   EXIT TRUE
      4563        MON POP /
4563      35077         INM   DECR ONE
4564        316         LOC   WORK BOTTOM
4565      70000         BRU
4555       5235         LOC   SOB LIST EXIT
      4567        MOF POP ✓
4567      70000         BRU
4570       5461         LOC   EMPTY TEST
4571      64203         LDY 2 BOTTOMS
4572       1000         LDA   0
4573      35277         INM 2 DECR ONE
4574          3         LOC   BOTTOMS
4575      70000         BRU
4576       5233         LOC   SOB WORK EXIT
      4577        TOT POP
4577      70000         BRU
4600       5461         LOC   EMPTY TEST
4601      35201         INM 2 INCR ONE
4602          2         LOC   TOP
4603      64202         LDY 2 TOP
4604       1000         LDA   0
4605      70000         BRU
4606       5233         LOC   SOB WORK EXIT
      4607        CSF POP✓
4607      14371         CSA   POP ADDRESS INDIRECT
4610      45115         JAF   SYNTAX FAIL
4611      25237         JUN   EXIT
      4612        CSA POP✓
4612      53431         JRS   READY SCAN CHAR
4613          0         XIT
4614       1017         LDA   POP ADDRESS
4615      21024         CEA   ACTUAL CHAR
4616      70042         FQ2
4617       5242         LOC   ANS EXIT
4620      43023         STZ   CRRNT CHAR
4621      70000         BRU
4522       5242         LOC   ANS EXIT
      4623        SCE POP
4623       1600         LDA12 0
4624       6157         LOC   CHAR TRANSL TBL
4625      21023         CEA   CRRNT CHAR
4626      70000         BRU
4527       5242         LOC   ANS EXIT
```

BRU LOC READY SCAN CHAR
LDA ADDRESS

```
      4630        SER POP
4630      70000          BRU
4631       5461          LOC    EMPTY TEST
4632       1203          LDA 2  BOTTOM
4633          5          TCA
4634      61400          STA1   0
4635       4667          LOC    $3
4636       1204          LDA 2  CODE
4637      17062          ANA    SIZE MASK
4640      61040          STA    SER TEMP 1
4641       7057          SBA    ONE
4642      61042          STA    SER TEMP 3
4643      44040          LX1    SER TEMP 1
4644      51041          SX2    SER TEMP 2
4645      54202          LX2 2  TOP
4646       1025          LDA    CENTRAL 1
4647       2026          LDB    CENTRAL 2
4650      23201  $1      CEB 2  1
4651      30100          ANQ    Q4 ONLY
4652      24042          CEZ    SER TEMP 3
4653      70004          TQ4
4654       4660          LOC    $6
4655      21201          CEA 2  1
4656      23202          CEB 2  2
4657      30014          ANQ    Q2 AND Q4 TRUE
4660      70005  $6      TQ5
4661       4677          LOC    $4
4662      24040          CEZ    SER TEMP 1
4663      70004          TQ4
4664       4674          LOC    $5
4665      55300  $2      AX2 3  0
4666        451          CX2
4667         30  $3      HLT    0
4670      70004          TQ4
4671       4650          LOC    $1
4672      70000          BRU
4673       5203          LOC    EXIT FALSE
4674      44203  $5      LX1 2  3
4675      70000          BRU
4675       4665          LOC    $2
4677      51040  $4      SX2    SER TEMP 1
4700      54041          LX2    SER TEMP 2
4701       1040          LDA    SER TEMP 1
4702       7200          SBA 2  BASE
4703       6057          ADA    ONE
4704       2072          LDB    CODE MASK
4705      14204          ETR 2  CODE
4706      70000          BRU
4707       5233          LOC    SOB WORK EXIT
      4710        SOC POP
4710      53431          JRS    READY SCAN CHAR
4711        417          FET    POP ADDRESS
4712       3542          MPY    LEFT SHIFTER 9
4713       4023          AND    CRRNT CHAR
4714       5354          SOZ    WO
```

```
BRU
LOC   READY SCAN CHAR
LDA   ADDRESS
SAL   11
ANA   CRRNT CHAR
CEA   ZERO.
BRU
LOC   ANS EXIT
```

```
4715      35200          JAT    CLEAR ONE EXIT FALSE
4716      25166          JUN    CLEAR ONE EXIT TRUE
     4717          SOT POP J
4717      70000          BRU
4720       4204          LOC    FETCH STAT ADR
4721       6063          ADA    FOUR
4722         64          PAY
4723       1000          LDA    0
4724      17200          ANA 2  0
4725      21201          CEA 2  1
4726      70000          BRU
4727       5242          LOC    ANS EXIT
```

```
      4730          LDP POP
4730        2200          LDB 2 0
4731        1201          LDA 2 1
4732       70000          BRU
4733        5227          LOC   DP EXIT
      4734          STD POP
4734        1030          LDA   ACCUM 2
4735       71200          STB 2 0
4736       61201          STA 2 1
4737       70000          BRU
4740        5227          LOC   DP EXIT
      4741          ADP POP
4741        1030          LDA   ACCUM 2
4742       46201          ADC 2 1
4743        4200          ADB 2 0
4744       70000          BRU
4745        5227          LOC   DP EXIT
      4746          SDP POP
4746        1030          LDA   ACCUM 2
4747       47201          SBC 2 1
4750        5200          SBB 2 0
4751       70000          BRU
4752        5227          LOC   DP EXIT
      4753          MDP POP
4753        1030          LDA   ACCUM 2
4754       43037          STZ   MDP TOGGLE
4755       70070          TBH
4756        5007          LOC   COMPLEMENT
4757       61043          STA   MDP TEMP 2
4760       71042          STB   MDP TEMP 1
4761        2200          LDB 2 0
4762        1201          LDA 2 1
4763       70070          TBH
4764        5007          LOC   COMPLEMENT
4765       61045          STA   MDP TEMP 4
4766       71044          STB   MDP TEMP 3
4767        1042          LDA   MDP TEMP 1
4770       76045          MUL   MDP TEMP 4
4771       61042          STA   MDP TEMP 1
4772        1044          LDA   MDP TEMP 3
4773       76043          MUL   MDP TEMP 2
4774       61044          STA   MDP TEMP 3
4775        1043          LDA   MDP TEMP 2
4776       76045          MUL   MDP TEMP 4
4777        4044          ADB   MDP TEMP 3
5000        4042          ADB   MDP TEMP 1
5001       24037          CEZ   MDP TOGGLE
5002       70004          TQ4
5003        5005          LOC   $1
5004          70          TCC
5005       70000   $1     BRU
5006        5227          LOC   DP EXIT
      5007          COMPLEMENT
5007       34400          SBL1  0
5010        5020          LOC   $1
```

```
5011        70          TCC
5012     61046          STA    COMP TEMP
5013      1037          LDA    MDP TOGGLE
5014     15057          EOA    ONE
5015     61037          STA    MDP TOGGLE
5016      1046          LDA    COMP TEMP
5017     70000          BRU
5020         0    $1    LOC    0
```

```
         5021         PRC POP
5021     1600             LDA12 0
5022     6157             LOC   CHAR TRANSL TBL
5023    21401             CEA1  1
5024    20117             LOC   ML CAR RETURN
5025    70042             FQ2
5026     5032             LOC   $1
5027    35001             INM   INCR ONE
5030       47             LOC   LINES THIS PAGE
5031    34050             SBL   TYPER CASE TRIGGER
5032    60026    $1       POP   CASE BIT POPA
5033     1600             LDA12 0
5034     6157             LOC   CHAR TRANSL TBL
5035    21057             CEA   ONE
5036    24050             CEZ   TYPER CASE TRIGGER
5037    70044             FQ4
5040     5045             LOC   $2
5041    70002             TQ2
5042     5056             LOC   $3
5043    70000             BRU
5044     5063             LOC   $4
5045    70002    $2       TQ2
5046     5063             LOC   $4
5047     1401             LDA1  1
5050    10474             LOC   ML UPPER CASE
5051    70000             BRU
5052     5447             LOC   TYPE ONE CHAR
5053    43050             STZ   TYPER CASE TRIGGER
5054    70000             BRU
5055     5063             LOC   $4
5056     1401    $3       LDA1  1
5057     4472             LOC   ML LOWER CASE
5060    70000             BRU
5061     5447             LOC   TYPE ONE CHAR
5062    34050             SBL   TYPER CASE TRIGGER
5063     1600    $4       LDA12 0
5064     6157             LOC   CHAR TRANSL TBL
5065    70000             BRU
5066     5447             LOC   TYPE ONE CHAR
5067    35001             INM   INCR ONE
5070      176             LOC   CHARS THIS LINE
5071    24050             CEZ   TYPER CASE TRIGGER
5072    70044             FQ4
5073     5237             LOC   EXIT
5074     1401             LDA1  1
5075     4472             LOC   ML LOWER CASE
5076    70000             BRU
5077     5447             LOC   TYPE ONE CHAR
5100    34050             SBL   TYPER CASE TRIGGER
5101    70000             BRU
5102     5237             LOC   EXIT
```

typ C.R. sets lower case

6 1000000

A→Q2

trigger 0 1
case bit 0 – u.c.
1 l.c. –

where reset?

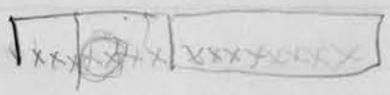
```
      5103          OVERFLOW FAIL
5103        30            HLT
      5104          ALLOCATION FAIL
5104       554            FET   ALLOCATION QT ADR
5105     25113            JUN   SET LAST ACTIVE
      5106          NUMBER FAIL
5106       555            FET   NUMBER QT ADR
5107     25113            JUN   SET LAST ACTIVE
      5110          SUBSCRIPT FAIL
5110       556            FET   SUBSCRIPTS QT ADR
5111     25113            JUN   SET LAST ACTIVE
      5112          ID CONFLICT FAIL
5112       557            FET   ID CONFLICT QT ADR
      5113          SET LAST ACTIVE
5113       500            FET   LAST ACTIVE CHAR CNT
5114     25117            JUN   NOTE FAIL
      5115          SYNTAX FAIL
5115       560            FET   SYNTAX QT ADR
5116       431            FET   INPUT CHAR CNT
      5117          NOTE FAIL
5117      3347            SUB   FAIL CNT
5120      4754            SON   WO
5121     35125            JAT   FAIL
5122      2747            ADD   FAIL CNT
5123      1347            STO   FAIL CNT
5124      1021            STO   FAIL MESSAGE
      5125          FAIL
5125         0            XIT
5125      1010            LDA   SAVE ICC
5127     61031            STA   INPUT CHAR CNT
5130      1011            LDA   SAVE CC
5131     61023            STA   CRRNT CHAR
5132      1012            LDA   SAVE AC
5133     61024            STA   ACTUAL CHAR
5134      1013            LDA   SAVE LC
5135     61035            STA   LINE CNT
5136     54146            LX2   LIST STAT START ADR
5137     44401            LX11  1
5140      6332            LOC   LIST SAVE START
5141      1100   $1       LDA 1 SAVE START
5142      6200            ADA 2 BASE
5143     61201            STA 2 START
5144      1101            LDA 1 SAVE TOP
5145      6200            ADA 2 BASE
5146     61202            STA 2 TOP
5147      1102            LDA 1 SAVE BOTTOM
5150      6200            ADA 2 BASE
5151     61203            STA 2 BOTTOM
5152     50005            IX2   INCR FIVE
5153     40003            IX1   INCR THREE
5154       451            CX2
5155     77453            LOC   NEG OF LIST STAT SIZE
5156     70004            TQ4
5157      5141            LOC   $1
5160      1014            LDA   FEX EXIT
```

```
5161      70000         BRU
5162       5264         LOC    NEXT FROM A
```

```
     5163        CLEAR TWO EXIT TRUE
5163          0         XIT
5164      35077         INM   DECR ONE
5165        316         LOC   WORK BOTTOM
     5166        CLEAR ONE EXIT TRUE
5166          0         XIT
5167      35077         INM   DECR ONE
5170        316         LOC   WORK BOTTOM
     5171        EXIT TRUE
5171          0         XIT
5172      57061         LPQ   TRUE Q WORD
5173      70000         BRU
5174       5242         LOC   ANS EXIT
     5175        CLEAR TWO EXIT FALSE
5175          0         XIT
5176      35077         INM   DECR ONE
5177        316         LOC   WORK BOTTOM
     5200        CLEAR ONE EXIT FALSE
5200          0         XIT
5201      35077         INM   DECR ONE
5202        316         LOC   WORK BOTTOM
     5203        EXIT FALSE
5203          0         XIT
5204      57056         LPQ   FALSE Q WORD
5205      70000         BRU
5206       5242         LOC   ANS EXIT
     5207        CLEAR TWO AND EXIT
5207          0         XIT
5210      35077         INM   DECR ONE
5211        316         LOC   WORK BOTTOM
     5212        CLEAR ONE AND EXIT
5212          0         XIT
5213        077         INM   DECR ONE
5214        316         LOC   WORK BOTTOM
5215      70000         BRU
5216       5255         LOC   NO ANSWER
```

```
     5217        INTERPRETER
5217      1001          LDA   1
5220     70000          BRU
5221      5264          LOC   NEXT FROM A
     5222        ARITH EXIT
5222     64400          LDY1  0
5223       316          LOC   WORK BOTTOM
5224     61000          STA   0
5225     70000          BRU
5226      5255          LOC   NO ANSWER
     5227        DP EXIT
5227     71027          STB   ACCUM 1
5230     61030          STA   ACCUM 2
5231     70000          BRU
5232      5255          LOC   NO ANSWER
     5233        SOB WORK EXIT
5233     54401          LX21  1
5234       313          LOC   WORK LIST
     5235        SOB LIST EXIT
5235     70000          BRU
5236      5475          LOC   SOB LIST
     5237        EXIT
5237         0          XIT   = No-op
5240     70001          TQ1
5241      5255          LOC   NO ANSWER
     5242        ANS EXIT
5242        11          ZRA
5243     70042          FQ2
5244      5246          LOC   $1
5245      1071          LDA   HIGH ORDER BIT
5246     54400   $1     LX21  0
5247       323          LOC   EXIT BOTTOM
5250     50077          IX2   DECR ONE
5251      2401          LDB1  1
5252     37777          OCT   37777
5253     14200          ETR 2 0
5254     61200          STA 2 0
     5255        NO ANSWER
5255     54400          LX21  0
5256       323          LOC   EXIT BOTTOM
5257     35077          INM   DECR ONE
5260       323          LOC   EXIT BOTTOM
5261      1200          LDA 2 0
5262     61015          STA   ADDRESS
     5263        JRS POP
5263      1015          LDA   ADDRESS
```

Q2 → high bit of 2nd on EXT list



1. 70000 → BRU.
2. op < 20 ⇒ addr < 354 stays.
   $354 \le ad < 370$: add ⇒ $\left(\text{'work bottom'} - \frac{addr - 354}{2}\right)$ is address
   even ⇒
   $370 \le ad$: (add - 352)
3. ~~[illegible]~~ op ≥ 20 12-bit address, 3 bit op.
   if address ≥ 6000 however, take an interpretation ~~[illegible]~~ as though op < 20.

```
      5254        NEXT FROM A
5264     44065        LX1   SIXTY FOUR
5265     17144        ANA   ADDRESS MASK
5266     61054        STA   LOCATION
5257      6057        ADA   ONE
5270     54401        LX21  1
5271       320        LOC   EXIT LIST
5272     70000        BRU
5273      5475        LOC   SOB LIST
5274     54054        LX2   LOCATION
5275      2200        LDB 2 0
5276     71200        STB 2 0
5277     70000        BRU
5300     14116        LOC   DEBUG
5301     23401        CEB1  1
5302     70000        BRU
5303      1201        LDA 2 1
5304     70044        FQ4
5305      5312        LOC   $1
5306     35077        INM   DECR ONE
5307       323        LOC   EXIT BOTTOM
5310     70000        BRU
5311      5264        LOC   NEXT FROM A
5312     22401  $1    CMB1  1
5313     20000        LOC   OP BREAK TESTER
5314     36050        SCR   10
5315     70043        FQ3
5316      5337        LOC   $4
5317     36044        SCR   4
5320     70022        FAH
5321      5325        LOC   $2
5322     37001        SAL   1
5323     70062        TAH
5324      5333        LOC   $3
5325      4111  $2    ADB   NO OF NON JUMP POPS -1
5326     71043        STB   INT TEMP 1
5327      1200        LDA 2 0
5330     17144        ANA   TWELVE BIT MASK
5331     70000        BRU
5332      5372        LOC   SPEC AND NON SPEC
5333     37001  $3    SAL   1
5334     37042        SCL   2
5335      4401        ADB1  1
5336        30        DEC   24
5337     71043  $4    STB   INT TEMP 1
5340      1200        LDA 2 0
5341     17140        ANA   EIGHT BIT MASK
5342      7401        SBA1  1
5343       354        LOC   SPECIAL BREAK
5344     70062        TAH
5345      5360        LOC   NON SPECIAL
5346     20401        CMA1  1
5347        14        LOC   WORK BREAK
5350     70041        FQ1
5351      5364        LOC   WORK SPECIAL
```

reduces to one index reg

=7777

70000 is interpreted as BRU
(but I can't see where used)

B≥20000

xxx1

xxx11

B<20000

add≥354

add<370

```
5352        6401        ADA1  1
5353           2        LOC   SPECIAL LOC OFFSET
```

```
5354          64          PAY
5355       54000          LX2   0
5356       70000          BRU
5357        5404          LOC   PROCESS OP
     5360          NON SPECIAL
5360        6401          ADA1  1
5361         354          LOC   SPECIAL BREAK
5362       70000          BRU
5363        5372          LOC   SPEC AND NON SPEC
     5364          WORK SPECIAL
5364       70061          TAL
5365        5376          LOC   WORK SPEC IND
5366       36001          SAR   1
5367           5          TCA
5370        6400          ADA1  0
5371         316          LOC   WORK BOTTOM
     5372          SPEC AND NON SPEC
5372       61037          STA   INT TEMP
5373       54037          LX2   INT TEMP
5374       70000          BRU
5375        5404          LOC   PROCESS OP
     5376          WORK SPEC IND
5375       36001          SAR   1
5377           5          TCA
5400        6400          ADA1  0
5401         316          LOC   WORK BOTTOM
5402          64          PAY
5403       54000          LX2   0
     5404          PROCESS OP
5404       44043          LX1   INT TEMP 1
5405        1500          LDA11 0
5406        6245          LOC   POP JUMP TBL
5407       70022          FAH
5410        5414          LOC   $2
5411       51017          SX2   POP ADDRESS
5412       70000          BRU
5413        5264          LOC   NEXT FROM A
5414       61400    $2    STA1  0
5415        5426          LOC   $1
5416       64400          LDY1  0
5417         316          LOC   WORK BOTTOM
5420        1000          LDA   0
5421        2027          LDB   ACCUM 1
5422       44065          LX1   SIXTY FOUR
5423       57057          LPQ   POP PQ    =\
5424       51015          SX2   ADDRESS
5425       70000          BRU
5425           0    $1    LOC   0
```

MLC → address pop and store in interp. lang.

rA contains w/o

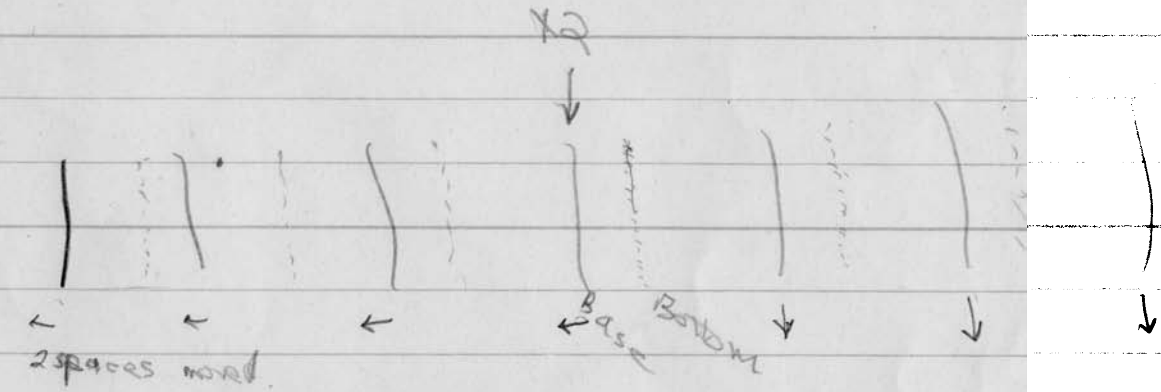
rX2 contains ADDRESS

```
      5427          JAT POP
5427       1116           LDA    ALL ONES
5430      70000           BRU
5431       5433           LOC    JAT-JAF
      5432          JAF POP
5432         11           ZRA
      5433          JAT-JAF
5433      54400           LX21   0
5434        323           LOC    EXIT BOTTOM
5435      50077           IX2    DECR ONE
5436      15200           EOR 2  0
5437      70062           TAH
5440       5237           LOC    EXIT
      5441          JJN POP
5441      54400           LX21   0
5442        323           LOC    EXIT BOTTOM
5443       1015           LDA    ADDRESS
5444      61200           STA 2  0
5445      70000           BRU
5446       5237           LOC    EXIT
      5447          TYPE ONE CHAR
5447      34400           SBL1   0
5450       5460           LOC    $1
5451      17115           ANA    LOW SIX BITS MASK
5452      61046           STA    TYPE ONE TEMP 1
5453       3046           LDN    TYPE ONE TEMP 1
5454      42010           OPA    TYPER ADR
5455      70016  $2       TNB
5456       5455           LOC    $2
5457      70000           BRU
5460          0  $1       LOC    0
      5461          EMPTY TEST
5461      34400           SBL1   0
5462       5467           LOC    $1
5463       1202           LDA 2  TOP
5464       7203           SBA 2  BOTTOM
5465      57061           LPQ    TRUE Q WORD = 2
5466      70063           FAZ
5467          0  $1       LOC    0
5470       1201           LDA 2  START
5471      61202           STA 2  TOP
5472      61203           STA 2  BOTTOM
5473      70000           BRU
5474       5203           LOC    EXIT FALSE
      5475          SOB LIST                    store -1 Bottom
5475      34400           SBL1   0
5476       5510           LOC    $1
5477       2203           LDB 2  BOTTOM
5500      23205           CEB 2  LIMIT
5501      70004           TQ4
5502       5511           LOC    REASSIGN MEMORY
5503      35201           INM 2  INCR ONE
5504          3           LOC    BOTTOM
5505      64203           LDY 2  BOTTOM
5506      61000           STA    0
                          BRU
                  T1      LOC    0
```

```
5507      70000          BRU
5510          0   $1     LOC    0
```

```
         5511         REASSIGN MEMORY
     5511       34400          SBL1   0
     5512        5576          LOC    $8
     5513       53045          SPQ    REASSIGN TEMP 4
     5514       61043          STA    REASSIGN TEMP 2
     5515       41044          SX1    REASSIGN TEMP 3
     5516        1400          LDA1   0
     5517         203          LOC    LBL BOTTOM
     5520        7400          SBA1   0
     5521         205          LOC    LBL LIMIT
     5522       70022          FAH
U    5523       20001          LOC    PRESS MEMORY
     5524       51046          SX2    REASSIGN TEMP 5
     5525       44401          LX11   1
     5526         200          LOC    LBL LIST
     5527       40005   $6     IX1    INCR FIVE
     5530       41042          SX1    REASSIGN TEMP 1
     5531        1100          LDA 1  BASE
     5532        6057          ADA    ONE
     5533       61400          STA1   0
     5534        5555          LOC    $3
     5535        7061          SBA    TWO
     5536       61400          STA1   0
     5537        5557          LOC    $4
     5540        7103          SBA 1  BOTTOM
     5541       61400          STA1   0
     5542        5562          LOC    $1
     5543       35176          INM 1  DECR TWO
     5544           0          LOC    BASE
     5545       35176          INM 1  DECR TWO
     5546           1          LOC    START
     5547       35176          INM 1  DECR TWO
     5550           2          LOC    TOP
     5551       35176          INM 1  DECR TWO
     5552           3          LOC    BOTTOM
     5553       44056          LX1    ZERO
     5554        1500   $2     LDA11  0
U    5555       20002   $3     LOC    (BASE +1)
     5556       61500          STA11  0
U    5557       20003   $4     LOC    (BASE -1)
     5560       40001          IX1    INCR ONE
     5561         441          CX1
U    5562       20004   $1     LOC    (BASE -BOTTOM- 1)
     5563       70003          TQ3
     5564        5554          LOC    $2
     5565       44042          LX1    REASSIGN TEMP 1
     5566        1042          LDA    REASSIGN TEMP 1
     5567       21046          CEA    REASSIGN TEMP 5
     5570       70042          FQ2
     5571        5527          LOC    $6
     5572       57045          LPQ    REASSIGN TEMP 4
     5573        1043          LDA    REASSIGN TEMP 2
     5574       44044          LX1    REASSIGN TEMP 3
     5575       70000          BRU
     5576           0   $8     LOC    0
```

High bit off (Bottom ≥ limit)



```
5577        EVEN INPUT BUFFER
                  PLS    75
5712        ODD INPUT BUFFER
                  PLS    75
```

```
      5025        QJOTE TBL
6025       5432          ENC    2SU
                         SOG    1
6026      17364          ENC    BRO
6027      65456          ENC    UTI
          3         FJNCTION QT
6030      46502          ENC    NE2
6031      27523          ENC    FUN
6032      21456          ENC    CTI
          6         IMENSION QT
6033      51142          ENC    ON2
6034      35112          ENC    IME
5035      47416          ENC    NSI
         11         OTO QT
6036      51142          ENC    ON2
5037      51464          ENC    OTO
         13         IF QT
6040       4713          ENC    2IF
         14         FORMAT QT
6041       4564          ENC    2FO
6042      57106          ENC    RMA
         16         CALL QT
5043      62110          ENC    T2C
5044      15061          ENC    ALL
         20         CONTINUE QT
6045       4424          ENC    2CO
5046      47456          ENC    NTI
5047      47512          ENC    NUE
         23         TYPE QT
6050       5476          ENC    2TY
         24         ACCEPT QT
6051      52502          ENC    PE2
6052      14410          ENC    ACC
5053      25271          ENC    EPT
         27         TAPE QT
6054       5446          ENC    2TA
         30         READ DRUM QT
6055      52502          ENC    PE2
6056      56506          ENC    REA
6057      22467          ENC    DDR
         33         WRITE DRUM QT
6060      65102          ENC    UM2
6061      71356          ENC    WRI
6052      62511          ENC    TED
6063      57522          ENC    RUM
         37         PUNCH QT
6054       5272          ENC    2PU
6065      46415          ENC    NCH
         41         PRINT QT
6066       5267          ENC    2PR
6057      35171          ENC    INT
```

```
          43        OVERFLOW QT
6070       5232           ENC    2OU
6071      25353           ENC    ERF
6072      43234           ENC    LOW
          46        SENSE QT
6073       5412           ENC    2SE
6074      47412           ENC    NSE
          50        WITCH QT
6075       5616           ENC    2WI
6076      62415           ENC    TCH
          52        LIGHT QT
6077       5056           ENC    2LI
6100      30671           ENC    GHT
          54        ASSIGN QT
6101       4330           ENC    2AS
6102      60714           ENC    SIG
          56        COMMON QT
6103      46110           ENC    N2C
6104      51122           ENC    OMM
          60        EQJIVALENCE QT
6105      51142           ENC    ON2
6106      25332           ENC    EQU
6107      35546           ENC    IVA
6110      42523           ENC    LEN
          64        RETURN QT
6111      20502           ENC    CE2
6112      56531           ENC    RET
6113      65363           ENC    URN
          67        PAUSE QT
6114       5246           ENC    2PA
6115      65412           ENC    USE
          71        STOP QT
6116       5431           ENC    2ST
          72        ID CONFLICT QT
6117      51242           ENC    OP2
6120      34441           ENC    ID1
6121      21223           ENC    CON
6122      27056           ENC    FLI
          76        SYNTAX QT
6123      21442           ENC    CT2
6124      61723           ENC    SYN
6125      62335           ENC    TAX
         101        ALLOCATION QT
6126       4321           ENC    2AL
6127      43210           ENC    LOC
6130      15456           ENC    ATI
         104        SUBSCRIPTS QT
6131      51142           ENC    ON2
6132      61507           ENC    SUB
6133      60427           ENC    SCR
6134      35271           ENC    IPT
         110        NJMBER QT
6135      60123           ENC    S2N
6136      65107           ENC    UMB
```

```
      112        SJBPROGRAMS REQUIRED QT
6137     25342          ENC    ER2
6140     61507          ENC    SUB
6141     53364          ENC    PRO
6142     31346          ENC    GRA
6143     45401          ENC    MS1
6144     56526          ENC    REQ
6145     64727          ENC    UIR
      121        ERRORS QT
6146     24442          ENC    ED2
6147     25367          ENC    ERR
6150     51370          ENC    ORS
      124        ID MAP QT
6151      4711          ENC    2ID
6152      3106          ENC    1MA
      126        END QT
6153     52112          ENC    P2E
      127        FINIS QT
6154     46442          ENC    ND2
6155     26723          ENC    FIN
6156     35402          ENC    IS2
```

```
                          SED
       6157        CHAR TRANSL TBL
6157        42300         OCT    42300
                          SOG    1
          1        N1
6160        42301         OCT    42301
          2        N2
6161        42302         OCT    42302
          3        N3
6162        42303         OCT    42303
          4        N4
6163        42304         OCT    42304
          5        N5
6164        42305         OCT    42305
          6        N6
6165        42306         OCT    42306
          7        N7
6166        42307         OCT    42307
         10        N8
6167        42310         OCT    42310
         11        N9
6170        42311         OCT    42311
         12        A
6171         7361         OCT    07361
         13        B
6172         7362         OCT    07362
         14        C
6173         7363         OCT    07363
         15        D
6174         7364         OCT    07364
         16        E
6175         7365         OCT    07365
         17        F
6176         7366         OCT    07366
         20        G
6177         7367         OCT    07367
         21        H
6200         7370         OCT    07370
         22        I
6201         6371         OCT    06371
         23        J
6202         6341         OCT    06341
         24        K
6203         6342         OCT    06342
         25        L
6204         6343         OCT    06343
         26        M
6205         6344         OCT    06344
         27        N
6206         6345         OCT    06345
         30        LETTER O
6207         7346         OCT    07346
         31        P
6210         7347         OCT    07347
         32        Q
```

```
6211        7350            OCT     07350
        33          R
6212        7351            OCT     07351
        34          S
6213        7322            OCT     07322
        35          T
6214        7323            OCT     07323
        36          J
6215        7324            OCT     07324
        37          V
6216        7325            OCT     07325
        40          W
6217        7326            OCT     07326
        41          X
6220        7327            OCT     07327
        42          Y
6221        7330            OCT     07330
        43          Z
5222        7331            OCT     07331
```

```
                44          RIGHT PAREN
                44          R PAREN
                44          R BRACKET
6223             10044            OCT    10044
                45          VIRGULE
                45          SLASH CHAR
6224             10321            OCT    10321
                46          COMMA
                46          CJMMA CHAR
6225             10133            OCT    10133
                47          ERROR MARK
5226             20246            OCT    20246
                50          LOWER CASE
6227              4472            OCT    04472
                51          JPPER CASE
6230             10474            OCT    10474
                52          STOP CODE
6231               476            OCT    00476
                53          DELETE
6232             11477            OCT    11477
                54          LINE MARK
                54          ILLEGAL CHAR
6233             20313            OCT    20313
                55          SPACE
                55          BLANK
6234               112            OCT    00112
                56          EQUAL
                56          EQUAL SIGN CHAR
5235               224            OCT    00224
                57          PLUS
                57          PLUS CHAR
6236               360            OCT    00360
                60          PERIOD
6237               373            OCT    00373
                61          LEFT PAREN
                61          L PAREN
                61          L BRAKET
6240               264            OCT    00264
                62          MINJS
                62          MINUS CHAR
6241               140            OCT    00140
                63          CAR RET
                53          CAR RETJRN
6242             20117            OCT    20117
                64          DOLLAR
6243               353            OCT    00353
                65          ASTERISK
                65          ASTERISK CHAR
6244               320            OCT    00320
             5245           SPECIAL CHAR FLAG
                            *      OCT    00400
             6245           LOWER CASE FLAG
                            *      OCT    00100
             5245           CASE IMPORTANT FLAG
                            *      OCT    00200
```

(don't get into Curr. char)

SED

6245 POP JUMP TBL

6245	4225	LOC	XIT	POP	000	Exit
6246	4475	LOC	FET	POP	004	Fetch
6247	4510	LOC	STO	POP	010	Store
6250	4505	LOC	STS	POP	014	store, save
6251	4500	LOC	SWT	POP	020	Switch add ↔ W0
6252	4513	LOC	ADD	POP	024	add to W0
6253	4516	LOC	SUB	POP	030	subtract from W0
6254	4521	LOC	MPY	POP	034	multiply into W0
6255	4524	LOC	AND	POP	040	And with W0
6256	4527	LOC	SON	POP	044	Is operand neg
6257	4534	LOC	SOZ	POP	050	Is " zero
6260	4540	LOC	SOE	POP	054	≠ W0
6261	4543	LOC	RST	POP	060	Reset : Sub 1, if 0, True.
6262	4563	LOC	MON	POP	064	Move on W0 → list, [illegible]
6263	4567	LOC	MOF	POP	070	Move off W0 ← list; F if empty
6264	44235	MLC	MCO	POP	074	Move Central on
6265	4630	LOC	SER	POP	100	(Copy) Search, Not on → F, Else W0 ← (list no) ... (rel loc)
6266	4730	LOC	LDP	POP	104	Load DP accum
6267	4734	LOC	STD	POP	110	Store DP accum
6270	4741	LOC	ADP	POP	114	Add to DP accum
6271	4746	LOC	SDP	POP	120	Sub from DP accum
6272	4753	LOC	MDP	POP	124	Mul DP
6273	~~0~~4710	LOC ~~MLC~~	SOC	POP	130	Test char ∈ class
6274	4717	LOC	SOT	POP	134	code [list W0] marked and cup with next wd.
6275	~~0~~4612	LOC ~~MLC~~	CSA	POP	140	Source = addr: pass if true — Char Scan in list
6276	44607	MLC	CSF	POP	144	Compare, if * it's syntax fail. — Char Scan on Fail
6277	4623	LOC	SCE	POP	150	Set if char equal
6300	44260	MLC	QSF	POP	154	Quote Scan on Fail.
6301	4577	LOC	TOT	POP	160	Top of list → W0 F if empty
6302	4424	LOC	RSV	POP	164	Reserve list contents
6303	4441	LOC	REL	POP	170	Restore after RSV
6304	44274	MLC	BIF	POP	174	
6305	44331	MLC	BLF	POP	260	
6306	4466	LOC	BOP	POP	264	W0 ← (list no) [illegible] +1)
6307	44341	MLC	BNG	POP	270	Fetch [illegible] contents (pointed to [illegible] addr)
6310	44242	MLC	FIL	POP	274	addr → code
6311	44245	MLC	ADR	POP	360	Fetch literal
6312	44347	MLC	CAR	POP	364	add W0 names list [illegible] to list ~~[illegible]~~
6313	44356	MLC	COF	POP	370	Reserve and CLR
6314	4401	LOC	LCF	POP	374	
6315	4404	LOC	LCO	POP	460	
6316	4557	LOC	SNE	POP	464	scroll not empty?
6317	44247	MLC	PRQ	POP	470	Print quote
6320	5021	LOC	PRC	POP	474	Print char
6321	44363	MLC	SOL	POP	560	
6322	4551	LOC	CNT	POP	564	count (size → accum 1)
6323	44334	MLC	BAF	POP	570	Test DP [illegible]
6324	5441	LOC	JUN	POP	2	Jump uncond
6325	5427	LOC	JAT	POP	3	Jump to Addr if true
6326	5432	LOC	JAF	POP	4	" " " false
6327	5263	LOC	JRS	POP	5	Jump Recursively to Subroutine
6330	4231	LOC	BRS	POP ✓	6	Branch to ML Subr
6331	44376	MLC	FEX	POP	7	~~[illegible]~~ addr → Fail Exit

```
      6332          LIST SAVE START
6332             0      PZE
      6333          LIST SAVE TOP
6333             0      PZE
      6334          LIST SAVE BOTTOM
                       PLS    49
      6415          LIST MEMORY START
6415             0      PZE
```

~ 1800 WAs

```
                         DOG   12200
                         SOG   12200
      12200          CT CONVERT TAPE
      12200          CT FIRST TIME FLAG
12200            0       PZE
      12201          CT CASE WORD
12201            0       PZE
      12202          CT PUNCH TEMP
12202            0       PZE
      12203          CT LOWER CASE
12203           72       OCT   72
      12204          CT UPPER CASE
12204           74       OCT   74
      12205          CT CONVERT TAPE ENTRY
12205        57401       LPQ1  1
12206        12200       LOC   CT CONVERT TAPE
12207        42001       OPA   1
12210        42000       OPA   0
12211           20       ZRN
12212        34000       SBL   CT FIRST TIME FLAG
12213         1003       LDA   CT LOWER CASE
12214        61001       STA   CT CASE WORD
12215        70000  $3   BRU
U 12216      20005       LOC   CT READ CHAR  MW
12217         2003       LDB   CT LOWER CASE
12220         1500       LDA11 0
12221        12270       LOC   CT CONV TBL
12222        70022       FAH
12223        12225       LOC   $1
12224         2004       LDB   CT UPPER CASE
12225        23001  $1   CEB   CT CASE WORD
12226        70004       TQ4
12227        12235       LOC   $2
12230        71001       STB   CT CASE WORD
12231            3       XAB
12232        70000       BRU
12233        12257       LOC   CT PUNCH CHAR
12234            3       XAB
12235        70000  $2   BRU
12236        12257       LOC   CT PUNCH CHAR
12237        70000       BRU
12240        12215       LOC   $3
      12241          CT READ CHAR
12241        34400       SBL1  0
12242        12256       LOC   $6
12243        42001  $3   OPA   0
12244        70054  $5   FNI
12245        12244       LOC   $5
12246           44       NX1
12247        70057       FTP
12250        12254       LOC   $4
12251        24000       CEZ   CT FIRST TIME FLAG
12252        70044       FQ4
12253        12243       LOC   $3
12254        43000  $4   STZ   CT FIRST TIME FLAG
```

```
12255      70000          BRU
12256          0   $6     LOC   0
      12257        CT PUNCH CHAR
12257      34400          SBL1  0
12250      12267          LOC   $1
12261      70016   $2     TNB
12262      12261          LOC   $2
12263      61002          STA   CT PUNCH TEMP
12254       3002          LDN   CT PUNCH TEMP
12265      42004          OPA   4
12266      70000          BRU
12257          0   $1     LOC   0
```

```
      12270          CT CONV TBL
12270          60          OCT    60
12271           1          OCT    1
12272           2          OCT    2
12273          63          OCT    63
12274           4          OCT    4
12275          65          OCT    65
12276          66          OCT    66
12277           7          OCT    7
12300          10          OCT    10
12301          71          OCT    71
12302       40032          OCT    40032
12303       40024          OCT    40024
12304       40044          OCT    40044
12305       40004          OCT    40004
12306       40007          OCT    40007
12307          76          OCT    76
12310          40          OCT    40
12311          21          OCT    21
12312          22          OCT    22
12313          43          OCT    43
12314          24          OCT    24
12315          45          OCT    45
12316          46          OCT    46
12317          27          OCT    27
12320          30          OCT    30
12321          51          OCT    51
12322          17          OCT    17
12323          33          OCT    33
12324          20          OCT    20
12325          76          OCT    76
12326          76          OCT    76
12327       40046          OCT    40046
12330           0          OCT    0
12331          61          OCT    61
12332          62          OCT    62
12333           3          OCT    3
12334          64          OCT    64
12335           5          OCT    5
12336           6          OCT    6
12337          67          OCT    67
12340          70          OCT    70
12341          11          OCT    11
12342          12          OCT    12
12343          73          OCT    73
12344       40027          OCT    40027
12345       40064          OCT    40064
12346       40067          OCT    40067
12347       40066          OCT    40066
12350          12          OCT    12
12351          41          OCT    41
12352          42          OCT    42
12353          23          OCT    23
12354          44          OCT    44
12355          25          OCT    25
```

12356	26	OCT	26
12357	47	OCT	47
12360	50	OCT	50
12361	31	OCT	31
12362	15	OCT	15
12363	53	OCT	53
12364	40064	OCT	40064
12365	40044	OCT	40044
12366	40047	OCT	40047
12367	40077	OCT	40077

```
                        DOG    14000
                        SOG    14000
          77        DB DECR ONE
                        EQU    77
           1        DB INCR ONE
                        EQJ    1
          10        DB TYPER ADR
                        EQU    10
       10000        DB INITIAL DRUM ADR BLK 1
                        EQJ    10000
       14000        DB INITIAL DRUM ADR BLK 2
                        EQU    14000
       20000        DB INITIAL DRUM ADR BLK 3
                        EQU    20000
       24000        DB INITIAL DRUM ADR BLK 4
                        EQU    24000
       14000        DB ZERO IF INT ENTRY
14000           0        PZE
       14001        DB CONTROL WORD
14001           0        PZE
       14002        DB LIST NUMBER
14002           0        PZE
       14003        DB LIST PRINT NO.
14003           0        PZE
       14004        DB OLD LIST ADR
14004           0        PZE
       14005        DB C STAT ADR
14005           0        PZE
       14006        DB TOP
14006           0        PZE
       14007        DB BOTTOM
14007           0        PZE
       14010        DB LIST LENGTH
14010           0        PZE
       14011        DB POP TABLE SIZE
14011           0        PZE
       14012        DB D C OR P
14012           0        PZE
       14013        DB HOLD FIRST WORD
14013           0        PZE
       14014        DB HOLD SECOND WORD
14014           0        PZE
       14015        DB SAVE A
14015           0        PZE
       14016        DB SAVE P AND Q
14016           0        PZE
       14017        DB SAVE X1
14017           0        PZE
       14020        DB SAVE X2
14020           0        PZE
       14021        DB SAVE B
14021           0        PZE
       14022        DB ZERO IF IN DEBUG
14022           0        PZE
       14023        DB ZERO IF DEBUG ON
```

```
14023          0          PZE
     14024           DB LOCATION
14024          0          PZE
     14025           DB ZERO IF NAME NOT IN TABLE
14025          0          PZE
     14026           DB HOLD POP
14026          0          PZE
     14027           DB SAVE POP OR ADR
14027          0          PZE
     14030           DB ZERO IF TRAPING POPS
14030          0          PZE
     14031           DB RETJRN PATCH ADR
14031          0          PZE
     14032           DB TEMP 1
14032          0          PZE
     14033           DB CHARS THIS LINE
14033          0          PZE
     14034           DB HOLD OCTAL WORD
14034          0          PZE
     14035           DB LEVEL
14035          0          PZE
     14036           DB OLD LEVEL
14035          0          PZE
     14037           DB SAVE INT BL
14037          0          PZE
     14040           DB INT HOLD P AND Q
14040          0          PZE
     14041           DB INT HOLD A
14041          0          PZE
     14042           DB P AND Q DATA
14042      14000          OCT    14000
     14043           DB BIT 11 AND 12 MASK
14043       6000          OCT    06000
     14044           DB HI 2 BIT MASK
14044      60000          OCT    60000
     14045           DB HI 3 BIT MASK
14045      70000          OCT    70000
     14046           DB LOW 12 BIT MASK
14046       7777          OCT    07777
     14047           DB HI 7 BIT MASK
14047      77400          OCT    77400
     14050           DB POP TABLE MAX
14050        144          DEC    100
     14051           DB ZERO
14051          0          DEC    0
     14052           DB OLD LIST START
14052      15661          LOC    DB OLD LIST TABLE
     14053           DB NJMBER OF LISTS+1
14053        125          OCT    125
     14054           DB C STAT START
14054        200          LOC    LBL LIST
     14055           DB ONE
14055          1          DEC    1
     14056           DB SIX
14056          6          DEC    6
```

```
     14057          DB NUMBER OF STATS
14057           5          DEC   5
     14060          DB LOW 13 BIT MASK
14060       17777          OCT   17777
     14061          DB BRU
14061       70000          BRJ
     14062          DB LIST MEMORY ADR
14062        4131          LOC   LIST MEMORY
     14063          DB TWO
14063           2          DEC   2
     14064          DB LOW 6 BIT MASK
14064          77          OCT   77
     14065          DB MAX CHARS PER LINE
14065         120          DEC   80
     14066          DB LEVEL MAX
14066         144          DEC   100
     14067          DB WRITE DRUM CONTROL
14067        7777          OCT   07777
     14070          DB READ DRUM CONTROL
14070        3777          OCT   03777
     14071          DB DRUM BUSY MASK
14071          20          OCT   20
     14072          DB JRS
14072       50000          OCT   50000
     14073          DB CR DELAY CNT
14073           1          DEC   1
     14074          DB A
14074          61          OCT   61
     14075          DB B
14075          62          OCT   62
     14076          DB C
14076          63          OCT   63
     14077          DB D
14077          64          OCT   64
     14100          DB E
14100          65          OCT   65
     14101          DB F
14101          66          OCT   66
     14102          DB G
14102          67          OCT   67
     14103          DB I
14103          71          OCT   71
     14104          DB J
14104          41          OCT   41
     14105          DB L
14105          43          OCT   43
     14106          DB N
14106          45          OCT   45
     14107          DB P
14107          47          OCT   47
     14110          DB S
14110          22          OCT   22
     14111          DB T
14111          23          OCT   23
     14112          DB SPACE
```

```
14112           12          OCT    12
      14113         DB CR
14113           17          OCT    17
      14114         DB DOLLAR
14114           53          OCT    53
      14115         DB PERIOD
14115           73          OCT    73
```

```
     14116          DEBJG
14115       34400          SBL1
14117       15421          LOC    DB RTN LOC
     14120          DEBUG ENTRY 1
14120       61400          STA1
14121       14015          LOC    DB SAVE A
14122       53400          SPQ1
14123       14016          LOC    DB SAVE P AND Q
14124       41400          SX11   0
14125       14017          LOC    DB SAVE X1
14126       51400          SX21   0
14127       14020          LOC    DB SAVE X2
14130       71400          STB1   0
14131       14021          LOC    DB SAVE B
     14132          DEBUG ENTRY 2
14132       43400          STZ1   0
14133       14022          LOC    DB ZERO IF IN DEBUG
14134       57400          LPQ1   0
14135       14042          LOC    DB P AND Q DATA
14136       44401          LX11   1
14137         100          DEC    64
14140       24023          CEZ    DB ZERO IF DEBUG ON
14141       70044          FQ4
14142       15411          LOC    DB EXIT
14143        1400          LDA1
14144          54          LOC    LOCATION
14145       61024          STA    DB LOCATION
14146       43025          STZ    DB ZERO IF NAME NOT IN TABLE
14147       64024          LDY    DB LOCATION
14150        1000          LDA    0
14151       61026          STA    DB HOLD POP
14152       17043          ANA    DB BIT 11 AND 12 MASK
14153       21043          CEA    DB BIT 11 AND 12 MASK
14154        1026          LDA    DB HOLD POP
14155       70002          TQ2
14156       14175          LOC    $1
14157       17044          ANA    DB HI 2 BIT MASK
14160       21051          CEA    DB ZERO
14161        1026          LDA    DB HOLD POP
14162       70002          TQ2
14163       14175          LOC    $1
14164       17045          ANA    DB HI 3 BIT MASK
14165       21072          CEA    DB JRS
14166        1026          LDA    DB HOLD POP
14167       70042          FQ2
14170       14175          LOC    $1
14171       17046          ANA    DB LOW 12 BIT MASK
14172       61027          STA    DB SAVE POP OR ADR
14173       70000          BRU
14174       14202          LOC    $3
14175       17047    $1    ANA    DB HI 7 BIT MASK
14176       61027          STA    DB SAVE POP OR ADR
14177       24030          CEZ    DB ZERO IF TRAPING POPS
14200       70044          FQ4
14201       14225          LOC    $4
```

```
14202      54011   $3     LX2    DB POP TABLE SIZE
14203        451   $6     CX2
14204      77777          DEC    -1
14205      70004          TQ4
14206      14216          LOC    $8
14207      21600          CEA12
14210      15705          LOC    DB POP TABLE
14211      70002          TQ2
14212      14224          LOC    $7
14213      50077          IX2    77
14214      70000          BRJ
14215      14203          LOC    $6
14216      24000   $8     CEZ    DB ZERO IF INT ENTRY
14217      34000          SBL    DB ZERO IF INT ENTRY
14220      70004          TQ4
14221      15210          LOC    DB ENTER VIA INT
14222      70000          BRU
14223      14237          LOC    DEBUG STOP ENTRY
14224      34025   $7     SBL    DB ZERO IF NAME NOT IN TABLE
14225      24000   $4     CEZ    DB ZERO IF INT ENTRY
14226      34000          SBL    DB ZERO IF INT ENTRY
14227      70004          TQ4
14230      15210          LOC    DB ENTER VIA INT
14231      70000          BRU
14232      15150          LOC    DB SET LEVEL AND X2
14233      24600          CEZ12  0
14234      16052          LOC    DB EXIT STACK
14235      70004          TQ4
14236      15411          LOC    DB EXIT
```

```
     14237        DEBUG STOP ENTRY
14237      1024          LDA   DB LOCATION
14240     70000          BRU
14241     15120          LOC   DISPLAY OCTAL
14242     70000          BRU
14243     14263          LOC   DEBUG NO PRINT ENTRY
14244      1074          LDA   DB A
14245     70000          BRU
14246     15033          LOC   DB PRINT CHAR
14247      1024          LDA   DB LOCATION
14250     70000          BRU
14251     15076          LOC   DB PRINT OCTAL
14252      1115          LDA   DB PERIOD
14253     70000          BRU
14254     15033          LOC   DB PRINT CHAR
14255      1027          LDA   DB SAVE POP OR ADR
14256     70000          BRU
14257     15076          LOC   DB PRINT OCTAL
14260      1112          LDA   DB SPACE
14261     70000          BRU
14252     15063          LOC   DB CAR RET TEST
     14263        DEBUG NO PRINT ENTRY
14263     44400          LX11  0
14264       316          LOC   WORK BOTTOM
14265     54500          LX211 0
14266     77777          OCT   77777
14267     44500          LX111 0
14270         0          LOC   0
14271      2400          LDB1  0
14272        24          LOC   ACTUAL CHAR
14273     57400          LPQ1  0
14274        25          LOC   CENTRAL 1
14275     64400          LDY1  0
14276        26          LOC   CENTRAL 2
14277        11          ZRA
14300        30          HLT
14301     57400          LPQ1
14302     14042          LOC   DB P AND Q DATA
14303     44401          LX11  1
14304       100          DEC   64
14305     61001          STA   DB CONTROL WORD
14306     17044          ANA   DB HI 2 BIT MASK
14307     21401          CEA1  1
14310     40000          OCT   40000
14311     70002          TQ2
14312     14705          LOC   DB PATCH
14313     21401          CEA1  1
14314     20000          OCT   20000
14315     70002          TQ2
14316     14660          LOC   DB CHANGE
14317     21401          CEA1  1
14320     60000          OCT   60000
14321     70002          TQ2
14322     14644          LOC   DB DUMP
14323      1001          LDA   DB CONTROL WORD
```

```
14324      21051          CEA    DB ZERO
14325      70002          TQ2
14326      14424          LOC    DB GO
14327      21401          CEA1   1
14330          2          OCT    2
14331      70002          TQ2
14332      14431          LOC    DB TRAP THIS LEVEL
14333      21401          CEA1   1
14334          1          OCT    1
14335      70002          TQ2
14336      14440          LOC    DB TRAP NEXT LEVEL
14337      21401          CEA1   1
14340          3          OCT    3
14341      70002          TQ2
14342      14447          LOC    DB TRAP BOTH LEVELS
14343      21401          CEA1   1
14344          4          OCT    4
14345      70002          TQ2
14346      14460          LOC    DB DEBUG OFF
14347      21401          CEA1   1
14350         10          OCT    10
14351      70002          TQ2
14352      14464          LOC    DB JRS STOP ONLY
14353      21401          CEA1   1
14354         20          OCT    20
14355      70002          TQ2
14356      14470          LOC    DB INITIALIZE OPTION
14357      21401          CEA1   1
14360         40          OCT    40
14361      70002          TQ2
14362      14502          LOC    DB LIST DUMP
14363      21401          CEA1   1
14364        100          OCT    100
14365      70002          TQ2
14366      14621          LOC    DB STOP NAME
14367      21401          CEA1   1
14370        200          OCT    200
14371      70002          TQ2
14372      14641          LOC    DB BRANCH TO COMPILER
14373      21401          CEA1   1
14374        400          OCT    400
14375      70002          TQ2
14376      15364          LOC    DB BRANCH TO LOC IN A
14377      21401          CEA1   1
14400       1000          OCT    1000
14401      70002          TQ2
14402      15340          LOC    DB LOAD DEBUG FROM DRUM
14403      21401          CEA1   1
14404       2000          OCT    2000
14405      70002          TQ2
14406      15304          LOC    DB STO COMP ON DRUM RTN
14407      21401          CEA1   1
14410       4000          LOC    4000
14411      70002          TQ2
14412      15314          LOC    DB STO DEBUG ON DRUM
```

```
14413      21401          CEA1  1
14414      10000          OCT   10000
14415      70002          TQ2
14416      15402          LOC   DB TURN NAMES BACK ON
```

```
     14417        DB ILLEGAL CONTROL CHAR
14417      1114         LDA   DB DOLLAR
14420     70000         BRU
14421     15063         LOC   DB CAR RET TEST
14422     70000         BRU
14423     14263         LOC   DEBUG NO PRINT ENTRY
     14424        DB GO
14424      1102         LDA   DB G
     14425        DB PRINT ONE AND EXIT
14425     70000         BRU
14426     15063         LOC   DB CAR RET TEST
14427     70000         BRU
14430     15411         LOC   DB EXIT
     14431        DB TRAP THIS LEVEL
14431     70000         BRU
14432     15150         LOC   DB SET LEVEL AND X2
14433     34600         SBL12
14434     16052         LOC   DB EXIT STACK
14435      1111         LDA   DB T
14436     70000         BRU
14437     14425         LOC   DB PRINT ONE AND EXIT
     14440        DB TRAP NEXT LEVEL
14440     70000         BRU
14441     15150         LOC   DB SET LEVEL AND X2
14442     34600         SBL12
14443     16053         LOC   DB EXIT STACK+1
14444      1116         LDA   DB N
14445     70000         BRU
14446     14425         LOC   DB PRINT ONE AND EXIT
     14447        DB TRAP BOTH LEVELS
14447     70000         BRU
14450     15150         LOC   DB SET LEVEL AND X2
14451     34600         SBL12
14452     16052         LOC   DB EXIT STACK
14453     34600         SBL12
14454     16053         LOC   DB EXIT STACK+1
14455      1075         LDA   DB B
14456     70000         BRU
14457     14425         LOC   DB PRINT ONE AND EXIT
     14460        DB DEBUG OFF
14460     34023         SBL   DB ZERO IF DEBUG ON
14461      1101         LDA   DB F
14462     70000         BRU
14463     14473         LOC   DB PRINT ONE AND GO BACK
     14464        DB JRS STOP ONLY
14464     34030         SBL   DB ZERO IF TRAPING POPS
14465      1104         LDA   DB J
14466     70000         BRU
14467     14473         LOC   DB PRINT ONE AND GO BACK
```

```
     14470          DB INITIALIZE OPTION
14470      70000          BRU
14471      15466          LOC    DB INITIALIZE FROM WITHIN
14472       1103          LDA    DB I
     14473          DB PRINT ONE AND GO BACK
14473      70000          BRU
14474      15063          LOC    DB CAR RET TEST
14475       1115          LDA    DB PERIOD
14476      70000          BRU
14477      15063          LOC    DB CAR RET TEST
14500      70000          BRU
14501      14263          LOC    DEBUG NO PRINT ENTRY
     14502          DB LIST DUMP
14502       1105          LDA    DB L
14503      70000          BRU
14504      15063          LOC    DB CAR RET TEST
14505       1113          LDA    DB CR
14506      70000          BRU
14507      15063          LOC    DB CAR RET TEST
14510      43002          STZ    DB LIST NUMBER
14511      43003          STZ    DB LIST PRINT NO.
14512       1052          LDA    DB OLD LIST START
14513      61004          STA    DB OLD _IST ADR
14514       1002  $1       LDA    DB LIST NUMBER
14515      20053          CMA    DB NUMBER OF LISTS+1
14516      70001          TQ1
14517      14263          LOC    DEBUG NO PRINT ENTRY
14520       6054          ADA    DB C STAT START
14521      61005          STA    DB C STAT ADR
14522      54005          LX2    DB C STAT ADR
14523       1600          LDA12  0
14524          2          LOC    TOP
14525      61006          STA    DB TOP
14526       1600          LDA12  0
14527          3          LOC    BOTTOM
14530      61007          STA    DB BOTTOM
14531       7006          SBA    DB TOP
14532      61010          STA    DB LIST LENGTH
14533       1006          LDA    DB TOP
14534       6055          ADA    DB ONE
14535         64          PAY
14536       1000          LDA    0
14537      37003          SAL    3
14540      64007          LDY    DB BOTTOM
14541       6000          ADA    0
14542       6055          ADA    DB ONE
14543      76010          MUL    DB LIST LENGTH
14544      64004          LDY    DB OLD _IST ADR
14545      21000          CEA    0
14546      70002          TQ2
14547      14610          LOC    $2
14550      64004          LDY    DB OLD _IST ADR
14551      61000          STA    0
14552       1007          LDA    DB BOTTOM
14553       7056          SBA    DB SIX
```

```
14554     20006          CMA   DB TOP
14555     70041          FQ1
14556     14560          LOC   $3
14557     61006          STA   DB TOP
14560      1005   $3     LDA   DB C STAT ADR
14561     70000          BRU
14562     15076          LOC   DB PRINT OCTAL
14563      1115          LDA   DB PERIOD
14564     70000          BRU
14565     15033          LOC   DB PRINT CHAR
14566      1007   $5     LDA   DB BOTTOM
14567     21006          CEA   DB TOP
14570     70002          TQ2
14571     14605          LOC   $4
14572     64007          LDY   DB BOTTOM
14573      1000          LDA   0
14574     70000          BRU
14575     15076          LOC   DB PRINT OCTAL
14576     35077          INM   DB DECR ONE
14577     14007          LOC   DB BOTTOM
14600      1112          LDA   DB SPACE
14601     70000          BRU
14602     15033          LOC   DB PRINT CHAR
14603     70000          BRU
14604     14566          LOC   $5
14605      1113   $4     LDA   DB CR
14606     70000          BRU
14607     15063          LOC   DB CAR RET TEST
14610      1057   $2     LDA   DB NUMBER OF STATS
14611      6002          ADA   DB LIST NUMBER
14612     61002          STA   DB LIST NUMBER
14613     35001          INM   DB INCR ONE
14614     14003          LOC   DB LIST PRINT NO.
14615     35001          INM   DB INCR ONE
14616     14004          LOC   DB OLD LIST ADR
14617     70000          BRU
14620     14514          LOC   $1
```

```
      14621          DB STOP NAME
14621       24025          CEZ    DB ZERO IF NAME NOT IN TABLE
14622       70044          FQ4
14523       14636          LOC    $1
14624        1011          LDA    DB POP TABLE SIZE
14625        6055          ADA    DB ONE
14626       20050          CMA    DB POP TABLE MAX
14627       70001          TQ1
14630       14636          LOC    $1
14631       61011          STA    DB POP TABLE SIZE
14632       54011          LX2    DB POP TABLE SIZE
14633        1027          LDA    DB SAVE POP OR ADR
14634       61600          STA12
14635       15705          LOC    DB POP TABLE
14636        1110   $1     LDA    DB S
14637       70000          BRU
14640       14473          LOC    DB PRINT ONE AND GO BACK
      14641          DB BRANCH TO COMPILER
14641       34022          SBL    DB ZERO IF IN DEBUG
14642       70000          BRU
14643         352          LOC    START OF COMPILER
      14644          DB DUMP
14644        1113          LDA    DB CR
14645       70000          BRU
14646       15063          LOC    DB CAR RET TEST
14647        1001          LDA    DB CONTROL WORD
14650       17060          ANA    DB LOW 13 BIT MASK
14651       61001          STA    DB CONTROL WORD
14552        1077          LDA    DB D
14653       61012          STA    DB D C OR P
14654       70000   $1     BRU
14655       15005          LOC    DB DUMP ONE WORD
14656       70000          BRU
14657       14654          LOC    $1
```

```
     14660          DB CHANGE
14660       1001           LDA    DB CONTROL WORD
14661      17060           ANA    DB LOW 13 BIT MASK
14662      61001           STA    DB CONTROL WORD
14663       1076           LDA    DB C
14664      70000           BRU
14665      15033           LOC    DB PRINT CHAR
14666       1113           LDA    DB CR
14667      70000           BRJ
14670      15063           LOC    DB CAR RET TEST
14671      70000           BRU
14672      15233           LOC    DB LOAD COMP FROM DRUM
14673       1076           LDA    DB C
14674      61012           STA    DB D C OR P
14675         11   $1       ZRA
14676         30            HLT
14677      70000           BRU
14700      14775           LOC    DB PATCH PRINT
14701      70000           BRU
14702      15224           LOC    DB STO COMP ON DRUM
14703      70000           BRU
14704      14675           LOC    $1
     14705          DB PATCH
14705       1001           LDA    DB CONTROL WORD
14706      17060           ANA    DB LOW 13 BIT MASK
14707      61001           STA    DB CONTROL WORD
14710       1113           LDA    DB CR
14711      70000           BRU
14712      15063           LOC    DB CAR RET TEST
14713      70000           BRU
14714      15233           LOC    DB LOAD COMP FROM DRUM
14715      64001           LDY    DB CONTROL WORD
14716       1000           LDA    0
14717      61013           STA    DB HOLD FIRST WORD
14720       1107           LDA    DB P
14721      61012           STA    DB D C OR P
14722       1061           LDA    DB BRU
14723      70000           BRU
14724      14775           LOC    DB PATCH PRINT
14725      64001           LDY    DB CONTROL WORD
14726       1000           LDA    0
14727      61014           STA    DB HOLD SECOND WORD
14730       1400           LDA1   0
14731       4131           LOC    LIST MEMORY
14732      70000           BRU
14733      14775           LOC    DB PATCH PRINT
14734       1001           LDA    DB CONTROL WORD
14735      61031           STA    DB RETURN PATCH ADR
14736       1400           LDA1   0
14737       4131           LOC    LIST MEMORY
14740      61001           STA    DB CONTROL WORD
14741       1013           LDA    DB HOLD FIRST WORD
14742      70000           BRU
14743      14775           LOC    DB PATCH PRINT
14744       1014   $1      LDA    DB HOLD SECOND WORD
```

```
14745      70000          BRU
14746      14775          LOC    DB PATCH PRINT
14747       1061          LDA    DB BRU
14750      70000          BRU
14751      14775          LOC    DB PATCH PRINT
14752       1031          LDA    DB RETURN PATCH ADR
14753      70000          BRU
14754      14775          LOC    DB PATCH PRINT
14755       2062          LDB    DB LIST MEMORY ADR
14756       1001          LDA    DB CONTROL WORD
14757      71001          STB    DB CONTROL WORD
14760      70000          BRU
14761      14775          LOC    DB PATCH PRINT
14762      70000          BRU
14763      15224          LOC    DB STO COMP ON DRUM
14764         11          ZRA
14765         30          HLT
14766      61014          STA    DB HOLD SECOND WORD
14767       1400          LDA1   0
14770       4131          LOC    LIST MEMORY
14771       7063          SBA    DB TWO
14772      61001          STA    DB CONTROL WORD
14773      70000          BRU
14774      14744          LOC    $1
     14775          DB PATCH PRINT
14775      34400          SBL1   0
14776      15004          LOC    $1
14777      64001          LDY    DB CONTROL WORD
15000      61000          STA    0
15001      70000          BRU
15002      15005          LOC    DB DUMP ONE WORD
15003      70000          BRU
15004          0   $1     LOC    0
```

```
     15005          DB DUMP ONE WORD
15005       34400          SBL1  0
15006       15032          LOC   $1
15007        1012          LDA   DB D C OR P
15010       70000          BRU
15011       15033          LOC   DB PRINT CHAR
15012        1001          LDA   DB CONTROL WORD
15013       70000          BRU
15014       15076          LOC   DB PRINT OCTAL
15015        1115          LDA   DB PERIOD
15016       70000          BRU
15017       15033          LOC   DB PRINT CHAR
15020       64001          LDY   DB CONTROL WORD
15021        1000          LDA   0
15022       70000          BRU
15023       15076          LOC   DB PRINT OCTAL
15024       35001          INM   DB INCR ONE
15025       14001          LOC   DB CONTROL WORD
15026        1113          LDA   DB CR
15027       70000          BRU
15030       15063          LOC   DB CAR RET TEST
15031       70000          BRU
15032           0   $1     LOC   0
     15033          DB PRINT CHAR
15033       34400          SBL1  0
15034       15062          LOC   $1
15035       17064          ANA   DB LOW 6 BIT MASK
15036       61032          STA   DB TEMP 1
15037        3032          LDN   DB TEMP 1
15040       42010          OPA   DB TYPER ADR
15041       70016   $2     TNB
15042       15041          LOC   $2
15043       21113          CEA   DB CR
15044       35001          INM   DB INCR ONE
15045       14033          LOC   DB CHARS THIS LINE
15046       70042          FQ2
15047       15061          LOC   $4
15050       43033          STZ   DB CHARS THIS LINE
15051       54073          LX2   DB CR DELAY CNT
15052         451   $3     CX2
15053       77777          DEC   -1
15054       70004          TQ4
15055       15061          LOC   $4
15056       50077          IX2   DB DECR ONE
15057       70000          BRU
15060       15052          LOC   $3
15061       70000   $4     BRU
15062           0   $1     LOC   0
     15063          DB CAR RET TEST
15063       34400          SBL1  0
15064       15072          LOC   $1
15065       70000   $2     BRU
15066       15033          LOC   DB PRINT CHAR
15067        1033          LDA   DB CHARS THIS LINE
15070       20065          CMA   DB MAX CHARS PER LINE
```

```
15071      70041          FQ1
15072          0   $1     LOC   0
15073       1113          LDA   DB CR
15074      70000          BRU
15075      15065          LOC   $2
     15076          DB PRINT OCTAL
15076      34400          SBL1  0
15077      15117          LOC   $1
15100      54051          LX2   DB ZERO
15101      61034          STA   DB HOLD OCTAL WORD
15102         12  $2      ZRB
15103       1034          LDA   DB HOLD OCTAL WORD
15104      37043          SCL   3
15105          3          XAB
15106      71034          STB   DB HOLD OCTAL WORD
15107      70000          BRU
15110      15033          LOC   DB PRINT CHAR
15111      50001          IX2   DB INCR ONE
15112        451          CX2
15113      77773          DEC   -5
15114      70004          TQ4
15115      15102          LOC   $2
15116      70000          BRU
15117          0   $1     LOC   0
     15120          DISPLAY OCTAL
15120      34400          SBL1  0
15121      15147          LOC   $1
15122          2          ABC
15123      36043          SCR   3
15124      36001          SAR   1
15125      36043          SCR   3
15126      36001          SAR   1
15127      36043          SCR   3
15130      36001          SAR   1
15131      36043          SCR   3
15132      42030          OPA   30
15133         11          ZRA
15134      36056          SCR   16
15135      16401          ORA1  1
15136      57740   $2     OCT   57740
15137      42031          OPA   31
15140       1400          LDA1  0
15141      15136          LOC   $2
15142      15401          EOR1  1
15143      40000          OCT   40000
15144      61400          STA1  0
15145      15136          LOC   $2
15146      70000          BRU
15147          0   $1     LOC
```

```
     15150          DB SET LEVEL AND X2
15150      34400          SBL1  0
15151      15207          LOC   $1
15152       1400          LDA1  0
15153        323          LOC   EXIT BOTTOM
15154       7400          SBA1  0
15155        322          LOC   EXIT TOP
15156      20066          CMA   DB LEVEL MAX
15157      70041          FQ1
15160      15162          LOC   $2
15161       1066          LDA   DB LEVEL MAX
15162      61035   $2     STA   DB LEVEL
15163      54035          LX2   DB LEVEL
15164      20036          CMA   DB OLD LEVEL
15165      70001          TQ1
15166      15204          LOC   $3
15167      35001          INM   DB INCR ONE
15170      14036          LOC   DB OLD LEVEL
15171       1035          LDA   DB LEVEL
15172      21036   $4     CEA   DB OLD LEVEL
15173      70002          TQ2
15174      15204          LOC   $3
15175      54036          LX2   DB OLD LEVEL
15176      43600          STZ12 0
15177      16052          LOC   DB EXIT STACK
15200      35077          INM   DB DECR ONE
15201      14036          LOC   DB OLD LEVEL
15202      70000          BRU
15203      15172          LOC   $4
15204      61036   $3     STA   DB OLD LEVEL
15205      54035          LX2   DB LEVEL
15206      70000          BRU
15207          0   $1     LOC   0
```

```
     15210        DB ENTER VIA INT
15210         20          ZRN
15211      25016          SPL    16
15212      52400          OPB1
15213       1400          LOC    1400
15214       1113          LDA    DB CR
15215      70000          BRU
15216      15063          LOC    DB CAR RET TEST
15217       1100          LDA    DB E
15220      70000          BRU
15221      15063          LOC    DB CAR RET TEST
15222      70000          BRU
15223      14263          LOC    DEBUG NO PRINT ENTRY
     15224        DB STO COMP ON DRUM
15224      34400          SBL1   0
15225      15232          LOC    $1
15226       1067          LDA    DB WRITE DRUM CONTROL
15227      70000          BRU
15230      15242          LOC    DB DRUM TRANSFER
15231      70000          BRU
15232          0   $1     LOC    0
     15233        DB LOAD COMP FROM DRUM
15233      34400          SBL1   0
15234      15241          LOC    $1
15235       1070          LDA    DB READ DRUM CONTROL
15236      70000          BRU
15237      15242          LOC    DB DRUM TRANSFER
15240      70000          BRU
15241          0   $1     LOC    0
     15242        DB DRUM TRANSFER
15242      34400          SBL1   0
15243      15261          LOC    $1
15244      61400          STA1   0
15245      15263          LOC    $2
15246      61400          STA1   0
15247      15266          LOC    $3
15250      62400          OPC1   0
15251      15262          LOC    $4
15252      70000          BRU
15253      15270          LOC    DB WAIT FOR DRUM XFER
15254      62400          OPC1
15255      15265          LOC    $5
15256      70000          BRU
15257      15270          LOC    DB WAIT FOR DRUM XFER
15260      70000          BRU
15261          0   $1     LOC    0
15262      10000   $4     LOC    DB INITIAL DRUM ADR BLK 1
15263          0   $2     PZE
15264          2          OCT    00002
15265      14000   $5     LOC    DB INITIAL DRUM ADR BLK 2
15266          0   $3     PZE
15267       4000          OCT    4000
     15270        DB WAIT FOR DRUM XFER
15270      34400          SBL1   0
15271      17777          LOC    17777
```

```
15272      66400   $2     DGI1   0
15273        154          OCT    154
15274      17400          ANA1   0
15275      14071          LOC    DB DRUM BUSY MASK
15276      21400          CEA1   0
15277      14051          LOC    DB ZERO
15300      70042          FQ2
15301      15272          LOC    $2
15302      70000          BRU
15303      17776          LOC    17776
     15304          DB STO COMP ON DRUM RTN
15304       1110          LDA    DB S
15305      70000          BRU
15306      15063          LOC    DB CAR RET TEST
15307      70000          BRU
15310      15224          LOC    DB STO COMP ON DRUM
15311       1076          LDA    DB C
15312      70000          BRU
15313      14473          LOC    DB PRINT ONE AND GO BACK
     15314          DB STO DEBUG ON DRUM
15314       1110          LDA    DB S
15315      70000          BRU
15316      15063          LOC    DB CAR RET TEST
15317      62400          OPC1   0
15320      15332          LOC    $1
15321      70000          BRU
15322      15270          LOC    DB WAIT FOR DRUM XFER
15323      62400          OPC1   0
15324      15335          LOC    $2
15325      70000          BRU
15326      15270          LOC    DB WAIT FOR DRUM XFER
15327       1077          LDA    DB D
15330      70000          BRU
15331      14473          LOC    DB PRINT ONE AND GO BACK
15332      20000   $1     LOC    DB INITIAL DRUM ADR BLK 3
15333       7777          OCT    7777
15334      10000          OCT    10000
15335      24000   $2     LOC    DB INITIAL DRUM ADR BLK 4
15336       7770          OCT    7770
15337      14000          OCT    14000
     15340          DB LOAD DEBUG FROM DRUM
15340       1105          LDA    DB L
15341      70000          BRU
15342      15063          LOC    DB CAR RET TEST
15343      62400          OPC1   0
15344      15356          LOC    $1
15345      70000          BRU
15346      15270          LOC    DB WAIT FOR DRUM XFER
15347      62400          OPC1   0
15350      15361          LOC    $2
15351      70000          BRU
15352      15270          LOC    DB WAIT FOR DRUM XFER
15353       1077          LDA    DB D
15354      70000          BRU
15355      14473          LOC    DB PRINT ONE AND GO BACK
```

```
15355      20000   $1     LOC    DB INITIAL DRUM ADR BLK 3
15357       3777          OCT    3777
15360      10000          OCT    10000
15361      24000   $2     LOC    DB INITIAL DRUM ADR BLK 4
15362       3770          OCT    3770
15363      14000          OCT    14000
     15364         DB BRANCH TO LOC IN A
15364       1104          LDA    DB J
15365      70000          BRU
15366      15063          LOC    DB CAR RET TEST
15367       1111          LDA    DB T
15370      70000          BRU
15371      15063          LOC    DB CAR RET TEST
15372         30          HLT
15373      61400          STA1   0
15374      15401          LOC    $1
15375      70000          BRU
15376      15076          LOC    DB PRINT OCTAL
15377      34022          SBL    DB ZERO IF IN DEBUG
15400      70000          BRU
15401          0   $1     LOC    0
     15402         DB TURN NAMES BACK ON
15402       1106          LDA    DB N
15403      70000          BRU
15404      15063          LOC    DB CAR RET TEST
15405      43011          STZ    DB POP TABLE SIZE
15406       1100          LDA    DB E
15407      70000          BRU
15410      14473          LOC    DB PRINT ONE AND GO BACK
```

```
     15411          DB EXIT
15411       1015          LDA    DB SAVE A
15412       2021          LDB    DB SAVE B
15413      44017          LX1    DB SAVE X1
15414      54020          LX2    DB SAVE X2
15415      57015          LPQ    DB SAVE P AND Q
15416      34400          SBL1   0
15417      14022          LOC    DB ZERO IF IN DEBUG
15420      70000          BRU
     15421          DB RTN LOC
15421          0          LOC    0
     15422          DB PROCESS INT
15422      53400          SPQ1   0
15423      14040          LOC    DB INT HOLD P AND Q
15424      43400          STZ1   0
15425      14023          LOC    DB ZERO IF DEBUG ON
15426      61400          STA1   0
15427      14041          LOC    DB INT HOLD A
15430      43400          STZ1   0
15431      14000          LOC    DB ZERO IF INT ENTRY
15432      24400          CEZ1   0
15433      14022          LOC    DB ZERO IF IN DEBUG
15434      70004          TQ4
15435      14132          LOC    DEBUG ENTRY 2
15436       1400          LDA1   0
15437      14037          LOC    DB SAVE INT BL
15440      20401          CMA1   1
15441      14116          LOC    DEBUG
15442      70001          TQ1
15443      15446          LOC    $1
15444      61400          STA1   0
15445      15421          LOC    DB RTN LOC
15446       1400    $1    LDA1   0
15447      14041          LOC    DB INT HOLD A
15450      57400          LPQ1   0
15451      14040          LOC    DB INT HOLD P AND Q
15452      70000          BRU
15453      14120          LOC    DEBUG ENTRY 1
```

```
     15454        DB INITIALIZE
15454      34400          SBL1  0
15455      15465          LOC   $1
15456      70000          BRJ
15457      15466          LOC   DB INITIALIZE FROM WITHIN
15460      34400          SBL1  0
15461      14022          LOC   DB ZERO IF IN DEBUG
15462      43400          STZ1  0
15463      14023          LOC   DB ZERO IF DEBUG ON
15464      70000          BRU
15465          0  $1      LOC   0
     15466        DB INITIALIZE FROM WITHIN
15466      34400          SBL1  0
15467      15514          LOC   $1
15470      57400          LPQ1  0
15471      14042          LOC   DB P AND Q DATA
15472      44401          LX11  1
15473        100          DEC   64
15474      43030          STZ   DB ZERO IF TRAPING POPS
15475      34000          SBL   DB ZERO IF INT ENTRY
15476       1113          LDA   DB CR
15477      70000          BRJ
15500      15063          LOC   DB CAR RET TEST
15501      54066          LX2   DB LEVEL MAX
15502      43600  $3      STZ12 0
15503      16052          LOC   DB EXIT STACK
15504        451          CX2
15505      77777          DEC   -1
15506      70004          TQ4
15507      15513          LOC   $2
15510      50077          IX2   DB DECR ONE
15511      70000          BRU
15512      15502          LOC   $3
15513      70000  $2      BRJ
15514          0  $1      LOC   0
```

```
      15515         DB PATCH BUFFER
                        PLS   100
      15661         DB OLD LIST TABLE
                        PLS   20
      15705         DB POP TABLE
                        PLS   101
      16052         DB EXIT STACK
16052          0          PZE
      16053         DB EXIT STACK+1
                        PLS   101
                        DOG   17776
17775      70000          BRU
                          FIN
```

5764 LINES OUTPUT THIS JOB. 2106

```
SYSTEM TAPE 430
 TIME    21 05
 DATE    28   MAY      1963
 LOG NO.      SET-UP          PROB NO.          PROG NO.          EST TIME        MINS     PAGES
 IF2106 052863 SET-UP,,,,
```

6 LINES CUTPUT THIS JOB. 2107

```
*       XEQ
*     SYMBOL TABLE
*     LIST
```

```
      DIMENSION  BUF(12),PACK(120),SYMB(5,2000),KVAL(2000),PNCH(8),
     $KARS(72),KORS(72)
      LNEG=32
      LPLUS=16
      LBLNK=48
      LDLLR=43
      LASRK=44
      LOH=38
      KPASS =1
   36 KPACK =0
      HEAD =1.
      LOCS=0
      LOC =0
      REWIND 11
      K=1
   26 MARK =K
   25 IF(KPASS-1)37,37,42
   37 READ INPUT TAPE 3,38,(BUF(J),J=1,12)
   38 FORMAT(12A6)
      DO 39 J=1,12
      KPACK =KPACK +1
   39 PACK(KPACK)=BUF(J)
      IF(KPACK-120)40,41,41
   41 KPACK =0
      WRITE TAPE 11,PACK
      GO TO 40
   42 IF(KPACK)43,44,43
   44 READ TAPE 11,PACK
   43 DO 45 J =1,12
      KPACK =KPACK+1
   45 BUF(J) =PACK(KPACK)
      IF(KPACK-120)40,46,46
   46 KPACK =0
   40 CALL UPAK(BUF,KORS)
      DO 96 J=1,72
      KARS(J) =KORS(J)
      IF (KORS(J)-LOH)96,97,96
   97 KARS(J) = 0
   96 CONTINUE
      CALL PAK(KARS,BUF)
      IF(KARS(1)-LASRK)86,87,86
   87 IS=2
      IF(KPASS-2)25,64,25
   86 IF(KARS(1)-LBLNK)88,89 ,88
   88 IF(KARS(1)-LDLLR)90,91,90
   90 IS =0
      GO TO 100
   91 DO 92 J=2,5
   92 SYMB(J,K)=HEAD
      SYMB(1,K)=BUF(1)
      KVAL(K)=LOC
      K=K+1
   89 CALL SWITCH(BUF(2),OFLAG,IS,WORD,AFLAG,U,D,IMASK)
  100 IS=IS+KPASS
      PLOC=0.
```

```
      PLOCS=0.
      GO TO (1,2,3,3,3,3,7,7,25,66,33,12,33,14,33,16,33,18,3,3,21,48,
     $207,207),IS
207   INT=LOC
      GO TO 30
    1 DO 69 J=1,5
   69 SYMB(J ,K)=BUF(J )
      KVAL(K)=LOCS
      K=K+1
      HEAD=HEAD+1.
      GO TO 25
2     CALL SHFOR(KVAL(K),PLOCS)
      HEAD=HEAD+1.
      K=K+1
      GO TO 24
    3 LS =2
      GO TO 108
   30 IF(MARK-K)28,29,29
   28 KVAL(MARK)=INT
      MARK=MARK+1
      GO TO 30
29    GO TO (4,4,31,31,26,24,4,4,4,4,4,4,4,4,4,4,4,206,206,4,4,
     $206,206),IS
206   LOCS=INT
      GO TO 24
   31 LOC=INT
      GO TO 24
    7 LS =3
      GO TO 110
   93 LOC=LOC +INT
      LOCS=LOCS+INT
      GO TO 24
   12 LS =4
      GO TO 110
   14 LS =4
      GO TO 108
   94 WORD =FINT
      GO TO 33
16    FACT=32.
      FINT=0.
      DO 120 J1=13,15
      HOLD1=FLOATF(KORS(J1))
      IF(HOLD1-10.)120,201,201
201   IF(HOLD1-26.)202,203,203
203   IF(HOLD1-42.)204,205,205
205   HOLD1=HOLD1-8.
204   HOLD1=HOLD1-7.
202   HOLD1=HOLD1-11.
120   FINT=FINT*FACT+HOLD1
      CALL FIX(FINT,DUMMY,WORD)
      GO TO 33
   18 IF(KARS(13)-LBLNK)70,71,70
   71 INT = 0
      GO TO 85
70    L=13
      IF(KARS(13)-LPLUS)72,73,72
```

```
  72 IF(KARS(13)-LNEG) 74,73,74
  73 L=L+1
74   DO 75 J=L,42
     IF(KARS(J)-8)75,121,121
121  IF(KARS(J)-LBLNK)76,75,76
  75 CONTINUE
     LS=1
     GO TO 108
76   DO 83 J=1,5
83   SYMB(J,KNOT)=BUF(J+2)
     IF(KARS(13)-LDLLR)77,78,77
78   DO 79 J=2,5
79   SYMB(J,KNOT)=HEAD
77   CALL SERCH(SYMB(1,KNOT),SYMB,KNOT,KHITS,KHIT)
     INT=KVAL(KHIT)
     IF(KHITS-1)80,81,82
80   INT=LOCNOT
     KVAL(KNOT) =LOCNOT
     KNOT=KNOT+1
     LOCNOT =LOCNOT+1
  84 AFLAG =U
     GO TO 85
81   IF(KHIT-KMAX)85,84,84
  82 AFLAG =D
85   CALL SHFORM(INT,IMASK,WORD)
33   CALL SHFOR(LOC,PLOC)
     LOC =LOC+1
     LOCS=LOCS+1
     GO TO 24
```

```
21   IF(KPACK)34,35,34
  34 WRITE TAPE 11,PACK
  35 END FILE 11
     KMAX =K
     KNOT =K
     LOCNOT =LOC
     KPNCH =1
     KPASS =2
     KLINE =1
     CKSUM=0.
     REWIND 8
     WRITE OUTPUT TAPE 2,59
  59 FORMAT (1H1)
     GO TO 36
24   GO TO (4,62,26,48,4,64,26,48,26,47,26,47,26,47,26,47,26,64,
    $4,48,26,64),IS
  47 PNCH(KPNCH)= WORD
     CALL ADD24(WORD,CKSUM)
     IF(KPNCH-8)50,51,50
50   KPNCH=KPNCH+1
     GO TO 56
  51 WRITE OUTPUT TAPE 8,52,(PNCH(J),J=1,KPNCH)
  52 FORMAT (8O8)
     KPNCH =1
  56 GO TO( 4,4,4,54,4,4,4,54,4,23,4,23,4,23,4,23,4,23,4,4,4,55),IS
  48 IF(KPNCH-1)4,56,57
  57 KPNCH =KPNCH-1
```

```
      GO TO 51
54    CALL SHFOR(LOC,PLOC)
      WRITE OUTPUT TAPE 8,53,PLOC
   53 FORMAT(4HORG ,O8)
      GO TO 64
   55 WRITE OUTPUT TAPE 8,49,CKSUM
   49 FORMAT (4HEND ,O8)
      ENDFILE 8
      GO TO 64
   23 WRITE OUTPUT TAPE 2,60,OFLAG,AFLAG,PLOC,WORD,BUF
   60 FORMAT (7X,2A1,2X,O5,2X,O8,2X,12A6)
      GO TO 61
62    WRITE OUTPUT TAPE 2,63,PLOCS,BUF
63    FORMAT(16X,O5,7X,12A6)
      GO TO 61
   64 WRITE OUTPUT TAPE 2,58,BUF
   58 FORMAT(28X,12A6)
   61 KLINE=KLINE+1
      IF(KLINE-56)65,66,65
   66 KLINE=1
      WRITE OUTPUT TAPE 2,59
65    GO TO (4,25,4,26,4,26,4,26,4,25,4,26,4,26,4,26,4,26,4,67,
     $4,26),IS
    4 WRITE OUTPUT TAPE 2,68
   68 FORMAT(6H1ERROR)
   67 DONE=1.
      CALL EXIT
108   FACT=8.
      GO TO 109
110   FACT=10.
109   SW1=0.
      FINT=0.
      J1=13
      IF(KARS(13)-LNEG)111,112,111
111   IF(KARS(13)-LPLUS)113,114,113
112   SW1=1.
114   J1=14
113   J2=J1+7
      DO 115 J3=J1,J2
      IF(KARS(J3)-LBLNK)115,117,115
115   FINT=FINT*FACT+FLOATF(KARS(J3))
117   IF(SW1)118,119,118
118   FINT=-FINT
119   CALL FIX(FINT,INT,FINT)
      GO TO (85,30,93,94),LS
      END(1,1,0,0,0,1,1,0,0,0,0,0,0,0,0)
```

STORAGE NOT USED BY PROGRAM

DEC	OCT	DEC	OCT
13419	32153	32561	77461

STORAGE LOCATIONS FOR VARIABLES APPEARING IN DIMENSION AND EQUIVALENCE STATEMENTS

	DEC	OCT		DEC	OCT		DEC	OCT		DEC	OCT		DEC	OCT
BUF	13418	32152	KARS	11278	26016	KORS	11206	25706	KVAL	13286	31746	PACK	13406	32136
PNCH	11286	26026	SYMB	11134	25576									

STORAGE LOCATIONS FOR VARIABLES NOT APPEARING IN COMMON, DIMENSION, OR EQUIVALENCE STATEMENT

	DEC	OCT		DEC	OCT		DEC	OCT		DEC	OCT		DEC	OCT
AFLAG	1134	02156	CKSUM	1133	02155	DONE	1132	02154	D	1131	02153	DUMMY	1130	02152
FACT	1129	02151	FINT	1128	02150	HEAD	1127	02147	HOLD1	1126	02146	IMASK	1125	02145
INT	1124	02144	IS	1123	02143	J1	1122	02142	J2	1121	02141	J3	1120	02140
J	1119	02137	KHIT	1118	02136	KHITS	1117	02135	KLINE	1116	02134	KMAX	1115	02133
KNOT	1114	02132	KPACK	1113	02131	KPASS	1112	02130	KPNCH	1111	02127	K	1110	02126
LASRK	1109	02125	LBLNK	1108	02124	LDLLR	1107	02123	LNEG	1106	02122	LOCNOT	1105	02121
LOC	1104	02120	LOCS	1103	02117	LOH	1102	02116	LPLUS	1101	02115	L	1100	02114
LS	1099	02113	MARK	1098	02112	OFLAG	1097	02111	PLOC	1096	02110	PLOCS	1095	02107
SW1	1094	02106	U	1093	02105	WORD	1092	02104						

SYMBOLS AND LOCATIONS FOR SOURCE PROGRAM FORMAT STATEMENTS

	EFN	LOC		EFN	LOC		EFN	LOC		EFN	LOC		EFN	LOC
8)16	38	02062	8)1H	49	02055	8)1K	52	02060	8)1L	53	02057	8)1Q	58	02043
8)1R	59	02061	8)1S	60	02053	8)1V	63	02046	8)24	68	02041			

LOCATIONS FOR OTHER SYMBOLS NOT APPEARING IN SOURCE PROGRAM

	DEC	OCT		DEC	OCT		DEC	OCT		DEC	OCT		DEC	OCT
1)	1075	02063	2)	1022	01776	3)	1041	02021	4)	32767	77777	6)	1050	02032
A)101	1004	01754	A)103	1013	01765	C)G0	1079	02067	C)G1	1080	02070	C)G3	1081	02071
C)G4	1082	02072	C)G5	1083	02073	C)G6	1084	02074	C)G7	1085	02075	C)G8	1086	02076
C)G9	1087	02077	C)GA	1088	02100	C)GB	1089	02101	C)101	1090	02102	C)103	1091	02103
D)102	64	00100	D)10S	226	00342	D)114	336	00520	D)129	549	01045	D)12P	745	01351
D)134	912	01620	D)136	932	01644	D)138	938	01652	D)13H	986	01732	D)212	307	00463
D)22B	591	01117	D)22E	603	01133	D)22F	616	01150	D)22J	678	01246	D)22Q	770	01402
D)230	854	01526	D)231	866	01542	D)235	925	01635	D)314	335	00517	D)32B	590	01116
D)32E	602	01132	D)32F	615	01147	D)32J	677	01245	D)32Q	769	01401	D)330	853	01525
D)331	865	01541	D)334	911	01617	D)335	924	01634	D)401	41	00051	D)403	73	00111
D)503	72	00110	E)3	77	00115	E)A	118	00166	E)M	184	00270	E)U	270	00416
E)V	274	00422	E)12	306	00462	E)13	329	00511	E)19	384	00600	E)1A	390	00606
E)1B	399	00617	E)1C	405	00625	E)1E	414	00636	E)1J	444	00674	E)1K	449	00701
E)1N	466	00722	E)1V	499	00763	E)20	503	00767	E)2F	614	01146	E)2G	629	01165
E)2K	704	01300	E)2P	743	01347	E)2R	776	01410	E)2V	835	01503	E)32	877	01555
E)35	923	01633	E)39	948	01664	E)3C	959	01677	E)3G	985	01731	E)3J	992	01740
E)10G	151	00227	E)132	875	01553	E)203	75	00113	E)214	338	00522	E)230	851	01523
E)403	77	00115	E)42E	605	01135	E)734	910	01616	E)802	66	00102	E)1634	914	01622

LOCATIONS OF NAMES IN TRANSFER VECTOR

	DEC	OCT		DEC	OCT		DEC	OCT		DEC	OCT		DEC	OCT
ADD24	20	00024	EXIT	21	00025	FIX	14	00016	PAK	11	00013	SERCH	15	00017
SHFORM	16	00020	SHFOR	13	00015	SWITCH	12	00014	UPAK	10	00012	(EFT)	17	00021
(FIL)	19	00023	(FPT)	0	00000	(RLR)	9	00011	(RTN)	3	00003	(RWT)	1	00001
(SLI)	8	00010	(SLO)	5	00005	(STB)	4	00004	(STH)	18	00022	(TSB)	7	00007
(TSH)	2	00002	(WLR)	6	00006									

ENTRY POINTS TO SUBROUTINES NOT OUTPUT FROM LIBRARY

ADD24	EXIT	FIX	PAK	SERCH	SHFORM	SHFOR	SWITCH	UPAK	(EFT)
(FIL)	(FPT)	(RLR)	(RTN)	(RWT)	(SLI)	(SLO)	(STB)	(STH)	(TSB)
(TSH)	(WLR)								

EXTERNAL FORMULA NUMBERS WITH CORRESPONDING INTERNAL FORMULA NUMBERS AND OCTAL LOCATIONS

EFN	IFN	LOC	EFN	IFN	LOC	EFN	IFN	LOC	EFN	IFN	LOC	EFN	IFN	LOC
36	19	00052	26	25	00105	25	26	00117	37	27	00123	39	34	00142
41	36	00153	42	40	00167	44	41	00173	43	43	00203	45	45	00211
46	47	00222	40	48	00230	97	53	00243	96	54	00245	87	58	00257
86	60	00271	88	61	00274	90	62	00277	91	64	00304	92	65	00316
89	69	00343	100	71	00355	207	75	00417	1	77	00423	69	78	00435
2	83	00464	3	88	00512	30	90	00524	28	91	00530	29	94	00541
206	95	00572	31	97	00575	7	99	00601	93	101	00610	12	104	00620
14	106	00626	94	108	00633	16	110	00637	201	115	00656	203	116	00663
205	117	00670	204	118	00675	202	119	00702	120	120	00705	18	124	00723
71	125	00730	70	127	00733	72	129	00740	73	130	00745	74	131	00750
121	133	00756	75	134	00773	76	137	01002	83	138	01014	78	140	01026
79	141	01040	77	142	01046	80	146	01075	84	150	01120	81	152	01123
82	153	01130	85	154	01137	33	156	01151	21	161	01166	34	162	01170
35	164	01200	24	175	01247	47	176	01302	50	180	01315	51	182	01323
56	188	01352	48	189	01403	57	190	01412	54	192	01420	55	197	01440
23	201	01457	62	204	01505	64	207	01527	61	209	01543	66	211	01556
65	213	01566	4	214	01624	67	215	01636	108	217	01645	110	219	01650
109	220	01653	111	224	01665	112	225	01672	114	226	01674	113	227	01700
115	230	01716	117	231	01733	118	232	01735	119	233	01741			

SYMBOL TABLE PRECEDES PROGRAM CARD IN BINARY DECK

```
00000 (FPT)   BCD 1(FPT)
00001 (RWT)   BCD 1(RWT)
00002 (TSH)   BCD 1(TSH)
00003 (RTN)   BCD 1(RTN)
00004 (STB)   BCD 1(STB)
00005 (SLO)   BCD 1(SLO)
00006 (WLR)   BCD 1(WLR)
00007 (TSB)   BCD 1(TSB)
00010 (SLI)   BCD 1(SLI)
00011 (RLR)   BCD 1(RLR)
00012 UPAK    BCD 1UPAK
00013 PAK     BCD 1PAK
00014 SWITCH  BCD 1SWITCH
00015 SHFOR   BCD 1SHFOR
00016 FIX     BCD 1FIX
00017 SERCH   BCD 1SERCH
00020 SHFORM  BCD 1SHFORM
00021 (EFT)   BCD 1(EFT)
00022 (STH)   BCD 1(STH)
00023 (FIL)   BCD 1(FIL)
00024 ADD24   BCD 1ADD24
00025 EXIT    BCD 1EXIT
00026 $$      CLA 2
00027         STO 6)+5
00030         CLA (FPT)
00031         STO 8
00032         STZ 4)-205
00033 12A     CLA 2)
00034         STO LNEG
00035 13A     CLA 2)+1
00036         STO LPLUS
00037 14A     CLA 2)+2
00040         STO LBLNK
00041 15A     CLA 2)+3
00042         STO LDLLR
00043 16A     CLA 2)+4
00044         STO LASRK
00045 17A     CLA 2)+5
00046         STO LOH
00047 18A     CLA 2)+6
00050         STO KPASS
00051 D)401   LXD C)G4,4
00052 19A     CLA 2)+7
00053         STO KPACK
00054         LXD KPACK,2
00055         SXD C)G1,2
00056 20A     CLA 3)
00057         STO HEAD
00060 21A     CLA 2)+7
00061         STO LOCS
00062 22A     CLA 2)+7
00063         STO LOC
00064 23A     CAL 2)+8
00065         SXD 6)+4,4
00066         TSX (RWT),4
00067         LXD 6)+4,4
00070 24A     CLA 2)+6
00071         STO K
00072         SXD 6)+4,4
00073         TSX A)101,4
00074         LXD C)101,1
00075         LXD 6)+4,4
00076         LXD K,1
00077         SXD C)G3,1
00100 D)102   LXD C)G1,1
00101         TRA 25A
00102 E)802   SXD C)G4,4
00103         SXD C)GA,1
00104         TRA D)102
00105 25A     CLA K
00106         STO MARK
00107         LXD MARK,2
00110 D)503   LXD C)G4,1
00111 D)403   LXD C)G1,4
00112         TRA 26A
00113 E)203   SXD C)G4,4
00114         TRA D)503
00115 E)3     SXD C)G5,2
00116         TRA D)503
      E)403   SYN E)3
00117 26A     CLA KPASS
00120         SUB 2)+6
00121 26A1    TZE 27A
00122         TPL E)A
00123 27A     CAL 2)+9
00124         TSX (TSH),4
00125         PZE 8)16
00126 28A     LXD 2)+6,4
00127 29A     STR
00130         STQ BUF+1,4
00131 29A1    TXI *+1,4,1
00132 29A2    TXL 29A,4,12
      31A     BSS
00133         TSX (RTN),4
00134 32A     LXD 2)+6,4
00135 33A     CLA KPACK
00136         ADD 2)+6
00137         STO KPACK
00140         LXD KPACK,1
00141         SXD C)G1,1
00142 34A     CLA BUF+1,4
00143         STO PACK+1,1
00144 34A1    TXI *+1,4,1
00145 34A2    TXL 33A,4,12
00146 35A     CLA KPACK
00147         SUB 2)+10
00150 35A1    TZE 36A
00151         TPL 36A
00152         TRA E)10G
00153 36A     CLA 2)+7
00154         STO KPACK
00155         LXD KPACK,1
00156         SXD C)G1,1
00157 37A     CAL 2)+8
00160         TSX (STB),4
      38A     BSS
00161         TSX (SLO),4
00162         PZE PACK+1
00163         PZE 120
00164         TSX (WLR),4
00165 39A     TRA 48A
00166 E)A     SXD C)G5,2
00167 40A     CLA KPACK
00170 40A1    TZE 41A
00171         TPL 43A
00172         TRA 43A
00173 41A     CAL 2)+8
00174         SXD 6)+4,4
00175         TSX (TSB),4
00176         TSX (SLI),4
00177         PZE PACK+1
00200         PZE 120
00201         TSX (RLR),4
00202         LXD 6)+4,4
00203 43A     LXD 2)+6,4
00204 44A     CLA KPACK
00205         ADD 2)+6
00206         STO KPACK
00207         LXD KPACK,1
00210         SXD C)G1,1
00211 45A     CLA PACK+1,1
00212         STO BUF+1,4
00213 45A1    TXI *+1,4,1
00214 45A2    TXL 44A,4,12
00215 46A     CLA KPACK
00216         SUB 2)+10
00217 46A1    TZE 47A
00220         TPL 47A
00221         TRA 48A
00222 47A     CLA 2)+7
00223         STO KPACK
00224         LXD KPACK,1
00225         SXD C)G1,1
00226         TRA 48A
00227 E)10G   SXD C)G5,2
      48A     BSS
00230 49A     TSX UPAK,4
00231         TSX BUF
00232         TSX KORS
00233 50A     LXD 2)+6,4
00234 51A     CLA KORS+1,4
00235         STO KARS+1,4
00236 52A     CLA KORS+1,4
00237         SUB LOH
00240 52A1    TZE 53A
00241         TPL 54A
00242         TRA 54A
00243 53A     CLA 2)+7
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00244          STO KARS+1,4
       54A     BSS
00245 54A1     TXI *+1,4,1
00246 54A2     TXL 51A,4,72
       55A     BSS
00247 56A      TSX PAK,4
00250          TSX KARS
00251          TSX BUF
00252 57A      CLA KARS
00253          SUB LASRK
00254 57A1     TZE 58A
00255          TPL E)M
00256          TRA E)M
00257 58A      CLA 2)+11
00260          STO IS
00261          LXD IS,4
00262          SXD C)G4,4
00263 59A      CLA KPASS
00264          SUB 2)+11
00265 59A1     TZE 207A
00266          TPL E)403
00267          TRA E)403
00270 E)M      SXD C)G5,2
00271 60A      CLA KARS
00272          SUB LBLNK
00273 60A1     TZE 69A
00274 61A      CLA KARS
00275          SUB LDLLR
00276 61A1     TZE 64A
00277 62A      CLA 2)+7
00300          STO IS
00301          LXD IS,4
00302          SXD C)G4,4
00303 63A      TRA 71A
00304 64A      CLA 2)+11
00305          STO 1)+3
00306          LDQ K
00307          MPY 2)+18
00310          ALS 17
00311          SUB 2)+18
00312          ADD 1)+3
00313          STO 1)+3
00314          LXD 1)+3,4
00315          LXD 2)+11,1
00316 65A      CLA HEAD
00317          STO SYMB+1,4
00320 65A1     TXI *+1,4,1
00321          TXI *+1,1,1
00322 65A2     TXL 65A,1,5
00323 66A      CLA BUF
00324          LXD C)101,1
00325          STO SYMB+1,1
00326 67A      CLA LOC
00327          LXD C)G3,4
00330          STO KVAL+1,4
00331 68A      CLA K
00332          ADD 2)+6
00333          STO K
00334          SXD 6)+4,4
00335          TSX A)101,4
00336          LXD C)101,1
00337          LXD 6)+4,4
00340          LXD K,4
00341          SXD C)G3,4
00342 D)10S    LXD C)G1,1
       69A     BSS
00343 70A      TSX SWITCH,4
00344          TSX BUF-1
00345          TSX OFLAG
00346          TSX IS
00347          TSX WORD
00350          TSX AFLAG
00351          TSX U
00352          TSX D
00353          TSX IMASK
00354          LXD IS,4
00355 71A      CLA IS
00356          ADD KPASS
00357          STO IS
00360          LXD IS,4
00361 72A      CLA 3)+1
00362          STO PLOC
00363 73A      CLA 3)+1
00364          STO PLOCS
00365 74A      TRA 74A+25,4
00366          TRA E)U
00367          TRA E)U
00370          TRA D)32Q
00371          TRA E)2G
00372          TRA E)13
00373          TRA E)13
00374          TRA E)1N
00375          TRA E)2F
00376          TRA E)1E
00377          TRA E)2F
00400          TRA E)1C
00401          TRA E)2F
00402          TRA E)1B
00403          TRA E)2F
00404          TRA E)32
00405          TRA E)203
00406          TRA E)19
00407          TRA E)19
00410          TRA E)13
00411          TRA E)13
00412          TRA E)13
00413          TRA E)13
00414          TRA E)12
00415          TRA E)V
00416 E)U      SXD C)G4,4
00417 75A      CLA LOC
00420          STO INT
00421 76A      TRA D)314
00422 E)V      SXD C)G4,4
00423 77A      CLA 6)+3
00424          STO 1)+3
00425          LDQ K
00426          MPY 2)+18
00427          ALS 17
00430          SUB 2)+18
00431          ADD 1)+3
00432          STO 1)+3
00433          LXD 1)+3,4
00434          LXD 2)+6,1
00435 78A      CLA BUF+1,1
00436          STO SYMB+1,4
00437 78A1     TXI *+1,4,1
00440          TXI *+1,1,1
00441 78A2     TXL 78A,1,5
00442 79A      CLA LOCS
00443          LXD C)G3,1
00444          STO KVAL+1,1
00445 80A      CLA K
00446          ADD 2)+6
00447          STO K
00450          TSX A)101,4
00451          LXD C)101,4
00452          SXD 6)+4,4
00453          LXD 6)+4,4
00454          LXD K,1
00455          SXD C)G3,1
00456 81A      CLA HEAD
00457          FAD 3)
00460          STO HEAD
00461 82A      TRA D)503
00462 E)12     SXD C)G4,4
00463 D)212    LXD C)G3,2
00464 83A      PXA KVAL+1,2
00465          SUB *-1
00466          STA 84A+1
00467          SXD 6)+4,4
00470 84A      TSX SHFOR,4
00471          TSX KVAL
00472          TSX PLOCS
00473          LXD 6)+4,4
00474 85A      CLA HEAD
00475          FAD 3)
00476          STO HEAD
00477 86A      CLA K
00500          ADD 2)+6
00501          STO K
00502          SXD 6)+4,4
00503          TSX A)101,4
00504          LXD C)101,2
00505          LXD 6)+4,4
00506          LXD K,2
00507          SXD C)G3,2
00510 87A      TRA D)32J
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00511 E)13    SXD C)G4,4
00512 88A     CLA 2)+11
00513         STO LS
00514         LXD LS,2
00515         SXD C)GB,2
00516 89A     TRA D)136
00517 D)314   LXD C)GB,2
00520 D)114   LXD C)GA,1
00521         TRA 90A
00522 E)214   SXD C)G4,4
00523         SXD C)GA,1
00524 90A     CLA MARK
00525         SUB K
00526 90A1    TZE 94A
00527         TPL 94A
00530 91A     CLA INT
00531         LXD C)G5,1
00532         STO KVAL+1,1
00533 92A     CLA MARK
00534         ADD 2)+6
00535         STO MARK
00536         LXD MARK,1
00537         SXD C)G5,1
00540 93A     TRA D)114
00541 94A     TRA 94A+25,4
00542         TRA 95A
00543         TRA 95A
00544         TRA 214A
00545         TRA 214A
00546         TRA 95A
00547         TRA 95A
00550         TRA 214A
00551         TRA 214A
00552         TRA 214A
00553         TRA 214A
00554         TRA 214A
00555         TRA 214A
00556         TRA 214A
00557         TRA 214A
00560         TRA 214A
00561         TRA 214A
00562         TRA 214A
00563         TRA 214A
00564         TRA 175A
00565         TRA D)102
00566         TRA 97A
00567         TRA 97A
00570         TRA 214A
00571         TRA 214A
00572 95A     CLA INT
00573         STO LOCS
00574 96A     TRA 175A
00575 97A     CLA INT
00576         STO LOC
00577 98A     TRA 175A
00600 E)19    SXD C)G4,4
00601 99A     CLA 2)+9
00602         STO LS
00603         LXD LS,2
00604         SXD C)GB,2
00605 100A    TRA 219A
00606 E)1A    SXD C)G4,4
00607         SXD C)GA,1
00610 101A    CLA LOC
00611         ADD INT
00612         STO LOC
00613 102A    CLA LOCS
00614         ADD INT
00615         STO LOCS
00616 103A    TRA 175A
00617 E)1B    SXD C)G4,4
00620 104A    CLA 2)+12
00621         STO LS
00622         LXD LS,2
00623         SXD C)GB,2
00624 105A    TRA 219A
00625 E)1C    SXD C)G4,4
00626 106A    CLA 2)+12
00627         STO LS
00630         LXD LS,2
00631         SXD C)GB,2
00632 107A    TRA D)136
00633 108A    CLA FINT
00634         STO WORD
00635 109A    TRA 156A
00636 E)1E    SXD C)G4,4
00637 110A    CLA 3)+2
00640         STO FACT
00641 111A    CLA 3)+1
00642         STO FINT
00643 112A    LXD 2)+13,2
00644 113A    CLA KORS+1,2
00645         LRS 18
00646         ORA 6)
00647         FAD 6)
00650         STO HOLD1
00651 114A    CLA HOLD1
00652         FSB 3)+3
00653 114A1   TZE 115A
00654         TPL 115A
00655         TRA 120A
00656 115A    CLA HOLD1
00657         FSB 3)+4
00660 115A1   TZE 116A
00661         TPL 116A
00662         TRA E)1K
00663 116A    CLA HOLD1
00664         FSB 3)+5
00665 116A1   TZE 117A
00666         TPL 117A
00667         TRA E)1J
00670 117A    CLA HOLD1
00671         FSB 3)+6
00672         STO HOLD1
00673         TRA 118A
00674 E)1J    SXD C)G6,2
00675 118A    CLA HOLD1
00676         FSB 3)+7
00677         STO HOLD1
00700         TRA 119A
00701 E)1K    SXD C)G6,2
00702 119A    CLA HOLD1
00703         FSB 3)+8
00704         STO HOLD1
00705 120A    LDQ FINT
00706         FMP FACT
00707         FAD HOLD1
00710         STO FINT
00711 120A1   TXI *+1,2,1
00712 120A2   TXL 113A,2,15
00713 121A    SXD 6)+4,4
00714 122A    TSX FIX,4
00715         TSX FINT
00716         TSX DUMMY
00717         TSX WORD
00720         LXD 6)+4,4
00721 123A    TRA D)32F
00722 E)1N    SXD C)G4,4
00723 124A    CLA KARS-12
00724         SUB LBLNK
00725 124A1   TZE 125A
00726         TPL 127A
00727         TRA 127A
00730 125A    CLA 2)+7
00731         STO INT
00732 126A    TRA D)32E
00733 127A    CLA 2)+13
00734         STO L
00735 128A    CLA KARS-12
00736         SUB LPLUS
00737 128A1   TZE 130A
00740 129A    CLA KARS-12
00741         SUB LNEG
00742 129A1   TZE 130A
00743         TPL 131A
00744         TRA 131A
00745 130A    CLA L
00746         ADD 2)+6
00747         STO L
00750 131A    LXD L,2
00751 132A    CLA KARS+1,2
00752         SUB 2)+14
00753 132A1   TZE 133A
00754         TPL 133A
00755         TRA 134A
00756 133A    CLA KARS+1,2
00757         SUB LBLNK
00760 133A1   TZE 134A
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00761          TPL E)1V
00762          TRA E)20
00763 E)1V     SXD C)G0,2
00764 133A2    PXD 0,2
00765          STO J
00766          TRA 137A
00767 E)20     SXD C)G0,2
00770 133A3    PXD 0,2
00771          STO J
00772          TRA 137A
      134A     BSS
00773 134A1    TXI *+1,2,1
00774 134A2    TXL 132A,2,42
00775 135A     CLA 2)+6
00776          STO LS
00777          LXD LS,2
01000          SXD C)GB,2
01001 136A     TRA D)136
01002 137A     CLA 6)+3
01003          STO 1)+3
01004          LDQ KNOT
01005          MPY 2)+18
01006          ALS 17
01007          SUB 2)+18
01010          ADD 1)+3
01011          STO 1)+3
01012          LXD 1)+3,2
01013          LXD 2)+6,1
01014 138A     CLA BUF-1,1
01015          STO SYMB+1,2
01016 138A1    TXI *+1,2,1
01017          TXI *+1,1,1
01020 138A2    TXL 138A,1,5
01021 139A     CLA KARS-12
01022          SUB LDLLR
01023 139A1    TZE 140A
01024          TPL D)129
01025          TRA D)129
01026 140A     CLA 2)+11
01027          STO 1)+3
01030          LDQ KNOT
01031          MPY 2)+18
01032          ALS 17
01033          SUB 2)+18
01034          ADD 1)+3
01035          STO 1)+3
01036          LXD 1)+3,1
01037          LXD 2)+11,2
01040 141A     CLA HEAD
01041          STO SYMB+1,1
01042 141A1    TXI *+1,1,1
01043          TXI *+1,2,1
01044 141A2    TXL 141A,2,5
01045 D)129    LXD C)103,1
01046 142A     PXA SYMB+1,1
01047          SUB *-1
01050          STA 143A+1
01051          SXD 6)+4,4
01052 143A     TSX SERCH,4
01053          TSX SYMB
01054          TSX SYMB
01055          TSX KNOT
01056          TSX KHITS
01057          TSX KHIT
01060          TSX A)103,4
01061          LXD C)103,1
01062          LXD 6)+4,4
01063          LXD KHIT,2
01064          SXD C)G7,2
01065          LXD KNOT,1
01066          SXD C)G8,1
01067 144A     CLA KVAL+1,2
01070          STO INT
01071 145A     CLA KHITS
01072          SUB 2)+6
01073 145A1    TZE 152A
01074          TPL 153A
01075 146A     CLA LOCNOT
01076          STO INT
01077 147A     CLA LOCNOT
01100          STO KVAL+1,1
01101 148A     CLA KNOT
01102          ADD 2)+6
01103          STO KNOT
01104          SXD 6)+4,4
01105          TSX A)103,4
01106          LXD C)103,1
01107          LXD 6)+4,4
01110          LXD KNOT,2
01111          SXD C)G8,2
01112 149A     CLA LOCNOT
01113          ADD 2)+6
01114          STO LOCNOT
01115          TRA 150A
01116 D)32B    LXD C)103,1
01117 D)22B    LXD C)G8,2
01120 150A     CLA U
01121          STO AFLAG
01122 151A     TRA D)32E
01123 152A     CLA KHIT
01124          SUB KMAX
01125 152A1    TZE D)32B
01126          TPL D)32B
01127          TRA D)32E
01130 153A     CLA D
01131          STO AFLAG
01132 D)32E    LXD C)GA,1
01133 D)22E    LXD C)GB,2
01134          TRA 154A
01135 E)42E    SXD C)G4,4
01136          SXD C)GA,1
01137 154A     SXD 6)+4,4
01140 155A     TSX SHFORM,4
01141          TSX INT
01142          TSX IMASK
01143          TSX WORD
01144          LXD 6)+4,4
01145          TRA 156A
01146 E)2F     SXD C)G4,4
01147 D)32F    LXD C)GA,1
01150 D)22F    LXD C)GB,2
01151 156A     SXD 6)+4,4
01152 157A     TSX SHFOR,4
01153          TSX LOC
01154          TSX PLOC
01155          LXD 6)+4,4
01156 158A     CLA LOC
01157          ADD 2)+6
01160          STO LOC
01161 159A     CLA LOCS
01162          ADD 2)+6
01163          STO LOCS
01164 160A     TRA 175A
01165 E)2G     SXD C)G4,4
01166 161A     CLA KPACK
01167 161A1    TZE 164A
01170 162A     CAL 2)+8
01171          SXD 6)+4,4
01172          TSX (STB),4
01173          TSX (SLO),4
01174          PZE PACK+1
01175          PZE 120
01176          TSX (WLR),4
01177          LXD 6)+4,4
01200 164A     CAL 2)+8
01201          SXD 6)+4,4
01202          TSX (EFT),4
01203          LXD 6)+4,4
01204 165A     CLA K
01205          STO KMAX
01206 166A     CLA K
01207          STO KNOT
01210          SXD 6)+4,4
01211          TSX A)103,4
01212          LXD C)103,1
01213          LXD 6)+4,4
01214          LXD KNOT,2
01215          SXD C)G8,2
01216 167A     CLA LOC
01217          STO LOCNOT
01220 168A     CLA 2)+6
01221          STO KPNCH
01222          LXD KPNCH,2
01223          SXD C)G9,2
01224 169A     CLA 2)+11
01225          STO KPASS
01226 170A     CLA 2)+6
01227          STO KLINE
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01230 171A    CLA 3)+1
01231         STO CKSUM
01232 172A    CAL 2)+14
01233         SXD 6)+4,4
01234         TSX (RWT),4
01235         LXD 6)+4,4
01236 173A    CAL 2)+11
01237         SXD 6)+4,4
01240         TSX (STH),4
01241         PZE 8)1R
01242         TSX (FIL),4
01243         LXD 6)+4,4
01244 174A    TRA 19A
01245 D)32J   LXD C)GA,1
01246 D)22J   LXD C)GB,2
01247 175A    TRA 175A+25,4
01250         TRA E)230
01251         TRA E)802
01252         TRA 189A
01253         TRA E)1634
01254         TRA E)230
01255         TRA E)802
01256         TRA E)2K
01257         TRA E)802
01260         TRA E)2K
01261         TRA E)802
01262         TRA E)2K
01263         TRA E)802
01264         TRA E)2K
01265         TRA E)802
01266         TRA E)2K
01267         TRA E)802
01270         TRA 189A
01271         TRA E)802
01272         TRA E)230
01273         TRA E)1634
01274         TRA 189A
01275         TRA E)802
01276         TRA E)2V
01277         TRA E)1634
01300 E)2K    SXD C)G4,4
01301         SXD C)GA,1
01302 176A    CLA WORD
01303         LXD C)G9,1
01304         STO PNCH+1,1
01305 177A    SXD 6)+4,4
01306 178A    TSX ADD24,4
01307         TSX WORD
01310         TSX CKSUM
01311         LXD 6)+4,4
01312 179A    CLA KPNCH
01313         SUB 2)+14
01314 179A1   TZE 182A
01315 180A    CLA KPNCH
01316         ADD 2)+6
01317         STO KPNCH
01320         LXD KPNCH,1
01321         SXD C)G9,1
01322 181A    TRA 188A
01323 182A    CAL 2)+14
01324         SXD 6)+4,4
01325         TSX (STH),4
01326         PZE 8)1K
01327         LXD 6)+4,4
01330 183A    LXD 2)+6,1
01331         CLA KPNCH
01332         STD 184A2
01333 184A    LDQ PNCH+1,1
01334         STR
01335 184A1   TXI *+1,1,1
01336 184A2   TXL 184A,1
01337 186A    SXD 6)+4,4
01340         TSX (FIL),4
01341         LXD 6)+4,4
01342 187A    CLA 2)+6
01343         STO KPNCH
01344         LXD KPNCH,1
01345         SXD C)G9,1
01346         TRA 188A
01347 E)2P    SXD C)G4,4
01350         SXD C)GA,1
01351 D)12P   LXD C)G9,1
01352 188A    TRA 188A+23,4
01353         TRA 197A
01354         TRA D)134
01355         TRA D)134
01356         TRA D)134
01357         TRA 201A
01360         TRA D)134
01361         TRA 201A
01362         TRA D)134
01363         TRA 201A
01364         TRA D)134
01365         TRA 201A
01366         TRA D)134
01367         TRA 201A
01370         TRA D)134
01371         TRA 192A
01372         TRA D)134
01373         TRA D)134
01374         TRA D)134
01375         TRA 192A
01376         TRA D)134
01377         TRA D)134
01400         TRA D)134
01401 D)32Q   LXD C)GA,1
01402 D)22Q   LXD C)GB,2
01403 189A    CLA KPNCH
01404         SUB 2)+6
01405 189A1   TZE E)2P
01406         TPL E)2R
01407         TRA 214A
01410 E)2R    SXD C)G4,4
01411         SXD C)GA,1
01412 190A    CLA KPNCH
01413         SUB 2)+6
01414         STO KPNCH
01415         LXD KPNCH,1
01416         SXD C)G9,1
01417 191A    TRA 182A
01420 192A    SXD 6)+4,4
01421 193A    TSX SHFOR,4
01422         TSX LOC
01423         TSX PLOC
01424         LXD 6)+4,4
01425 194A    CAL 2)+14
01426         SXD 6)+4,4
01427         TSX (STH),4
01430         PZE 8)1L
01431         LXD 6)+4,4
01432 195A    LDQ PLOC
01433         STR
01434         SXD 6)+4,4
01435         TSX (FIL),4
01436         LXD 6)+4,4
01437 196A    TRA D)330
01440 197A    CAL 2)+14
01441         SXD 6)+4,4
01442         TSX (STH),4
01443         PZE 8)1H
01444         LXD 6)+4,4
01445 198A    LDQ CKSUM
01446         STR
01447         SXD 6)+4,4
01450         TSX (FIL),4
01451         LXD 6)+4,4
01452 199A    CAL 2)+14
01453         SXD 6)+4,4
01454         TSX (EFT),4
01455         LXD 6)+4,4
01456 200A    TRA D)330
01457 201A    CAL 2)+11
01460         SXD 6)+4,4
01461         TSX (STH),4
01462         PZE 8)1S
01463         LXD 6)+4,4
01464 202A    LDQ OFLAG
01465         STR
01466         LDQ AFLAG
01467         STR
01470         LDQ PLOC
01471         STR
01472         LDQ WORD
01473         STR
01474         SXD 6)+4,4
01475         TSX (SLO),4
01476         PZE BUF+1
01477         PZE 12
```

```
01500          TSX (FIL),4
01501          LXD 6)+4,4
01502 203A     TRA D)331
01503 E)2V     SXD C)G4,4
01504          SXD C)GA,1
01505 204A     CAL 2)+11
01506          SXD 6)+4,4
01507          TSX (STH),4
01510          PZE 8)1V
01511          LXD 6)+4,4
01512 205A     LDQ PLOCS
01513          STR
01514          SXD 6)+4,4
01515          TSX (SLO),4
01516          PZE BUF+1
01517          PZE 12
01520          TSX (FIL),4
01521          LXD 6)+4,4
01522 206A     TRA D)331
01523 E)230    SXD C)G4,4
01524          SXD C)GA,1
01525 D)330    LXD C)G1,1
01526 D)230    LXD C)G5,2
01527 207A     CAL 2)+11
01530          SXD 6)+4,4
01531          TSX (STH),4
01532          PZE 8)1Q
01533          TSX (SLO),4
01534          PZE BUF+1
01535          PZE 12
01536          TSX (FIL),4
01537          LXD 6)+4,4
01540          TRA 209A
01541 D)331    LXD C)G1,1
01542 D)231    LXD C)G5,2
01543 209A     CLA KLINE
01544          ADD 2)+6
01545          STO KLINE
01546 210A     CLA KLINE
01547          SUB 2)+15
01550 210A1    TZE E)132
01551          TPL 213A
01552          TRA 213A
01553 E)132    SXD C)G5,2
01554          TRA 211A
01555 E)32     SXD C)G4,4
01556 211A     CLA 2)+6
01557          STO KLINE
01560 212A     CAL 2)+11
01561          SXD 6)+4,4
01562          TSX (STH),4
01563          PZE 8)1R
01564          TSX (FIL),4
01565          LXD 6)+4,4
01566 213A     TRA 213A+25,4
01567          TRA 25A
01570          TRA E)734
01571          TRA E)35
01572          TRA E)734
01573          TRA 25A
01574          TRA E)734
01575          TRA 25A
01576          TRA E)734
01577          TRA 25A
01600          TRA E)734
01601          TRA 25A
01602          TRA E)734
01603          TRA 25A
01604          TRA E)734
01605          TRA E)3
01606          TRA E)734
01607          TRA 25A
01610          TRA E)734
01611          TRA 25A
01612          TRA E)734
01613          TRA 25A
01614          TRA E)734
01615          TRA E)3
01616 E)734    SXD C)G5,2
01617 D)334    LXD C)GB,2
01620 D)134    LXD C)GA,1
01621          TRA 214A
01622 E)1634   SXD C)G4,4
01623          SXD C)GA,1
01624 214A     CAL 2)+11
01625          SXD 6)+4,4
01626          TSX (STH),4
01627          PZE 8)24
01630          TSX (FIL),4
01631          LXD 6)+4,4
01632          TRA 215A
01633 E)35     SXD C)G5,2
01634 D)335    LXD C)GA,1
01635 D)235    LXD C)GB,2
01636 215A     CLA 3)
01637          STO DONE
01640 216A     SXD 6)+4,4
01641          TSX EXIT,4
01642          LXD 6)+4,4
01643          TRA 217A
01644 D)136    LXD C)GA,1
01645 217A     CLA 3)+6
01646          STO FACT
01647 218A     TRA 220A
01650 219A     CLA 3)+3
01651          STO FACT
01652 D)138    LXD C)GA,1
01653 220A     CLA 3)+1
01654          STO SW1
01655 221A     CLA 3)+1
01656          STO FINT
01657 222A     CLA 2)+13
01660          STO J1
01661 223A     CLA KARS-12
01662          SUB LNEG
01663 223A1    TZE 225A
01664 E)39     SXD C)GA,1
01665 224A     CLA KARS-12
01666          SUB LPLUS
01667 224A1    TZE 226A
01670          TPL E)3C
01671          TRA E)3C
01672 225A     CLA 3)
01673          STO SW1
01674 226A     CLA 2)+16
01675          STO J1
01676          TRA 227A
01677 E)3C     SXD C)G4,4
01700 227A     CLA J1
01701          ADD 2)+17
01702          STO J2
01703 228A     LXD J1,1
01704          CLA J2
01705          STD 230A2
01706 229A     CLA KARS+1,1
01707          SUB LBLNK
01710 229A1    TZE 229A2
01711          TPL 230A
01712          TRA 230A
01713 229A2    PXD 0,1
01714          STO J3
01715          TRA 231A
01716 230A     CLA KARS+1,1
01717          LRS 18
01720          ORA 6)
01721          FAD 6)
01722          STO 1)+1
01723          LDQ FINT
01724          FMP FACT
01725          FAD 1)+1
01726          STO FINT
01727 230A1    TXI *+1,1,1
01730 230A2    TXL 229A,1
01731 E)3G     SXD C)G4,4
01732 D)13H    LXD C)GA,1
01733 231A     CLA SW1
01734 231A1    TZE E)3J
01735 232A     CLS FINT
01736          STO FINT
01737          TRA 233A
01740 E)3J     SXD C)GA,1
01741 233A     SXD 6)+4,4
01742 234A     TSX FIX,4
01743          TSX FINT
01744          TSX INT
01745          TSX FINT
01746          LXD 6)+4,4
01747 235A     TRA 235A+5,2
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01750          TRA 108A
01751          TRA E)1A
01752          TRA E)214
01753          TRA E)42E
01754 A)101    CLA 6)+3
01755          STO 1)+3
01756          LDQ K
01757          MPY 2)+18
01760          ALS 17
01761          SUB 2)+18
01762          ADD 1)+3
01763          STO C)101
01764          TRA 1,4
01765 A)103    CLA 6)+3
01766          STO 1)+3
01767          LDQ KNOT
01770          MPY 2)+18
01771          ALS 17
01772          SUB 2)+18
01773          ADD 1)+3
01774          STO C)103
01775          TRA 1,4
01776 2)       OCT +000040000000
01777          OCT +000020000000
02000          OCT +000060000000
02001          OCT +000053000000
02002          OCT +000054000000
02003          OCT +000046000000
02004          OCT +000001000000
02005          OCT +000000000000
02006          OCT +000013000000
02007          OCT +000003000000
02010          OCT +000170000000
02011          OCT +000002000000
02012          OCT +000004000000
02013          OCT +000015000000
02014          OCT +000010000000
02015          OCT +000070000000
02016          OCT +000016000000
02017          OCT +000007000000
02020          OCT +000005000000
02021 3)       OCT +201400000000
02022          OCT +000000000000
02023          OCT +206400000000
02024          OCT +204500000000
02025          OCT +205640000000
02026          OCT +206520000000
02027          OCT +204400000000
02030          OCT +203700000000
02031          OCT +204540000000
02032 6)       OCT +233000000000
02033          OCT +000000377777
02034          OCT +000000000000
02035          OCT +000001000000
02036          OCT +000000000000
02037          OCT +000000000000
02040          BCD 1ROR)
02041 8)24     BCD 1(6H1ER
02042          BCD 12A6)
02043 8)1Q     BCD 1(28X,1
02044          BCD 12A6)
02045          BCD 15,7X,1
02046 8)1V     BCD 1(16X,0
02047          BCD 112A6)
02050          BCD 108,2X,
02051          BCD 105,2X,
02052          BCD 1A1,2X,
02053 8)1S     BCD 1 (7X,2
02054          BCD 1D ,08)
02055 8)1H     BCD 1 (4HEN
02056          BCD 1 ,08)
02057 8)1L     BCD 1(4HORG
02060 8)1K     BCD 1 (808)
02061 8)1R     BCD 1 (1H1)
02062 8)16     BCD 1(12A6)
```

*   FAP

```
                  00000          ENTRY   SWITCH
                  01203          ENTRY   FIX
                  01225          ENTRY   SHFOR
                  01232          ENTRY   UPAK
                  01263          ENTRY   PAK
                  01314          ENTRY   SERCH
                  01370          ENTRY   ADD24
                  01214          ENTRY   SHFORM
00000   0634 00 1 00050  SWITCH SXA     SXR1,1
00001   0500 00 0 00052          CLA     BLNKS
00002   0601 60 4 00002          STO*    2,4
00003   0601 60 4 00005          STO*    5,4
00004   0500 00 0 00055          CLA     UWRD
00005   0601 60 4 00006          STO*    6,4
00006   0500 00 0 00056          CLA     DWRD
00007   0601 60 4 00007          STO*    7,4
00010  -0500 60 4 00001          CAL*    1,4             GET OP WORD
00011  -0765 00 0 00022          LGR     18
00012   0600 00 0 00053          STZ     MOD
00013  -0620 00 0 00053          SLQ     MOD             SAVE MODIFIERS
00014   0560 00 0 00052          LDQ     BLNKS
00015  -0763 00 0 00022          LGL     18
00016   0534 00 1 00077          LXA     TBL,1
00017  -0340 00 1 01200   SWT1   LAS     OPS,1
00020   0020 00 0 00022          TRA     *+2
00021   0020 00 0 00027          TRA     SWT2
00022   2 00003 1 00017          TIX     SWT1,1,3
00023   0500 00 0 00054          CLA     OWRD            UNDEFINED,SET OFLAG
00024   0601 60 4 00002          STO*    2,4
00025  -0754 00 0 00000          PXD     0,0
00026   0020 00 0 00030          TRA     *+2
00027   0500 00 1 01201    SWT2  CLA     BOPS,1          SET WORD
00030   0601 60 4 00004          STO*    4,4
00031   0500 00 1 01202          CLA     SOPS,1          SET SWITCH
00032   0600 60 4 00003          STZ*    3,4
00033   0622 60 4 00003          STD*    3,4
00034   0767 00 0 00022          ALS     18
00035   0600 60 4 00010          STZ*    8,4
00036   0622 60 4 00010          STD*    8,4
00037   0500 00 0 00053          CLA     MOD             CHECK MODIFIERS
00040   0774 00 1 00007          AXT     7,1
00041   0340 00 1 00066    SWT3  CAS     MTBL,1
00042   0020 00 0 00044          TRA     *+2
00043   0020 00 0 00046          TRA     SWT4
00044   2 00001 1 00041          TIX     SWT3,1,1
00045   0020 00 0 00050          TRA     SXR1
00046   0500 00 1 00076    SWT4  CLA     BITS,1          OR IN MODIFIER BITS
00047  -0602 60 4 00004          ORS*    4,4
00050   0774 00 1 00000    SXR1  AXT     **,1
00051   0020 00 4 00011          TRA     9,4
00052   606060606060       BLNKS BCI     1,
00053                        MOD  BSS     1
00054   464646464646        OWRD BCI     1,000000
00055   646464646464       UWRD  BCI     1,UUUUUU
00056   242424242424       DWRD  BCI     1,DDDDDD
00057   600160000000             BCI     1, 1 000
```

```
00060  600260000000            BCI     1, 2 000
00061  600360000000            BCI     1, 3 000
00062  016060000000            BCI     1,1  000
00063  010160000000            BCI     1,11 000
00064  010260000000            BCI     1,12 000
00065  010360000000            BCI     1,13 000
00066                    MTBL   BSS     1
00067 +000000000100             OCT     100
00070 +000000000200             OCT     200
00071 +000000000300             OCT     300
00072 +000000000400             OCT     400
00073 +000000000500             OCT     500
00074 +000000000600             OCT     600
00075 +000000000700             OCT     700
00076                    BITS   BSS     1
00077   0 00000 0 01100  TBL    PZE     OPS-TBL-1
00100  240027606060             BCI     1,DOG
00101 +000000000000             OCT     0
00102   0 00002 0 00001          PZE     1,,2
00103  255064606060             BCI     1,EQU
00104 +000000000000             OCT     0
00105   0 00004 0 00001          PZE     1,,4
00106  474362606060             BCI     1,PLS
00107 +000000000000             OCT     0
00110   0 00006 0 00001          PZE     1,,6
00111  242523606060             BCI     1,DEC
00112 +000000000000             OCT     0
00113   0 00012 0 00001          PZE     1,,10
00114  002363606060             BCI     1,OCT
00115 +000000000000             OCT     0
00116   0 00014 0 00001          PZE     1,,12
00117  254523606060             BCI     1,ENC
00120 +000000000000             OCT     0
00121   0 00016 0 00001          PZE     1,,14
00122  620027606060             BCI     1,SOG
00123 +000000000000             OCT     0
00124   0 00022 0 00001          PZE     1,,18
00125  263145606060             BCI     1,FIN
00126 +000000000000             OCT     0
00127   0 00024 0 00001          PZE     1,,20
00130  622524606060             BCI     1,SED
00131 +000000000000             OCT     0
00132   0 00026 0 00001          PZE     1,,22
00133  430023606060             BCI     1,LOC
00134 +000000000000             OCT     0
00135   0 00020 0 00001          PZE     1,,16
00136  254125606060             BCI     1,EJE
00137 +000000000000             OCT     0
00140   0 00010 0 00001          PZE     1,,8
00141  444323606060             BCI     1,MLC
00142 +000000040000             OCT     40000
00143   0 00020 0 00001          PZE     1,,16
00144  477125606060             BCI     1,PZE
00145 +000000000000             OCT     0
00146   0 00020 0 00001          PZE     1,,16
00147  673163606060             BCI     1,XIT
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00150 +000000000000          OCT     00000
00151  0 00020 0 00003       PZE     3,,16
00152  262563606060          BCI     1,FET
00153 +000000000400          OCT     00400
00154  0 00020 0 00003       PZE     3,,16
00155  626300606060          BCI     1,STO
00156 +000000001000          OCT     01000
00157  0 00020 0 00003       PZE     3,,16
00160  626362606060          BCI     1,STS
00161 +000000001400          OCT     01400
00162  0 00020 0 00003       PZE     3,,16
00163  626663606060          BCI     1,SWT
00164 +000000002000          OCT     02000
00165  0 00020 0 00003       PZE     3,,16
00166  212424606060          BCI     1,ADD
00167 +000000002400          OCT     02400
00170  0 00020 0 00003       PZE     3,,16
00171  626422606060          BCI     1,SUB
00172 +000000003000          OCT     03000
00173  0 00020 0 00003       PZE     3,,16
00174  444770606060          BCI     1,MPY
00175 +000000003400          OCT     03400
00176  0 00020 0 00003       PZE     3,,16
00177  214524606060          BCI     1,AND
00200 +000000004000          OCT     04000
00201  0 00020 0 00003       PZE     3,,16
00202  620045606060          BCI     1,SON
00203 +000000004400          OCT     04400
00204  0 00020 0 00003       PZE     3,,16
00205  620071606060          BCI     1,SOZ
00206 +000000005000          OCT     05000
00207  0 00020 0 00003       PZE     3,,16
00210  620025606060          BCI     1,SOE
00211 +000000005400          OCT     05400
00212  0 00020 0 00003       PZE     3,,16
00213  516263606060          BCI     1,RST
00214 +000000006000          OCT     06000
00215  0 00020 0 00003       PZE     3,,16
00216  440045606060          BCI     1,MON
00217 +000000006400          OCT     06400
00220  0 00020 0 00003       PZE     3,,16
00221  440026606060          BCI     1,MOF
00222 +000000007000          OCT     07000
00223  0 00020 0 00003       PZE     3,,16
00224  442300606060          BCI     1,MCO
00225 +000000007400          OCT     07400
00226  0 00020 0 00003       PZE     3,,16
00227  622551606060          BCI     1,SER
00230 +000000010000          OCT     10000
00231  0 00020 0 00003       PZE     3,,16
00232  432447606060          BCI     1,LDP
00233 +000000010400          OCT     10400
00234  0 00020 0 00003       PZE     3,,16
00235  626324606060          BCI     1,STD
00236 +000000011000          OCT     11000
00237  0 00020 0 00003       PZE     3,,16
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00240  212447606060          BCI     1,ADP
00241 +000000011400          OCT     11400
00242  0 00020 0 00003       PZE     3,,16
00243  622447606060          BCI     1,SDP
00244 +000000012000          OCT     12000
00245  0 00020 0 00003       PZE     3,,16
00246  442447606060          BCI     1,MDP
00247 +000000012400          OCT     12400
00250  0 00020 0 00003       PZE     3,,16
00251  620023606060          BCI     1,SOC
00252 +000000013000          OCT     13000
00253  0 00020 0 00003       PZE     3,,16
00254  620063606060          BCI     1,SOT
00255 +000000013400          OCT     13400
00256  0 00020 0 00003       PZE     3,,16
00257  236221606060          BCI     1,CSA
00260 +000000014000          OCT     14000
00261  0 00020 0 00003       PZE     3,,16
00262  236226606060          BCI     1,CSF
00263 +000000014400          OCT     14400
00264  0 00020 0 00003       PZE     3,,16
00265  622325606060          BCI     1,SCE
00266 +000000015000          OCT     15000
00267  0 00020 0 00003       PZE     3,,16
00270  506226606060          BCI     1,QSF
00271 +000000015400          OCT     15400
00272  0 00020 0 00003       PZE     3,,16
00273  630063606060          BCI     1,TOT
00274 +000000016000          OCT     16000
00275  0 00020 0 00003       PZE     3,,16
00276  516265606060          BCI     1,RSV
00277 +000000016400          OCT     16400
00300  0 00020 0 00003       PZE     3,,16
00301  512543606060          BCI     1,REL
00302 +000000017000          OCT     17000
00303  0 00020 0 00003       PZE     3,,16
00304  223126606060          BCI     1,BIF
00305 +000000017400          OCT     17400
00306  0 00020 0 00003       PZE     3,,16
00307  224326606060          BCI     1,BLF
00310 +000000026000          OCT     26000
00311  0 00020 0 00003       PZE     3,,16
00312  220047606060          BCI     1,BOP
00313 +000000026400          OCT     26400
00314  0 00020 0 00003       PZE     3,,16
00315  224527606060          BCI     1,BNG
00316 +000000027000          OCT     27000
00317  0 00020 0 00003       PZE     3,,16
00320  263143606060          BCI     1,FIL
00321 +000000027400          OCT     27400
00322  0 00020 0 00003       PZE     3,,16
00323  212451606060          BCI     1,ADR
00324 +000000036000          OCT     36000
00325  0 00020 0 00003       PZE     3,,16
00326  232151606060          BCI     1,CAR
00327 +000000036400          OCT     36400
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00330   0 00020 0 00003         PZE     3,,16
00331   230026606060            BCI     1,COF
00332  +000000037000            OCT     37000
00333   0 00020 0 00003         PZE     3,,16
00334   432326606060            BCI     1,LCF
00335  +000000037400            OCT     37400
00336   0 00020 0 00003         PZE     3,,16
00337   432300606060            BCI     1,LCO
00340  +000000046000            OCT     46000
00341   0 00020 0 00003         PZE     3,,16
00342   624525606060            BCI     1,SNE
00343  +000000046400            OCT     46400
00344   0 00020 0 00003         PZE     3,,16
00345   475150606060            BCI     1,PRQ
00346  +000000047000            OCT     47000
00347   0 00020 0 00003         PZE     3,,16
00350   475123606060            BCI     1,PRC
00351  +000000047400            OCT     47400
00352   0 00020 0 00003         PZE     3,,16
00353   620043606060            BCI     1,SOL
00354  +000000056000            OCT     56000
00355   0 00020 0 00003         PZE     3,,16
00356   234563606060            BCI     1,CNT
00357  +000000056400            OCT     56400
00360   0 00020 0 00003         PZE     3,,16
00361   222126606060            BCI     1,BAF
00362  +000000057000            OCT     57000
00363   0 00020 0 00003         PZE     3,,16
00364   416445606060            BCI     1,JUN
00365  +000000020000            OCT     20000
00366   0 00020 0 00002         PZE     2,,16
00367   412163606060            BCI     1,JAT
00370  +000000030000            OCT     30000
00371   0 00020 0 00002         PZE     2,,16
00372   412126606060            BCI     1,JAF
00373  +000000040000            OCT     40000
00374   0 00020 0 00002         PZE     2,,16
00375   415162606060            BCI     1,JRS
00376  +000000050000            OCT     50000
00377   0 00020 0 00002         PZE     2,,16
00400   225162606060            BCI     1,BRS
00401  +000000060000            OCT     60000
00402   0 00020 0 00002         PZE     2,,16
00403   262567606060            BCI     1,FEX
00404  +000000070000            OCT     70000
00405   0 00020 0 00002         PZE     2,,16
00406   470047606060            BCI     1,POP
00407  +000000060000            OCT     60000
00410   0 00020 0 00004         PZE     4,,16
00411   432421606060            BCI     1,LDA
00412  +000000001000            OCT     01000
00413   0 00020 0 00004         PZE     4,,16
00414   432422606060            BCI     1,LDB
00415  +000000002000            OCT     02000
00416   0 00020 0 00004         PZE     4,,16
00417   432445606060            BCI     1,LDN
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00420 +000000003000          OCT     03000
00421  0 00020 0 00004       PZE     4,,16
00422  436701606060          BCI     1,LX1
00423 +000000044000          OCT     44000
00424  0 00020 0 00004       PZE     4,,16
00425  436702606060          BCI     1,LX2
00426 +000000054000          OCT     54000
00427  0 00020 0 00004       PZE     4,,16
00430  432447606060          BCI     1,LDP
00431 +000000056000          OCT     56000
00432  0 00020 0 00004       PZE     4,,16
00433  434750606060          BCI     1,LPQ
00434 +000000057000          OCT     57000
00435  0 00020 0 00004       PZE     4,,16
00436  435001606060          BCI     1,LQ1
00437 +000000010000          OCT     10000
00440  0 00020 0 00004       PZE     4,,16
00441  435002606060          BCI     1,LQ2
00442 +000000011000          OCT     11000
00443  0 00020 0 00004       PZE     4,,16
00444  435003606060          BCI     1,LQ3
00445 +000000012000          OCT     12000
00446  0 00020 0 00004       PZE     4,,16
00447  435004606060          BCI     1,LQ4
00450 +000000013000          OCT     13000
00451  0 00020 0 00004       PZE     4,,16
00452  432470606060          BCI     1,LDY
00453 +000000064000          OCT     64000
00454  0 00020 0 00004       PZE     4,,16
00455  432121606060          BCI     1,LAA
00456 +000000065000          OCT     65000
00457  0 00020 0 00004       PZE     4,,16
00460  216701606060          BCI     1,AX1
00461 +000000045000          OCT     45000
00462  0 00020 0 00004       PZE     4,,16
00463  216702606060          BCI     1,AX2
00464 +000000055000          OCT     55000
00465  0 00020 0 00004       PZE     4,,16
00466  626321606060          BCI     1,STA
00467 +000000061000          OCT     61000
00470  0 00020 0 00004       PZE     4,,16
00471  626322606060          BCI     1,STB
00472 +000000071000          OCT     71000
00473  0 00020 0 00004       PZE     4,,16
00474  626701606060          BCI     1,SX1
00475 +000000041000          OCT     41000
00476  0 00020 0 00004       PZE     4,,16
00477  626702606060          BCI     1,SX2
00500 +000000051000          OCT     51000
00501  0 00020 0 00004       PZE     4,,16
00502  624750606060          BCI     1,SPQ
00503 +000000053000          OCT     53000
00504  0 00020 0 00004       PZE     4,,16
00505  622321606060          BCI     1,SCA
00506 +000000063000          OCT     63000
00507  0 00020 0 00004       PZE     4,,16
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00510  622322606060          BCI     1,SCB
00511 +000000073000          OCT     73000
00512  0 00020 0 00004       PZE     4,,16
00513  622243606060          BCI     1,SBL
00514 +000000034000          OCT     34000
00515  0 00020 0 00004       PZE     4,,16
00516  626371606060          BCI     1,STZ
00517 +000000043000          OCT     43000
00520  0 00020 0 00004       PZE     4,,16
00521  222123606060          BCI     1,BAC
00522 +000000000001          OCT     00001
00523  0 00020 0 00004       PZE     4,,16
00524  212223606060          BCI     1,ABC
00525 +000000000002          OCT     00002
00526  0 00020 0 00004       PZE     4,,16
00527  672122606060          BCI     1,XAB
00530 +000000000003          OCT     00003
00531  0 00020 0 00004       PZE     4,,16
00532  715121606060          BCI     1,ZRA
00533 +000000000011          OCT     00011
00534  0 00020 0 00004       PZE     4,,16
00535  715122606060          BCI     1,ZRB
00536 +000000000012          OCT     00012
00537  0 00020 0 00004       PZE     4,,16
00540  715145606060          BCI     1,ZRN
00541 +000000000020          OCT     00020
00542  0 00020 0 00004       PZE     4,,16
00543  450021606060          BCI     1,NOA
00544 +000000000021          OCT     00021
00545  0 00020 0 00004       PZE     4,,16
00546  456701606060          BCI     1,NX1
00547 +000000000044          OCT     00044
00550  0 00020 0 00004       PZE     4,,16
00551  256701606060          BCI     1,EX1
00552 +000000000045          OCT     00045
00553  0 00020 0 00004       PZE     4,,16
00554  474721606060          BCI     1,PPA
00555 +000000000053          OCT     00053
00556  0 00020 0 00004       PZE     4,,16
00557  472170606060          BCI     1,PAY
00560 +000000000064          OCT     00064
00561  0 00020 0 00004       PZE     4,,16
00562  472147606060          BCI     1,PAP
00563 +000000000057          OCT     00057
00564  0 00020 0 00004       PZE     4,,16
00565  212421606060          BCI     1,ADA
00566 +000000006000          OCT     06000
00567  0 00020 0 00004       PZE     4,,16
00570  622221606060          BCI     1,SBA
00571 +000000007000          OCT     07000
00572  0 00020 0 00004       PZE     4,,16
00573  212422606060          BCI     1,ADB
00574 +000000004000          OCT     04000
00575  0 00020 0 00004       PZE     4,,16
00576  622222606060          BCI     1,SBB
00577 +000000005000          OCT     05000
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00600   0 00020 0 00004          PZE     4,,16
00601   212423606060             BCI     1,ADC
00602  +000000046000             OCT     46000
00603   0 00020 0 00004          PZE     4,,16
00604   622223606060             BCI     1,SBC
00605  +000000047000             OCT     47000
00606   0 00020 0 00004          PZE     4,,16
00607   446443606060             BCI     1,MUL
00610  +000000076000             OCT     76000
00611   0 00020 0 00004          PZE     4,,16
00612   246524606060             BCI     1,DVD
00613  +000000075000             OCT     75000
00614   0 00020 0 00004          PZE     4,,16
00615   246551606060             BCI     1,DVR
00616  +000000074000             OCT     74000
00617   0 00020 0 00004          PZE     4,,16
00620   512422606060             BCI     1,RDB
00621  +000000000004             OCT     00004
00622   0 00020 0 00004          PZE     4,,16
00623   632321606060             BCI     1,TCA
00624  +000000000005             OCT     00005
00625   0 00020 0 00004          PZE     4,,16
00626   632323606060             BCI     1,TCC
00627  +000000000070             OCT     00070
00630   0 00020 0 00004          PZE     4,,16
00631   454471606060             BCI     1,NMZ
00632  +000000077000             OCT     77000
00633   0 00020 0 00004          PZE     4,,16
00634   622151606060             BCI     1,SAR
00635  +000000036000             OCT     36000
00636   0 00020 0 00004          PZE     4,,16
00637   622351606060             BCI     1,SCR
00640  +000000036040             OCT     36040
00641   0 00020 0 00004          PZE     4,,16
00642   622143606060             BCI     1,SAL
00643  +000000037000             OCT     37000
00644   0 00020 0 00004          PZE     4,,16
00645   622343606060             BCI     1,SCL
00646  +000000037040             OCT     37040
00647   0 00020 0 00004          PZE     4,,16
00650   314544606060             BCI     1,INM
00651  +000000035000             OCT     35000
00652   0 00020 0 00004          PZE     4,,16
00653   316701606060             BCI     1,IX1
00654  +000000040000             OCT     40000
00655   0 00020 0 00004          PZE     4,,16
00656   316702606060             BCI     1,IX2
00657  +000000050000             OCT     50000
00660   0 00020 0 00004          PZE     4,,16
00661   634764606060             BCI     1,TPU
00662  +000000000046             OCT     00046
00663   0 00020 0 00004          PZE     4,,16
00664   634724606060             BCI     1,TPD
00665  +000000000047             OCT     00047
00666   0 00020 0 00004          PZE     4,,16
00667   256351606060             BCI     1,ETR
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00670 +000000014000          OCT     14000
00671  0 00020 0 00004       PZE     4,,16
00672  250021606060          BCI     1,EOA
00673 +000000015000          OCT     15000
00674  0 00020 0 00004       PZE     4,,16
00675  005121606060          BCI     1,ORA
00676 +000000016000          OCT     16000
00677  0 00020 0 00004       PZE     4,,16
00700  214521606060          BCI     1,ANA
00701 +000000017000          OCT     17000
00702  0 00020 0 00004       PZE     4,,16
00703  214550606060          BCI     1,ANQ
00704 +000000030000          OCT     30000
00705  0 00020 0 00004       PZE     4,,16
00706  210050606060          BCI     1,AOQ
00707 +000000031000          OCT     31000
00710  0 00020 0 00004       PZE     4,,16
00711  005150606060          BCI     1,ORQ
00712 +000000032000          OCT     32000
00713  0 00020 0 00004       PZE     4,,16
00714  002150606060          BCI     1,OAQ
00715 +000000033000          OCT     33000
00716  0 00020 0 00004       PZE     4,,16
00717  234421606060          BCI     1,CMA
00720 +000000020000          OCT     20000
00721  0 00020 0 00004       PZE     4,,16
00722  232521606060          BCI     1,CEA
00723 +000000021000          OCT     21000
00724  0 00020 0 00004       PZE     4,,16
00725  234422606060          BCI     1,CMB
00726 +000000022000          OCT     22000
00727  0 00020 0 00004       PZE     4,,16
00730  232522606060          BCI     1,CEB
00731 +000000023000          OCT     23000
00732  0 00020 0 00004       PZE     4,,16
00733  232571606060          BCI     1,CEZ
00734 +000000024000          OCT     24000
00735  0 00020 0 00004       PZE     4,,16
00736  236701606060          BCI     1,CX1
00737 +000000000441          OCT     00441
00740  0 00020 0 00004       PZE     4,,16
00741  236702606060          BCI     1,CX2
00742 +000000000451          OCT     00451
00743  0 00020 0 00004       PZE     4,,16
00744  225164606060          BCI     1,BRU
00745 +000000070000          OCT     70000
00746  0 00020 0 00004       PZE     4,,16
00747  635001606060          BCI     1,TQ1
00750 +000000070001          OCT     70001
00751  0 00020 0 00004       PZE     4,,16
00752  265001606060          BCI     1,FQ1
00753 +000000070041          OCT     70041
00754  0 00020 0 00004       PZE     4,,16
00755  635002606060          BCI     1,TQ2
00756 +000000070002          OCT     70002
00757  0 00020 0 00004       PZE     4,,16
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00760  265002606060          BCI     1,FQ2
00761 +000000070042          OCT     70042
00762   0 00020 0 00004       PZE     4,,16
00763  635003606060          BCI     1,TQ3
00764 +000000070003          OCT     70003
00765   0 00020 0 00004       PZE     4,,16
00766  265003606060          BCI     1,FQ3
00767 +000000070043          OCT     70043
00770   0 00020 0 00004       PZE     4,,16
00771  635004606060          BCI     1,TQ4
00772 +000000070004          OCT     70004
00773   0 00020 0 00004       PZE     4,,16
00774  265004606060          BCI     1,FQ4
00775 +000000070044          OCT     70044
00776   0 00020 0 00004       PZE     4,,16
00777  635005606060          BCI     1,TQ5
01000 +000000070005          OCT     70005
01001   0 00020 0 00004       PZE     4,,16
01002  265005606060          BCI     1,FQ5
01003 +000000070045          OCT     70045
01004   0 00020 0 00004       PZE     4,,16
01005  635006606060          BCI     1,TQ6
01006 +000000070006          OCT     70006
01007   0 00020 0 00004       PZE     4,,16
01010  265006606060          BCI     1,FQ6
01011 +000000070046          OCT     70046
01012   0 00020 0 00004       PZE     4,,16
01013  634447606060          BCI     1,TMP
01014 +000000070007          OCT     70007
01015   0 00020 0 00004       PZE     4,,16
01016  264447606060          BCI     1,FMP
01017 +000000070047          OCT     70047
01020   0 00020 0 00004       PZE     4,,16
01021  636347606060          BCI     1,TTP
01022 +000000070017          OCT     70017
01023   0 00020 0 00004       PZE     4,,16
01024  266347606060          BCI     1,FTP
01025 +000000070057          OCT     70057
01026   0 00020 0 00004       PZE     4,,16
01027  634531606060          BCI     1,TNI
01030 +000000070014          OCT     70014
01031   0 00020 0 00004       PZE     4,,16
01032  264531606060          BCI     1,FNI
01033 +000000070054          OCT     70054
01034   0 00020 0 00004       PZE     4,,16
01035  264522606060          BCI     1,FNB
01036 +000000070056          OCT     70056
01037   0 00020 0 00004       PZE     4,,16
01040  634522606060          BCI     1,TNB
01041 +000000070016          OCT     70016
01042   0 00020 0 00004       PZE     4,,16
01043  634526606060          BCI     1,TNF
01044 +000000070015          OCT     70015
01045   0 00020 0 00004       PZE     4,,16
01046  264526606060          BCI     1,FNF
01047 +000000070055          OCT     70055
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```
01050   0 00020 0 00004          PZE     4,,16
01051   264321606060             BCI     1,FLA
01052  +000000070021             OCT     70021
01053   0 00020 0 00004          PZE     4,,16
01054   634321606060             BCI     1,TLA
01055  +000000070061             OCT     70061
01056   0 00020 0 00004          PZE     4,,16
01057   263021606060             BCI     1,FHA
01060  +000000070022             OCT     70022
01061   0 00020 0 00004          PZE     4,,16
01062   633021606060             BCI     1,THA
01063  +000000070062             OCT     70062
01064   0 00020 0 00004          PZE     4,,16
01065   264322606060             BCI     1,FLB
01066  +000000070024             OCT     70024
01067   0 00020 0 00004          PZE     4,,16
01070   634322606060             BCI     1,TLB
01071  +000000070064             OCT     70064
01072   0 00020 0 00004          PZE     4,,16
01073   263022606060             BCI     1,FHB
01074  +000000070030             OCT     70030
01075   0 00020 0 00004          PZE     4,,16
01076   633022606060             BCI     1,THB
01077  +000000070070             OCT     70070
01100   0 00020 0 00004          PZE     4,,16
01101   632171606060             BCI     1,TAZ
01102  +000000070023             OCT     70023
01103   0 00020 0 00004          PZE     4,,16
01104   632271606060             BCI     1,TBZ
01105  +000000070034             OCT     70034
01106   0 00020 0 00004          PZE     4,,16
01107   262171606060             BCI     1,FAZ
01110  +000000070063             OCT     70063
01111   0 00020 0 00004          PZE     4,,16
01112   262271606060             BCI     1,FBZ
01113  +000000070074             OCT     70074
01114   0 00020 0 00004          PZE     4,,16
01115   632371606060             BCI     1,TCZ
01116  +000000070037             OCT     70037
01117   0 00020 0 00004          PZE     4,,16
01120   262371606060             BCI     1,FCZ
01121  +000000070077             OCT     70077
01122   0 00020 0 00004          PZE     4,,16
01123   624743606060             BCI     1,SPL
01124  +000000025000             OCT     25000
01125   0 00020 0 00004          PZE     4,,16
01126   250051606060             BCI     1,EOR
01127  +000000015000             OCT     15000
01130   0 00020 0 00004          PZE     4,,16
01131   262130606060             BCI     1,FAH
01132  +000000070022             OCT     70022
01133   0 00020 0 00004          PZE     4,,16
01134   632130606060             BCI     1,TAH
01135  +000000070062             OCT     70062
01136   0 00020 0 00004          PZE     4,,16
01137   632143606060             BCI     1,TAL
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01140 +000000070061              OCT     70061
01141  0 00020 0 00004           PZE     4,,16
01142  262143606060              BCI     1,FAL
01143 +000000070021              OCT     70021
01144  0 00020 0 00004           PZE     4,,16
01145  632230606060              BCI     1,TBH
01146 +000000070070              OCT     70070
01147  0 00020 0 00004           PZE     4,,16
01150  262230606060              BCI     1,FBH
01151 +000000070030              OCT     70030
01152  0 00020 0 00004           PZE     4,,16
01153  004721606060              BCI     1,0PA
01154 +000000042000              OCT     42000
01155  0 00020 0 00004           PZE     4,,16
01156  004722606060              BCI     1,0PB
01157 +000000052000              OCT     52000
01160  0 00020 0 00004           PZE     4,,16
01161  004723606060              BCI     1,0PC
01162 +000000062000              OCT     62000
01163  0 00020 0 00004           PZE     4,,16
01164  004724606060              BCI     1,0PD
01165 +000000072000              OCT     72000
01166  0 00020 0 00004           PZE     4,,16
01167  242731606060              BCI     1,DGI
01170 +000000066000              OCT     66000
01171  0 00020 0 00004           PZE     4,,16
01172  304363606060              BCI     1,HLT
01173 +000000000030              OCT     00030
01174  0 00020 0 00004           PZE     4,,16
01175  234363606060              BCI     1,CLT
01176 +000000000031              OCT     00031
01177  0 00020 0 00004           PZE     4,,16
01200  0 00000 0 00000   OPS     PZE
01201  0 00000 0 00000   BOPS    PZE
01202  0 00000 0 00000   SOPS    PZE
01203  0500 60 4 00001   FIX     CLA*    1,4
01204 -0300 00 0 01376           UFA     NORM
01205  0400 00 0 01377           ADD     BIG
01206 -0320 00 0 01401           ANA     15BMS
01207  0601 60 4 00003           STO*    3,4
01210  0767 00 0 00022           ALS     18
01211  0600 60 4 00002           STZ*    2,4
01212  0622 60 4 00002           STD*    2,4
01213  0020 00 4 00004           TRA     4,4
01214  0500 60 4 00002   SHFORM  CLA*    2,4
01215  0634 00 1 01223           SXA     SH1,1
01216 -0734 00 1 00000           PDX     0,1
01217  0500 60 4 00001           CLA*    1,4
01220  0771 00 0 00022           ARS     18
01221 -0320 00 1 01410           ANA     MSTBL,1
01222 -0602 60 4 00003           ORS*    3,4
01223  0774 00 1 00000   SH1     AXT     **,1
01224  0020 00 4 00004           TRA     4,4
01225  0500 60 4 00001   SHFOR   CLA*    1,4
01226  0771 00 0 00022           ARS     18
01227 -0320 00 0 01401           ANA     15BMS
```

```
01230 -0602 60 4 00002          ORS*    2,4
01231  0020 00 4 00003          TRA     3,4
                        *       CALL UPAK(BUF,KARS)
01232  0634 00 1 01257   UPAK    SXA     U1,1
01233  0634 00 2 01260          SXA     U2,2
01234  0634 00 4 01261          SXA     U4,4
01235 -0500 00 4 00001          CAL     1,4
01236  0400 00 0 01375          ADD     1A                  BUF(1)+1
01237  0621 00 0 01246          STA     U5
01240 -0500 00 4 00002          CAL     2,4
01241  0400 00 0 01375          ADD     1A                  KARS(1)+1
01242  0621 00 0 01252          STA     U6
01243  0774 00 1 00001          AXT     1,1
01244  0774 00 2 00001          AXT     1,2
01245  0774 00 4 00006   U8     AXT     6,4
01246  0560 00 1 00000   U5     LDQ     **,1
01247 -0754 00 0 00000   U7     PXD     0,0
01250 -0763 00 0 00006          LGL     6
01251  0767 00 0 00022          ALS     18
01252  0602 00 2 00000   U6     SLW     **,2
01253  1 00001 2 01254          TXI     *+1,2,1
01254  2 00001 4 01247          TIX     U7,4,1
01255  1 00001 1 01256          TXI     *+1,1,1
01256 -3 00014 1 01245          TXL     U8,1,12
01257  0774 00 1 00000   U1     AXT     **,1
01260  0774 00 2 00000   U2     AXT     **,2
01261  0774 00 4 00000   U4     AXT     **,4
01262  0020 00 4 00003          TRA     3,4
                        *       CALL PAK(KARS,BUF)
01263  0634 00 1 01310   PAK    SXA     P1,1
01264  0634 00 2 01311          SXA     P2,2
01265  0634 00 4 01312          SXA     P4,4
01266 -0500 00 4 00001          CAL     1,4
01267  0400 00 0 01375          ADD     1A                  KARS(1)+1
01270  0621 00 0 01300          STA     P5
01271 -0500 00 4 00002          CAL     2,4
01272  0400 00 0 01375          ADD     1A                  BUF(1)+1
01273  0621 00 0 01305          STA     P6
01274  0774 00 1 00001          AXT     1,1
01275  0774 00 2 00001          AXT     1,2
01276  0774 00 4 00006   P7     AXT     6,4
01277 -0754 00 0 00000          PXD     0,0
01300  0560 00 1 00000   P5     LDQ     **,1
01301 -0773 00 0 00014          RQL     12
01302 -0763 00 0 00006          LGL     6
01303  1 00001 1 01304          TXI     *+1,1,1
01304  2 00001 4 01300          TIX     P5,4,1
01305  0602 00 2 00000   P6     SLW     **,2
01306  1 00001 2 01307          TXI     *+1,2,1
01307 -3 00014 2 01276          TXL     P7,2,12
01310  0774 00 1 00000   P1     AXT     **,1
01311  0774 00 2 00000   P2     AXT     **,2
01312  0774 00 4 00000   P4     AXT     **,4
01313  0020 00 4 00003          TRA     3,4
01314  0634 00 1 01364   SERCH  SXA     S1,1
01315  0634 00 2 01365          SXA     S2,2
```

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01316  0634 00 4 01366          SXA     S4,4
01317 -0500 00 4 00001          CAL     1,4
01320  0400 00 0 01375          ADD     1A
01321  0621 00 0 01333          STA     S3
01322 -0500 00 4 00002          CAL     2,4
01323  0400 00 0 01375          ADD     1A
01324  0621 00 0 01335          STA     S5
01325  0600 60 4 00004          STZ*    4,4
01326  0560 60 4 00003          LDQ*    3,4
01327  0200 00 0 01402          MPY     ALL
01330  0131 00 0 00000          XCA
01331 -0734 00 1 00000          PDX     0,1
01332  0774 00 2 00001    S9    AXT     1,2
01333  0500 00 2 00000    S3    CLA     **,2
01334  1 77774 1 01340          TXI     S6,1,1-LBLW
01335  0340 00 1 00000    S5    CAS     **,1
01336  0020 00 0 01340          TRA     *+2
01337  0020 00 0 01342          TRA     S7
01340  2 00005 1 01335    S6    TIX     S5,1,LBLW
01341  0020 00 0 01364          TRA     S1
01342  0774 00 4 00000    S7    AXT     0,4
01343  1 00001 1 01344    S8    TXI     *+1,1,1
01344  1 00001 2 01345          TXI     *+1,2,1
01345  0500 60 0 01333          CLA*    S3
01346  0340 60 0 01335          CAS*    S5
01347  0020 00 0 01351          TRA     *+2
01350  1 00001 4 01351          TXI     *+1,4,1
01351 -3 00004 2 01343          TXL     S8,2,LBLW-1
01352 -3 00003 4 01332          TXL     S9,4,LBLW-2
01353  0534 00 4 01366          LXA     S4,4
01354  0500 60 4 00004          CLA*    4,4
01355  0400 00 0 01403          ADD     1D
01356  0601 60 4 00004          STO*    4,4
01357 -0754 00 1 00000          PXD     0,1
01360  0765 00 0 00043          LRS     35
01361  0221 00 0 01402          DVP     ALL
01362 -0600 60 4 00005          STQ*    5,4
01363  0020 00 0 01332          TRA     S9
01364  0774 00 1 00000    S1    AXT     **,1
01365  0774 00 2 00000    S2    AXT     **,2
01366  0774 00 4 00000    S4    AXT     **,4
01367  0020 00 4 00006          TRA     6,4
01370 -0500 60 4 00001    ADD24 CAL*    1,4
01371  0400 60 4 00002          ADD*    2,4
01372 -0320 00 0 01400          ANA     24BMS
01373  0602 60 4 00002          SLW*    2,4
01374  0020 00 4 00003          TRA     3,4
01375 +000000000001       1A    DEC     1
01376 +233000000000       NORM  OCT     233000000000
01377 +234000000000       BIG   OCT     234000000000
01400 +000077777777       24BMS OCT     77777777
01401 +000000077777       15BMS OCT     77777
01402  0 00000 0 00005    ALL   PZE     LBLW
                    00005 LBLW  EQU     5
01403  0 00001 0 00000    1D    PZE     0,0,1
01404 +000000000177             OCT     177
```

```
BUF(3)
SYMB
KHITS
```

SYM(1, KNOT), STMB, KNOT, KHITS, KHIT

look for , base of tbl , # in , # of times , last hit

TOP

sequential search

KHITS

K = INDEX OF LAST HIT

```
01405 +000000000377              OCT     377
01406 +000000007777              OCT     7777
01407 +000000077777              OCT     77777
01410   0 00000 0 00000   MSTBL  PZE
                                 END
```

1411 IS THE FIRST LOCATION NOT USED BY THIS PROGRAM

REFERENCES TO DEFINED SYMBOLS

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1342	S7	1337
1343	S8	1351
1332	S9	1352, 1363
1257	U1	1232
1260	U2	1233
1261	U4	1234
1246	U5	1237
1252	U6	1242
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53	MOD	12, 13, 37
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1263	PAK	
1223	SH1	1215
77	TBL	16, 77
76	BITS	46
1201	BOPS	27
56	DWRD	6
5	LBLW	1334, 1340, 1351, 1352, 1402, 1403
66	MTBL	41
1376	NORM	1204
54	OWRD	23
1202	SOPS	31
17	SWT1	22
27	SWT2	21
41	SWT3	44
46	SWT4	43
50	SXR1	0, 45
1232	UPAK	
55	UWRD	4
1401	15BMS	1206, 1227
1400	24BMS	1372
1370	ADD24	
52	BLNKS	1, 14