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\* NAME: FRTN DWG 70180463000 REV J

\* DESCRIPTION: EXPANDED FORTRAN IV COMPILER

## \* REVISION HISTORY

| REV | DATE     | ECO NO   |
|-----|----------|----------|
| J   |          |          |
| H   | 05-05-71 | 9501     |
| G   | 12-01-70 | 8954     |
| F   | 08-14-70 | 8504     |
| E   | 02-09-70 | 7893     |
| D   | 12-18-68 | 5249     |
| C   | 10-31-66 | 3824     |
| B   | 09-19-66 | 3476     |
| A   |          | RELEASED |

## \* DOCUMENTATION REFERENCES

| TITLE                 | DOC NO      |
|-----------------------|-------------|
| FORTRAN USER'S MANUAL | 70130071364 |

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\*\*\*\*\*FRTN0032  
EJCTFRTN0033

|                   |                |
|-------------------|----------------|
| APPROVED REVISION |                |
| REV               | J              |
| ECO NO            | Not Available. |
| DATE              | 23rd March 73. |

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## \* PURPOSE

THIS PROGRAM IS DESIGNED TO COMPILE ASA STANDARD FORTRAN IV  
PROGRAMS IN ONE PASS, GENERATING OPTIMUM OBJECT CODE FOR THE  
DDP-516 OR H-316.

## \* RESTRICTIONS

MINIMUM 8K CORE STORAGE

## \* STORAGE

6593 (DECIMAL)  
14701 (OCTAL)

## \* USE

\*\*\*\*\*  
\*FORTRAN-IV OPERATING PROCEDURE\*  
\*\*\*\*\*

1. LOAD THE COMPILER SYSTEM TAPE USING STANDARD 'PAL-MODE'  
LOADING PROCEDURES.
2. SET THE (A) REGISTER FOR THE DESIRED INPUT/OUTPUT DEVICE  
SELECTION AS DESCRIBED BELOW, SET (P) TO '1000, PRESS  
START.
3. INPUT/OUTPUT DEVICE SELECTION (BITS SET IN (A) ON ENTRY).....  
1.....IF SET, CERTAIN ERROR CHECKS ARE NOT MADE. THIS  
OPTION IS USED WHEN COMPILING THOSE PARTS OF THE

FRTN0034  
FRTN0035  
FRTN0036  
FRTN0037  
FRTN0038  
FRTN0039  
FRTN0040  
FRTN0041  
FRTN0042  
FRTN0043  
FRTN0044  
FRTN0045  
FRTN0046  
FRTN0047  
FRTN0048  
FRTN0049  
FRTN0050  
FRTN0051  
FRTN0052  
FRTN0053  
FRTN0054  
FRTN0055  
FRTN0056  
FRTN0057  
FRTN0058  
FRTN0059  
FRTN0060  
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FRTN0062  
FRTN0063  
FRTN0064  
FRTN0065  
FRTN0066  
FRTN0067  
FRTN0068  
FRTN0069  
FRTN0070

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0071      *      LIBRARY WRITTEN IN FORTRAN LANGUAGE AND IT ALLOWS THE FRTN0071
0072      *      LIBRARY TO TAKE ADVANTAGE OF THE COMPILER'S LOGIC TO FRTN0072
0073      *      GENERATE SPECIAL CODING. FRTN0073
0074      * FRTN0074
0075      * 2.....IF SET, THE SYMBOLIC LISTING IS EXPANDED TO INCLUDE FRTN0075
0076      *      SIDE-BY-SIDE OCTAL INFORMATION. FRTN0076
0077      * FRTN0077
0078      * 3.....IF SET, THE SYMBOLIC LISTING IS INHIBITED (AS LONG FRTN0078
0079      *      AS BIT 2 IS NOT SET). FRTN0079
0080      * FRTN0080
0081      * 4.....IF SET, THE SYMBOLIC LISTING WILL CONTAIN INFORM- FRTN0081
0082      *      ATION CONCERNING OBJECT BLOCK TEXT (NOT FOR NORMAL FRTN0082
0083      *      USAGE). FRTN0083
0084      * FRTN0084
0085      * 5.....IF SET, THE COMPUTER WILL HALT BEFORE AND FRTN0085
0086      *      AFTER OUTPUTTING EACH BLOCK OF OBJECT TEXT. FRTN0086
0087      *      THIS IS TO ALLOW FOR TURNING THE ASR-33 FRTN0087
0088      *      PUNCH ON AND OFF AND THUS AVOID EXTRANEOUS FRTN0088
0089      *      DATA BEING PUNCHED ON OBJECT TAPE. FRTN0089
0090      * FRTN0090
0091      * 6.....IF SET, THE OBJECT CODING BEING GENERATED WILL IN- FRTN0091
0092      *      CLUDE TRACE COUPLING INFORMATION REGARDLESS OF FRTN0092
0093      *      ANY TRACE STATEMENTS WITHIN THE PROGRAM (OPERATOR FRTN0093
0094      *      OVERRIDE). FRTN0094
0095      * FRTN0095
0096      * 7.....UNUSED FRTN0096
0097      * FRTN0097
0098      * 8-10...INPUT DEVICE SELECTION FRTN0098
0099      *      0 = REPROCESS LAST CARD. FRTN0099
0100      *      1 = ASR-33/35 KEYBOARD (OR ITS PAPER TAPE READER). FRTN0100
0101      *      2 = HIGH SPEED PAPER TAPE FRTN0101
0102      *      3 = CARD READER FRTN0102
0103      *      4 = LINE PRINTER (NOT USED FOR INPUT) FRTN0103
0104      *      5 = MAGNETIC TAPE (UNIT 2) FRTN0104
0105      *      6 = DISC FRTN0105
0106      *      7 = * SPARE * FRTN0106
0107      * FRTN0107
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```
0108      *      11-13..BINARY OUTPUT SELECTION FRTN0108
0109      *      0 = SUPPRESS BINARY OUTPUT. FRTN0109
0110      *      1 = ASR-33/35 BINARY OUTPUT. FRTN0110
0111      *      2 = HIGH SPEED PAPER TAPE FRTN0111
0112      *      3 = CARD PUNCH FRTN0112
0113      *      4 = LINE PRINTER (NOT USED FOR OUTPUT) FRTN0113
0114      *      5 = MAGNETIC TAPE (UNIT 4) FRTN0114
0115      *      6 = DISC FRTN0115
0116      *      7 = * SPARE * FRTN0116
0117      * FRTN0117
0118      *      14-16..SYMBOLIC LISTING SELECTION FRTN0118
0119      *      0 = SUPPRESS ALL SYMBOLIC LISTINGS. FRTN0119
0120      *      1 = ASR-33/35 KEYBOARD. FRTN0120
0121      *      2 = HIGH SPEED PAPER TAPE (NOT USED FOR LISTING) FRTN0121
0122      *      3 = CARD READER/PUNCH (NOT USED FOR LISTING) FRTN0122
0123      *      4 = LINE PRINTER FRTN0123
0124      *      5 = MAGNETIC TAPE (UNIT 3) FRTN0124
0125      *      6 = DISC FRTN0125
0126      *      7 = * SPARE * FRTN0126
0127      * FRTN0127
0128      * FRTN0128
0129      *      4. WHEN BINARY TAPE IS BEING GENERATED, THE COMPILER FRTN0129
0130      *      AUTOMATICALLY TURNS ON THE TAPE PUNCH AND PUNCHES OUT A FRTN0130
0131      *      LENGTH OF LEADER. AFTER THE END-OF-JOB IS TYPED, A LENGTH OFFRTN0131
0132      *      TRAILER IS PUNCHED BEFORE TURNING OFF THE PUNCH, AND THE LINEFRTN0132
0133      *      PRINTER IS ADVANCED TO THE NEXT PAPER SEAM. PRESS 'START' FRTN0133
0134      *      TO PROCESS THE NEXT PROGRAM (BATCH COMPILING). FRTN0134
0135      * FRTN0135
0136      *      FOR ASR BINARY OUTPUT, NO LEADER OR TRAILER IS PROVIDED. FRTN0136
0137      *      THE SETTING OF BIT 5 IS ONLY NECESSARY WHEN THE ASR-33 FRTN0137
0138      *      IS SELECTED FOR BINARY OUTPUT. FRTN0138
0139      * FRTN0139
0140      * FRTN0140
0141      * ERRORS FRTN0141
0142      * FRTN0142
0143      * THE ERROR MESSAGES OUTPUT BY THIS COMPILER ARE LISTED ON A FRTN0143
0144      * SEPRATE DOCUMENT FOR EASE OF DISTRIBUTION. FRTN0144
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★ EJCT

FRTN0145  
FRTN0146

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\*\*\*\*\*  
\*DATA POOL ENTRY FORMATS\*  
\*\*\*\*\*

THE DATA POOL CONSISTS OF FOUR FORMS OF INFORMATION

1. THE ASSIGNMENT TABLE CONSISTS OF 5 WORDS, STARTS AT THE END OF THE COMPILER AND EXTENDS TOWARD THE END OF MEMORY.

```
TCCCCCCCCCCCCCCCC...DP(A+4)
CCCCCCCCCCCCCCCCC...DP(A+3)
CCCCCCCCCCCCCCCCC...DP(A+2)
IIAAAAAAAAAAAAAAAA...DP(A+1)
NRRRMMMLLLLLLLLLL...DP(A)
```

```
T = TRACE TAG
D = DATA TAG
C = SIX 8-BIT CHAR. OR BINARY CONSTANT
I = ITEM USAGE (IJ)
    0 = NO USAGE          2 = VAR/CONSTANT
    1 = SUBPROGRAM       3 = ARRAY
A = ASSIGNMENT ADDRESS
N = NAME TAG (NT)
    0 = NAME              1 = CONSTANT
R = ADDRESS TYPE (AT)
    0 = ABSOLUTE          3 = STRING-REL
    1 = RELATIVE          4 = COMMON
    2 = STRING-ABS        5 = DUMMY
M = ITEM MODE (IM)
    1 = INTEGER           5 = COMPLEX
    2 = REAL              6 = DOUBLE
    3 = LOGICAL
    4 = COM/EQU LINK
```

2. THE DO TABLE 'FLOATS' ON TOP OF THE ASSIGNMENT TABLE AND CONTAINS THE INFORMATION NEEDED TO CLOSE-OUT A DO-LOOP. EACH ENTRY IS 5 WORDS.

FRTN0147  
FRTN0148  
FRTN0149  
FRTN0150  
FRTN0151  
FRTN0152  
FRTN0153  
FRTN0154  
FRTN0155  
FRTN0156  
FRTN0157  
FRTN0158  
FRTN0159  
FRTN0160  
FRTN0161  
FRTN0162  
FRTN0163  
FRTN0164  
FRTN0165  
FRTN0166  
FRTN0167  
FRTN0168  
FRTN0169  
FRTN0170  
FRTN0171  
FRTN0172  
FRTN0173  
FRTN0174  
FRTN0175  
FRTN0176  
FRTN0177  
FRTN0178  
FRTN0179  
FRTN0180  
FRTN0181  
FRTN0182  
FRTN0183

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```
0184 * OOTTTTTTTTTTTTTT FRTN0184
0185 * OOOXXXXXXXXXXXXX FRTN0185
0186 * OOUUUUUUUUUUUUUJ FRTN0186
0187 * OONNNNNNNNNNNNNN FRTN0187
0188 * I = INITIAL VALUE/OR RPL FRTN0188
0189 * T = TERMINAL VALUE FRTN0189
0190 * X = INDEX FRTN0190
0191 * U = INCREMENT FRTN0191
0192 * N = STATEMENT NUMBER FRTN0192
0193 *
0194 *
0195 * 3. THE EXPRESSION TABLE (AOI TABLE) 'FLOATS' ON TOP FRTN0193
0196 * THE DO TABLE AND CONSISTS OF 2 WORD ENTRIES. FRTN0194
0197 *
0198 * NOOOOOOOOIIIIIII.....DP(I+1) FRTN0195
0199 * COAAAAAAAAAAAAAAAA.....DP(I) FRTN0196
0200 * N = NEGATION INDICATOR FRTN0197
0201 * O = OPERATOR FRTN0198
0202 * I = INDEX (OPERATOR LEVEL) FRTN0199
0203 * A = ASSIGNMENT TABLE REFERENCE FRTN0200
0204 * 4. THE TRIAD TABLE IS USED TO OPTIMIZE EXPRESSIONS AND FRTN0201
0205 * IS AT THE END OF MEMORY EXTENDING DOWN TOWARDS THE FRTN0202
0206 * COMPILER. EACH ENTRY IS THREE WORDS LONG. FRTN0203
0207 *
0208 * SOOOOOOOOOPPPPP.....DP(L+2) FRTN0204
0209 * OOIIIIIIIIIIII.....DP(L+1) FRTN0205
0210 * OOOOOOOOOOOOOOO.....DP(L) FRTN0206
0211 * S = TEMP STORAGE INDICATOR FRTN0207
0212 * P = OPERATOR FRTN0208
0213 * 1 = FIRST OPERAND ADDRESS FRTN0209
0214 * 2 = SECOND OPERAND ADDRESS FRTN0210
EJCT FRTN0211
FRTN0212
FRTN0213
FRTN0214
```

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```
0215 * EXTERNAL LINKAGE DECLARATIONS FRTN0215
0216 * FRTN0216
0217 * FRTN0217
0218 * FRTN0218
0219 * ENT NAMF1,NMF1 FRTN0219
0220 * ENT OR00 FRTN0220
0221 * ENT TCF FRTN0221
0222 * ENT IS00 FRTN0222
0223 * ENT A1 FRTN0223
0224 * ENT TS00 FRTN0224
0225 * ENT LSTF FRTN0225
0226 * ENT FS00 FRTN0226
0227 * ENT XN00 FRTN0227
0228 * ENT ON00 FRTN0228
0229 * ENT A FRTN0229
0230 * ENT ID FRTN0230
0231 * ENT ID1 FRTN0231
0232 * ENT OS00 FRTN0232
0233 * ENT LSTP FRTN0233
0234 * ENT NF00 FRTN0234
0235 * ENT IPTR FRTN0235
0236 * ENT OB00 FRTN0236
0237 * ENT R2B FRTN0237
0238 * ENT CH00 FRTN0238
0239 * ENT NT FRTN0239
0240 * ENT AF FRTN0240
0241 * ENT ISTR FRTN0241
0242 * ENT II00 FRTN0242
0243 * ENT OQ00 FRTN0243
0244 * ENT NA00 FRTN0244
0245 * ENT IC00 FRTN0245
0246 * ENT IT00 FRTN0246
0247 * ENT SY00 FRTN0247
0248 * ENT B6 FRTN0248
0249 * ENT AF00 FRTN0249
0250 * ENT OC00 FRTN0250
0251 * ENT NP00 FRTN0251
```

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|      |     |      |          |
|------|-----|------|----------|
| 0252 | ENT | IR00 | FRTN0252 |
| 0253 | ENT | SBF  | FRTN0253 |
| 0254 | ENT | RPL  | FRTN0254 |
| 0255 | ENT | TC   | FRTN0255 |
| 0256 | ENT | LIST | FRTN0256 |
| 0257 | ENT | MSPL | FRTN0257 |
| 0258 | ENT | EX00 | FRTN0258 |
| 0259 | ENT | IG00 | FRTN0259 |
| 0260 | ENT | IA00 | FRTN0260 |
| 0261 | ENT | CC   | FRTN0261 |
| 0262 | ENT | TG00 | FRTN0262 |
| 0263 | ENT | ER00 | FRTN0263 |
| 0264 | ENT | IV00 | FRTN0264 |
| 0265 | ENT | OCI  | FRTN0265 |
| 0266 | ENT | OCI7 | FRTN0266 |
| 0267 | ENT | OCI8 | FRTN0267 |
| 0268 | ENT | CN00 | FRTN0268 |
| 0269 | ENT | CERR | FRTN0269 |
| 0270 | ENT | C1R2 | FRTN0270 |
| 0271 | ENT | C2R2 | FRTN0271 |
| 0272 | ENT | CSR4 | FRTN0272 |
| 0273 | ENT | C3R2 | FRTN0273 |
| 0274 | ENT | CSR1 | FRTN0274 |
| 0275 | ENT | FS10 | FRTN0275 |
| 0276 | ENT | KASP | FRTN0276 |
| 0277 | ENT | CI   | FRTN0277 |
| 0278 | ENT | PR1  | FRTN0278 |
| 0279 | ENT | LIBF | FRTN0279 |
| 0280 | *   |      | FRTN0280 |
| 0281 | EXT | OPST | FRTN0281 |
| 0282 | EXT | HEAD | FRTN0282 |
| 0283 | EXT | WAIT | FRTN0283 |
| 0284 | EXT | TERM | FRTN0284 |
| 0285 | EXT | REQU | FRTN0285 |
| 0286 | EXT | CONN | FRTN0286 |
| 0287 | EXT | DISC | FRTN0287 |
| 0288 | EXT | SCHE | FRTN0288 |

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|------|-----|------|----------|
| 0289 | EXT | PRIN | FRTN0289 |
| 0290 | EXT | ASMB | FRTN0290 |
| 0291 | *   |      | FRTN0291 |
| 0292 | *   |      | FRTN0292 |
| 0293 | *   |      | FRTN0293 |
| 0294 |     | EJCT | FRTN0294 |

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0295
0296
0297
0298
0299
0300
0301
0302
0303
0304
0305
0306
0307 00100  C 010057
0308 00101  C 017400
0309
0310
0311 00102  C 001061
0312 00103  C 001152
0313 00104  C 001157
0314 00105  C 001240
0315 00106  C 001253
0316 00107  C 001307
0317 00110  C 001350
0318 00111  C 002224
0319 00112  C 002232
0320 00113  C 002242
0321 00114  C 007645
0322 00115  C 002253
0323 00116  C 002260
0324 00117  C 002264
0325 00120  C 002346
0326 00121  C 002341
0327
0328
0329 00122  C 002352
0330 00123  C 002360
0331 00124  C 003637
```

```

*
  ABS
  SETB '100
  ORG  '100
  THIS HELPS ON TIME SHARE
*
*****
* DIRECTORY OF FORTRAN IV COMPILER *
*****
*
*.....ENTRANCE GROUP
  DAC  A3      COMPILER ENTRANCE/INITIALIZE
  DAC  DP      DATA POOL START
*
*.....INPUT GROUP
  DAC  IC00    INPUT COLUMN
  DAC  UC00    UNINPT COLUMN
  DAC  CH00    INPUT CHARACTER
  DAC  ID00    INPUT DIGIT
  DAC  IA00    INPUT (A) CHARACTERS
  DAC  FN00    FINISH OPERATOR
  DAC  DN00    INPUT DNA
  DAC  II00    INPUT ITEM
  DAC  OP00    INPUT OPERAND
  DAC  NA00    INPUT NAME
  DAC  IG00    INPUT INTEGER
  DAC  IV00    INPUT INTEGER VARIABLE/CONSTANT
  DAC  IR00    INPUT INTEGER VARIABLE
  DAC  IS00    INPUT STATEMENT NUMBER
  DAC  XN00    EXAMINE NEXT CHARACTER
  DAC  SY00    INPUT SYMPOLE
*
*.....TEST GROUP
  DAC  TS00    ALL CHARACTER TEST (EXCEPT C/R)
  DAC  IP00    )-INPT OPERATOR
  DAC  A1      C/R TEST
```

FRTN0295  
FRTN0296  
FRTN0297  
FRTN0298  
FRTN0299  
FRTN0300  
FRTN0301  
FRTN0302  
FRTN0303  
FRTN0304  
FRTN0305  
FRTN0306  
FRTN0307  
FRTN0308  
FRTN0309  
FRTN0310  
FRTN0311  
FRTN0312  
FRTN0313  
FRTN0314  
FRTN0315  
FRTN0316  
FRTN0317  
FRTN0318  
FRTN0319  
FRTN0320  
FRTN0321  
FRTN0322  
FRTN0323  
FRTN0324  
FRTN0325  
FRTN0326  
FRTN0327  
FRTN0328  
FRTN0329  
FRTN0330  
FRTN0331

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```
0332 00125  C 010132
0333 00126  C 002401
0334 00127  C 002407
0335 00130  C 002415
0336 00131  C 002424
0337 00132  C 002433
0338 00133  C 002372
0339
0340
0341 00134  C 002762
0342 00135  C 003222
0343 00136  C 003274
0344 00137  C 003317
0345 00140  C 003426
0346 00141  C 003443
0347 00142  C 003464
0348 00143  C 003477
0349 00144  C 003571
0350 00145  C 003604
0351 00146  C 003612
0352 00147  C 003623
0353 00150  C 003520
0354
0355
0356 00151  C 003633
0357 00152  C 003635
0358 00153  C 003641
0359 00154  C 003723
0360 00155  C 004032
0361 00156  C 004157
0362 00157  C 004272
0363
0364
0365 00160  C 007602
0366 00161  C 007625
0367 00162  C 007634
0368 00163  C 007664
```

```

  DAC  B1
  DAC  NU00
  DAC  NC00
  DAC  NS00
  DAC  AT00
  DAC  IT00
  DAC  NR00
  * OR C/R TEST
  NO USAGE TEST
  NON CONSTANT TEST
  NON SUBPROGRAM TEST
  ARRAY TEST
  INTEGER TEST
  NON REL TEST
*
*.....ASSIGNMENT GROUP
  DAC  AS00    ASSIGN ITEM
  DAC  TG00    TAG SUBPROGRAM
  DAC  TV00    TAG VARIABLE
  DAC  FA00    FETCH ASSIGN
  DAC  FL00    FETCH LINK
  DAC  KT00    D(0)= SIZE OF ARRAY DEFLECTION
  DAC  DM00    DEFINE IM
  DAC  DA00    DEFINE AF
  DAC  AF00    DEFINE AFT
  DAC  LO00    DEFINE LOCATION
  DAC  AI00    ASSIGN INTEGER CONSTANT
  DAC  AA00    ASSIGN SPECIAL
  DAC  BUD     BUILD ASSIGNMENT TABLE ENTRY
*
*.....CONTROL GROUP
  DAC  B6      JUMP
  DAC  C5      ILL TERM
  DAC  C6      CONTINJE
  DAC  C7      STATEMENT INPUT
  DAC  C8      STATEMENT SCAN
  DAC  A9      STATEMENT IDENTIFICATION
  DAC  NP00    FIRST NON-SPEC CHECK
*
*.....SPECIFICATIONS GROUP
  DAC  EL00    EXCHANGE LINKS
  DAC  NM00    NON COMMON TEST
  DAC  ND00    NON DJMMY OR SUBPROGRAM TEST
  DAC  SC00    INPUT SUBSCRIPT
```

FRTN0332  
FRTN0333  
FRTN0334  
FRTN0335  
FRTN0336  
FRTN0337  
FRTN0338  
FRTN0339  
FRTN0340  
FRTN0341  
FRTN0342  
FRTN0343  
FRTN0344  
FRTN0345  
FRTN0346  
FRTN0347  
FRTN0348  
FRTN0349  
FRTN0350  
FRTN0351  
FRTN0352  
FRTN0353  
FRTN0354  
FRTN0355  
FRTN0356  
FRTN0357  
FRTN0358  
FRTN0359  
FRTN0360  
FRTN0361  
FRTN0362  
FRTN0363  
FRTN0364  
FRTN0365  
FRTN0366  
FRTN0367  
FRTN0368

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|      |       |   |        |     |      |                             |          |
|------|-------|---|--------|-----|------|-----------------------------|----------|
| 0369 | 00164 | C | 007755 | DAC | IL00 | INPUT LIST ELEMENT          | FRTN0369 |
| 0370 | 00165 | C | 010031 | DAC | R1   | FUNCTION                    | FRTN0370 |
| 0371 | 00166 | C | 010033 | DAC | R2   | SUBROUTINE                  | FRTN0371 |
| 0372 | 00167 | C | 010067 | DAC | A3   | INTEGER                     | FRTN0372 |
| 0373 | 00170 | C | 010071 | DAC | A4   | REAL                        | FRTN0373 |
| 0374 | 00171 | C | 010073 | DAC | A5   | DOUBLE PRECISION            | FRTN0374 |
| 0375 | 00172 | C | 010075 | DAC | A6   | COMPLEX                     | FRTN0375 |
| 0376 | 00173 | C | 010077 | DAC | A7   | LOGICAL                     | FRTN0376 |
| 0377 | 00174 | C | 010137 | DAC | B2   | EXTERNAL                    | FRTN0377 |
| 0378 | 00175 | C | 010145 | DAC | B3   | DIMENSION                   | FRTN0378 |
| 0379 | 00176 | C | 010226 | DAC | B7   | INPUT DIMENSION             | FRTN0379 |
| 0380 | 00177 | C | 010233 | DAC | B4   | COMMON                      | FRTN0380 |
| 0381 | 00200 | C | 010304 | DAC | B5   | EQUIVALENCE                 | FRTN0381 |
| 0382 | 00201 | C | 010344 | DAC | C2   | RELATE COMMON ITEMS         | FRTN0382 |
| 0383 | 00202 | C | 010410 | DAC | C3   | GROUP EQUIVALENCE           | FRTN0383 |
| 0384 | 00203 | C | 010661 | DAC | C4   | ASSIGN SPECIFICATIONS       | FRTN0384 |
| 0385 | 00204 | C | 010732 | DAC | W4   | DATA                        | FRTN0385 |
| 0386 | 00205 | C | 011305 | DAC | R3   | BLOCK DATA                  | FRTN0386 |
| 0387 | 00206 | C | 011315 | DAC | TRAC | TRACE                       | FRTN0387 |
| 0388 |       |   |        |     |      |                             | FRTN0388 |
| 0389 |       |   |        |     |      |                             | FRTN0389 |
| 0390 | 00207 | C | 004405 | DAC | V3   | IF                          | FRTN0390 |
| 0391 | 00210 | C | 004526 | DAC | R7   | GO TO                       | FRTN0391 |
| 0392 | 00211 | C | 004606 | DAC | IB00 | INPUT BRANCH LIST           | FRTN0392 |
| 0393 | 00212 | C | 004636 | DAC | W3   | ASSIGN                      | FRTN0393 |
| 0394 | 00213 | C | 004702 | DAC | C9   | DO                          | FRTN0394 |
| 0395 | 00214 | C | 004724 | DAC | V7   | END FILE                    | FRTN0395 |
| 0396 | 00215 | C | 004717 | DAC | V6   | BACKSPACE                   | FRTN0396 |
| 0397 | 00216 | C | 004726 | DAC | V8   | REWIND                      | FRTN0397 |
| 0398 | 00217 | C | 004735 | DAC | V5   | READ                        | FRTN0398 |
| 0399 | 00220 | C | 004737 | DAC | V4   | WRITE                       | FRTN0399 |
| 0400 | 00221 | C | 005133 | DAC | V2   | FORMAT                      | FRTN0400 |
| 0401 | 00222 | C | 005320 | DAC | SI00 | INPUT FORMAT STRING         | FRTN0401 |
| 0402 | 00223 | C | 005313 | DAC | IN00 | INPUT NUMERIC FORMAT STRING | FRTN0402 |
| 0403 | 00224 | C | 005305 | DAC | NZ00 | NON ZERO STRING TEST        | FRTN0403 |
| 0404 | 00225 | C | 005432 | DAC | W8   | PAUSE                       | FRTN0404 |
| 0405 | 00226 | C | 005371 | DAC | W7   | STOP                        | FRTN0405 |

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|      |       |   |        |     |      |                              |          |
|------|-------|---|--------|-----|------|------------------------------|----------|
| 0406 | 00227 | C | 005435 | DAC | R8   | CALL                         | FRTN0406 |
| 0407 | 00230 | C | 005452 | DAC | G2   | ASSIGNMENT STATEMENT         | FRTN0407 |
| 0408 | 00231 | C | 005463 | DAC | R9   | RETURN                       | FRTN0408 |
| 0409 | 00232 | C | 005507 | DAC | G1   | STATEMENT FUNCTION           | FRTN0409 |
| 0410 | 00233 | C | 005556 | DAC | W5   | END                          | FRTN0410 |
| 0411 |       |   |        |     |      |                              | FRTN0411 |
| 0412 |       |   |        |     |      |                              | FRTN0412 |
| 0413 | 00234 | C | 006042 | DAC | P000 | INPUT CHAR AND OUTPUT PACK   | FRTN0413 |
| 0414 | 00235 | C | 006046 | DAC | H500 | TRANSMIT HOLLERITH STRING    | FRTN0414 |
| 0415 | 00236 | C | 006064 | DAC | DP00 | DO INPUT                     | FRTN0415 |
| 0416 | 00237 | C | 006131 | DAC | DS00 | DO INITIALIZE                | FRTN0416 |
| 0417 | 00240 | C | 006155 | DAC | DQ00 | DO TERMINATION               | FRTN0417 |
| 0418 | 00241 | C | 006225 | DAC | EX00 | EXPRESSION                   | FRTN0418 |
| 0419 | 00242 | C | 007125 | DAC | CA00 | SCAN                         | FRTN0419 |
| 0420 | 00243 | C | 007411 | DAC | ST00 | TRIAD SEARCH                 | FRTN0420 |
| 0421 | 00244 | C | 007456 | DAC | TC00 | TEMP STORE CHECK             | FRTN0421 |
| 0422 | 00245 | C | 007470 | DAC | ET00 | ENTER TRIAD                  | FRTN0422 |
| 0423 | 00246 | C | 007514 | DAC | GE00 | GENERATE SUBPROGRAM ENTRANCE | FRTN0423 |
| 0424 |       |   |        |     |      |                              | FRTN0424 |
| 0425 |       |   |        |     |      |                              | FRTN0425 |
| 0426 | 00247 | C | 011332 | DAC | OL00 | OUTPUT OBJECT LINK           | FRTN0426 |
| 0427 | 00250 | C | 011337 | DAC | OI00 | OUTPUT I/O LINK              | FRTN0427 |
| 0428 | 00251 | C | 011363 | DAC | CN00 | CALL NAME                    | FRTN0428 |
| 0429 | 00252 | C | 011444 | DAC | OK00 | OUTPUT PACK                  | FRTN0429 |
| 0430 | 00253 | C | 011471 | DAC | OB00 | OUTPUT OA                    | FRTN0430 |
| 0431 | 00254 | C | 011701 | DAC | OT00 | OUTPUT TRIADS                | FRTN0431 |
| 0432 | 00255 | C | 012247 | DAC | OM00 | OUTPUT ITEM                  | FRTN0432 |
| 0433 | 00256 | C | 013072 | DAC | OR00 | OUTPUT REL                   | FRTN0433 |
| 0434 | 00257 | C | 013251 | DAC | OA00 | OUTPUT ABS                   | FRTN0434 |
| 0435 | 00260 | C | 013257 | DAC | OS00 | OUTPUT STRING                | FRTN0435 |
| 0436 | 00261 | C | 013402 | DAC | OW00 | OUTPUT WORD                  | FRTN0436 |
| 0437 | 00262 | C | 013476 | DAC | PU00 | PICKUP                       | FRTN0437 |
| 0438 | 00263 | C | 013531 | DAC | FS00 | FLUSH                        | FRTN0438 |
| 0439 | 00264 | C | 012754 | DAC | TRSE | OUTPUT TRACE COUPLING        | FRTN0439 |
| 0440 | 00265 | C | 013321 | DAC | PRSP | SET BUFFER TO SPACES         | FRTN0440 |
| 0441 |       |   |        |     |      |                              | FRTN0441 |
| 0442 |       |   |        |     |      |                              | FRTN0442 |

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|------|-------|---|--------|------|------|------------------------------|----------|
| 0443 | 00266 | 0 | 002442 | DAC  | AD3  | ADD TWO 3 WORD INTEGERS      | FRTN0443 |
| 0444 | 00267 | 0 | 002442 | DAC  | IM00 | MULTIPLY (A) BY (B)          | FRTN0444 |
| 0445 | 00270 | 0 | 002501 | DAC  | NF00 | SET F\$ INTO NAMF            | FRTN0445 |
| 0446 | 00271 | 0 | 002510 | DAC  | BLNK | SET AREA TO ZEROS            | FRTN0446 |
| 0447 | 00272 | 0 | 002523 | DAC  | MOV3 | MOVE 3 WORDS TO TEMP STORAGE | FRTN0447 |
| 0448 | 00273 | 0 | 002533 | DAC  | CIB  | COMPARE IBUF TO A CONSTANT   | FRTN0448 |
| 0449 | 00274 | 0 | 002555 | DAC  | PACK |                              | FRTN0449 |
| 0450 | 00275 | 0 | 002615 | DAC  | ER00 | ERROR OUTPUT                 | FRTN0450 |
| 0451 | 00276 | 0 | 002675 | DAC  | SRT  | SHIFT RIGHT 1 (TRIPLE PRES.) | FRTN0451 |
| 0452 | 00277 | 0 | 002720 | DAC  | SFT  | SHIFT LEFT 1 (TRIPLE PRES.)  | FRTN0452 |
| 0453 | 00300 | 0 | 002745 | DAC  | LIST |                              | FRTN0453 |
| 0454 |       |   |        | EJCT |      |                              | FRTN0454 |

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|------|-------|--------|----|-------|------|-----|----------|------------------------------------|----------|
| 0455 |       | *      |    |       |      |     | FRTN0455 |                                    |          |
| 0456 |       | *      |    |       |      |     | FRTN0456 |                                    |          |
| 0457 |       | *      |    |       |      |     | FRTN0457 |                                    |          |
| 0458 |       | *      |    |       |      |     | FRTN0458 |                                    |          |
| 0459 |       | *      |    |       |      |     | FRTN0459 |                                    |          |
| 0460 |       | *      |    |       |      |     | FRTN0460 |                                    |          |
| 0461 |       | *      |    |       |      |     | FRTN0461 |                                    |          |
| 0462 |       | *      |    |       |      |     | FRTN0462 |                                    |          |
| 0463 |       | *      |    |       |      |     | FRTN0463 |                                    |          |
| 0464 |       | *      |    |       |      |     | FRTN0464 |                                    |          |
| 0465 |       | *      |    |       |      |     | FRTN0465 |                                    |          |
| 0466 | 00025 | 0      | 00 | 00000 | AF   | PZE | 0        | ADDRESS FIELD                      | FRTN0466 |
| 0467 | 00026 | 0      | 00 | 00000 | AT   | PZE | 0        | ADDRESS TYPE                       | FRTN0467 |
| 0468 | 00027 | 0      | 00 | 00000 | CODE | PZE | 0        | OUTPUT CODE                        | FRTN0468 |
| 0469 | 00030 | 0      | 00 | 00000 | D0   | PZE | 0        | DIMENSIONS                         | FRTN0469 |
| 0470 | 00031 | 0      | 00 | 00000 | D1   | PZE | 0        |                                    | FRTN0470 |
| 0471 | 00032 | 0      | 00 | 00000 | D2   | PZE | 0        |                                    | FRTN0471 |
| 0472 | 00033 | 000000 |    |       | D3   | BSZ | 2        |                                    | FRTN0472 |
| 0473 | 00035 | 0      | 00 | 00000 | DF   | PZE | 0        | DATA FLAG                          | FRTN0473 |
| 0474 | 00036 | 0      | 00 | 00000 | R    | PZE | 0        |                                    | FRTN0474 |
| 0475 | 00037 | 0      | 00 | 00000 | DFL  | PZE | 0        | DELIMITER FLAG                     | FRTN0475 |
| 0476 | 00040 | 000000 |    |       | E    | GCT | 0        | EQUIVALENCE INDEX                  | FRTN0476 |
| 0477 | 00041 | 0      | 00 | 00000 | EP   | PZE | 0        | E-PRIME                            | FRTN0477 |
| 0478 | 00042 | 0      | 00 | 00000 | E0   | PZE | 0        | E-ZERO                             | FRTN0478 |
| 0479 | 00043 | 0      | 00 | 00000 | FTOP | PZE | 0        | OUTPUT COMMAND                     | FRTN0479 |
| 0480 | 00044 | 0      | 00 | 00000 | FLT1 | PZE | 0        | FETCH LINK CL POINTER LOCATION     | FRTN0480 |
| 0481 | 00045 | 0      | 00 | 00000 | F    | PZE | 0        | TRIAD TABLE INDEX                  | FRTN0481 |
| 0482 | 00046 | 0      | 00 | 00000 | CL   | PZE | 0        | ASSIGNMENT ITEMS UNPACKED          | FRTN0482 |
| 0483 | 00047 | 0      | 00 | 00000 | DT   | PZE | 0        |                                    | FRTN0483 |
| 0484 |       | *      |    |       |      |     |          |                                    | FRTN0484 |
| 0485 |       | *      |    |       |      |     |          |                                    | FRTN0485 |
| 0486 | 00051 | 000000 |    |       | NAMF | HLT |          | NAME FUNCTION                      | FRTN0486 |
| 0487 | 00052 | 000000 |    |       | NMF1 | ECU | NAMF+1   |                                    | FRTN0487 |
| 0488 | 00052 | 000000 |    |       |      | HLT |          | NAMF USES 3 CELLS, SHARING WITH NS | FRTN0488 |
| 0489 | 00053 | 000000 |    |       | NS   | HLT |          | NO. OF SUBSCRIPTS                  | FRTN0489 |
| 0490 | 00054 | 000000 |    |       | NT   | HLT |          | NAME TAG                           | FRTN0490 |
| 0491 | 00055 | 000000 |    |       | NTF  | HLT |          | NAME TAG FLAG                      | FRTN0491 |

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|------|-------|--------|------|------|--------------------------------------------------------------------|----------|
| 0492 | 00056 | 000000 | NTID | HLT  | NO. OF WORDS IN TID                                                | FRTN0492 |
| 0493 | 00057 | 000000 | 01   | HLT  | OPERATOR 1                                                         | FRTN0493 |
| 0494 | 00060 | 000000 | 02   | HLT  | OPERATOR 2                                                         | FRTN0494 |
| 0495 | 00061 | 000000 | P    | HLT  |                                                                    | FRTN0495 |
| 0496 | 00062 | 000000 | PCNT | HLT  |                                                                    | FRTN0496 |
| 0497 | 00063 | 000000 | OCNT | HLT  | OUTPUT COUNT                                                       | FRTN0497 |
| 0498 | 00064 | 000000 | S1   | HLT  | SUBSCRIPT NO. 1                                                    | FRTN0498 |
| 0499 | 00065 | 000000 | S2   | HLT  | SUBSCRIPT NO. 2                                                    | FRTN0499 |
| 0500 | 00066 | 000000 | S3   | HLT  | SUBSCRIPT NO. 3                                                    | FRTN0500 |
| 0501 | 00067 | 000000 | TC   | HLT  | TERMINAL CHARACTER                                                 | FRTN0501 |
| 0502 | 00070 | 000000 | TT   | HLT  |                                                                    | FRTN0502 |
| 0503 | 00071 | 000000 | X    | HLT  | ARRAY INDICES                                                      | FRTN0503 |
| 0504 | 00072 | 000000 | X1   | HLT  |                                                                    | FRTN0504 |
| 0505 | 00073 | 000000 | X2   | HLT  |                                                                    | FRTN0505 |
| 0506 | 00074 | 000000 | X3   | HLT  |                                                                    | FRTN0506 |
| 0507 | 00075 | 000000 | X4   | HLT  |                                                                    | FRTN0507 |
| 0508 | 00076 | 000000 | ND   | HLT  | NO. OF DIMENSIONS                                                  | FRTN0508 |
| 0509 | 00077 | 000000 | IFLG | HLT  | I-FLAG                                                             | FRTN0509 |
| 0510 |       |        | *    |      |                                                                    | FRTN0510 |
| 0511 |       |        | *    |      | * NOTE: LOCATIONS '100-'624 ARE AVAILABLE FOR LOADER ASSIGNMENT OF | FRTN0511 |
| 0512 |       |        | *    |      | CROSS-SECTOR REFERENCES. HOWEVER, LOCATIONS '100-'112 ARE          | FRTN0512 |
| 0513 |       |        | *    |      | SPECIFICALLY ASSIGNED -- SEE NOTE ON DATA POOL REFERENCES          | FRTN0513 |
| 0514 |       |        | *    |      | PRECEDING 'START OF COMPILER'                                      | FRTN0514 |
| 0515 |       |        | *    |      |                                                                    | FRTN0515 |
| 0516 |       |        | ORG  | '625 |                                                                    | FRTN0516 |
| 0517 | 00625 | 000000 | A    | HLT  | ASSIGNMENT TABLE INDEX                                             | FRTN0517 |
| 0518 | 00626 | 000000 | I    | HLT  | EXPRESSION TABLE INDEX                                             | FRTN0518 |
| 0519 | 00627 | 000000 | L    | HLT  |                                                                    | FRTN0519 |
| 0520 | 00630 | 000000 | MFL  | HLT  | MODE FLAG                                                          | FRTN0520 |
| 0521 | 00631 | 000000 | SFF  | HLT  | FUNCTION FLAG                                                      | FRTN0521 |
| 0522 | 00632 | 000000 | SBF  | HLT  | SUBFUNCTION FLAG                                                   | FRTN0522 |
| 0523 | 00633 | 000000 | SXF  | HLT  | POSSIBLE CPX FLAG                                                  | FRTN0523 |
| 0524 | 00634 | 000000 | SPF  | HLT  | SPEC. FLAG                                                         | FRTN0524 |
| 0525 | 00635 | 000000 | TCF  | HLT  | TEMP STORE COUNT                                                   | FRTN0525 |
| 0526 | 00636 | 000000 | IFF  | HLT  | IF FLAG                                                            | FRTN0526 |
| 0527 | 00637 | 000000 | ABAR | HLT  | BASE OF ASSIGNMENT TABLE                                           | FRTN0527 |
| 0528 | 00640 | 000000 | XST  | HLT  | FIRST EXECUTABLE STATEMENT                                         | FRTN0528 |

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|------|-------|------------|--------|--------------------------------|-------------------------------------------|----------|
| 0529 | 00641 | 000000     | CFL    | HLT                            | NON FLAG                                  | FRTN0529 |
| 0530 | 00642 | 000000     | D      | HLT                            | DO INDEX                                  | FRTN0530 |
| 0531 | 00643 | 000000     | RPL    | HLT                            | RELATE PROGRAM LOCATION                   | FRTN0531 |
| 0532 | 00644 | 000000     | BDF    | HLT                            | BLOCK DATA FLAG                           | FRTN0532 |
| 0533 | 00645 | 000000     | TRF    | HLT                            | TRACE FLAG (END TRACE STATEMENT NO.)      | FRTN0533 |
| 0534 | 00646 | 000000     | TRFA   | HLT                            | POINTER TO FIRST VAR. OR ARRAY NAME I.    | FRTN0534 |
| 0535 |       |            | *      |                                | AND EXPRESSION (FOR USE BY TRACE).        | FRTN0535 |
| 0536 | 00647 | 000000     | SOF    | HLT                            | SUBSCRIPT CONSTANT FLAG (NON-ZERO IF SET) | FRTN0536 |
| 0537 | 00650 | 000000     | LIF    | HLT                            | LOGICAL IF FLAG                           | FRTN0537 |
| 0538 | 00651 | 000000     | LSTN   | HLT                            | LAST STATEMENT NO.                        | FRTN0538 |
| 0539 | 00652 | 000000     | LSTF   | HLT                            | LAST STATEMENT FLAG                       | FRTN0539 |
| 0540 | 00653 | 000000     | LSTP   | HLT                            | LAST STATEMENT STOP                       | FRTN0540 |
| 0541 |       |            | *      |                                |                                           | FRTN0541 |
| 0542 |       |            | *      |                                |                                           | FRTN0542 |
| 0543 |       |            | ORG    | '654                           |                                           | FRTN0543 |
| 0544 | 00654 | 177777     | EBAR   | OCT -1                         | E-BAR                                     | FRTN0544 |
| 0545 | 00655 | 000017     | DO     | OCT 17                         | DO TABLE INDEX (FLOATS ABOVE ASSIGNMENT)  | FRTN0545 |
| 0546 | 00656 | C 00 00111 | CC     | PZE '111                       | CARD COLUMN COUNTER                       | FRTN0546 |
| 0547 |       |            | *..... | CONSTANTS USED BY THE COMPILER |                                           | FRTN0547 |
| 0548 | 00657 | 000251     | K4     | OCT 251                        | 0)                                        | FRTN0548 |
| 0549 | 00660 | 000240     | K8     | OCT 240                        | 0-SPACE                                   | FRTN0549 |
| 0550 | 00661 | 000256     | K10    | OCT 256                        | 0.                                        | FRTN0550 |
| 0551 | 00662 | 000244     | K15    | OCT 244                        | 0\$                                       | FRTN0551 |
| 0552 | 00663 | 000324     | K34    | OCT 324                        | 0T                                        | FRTN0552 |
| 0553 | 00664 | 000311     | K43    | OCT 311                        | 0I                                        | FRTN0553 |
| 0554 | 00665 | 000260     | K60    | OCT 260                        | 00 (BCI ZERO)                             | FRTN0554 |
| 0555 | 00666 | 000020     | K109   | DEC 16                         |                                           | FRTN0555 |
| 0556 | 00667 | 000377     | K100   | OCT 377                        |                                           | FRTN0556 |
| 0557 | 00670 | 037777     | K111   | OCT 37777                      |                                           | FRTN0557 |
| 0558 | 00671 | 177757     | K110   | DEC -17                        |                                           | FRTN0558 |
| 0559 | 00672 | 177400     | K116   | OCT 177400                     |                                           | FRTN0559 |
| 0560 | 00673 | 000777     | K118   | OCT 777                        |                                           | FRTN0560 |
| 0561 | 00674 | 177000     | K119   | OCT 177000                     |                                           | FRTN0561 |
| 0562 | 00675 | 040000     | K122   | OCT 040000                     |                                           | FRTN0562 |
| 0563 | 00676 | 177777     | K123   | DEC -1                         |                                           | FRTN0563 |
| 0564 | 00677 | 000022     | K132   | OCT 22                         |                                           | FRTN0564 |
| 0565 | 00700 | 000025     | K138   | OCT 25                         |                                           | FRTN0565 |

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|------|-------|------------|------------------------------------------------------------------|-----|--------------|--------------------------|----------|
| 0566 | 00701 | 000024     | K139                                                             | OCT | 24           |                          | FRTN0566 |
| 0567 | 00702 | 000215     | CRET                                                             | OCT | 215          |                          | FRTN0567 |
| 0568 | 00703 | 140000     | HBIT                                                             | OCT | 140000       | 0 C/R                    | FRTN0568 |
| 0569 | 00704 | 0 00 00000 | GFA                                                              | PZE | 0            | HIGH BITS FOR ALPHA DATA | FRTN0569 |
| 0570 | 00705 | 0 00 00001 | ICSW                                                             | PZE | 1            |                          | FRTN0570 |
| 0571 | 00706 | 0 00 00000 | IM                                                               | PZE | 0            | INPUT CONTROL SWITCH     | FRTN0571 |
| 0572 | 00707 | 0 00 00000 | IOF                                                              | PZE | 0            | ITEM MODE                | FRTN0572 |
| 0573 | 00710 | 0 00 00000 | IU                                                               | PZE | 0            | I-O FLAG                 | FRTN0573 |
| 0574 | 00711 | 0 00 00000 | KBAR                                                             | PZE | 0            | ITEM JSAGE               | FRTN0574 |
| 0575 | 00712 | 0 00 00000 | KPRM                                                             | PZE | 0            | TEM STORE                | FRTN0575 |
| 0576 | 00713 | 177776     | MIN2                                                             | DEC | -2           | TEM STORE                | FRTN0576 |
| 0577 | 00714 | 000340     | HC2                                                              | OCT | 340          | -2                       | FRTN0577 |
| 0578 |       |            | *                                                                |     |              |                          | FRTN0578 |
| 0579 |       |            | * THE FOLLOWING *20 WORDS CONSTITUTE A TABLE UTILIZED IN FN00 -- |     |              |                          | FRTN0579 |
| 0580 |       |            | * THE ORDER MUST NOT BE DISTURBED.                               |     |              |                          | FRTN0580 |
| 0581 |       |            | *                                                                |     |              |                          | FRTN0581 |
| 0582 | 00715 | 000253     | FN90                                                             | OCT | 253          | +                        | FRTN0582 |
| 0583 | 00716 | 000255     | K12                                                              | OCT | 255          | -                        | FRTN0583 |
| 0584 | 00717 | 000252     |                                                                  | OCT | 252          | *                        | FRTN0584 |
| 0585 | 00720 | 000257     | K9                                                               | OCT | 257          | /                        | FRTN0585 |
| 0586 | 00721 | 147317     | BCI                                                              |     | 5*NOANORLTLE |                          | FRTN0586 |
|      | 00722 | 140716     |                                                                  |     |              |                          |          |
|      | 00723 | 147722     |                                                                  |     |              |                          |          |
|      | 00724 | 146324     |                                                                  |     |              |                          |          |
|      | 00725 | 146305     |                                                                  |     |              |                          |          |
| 0587 | 00726 | 142721     | KAEG                                                             | BCI | 1*EG         |                          | FRTN0587 |
| 0588 | 00727 | 143705     | BCI                                                              |     | 4*GEGTNEQ.   |                          | FRTN0588 |
|      | 00730 | 143724     |                                                                  |     |              |                          |          |
|      | 00731 | 147305     |                                                                  |     |              |                          |          |
|      | 00732 | 150656     |                                                                  |     |              |                          |          |
| 0589 | 00733 | 000275     | K18                                                              | OCT | 275          | =                        | FRTN0589 |
| 0590 | 00734 | 000254     | K5                                                               | OCT | 254          | ,                        | FRTN0590 |
| 0591 |       |            | *                                                                |     |              |                          | FRTN0591 |
| 0592 |       |            | * THE FOLLOWING *20 WORDS CONSTITUTE A TABLE UTILIZED IN FN00 -- |     |              |                          | FRTN0592 |
| 0593 |       |            | * THE ORDER MUST NOT BE DISTURBED.                               |     |              |                          | FRTN0593 |
| 0594 |       |            | *                                                                |     |              |                          | FRTN0594 |
| 0595 | 00735 | 000001     | K101                                                             | OCT | 1            |                          | FRTN0595 |

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|      |       |            |                                               |     |        |                                       |          |
|------|-------|------------|-----------------------------------------------|-----|--------|---------------------------------------|----------|
| 0596 | 00736 | 000002     | K102                                          | OCT | 2      |                                       | FRTN0596 |
| 0597 | 00737 | 000003     | K103                                          | OCT | 3      |                                       | FRTN0597 |
| 0598 | 00740 | 000004     | K104                                          | OCT | 4      |                                       | FRTN0598 |
| 0599 | 00741 | 000005     | K105                                          | OCT | 5      |                                       | FRTN0599 |
| 0600 | 00742 | 000006     | K106                                          | OCT | 6      |                                       | FRTN0600 |
| 0601 | 00743 | 000007     | K107                                          | OCT | 7      |                                       | FRTN0601 |
| 0602 | 00744 | 000010     | K125                                          | OCT | 10     |                                       | FRTN0602 |
| 0603 | 00745 | 000011     | K124                                          | OCT | 11     |                                       | FRTN0603 |
| 0604 | 00746 | 000012     | K126                                          | OCT | 12     |                                       | FRTN0604 |
| 0605 | 00747 | 000013     | K127                                          | OCT | 13     |                                       | FRTN0605 |
| 0606 | 00750 | 000014     | K128                                          | OCT | 14     |                                       | FRTN0606 |
| 0607 | 00751 | 000015     | K129                                          | OCT | 15     |                                       | FRTN0607 |
| 0608 | 00752 | 000012     |                                               | OCT | 12     |                                       | FRTN0608 |
| 0609 | 00753 | 000016     | K153                                          | OCT | 16     |                                       | FRTN0609 |
| 0610 | 00754 | 000017     | K134                                          | OCT | 17     |                                       | FRTN0610 |
| 0611 |       |            | *                                             |     |        |                                       | FRTN0611 |
| 0612 |       |            | *                                             |     |        |                                       | FRTN0612 |
| 0613 | 00755 | 000301     | K49                                           | OCT | 301    | 0A                                    | FRTN0613 |
| 0614 | 00756 | 177775     | IA90                                          | OCT | -3     |                                       | FRTN0614 |
| 0615 | 00757 | 107777     | B4F                                           | OCT | 107777 |                                       | FRTN0615 |
| 0616 | 00760 | 000027     | K142                                          | OCT | 27     |                                       | FRTN0616 |
| 0617 | 00761 | 000030     | K143                                          | OCT | 30     |                                       | FRTN0617 |
| 0618 | 00762 | 177772     | K130                                          | DEC | -6     |                                       | FRTN0618 |
| 0619 | 00763 | 000304     | K11                                           | OCT | 304    |                                       | FRTN0619 |
| 0620 | 00764 | 000077     | K133                                          | OCT | 77     |                                       | FRTN0620 |
| 0621 | 00765 | 120240     | K81                                           | BCI | 1*     |                                       | FRTN0621 |
| 0622 | 00766 | 0 00 00000 | TIDN                                          | PZE | 0      |                                       | FRTN0622 |
| 0623 | 00767 | 000000     | ISTR                                          | BSZ | 1      | USED FOR INTERRUPT BLOCK HOUSEKEEPING | FRTN0623 |
| 0624 |       |            | *                                             |     |        |                                       | FRTN0624 |
| 0625 |       |            | * LOCATIONS *770 THROUGH *773 ARE USED BY DOP |     |        |                                       | FRTN0625 |
| 0626 |       |            | *                                             |     |        |                                       | FRTN0626 |
| 0627 |       |            | ORG                                           |     | *774   |                                       | FRTN0627 |
| 0628 | 00774 |            | ID                                            | BSS | 4      |                                       | FRTN0628 |
| 0629 |       | 000775     | ID1                                           | EQU | ID+1   |                                       | FRTN0629 |
| 0630 |       | 000774     | TID                                           | EQU | ID     | TEMP STORE FOR ID                     | FRTN0630 |
| 0631 |       |            | *                                             |     |        |                                       | FRTN0631 |
| 0632 |       |            | *                                             |     |        |                                       | FRTN0632 |

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0633      017400  DP  EQU  *17400          DUMMY START OF DATA POOL (ACTUALLY SET      FRTN0633
0634      *                                           BY THE FORTRAN IOS SUBROUTINE.)      FRTN0634
0635      000113  LO  EQU  *113            DUMMY END OF DATA POOL (MINUS 3 WORDS)      FRTN0635
0636      *                                           THE FOLLOWING INSTRUCTIONS CAUSE THE LOADER      FRTN0636
0637      *                                           TO ASSIGN ALL REFERENCES TO THE DATA POOL IN WORDS      FRTN0637
0638      *                                           100 TO 112 OF THE ZERO SECTOR.  FORTRAN IOS WILL      FRTN0638
0639      *                                           CAUSE THESE CELLS TO BE SET TO THE ACTUAL DATA POOL      FRTN0639
0640      *                                           LOCATIONS WHICH WILL BE DETERMINED BY COMPUTER      FRTN0640
0641      *                                           CONFIGURATION.      FRTN0641
0642      *                                           *1000      FRTN0642
0643 01000  1 00 17374 PZE DP-4,1          (100)      FRTN0643
0644 01001  1 00 17375 PZE DP-3,1          (101)      FRTN0644
0645 01002  1 00 17376 PZE DP-2,1          (102)      FRTN0645
0646 01003  1 00 17377 PZE DP-1,1          (103)      FRTN0646
0647 01004  1 00 17400 PZE DP,1            (104)      FRTN0647
0648 01005  1 00 17401 PZE DP+1,1          (105)      FRTN0648
0649 01006  1 00 17402 PZE DP+2,1          (106)      FRTN0649
0650 01007  1 00 17403 PZE DP+3,1          (107)      FRTN0650
0651 01010  1 00 17404 PZE DP+4,1          (110)      FRTN0651
0652 01011  1 00 17405 PZE DP+5,1          (111)      FRTN0652
0653 01012  1 00 17406 PZE DP+6,1          (112)      FRTN0653
0654 01013  0 00 17407 PZE DP+7            (113) NO WDS IN DATA POOL SET BY IOS      FRTN0654
0655      *                                           FRTN0655
0656      *                                           FRTN0656
0657      *                                           FRTN0657
                                EJECT
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0658      *                                           FRTN0658
0659      *                                           FRTN0659
0660      *                                           FRTN0660
0661      *                                           FRTN0661
0662      *                                           FRTN0662
0663      *                                           FRTN0663
0664      *                                           FRTN0664
0665      *                                           FRTN0665
0666      *                                           FRTN0666
0667      *                                           FRTN0667
0668      *                                           FRTN0668
0669      *                                           FRTN0669
0670 01000  0 04 01060 STA LIBF          COMP ENT EMPTY BUFFERS      FRTN0670
0671 01001  0 10 00000 A0 CALL F4$INT      DIAGNOSTIC FLAG IN BIT 1      FRTN0671
0672 01002  0 02 01150 LDA K108           INITIALIZE I/O DEVICES      FRTN0672
0673 01003  0 04 00656 STA CC              CC = 73      FRTN0673
0674 01004  0 10 01061 JST IC00           INPUT COLUMN      FRTN0674
0675 01005  0 35 01056 A051 LDX A090      FRTN0675
0676 01006  140040    CRA      FRTN0676
0677 01007  1 04 00654 STA A+M,1          SET M VARIABLES TO ZERO      FRTN0677
0678 01010  1 04 00100 STA NAMF+M,1      FRTN0678
0679 01011  0 12 00000 IRS C              FRTN0679
0680 01012  0 01 01007 JMP *-3            FRTN0680
0681 01013  0 04 11442 STA PKF           FRTN0681
0682 01014  0 10 13531 JST FS00           INITIALIZE OUTPUT BUFFER      FRTN0682
0683 01015  140401    CMA      FRTN0683
0684 01016  0 04 00652 STA LSTF           LSTF NOT EQ 0      FRTN0684
0685 01017  0 04 00653 STA LSTP           LSTP NOT EQ 0      FRTN0685
0686 01020  0 04 00654 STA EBAR           EBAR SET NEGATIVE      FRTN0686
0687 01021  0 04 00767 STA ISTR           MUST BE SET MINUS      FRTN0687
0688 01022  0 02 00113 LDA LO            FRTN0688
0689 01023  0 04 00705 STA ICSW          FRTN0689
0690 01024  0 04 00042 STA E0            INITIALIZE EQUIVALENCE TABLE      FRTN0690
0691 01025  0 04 00627 STA L              INITIALIZE TRIAD TABLE POINTER      FRTN0691
0692 01026  0 10 13321 JST PRSP          SET PRINT BUFFER TO SPACES      FRTN0692
0693 01027  0 02 00754 LDA K134          FRTN0693
0694 01030  0 04 00655 STA DO            INITIALIZE DO TABLE POINTER      FRTN0694
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|------|-------|------------|-----------|--------|------------------------------------------------|----------|
| 0695 | 01031 | C 07 00700 | SUB       | K138   |                                                | FRTN0695 |
| 0696 | 01032 | 0 04 01057 | STA       | A091   |                                                | FRTN0696 |
| 0697 | 01033 | 140040     | CRA       |        |                                                | FRTN0697 |
| 0698 | 01034 | 0 04 00774 | STA       | ID     |                                                | FRTN0698 |
| 0699 | 01035 | 0 12 00774 | A055 IRS  | ID     | ESTABLISH CONSTANTS                            | FRTN0699 |
| 0700 | 01036 | 0 10 03612 | JST       | A100   |                                                | FRTN0700 |
| 0701 | 01037 | 0 12 01057 | IRS       | A091   |                                                | FRTN0701 |
| 0702 | 01040 | 0 01 01035 | JMP       | A055   |                                                | FRTN0702 |
| 0703 | 01041 | 0 02 00765 | LDA       | K81    |                                                | FRTN0703 |
| 0704 | 01042 | 0 04 00774 | STA       | ID     |                                                | FRTN0704 |
| 0705 | 01043 | 0 04 00775 | STA       | ID+1   |                                                | FRTN0705 |
| 0706 | 01044 | 0 04 00776 | STA       | ID+2   |                                                | FRTN0706 |
| 0707 | 01045 | 0400 40    | LRL       | 32     | (B)=0 IM=NO USAGE                              | FRTN0707 |
| 0708 | 01046 | 141206     | AOA       |        | (A)=1 IU=SUBR                                  | FRTN0708 |
| 0709 | 01047 | 0 10 03623 | JST       | AA00   | ASSIGN (SPECIAL)                               | FRTN0709 |
| 0710 | 01050 | 0 35 00625 | LDX       | A      |                                                | FRTN0710 |
| 0711 | 01051 | 0 02 00625 | LDA       | A      |                                                | FRTN0711 |
| 0712 | 01052 | 0 04 00641 | STA       | CFL    | CFL=A (LOCATION OF FIRST COMMON BLOCK)         | FRTN0712 |
| 0713 | 01053 | 0 06 00675 | ADD       | K122   | =*40000 (IU=SUBR)                              | FRTN0713 |
| 0714 | 01054 | 1 04 17401 | STA       | DP+1.1 | GF(A)=A (IN CASE NO BLANK COMMON IS SPECIFIED) | FRTN0714 |
| 0715 | 01055 | 0 01 03723 | JMP       | C7     | GO TO STMT INPUT                               | FRTN0715 |
| 0716 |       | 000027     | M EQU     | 23     |                                                | FRTN0716 |
| 0717 | 01056 | -1 177751  | A090 DAC* | -M+1   |                                                | FRTN0717 |
| 0718 | 01057 | 0 00 00000 | A091 PZE  | 0      |                                                | FRTN0718 |
| 0719 | 01060 | 0 00 00000 | LIBF PZE  | 0      | SPECIAL LIBRARY FLAG                           | FRTN0719 |
| 0720 |       |            | EJCT      |        |                                                | FRTN0720 |

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|      |       |            |           |                       |                                |          |
|------|-------|------------|-----------|-----------------------|--------------------------------|----------|
| 0721 |       | *          |           |                       |                                | FRTN0721 |
| 0722 |       | *          |           |                       |                                | FRTN0722 |
| 0723 |       | *          |           |                       |                                | FRTN0723 |
| 0724 |       | *          |           | *****                 |                                | FRTN0724 |
| 0725 |       | *          |           | *INPUT COLUMN*        |                                | FRTN0725 |
| 0726 |       | *          |           | *****                 |                                | FRTN0726 |
| 0727 |       | *          |           |                       |                                | FRTN0727 |
| 0728 |       | *          |           | INPUT NEXT CHARACTER  |                                | FRTN0728 |
| 0729 |       | *          |           | IGNORE BLANKS         |                                | FRTN0729 |
| 0730 |       | *          |           | CHECK FOR COMMENTS    |                                | FRTN0730 |
| 0731 |       | *          |           | IC02 SET AS FOLLOWS - |                                | FRTN0731 |
| 0732 |       | *          |           | NORMAL - ICIP         |                                | FRTN0732 |
| 0733 |       | *          |           | INITIAL SCAN -ICSR    |                                | FRTN0733 |
| 0734 | 01061 | 0 000000   | IC00 DAC  | **                    | LINK STORE                     | FRTN0734 |
| 0735 | 01062 | 0 15 01134 | STX       | ICXS                  | SAVE INDEX                     | FRTN0735 |
| 0736 | 01063 | 0 02 00656 | LDA       | CC                    | IF CC = 73, GO TO IC 10        | FRTN0736 |
| 0737 | 01064 | 0 07 01150 | SUB       | K108                  |                                | FRTN0737 |
| 0738 | 01065 | 100040     | SZE       |                       |                                | FRTN0738 |
| 0739 | 01066 | 0 01 01120 | JMP       | IC19                  | ELSE, GO TO IC                 | FRTN0739 |
| 0740 | 01067 | 0 02 00705 | LDA       | ICSW                  | IF ICSW, GO TO IC12            | FRTN0740 |
| 0741 | 01070 | 101040     | SNZ       |                       |                                | FRTN0741 |
| 0742 | 01071 | 0 01 01135 | JMP       | IC24                  | ELSE, GO TO IC24               | FRTN0742 |
| 0743 | 01072 | 0 10 00000 | IC12 CALL | F4\$IN                | INPUT SYMOLIC CARD IMAGE       | FRTN0743 |
| 0744 | 01073 | 0 014040   | DAC       | CI                    |                                | FRTN0744 |
| 0745 | 01074 | 0 02 14040 | LDA       | CI                    |                                | FRTN0745 |
| 0746 | 01075 | 141140     | ICL       |                       | GO TO IC 14                    | FRTN0746 |
| 0747 | 01076 | 0 11 01147 | CAS       | K16                   | =(C)                           | FRTN0747 |
| 0748 | 01077 | 0 01 01101 | JMP       | *+2                   |                                | FRTN0748 |
| 0749 | 01100 | 0 01 01144 | JMP       | IC30                  | COMMENT CARD (IGNORE)          | FRTN0749 |
| 0750 | 01101 | 0 07 00662 | SUB       | K15                   | =(S)                           | FRTN0750 |
| 0751 | 01102 | 101040     | SNZ       |                       |                                | FRTN0751 |
| 0752 | 01103 | 0 01 01111 | JMP       | IC18                  | CONTROL CARD (IGNORE COLUMN 6) | FRTN0752 |
| 0753 | 01104 | 0 02 01146 | LDA       | K357                  | IF CARD COL. SIX IS            | FRTN0753 |
| 0754 | 01105 | 0 03 14042 | ANA       | CI+2                  | ZERO OR BLANK, GO TO IC18      | FRTN0754 |
| 0755 | 01106 | 0 07 00660 | SUB       | K8                    |                                | FRTN0755 |
| 0756 | 01107 | 100040     | SZE       |                       |                                | FRTN0756 |
| 0757 | 01110 | 0 01 01140 | JMP       | IC26                  | ELSE, GO TO IC26               | FRTN0757 |

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|            |             |      |      |      |                                         |          |
|------------|-------------|------|------|------|-----------------------------------------|----------|
| 0758 01111 | 0 04 00656  | IC18 | STA  | CC   | CC = 0.                                 | FRTN0758 |
| 0759 01112 | 0 02 14042  |      | LDA  | CI+2 | CI(6) = SPECIAL                         | FRTN0759 |
| 0760 01113 | 0 03 00672  |      | ANA  | K116 |                                         | FRTN0760 |
| 0761 01114 | 0 06 00714  |      | ADD  | HC2  | = '340                                  | FRTN0761 |
| 0762 01115 | 0 04 14042  |      | STA  | CI+2 |                                         | FRTN0762 |
| 0763 01116 | 0 02 00702  |      | LDA  | CRET |                                         | FRTN0763 |
| 0764 01117 | 0 01 01131  |      | JMP  | IC20 | TC = C.R.                               | FRTN0764 |
| 0765 01120 | 0 02 00656  | IC19 | LDA  | CC   | TC = CI(CC)                             | FRTN0765 |
| 0766 01121 | 0 07 00735  | IC21 | SUB  | K101 | LOCATE BUFFER WORD ASSOC. WITH CC       | FRTN0766 |
| 0767 01122 | 0404 77     |      | LGR  | 1    |                                         | FRTN0767 |
| 0768 01123 | 0 04 00000  |      | STA  | 0    |                                         | FRTN0768 |
| 0769 01124 | 1 02 14040  |      | LDA  | CI+1 |                                         | FRTN0769 |
| 0770 01125 | 101001      |      | SSC  |      | IS CURRENT CHAR. IN RT. OR LEFT         | FRTN0770 |
| 0771 01126 | 141140      |      | ICL  |      | LEFT                                    | FRTN0771 |
| 0772 01127 | 141050      |      | CAL  |      | RIGHT                                   | FRTN0772 |
| 0773 01130 | 0 12 00656  |      | IRS  | CC   | RESTORE CC                              | FRTN0773 |
| 0774 01131 | 0 04 00067  | IC20 | STA  | TC   |                                         | FRTN0774 |
| 0775 01132 | 0 35 01134  | IC22 | LDX  | ICXS | RESTORE INDEX                           | FRTN0775 |
| 0776 01133 | -0 01 01061 |      | JMP* | IC00 | RETURN                                  | FRTN0776 |
| 0777 01134 |             | ICXS | BSS  | 1    | TEMP STORAGE FOR INDEX                  | FRTN0777 |
| 0778 01135 | 0 02 00720  | IC24 | LDA  | K9   | TC = /, END OF LINE - STATEMENT SCAN    | FRTN0778 |
| 0779 01136 | 0 04 00067  |      | STA  | TC   |                                         | FRTN0779 |
| 0780 01137 | 0 01 01132  |      | JMP  | IC22 | GO TO IC22                              | FRTN0780 |
| 0781 01140 | 0 10 02745  | IC26 | JST  | LIST | LIST, CONTINUATION CARD                 | FRTN0781 |
| 0782 01141 | 0 02 00743  |      | LDA  | K107 | CC = 7, IGNORE STATEMENT NO.            | FRTN0782 |
| 0783 01142 | 0 04 00656  |      | STA  | CC   |                                         | FRTN0783 |
| 0784 01143 | 0 01 01121  |      | JMP  | IC21 |                                         | FRTN0784 |
| 0785 01144 | 0 10 02745  | IC30 | JST  | LIST | PRINT CARD IMAGE                        | FRTN0785 |
| 0786 01145 | 0 01 01072  |      | JMP  | IC12 | READ IN NEW CARD                        | FRTN0786 |
| 0787 01146 | 000357      | K357 | OCT  | 357  |                                         | FRTN0787 |
| 0788 01147 | 000303      | K16  | OCT  | 303  | OC                                      | FRTN0788 |
| 0789 01150 | 000111      | K108 | DEC  | 73   |                                         | FRTN0789 |
| 0790 01151 | 120240      | KASP | BCI  | 1,   | (SP)(SP) MUST PRECEDE CARD IMAGE BUFFER | FRTN0790 |
| 0791       |             |      | EJCT |      |                                         | FRTN0791 |

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|------------|-------------|------|------|------|------------|
| 0792       | *           |      |      |      | FRTN0792   |
| 0793       | *           |      |      |      | FRTN0793   |
| 0794       | *           |      |      |      | FRTN0794   |
| 0795       | *           |      |      |      | FRTN0795   |
| 0796       | *           |      |      |      | FRTN0796   |
| 0797       | *           |      |      |      | FRTN0797   |
| 0798       | *           |      |      |      | FRTN0798   |
| 0799       | *           |      |      |      | FRTN0799   |
| 0800 01152 | 0 000000    | UC00 | DAC  | **   | FRTN0800   |
| 0801 01153 | 0 13 00656  |      | IMA  | CC   | FRTN0801   |
| 0802 01154 | 0 07 00735  |      | SUB  | K101 | CC = CC-1  |
| 0803 01155 | 0 13 00656  |      | IMA  | CC   | RETAIN (A) |
| 0804 01156 | -0 01 01152 |      | JMP* | UC00 | FRTN0803   |
| 0805       |             |      | EJCT |      | FRTN0804   |
|            |             |      |      |      | FRTN0805   |

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0806      *
0807      *
0808      *
0809      *
0810      *
0811      *
0812      *
0813      *
0814      *
0815 01157 0 000000 CH00 DAC **
0816 01160 0 02 00654 LDA EBAR IF EBAR 7 0.
0817 01161 101400 SMI
0818 01162 0 01 01212 JMP CH10 GO TO CH10
0819 01163 0 10 01061 CH03 JST IC00 INPUT COLUMN
0820 01164 0 11 00660 CAS K8
0821 01165 100000 SKP
0822 01166 C 01 01163 JMP CH03 IF BLANK, REPEAT
0823      *
0824 01167 0 11 00755 CH04 CAS K49 =*301
0825 01170 101000 NOP
0826 01171 0 01 01206 JMP CH06
0827 01172 C 11 01237 CAS K772 =*272
0828 01173 C 01 01203 JMP CH05
0829 01174 101000 NOP
0830 01175 0 11 00662 CAS K15 =*244
0831 01176 0 01 01200 JMP **2
0832 01177 0 01 01202 JMP CH02
0833 01200 0 11 00665 CAS K60 =*260
0834 01201 101000 NOP
0835 01202 140040 CH02 CRA ALPHA NUMERIC CHARACTER
0836 01203 0 04 00037 CH05 STA DFL DELIMITER ENTRY
0837 01204 0 02 00067 LDA TC EXIT WITH TC IN A
0838 01205 -0 01 01157 JMP* CH00
0839 01206 0 11 01236 CH06 CAS K63 =*332
0840 01207 0 01 01203 JMP CH05
0841 01210 101000 NOP
0842 01211 0 01 01202 JMP CH02
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FRTN0806
FRTN0807
FRTN0808
FRTN0809
FRTN0810
FRTN0811
FRTN0812
FRTN0813
FRTN0814
FRTN0815
FRTN0816
FRTN0817
FRTN0818
FRTN0819
FRTN0820
FRTN0821
FRTN0822
FRTN0823
FRTN0824
FRTN0825
FRTN0826
FRTN0827
FRTN0828
FRTN0829
FRTN0830
FRTN0831
FRTN0832
FRTN0833
FRTN0834
FRTN0835
FRTN0836
FRTN0837
FRTN0838
FRTN0839
FRTN0840
FRTN0841
FRTN0842
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0843 01212 0 02 00040 CH10 LDA E IF E = EBAR
0844 01213 0 11 00654 CH11 CAS EBAR
0845 01214 0 01 01216 JMP **2
0846 01215 0 01 01233 JMP CH12 GO TO CH12
0847 01216 0 04 00000 STA 0 SET E INTO INDEX
0848 01217 0410 60 LLL 16 SET (B) TO ZERO
0849 01220 1 02 17400 LDA DP,1 CURRENT CHARACTER WORD
0850 01221 0412 70 LLR 8
0851 01222 1 04 17400 STA DP,1
0852 01223 000201 IAB SAVE REMAINING CHARACTER IF ANY
0853 01224 0 04 00067 STA TC TC=LEFTMOST CHARACTER
0854 01225 100040 SZE SKIP IF NEW CHARACTER WORD NEEDED
0855 01226 C 01 01167 JMP CH04
0856 01227 0 02 00040 LDA E E=E-1
0857 01230 0 07 00735 SUB K101 =1
0858 01231 0 04 00040 STA E
0859 01232 0 01 01213 JMP CH11 PICK UP NEXT CHARACTER WORD
0860 01233 140500 CH12 SSM MAKE E MINUS
0861 01234 0 04 00654 STA EBAR
0862 01235 0 01 10661 JMP C4 GO TO ASSIGN SPEC
0863 01236 000332 K63 OCT 332 OZ
0864 01237 000272 K772 OCT 272 ASCII COLON
0865      EJCT
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FRTN0843
FRTN0844
FRTN0845
FRTN0846
FRTN0847
FRTN0848
FRTN0849
FRTN0850
FRTN0851
FRTN0852
FRTN0853
FRTN0854
FRTN0855
FRTN0856
FRTN0857
FRTN0858
FRTN0859
FRTN0860
FRTN0861
FRTN0862
FRTN0863
FRTN0864
FRTN0865
```

\* NAME: FRTN

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```
0866      *
0867      *
0868      *
0869      *      *****
0870      *      *INPUT DIGIT*
0871      *      *****
0872      *      A IS ZERO IF DIGIT
0873 01240  0 000000  ID00 DAC  **      INPUT DIGIT
0874 01241  0 10 01157  JST  CH00      INPUT A CHAR
0875 01242  0 11 01237  CAS  K772      ='272 CONSIDER 1 THRU : AS DIGITS
0876 01243 -0 01 01240  JMP* ID00      (A) = TC
0877 01244  0 01 01251  JMP  ID10      ELSE, (A) = 0
0878 01245  0 11 00665  CAS  K60      RETURN
0879 01246  101000     NOP
0880 01247  0 01 01251  JMP  **2
0881 01250 -0 01 01240  JMP* ID00
0882 01251  140040     ID10 CRA
0883 01252 -0 01 01240  JMP* ID00
0884      EJCT
```

FRTN0866  
FRTN0867  
FRTN0868  
FRTN0869  
FRTN0870  
FRTN0871  
FRTN0872  
FRTN0873  
FRTN0874  
FRTN0875  
FRTN0876  
FRTN0877  
FRTN0878  
FRTN0879  
FRTN0880  
FRTN0881  
FRTN0882  
FRTN0883  
FRTN0884

\* NAME: FRTN

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```
0885      *
0886      *
0887      *
0888      *      *****
0889      *      *INPUT (A) CHARACTERS*
0890      *      *****
0891      *      CHAR COUNT IN XR, TERMINATES WITH EITHER
0892      *      1. CHAR COUNT -1 = ZERO OR
0893      *      2. LAST CHAR IS A DELIMITER
0894 01253  0 000000  IA00 DAC  **      SET COUNTER
0895 01254  140407     TCA
0896 01255  0 04 01305  STA  IA99      EXCHANGE IBUF AND ID
0897 01256  0 10 01272  JST  IA50
0898 01257  140040     CRA
0899 01260  0 04 00056  STA  NTID      NTID = 0
0900 01261  0 10 01157  IA10 JST  CH00      INPUT A CHARACTER
0901 01262  0 10 02555  JST  PACK
0902 01263  0 02 00037  LDA  DFL      IF DFL NOT ZERO,
0903 01264  100040     SZE      CONTINUE
0904 01265  0 01 01270  JMP  IA20      ELSE,
0905 01266  0 12 01305  IRS  IA99      TEST COUNTER
0906 01267  0 01 01261  JMP  IA10      MORE CHARACTERS TO INPUT
0907 01270  0 10 01272  IA20 JST  IA50      EXCHANGE ID AND IBUF
0908 01271 -0 01 01253  JMP* IA00      RETURN
0909 01272  0 000000  IA50 DAC  **      EXCHANGE IBUF AND ID
0910 01273  0 15 01306  STX  IAXS      SAVE INDEX
0911 01274  0 35 00756  LDX  IA90
0912 01275  1 02 01336  LDA  IBUF+3,1
0913 01276  1 13 00777  IMA  ID+3,1
0914 01277  1 04 01336  STA  IBUF+3,1
0915 01300  0 12 00000  IRS  0
0916 01301  0 01 01275  JMP  *-4
0917 01302  0 35 01306  LDX  IAXS      RESTORE INDEX
0918 01303  0 02 00056  LDA  NTID
0919 01304 -0 01 01272  JMP* IA50
0920 01305  0 00 00000  IA99 PZE  0
0921 01306      IAXS BSS  1      TEMP STORAGE FOR INDEX
```

FRTN0885  
FRTN0886  
FRTN0887  
FRTN0888  
FRTN0889  
FRTN0890  
FRTN0891  
FRTN0892  
FRTN0893  
FRTN0894  
FRTN0895  
FRTN0896  
FRTN0897  
FRTN0898  
FRTN0899  
FRTN0900  
FRTN0901  
FRTN0902  
FRTN0903  
FRTN0904  
FRTN0905  
FRTN0906  
FRTN0907  
FRTN0908  
FRTN0909  
FRTN0910  
FRTN0911  
FRTN0912  
FRTN0913  
FRTN0914  
FRTN0915  
FRTN0916  
FRTN0917  
FRTN0918  
FRTN0919  
FRTN0920  
FRTN0921

\* NAME: FRTN

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0922

EJCT

FRTN0922

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```

0923          *                                FRTN0923
0924          *                                FRTN0924
0925          *                                FRTN0925
0926          *                                FRTN0926
0927          *                                FRTN0927
0928          *                                FRTN0928
0929          *                                FRTN0929
0930 01307    0 000000    FN00 DAC    **                                FRTN0930
0931 01310    0 02 00037    LDA    DFL                                FRTN0931
0932 01311    0 04 01333    STA    IBUF                                FRTN0932
0933 01312    0 07 00661    SUB    K10                                FRTN0933
0934 01313    100040        SZE                                FRTN0934
0935 01314    0 01 01317    JMP     FN05                                FRTN0935
0936 01315    0 02 00740    LDA    K104                                FRTN0936
0937 01316    0 10 01253    JST     IA00                                FRTN0937
0938 01317    0 35 00671    LDX     K110                                FRTN0938
0939 01320    1 02 00736    FN10 LDA    FN90+17,1                    FRTN0939
0940 01321    0 11 01333    CAS     IBUF                                FRTN0940
0941 01322    0 01 01324    JMP     **2                                FRTN0941
0942 01323    0 01 01330    JMP     FN20                                FRTN0942
0943 01324    0 12 00000    IRS     0                                FRTN0943
0944 01325    0 01 01320    JMP     FN10                                FRTN0944
0945 01326    0 02 00067    LDA     TC                                FRTN0945
0946 01327    -0 01 01307    JMP*    FN00                                FRTN0946
0947 01330    1 02 00756    FN20 LDA    K101+17,1                    FRTN0947
0948 01331    0 04 00067    STA     TC                                FRTN0948
0949 01332    -0 01 01307    JMP*    FN00                                FRTN0949
0950          EJCT                                FRTN0950

```

\* NAME: FRTN

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```
0951      *
0952      *
0953      *
0954      *
0955      *
0956      *
0957      *
0958      *
0959      *
0960 01333      IBUF BSS      3
0961 01336      177727      K155 OCT      177727
0962 01337      024000      K156 OCT      024000
0963 01340      007777      K157 OCT      007777
0964 01341      074000      K158 OCT      074000
0965 01342      C 00 00000 F1 PZE      0
0966 01343      0 00 00000 F2 PZE      0
0967 01344      0 00 00000 F3 PZE      0
0968 01345      0 00 00000 F4 PZE      0
0969 01346      0 00 00000 F6 PZE      0
0970 01347      0 00 00000 HOLF PZE      0
0971 01350      0 000000 DN00 DAC      **
0972 01351      140040 DN01 CRA
0973 01352      0 04 01347 STA HOLF
0974 01353      0 04 01345 STA F4
0975 01354      0 04 00710 STA IU
0976 01355      0 04 00054 STA NT
0977 01356      0 04 00056 STA NTID
0978 01357      0 10 02510 JST BLNK
0979 01360      0 000774 DAC TID
0980 01361      0 10 02510 JST BLNK
0981 01362      0 001342 DAC F1
0982 01363      140040 DN06 CRA
0983 01364      0 04 00706 STA IM
0984 01365      0 10 01240 DN07 JST ID00
0985 01366      100040 SZE
0986 01367      0 C1 01435 JMP DN14
0987 01370      0 02 00067 LDA TC
```

\*\*\*\*\*  
\*INPUT DNA\*  
\*\*\*\*\*  
BASIC INPUT ROUTINE, HANDLES FOLLOWING -  
CONSTANT CONVERSION  
MODE TYPING (CONSTANTS, IMPLIED/VARIABLES)  
ALL OPERATORS (TERMINATE ITEM)

3-WORD BUF  
-41  
10B5  
SIGN FLAG  
INPUT EXPONENT  
NO. FRAC. POSITIONS  
HOLLERITH FLAG  
SET HOLF = 0  
F4 = 0  
IU=NT=NTID=0  
CLEAR OUT TID = ID (3 WORDS ONLY)  
F1,F2,F3 = 0  
INPUT DIGIT  
(A) NON-ZERO, GO TO DN14  
IT'S A DIGIT, BUT WHICH ONE

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```
0988 01371      0 11 01237 CAS K772
0989 01372      100000 SKP
0990 01373      0 01 01554 JMP DNOC
0991 01374      0 02 00776 DN10 LDA TID+2
0992 01375      0 03 01341 ANA K158
0993 01376      100040 SZE
0994 01377      0 01 01427 JMP SKIP
0995 01400      0 06 00706 ADD IM
0996 01401      0405 77 ARS 1
0997 01402      0 06 01345 ADD F4
0998 01403      0 04 01345 STA F4
0999 01404      0 02 00735 LDA K101
1000 01405      0 04 00054 STA NT
1001 01406      141206 AOA
1002 01407      C 04 00710 STA IU
1003 01410      0 10 02720 JST SFT
1004 01411      0 000774 DAC ID
1005 01412      0 10 02523 JST MOV3
1006 01413      0 10 02720 JST SFT
1007 01414      0 000774 DAC ID
1008 01415      0 10 02720 JST SFT
1009 01416      0 000774 DAC ID
1010 01417      0 10 02442 JST AD3
1011 01420      0 10 02510 JST BLNK
1012 01421      0 C02221 DAC DN11
1013 01422      0 02 00067 LDA TC
1014 01423      C 07 00665 SUB K60
1015 01424      C 04 02221 STA DN11
1016 01425      C 10 02442 JST AD3
1017 01426      0 C1 01365 JMP DN07
1018 01427      C 02 00713 SKIP LDA MIN2
1019 01430      0 06 00706 ADD IM
1020 01431      0405 77 ARS 1
1021 01432      0 06 01345 ADD F4
1022 01433      0 04 01345 STA F4
1023 01434      C 01 01365 JMP DN07
1024 01435      0 02 00706 DN14 LDA IM
```

IS IT A COLON  
IF SO, PROCESS OCTAL CONSTANT  
CHECK FOR OVERFLOW AND ADJUST  
POSITION COUNT IF NECESSARY.  
F4 = F4+1 IF NO OVERFLOW  
AND IM ALREADY SET TO REAL  
NT=1  
IU = VAR/COD  
SHIFT ID LEFT  
MOVE TO TEMP STORE  
ID = 10\*ID+TC  
IM = REAL

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```
1025 01436 0 07 00736 SUB K102
1026 01437 100040 SZE
1027 01440 0 01 01533 JMP DN50
1028 01441 0 02 00037 DN16 LDA DFL
1029 01442 100040 SZE
1030 01443 0 01 02015 JMP DN90
1031 01444 0 02 00067 LDA TC
1032 01445 0 07 00763 SUB K11
1033 01446 101040 SNZ
1034 01447 0 01 01507 JMP DN26
1035 01450 0 07 00735 SUB K101
1036 01451 101040 SNZ
1037 01452 0 01 01461 JMP DN22
1038 01453 0 10 01152 JST UC00
1039 01454 0 02 00661 LDA K10
1040 01455 0 04 00037 STA DFL
1041 01456 0 02 00735 DN17 LDA K101
1042 01457 0 04 00706 STA IM
1043 01460 0 01 01643 JMP DN67
1044
1045 01461 0 10 01240 DN22 JST ID00
1046 01462 101040 SNZ
1047 01463 0 01 01517 JMP DN30
1048 01464 0 02 00067 LDA TC
1049 01465 0 07 00716 SUB K12
1050 01466 101040 SNZ
1051 01467 0 01 01512 JMP DN28
1052 01470 0 06 00736 ADD K102
1053 01471 101040 SNZ
1054 01472 0 01 01514 JMP DN29
1055 01473 0 02 00661 LDA K10
1056 01474 0 04 00037 STA DFL
1057 01475 0 10 01152 JST UC00
1058 01476 0 02 00735 DN25 LDA K101
1059 01477 0 04 00706 STA IM
1060 01500 0 02 00775 LDA ID+1
1061 01501 100040 SZE
```

```
NO. GO TO DN50
IF DFL=0, GO TO DN20 (5)

ELSE GO TO DN90 (9)
IF TC = D, GO TO DN26

ELSE, IF TC = E, GO TO DN22

TERMINATOR = E

=*256 (.)
SET DELIMITER FLAG
=1
SET ITEM MODE TO INTEGER
FINISH OPERATOR AND EXIT

INPUT DIGIT
IF (A) = 0, GO TO DN30

IF TC = -, GO TO DN28

SET LAST READ CHARACTER TO '..'

UN-INPUT COL
IM = INT

IF ID IS TOO BIG TO
BE AN INTEGER (>L2),
```

FRTN1025  
FRTN1026  
FRTN1027  
FRTN1028  
FRTN1029  
FRTN1030  
FRTN1031  
FRTN1032  
FRTN1033  
FRTN1034  
FRTN1035  
FRTN1036  
FRTN1037  
FRTN1038  
FRTN1039  
FRTN1040  
FRTN1041  
FRTN1042  
FRTN1043  
FRTN1044  
FRTN1045  
FRTN1046  
FRTN1047  
FRTN1048  
FRTN1049  
FRTN1050  
FRTN1051  
FRTN1052  
FRTN1053  
FRTN1054  
FRTN1055  
FRTN1056  
FRTN1057  
FRTN1058  
FRTN1059  
FRTN1060  
FRTN1061

\* NAME: FRTN

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```
1062 01502 0 01 01647 JMP DN69
1063 01503 0 02 00776 LDA ID+2
1064 01504 100040 SZE
1065 01505 0 01 01647 JMP DN69
1066 01506 0 01 01726 JMP DN84
1067 01507 0 02 00742 DN26 LDA K106
1068 01510 0 04 00706 STA IM
1069 01511 0 01 01461 JMP DN22
1070 01512 0 02 00735 DN28 LDA K101
1071 01513 0 04 01343 STA F2
1072 01514 0 10 01240 DN29 JST ID00
1073 01515 100040 SZE
1074 01516 0 01 01647 JMP DN69
1075 01517 0 02 01344 DN30 LDA F3
1076 01520 0415 75 ALS 3
1077 01521 0 13 01344 IMA F3
1078 01522 0415 77 ALS 1
1079 01523 0 06 01344 ADD F3
1080 01524 0 06 00067 ADD TC
1081 01525 0 07 00665 SUB K60
1082 01526 0 04 01344 STA F3
1083 01527 0 10 01240 JST ID00
1084 01530 100040 SZE
1085 01531 0 01 02015 JMP DN90
1086 01532 0 01 01517 JMP DN30
1087 01533 0 02 00736 DN50 LDA K102
1088 01534 0 04 00706 STA IM
1089 01535 0 02 00067 LDA TC
1090 01536 0 07 00661 SUB K10
1091 01537 101040 SNZ
1092 01540 0 01 01577 JMP DN54
1093 01541 0 02 00054 LDA NT
1094 01542 101040 SNZ
1095 01543 0 01 01656 JMP DN72
1096 01544 0 02 00067 LDA TC
1097 01545 0 07 14501 SUR K14
1098 01546 101040 SNZ
```

```
GO TO DN69 (20)

OTHERWISE, GO TO DN84 (12)
IM = DBL

F2 = 1

INPUT DIGIT
IF (A) = 0, GO TO DN30 (8.5)
ELSE, GO TO DN69 (20)
F3 = 10 * F3

F3 = F3 +TC

INPUT DIGIT

IF (A) = 0, GO TO DN30 (8.5)
ELSE, GO TO DN90 (9)

IM=REA

IF TC = .. GO TO DN54

ELSE,

IF NT = 0, GO TO DN72

IF TC = H, GO TO DN9H (22)
```

FRTN1062  
FRTN1063  
FRTN1064  
FRTN1065  
FRTN1066  
FRTN1067  
FRTN1068  
FRTN1069  
FRTN1070  
FRTN1071  
FRTN1072  
FRTN1073  
FRTN1074  
FRTN1075  
FRTN1076  
FRTN1077  
FRTN1078  
FRTN1079  
FRTN1080  
FRTN1081  
FRTN1082  
FRTN1083  
FRTN1084  
FRTN1085  
FRTN1086  
FRTN1087  
FRTN1088  
FRTN1089  
FRTN1090  
FRTN1091  
FRTN1092  
FRTN1093  
FRTN1094  
FRTN1095  
FRTN1096  
FRTN1097  
FRTN1098

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|            |            |      |      |      |                                   |          |
|------------|------------|------|------|------|-----------------------------------|----------|
| 1099 01547 | 0 01 02153 | JMP  | DN9H |      |                                   | FRTN1099 |
| 1100 01550 | 0 02 00037 | LDA  | DFL  |      | IF DFL = 0,                       | FRTN1100 |
| 1101 01551 | 100040     | SZE  |      |      | GO TO DN16 (4.9)                  | FRTN1101 |
| 1102 01552 | 0 01 01476 | JMP  | DN25 |      | ELSE, GO TO DN25                  | FRTN1102 |
| 1103 01553 | 0 01 01441 | JMP  | DN16 |      |                                   | FRTN1103 |
| 1104       |            | *    |      |      |                                   | FRTN1104 |
| 1105       |            | *    |      |      |                                   | FRTN1105 |
| 1106       |            | *    |      |      |                                   | FRTN1106 |
| 1107 01554 | 0 12 00054 | DNOC | IRS  | NT   | NAME TAG=0 IF NAME, =1 OTHERWISE  | FRTN1107 |
| 1108 01555 | 0 10 01157 | DN02 | JST  | CH00 | FETCH NEXT CHARACTER              | FRTN1108 |
| 1109 01556 | 0 11 00720 | CAS  | K9   |      | (=*257) TEST FOR OCTAL DIGIT      | FRTN1109 |
| 1110 01557 | 0 11 01576 | CAS  | K90  |      | (=*270) X                         | FRTN1110 |
| 1111 01560 | 0 01 01567 | JMP  | DN52 |      | NO...GO CLOSE OUT                 | FRTN1111 |
| 1112 01561 | 0 01 01567 | JMP  | DN52 |      | X                                 | FRTN1112 |
| 1113 01562 | 0400 75    | LRL  | 3    |      | GOOD PART OF DIGIT TO P           | FRTN1113 |
| 1114 01563 | 0 02 00774 | LDA  | TID  |      | PREVIOUS ACCUM. TO A              | FRTN1114 |
| 1115 01564 | 0410 75    | LLL  | 3    |      | *8 + NEW DIGIT                    | FRTN1115 |
| 1116 01565 | 0 04 00774 | STA  | TID  |      | SAVE NEW VALUE                    | FRTN1116 |
| 1117 01566 | 0 01 01555 | JMP  | DN02 |      | CONTINUE SCAN                     | FRTN1117 |
| 1118 01567 | 0 02 01342 | DN52 | LDA  | F1   |                                   | FRTN1118 |
| 1119 01570 | 101040     | SNZ  |      |      | CHECK FOR NEGATIVE OCTAL CONSTANT | FRTN1119 |
| 1120 01571 | 0 01 01456 | JMP  | DN17 |      | NO...IT'S POSITIVE                | FRTN1120 |
| 1121 01572 | 0 02 00774 | LDA  | TID  |      | YES...2'S COMPLEMENT AND CONTINUE | FRTN1121 |
| 1122 01573 | 140407     | TCA  |      |      | X                                 | FRTN1122 |
| 1123 01574 | 0 04 00774 | STA  | TID  |      | X                                 | FRTN1123 |
| 1124 01575 | 0 01 01456 | JMP  | DN17 |      | X                                 | FRTN1124 |
| 1125 01576 | 000270     | K90  | OCT  | 270  |                                   | FRTN1125 |
| 1126       |            | *    |      |      |                                   | FRTN1126 |
| 1127       |            | *    |      |      |                                   | FRTN1127 |
| 1128 01577 | 0 10 01240 | DN54 | JST  | ID00 | INPUT DIGIT                       | FRTN1128 |
| 1129 01600 | 101040     | SNZ  |      |      |                                   | FRTN1129 |
| 1130 01601 | 0 01 01374 | JMP  | DN10 |      | IF (A) = 0, GO TO DN10 (3)        | FRTN1130 |
| 1131 01602 | 0 02 00054 | LDA  | NT   |      |                                   | FRTN1131 |
| 1132 01603 | 101040     | SNZ  |      |      | IF NT = 0, GO TO DN56             | FRTN1132 |
| 1133 01604 | 0 01 01606 | JMP  | DN56 |      | GO TO DN16 (4)                    | FRTN1133 |
| 1134 01605 | 0 01 01441 | JMP  | DN16 |      |                                   | FRTN1134 |
| 1135 01606 | 140040     | DN56 | CRA  |      |                                   | FRTN1135 |

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|            |            |      |          |      |                          |          |
|------------|------------|------|----------|------|--------------------------|----------|
| 1136 01607 | 0 04 00067 | STA  | TC       |      | TC = )                   | FRTN1136 |
| 1137 01610 | 0 10 01152 | DN58 | JST      | UC00 | UN-INPUT A COLUMN.       | FRTN1137 |
| 1138 01611 | 0 02 01342 | LDA  | F1       |      | IF F1 = 0, GO TO DN60    | FRTN1138 |
| 1139 01612 | 100040     | SZE  |          |      |                          | FRTN1139 |
| 1140 01613 | 0 01 01627 | JMP  | DN63     |      | ELSE, GO TO DN63 (15)    | FRTN1140 |
| 1141 01614 | 0 02 00742 | LDA  | K106     |      |                          | FRTN1141 |
| 1142 01615 | 0 10 01253 | JST  | IA00     |      | INPUT (6) CHARS          | FRTN1142 |
| 1143 01616 | 0 10 02533 | JST  | CIB      |      | IF IBUF = TRUE..         | FRTN1143 |
| 1144 01617 | 1 014137   | DAC  | K1+3.1   |      |                          | FRTN1144 |
| 1145 01620 | 0 01 01632 | JMP  | DN64     |      |                          | FRTN1145 |
| 1146 01621 | 0 10 02533 | JST  | CIB      |      | IF IBUF = FALSE..        | FRTN1146 |
| 1147 01622 | 1 014142   | DAC  | K2+3.1   |      | GO TO DN66 (16)          | FRTN1147 |
| 1148 01623 | 0 01 01634 | JMP  | DN66     |      |                          | FRTN1148 |
| 1149 01624 | 0 10 02533 | JST  | CIB      |      | CHECK FOR .NOT. OPERATOR | FRTN1149 |
| 1150 01625 | 1 014145   | DAC  | KNOT+3.1 |      | CHECK FOR .NOT. OPERATOR | FRTN1150 |
| 1151 01626 | 0 01 02214 | JMP  | DN9N     |      | OPERATOR IS .NOT.        | FRTN1151 |
| 1152       |            | *    |          |      |                          | FRTN1152 |
| 1153       |            | *    |          |      |                          | FRTN1153 |
| 1154       |            | *    |          |      |                          | FRTN1154 |
| 1155       |            | *    |          |      |                          | FRTN1155 |
| 1156 01627 | 140040     | DN63 | CRA      |      | IM = 0                   | FRTN1156 |
| 1157 01630 | 0 04 00706 | STA  | IM       |      |                          | FRTN1157 |
| 1158 01631 | 0 01 01643 | JMP  | DN67     |      | GO TO DN67 (18)          | FRTN1158 |
| 1159 01632 | 0 02 00735 | DN64 | LDA      | K101 |                          | FRTN1159 |
| 1160 01633 | 0 04 00774 | STA  | TID      |      |                          | FRTN1160 |
| 1161 01634 | 0 02 00735 | DN66 | LDA      | K101 |                          | FRTN1161 |
| 1162 01635 | 0 04 00054 | STA  | NT       |      | NAME TAG = 1 (CONSTANT)  | FRTN1162 |
| 1163 01636 | 0 02 00736 | LDA  | K102     |      | IU=VAR                   | FRTN1163 |
| 1164 01637 | 0 04 00710 | STA  | IU       |      |                          | FRTN1164 |
| 1165 01640 | 0 02 00737 | LDA  | K103     |      |                          | FRTN1165 |
| 1166 01641 | 0 04 00706 | STA  | IM       |      | IM = LOG                 | FRTN1166 |
| 1167 01642 | 0 10 01157 | JST  | CH00     |      |                          | FRTN1167 |
| 1168 01643 | 0 10 01307 | DN67 | JST      | FN00 | FINISH OPERATOR          | FRTN1168 |
| 1169 01644 | 0 02 01346 | DN68 | LDA      | F6   | IF F6 = 0,               | FRTN1169 |
| 1170 01645 | 101040     | SNZ  |          |      | GO TO DN70 (21)          | FRTN1170 |
| 1171 01646 | 0 01 01651 | JMP  | DN70     |      |                          | FRTN1171 |
| 1172 01647 | 0 02 00661 | DN69 | LDA      | K10  |                          | FRTN1172 |

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|------|-------|-------------|------|------|-----------------------|----------|
| 1173 | 01650 | 0 04 00067  | STA  | TC   | TC = .                | FRTN1173 |
| 1174 | 01651 | 140040      | DN70 | CRA  |                       | FRTN1174 |
| 1175 | 01652 | 0 04 01346  | DN71 | STA  | F6 = SXF = 0          | FRTN1175 |
| 1176 | 01653 | 0 04 00633  | STA  | SXF  |                       | FRTN1176 |
| 1177 | 01654 | 0 02 00706  | LDA  | IM   | (A) = IM              | FRTN1177 |
| 1178 | 01655 | -0 01 01350 | JMP* | DN00 | RETURN                | FRTN1178 |
| 1179 | 01656 | 0 02 01342  | DN72 | LDA  | IF F1 = 0, GO TO DN74 | FRTN1179 |
| 1180 | 01657 | 101040      | SNZ  | F1   |                       | FRTN1180 |
| 1181 | 01660 | 0 01 01663  | JMP  | DN74 |                       | FRTN1181 |
| 1182 | 01661 | 0 04 00067  | STA  | TC   | ELSE, TC = F1         | FRTN1182 |
| 1183 | 01662 | 0 01 01610  | JMP  | DN58 | GO TO DN58 (14)       | FRTN1183 |
| 1184 | 01663 | 0 02 00067  | DN74 | LDA  | IF TC = -, GO TO DN82 | FRTN1184 |
| 1185 | 01664 | 0 07 00716  | SUB  | K12  |                       | FRTN1185 |
| 1186 | 01665 | 101040      | SNZ  |      |                       | FRTN1186 |
| 1187 | 01666 | 0 01 01723  | JMP  | DN82 |                       | FRTN1187 |
| 1188 | 01667 | 0 06 00736  | ADD  | K102 | CHECK FOR TC = +      | FRTN1188 |
| 1189 | 01670 | 101040      | SNZ  |      |                       | FRTN1189 |
| 1190 | 01671 | 0 01 01723  | JMP  | DN82 |                       | FRTN1190 |
| 1191 | 01672 | 0 02 00037  | LDA  | DFL  | IF DFL = NON-ZERO     | FRTN1191 |
| 1192 | 01673 | 100040      | SZE  |      |                       | FRTN1192 |
| 1193 | 01674 | 0 01 01627  | JMP  | DN63 | GO TO DN63 (15)       | FRTN1193 |
| 1194 | 01675 | 0 02 00067  | LDA  | TC   |                       | FRTN1194 |
| 1195 | 01676 | 0 11 00664  | CAS  | K43  |                       | FRTN1195 |
| 1196 | 01677 | 0 01 01702  | JMP  | **3  |                       | FRTN1196 |
| 1197 | 01700 | 0 01 01705  | JMP  | DN78 |                       | FRTN1197 |
| 1198 | 01701 | 0 01 01710  | JMP  | DN81 |                       | FRTN1198 |
| 1199 | 01702 | 0 11 01722  | CAS  | K62  |                       | FRTN1199 |
| 1200 | 01703 | 0 01 01710  | JMP  | DN81 |                       | FRTN1200 |
| 1201 | 01704 | 101000      | NOP  |      |                       | FRTN1201 |
| 1202 | 01705 | 0 02 00735  | DN78 | LDA  | IM = INT              | FRTN1202 |
| 1203 | 01706 | 0 04 00706  | STA  | IM   |                       | FRTN1203 |
| 1204 | 01707 | 0 02 00067  | DN80 | LDA  | PACK TC TO ID         | FRTN1204 |
| 1205 | 01710 | 0 10 02555  | DN81 | JST  |                       | FRTN1205 |
| 1206 | 01711 | 0 10 01157  | JST  | CH00 | INPUT CHAR            | FRTN1206 |
| 1207 | 01712 | 0 02 00037  | LDA  | DFL  | IF DFL IS NOT ZERO,   | FRTN1207 |
| 1208 | 01713 | 100040      | SZE  |      | GO TO DN67 (18)       | FRTN1208 |
| 1209 | 01714 | 0 01 01643  | JMP  | DN67 |                       | FRTN1209 |

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|------|-------|------------|------|-------|-------------------------------|----------|
| 1210 | 01715 | 0 02 00056 | LDA  | NTID  | IF NTID = 6, GO TO DN67       | FRTN1210 |
| 1211 | 01716 | 0 07 00742 | SUB  | K106  |                               | FRTN1211 |
| 1212 | 01717 | 100040     | SZE  |       |                               | FRTN1212 |
| 1213 | 01720 | 0 01 01707 | JMP  | DN80  |                               | FRTN1213 |
| 1214 | 01721 | 0 01 01643 | JMP  | DN67  |                               | FRTN1214 |
| 1215 | 01722 | 000316     | K62  | OCT   |                               | FRTN1215 |
| 1216 | 01723 | 0 10 01307 | DN82 | JST   |                               | FRTN1216 |
| 1217 | 01724 | 0 04 01342 | STA  | F1    | F1 = CONVERTED TC             | FRTN1217 |
| 1218 | 01725 | 0 01 01363 | JMP  | DN06  | GO TO DN06 (2)                | FRTN1218 |
| 1219 | 01726 | 0 02 01342 | DN84 | LDA   | IF F1 = -,                    | FRTN1219 |
| 1220 | 01727 | 0 07 00736 | SUB  | K102  | GO TO DN85(13)                | FRTN1220 |
| 1221 | 01730 | 100040     | SZE  |       |                               | FRTN1221 |
| 1222 | 01731 | 0 01 01751 | JMP  | DN85  |                               | FRTN1222 |
| 1223 | 01732 | 140040     | CRA  |       |                               | FRTN1223 |
| 1224 | 01733 | 0 07 00774 | SUB  | TID   | COMPLEMENT THREE WORDS AT TID | FRTN1224 |
| 1225 | 01734 | 100040     | SZE  |       |                               | FRTN1225 |
| 1226 | 01735 | 0 01 01742 | JMP  | DN8A  |                               | FRTN1226 |
| 1227 | 01736 | 0 07 00775 | SUB  | TID+1 |                               | FRTN1227 |
| 1228 | 01737 | 100040     | SZE  |       |                               | FRTN1228 |
| 1229 | 01740 | 0 01 01745 | JMP  | DN8B  |                               | FRTN1229 |
| 1230 | 01741 | 0 01 01747 | JMP  | DN8C  |                               | FRTN1230 |
| 1231 | 01742 | 0 04 00774 | DN8A | STA   |                               | FRTN1231 |
| 1232 | 01743 | 0 02 00676 | LDA  | K123  |                               | FRTN1232 |
| 1233 | 01744 | 0 07 00775 | SUB  | TID+1 |                               | FRTN1233 |
| 1234 | 01745 | 0 04 00775 | DN8B | STA   |                               | FRTN1234 |
| 1235 | 01746 | 0 02 00676 | LDA  | K123  |                               | FRTN1235 |
| 1236 | 01747 | 0 07 00776 | DN8C | SUB   |                               | FRTN1236 |
| 1237 | 01750 | 0 04 00776 | STA  | TID+2 |                               | FRTN1237 |
| 1238 | 01751 | 0 02 00633 | DN85 | LDA   | IF SXF = 0, GO TO DN67 (18)   | FRTN1238 |
| 1239 | 01752 | 101040     | SNZ  | SXF   |                               | FRTN1239 |
| 1240 | 01753 | 0 01 01643 | JMP  | DN67  | ELSE,                         | FRTN1240 |
| 1241 | 01754 | 0 02 00706 | LDA  | IM    | IF IM NOT = REA,              | FRTN1241 |
| 1242 | 01755 | 0 07 00736 | SUB  | K102  |                               | FRTN1242 |
| 1243 | 01756 | 100040     | SZE  |       | GO TO DN67 (18)               | FRTN1243 |
| 1244 | 01757 | 0 01 01643 | JMP  | DN67  |                               | FRTN1244 |
| 1245 | 01760 | 0 02 01346 | LDA  | F6    | ELSE,                         | FRTN1245 |
| 1246 | 01761 | 101040     | SNZ  |       | IF F6 = 0, GO TO DN87         | FRTN1246 |

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|------|-------|------------|----------|--------|---------------------------|----------|
| 1247 | 01762 | 0 01 02000 | JMP      | DN87   |                           | FRTN1247 |
| 1248 | 01763 | 0 02 00741 | LDA      | K105   |                           | FRTN1248 |
| 1249 | 01764 | 0 04 00706 | STA      | IM     | IM = CPX                  | FRTN1249 |
| 1250 | 01765 | 0 02 00774 | LDA      | TID    | INTERCHANGE               | FRTN1250 |
| 1251 | 01766 | 0 13 03271 | IMA      | TIDB   | 3 CELLS                   | FRTN1251 |
| 1252 | 01767 | 0 04 00774 | STA      | TID    | TID                       | FRTN1252 |
| 1253 | 01770 | 0 02 00775 | LDA      | TID+1  | WITH                      | FRTN1253 |
| 1254 | 01771 | 0 13 03272 | IMA      | TIDB+1 | 3 CELLS                   | FRTN1254 |
| 1255 | 01772 | 0 04 00775 | STA      | TID+1  | OF                        | FRTN1255 |
| 1256 | 01773 | 0 02 00776 | LDA      | TID+2  | TIDB                      | FRTN1256 |
| 1257 | 01774 | 0 13 03273 | IMA      | TIDB+2 |                           | FRTN1257 |
| 1258 | 01775 | 0 04 00776 | STA      | TID+2  |                           | FRTN1258 |
| 1259 | 01776 | 0 10 02360 | JST      | IP00   | )-INPUT OPERATOR          | FRTN1259 |
| 1260 | 01777 | 0 01 01652 | JMP      | DN71   |                           | FRTN1260 |
| 1261 | 02000 | 0 02 00067 | DN87 LDA | TC     | IF TC = ,                 | FRTN1261 |
| 1262 | 02001 | 0 07 00734 | SUB      | K5     |                           | FRTN1262 |
| 1263 | 02002 | 100040     | SZE      |        |                           | FRTN1263 |
| 1264 | 02003 | 0 01 01643 | JMP      | DN67   | TID-BAR = TID             | FRTN1264 |
| 1265 | 02004 | 0 02 00774 | LDA      | TID    | F6 = 1                    | FRTN1265 |
| 1266 | 02005 | 0 04 03271 | STA      | TIDB   | GO TO DN01 (1)            | FRTN1266 |
| 1267 | 02006 | 0 02 00775 | LDA      | TID+1  |                           | FRTN1267 |
| 1268 | 02007 | 0 04 03272 | STA      | TIDB+1 | ELSE, GO TO DN67 (18)     | FRTN1268 |
| 1269 | 02010 | 0 02 00776 | LDA      | TID+2  |                           | FRTN1269 |
| 1270 | 02011 | 0 04 03273 | STA      | TIDB+2 |                           | FRTN1270 |
| 1271 | 02012 | 0 02 00735 | LDA      | K101   |                           | FRTN1271 |
| 1272 | 02013 | 0 04 01346 | STA      | F6     |                           | FRTN1272 |
| 1273 | 02014 | 0 01 01351 | JMP      | DN01   |                           | FRTN1273 |
| 1274 | 02015 | 0 02 01343 | DN90 LDA | F2     | IF F2= 0, GO TO DN9A (10) | FRTN1274 |
| 1275 | 02016 | 101040     | SNZ      |        |                           | FRTN1275 |
| 1276 | 02017 | 0 01 02023 | JMP      | DN9A   |                           | FRTN1276 |
| 1277 | 02020 | 0 02 01344 | LDA      | F3     | F3 = - F3                 | FRTN1277 |
| 1278 | 02021 | 140407     | TCA      |        |                           | FRTN1278 |
| 1279 | 02022 | 0 04 01344 | STA      | F3     |                           | FRTN1279 |
| 1280 | 02023 | 0 02 01344 | DN9A LDA | F3     | F4 = F3 - F4              | FRTN1280 |
| 1281 | 02024 | 0 07 01345 | SUB      | F4     |                           | FRTN1281 |
| 1282 | 02025 | 0 04 01345 | STA      | F4     |                           | FRTN1282 |
| 1283 | 02026 | 0 02 00716 | LDA      | K12    | F2 = EXP. BIAS + MANTISSA | FRTN1283 |

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|------|-------|------------|----------|-------|-------------------------|----------|
| 1284 | 02027 | 0 04 01343 | STA      | F2    |                         | FRTN1284 |
| 1285 | 02030 | 0 02 00774 | LDA      | TID   | IF TID = 0,             | FRTN1285 |
| 1286 | 02031 | 0 06 00775 | ADD      | TID+1 |                         | FRTN1286 |
| 1287 | 02032 | 101040     | SNZ      |       |                         | FRTN1287 |
| 1288 | 02033 | 0 06 00776 | ADD      | TID+2 | GO TO DN85(13)          | FRTN1288 |
| 1289 | 02034 | 101040     | SNZ      |       |                         | FRTN1289 |
| 1290 | 02035 | 0 01 01751 | JMP      | DN85  |                         | FRTN1290 |
| 1291 | 02036 | 0 02 00776 | DN9C LDA | TID+2 |                         | FRTN1291 |
| 1292 | 02037 | 0414 77    | DN9B LGL | 1     | NORMALIZE ID            | FRTN1292 |
| 1293 | 02040 | 100400     | SPL      |       |                         | FRTN1293 |
| 1294 | 02041 | 0 01 02050 | JMP      | DN9D  | ID IS NORMALIZED        | FRTN1294 |
| 1295 | 02042 | 0 10 02720 | JST      | SFT   |                         | FRTN1295 |
| 1296 | 02043 | 0 000774   | DAC      | ID    |                         | FRTN1296 |
| 1297 |       |            | *        |       | F2 = F2 - = SHIFTS      | FRTN1297 |
| 1298 | 02044 | 0 02 01343 | LDA      | F2    |                         | FRTN1298 |
| 1299 | 02045 | 0 07 00735 | SUB      | K101  |                         | FRTN1299 |
| 1300 | 02046 | 0 04 01343 | STA      | F2    |                         | FRTN1300 |
| 1301 | 02047 | 0 01 02036 | JMP      | DN9C  | CONTINUE NORMALIZE LOOP | FRTN1301 |
| 1302 | 02050 | 0 02 01345 | DN9D LDA | F4    |                         | FRTN1302 |
| 1303 | 02051 | 0 11 03313 | CAS      | ZERO  |                         | FRTN1303 |
| 1304 | 02052 | 0 01 02104 | JMP      | DN9E  |                         | FRTN1304 |
| 1305 | 02053 | 0 01 02122 | JMP      | DN9G  | FINISHED E FACTOR LOOP  | FRTN1305 |
| 1306 | 02054 | 0 12 01345 | IRS      | F4    |                         | FRTN1306 |
| 1307 | 02055 | 101000     | NOP      |       | F4 = F4 +1              | FRTN1307 |
| 1308 | 02056 | 0 02 01336 | LDA      | K155  | DIVIDE LOOP COUNTER     | FRTN1308 |
| 1309 | 02057 | 0 04 00766 | STA      | TIDN  |                         | FRTN1309 |
| 1310 | 02060 | 0 10 02675 | JST      | SRT   | RIGHT SHIFT TID         | FRTN1310 |
| 1311 | 02061 | 0 000774   | DAC      | TID   |                         | FRTN1311 |
| 1312 | 02062 | 0 10 02675 | JST      | SRT   |                         | FRTN1312 |
| 1313 | 02063 | 0 000774   | DAC      | TID   |                         | FRTN1313 |
| 1314 | 02064 | 0 10 02720 | DN9D JST | SFT   |                         | FRTN1314 |
| 1315 | 02065 | 0 000774   | DAC      | TID   |                         | FRTN1315 |
| 1316 | 02066 | 0 02 00776 | LDA      | TID+2 |                         | FRTN1316 |
| 1317 | 02067 | 0 07 01337 | SUB      | K156  | 10 AT B=4               | FRTN1317 |
| 1318 | 02070 | 101400     | SMT      |       |                         | FRTN1318 |
| 1319 | 02071 | 0 04 00776 | STA      | TID+2 |                         | FRTN1319 |
| 1320 | 02072 | 101400     | SMT      |       |                         | FRTN1320 |

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|------|-------|------------|----------|-----------------------------------------------|--------------------------------------------|----------|
| 1321 | 02073 | 0 12 00774 | IRS      | TID                                           |                                            | FRTN1321 |
| 1322 | 02074 | 0 12 00766 | IRS      | TIDN                                          |                                            | FRTN1322 |
| 1323 | 02075 | 0 01 02064 | JMP      | DN91                                          | REDUCE DIVIDE COUNTER                      | FRTN1323 |
| 1324 | 02076 | 0 10 02720 | JST      | SFT                                           |                                            | FRTN1324 |
| 1325 | 02077 | 0 000774   | DAC      | TID                                           |                                            | FRTN1325 |
| 1326 | 02100 | 0 02 00776 | LDA      | TID+2                                         |                                            | FRTN1326 |
| 1327 | 02101 | 0 03 01340 | ANA      | K157                                          |                                            | FRTN1327 |
| 1328 | 02102 | 0 04 00776 | STA      | TID+2                                         |                                            | FRTN1328 |
| 1329 | 02103 | 0 01 02036 | JMP      | DN9C                                          |                                            | FRTN1329 |
| 1330 | 02104 | 0 07 00735 | DN9E SUB | K101                                          |                                            | FRTN1330 |
| 1331 | 02105 | 0 04 01345 | STA      | F4                                            | F4 = F4-1                                  | FRTN1331 |
| 1332 | 02106 | 0 02 01343 | LDA      | F2                                            | F2 = F2+4                                  | FRTN1332 |
| 1333 | 02107 | 0 06 00740 | ADD      | K104                                          |                                            | FRTN1333 |
| 1334 | 02110 | 0 04 01343 | STA      | F2                                            |                                            | FRTN1334 |
| 1335 | 02111 | 0 10 02675 | JST      | SRT                                           |                                            | FRTN1335 |
| 1336 | 02112 | 0 000774   | DAC      | ID                                            |                                            | FRTN1336 |
| 1337 | 02113 | 0 10 02523 | JST      | MOV3                                          |                                            | FRTN1337 |
| 1338 | 02114 | 0 10 02675 | JST      | SRT                                           | ID = ID*10                                 | FRTN1338 |
| 1339 | 02115 | 0 000774   | DAC      | ID                                            |                                            | FRTN1339 |
| 1340 | 02116 | 0 10 02675 | JST      | SRT                                           |                                            | FRTN1340 |
| 1341 | 02117 | 0 000774   | DAC      | ID                                            |                                            | FRTN1341 |
| 1342 | 02120 | 0 10 02442 | JST      | AD3                                           | ADD THREE WORD INTEGERS                    | FRTN1342 |
| 1343 | 02121 | 0 01 02037 | JMP      | DN9B                                          |                                            | FRTN1343 |
| 1344 |       |            | *        | CONVERT THREE WORD INTEGER TO INTERNAL FORMAT |                                            | FRTN1344 |
| 1345 | 02122 | 0 02 00776 | DN9G LDA | TID+2                                         |                                            | FRTN1345 |
| 1346 | 02123 | 000201     | IAB      |                                               |                                            | FRTN1346 |
| 1347 | 02124 | 0 02 01343 | LDA      | F2                                            |                                            | FRTN1347 |
| 1348 | 02125 | 0401 70    | LRS      | 8                                             |                                            | FRTN1348 |
| 1349 | 02126 | 101040     | SNZ      |                                               |                                            | FRTN1349 |
| 1350 | 02127 | 0 01 02132 | JMP      | *+3                                           |                                            | FRTN1350 |
| 1351 | 02130 | 0 10 02615 | JST      | ER00                                          |                                            | FRTN1351 |
| 1352 | 02131 | 141705     | BCI      | 1+CE                                          | CONSTANT'S EXPONENT OVER 8 BITS (OVERFLOW) | FRTN1352 |
| 1353 | 02132 | 000201     | IAB      |                                               |                                            | FRTN1353 |
| 1354 | 02133 | 0 13 00776 | IMA      | TID+2                                         |                                            | FRTN1354 |
| 1355 | 02134 | 000201     | IAB      |                                               |                                            | FRTN1355 |
| 1356 | 02135 | 0 02 00775 | LDA      | TID+1                                         |                                            | FRTN1356 |
| 1357 | 02136 | 0414 77    | LGL      | 1                                             |                                            | FRTN1357 |

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| 1358 | 02137 | 0402 70    | LRR      | 8     |                                  | FRTN1358 |
| 1359 | 02140 | 0 04 00775 | STA      | TID+1 |                                  | FRTN1359 |
| 1360 | 02141 | 0402 67    | LRR      | 9     |                                  | FRTN1360 |
| 1361 | 02142 | 0 02 00774 | LDA      | TID   | PACK UP TRIPLE PRECISION         | FRTN1361 |
| 1362 | 02143 | 0414 77    | LGL      | 1     |                                  | FRTN1362 |
| 1363 | 02144 | 0402 71    | LRR      | 7     | REAL CONSTANT                    | FRTN1363 |
| 1364 | 02145 | 0 04 00774 | STA      | TID   |                                  | FRTN1364 |
| 1365 | 02146 | 0 02 01343 | LDA      | F2    |                                  | FRTN1365 |
| 1366 | 02147 | 141140     | ICL      |       |                                  | FRTN1366 |
| 1367 | 02150 | 100040     | SZE      |       |                                  | FRTN1367 |
| 1368 | 02151 | 0 01 01647 | JMP      | DN69  | GO TO DN69 (20)                  | FRTN1368 |
| 1369 | 02152 | 0 01 01726 | JMP      | DN84  | ELSE, GO TO DN84 (12)            | FRTN1369 |
| 1370 | 02153 | 0 04 00706 | DN9H STA | IM    |                                  | FRTN1370 |
| 1371 | 02154 | 0 02 00634 | LDA      | SPF   |                                  | FRTN1371 |
| 1372 | 02155 | 0 07 00736 | SUB      | K102  |                                  | FRTN1372 |
| 1373 | 02156 | 100040     | SZE      |       |                                  | FRTN1373 |
| 1374 | 02157 | 0 02 00742 | LDA      | K106  |                                  | FRTN1374 |
| 1375 | 02160 | 0 07 00745 | SUB      | K124  |                                  | FRTN1375 |
| 1376 | 02161 | 0 06 00774 | ADD      | TID   |                                  | FRTN1376 |
| 1377 | 02162 | 101400     | SMI      |       |                                  | FRTN1377 |
| 1378 | 02163 | 0 01 01651 | JMP      | DN70  |                                  | FRTN1378 |
| 1379 | 02164 | 0 02 00774 | LDA      | TID   |                                  | FRTN1379 |
| 1380 | 02165 | 0 04 01347 | STA      | HOLF  | HOLF=NO.OF HOLLERITH CHARS.      | FRTN1380 |
| 1381 | 02166 | 0 04 01344 | STA      | F3    |                                  | FRTN1381 |
| 1382 | 02167 | 140407     | TCA      |       |                                  | FRTN1382 |
| 1383 | 02170 | 101040     | SNZ      |       |                                  | FRTN1383 |
| 1384 | 02171 | 0 01 02212 | JMP      | DN9K  | FIELD WIDTH OF ZERO              | FRTN1384 |
| 1385 | 02172 | 0 04 01343 | STA      | F2    | F2= -1(1 CHAR) OR -2(2 CHAR)     | FRTN1385 |
| 1386 | 02173 | 0 10 02510 | JST      | BLNK  | SET ID,ID+1(ID+2 TO ZFEO         | FRTN1386 |
| 1387 | 02174 | 0 000774   | DAC      | TID   |                                  | FRTN1387 |
| 1388 | 02175 | 0 10 01061 | DN9J JST | IC00  | INPUT COLUMN (INCLUDING BLANKS)  | FRTN1388 |
| 1389 | 02176 | 0 10 02555 | JST      | PACK  | PACK CHARACTERS 2 PER WORD       | FRTN1389 |
| 1390 | 02177 | 0 12 01343 | IRS      | F2    | REDUCE CHARACTER COUNT           | FRTN1390 |
| 1391 | 02200 | 0 01 02175 | JMP      | DN9J  | INPUT AND PACK MORE CHARACTERS   | FRTN1391 |
| 1392 | 02201 | 0 02 01344 | LDA      | F3    | F3= 0 IF 2 CHAR. HAVE BEEN INPUT | FRTN1392 |
| 1393 | 02202 | 0 03 00735 | ANA      | K101  |                                  | FRTN1393 |
| 1394 | 02203 | 101040     | SNZ      |       |                                  | FRTN1394 |

\* NAME: FRTN

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|      |       |            |      |      |                                  |          |
|------|-------|------------|------|------|----------------------------------|----------|
| 1395 | 02204 | 0 01 02207 | JMP  | **3  |                                  | FRTN1395 |
| 1396 | 02205 | 0 02 00660 | LDA  | K8   |                                  | FRTN1396 |
| 1397 | 02206 | 0 10 02555 | JST  | PACK | =*240 (SP)                       | FRTN1397 |
| 1398 | 02207 | 0 12 00706 | IRS  | IM   | SHIFT A SPACE INTO THE LAST WORD | FRTN1398 |
| 1399 | 02210 | 0 10 01157 | JST  | CH00 |                                  | FRTN1399 |
| 1400 | 02211 | 0 01 01643 | JMP  | DN67 | INPUT THE TERMINATING CHARACTER  | FRTN1400 |
| 1401 | 02212 | 0 10 02615 | JST  | ER00 | FINISH OPERATOR AND EXIT         | FRTN1401 |
| 1402 | 02213 | 144306     | BCI  | 1+HF |                                  | FRTN1402 |
| 1403 | 02214 | 0 02 00741 | DN9N | LDA  | SET .NOT. OPERATOR (TC=5)        | FRTN1403 |
| 1404 | 02215 | 0 04 00067 | STA  | TC   | SET .NOT. OPERATOR (TC=5)        | FRTN1404 |
| 1405 | 02216 | 140040     | CRA  |      |                                  | FRTN1405 |
| 1406 | 02217 | 0 04 00706 | STA  | IM   | IM=0 = UNDEFINED                 | FRTN1406 |
| 1407 | 02220 | 0 01 01644 | JMP  | DN68 |                                  | FRTN1407 |
| 1408 | 02221 | DNX1       | BSS  | 3    |                                  | FRTN1408 |
| 1409 |       |            | EJCT |      |                                  | FRTN1409 |

\* NAME: FRTN

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|      |       |             |      |      |                 |          |
|------|-------|-------------|------|------|-----------------|----------|
| 1410 |       | *           |      |      |                 | FRTN1410 |
| 1411 |       | *           |      |      |                 | FRTN1411 |
| 1412 |       | *           |      |      |                 | FRTN1412 |
| 1413 |       | *           |      |      |                 | FRTN1413 |
| 1414 |       | *           |      |      |                 | FRTN1414 |
| 1415 |       | *           |      |      |                 | FRTN1415 |
| 1416 |       | *           |      |      |                 | FRTN1416 |
| 1417 | 02224 | 0 000000    | II00 | DAC  | **              | FRTN1417 |
| 1418 | 02225 | 0 10 01350  | JST  | DN00 | INPUT DNA       | FRTN1418 |
| 1419 | 02226 | 101040      | SNZ  |      | IF (A) = 0      | FRTN1419 |
| 1420 | 02227 | -0 01 02224 | JMP* | II00 | RETURN          | FRTN1420 |
| 1421 | 02230 | 0 10 02762  | JST  | A500 | NO. ASSIGN ITEM | FRTN1421 |
| 1422 | 02231 | -0 01 02224 | JMP* | II00 | RETURN (A) = IM | FRTN1422 |
| 1423 |       |             | EJCT |      |                 | FRTN1423 |

\* NAME: FRTN

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```
1424 *
1425 *
1426 *
1427 *
1428 *
1429 *
1430 *
1431 *
1432 02232 0 000000 OP00 DAC ** INPUT OPERAND
1433 02233 0 10 02224 JST I100 INPUT ITEM
1434 02234 100040 SZE IF IM = 0, SKIP
1435 02235 -0 01 02232 JMP* OP00 ELSE (A) = IM, RETURN
1436 02236 0 02 00661 LDA K10 TC = .
1437 02237 0 04 00067 STA TC (A) = 0
1438 02240 140040 CRA
1439 02241 -0 01 02232 JMP* OP00 RETURN
1440 EJCT
```

FRTN1424  
FRTN1425  
FRTN1426  
FRTN1427  
FRTN1428  
FRTN1429  
FRTN1430  
FRTN1431  
FRTN1432  
FRTN1433  
FRTN1434  
FRTN1435  
FRTN1436  
FRTN1437  
FRTN1438  
FRTN1439  
FRTN1440

\* NAME: FRTN

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```
1441 *
1442 *
1443 *
1444 *
1445 *
1446 *
1447 *
1448 02242 0 000000 NA00 DAC ** INPUT NAME
1449 02243 0 10 02232 JST OP00 INPUT OPERAND
1450 02244 0 02 00054 LDA NT IF NT = 1,
1451 02245 101040 SNZ
1452 02246 0 01 02251 JMP NA10
1453 02247 0 10 02615 NA7X JST ER00
1454 02250 153316 BCI 1.VN
1455 02251 0 02 00706 NA10 LDA IM (A) = IM
1456 02252 -0 01 02242 JMP* NA00 RETURN
1457 EJCT
```

FRTN1441  
FRTN1442  
FRTN1443  
FRTN1444  
FRTN1445  
FRTN1446  
FRTN1447  
FRTN1448  
FRTN1449  
FRTN1450  
FRTN1451  
FRTN1452  
FRTN1453  
FRTN1454  
FRTN1455  
FRTN1456  
FRTN1457

\* NAME: FRTN

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```
1458      *
1459      *
1460      *
1461      *          *****
1462      *          *INPUT INTEGER VAR/CON*
1463      *          *****
1464 02253  0 000000  IV00 DAC  **
1465 02254  0 10 02232 JST  OP00      INPUT OPERAND
1466 02255  0 10 02433 JST  IT00      INTER TEST
1467 02256  0 10 03274 JST  TV00      TAG VARIABLE
1468 02257 -0 01 02253 JMP*  IV00      EXIT
1469      EJCT
```

```
FRTN1458
FRTN1459
FRTN1460
FRTN1461
FRTN1462
FRTN1463
FRTN1464
FRTN1465
FRTN1466
FRTN1467
FRTN1468
FRTN1469
```

\* NAME: FRTN

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```
1470      *
1471      *
1472      *
1473      *          *****
1474      *          *INPUT INTEGER VARIABLE*
1475      *          *****
1476 02260  0 000000  IR00 DAC  **
1477 02261  0 10 02253 JST  IV00      INPUT INT VAR
1478 02262  0 10 02407 JST  NC00      INPUT INT VAR/CON
1479 02263 -0 01 02260 JMP*  IR00      NON-CONSTANT TEST
1480      EJCT      RETURN
```

```
FRTN1470
FRTN1471
FRTN1472
FRTN1473
FRTN1474
FRTN1475
FRTN1476
FRTN1477
FRTN1478
FRTN1479
FRTN1480
```

\* NAME: FRTN

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```
1481 *
1482 *
1483 *
1484 * *****
1485 * *INPUT STATEMENT NUMBER*
1486 * *****
1487 * NUMBER IS FORMED AS SPECIAL NAME , NOT CONVERTED
1488 * TO NUMERIC
1489 02264 0 000000 IS00 DAC **
1490 02265 140040 IS04 CRA
1491 02266 0 04 00054 STA NT
1492 02267 0 04 00706 STA IM
1493 02270 0 04 00710 STA IU
1494 02271 0 04 00056 STA NTID
1495 02272 0 02 02337 LDA K79
1496 02273 0 10 02555 JST PACK
1497 02274 0 10 01240 IS10 JST ID00
1498 02275 100040 SZE
1499 02276 0 01 02312 JMP IS20
1500 02277 0 02 00056 LDA NTID
1501 02300 0 07 00742 SUB K106
1502 02301 101400 SMI
1503 02302 0 01 02316 JMP IS22
1504 02303 0 02 00067 LDA TC
1505 02304 0 10 02555 JST PACK
1506 02305 0 02 00774 LDA TID
1507 02306 0 11 02340 CAS K79X
1508 02307 0 01 02274 JMP IS10
1509 02310 0 01 02265 JMP IS04
1510 02311 0 01 02274 JMP IS10
1511 02312 0 02 00056 IS20 LDA NTID
1512 02313 0 07 00735 SUB K101
1513 02314 101400 SMI
1514 02315 0 01 02320 JMP IS25
1515 02316 0 10 02615 IS22 JST ER00
1516 02317 151724 BCI 1,ST
1517 02320 0 10 02762 IS25 JST AS00
```

\*\*\*\*\*  
\*INPUT STATEMENT NUMBER\*  
\*\*\*\*\*  
NUMBER IS FORMED AS SPECIAL NAME , NOT CONVERTED  
TO NUMERIC

IU = IM = IT = 0  
PUT LEADING 'S' IN STATEMENT NO.

INPUT DIGIT

NOT A DIGIT GO TO IS20

PACK TC TO ID - LEGAL ST. NO. CHAR

IGNORE LEAD ZERO ON ST. NO.

ILLEGAL STATEMENT NUMBER FORMAT  
ASSIGN ITEM

\* NAME: FRTN

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```
1518 02321 0 35 00625 LDX A
1519 02322 1 02 17401 LDA DP+1,1
1520 02323 0 03 00670 ANA K111
1521 02324 1 04 17401 STA DP+1,1
1522 02325 0 02 00025 LDA AF
1523 02326 0 11 00640 CAS XST
1524 02327 -0 01 02264 JMP* IS00
1525 02330 -0 01 02264 JMP* IS00
1526 02331 0 02 00026 LDA AT
1527 02332 0 11 00736 CAS K102
1528 02333 101000 NOP
1529 02334 -0 01 02264 JMP* IS00
1530 02335 0 10 02615 JST ER00
1531 02336 151316 K41 BCI 1,RN
1532 02337 000237 K79 OCT 337
1533 02340 157660 K79X OCT 157660
1534 EJCT
```

IU = 0  
ADDRESS FIELD IS  
LE XST - ALREADY ASSIGNED

OK - OTHERWISE  
MUST HAVE STR-ABS OTHERWISE

STRING-REL IS ALSO OK

REFERENCE TO A SPECIFICATION STMT. NO.

\* NAME: FRTN

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|      |       |    |          |      |      |    |                                  |  |          |
|------|-------|----|----------|------|------|----|----------------------------------|--|----------|
| 1535 |       |    | *        |      |      |    |                                  |  | FRTN1535 |
| 1536 | 02341 | 0  | 000000   | SY00 | DAC  | ** |                                  |  | FRTN1536 |
| 1537 | 02342 | 0  | 02 00735 | LDA  | K101 |    | INPUT SYMBOL                     |  | FRTN1537 |
| 1538 | 02343 | 0  | 04 00055 | STA  | NTF  |    |                                  |  | FRTN1538 |
| 1539 | 02344 | 0  | 10 02242 | JST  | NA00 |    | NTF NOT 0 - DON'T SET IU IN A500 |  | FRTN1539 |
| 1540 | 02345 | -0 | C1 02341 | JMP* | SY00 |    | INPUT NAME                       |  | FRTN1540 |
| 1541 |       |    |          | EJCT |      |    | EXIT                             |  | FRTN1541 |

\* NAME: FRTN

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```

1542      *
1543      *
1544      * *****
1545      * *EXAMINE NEXT CHARACTER*
1546      * *****
1547      * CHECK NEXT CHAR FOR DIGIT (BACKUP ONE COL. THEN EXIT)
1548 02346 0 000000 XN00 DAC **
1549 02347 0 10 01240 JST ID00 INPUT DIGIT
1550 02350 0 10 01152 JST UC00 UNINPUT COLUMM
1551 02351 -0 01 02346 JMP* XN00
1552      EJCT

```

\* NAME: FRTN

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```
1553      *
1554      *
1555      *
1556      *
1557      *
1558      *
1559 02352 0 000000 TS00 DAC **          TEST (A) AGAINST TC
1560 02353 0 07 00067 SUB TC
1561 02354 101040 SNZ
1562 02355 -0 01 02352 JMP* TS00          RETURN
1563 02356 0 10 02615 JST ER00          TO ERROR TEST
1564 02357 141710 BCI 1*CH          IMPROPER TERMINATING CHARACTER
1565      EJCT
```

FRTN1553  
FRTN1554  
FRTN1555  
FRTN1556  
FRTN1557  
FRTN1558  
FRTN1559  
FRTN1560  
FRTN1561  
FRTN1562  
FRTN1563  
FRTN1564  
FRTN1565

\* NAME: FRTN

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```
1566      *
1567      *
1568      *
1569      *
1570      *
1571      *
1572 02360 0 000000 IP00 DAC **
1573 02361 0 02 00657 LDA K4          TEST - )
1574 02362 0 10 02352 JST TS00
1575 02363 0 10 01157 JST CH00          INPUT CHAR
1576 02364 0 10 01307 JST FN00          FINISH OPERATOR
1577 02365 0 02 00036 LDA B          B = B-16
1578 02366 0 07 00666 SUB K109
1579 02367 0 04 00036 STA B
1580 02370 140040 CRA          (A) = 0
1581 02371 -0 01 02360 JMP* IP00          RETURN
1582      EJCT
```

FRTN1566  
FRTN1567  
FRTN1568  
FRTN1569  
FRTN1570  
FRTN1571  
FRTN1572  
FRTN1573  
FRTN1574  
FRTN1575  
FRTN1576  
FRTN1577  
FRTN1578  
FRTN1579  
FRTN1580  
FRTN1581  
FRTN1582

\* NAME: FRTN

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```

1583          *                                FRTN1583
1584          *                                FRTN1584
1585          *                                FRTN1585
1586 02372    0 000000  NR00 DAC  **          NON-REL TEST      FRTN1586
1587 02373    0 02 00026 LDA  AT                                FRTN1587
1588 02374    0 07 00735 SUB  K101          IF AT = 1 GO TO ERROR- FRTN1588
1589 02375    100040      SIZE                                FRTN1589
1590 02376    -0 01 02372 JMP* NR00          RETURN              FRTN1590
1591 02377    0 10 02615 JST  ER00          ERROR TEST ROUTINE   FRTN1591
1592 02400    146723    BCI  1*MS          MULTIPLY DEFINED STATEMENT NUMBER FRTN1592
1593          EJCT                                FRTN1593

```

\* NAME: FRTN

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|      |       |             |             |                 |                         |          |
|------|-------|-------------|-------------|-----------------|-------------------------|----------|
| 1594 |       | *           |             |                 |                         | FRTN1594 |
| 1595 |       | *           |             |                 |                         | FRTN1595 |
| 1596 |       | *           |             | *****           |                         | FRTN1596 |
| 1597 |       | *           |             | *NO USAGE TEST* |                         | FRTN1597 |
| 1598 |       | *           |             | *****           |                         | FRTN1598 |
| 1599 |       | *           |             |                 |                         | FRTN1599 |
| 1600 | 02401 | 0 000000    | NU00 DAC ** |                 | NO USAGE TEST           | FRTN1600 |
| 1601 | 02402 | 0 02 00710  | LDA IU      |                 |                         | FRTN1601 |
| 1602 | 02403 | 101040      | SNZ         |                 | IF IU NOT = 0, TO ERROR | FRTN1602 |
| 1603 | 02404 | -0 01 02401 | JMP* NU00   |                 | RETURN                  | FRTN1603 |
| 1604 | 02405 | 0 10 02615  | JST ER00    |                 | ERROR TEST              | FRTN1604 |
| 1605 | 02406 | 147325      | BCI 1,NU    |                 | NAME ALREADY BEING USED | FRTN1605 |
| 1606 |       |             | EJCT        |                 |                         | FRTN1606 |

\* NAME: FRTN

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```
1607      *
1608      *
1609      *
1610      *      *****
1611      *      *NON-CONSTANT TEST*
1612      *      *****
1613 02407  0 000000  NC00 DAC  **      NON CONSTANT TEST
1614 02410  0 02 00054 LDA  NT
1615 02411  101040  SNZ
1616 02412 -0 01 02407 JMP* NC00      IF NT NOT = 0, TO ERROR TEST
1617 02413  0 10 02615 JST  ER00      RETURN
1618 02414  147303  BCI  1*NC      ERROR TEST
1619      EJCT      CONSTANT MUST BE PRESENT
```

FRTN1607  
FRTN1608  
FRTN1609  
FRTN1610  
FRTN1611  
FRTN1612  
FRTN1613  
FRTN1614  
FRTN1615  
FRTN1616  
FRTN1617  
FRTN1618  
FRTN1619

\* NAME: FRTN

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```
1620      *
1621      *
1622      *
1623      *      *****
1624      *      *NON SUBPROGRAM TEST*
1625      *      *****
1626 02415  0 000000  NS00 DAC  **      NON SUBPROGRAM TEST
1627 02416  0 02 00710 LDA  IU
1628 02417  0 07 00735 SUB  K101      IF IU = 1, GO TO-
1629 02420  100040  SZE      ERROR TEST
1630 02421 -0 01 02415 JMP* NS00      RETURN
1631 02422  0 10 02615 JST  ER00      ERROR TEST
1632 02423  147323  BCI  1*NS      SUBPROGRAM NAME NOT ALLOWED
1633      EJCT
```

FRTN1620  
FRTN1621  
FRTN1622  
FRTN1623  
FRTN1624  
FRTN1625  
FRTN1626  
FRTN1627  
FRTN1628  
FRTN1629  
FRTN1630  
FRTN1631  
FRTN1632  
FRTN1633

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|      |       |             |             |                        |           |
|------|-------|-------------|-------------|------------------------|-----------|
| 1634 |       | *           |             |                        | FRTN1634  |
| 1635 |       | *           |             |                        | FRTN1635  |
| 1636 |       | *           | *****       |                        | FRTN1636  |
| 1637 |       | *           | *ARR TEST*  |                        | FRTN1637  |
| 1638 |       | *           | *****       |                        | FRTN1638  |
| 1639 |       | *           |             |                        | FRTN1639  |
| 1640 | 02424 | 0 000000    | ATOC DAC ** | ARRAY TEST             | FRTN1640  |
| 1641 | 02425 | 0 02 00710  | LDA IU      |                        | FRTN1641  |
| 1642 | 02426 | 0 07 00737  | SUB K103    | IF IU = 3, GO TO       | FRTN1642  |
| 1643 | 02427 | 101040      | SNZ         |                        | FRTN1643. |
| 1644 | 02430 | -0 01 02424 | JMP* ATOO   | RETURN                 | FRTN1644  |
| 1645 | 02431 | 0 10 02615  | JST EPOO    | ERROR TEST             | FRTN1645  |
| 1646 | 02432 | 140722      | BCI 1-AR    | ITEM NOT AN ARRAY NAME | FRTN1646  |
| 1647 |       |             | EJCT        |                        | FRTN1647  |

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```

1648          *
1649          *
1650          *
1651          *
1652          *
1653          *
1654 02433    0 000000  IT00 DAC  **          INTEGER TEST
1655 02434    0 02 00706  LDA  IM
1656 02435    0 07 00735  SUB  K101          IF IM = 1, GO TO-
1657 02436    1C1040     SNZ
1658 02437    -0 C1 02433  JMP* IT00          ERROR ROUTINE, ELSE
1659 02440    0 10 02615  JST  ER00          RETURN
1660 02441    144724     BCI  1,IT          TO ERROR TEST
1661          EUCT          ITEM NOT AN INTEGER

```

\* NAME: FRTN

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|      |       |             |     |      |        |                              |          |
|------|-------|-------------|-----|------|--------|------------------------------|----------|
| 1662 | *     |             |     |      |        |                              | FRTN1662 |
| 1663 | *     |             |     |      |        |                              | FRTN1663 |
| 1664 | *     |             |     |      |        |                              | FRTN1664 |
| 1665 | *     |             |     |      |        |                              | FRTN1665 |
| 1666 | *     |             |     |      |        |                              | FRTN1666 |
| 1667 | *     |             |     |      |        |                              | FRTN1667 |
| 1668 | 02442 | 0 000000    | AD3 | DAC  | **     | ADD TWO THREE WORD INTEGERS. | FRTN1668 |
| 1669 | 02443 | 0 02 00774  |     | LDA  | TID    |                              | FRTN1669 |
| 1670 | 02444 | 0 06 02221  |     | ADD  | DNX1   |                              | FRTN1670 |
| 1671 | 02445 | 140320      |     | CSA  |        |                              | FRTN1671 |
| 1672 | 02446 | 0 04 00774  |     | STA  | TID    |                              | FRTN1672 |
| 1673 | 02447 | 0 02 00775  |     | LDA  | TID+1  |                              | FRTN1673 |
| 1674 | 02450 | 141216      |     | ACA  |        |                              | FRTN1674 |
| 1675 | 02451 | 0 06 02222  |     | ADD  | DNX1+1 |                              | FRTN1675 |
| 1676 | 02452 | 140320      |     | CSA  |        |                              | FRTN1676 |
| 1677 | 02453 | 0 04 00775  |     | STA  | TID+1  |                              | FRTN1677 |
| 1678 | 02454 | 0 02 00776  |     | LDA  | TID+2  |                              | FRTN1678 |
| 1679 | 02455 | 141216      |     | ACA  |        |                              | FRTN1679 |
| 1680 | 02456 | 0 06 02223  |     | ADD  | DNX1+2 |                              | FRTN1680 |
| 1681 | 02457 | 0 04 00776  |     | STA  | TID+2  |                              | FRTN1681 |
| 1682 | 02460 | -0 01 02442 |     | JMP* | AD3    |                              | FRTN1682 |
| 1683 |       |             |     | EJCT |        |                              | FRTN1683 |

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|      |       |             |      |      |      |                     |          |
|------|-------|-------------|------|------|------|---------------------|----------|
| 1684 | *     |             |      |      |      |                     | FRTN1684 |
| 1685 | *     |             |      |      |      |                     | FRTN1685 |
| 1686 | *     |             |      |      |      |                     | FRTN1686 |
| 1687 | 02461 | 177761      | K120 | DEC  | -15  |                     | FRTN1687 |
| 1688 | 02462 | 0 000000    | IM00 | DAC  | **   |                     | FRTN1688 |
| 1689 | 02463 | 0 04 02477  |      | STA  | T1IM | MULTIPLY A BY B     | FRTN1689 |
| 1690 | 02464 | 0 02 02461  |      | LDA  | K120 | =-15                | FRTN1690 |
| 1691 | 02465 | 0 04 02500  |      | STA  | T2IM |                     | FRTN1691 |
| 1692 | 02466 | 140040      |      | CRA  |      |                     | FRTN1692 |
| 1693 | 02467 | 140200      |      | RCB  |      |                     | FRTN1693 |
| 1694 | 02470 | 0400 77     | IM10 | LRL  | 1    | C BIT = 0           | FRTN1694 |
| 1695 | 02471 | 100001      |      | SRC  |      | LOW BIT OF B INTO C | FRTN1695 |
| 1696 | 02472 | 0 06 02477  |      | ADD  | T1IM | SKIP IF B = 0       | FRTN1696 |
| 1697 | 02473 | 0 12 02500  |      | IRS  | T2IM |                     | FRTN1697 |
| 1698 | 02474 | 0 01 02470  |      | JMP  | IM10 |                     | FRTN1698 |
| 1699 | 02475 | 0410 62     |      | LLL  | 14   |                     | FRTN1699 |
| 1700 | 02476 | -0 01 02462 |      | JMP* | IM00 | RETURN, RESULT IN A | FRTN1700 |
| 1701 | 02477 | 0 00 00000  | T1IM | PZE  | 0    |                     | FRTN1701 |
| 1702 | 02500 | 0 00 00000  | T2IM | PZE  | 0    |                     | FRTN1702 |
| 1703 |       |             |      | EJCT |      |                     | FRTN1703 |

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| ADDRESS | HEX   | ASSEMBLY    | OPERANDS | OPERATION | ADDRESS                      |
|---------|-------|-------------|----------|-----------|------------------------------|
| 1714    |       | *           |          |           | FRTN1714                     |
| 1715    |       | *           |          |           | FRTN1715                     |
| 1716    | 02510 | 0 000000    | BLNK DAC | **        | CLEAR A 3/36                 |
| 1717    | 02511 | 0 15 02522  | STX      | BLXS      | AREA TO ZEROS                |
| 1718    | 02512 | -0 35 02510 | LDX*     | BLNK      |                              |
| 1719    | 02513 | 140040      | CRA      |           |                              |
| 1720    | 02514 | 1 04 00001  | STA      | 1+1       | CLEAR 3 WORDS OF MEMORY      |
| 1721    | 02515 | 1 04 00002  | STA      | 2+1       | PARAMETER INPUT ADDRESS TO 0 |
| 1722    | 02516 | 1 04 00000  | STA      | 0+1       |                              |
| 1723    | 02517 | 0 35 02522  | LDX      | BLXS      |                              |
| 1724    | 02520 | 0 12 02510  | IRS      | BLNK      | RESTORE INDEX                |
| 1725    | 02521 | -0 01 02510 | JMP*     | BLNK      |                              |
| 1726    | 02522 |             | BLXS BSS | 1         | EXIT                         |
| 1727    |       |             | EJCT     |           | TEMP STORAGE FOR INDEX       |

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| ADDRESS | OPERANDS          | OPERATION   | REMARKS       |
|---------|-------------------|-------------|---------------|
| 1728    |                   | *           |               |
| 1729    |                   | *           |               |
| 1730    | 02523 C 000000    | MOV3 DAC ** | MOVE 3-WORDS  |
| 1731    | 02524 0 02 00774  | LDA TID     | TO TEMP STORE |
| 1732    | 02525 C 04 02221  | STA DNX1    |               |
| 1733    | 02526 0 02 00775  | LDA TID+1   |               |
| 1734    | 02527 0 C4 02222  | STA DNX1+1  |               |
| 1735    | 02530 0 02 00776  | LDA TID+2   |               |
| 1736    | 02531 C 04 02223  | STA DNX1+2  |               |
| 1737    | 02532 -C 01 02523 | JMP* MOV3   |               |
| 1738    |                   | EJCT        |               |

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| PC | OP | OP2 | OP3 | OP4 | OP5 | OP6 | OP7 | OP8 | OP9 | OP10 | OP11 | OP12 | OP13 | OP14 | OP15 | OP16 | OP17 | OP18 | OP19 | OP20 | OP21 | OP22 | OP23 | OP24 | OP25 | OP26 | OP27 | OP28 | OP29 | OP30 | OP31 | OP32 | OP33 | OP34 | OP35 | OP36 | OP37 | OP38 | OP39 | OP40 | OP41 | OP42 | OP43 | OP44 | OP45 | OP46 | OP47 | OP48 | OP49 | OP50 | OP51 | OP52 | OP53 | OP54 | OP55 | OP56 | OP57 | OP58 | OP59 | OP60 | OP61 | OP62 | OP63 | OP64 | OP65 | OP66 | OP67 | OP68 | OP69 | OP70 | OP71 | OP72 | OP73 | OP74 | OP75 | OP76 | OP77 | OP78 | OP79 | OP80 | OP81 | OP82 | OP83 | OP84 | OP85 | OP86 | OP87 | OP88 | OP89 | OP90 | OP91 | OP92 | OP93 | OP94 | OP95 | OP96 | OP97 | OP98 | OP99 | OP100 | OP101 | OP102 | OP103 | OP104 | OP105 | OP106 | OP107 | OP108 | OP109 | OP110 | OP111 | OP112 | OP113 | OP114 | OP115 | OP116 | OP117 | OP118 | OP119 | OP120 | OP121 | OP122 | OP123 | OP124 | OP125 | OP126 | OP127 | OP128 | OP129 | OP130 | OP131 | OP132 | OP133 | OP134 | OP135 | OP136 | OP137 | OP138 | OP139 | OP140 | OP141 | OP142 | OP143 | OP144 | OP145 | OP146 | OP147 | OP148 | OP149 | OP150 | OP151 | OP152 | OP153 | OP154 | OP155 | OP156 | OP157 | OP158 | OP159 | OP160 | OP161 | OP162 | OP163 | OP164 | OP165 | OP166 | OP167 | OP168 | OP169 | OP170 | OP171 | OP172 | OP173 | OP174 | OP175 | OP176 | OP177 | OP178 | OP179 | OP180 | OP181 | OP182 | OP183 | OP184 | OP185 | OP186 | OP187 | OP188 | OP189 | OP190 | OP191 | OP192 | OP193 | OP194 | OP195 | OP196 | OP197 | OP198 | OP199 | OP200 | OP201 | OP202 | OP203 | OP204 | OP205 | OP206 | OP207 | OP208 | OP209 | OP210 | OP211 | OP212 | OP213 | OP214 | OP215 | OP216 | OP217 | OP218 | OP219 | OP220 | OP221 | OP222 | OP223 | OP224 | OP225 | OP226 | OP227 | OP228 | OP229 | OP230 | OP231 | OP232 | OP233 | OP234 | OP235 | OP236 | OP237 | OP238 | OP239 | OP240 | OP241 | OP242 | OP243 | OP244 | OP245 | OP246 | OP247 | OP248 | OP249 | OP250 | OP251 | OP252 | OP253 | OP254 | OP255 | OP256 | OP257 | OP258 | OP259 | OP260 | OP261 | OP262 | OP263 | OP264 | OP265 | OP266 | OP267 | OP268 | OP269 | OP270 | OP271 | OP272 | OP273 | OP274 | OP275 | OP276 | OP277 | OP278 | OP279 | OP280 | OP281 | OP282 | OP283 | OP284 | OP285 | OP286 | OP287 | OP288 | OP289 | OP290 | OP291 | OP292 | OP293 | OP294 | OP295 | OP296 | OP297 | OP298 | OP299 | OP300 | OP301 | OP302 | OP303 | OP304 | OP305 | OP306 | OP307 | OP308 | OP309 | OP310 | OP311 | OP312 | OP313 | OP314 | OP315 | OP316 | OP317 | OP318 | OP319 | OP320 | OP321 | OP322 | OP323 | OP324 | OP325 | OP326 | OP327 | OP328 | OP329 | OP330 | OP331 | OP332 | OP333 | OP334 | OP335 | OP336 | OP337 | OP338 | OP339 | OP340 | OP341 | OP342 | OP343 | OP344 | OP345 | OP346 | OP347 | OP348 | OP349 | OP350 | OP351 | OP352 | OP353 | OP354 | OP355 | OP356 | OP357 | OP358 | OP359 | OP360 | OP361 | OP362 | OP363 | OP364 | OP365 | OP366 | OP367 | OP368 | OP369 | OP370 | OP371 | OP372 | OP373 | OP374 | OP375 | OP376 | OP377 | OP378 | OP379 | OP380 | OP381 | OP382 | OP383 | OP384 | OP385 | OP386 | OP387 | OP388 | OP389 | OP390 | OP391 | OP392 | OP393 | OP394 | OP395 | OP396 | OP397 | OP398 | OP399 | OP400 | OP401 | OP402 | OP403 | OP404 | OP405 | OP406 | OP407 | OP408 | OP409 | OP410 | OP411 | OP412 | OP413 | OP414 | OP415 | OP416 | OP417 | OP418 | OP419 |
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|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

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|------|-------|-------------|-----------|--------|-----------------------------|----------|
| 1762 |       | *           |           |        |                             | FRTN1762 |
| 1763 |       | *           |           |        |                             | FRTN1763 |
| 1764 | 02555 | 0 000000    | PACK DAC  | **     | PLACE CHARACTER IN A        | FRTN1764 |
| 1765 | 02556 | 0 04 02612  | STA       | PAK7   |                             | FRTN1765 |
| 1766 | 02557 | 0 02 00056  | LDA       | NTID   | INTO ID - UPDATE 3 WORDS OF | FRTN1766 |
| 1767 | 02560 | 101040      | PAK1 SNZ  |        | ID                          | FRTN1767 |
| 1768 | 02561 | 0 01 02603  | JMP       | PAK4   |                             | FRTN1768 |
| 1769 | 02562 | 0400 77     | LRL       | 1      |                             | FRTN1769 |
| 1770 | 02563 | 0 06 02614  | ADD       | PAK9   |                             | FRTN1770 |
| 1771 | 02564 | 0 04 02613  | STA       | PAK8   |                             | FRTN1771 |
| 1772 | 02565 | 0 02 02612  | LDA       | PAK7   |                             | FRTN1772 |
| 1773 | 02566 | 000201      | IAB       |        |                             | FRTN1773 |
| 1774 | 02567 | 100400      | SPL       |        |                             | FRTN1774 |
| 1775 | 02570 | 0 01 02576  | JMP       | PAK3   |                             | FRTN1775 |
| 1776 | 02571 | 0410 50     | LLL       | 24     |                             | FRTN1776 |
| 1777 | 02572 | 0 06 00660  | ADD       | K8     |                             | FRTN1777 |
| 1778 | 02573 | -0 04 02613 | PAK2 STA* | PAK8   |                             | FRTN1778 |
| 1779 | 02574 | 0 12 00056  | IRS       | NTID   |                             | FRTN1779 |
| 1780 | 02575 | -0 01 02555 | JMP*      | PACK   |                             | FRTN1780 |
| 1781 | 02576 | 0410 70     | PAK3 LLL  | 8      |                             | FRTN1781 |
| 1782 | 02577 | -0 02 02613 | LDA*      | PAK8   |                             | FRTN1782 |
| 1783 | 02600 | 141140      | ICL       |        |                             | FRTN1783 |
| 1784 | 02601 | 0410 70     | LLL       | 8      |                             | FRTN1784 |
| 1785 | 02602 | 0 01 02573  | JMP       | PAK2   |                             | FRTN1785 |
| 1786 | 02603 | 0 02 00765  | PAK4 LDA  | K81    |                             | FRTN1786 |
| 1787 | 02604 | 0 04 00774  | STA       | TID    |                             | FRTN1787 |
| 1788 | 02605 | 0 04 00775  | STA       | TID+1  |                             | FRTN1788 |
| 1789 | 02606 | 0 04 00776  | STA       | TID+2  |                             | FRTN1789 |
| 1790 | 02607 | 0 04 00777  | STA       | TID+3  |                             | FRTN1790 |
| 1791 | 02610 | 0 02 00056  | LDA       | NTID   |                             | FRTN1791 |
| 1792 | 02611 | 0 01 02562  | JMP       | PAK1+2 |                             | FRTN1792 |
| 1793 | 02612 | 0 000000    | PAK7 DAC  | **     |                             | FRTN1793 |
| 1794 | 02613 | 0 000000    | PAK8 DAC  | **     |                             | FRTN1794 |
| 1795 | 02614 | 0 000774    | PAK9 DAC  | TID    |                             | FRTN1795 |
| 1796 |       |             | EJCT      |        |                             | FRTN1796 |

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|------|-------|-------------|-----------|---------|--------------------------------------------|----------|
| 1797 |       | *           |           |         |                                            | FRTN1797 |
| 1798 |       | *           |           |         |                                            | FRTN1798 |
| 1799 |       | *           |           |         |                                            | FRTN1799 |
| 1800 |       | *           |           |         |                                            | FRTN1800 |
| 1801 |       | *           |           |         |                                            | FRTN1801 |
| 1802 |       | *           |           |         |                                            | FRTN1802 |
| 1803 | 02615 | 0 000000    | ER00 DAC  | **      | ERROR ROUTINE                              | FRTN1803 |
| 1804 | 02616 | 0 10 13321  | JST       | PRSP    | BLANK OUT BUFFER                           | FRTN1804 |
| 1805 |       | 002617      | ER04 EQU  | *       |                                            | FRTN1805 |
| 1806 | 02617 | 0 35 00762  | LDX       | K130    | -6                                         | FRTN1806 |
| 1807 | 02620 | 0 02 02673  | LDA       | ER91    | SET ** INTO PRINT BUFFER                   | FRTN1807 |
| 1808 | 02621 | 1 04 13752  | ER03 STA  | PRI+6,1 | X                                          | FRTN1808 |
| 1809 | 02622 | 0 12 00000  | IRS       | 0       | X                                          | FRTN1809 |
| 1810 | 02623 | 0 01 02621  | JMP       | ER03    | X                                          | FRTN1810 |
| 1811 | 02624 | 0 02 00656  | LDA       | CC      | CARD COLUMN POINTER                        | FRTN1811 |
| 1812 | 02625 | 0 11 00735  | CAS       | K101    | COMPARE IT TO 1                            | FRTN1812 |
| 1813 | 02626 | 0 01 02634  | JMP       | ER01    | ERROR IS IN PRESENT CARD                   | FRTN1813 |
| 1814 | 02627 | 0 01 02634  | JMP       | ER01    | X                                          | FRTN1814 |
| 1815 | 02630 | 0 02 02674  | LDA       | ER92    | USE TWO VERTICAL ARROWS FOR PREVIOUS CARD  | FRTN1815 |
| 1816 | 02631 | 0 04 13744  | STA       | PRI     | X                                          | FRTN1816 |
| 1817 | 02632 | 0 35 00742  | LDX       | K106    | POSITION IN                                | FRTN1817 |
| 1818 | 02633 | 0 01 02637  | JMP       | ER02    | X                                          | FRTN1818 |
| 1819 | 02634 | 0 02 00656  | ER01 LDA  | CC      | CHECK COLUMN POSITION OF ERROR             | FRTN1819 |
| 1820 | 02635 | 0404 77     | LGR       | 1       | TRUNCATE TO WORD POSITION                  | FRTN1820 |
| 1821 | 02636 | 0 04 00000  | STA       | 0       | X                                          | FRTN1821 |
| 1822 | 02637 | -0 02 02615 | ER02 LDA* | ER00    | PICK UP ERROR ID                           | FRTN1822 |
| 1823 | 02640 | 1 04 13744  | STA       | PRI+1   | POSITION AS DETERMINED                     | FRTN1823 |
| 1824 | 02641 | 0 02 00654  | LDA       | EBAR    | (NEGATIVE IF NOT WITHIN EQUIVALENCE STMT.) | FRTN1824 |
| 1825 | 02642 | 140320      | CSA       |         |                                            | FRTN1825 |
| 1826 | 02643 | 0 02 00726  | LDA       | KAEO    | SET UP 'EQ'                                | FRTN1826 |
| 1827 | 02644 | 101001      | SSC       |         | CHECK IF EQUIVALENCE STMT. ERROR           | FRTN1827 |
| 1828 | 02645 | 1 04 13745  | STA       | PRI+1,1 | IF SO, APPEND 'EQ' TO ERROR ID             | FRTN1828 |
| 1829 | 02646 | 0 10 00000  | CALL      | F4SSYM  | PRINT BUFFER                               | FRTN1829 |
| 1830 | 02647 | 0 013744    | CERR DAC  | PRI     | X                                          | FRTN1830 |
| 1831 | 02650 | 0 10 13321  | JST       | PRSP    | BLANK OUT BUFFER                           | FRTN1831 |
| 1832 | 02651 | 140040      | CRA       |         | CLEAR                                      | FRTN1832 |
| 1833 | 02652 | 0 04 00642  | STA       | D       | DO LOOP POINTER                            | FRTN1833 |

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|------|-------|-------------|------|------|-------------------------------------------|----------|
| 1834 | 02653 | 0 02 00654  | LDA  | EBAR |                                           | FRTN1834 |
| 1835 | 02654 | 101400      | SMI  |      | IS IT PROCESSING AN EQUIVALENCE           | FRTN1835 |
| 1836 | 02655 | 0 01 01233  | JMP  | CH12 | IF SO, CONSIDER THIS IN WRAP UP           | FRTN1836 |
| 1837 | 02656 | -0 02 02615 | LDA* | ER00 | SAVE ERROR ID                             | FRTN1837 |
| 1838 | 02657 | 0 12 02615  | IRS  | ER00 | BUMP EXIT, RETURN IF END STMT. ERROR      | FRTN1838 |
| 1839 | 02660 | 101400      | SMI  |      | ERROR ID IS + ONLY FOR RECOVERABLE ERRORS | FRTN1839 |
| 1840 | 02661 | -0 01 02615 | JMP* | ER00 | RETURN TO PROCESSOR                       | FRTN1840 |
| 1841 | 02662 | 0 02 00656  | LDA  | CC   | CHECK FOR CONTINUATION CARD               | FRTN1841 |
| 1842 | 02663 | 101040      | SNZ  |      | X                                         | FRTN1842 |
| 1843 | 02664 | 0 01 03723  | JMP  | C7   | IF NOT, INPUT NEXT STATEMENT              | FRTN1843 |
| 1844 | 02665 | 0 02 00067  | LDA  | TC   | CHECK LAST CHARACTER READ                 | FRTN1844 |
| 1845 | 02666 | 0 11 00702  | ER20 | CAS  | WAS IT A CARRIAGE RETURN                  | FRTN1845 |
| 1846 | 02667 | 100000      | SKP  |      |                                           | FRTN1846 |
| 1847 | 02670 | 0 01 03723  | JMP  | C7   | IF SO, INPUT NEXT STATEMENT               | FRTN1847 |
| 1848 | 02671 | 0 10 01157  | JST  | CH00 | OTHERWISE, INPUT NEXT CHARACTER           | FRTN1848 |
| 1849 | 02672 | 0 01 02666  | JMP  | ER20 | KEEP LOOKING FOR CARRIAGE RETURN          | FRTN1849 |
| 1850 | 02673 | 125252      | ER91 | BCI  | 1,**                                      | FRTN1850 |
| 1851 | 02674 | 157336      | ER92 | VFD  | 8,*336*8,*336                             | FRTN1851 |
| 1852 |       |             | EJCT |      | TWO VERTICAL ARROWS                       | FRTN1852 |

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| 1853 |       |             | *    |      |                                         | FRTN1853 |
| 1854 |       |             | *    |      |                                         | FRTN1854 |
| 1855 | 02675 | 0 000000    | SRT  | DAC  | **                                      | FRTN1855 |
| 1856 | 02676 | 0 15 02717  | STX  | SRXS |                                         | FRTN1856 |
| 1857 | 02677 | -0 35 02675 | LDX* | SRT  | SAVE INDEX                              | FRTN1857 |
| 1858 | 02700 | 1 02 00000  | LDA  | 0,1  | SHIFT RIGHT ONE PLACE, TRIPLE PRECISION | FRTN1858 |
| 1859 | 02701 | 000201      | IAB  |      |                                         | FRTN1859 |
| 1860 | 02702 | 1 02 00001  | LDA  | 1,1  |                                         | FRTN1860 |
| 1861 | 02703 | 0401 77     | LRS  | 1    |                                         | FRTN1861 |
| 1862 | 02704 | 0414 77     | LGL  | 1    |                                         | FRTN1862 |
| 1863 | 02705 | 000201      | IAB  |      |                                         | FRTN1863 |
| 1864 | 02706 | 1 04 00000  | STA  | 0,1  |                                         | FRTN1864 |
| 1865 | 02707 | 1 02 00002  | LDA  | 2,1  |                                         | FRTN1865 |
| 1866 | 02710 | 0401 77     | LRS  | 1    |                                         | FRTN1866 |
| 1867 | 02711 | 1 04 00002  | STA  | 2,1  |                                         | FRTN1867 |
| 1868 | 02712 | 000201      | IAB  |      |                                         | FRTN1868 |
| 1869 | 02713 | 1 04 00001  | STA  | 1,1  |                                         | FRTN1869 |
| 1870 | 02714 | 0 35 02717  | LDX  | SRXS | RESTORE INDEX                           | FRTN1870 |
| 1871 | 02715 | 0 12 02675  | IRS  | SRT  |                                         | FRTN1871 |
| 1872 | 02716 | -0 01 02675 | JMP* | SRT  |                                         | FRTN1872 |
| 1873 | 02717 |             | SRXS | BSS  | 1                                       | FRTN1873 |
| 1874 |       |             | EJCT |      | TEMP STORAGE FOR INDEX                  | FRTN1874 |

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| 1875 |       | *           |      |      |    |                        | FRTN1875 |
| 1876 |       | *           |      |      |    |                        | FRTN1876 |
| 1877 | 02720 | 0 000000    | SFT  | DAC  | ** |                        | FRTN1877 |
| 1878 | 02721 | 0 15 02744  | STX  | SFXS |    | TRIPLE PRECISION       | FRTN1878 |
| 1879 | 02722 | -0 35 02720 | LDX* | SFT  |    | SHIFT LEFT ONE PLACE   | FRTN1879 |
| 1880 | 02723 | 1 02 00000  | LDA  | 0+1  |    |                        | FRTN1880 |
| 1881 | 02724 | 000201      | IAB  |      |    |                        | FRTN1881 |
| 1882 | 02725 | 1 02 00001  | LDA  | 1+1  |    |                        | FRTN1882 |
| 1883 | 02726 | 0411 77     | LLS  | 1    |    |                        | FRTN1883 |
| 1884 | 02727 | 140320      | CSA  |      |    |                        | FRTN1884 |
| 1885 | 02730 | 1 04 00001  | STA  | 1+1  |    |                        | FRTN1885 |
| 1886 | 02731 | 000201      | IAB  |      |    |                        | FRTN1886 |
| 1887 | 02732 | 1 04 00000  | STA  | 0+1  |    |                        | FRTN1887 |
| 1888 | 02733 | 141216      | ACA  |      |    |                        | FRTN1888 |
| 1889 | 02734 | 0401 77     | LRS  | 1    |    |                        | FRTN1889 |
| 1890 | 02735 | 1 02 00002  | LDA  | 2+1  |    |                        | FRTN1890 |
| 1891 | 02736 | 0411 77     | LLS  | 1    |    |                        | FRTN1891 |
| 1892 | 02737 | 140320      | CSA  |      |    |                        | FRTN1892 |
| 1893 | 02740 | 1 04 00002  | STA  | 2+1  |    |                        | FRTN1893 |
| 1894 | 02741 | 0 35 02744  | LDX  | SFXS |    | RESTORE INDEX          | FRTN1894 |
| 1895 | 02742 | 0 12 02720  | IRS  | SFT  |    |                        | FRTN1895 |
| 1896 | 02743 | -0 01 02720 | JMP* | SFT  |    |                        | FRTN1896 |
| 1897 | 02744 |             | SFXS | BSS  | 1  | TEMP STORAGE FOR INDEX | FRTN1897 |
| 1898 |       |             | EJCT |      |    |                        | FRTN1898 |

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|      |       |             |      |         |    |                              |          |
|------|-------|-------------|------|---------|----|------------------------------|----------|
| 1899 |       | *           |      |         |    |                              | FRTN1899 |
| 1900 | 02745 | 0 000000    | LIST | DAC     | ** |                              | FRTN1900 |
| 1901 | 02746 | 0 10 13321  | JST  | PRSP    |    |                              | FRTN1901 |
| 1902 | 02747 | 0 02 01060  | LDA  | LIBF    |    | CHECK TO SEE IF BIT 3 IS SET | FRTN1902 |
| 1903 | 02750 | 0 03 14677  | ANA  | =*20000 |    |                              | FRTN1903 |
| 1904 | 02751 | 0 05 14677  | ERA  | =*20000 |    |                              | FRTN1904 |
| 1905 | 02752 | 101040      | C1R2 | SNZ     |    | SKIP IF BIT 3 IS NOT SET     | FRTN1905 |
| 1906 | 02753 | 0 01 02756  | JMP  | *+3     |    |                              | FRTN1906 |
| 1907 | 02754 | 0 10 00000  | CALL | F4\$SYM |    | PRINT BLANK LINE             | FRTN1907 |
| 1908 | 02755 | 0 013744    | DAC  | PRI     |    |                              | FRTN1908 |
| 1909 | 02756 | 0 10 00000  | CALL | F4\$SYM |    | PRINT SOURCE INPUT LINE      | FRTN1909 |
| 1910 | 02757 | 0 014040    | DAC  | CI      |    |                              | FRTN1910 |
| 1911 | 02760 | -0 01 02745 | JMP* | LIST    |    |                              | FRTN1911 |
| 1912 |       |             | EJCT |         |    |                              | FRTN1912 |

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```
1913 *
1914 *
1915 *
1916 *
1917 *
1918 *
1919 *
1920 *
1921 *
1922 *
1923 *
1924 02761 0 00 00000 TOAS PZE 0
1925 02762 0 000000 AS00 DAC **
1926 02763 0 02 00741 LDA K105
1927 02764 0 01 02767 JMP AS05
1928 02765 0 02 00625 AS04 LDA A
1929 02766 0 06 00741 ADD K105
1930 02767 0 04 00625 AS05 STA A
1931 02770 0 04 00000 STA 0
1932 02771 0 11 00637 CAS ABAR
1933 02772 0 01 03113 JMP AS30
1934 02773 101000 NOP
1935 02774 1 02 17400 LDA DP+1
1936 02775 0400 61 LRL 15
1937 02776 0 07 00054 SUB NT
1938 02777 100040 SZE
1939 03000 0 01 02765 JMP AS04
1940 03001 0 02 00774 LDA TID
1941 03002 1 07 17404 SUB DP+4+1
1942 03003 101040 SNZ
1943 03004 0 01 03011 JMP **+5
1944 03005 0 03 00670 ANA K111
1945 03006 0 06 00054 ADD NT
1946 03007 100040 SZE
1947 03010 0 01 02765 JMP AS04
1948 03011 0 02 00775 LDA TID+1
1949 03012 1 07 17403 SUB DP+3+1
```

\*\*\*\*\*  
\*ASSIGN ITEM\*  
\*\*\*\*\*  
CHECKS ASSIGNMENT AREA OF DATA POOL (AO TO ABAR)  
FOR ITEM DEFINED BY ID, IM, IU, ETC.  
IF FOUND, EXIT WITH POINTER AND  
ASSIGNMENTS DATA SET, OTHERWISE  
ASSIGN THE ITEM.

INITIALIZE A TO BEG. OF  
TABLE  
ADVANCE A TO NEXT ENTRY

AT END, GO TO AS30

NT(A)  
IS NT=NT(A)  
NO. GO TO AS04

TID(A)  
IS TID= TID(A)  
YES, PROCEED  
MAYBE, TEST FURTHER

TID = TID(A)  
TID+1(A)

FRTN1913  
FRTN1914  
FRTN1915  
FRTN1916  
FRTN1917  
FRTN1918  
FRTN1919  
FRTN1920  
FRTN1921  
FRTN1922  
FRTN1923  
FRTN1924  
FRTN1925  
FRTN1926  
FRTN1927  
FRTN1928  
FRTN1929  
FRTN1930  
FRTN1931  
FRTN1932  
FRTN1933  
FRTN1934  
FRTN1935  
FRTN1936  
FRTN1937  
FRTN1938  
FRTN1939  
FRTN1940  
FRTN1941  
FRTN1942  
FRTN1943  
FRTN1944  
FRTN1945  
FRTN1946  
FRTN1947  
FRTN1948  
FRTN1949

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1950 03013 100040 SZE
1951 03014 0 01 02765 JMP AS04
1952 03015 0 02 00776 LDA TID+2
1953 03016 1 07 17402 SUB DP+2+1
1954 03017 100040 SZE
1955 03020 0 01 02765 JMP AS04
1956 03021 0 02 00054 LDA NT
1957 03022 101040 SNZ
1958 03023 0 01 03066 JMP AS16
1959 03024 1 02 17400 LDA DP+1
1960 03025 0400 67 LRL 9
1961 03026 0 03 00743 ANA K107
1962 03027 0 07 00706 SUB IM
1963 03030 100040 SZE
1964 03031 0 01 02765 JMP AS04
1965 03032 0 02 00710 LDA IU
1966 03033 101040 SNZ
1967 03034 0 01 02765 JMP AS04
1968 03035 1 02 17401 LDA DP+1+1
1969 03036 0400 62 LRL 14
1970 03037 0 07 00710 SUB IU
1971 03040 100040 SZE
1972 03041 0 01 02765 JMP AS04
1973 03042 0 02 00706 LDA IM
1974 03043 0 07 00741 SUB K105
1975 03044 100040 SZE
1976 03045 0 01 03066 JMP AS16
1977 03046 0 02 00625 LDA A
1978 03047 0 06 00741 ADD K105
1979 03050 0 04 00000 STA 0
1980 03051 1 02 17404 LDA DP+4+1
1981 03052 0 07 03271 SUB TID5
1982 03053 100040 SZE
1983 03054 0 01 02765 JMP AS04
1984 03055 1 02 17403 LDA DP+3+1
1985 03056 0 07 03272 SUB TIDB+1
1986 03057 100040 SZE
```

NO. GO TO AS04

TID+2(A)

IF NT (A) .NE. 0,  
GO TO AS10  
GO TO AS16 (4)

IM(A)  
IF (IM.NE.IM(A)) GO TO AS04

IF IU = 0,  
OR NOT EQUAL IU (A)  
GO TO AS04 (1)

IU(A)

ELSE,  
GO TO AS16 (4)

TIDB(A)  
GO TO AS16 (4)  
ELSE, GO TO AS04 (1)

TIDB+1(A)

FRTN1950  
FRTN1951  
FRTN1952  
FRTN1953  
FRTN1954  
FRTN1955  
FRTN1956  
FRTN1957  
FRTN1958  
FRTN1959  
FRTN1960  
FRTN1961  
FRTN1962  
FRTN1963  
FRTN1964  
FRTN1965  
FRTN1966  
FRTN1967  
FRTN1968  
FRTN1969  
FRTN1970  
FRTN1971  
FRTN1972  
FRTN1973  
FRTN1974  
FRTN1975  
FRTN1976  
FRTN1977  
FRTN1978  
FRTN1979  
FRTN1980  
FRTN1981  
FRTN1982  
FRTN1983  
FRTN1984  
FRTN1985  
FRTN1986

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|            |             |          |        |  |                            |          |
|------------|-------------|----------|--------|--|----------------------------|----------|
| 1987 03060 | 0 01 02765  | JMP      | AS04   |  |                            | FRTN1987 |
| 1988 03061 | 1 02 17402  | LDA      | DP+2,1 |  |                            | FRTN1988 |
| 1989 03062 | 0 07 03273  | SUB      | TIDB+2 |  | TIDB+2(A)                  | FRTN1989 |
| 1990 03063 | 100040      | SZE      |        |  |                            | FRTN1990 |
| 1991 03064 | 0 01 02765  | JMP      | AS04   |  |                            | FRTN1991 |
| 1992 03065 | 0 35 00625  | AS15 LDX | A      |  |                            | FRTN1992 |
| 1993 03066 | 1 02 17401  | AS16 LDA | DP+1,1 |  |                            | FRTN1993 |
| 1994 03067 | 0400 62     | LRL      | 14     |  | IU(A)                      | FRTN1994 |
| 1995 03070 | 0 06 00055  | ADD      | NTF    |  |                            | FRTN1995 |
| 1996 03071 | 100040      | SZE      |        |  |                            | FRTN1996 |
| 1997 03072 | 0 01 03103  | JMP      | AS18   |  | GO TO AS18 (5)             | FRTN1997 |
| 1998 03073 | 0 02 00634  | LDA      | SPF    |  | IF SPF = 0, GO TO AS18 (5) | FRTN1998 |
| 1999 03074 | 101040      | SNZ      |        |  |                            | FRTN1999 |
| 2000 03075 | 0 01 03103  | JMP      | AS18   |  |                            | FRTN2000 |
| 2001 03076 | 0 02 00067  | LDA      | TC     |  | IF TC = 1                  | FRTN2001 |
| 2002 03077 | 0 07 14474  | SUB      | K17    |  |                            | FRTN2002 |
| 2003 03100 | 100040      | SZE      |        |  |                            | FRTN2003 |
| 2004 03101 | 0 01 03111  | JMP      | AS19   |  |                            | FRTN2004 |
| 2005 03102 | 0 10 03222  | JST      | TG00   |  | TAG SUBPROGRAM             | FRTN2005 |
| 2006 03103 | 140040      | AS18 CRA |        |  | SET NTF TO 0               | FRTN2006 |
| 2007 03104 | 0 04 00055  | STA      | NTF    |  | SET NTF TO 0               | FRTN2007 |
| 2008 03105 | 0 10 03317  | JST      | FA00   |  | GO TO FETCH ASSIGNS        | FRTN2008 |
| 2009 03106 | 0 35 00625  | LDX      | A      |  |                            | FRTN2009 |
| 2010 03107 | 0 02 00706  | LDA      | IM     |  |                            | FRTN2010 |
| 2011 03110 | -0 01 02762 | JMP*     | AS00   |  | RETURN                     | FRTN2011 |
| 2012 03111 | 0 10 03274  | AS19 JST | TV00   |  | TAG VARIABLE               | FRTN2012 |
| 2013 03112 | 0 01 03103  | JMP      | AS18   |  |                            | FRTN2013 |
| 2014 03113 | 0 10 03520  | AS30 JST | BUD    |  | BUILD ASSIGNMENT ENTRY     | FRTN2014 |
| 2015 03114 | 0 02 00054  | LDA      | NT     |  | IF NT = 1                  | FRTN2015 |
| 2016 03115 | 100040      | SZE      |        |  |                            | FRTN2016 |
| 2017 03116 | 0 01 03123  | JMP      | AS32   |  | OR IV = VAR,               | FRTN2017 |
| 2018 03117 | 0 02 00710  | LDA      | IU     |  |                            | FRTN2018 |
| 2019 03120 | 0 07 00736  | SUB      | K102   |  |                            | FRTN2019 |
| 2020 03121 | 100040      | SZE      |        |  |                            | FRTN2020 |
| 2021 03122 | 0 01 03145  | JMP      | AS40   |  | AMD                        | FRTN2021 |
| 2022 03123 | 0 02 00706  | AS32 LDA | IM     |  | IF IM = CPX,               | FRTN2022 |
| 2023 03124 | 0 07 00741  | SUB      | K105   |  |                            | FRTN2023 |

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|            |            |          |        |  |                                           |          |
|------------|------------|----------|--------|--|-------------------------------------------|----------|
| 2024 03125 | 100040     | SZE      |        |  |                                           | FRTN2024 |
| 2025 03126 | 0 01 03145 | JMP      | AS40   |  |                                           | FRTN2025 |
| 2026 03127 | 0 04 00710 | STA      | IU     |  | MOVE 1ST PART OF                          | FRTN2026 |
| 2027 03130 | 0 02 03271 | LDA      | TIDB   |  | COMPLEX ENTRY TO                          | FRTN2027 |
| 2028 03131 | 0 04 00774 | STA      | TID    |  | TID AND BUILD                             | FRTN2028 |
| 2029 03132 | 0 02 03272 | LDA      | TIDB+1 |  | ASSIGNMENT ENTRY                          | FRTN2029 |
| 2030 03133 | 0 04 00775 | STA      | TID+1  |  |                                           | FRTN2030 |
| 2031 03134 | 0 02 03273 | LDA      | TIDB+2 |  |                                           | FRTN2031 |
| 2032 03135 | 0 04 00776 | STA      | TID+2  |  |                                           | FRTN2032 |
| 2033 03136 | 0 02 00625 | LDA      | A      |  |                                           | FRTN2033 |
| 2034 03137 | 0 06 00741 | ADD      | K105   |  |                                           | FRTN2034 |
| 2035 03140 | 0 04 00625 | STA      | A      |  |                                           | FRTN2035 |
| 2036 03141 | 0 10 03520 | JST      | BUD    |  |                                           | FRTN2036 |
| 2037 03142 | 0 02 00625 | LDA      | A      |  |                                           | FRTN2037 |
| 2038 03143 | 0 07 00741 | SUB      | K105   |  | RESTORE A                                 | FRTN2038 |
| 2039 03144 | 0 04 00625 | STA      | A      |  |                                           | FRTN2039 |
| 2040 03145 | 0 02 00637 | AS40 LDA | ABAR   |  |                                           | FRTN2040 |
| 2041 03146 | 0 07 00625 | SUB      | A      |  | TO = -(ABAR-A+5)                          | FRTN2041 |
| 2042 03147 | 0 06 00741 | ADD      | K105   |  | GIVING NO. OF WORDS TO MOVE TABLES UP     | FRTN2042 |
| 2043 03150 | 140407     | TCA      |        |  |                                           | FRTN2043 |
| 2044 03151 | 0 04 02761 | STA      | TOAS   |  |                                           | FRTN2044 |
| 2045 03152 | 140407     | TCA      |        |  |                                           | FRTN2045 |
| 2046 03153 | 0 06 00655 | ADD      | DO     |  | CO=DO+TO                                  | FRTN2046 |
| 2047 03154 | 0 04 00655 | STA      | DO     |  |                                           | FRTN2047 |
| 2048 03155 | 0 02 00077 | LDA      | IFLG   |  | IF IFLG = 0, THERE IS NO EXPRESSION TABLE | FRTN2048 |
| 2049 03156 | 101040     | SNZ      |        |  |                                           | FRTN2049 |
| 2050 03157 | 0 01 03215 | JMP      | AS60   |  | GO TO AS60                                | FRTN2050 |
| 2051 03160 | 0 02 00626 | LDA      | I      |  |                                           | FRTN2051 |
| 2052 03161 | 0 07 02761 | SUB      | TOAS   |  |                                           | FRTN2052 |
| 2053 03162 | 0 04 00626 | STA      | I      |  | I = I - TO (TO IS NEGATIVE)               | FRTN2053 |
| 2054 03163 | 141206     | ACA      |        |  |                                           | FRTN2054 |
| 2055 03164 | 0 11 00627 | AS41 CAS | L      |  | CHECK AGAINST BOTTOM OF TRIAD TABLE       | FRTN2055 |
| 2056 03165 | 101000     | NOP      |        |  |                                           | FRTN2056 |
| 2057 03166 | 0 01 03213 | JMP      | AS50   |  |                                           | FRTN2057 |
| 2058 03167 | 0 06 00104 | ADD      | *104   |  | =DP+1                                     | FRTN2058 |
| 2059 03170 | 0 04 03220 | STA      | AS91   |  | AS91 = NEW TABLE TOP                      | FRTN2059 |
| 2060 03171 | 0 06 02761 | ADD      | TOAS   |  |                                           | FRTN2060 |

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|      |       |             |           |      |                                 |          |
|------|-------|-------------|-----------|------|---------------------------------|----------|
| 2061 | 03172 | 0 04 03221  | STA       | AS92 | AS92                            | FRTN2061 |
| 2062 | 03173 | 0 07 02761  | SUB       | TOAS | COMPUTE SIZE OF FLOATING TABLES | FRTN2062 |
| 2063 | 03174 | 0 07 00104  | SUB       | *104 | =DP+1                           | FRTN2063 |
| 2064 | 03175 | 0 07 00655  | SUB       | DO   |                                 | FRTN2064 |
| 2065 | 03176 | 101040      | SNZ       |      | IF ZERO, ASSIGN TABLE ONLY.     | FRTN2065 |
| 2066 | 03177 | 0 01 03066  | JMP       | AS16 |                                 | FRTN2066 |
| 2067 | 03200 | 140407      | TCA       |      |                                 | FRTN2067 |
| 2068 | 03201 | 0 04 02761  | STA       | TOAS |                                 | FRTN2068 |
| 2069 | 03202 | 0 35 03313  | LDX       | ZERO |                                 | FRTN2069 |
| 2070 | 03203 | -0 02 03221 | AS46 LDA* | AS92 | END-5                           | FRTN2070 |
| 2071 | 03204 | -0 04 03220 | STA*      | AS91 | END (MOVE TABLES UP)            | FRTN2071 |
| 2072 | 03205 | 0 02 00000  | LDA       | 0    |                                 | FRTN2072 |
| 2073 | 03206 | 0 07 00735  | SUB       | K101 | =1                              | FRTN2073 |
| 2074 | 03207 | 0 04 00000  | STA       | 0    | REDUCE INDEX                    | FRTN2074 |
| 2075 | 03210 | 0 12 02761  | IRS       | TOAS | = NO. OF WORDS TO MOVE          | FRTN2075 |
| 2076 | 03211 | 0 01 03203  | JMP       | AS46 |                                 | FRTN2076 |
| 2077 | 03212 | 0 01 03065  | JMP       | AS15 |                                 | FRTN2077 |
| 2078 | 03213 | 0 10 02615  | AS50 JST  | ER00 |                                 | FRTN2078 |
| 2079 | 03214 | 146717      | BCI       | 1+MO | DATA POOL OVERFLOW              | FRTN2079 |
| 2080 | 03215 | 0 02 00655  | AS60 LDA  | DO   |                                 | FRTN2080 |
| 2081 | 03216 | 0 06 00642  | ADD       | D    |                                 | FRTN2081 |
| 2082 | 03217 | 0 01 03164  | JMP       | AS41 |                                 | FRTN2082 |
| 2083 | 03220 | 0 000000    | AS91 DAC  | 0    |                                 | FRTN2083 |
| 2084 | 03221 | 0 000000    | AS92 DAC  | **   |                                 | FRTN2084 |
| 2085 |       |             | EJCT      |      |                                 | FRTN2085 |

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|------|-------|-------------|----------|-----------|--------------------------------|----------|
| 2086 |       | *           |          |           |                                | FRTN2086 |
| 2087 |       | *           |          |           |                                | FRTN2087 |
| 2088 |       | *           |          |           |                                | FRTN2088 |
| 2089 |       | *           |          |           |                                | FRTN2089 |
| 2090 |       | *           |          |           |                                | FRTN2090 |
| 2091 |       | *           |          |           |                                | FRTN2091 |
| 2092 |       | *           |          |           |                                | FRTN2092 |
| 2093 |       | *           |          |           |                                | FRTN2093 |
| 2094 |       | *           |          |           |                                | FRTN2094 |
| 2095 |       | *           |          |           |                                | FRTN2095 |
| 2096 |       | *           |          |           |                                | FRTN2096 |
| 2097 | 03222 | 0 000000    | TG00 DAC | **        |                                | FRTN2097 |
| 2098 | 03223 | 0 02 00710  | LDA      | IU        |                                | FRTN2098 |
| 2099 | 03224 | 0 07 00735  | SUB      | K101      | IF IU = SUB                    | FRTN2099 |
| 2100 | 03225 | 101040      | SNZ      |           |                                | FRTN2100 |
| 2101 | 03226 | -0 01 03222 | JMP*     | TG00      | RETURN, ELSE                   | FRTN2101 |
| 2102 | 03227 | 0 10 02401  | JST      | NU00      | NO - USAGE TEST                | FRTN2102 |
| 2103 | 03230 | 0 35 03270  | LDX      | TG22      |                                | FRTN2103 |
| 2104 | 03231 | 0 02 00775  | TG04 LDA | ID+1      | CHARACTERS 3 AND 4             | FRTN2104 |
| 2105 | 03232 | 1 11 14217  | CAS      | TGT2+21+1 | IMPLICIT MODE SUBR. NAME TABLE | FRTN2105 |
| 2106 | 03233 | 0 01 03235  | JMP      | **+2      |                                | FRTN2106 |
| 2107 | 03234 | 0 01 03250  | JMP      | TG10      |                                | FRTN2107 |
| 2108 | 03235 | 0 12 00000  | TG06 IRS | 0         |                                | FRTN2108 |
| 2109 | 03236 | 0 01 03231  | JMP      | TG04      | NOT DONE WITH TABLE            | FRTN2109 |
| 2110 | 03237 | 0 02 00735  | TG08 LDA | K101      | =1 (IU=SUBR.)                  | FRTN2110 |
| 2111 | 03240 | 0 04 00710  | STA      | IU        |                                | FRTN2111 |
| 2112 | 03241 | 0 35 00625  | LDX      | A         |                                | FRTN2112 |
| 2113 | 03242 | 1 02 17401  | LDA      | DP+1,1    | IU(A) = SUB                    | FRTN2113 |
| 2114 | 03243 | 0414 77     | LGL      | 1         |                                | FRTN2114 |
| 2115 | 03244 | 140500      | SSM      |           |                                | FRTN2115 |
| 2116 | 03245 | 0404 77     | LGR      | 1         |                                | FRTN2116 |
| 2117 | 03246 | 1 04 17401  | STA      | DP+1,1    |                                | FRTN2117 |
| 2118 | 03247 | -0 01 03222 | JMP*     | TG00      | RETURN                         | FRTN2118 |
| 2119 |       | *           |          |           |                                | FRTN2119 |
| 2120 | 03250 | 0 02 00774  | TG10 LDA | ID        | CHARACTERS 1 AND 2             | FRTN2120 |
| 2121 | 03251 | 0 03 00670  | ANA      | K111      | =*37777                        | FRTN2121 |
| 2122 | 03252 | 0 06 00703  | ADD      | HB1T      | =*140000                       | FRTN2122 |

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|------|-------|------------|----------|-----------|--------------------------|----------|
| 2123 | 03253 | 1 07 14172 | SUB      | TGT1+21,1 |                          | FRTN2123 |
| 2124 | 03254 | 100040     | SZE      |           |                          | FRTN2124 |
| 2125 | 03255 | 0 01 03235 | JMP      | TG06      | CONTINUE SEARCH          | FRTN2125 |
| 2126 | 03256 | 0 02 00776 | LDA      | ID+2      | CHARACTERS 5 AND 6       | FRTN2126 |
| 2127 | 03257 | 1 07 14244 | SUB      | TGT3+21,1 |                          | FRTN2127 |
| 2128 | 03260 | 100040     | SZE      |           |                          | FRTN2128 |
| 2129 | 03261 | 0 01 03235 | JMP      | TG06      | CONTINUE SEARCH          | FRTN2129 |
| 2130 | 03262 | 1 02 14172 | LDA      | TGT1+21,1 |                          | FRTN2130 |
| 2131 | 03263 | 141140     | ICL      |           |                          | FRTN2131 |
| 2132 | 03264 | 0 03 00743 | ANA      | K107      | =7 (=3 IF CPX, 4 IF DBL) | FRTN2132 |
| 2133 | 03265 | 0 06 00736 | ADD      | K102      | =2 (=5 IF CPX, 6 IF DBL) | FRTN2133 |
| 2134 | 03266 | 0 10 03464 | JST      | DM00      | DEFINE IM                | FRTN2134 |
| 2135 | 03267 | 0 01 03237 | JMP      | TG08      |                          | FRTN2135 |
| 2136 |       |            | *        |           |                          | FRTN2136 |
| 2137 | 03270 | 177753     | TG22 OCT | 177753    | =-21                     | FRTN2137 |
| 2138 |       |            | *        |           |                          | FRTN2138 |
| 2139 |       |            | *        |           |                          | FRTN2139 |
| 2140 |       |            | *        |           |                          | FRTN2140 |
| 2141 | 03271 |            | TIDB BSS | 3         |                          | FRTN2141 |
| 2142 |       |            | EJCT     |           |                          | FRTN2142 |

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|      |       |             |          |        |                     |          |
|------|-------|-------------|----------|--------|---------------------|----------|
| 2143 |       |             | *        |        |                     | FRTN2143 |
| 2144 |       |             | *        | -      | TV00 TAG VARIABLE   | FRTN2144 |
| 2145 | 03274 | 0 000000    | TV00 DAC | **     |                     | FRTN2145 |
| 2146 | 03275 | 0 02 00710  | LDA      | IU     | IF IU = 'VAR',      | FRTN2146 |
| 2147 | 03276 | 0 07 00736  | SUB      | K102   |                     | FRTN2147 |
| 2148 | 03277 | 101040      | SNZ      |        |                     | FRTN2148 |
| 2149 | 03300 | -0 01 03274 | JMP*     | TV00   | RETURN              | FRTN2149 |
| 2150 | 03301 | 0 10 02401  | JST      | NU00   | ELSE, NO USAGE TEST | FRTN2150 |
| 2151 | 03302 | 0 35 00625  | LDX      | A      |                     | FRTN2151 |
| 2152 | 03303 | 1 02 17401  | LDA      | DP+1,1 |                     | FRTN2152 |
| 2153 | 03304 | 0 03 00670  | ANA      | K111   | IU (A) = 'VAR'      | FRTN2153 |
| 2154 | 03305 | 140500      | SSM      |        |                     | FRTN2154 |
| 2155 | 03306 | 1 04 17401  | STA      | DP+1,1 |                     | FRTN2155 |
| 2156 | 03307 | -0 C1 03274 | JMP*     | TV00   | RETURN              | FRTN2156 |
| 2157 |       |             | EJCT     |        |                     | FRTN2157 |

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```
2158 * FRTN2158
2159 * FRTN2159
2160 * FRTN2160
2161 * FRTN2161
2162 * FRTN2162
2163 * FRTN2163
2164 * FRTN2164
2165 * FRTN2165
2166 * FRTN2166
2167 * FRTN2167
2168 * FRTN2168
2169 * FRTN2169
2170 * FRTN2170
2171 03310 000001 KM92 DEC 1 001 = INT FRTN2171
2172 03311 000002 DEC 2 010 = REA FRTN2172
2173 03312 000001 DEC 1 011 = LOG FRTN2173
2174 03313 000000 ZERO DEC 0 - - FRTN2174
2175 03314 000004 DEC 4 101 = CPX FRTN2175
2176 03315 000003 DEC 3 110 = DBL FRTN2176
2177 03316 000003 OCT 3 111 = HOL FRTN2177
2178 * FRTN2178
2179 * FRTN2179
2180 03317 0 000000 FA00 DAC ** FRTN2180
2181 03320 0 35 00625 LDX A FRTN2181
2182 03321 1 02 17400 LDA DP+1 FRTN2182
2183 03322 0400 61 LRL 15 FRTN2183
2184 03323 0 04 00054 STA NT FRTN2184
2185 03324 140040 CRA NT=NT(A) FRTN2185
2186 03325 0410 75 LLL 3 FRTN2186
2187 03326 0 04 00026 STA AT AT=AT(A) FRTN2187
2188 03327 140040 CRA FRTN2188
2189 03330 0410 75 LLL 3 IM = IM(A) FRTN2189
2190 03331 0 04 00706 STA IM FRTN2190
2191 03332 0 04 00000 STA 0 FRTN2191
2192 03333 1 02 03307 LDA KM92-1,1 FRTN2192
2193 03334 0 04 00030 STA D0 D0 = NUMBER OF WORDS FRTN2193
2194 03335 0415 76 ALS 2 FRTN2194
```

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```
2195 03336 0 06 00030 ADD D0 FRTN2195
2196 03337 0 04 00071 STA X X = POINTER TO CONSTANT NUMBER OF WORDS FRTN2196
2197 03340 0 35 00625 LDX A FRTN2197
2198 03341 1 02 17401 LDA DP+1,1 FRTN2198
2199 03342 0400 62 LRL 14 FRTN2199
2200 03343 0 04 00710 STA IU FRTN2200
2201 03344 0 07 00737 SUB K103 IF IU NOT 'ARR' FRTN2201
2202 03345 101040 SNZ FRTN2202
2203 03346 0 01 03353 JMP FA10 FRTN2203
2204 03347 140040 CRA FRTN2204
2205 03350 0410 62 LLL 14 AF = GF(A) FRTN2205
2206 03351 0 04 00025 STA AF FRTN2206
2207 03352 -0 01 03317 JMP* FA00 FRTN2207
2208 03353 0410 62 FA10 LLL 14 FRTN2208
2209 03354 0 04 00000 STA 0 INDEX = GF(A) FRTN2209
2210 03355 1 02 17404 LDA DP+4,1 FRTN2210
2211 03356 0 04 00072 STA X1 POINTER OF DIMENSION 1 FRTN2211
2212 03357 1 02 17403 LDA DP+3,1 FRTN2212
2213 03360 0 04 00073 STA X2 POINTER OF DIMENSION 2 FRTN2213
2214 03361 1 02 17402 LDA DP+2,1 FRTN2214
2215 03362 0 04 00074 STA X3 POINTER OF DIMENSION 3 FRTN2215
2216 03363 1 02 17401 LDA DP+1,1 FRTN2216
2217 03364 0 03 00670 ANA K111 = '37777 FRTN2217
2218 03365 0 04 00025 STA AF AF = GF(GF(A)) FRTN2218
2219 03366 1 02 17400 LDA DP,1 FRTN2219
2220 03367 0404 67 LGR 9 FRTN2220
2221 03370 0 03 00743 ANA K107 FRTN2221
2222 03371 0 04 00076 STA ND NUMBER OF DIMENSIONS FRTN2222
2223 03372 0 04 00000 STA 0 FRTN2223
2224 03373 0 02 00735 LDA K101 FRTN2224
2225 03374 0 04 00032 STA D2 FRTN2225
2226 03375 0 04 00033 STA D3 FRTN2226
2227 03376 -1 01 03422 JMP* FA91-1,1 FRTN2227
2228 03377 0 35 00074 FA22 LDX X3 FETCH 3RD DIMENSION SIZE FRTN2228
2229 03400 0 10 03413 JST FA40 FRTN2229
2230 03401 0 04 00033 STA D3 STORE D3 FRTN2230
2231 03402 0 35 00073 FA24 LDX X2 FRTN2231
```

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|      |       |             |          |        |                          |  |          |
|------|-------|-------------|----------|--------|--------------------------|--|----------|
| 2232 | 03403 | 0 10 03413  | JST      | FA40   |                          |  | FRTN2232 |
| 2233 | 03404 | 0 04 00032  | STA      | D2     |                          |  | FRTN2233 |
| 2234 | 03405 | 0 35 00072  | FA26 LDX | X1     | D2 = 2ND DIMENSION SIZE  |  | FRTN2234 |
| 2235 | 03406 | 0 10 03413  | JST      | FA40   |                          |  | FRTN2235 |
| 2236 | 03407 | 0 04 00031  | STA      | D1     | D1 = 1ST DIMENSION SIZE  |  | FRTN2236 |
| 2237 | 03410 | 0 35 00625  | LDX      | A      | EXIT WITH AF IN A        |  | FRTN2237 |
| 2238 | 03411 | 0 02 00025  | LDA      | AF     |                          |  | FRTN2238 |
| 2239 | 03412 | -0 01 03317 | JMP*     | FA00   |                          |  | FRTN2239 |
| 2240 | 03413 | 0 000000    | FA40 DAC | **     |                          |  | FRTN2240 |
| 2241 | 03414 | 1 02 17400  | LDA      | DP,1   | IM OF SUBSCRIPT VALUE    |  | FRTN2241 |
| 2242 | 03415 | 140100      | SSP      |        |                          |  | FRTN2242 |
| 2243 | 03416 | 0404 64     | LGR      | 12     |                          |  | FRTN2243 |
| 2244 | 03417 | 0 07 00741  | SUB      | K105   | =5                       |  | FRTN2244 |
| 2245 | 03420 | 100040      | SZE      |        | SKIP IF DUMMY SUBSCRIPT  |  | FRTN2245 |
| 2246 | 03421 | 1 02 17404  | LDA      | DP+4,1 | FETCH VALUE OF SUBSCRIPT |  | FRTN2246 |
| 2247 | 03422 | -0 01 03413 | JMP*     | FA40   |                          |  | FRTN2247 |
| 2248 | 03423 | 0 003405    | FA91 DAC | FA26   |                          |  | FRTN2248 |
| 2249 | 03424 | 0 003402    | DAC      | FA24   |                          |  | FRTN2249 |
| 2250 | 03425 | 0 003377    | DAC      | FA22   |                          |  | FRTN2250 |
| 2251 |       |             | EJCT     |        |                          |  | FRTN2251 |

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|      |       |             |          |      |                                 |  |          |
|------|-------|-------------|----------|------|---------------------------------|--|----------|
| 2252 |       | *           |          |      |                                 |  | FRTN2252 |
| 2253 |       | *           |          |      |                                 |  | FRTN2253 |
| 2254 |       | *           |          |      |                                 |  | FRTN2254 |
| 2255 |       | *           |          |      |                                 |  | FRTN2255 |
| 2256 |       | *           |          |      |                                 |  | FRTN2256 |
| 2257 |       | *           |          |      |                                 |  | FRTN2257 |
| 2258 |       | *           |          |      |                                 |  | FRTN2258 |
| 2259 |       | *           |          |      |                                 |  | FRTN2259 |
| 2260 | 03426 | 0 000000    | FL00 DAC | **   |                                 |  | FRTN2260 |
| 2261 | 03427 | 0 35 00625  | LDX      | A    |                                 |  | FRTN2261 |
| 2262 | 03430 | 1 02 17400  | LDA      | DP,1 | A = 5 * CL(A)                   |  | FRTN2262 |
| 2263 | 03431 | 0 03 00673  | ANA      | K118 |                                 |  | FRTN2263 |
| 2264 | 03432 | 0 04 00044  | STA      | FLT1 |                                 |  | FRTN2264 |
| 2265 | 03433 | 0415 76     | ALS      | 2    |                                 |  | FRTN2265 |
| 2266 | 03434 | 0 06 00044  | ADD      | FLT1 | (FLT1 ALSO USED BY ASSIGN SPEC) |  | FRTN2266 |
| 2267 | 03435 | 0 04 00625  | STA      | A    |                                 |  | FRTN2267 |
| 2268 | 03436 | 0 10 03317  | JST      | FA00 | FETCH ASSIGN                    |  | FRTN2268 |
| 2269 | 03437 | 0 10 03443  | JST      | KT00 | DO = = WDS /ITEM                |  | FRTN2269 |
| 2270 | 03440 | 0 02 00625  | LDA      | A    |                                 |  | FRTN2270 |
| 2271 | 03441 | 0 07 00045  | SUB      | F    | (A) = A-F                       |  | FRTN2271 |
| 2272 | 03442 | -0 01 03426 | JMP*     | FL00 | RETURN                          |  | FRTN2272 |
| 2273 |       |             | EJCT     |      |                                 |  | FRTN2273 |

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```
2274 *
2275 *
2276 *
2277 *
2278 *
2279 *
2280 *
2281 *
2282 03443 0 000000 KT00 DAC **
2283 03444 0 02 00710 LDA IU
2284 03445 0 07 00737 SUB K103
2285 03446 100040 SZE
2286 03447 -0 01 03443 JMP* KT00
2287 03450 0 02 00030 LDA D0
2288 03451 000201 IAB
2289 03452 0 02 00031 LDA D1
2290 03453 0 10 02462 JST IM00
2291 03454 000201 IAB
2292 03455 0 02 00032 LDA D2
2293 03456 0 10 02462 JST IM00
2294 03457 000201 IAB
2295 03460 0 02 00033 LDA D3
2296 03461 0 10 02462 JST IM00
2297 03462 0 04 00030 STA D0
2298 03463 -0 01 03443 JMP* KT00
2299 EJCT
```

\*\*\*\*\*  
\*DO=WORDS FOR LINK\*  
\*\*\*\*\*

D = ITEM MODE SIZE TIMES THE TOTAL SIZE IF  
THE ITEM IS AN ARRAY

IF IU NOT 'ARR'

RETURN

DO = DO \* D1 \* D2 \* D3

MULTIPLY A BY B

MULTIPLY A BY B

MULTIPLY A BY B

RETURN

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```
2300 *
2301 *
2302 *
2303 *
2304 *
2305 *
2306 *
2307 *
2308 03464 0 000000 DM00 DAC **
2309 03465 0 04 00706 STA IM
2310 03466 0 35 00625 LDX A
2311 03467 1 02 17400 LDA DP+1
2312 03470 0400 67 LRL 9
2313 03471 0404 75 LGR 3
2314 03472 0414 75 LGL 3
2315 03473 0 06 00706 ADD IM
2316 03474 0410 67 LLL 9
2317 03475 1 04 17400 STA DP+1
2318 03476 -0 01 03464 JMP* DM00
2319 EJCT
```

\*\*\*\*\*  
\*DEFINE IM\*  
\*\*\*\*\*

IM SUBA = IM (SET FROM A REG)

IM = (A)  
ESTABLISH A

IM(A) = IM

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```
2320      *
2321      *
2322      *
2323      *
2324      *
2325      *
2326      *
2327 03477 0 000000 DA00 DAC **
2328 03500 0 04 00025 STA AF
2329 03501 0400 62 LRL 14
2330 03502 0 35 00625 LDX A
2331 03503 1 02 17401 DA10 LDA DP+1,1
2332 03504 0404 62 LGR 14
2333 03505 0 11 00737 CAS K103
2334 03506 0 01 03510 JMP **2
2335 03507 0 01 03513 JMP DA20
2336 03510 0410 62 LLL 14
2337 03511 1 04 17401 STA DP+1,1
2338 03512 -0 01 03477 JMP* DA00
2339 03513 1 02 17401 DA20 LDA DP+1,1
2340 03514 0 03 00670 ANA K111
2341 03515 0 04 00704 STA GFA
2342 03516 0 04 00000 STA 0
2343 03517 0 01 03503 JMP DA10
2344      EJCT
```

\*\*\*\*\*  
\*DEFINE AF\*  
\*\*\*\*\*  
AF SUBA = AF (SET FROM A REG)

AF = (A)

IF IU (A) NOT ARR

GF (A) = AF

ELSE, GF (GF (A)) = AF

RETURN

FRTN2320  
FRTN2321  
FRTN2322  
FRTN2323  
FRTN2324  
FRTN2325  
FRTN2326  
FRTN2327  
FRTN2328  
FRTN2329  
FRTN2330  
FRTN2331  
FRTN2332  
FRTN2333  
FRTN2334  
FRTN2335  
FRTN2336  
FRTN2337  
FRTN2338  
FRTN2339  
FRTN2340  
FRTN2341  
FRTN2342  
FRTN2343  
FRTN2344

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```
2345      *
2346      *
2347 03520 0 000000 BUD DAC **
2348 03521 0 35 00625 LDX A
2349 03522 0 15 00637 STX ABAR
2350 03523 0 02 00774 LDA TID
2351 03524 1 04 17404 STA DP+4,1
2352 03525 0 02 00775 LDA TID+1
2353 03526 1 04 17403 STA DP+3,1
2354 03527 0 02 00776 LDA TID+2
2355 03530 1 04 17402 STA DP+2,1
2356 03531 0 02 00710 LDA IU
2357 03532 0414 62 LGL 14
2358 03533 1 04 17401 STA DP+1,1
2359 03534 0 02 00054 LDA NT
2360 03535 0414 75 LGL 3
2361 03536 0 06 00736 ADD K102
2362 03537 0414 75 LGL 3
2363 03540 0 06 00706 ADD IM
2364 03541 0400 60 LRL 16
2365 03542 0 04 00046 STA CL
2366 03543 0 02 00736 LDA K102
2367 03544 0 04 00026 STA AT
2368 03545 0 02 00625 LDA A
2369 03546 0 07 00741 SUR K105
2370 03547 100400 SPL
2371 03550 0 01 03553 JMP **3
2372 03551 0 12 00046 IRS CL
2373 03552 0 01 03546 JMP *-4
2374 03553 0410 47 LLL 25
2375 03554 0 06 00046 ADD CL
2376 03555 1 04 17400 STA DP+1
2377 03556 100400 SPL
2378 03557 -0 01 03520 JMP* BUD
2379 03560 0 02 00047 LDA DT
2380 03561 0414 77 LGL 1
2381 03562 0 06 00070 ADD TT
```

BUILD ASSIGNMENT

TABLE ENTRY

AT = STR/+BS

CL(A) = A/5

FRTN2345  
FRTN2346  
FRTN2347  
FRTN2348  
FRTN2349  
FRTN2350  
FRTN2351  
FRTN2352  
FRTN2353  
FRTN2354  
FRTN2355  
FRTN2356  
FRTN2357  
FRTN2358  
FRTN2359  
FRTN2360  
FRTN2361  
FRTN2362  
FRTN2363  
FRTN2364  
FRTN2365  
FRTN2366  
FRTN2367  
FRTN2368  
FRTN2369  
FRTN2370  
FRTN2371  
FRTN2372  
FRTN2373  
FRTN2374  
FRTN2375  
FRTN2376  
FRTN2377  
FRTN2378  
FRTN2379  
FRTN2380  
FRTN2381

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```
2382 03563 0414 62      LGL 14
2383 03564 1 13 17404    IMA DP+4,1
2384 03565 0 03 00670    ANA K111
2385 03566 1 06 17404    ADD DP+4,1
2386 03567 1 04 17404    STA DP+4,1
2387 03570 -0 01 03520    JMP* BUD
2388                      EJCT
```

FRTN2382  
FRTN2383  
FRTN2384  
FRTN2385  
FRTN2386  
FRTN2387  
FRTN2388

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```
2389 *
2390 *
2391 *
2392 *
2393 *
2394 *
2395 *
2396 *
2397 *
2398 *
2399 03571 0 000000 AF00 DAC **
2400 03572 000201 IAB
2401 03573 0 35 00625 LDX A
2402 03574 0414 64 LGL 12
2403 03575 1 13 17400 IMA DP+1
2404 03576 0 03 00757 ANA B4F
2405 03577 1 06 17400 ADD DP+1
2406 03600 1 04 17400 STA DP+1
2407 03601 000201 IAB
2408 03602 0 10 03477 JST DA00
2409 03603 -0 01 03571 JMP* AF00
2410                      EJCT
```

AT SUBA = AT (FROM B REG), THEN DEFINE AF

AT(A) = CONTENTS OF B INPUT  
DEFINE AF

FRTN2389  
FRTN2390  
FRTN2391  
FRTN2392  
FRTN2393  
FRTN2394  
FRTN2395  
FRTN2396  
FRTN2397  
FRTN2398  
FRTN2399  
FRTN2400  
FRTN2401  
FRTN2402  
FRTN2403  
FRTN2404  
FRTN2405  
FRTN2406  
FRTN2407  
FRTN2408  
FRTN2409  
FRTN2410

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|      |       |             |          |      |          |
|------|-------|-------------|----------|------|----------|
| 2411 | *     |             |          |      | FRTN2411 |
| 2412 | *     |             |          |      | FRTN2412 |
| 2413 | *     |             |          |      | FRTN2413 |
| 2414 | *     |             |          |      | FRTN2414 |
| 2415 | *     |             |          |      | FRTN2415 |
| 2416 | *     |             |          |      | FRTN2416 |
| 2417 | 03604 | 0 000000    | LOCO DAC | **   | FRTN2417 |
| 2418 | 03605 | 0 02 00735  | LDA      | K101 | FRTN2418 |
| 2419 | 03606 | 000201      | IAB      |      | FRTN2419 |
| 2420 | 03607 | 0 02 00643  | LDA      | RPL  | FRTN2420 |
| 2421 | 03610 | 0 10 03571  | JST      | AF00 | FRTN2421 |
| 2422 | 03611 | -0 01 03604 | JMP*     | LO00 | FRTN2422 |
| 2423 |       |             | EJCT     |      | FRTN2423 |

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|      |       |             |          |      |          |
|------|-------|-------------|----------|------|----------|
| 2424 | *     |             |          |      | FRTN2424 |
| 2425 | *     |             |          |      | FRTN2425 |
| 2426 | *     |             |          |      | FRTN2426 |
| 2427 | *     |             |          |      | FRTN2427 |
| 2428 | 03612 | 0 000000    | A100 DAC | **   | FRTN2428 |
| 2429 | 03613 | 140040      | CRA      |      | FRTN2429 |
| 2430 | 03614 | 0 04 00775  | STA      | ID+1 | FRTN2430 |
| 2431 | 03615 | 0 04 00776  | STA      | ID+2 | FRTN2431 |
| 2432 | 03616 | 0 02 00735  | LDA      | K101 | FRTN2432 |
| 2433 | 03617 | 000201      | IAB      |      | FRTN2433 |
| 2434 | 03620 | 0 02 00736  | LDA      | K102 | FRTN2434 |
| 2435 | 03621 | 0 10 03623  | JST      | AA00 | FRTN2435 |
| 2436 | 03622 | -0 01 03612 | JMP*     | A100 | FRTN2436 |
| 2437 |       |             | EJCT     |      | FRTN2437 |

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```
2438 *
2439 *
2440 *
2441 * *****
2442 * *ASSIGN SPECIAL*
2443 * *****
2444 * B REG TO IM, A REG TO IJ, 1 TO NT (CONSTANT), THEN
2445 * ASSIGN ITEM
2445 03623 0 000000 AA00 DAC **
2446 03624 0 04 00710 STA IU IU = (A)
2447 03625 000201 IAB
2448 03626 0 04 00706 STA IM IM = (B)
2449 03627 0 02 00735 LDA K101
2450 03630 0 04 00054 STA NT NT = 1
2451 03631 0 10 02762 JST A500 ASSIGN ITEM
2452 03632 -0 01 03623 JMP* AA00 RETURN
2453 EJCT
```

FRTN2438  
FRTN2439  
FRTN2440  
FRTN2441  
FRTN2442  
FRTN2443  
FRTN2444  
FRTN2445  
FRTN2446  
FRTN2447  
FRTN2448  
FRTN2449  
FRTN2450  
FRTN2451  
FRTN2452  
FRTN2453

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```
2454 *
2455 *
2456 * *****
2457 * *JUMP *
2458 * *ILL TERM*
2459 * *****
2460 *
2461 * CLEAR LAST OP FLAG FOR NO PATH TESTING
2462 *
2463 03633 140040 B6 CRA
2464 03634 0 04 00653 STA LSTP LSTP = 0
2465 * SET ILLEGAL DO TERM FLAG
2466 03635 0 02 00735 C5 LDA K101
2467 03636 0 04 00652 STA LSTF LSTF = 1
2468 03637 0 02 00702 A1 LDA CRET
2469 03640 0 10 02352 JST TS00 IF TC NOT C/R, ERROR
2470 * JMP C6 (MAKE EFFECTIVE ONLY IF CODING IS INSFRTE)
2471 EJCT
```

FRTN2454  
FRTN2455  
FRTN2456  
FRTN2457  
FRTN2458  
FRTN2459  
FRTN2460  
FRTN2461  
FRTN2462  
FRTN2463  
FRTN2464  
FRTN2465  
FRTN2466  
FRTN2467  
FRTN2468  
FRTN2469  
FRTN2470  
FRTN2471

\* NAME: FRTN

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```
2472 *
2473 *
2474 *
2475 * *****
2476 * *CONTINUE*
2477 * *****
2478 * WRAPUP LOGICAL IF* CHECK TRACE STOP AND SEARCH
2479 * DO TABLE FOR DO TERMINATION
2480 * NOTE COMMENT LINE AFTER A1 ON PRECEEDING PAGE
2480 C3641 0 02 00650 C6 LDA LIF
2481 C3642 100040 SZE IF LIF NON-ZERO,
2482 C3643 0 01 03703 JMP C6H GO TO
2483 C3644 0 02 00651 C6A LDA LSTN IF LSTN NON-ZERO,
2484 C3645 100040 SZE GO TO
2485 C3646 0 01 03651 JMP C6C
2486 C3647 0 04 00652 C6B STA LSTF LSTF = 0
2487 C3650 0 01 03723 JMP C7 GO TO STATEMENT INPUT
2488 C3651 0 07 00645 C6C SUB TRF TRACE FLAG
2489 C3652 101040 SNZ SKIP IF NOT END OF TRACE ZONE
2490 C3653 0 04 00645 STA TRF SET TRF TO ZERO (TURN FLAG OFF)
2491 C3654 0 02 00655 LDA DO START OF DO TABLE
2492 C3655 0 06 00642 ADD D
2493 C3656 0 04 00626 C6D STA I I = DO + D
2494 C3657 0 35 00626 LDX I
2495 C3660 0 07 00655 SUB DO
2496 C3661 101040 SNZ
2497 C3662 0 01 03647 JMP C6R GO TO C6B - FINISHED DO
2498 C3663 1 02 17374 LDA DP-4,1
2499 C3664 0 07 00651 SUB LSTN
2500 C3665 100040 SZE
2501 C3666 0 01 03677 JMP C6E
2502 C3667 0 02 00652 LDA LSTF
2503 C3670 100040 SZE
2504 C3671 0 01 03721 JMP C6K
2505 C3672 0 10 06155 JST D000 DO TERMINATION
2506 C3673 0 02 00642 LDA D
2507 C3674 0 07 00741 SUB K105
2508 C3675 0 04 00642 STA D D = D-5
```

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2509 C3676 0 02 00652 LDA LSTF
2510 C3677 0 04 00652 C6E STA LSTF
2511 C3700 0 02 00626 LDA I
2512 C3701 0 07 00741 SUB K105
2513 C3702 0 01 03656 JMP C6D I = I-5 - CONTINUE DO LOOP
2514 C3703 0 02 00636 C6H LDA IFF
2515 C3704 0 04 00625 STA A
2516 C3705 101040 SNZ
2517 C3706 0 01 03714 JMP C6J
2518 C3707 0410 60 LLL 16
2519 C3710 0 02 13026 LDA CM15 (A) = JMP INSTRUCTION
2520 C3711 0 10 11471 JST OB00 OUTPUT OA
2521 C3712 140040 CRA
2522 C3713 0 04 00636 STA IFF IFF = 0
2523 C3714 0 04 00625 C6J STA A A = 0
2524 C3715 0 02 00650 LDA LIF
2525 C3716 0 04 00653 STA LSTP SET TO NON-ZERO TO PREVENT DATA ERROR MSG
2526 C3717 0 10 13257 JST OS00 OUTPUT STRING - RPL
2527 C3720 0 01 03644 JMP C6A
2528 *
2529 C3721 0 10 02615 C6K JST ER00
2530 C3722 142324 BCI 1,DT
2531 EJC
```

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```
2532 *
2533 *
2534 * *****
2535 * *STATEMENT INPUT*
2536 * *****
2537 * SET UP PROCESSING OF NEXT SOURCE STATEMENT
2538 * PROCESS STATEMENT NUMBER IF PRESENT
2539 * WRAPUP ANY OUTSTANDING ARITHMETIC IF
2539 03723 140040 C7 CRA
2540 03724 0 04 00651 STA LSTN LSTN = 0
2541 03725 0 04 00077 STA IFLG IFLG = 0
2542 03726 0 04 00650 STA LIF LIF = 0
2543 03727 0 10 00000 JST OPST PREPARE OP-16 STMT PROCESSORS
2544 03730 0 02 00113 LDA LO L = L (0)
2545 03731 0 04 00627 STA L
2546 03732 0 02 14040 LDA CI
2547 03733 141140 ICL CHECK CARD COLUMN 1
2548 03734 0 11 00662 CAS K15 FOR $ CHARACTER
2549 03735 100000 SKP = '$'
2550 03736 0 01 04007 JMP CCRD X
2551 03737 0 11 00755 CAS K49 CONTROL CARD
2552 03740 100000 SKP TEST FOR INLINE ASSEMBLY
2553 03741 0 01 00000 JMP ASMB NO
2554 03742 0 10 02346 JST XN00 YES ... GC PROCESS IT
2555 03743 100040 SZF EXAMINE NEXT CHAR
2556 03744 0 01 03751 JMP C71
2557 03745 0 10 02264 JST IS00 INPUT STATEMENT =
2558 03746 0 02 00625 LDA A
2559 03747 0 04 00651 STA LSTN LSTN = A
2560 03750 0 04 00653 STA LSTP
2561 03751 0 02 00636 C71 LDA IFF CHECK FOR IFF=0
2562 03752 101040 SNZ
2563 03753 0 01 03760 JMP C7B GO TO C7B
2564 03754 0 07 00651 SUB LSTN IF = LSTN
2565 03755 100040 SZE
2566 03756 0 01 03762 JMP C7C
2567 03757 0 04 00636 C7A STA IFF IFF = 0
2568 03760 0 10 03771 C7E JST C7LT LINE TEST
```

FRTN2532  
FRTN2533  
FRTN2534  
FRTN2535  
FRTN2536  
FRTN2537  
FRTN2538  
FRTN2539  
FRTN2540  
FRTN2541  
FRTN2542  
FRTN2543  
FRTN2544  
FRTN2545  
FRTN2546  
FRTN2547  
FRTN2548  
FRTN2549  
FRTN2550  
FRTN2551  
FRTN2552  
FRTN2553  
FRTN2554  
FRTN2555  
FRTN2556  
FRTN2557  
FRTN2558  
FRTN2559  
FRTN2560  
FRTN2561  
FRTN2562  
FRTN2563  
FRTN2564  
FRTN2565  
FRTN2566  
FRTN2567  
FRTN2568

\* NAME: FRTN

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2569 03761 0 01 04032 JMP C8
2570 03762 0 02 00636 C7C LDA IFF IFF = A
2571 03763 0 04 00625 STA A
2572 03764 0400 40 LRL 32
2573 03765 0 02 13026 LDA K201 (A) = JMP INSTRUCTION
2574 03766 0 10 11471 JST 0B00 OUTPUT OA
2575 03767 140040 CPA
2576 03770 0 01 03757 JMP C7A GO TO C7A
2577 03771 0 000000 C7LT DAC ** LINE TEST
2578 03772 0 02 14042 LDA CI+2 CI = BLANK
2579 03773 0 03 00672 ANA K116 LIST LINE
2580 03774 0 06 00660 ADD K8 RETURN
2581 03775 0 04 14042 STA CI+2
2582 03776 0 02 00067 LDA TC
2583 03777 0 07 00714 SUB HC2 IF TC = SPECIAL
2584 04000 100040 SZF
2585 04001 0 01 04094 JMP C7LU
2586 04002 0 10 02745 C7LS JST LIST LIST THIS LINE
2587 04003 0 01 03771 JMP* C7LT
2588 04004 0 10 02615 C7LJ JST ER00 ILLEGAL STMT. NO. ERROR
2589 04005 051724 VFD 1,0,7,'323,8,'324 ASCII 'ST' WITH SIGN BIT +
2590 04006 0 01 04002 JMP C7LS LIST LINE AND RETURN
2591 EJCT
```

FRTN2569  
FRTN2570  
FRTN2571  
FRTN2572  
FRTN2573  
FRTN2574  
FRTN2575  
FRTN2576  
FRTN2577  
FRTN2578  
FRTN2579  
FRTN2580  
FRTN2581  
FRTN2582  
FRTN2583  
FRTN2584  
FRTN2585  
FRTN2586  
FRTN2587  
FRTN2588  
FRTN2589  
FRTN2590  
FRTN2591

\* NAME: FRTN

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2592 *
2593 *
2594 *
2595 *
2596 *
2597 *
2598 04007 0 10 13531 CCRD JST FS00
2599 04010 0 10 02745 JST LIST
2600 04011 0 02 14040 LDA CI
2601 04012 0414 64 LGL 12
2602 04013 101040 SNZ
2603 04014 0 02 04030 LDA CCRK
2604 04015 0404 72 LGR 6
2605 04016 0 04 13650 STA OCI
2606 04017 0 02 00742 LDA K106
2607 04020 0 04 00063 STA OCNT
2608 04021 0 10 13531 JST FS00
2609 04022 0 02 14040 LDA CI
2610 04023 0414 64 LGL 12
2611 04024 100040 SZE
2612 04025 0 01 02666 JMP ER20
2613 04026 0 10 00000 CALL F4$END
2614 04027 0 01 01001 JMP AO
2615 04030 030000 CCRK OCT 030000
2616 EJCT
```

\*\*\*\*\*  
\*CONTROL CARD PROCESSOR\*  
\*\*\*\*\*

FLUSH BUFFER IF NECESSARY  
LIST CARD  
WORD CONTAINING COLUMN 1

=\*030000 (EOJ CODE = 3)  
TRUNCATE TO A DIGIT

=6  
SET BUFFER WORD COUNT TO 3  
FLUSH BUFFER

CHECK COLUMN 1 FOR CONTROL CODE 0

SKIP TO NEXT CARD (NOT CONTROL CARD)  
CLOSE-OUT I/O DEVICES AND STOP  
RESTART NEW COMPILATION  
EOJ CONTROL CODE

FRTN2592  
FRTN2593  
FRTN2594  
FRTN2595  
FRTN2596  
FRTN2597  
FRTN2598  
FRTN2599  
FRTN2600  
FRTN2601  
FRTN2602  
FRTN2603  
FRTN2604  
FRTN2605  
FRTN2606  
FRTN2607  
FRTN2608  
FRTN2609  
FRTN2610  
FRTN2611  
FRTN2612  
FRTN2613  
FRTN2614  
FRTN2615  
FRTN2616

\* NAME: FRTN

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2617 *
2618 *
2619 *
2620 *
2621 *
2622 *
2623 *
2624 *
2625 *
2626 *
2627 *
2628 *
2629 *
2630 *
2631 *
2632 *
2633 04031 0 00 00000 C8T1 PZE 0
2634 04032 0 02 00656 C8 LDA CC
2635 04033 0 04 04153 STA C8X9
2636 04034 0 02 00735 LDA K101
2637 04035 0 04 04031 STA C8T1
2638 04036 140040 CRA
2639 04037 0 04 00705 STA ICSW
2640 04040 0 10 01157 C8A JST CH00
2641 04041 0 02 00067 C8B LDA TC
2642 04042 0 07 00657 SUB K4
2643 04043 100040 SZE
2644 04044 0 01 04056 JMP C8C
2645 04045 0 10 01157 JST CH00
2646 04046 0 02 00037 C8F2 LDA DFL
2647 04047 100040 SZE
2648 04050 0 01 04041 JMP C8B
2649 04051 0 02 04153 C8F4 LDA C8X9
2650 04052 0 04 00656 STA CC
2651 04053 0 02 00735 LDA K101
2652 04054 0 04 00705 STA ICSW
2653 04055 0 01 04157 JMP A9
```

\*\*\*\*\*  
\*STATEMENT SCAN\*  
\*\*\*\*\*

DETERMINE THE CLASS OF THE STATEMENT  
IF AN = IS FOUND WITH A FOLLOWING ,  
THE STATEMENT IS A DO  
IF NO FOLLOWING COMMA, THE PAREN FLAG  
IS TESTED, IF NO PARENS, THE STATEMENT  
IS ARITHMETIC ASSIGNMENT  
IF PARENS WERE DETECTED AND THE FIRST  
NAME IS AN ARRAY, THE STATEMENT IS  
ARITHMETIC ASSIGNMENT  
OTHERWISE, IT IS A STATEMENT FUNCTION  
IF NO = IS FOUND, THE STATEMENT IS  
PROCESSED FURTHER IN STATEMENT ID

SAVE CC

T (1) = 1

ICSW = SIP  
INPUT CHARACTER  
IF TC = )

INPUT CHAR  
IF DFL NOT ZERO

GO TO C8B  
RESTORE CC

IPL  
ICSW = IPL  
GO TO STATEMENT ID

FRTN2617  
FRTN2618  
FRTN2619  
FRTN2620  
FRTN2621  
FRTN2622  
FRTN2623  
FRTN2624  
FRTN2625  
FRTN2626  
FRTN2627  
FRTN2628  
FRTN2629  
FRTN2630  
FRTN2631  
FRTN2632  
FRTN2633  
FRTN2634  
FRTN2635  
FRTN2636  
FRTN2637  
FRTN2638  
FRTN2639  
FRTN2640  
FRTN2641  
FRTN2642  
FRTN2643  
FRTN2644  
FRTN2645  
FRTN2646  
FRTN2647  
FRTN2648  
FRTN2649  
FRTN2650  
FRTN2651  
FRTN2652  
FRTN2653

\* NAME: FRTN

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|            |            |      |     |      |                                    |          |
|------------|------------|------|-----|------|------------------------------------|----------|
| 2654 04054 | C 02 00067 | CRC  | LDA | TC   | IF TC NOT (,                       | FRTN2654 |
| 2655 04057 | C 07 14474 |      | SUB | K17  |                                    | FRTN2655 |
| 2656 04060 | 100040     |      | SZE |      |                                    | FRTN2656 |
| 2657 04061 | C 01 04071 |      | JMP | C8D  | GO TO C8D                          | FRTN2657 |
| 2658 04062 | C 02 04031 |      | LDA | C8T1 | T1 = T1 - 1                        | FRTN2658 |
| 2659 04063 | C 07 00735 |      | SUB | K101 |                                    | FRTN2659 |
| 2660 04064 | C 04 04031 |      | STA | C8T1 |                                    | FRTN2660 |
| 2661 04065 | 100040     | CRC4 | SZE |      | IF T1 = 0                          | FRTN2661 |
| 2662 04066 | C 01 04051 |      | JMP | C8B4 |                                    | FRTN2662 |
| 2663 04067 | C 10 01350 |      | JST | DN00 | INPUT DNA                          | FRTN2663 |
| 2664 04070 | C 01 04046 |      | JMP | C8B2 | GO TO C8B2                         | FRTN2664 |
| 2665 04071 | C 02 00067 | CRC  | LDA | TC   | IF TC = ,                          | FRTN2665 |
| 2666 04072 | C 11 00754 |      | CAS | K134 | = '17' ('FINISHED' CODE FOR COMMA) | FRTN2666 |
| 2667 04073 | C 01 04075 |      | JMP | **2  |                                    | FRTN2667 |
| 2668 04074 | C 01 04100 |      | JMP | C8D2 | TC = COMMA                         | FRTN2668 |
| 2669 04075 | C 07 00734 |      | SUB | K5   |                                    | FRTN2669 |
| 2670 04076 | 100040     |      | SZE |      |                                    | FRTN2670 |
| 2671 04077 | C 01 04102 |      | JMP | C8E  |                                    | FRTN2671 |
| 2672 04100 | C 02 04031 | C8D2 | LDA | C8T1 | GO TO C8C4,                        | FRTN2672 |
| 2673 04101 | C 01 04065 |      | JMP | C8C4 |                                    | FRTN2673 |
| 2674 04102 | C 02 00067 | CRC  | LDA | TC   | ELSE, IF TC = '/'                  | FRTN2674 |
| 2675 04103 | C 07 00740 |      | SUB | K104 |                                    | FRTN2675 |
| 2676 04104 | 100040     |      | SZE |      |                                    | FRTN2676 |
| 2677 04105 | C 07 00715 |      | SUB | FN90 |                                    | FRTN2677 |
| 2678 04106 | 101040     |      | SNZ |      |                                    | FRTN2678 |
| 2679 04107 | C 01 04051 |      | JMP | C8B4 | GO TO C8B4                         | FRTN2679 |
| 2680 04110 | C 02 00067 |      | LDA | TC   |                                    | FRTN2680 |
| 2681 04111 | C 07 00733 |      | SUB | K18  | IF NOT = ,                         | FRTN2681 |
| 2682 04112 | 100040     |      | SZE |      |                                    | FRTN2682 |
| 2683 04113 | C 01 04040 |      | JMP | C8A  | GO TO C8A                          | FRTN2683 |
| 2684 04114 | C 10 01350 |      | JST | DN00 | INPUT DNA                          | FRTN2684 |
| 2685 04115 | C 02 04153 |      | LDA | C8X9 | RESTORE CC                         | FRTN2685 |
| 2686 04116 | C 04 00656 |      | STA | CC   |                                    | FRTN2686 |
| 2687 04117 | C 02 00735 |      | LDA | K101 | IPL                                | FRTN2687 |
| 2688 04120 | C 04 00705 |      | STA | ICSW | ICSW = IPL                         | FRTN2688 |
| 2689 04121 | C 02 00067 |      | LDA | TC   |                                    | FRTN2689 |
| 2690 04122 | C 07 00754 |      | SUB | K134 | = '17' (FINISHED CODE FOR COMMA)   | FRTN2690 |

\* NAME: FRTN

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|            |            |      |      |      |                                            |          |
|------------|------------|------|------|------|--------------------------------------------|----------|
| 2691 04123 | 100040     |      | SZE  |      |                                            | FRTN2691 |
| 2692 04124 | C 01 04140 |      | JMP  | C8G  | GO TO C8G                                  | FRTN2692 |
| 2693 04125 | C 02 00736 |      | LDA  | K102 | ELSE, INPUT 2 CHARS                        | FRTN2693 |
| 2694 04126 | C 10 01253 |      | JST  | IA00 |                                            | FRTN2694 |
| 2695 04127 | C 02 01333 |      | LDA  | IBUF | IF (A) = 'D0'                              | FRTN2695 |
| 2696 04130 | C 07 14246 |      | SUB  | K19  |                                            | FRTN2696 |
| 2697 04131 | 101040     |      | SNZ  |      |                                            | FRTN2697 |
| 2698 04132 | C 01 04135 |      | JMP  | **3  |                                            | FRTN2698 |
| 2699 04133 | C 10 02615 |      | JST  | ER00 |                                            | FRTN2699 |
| 2700 04134 | 141715     |      | BCI  | 1*CM | COMMA OUTSIDE PARENTHESES, NOT IN DO STMT. | FRTN2700 |
| 2701 04135 | C 02 00740 |      | LDA  | K104 |                                            | FRTN2701 |
| 2702 04136 | C 10 04272 |      | JST  | NP00 | FIRST NON-SPEC CHECK                       | FRTN2702 |
| 2703 04137 | C 01 04702 |      | JMP  | C9   | GO TO DO                                   | FRTN2703 |
| 2704 04140 | C 02 04031 | C8G  | LDA  | C8T1 | 1 IF NO ( TO LEFT OF EQUALS                | FRTN2704 |
| 2705 04141 | 100040     |      | SZE  |      |                                            | FRTN2705 |
| 2706 04142 | C 01 05452 |      | JMP  | G2   | ARITHMETIC ASSIGNMENT STATEMENT            | FRTN2706 |
| 2707 04143 | C 10 02341 |      | JST  | SY00 | INPUT SYMBOL                               | FRTN2707 |
| 2708 04144 | C 02 04153 |      | LDA  | C8X9 |                                            | FRTN2708 |
| 2709 04145 | C 04 00656 |      | STA  | CC   | RESTORE CC                                 | FRTN2709 |
| 2710 04146 | C 02 00710 |      | LDA  | IU   | IF IU = SUBP                               | FRTN2710 |
| 2711 04147 | C 07 00737 |      | SUB  | K103 |                                            | FRTN2711 |
| 2712 04150 | 100040     |      | SZE  |      |                                            | FRTN2712 |
| 2713 04151 | C 01 05507 |      | JMP  | G1   | GO TO ARITH ST. FUNCT.                     | FRTN2713 |
| 2714 04152 | C 01 05452 |      | JMP  | G2   | OTHERWISE = ASSIGNMENT STATEMENT           | FRTN2714 |
| 2715 04153 | C 00 00000 | C8X9 | PZE  | 0    |                                            | FRTN2715 |
| 2716       |            |      | EJCT |      |                                            | FRTN2716 |

\* NAME: FRTN

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2717 *
2718 *
2719 *
2720 *
2721 *
2722 *
2723 *
2724 04154 0 00 00000 A9T1 PZE 0
2725 04155 0 00 00000 A9T2 PZE 0
2726 04156 0 00 00000 A9T3 PZE 0
2727 000046 STMT EQU 38
2728 04157 0 02 00740 A9 LDA K104
2729 04160 0 10 01253 JST IAO0
2730 04161 0 02 01333 LDA IBUF
2731 04162 0 04 00051 STA NAMF
2732 04163 0 02 01334 LDA IBUF+1
2733 04164 0 04 00052 STA NAMF+1
2734 04165 0 35 04266 LDX A9Z9
2735 04166 0 02 00051 A9A LDA NAMF
2736 04167 1 07 14312 SUB A9X1+STMT+1
2737 04170 100040 SZE
2738 04171 0 01 04246 JMP A9F
2739 04172 0 02 00052 LDA NAMF+1
2740 04173 1 07 14360 SUB A9X2+STMT+1
2741 04174 100040 SZE
2742 04175 0 01 04246 JMP A9F
2743 04176 0 02 00000 LDA 0
2744 04177 0 05 04266 ERA A9Z9
2745 04200 100040 SZE
2746 04201 0 01 04207 JMP **6
2747 04202 0 10 02346 JST XN00
2748 04203 0 02 00067 LDA TC
2749 04204 0 05 04261 ERA KACG
2750 04205 100040 SZE
2751 04206 0 01 04246 JMP A9F
2752 04207 1 02 14474 LDA A9X4+STMT+1
2753 04210 0 03 00764 ANA K133
```

\*\*\*\*\*  
\*STATEMENT IDENTIFICATION\*  
\*\*\*\*\*  
READ FOUR CHARACTERS AND DETERMINE CORRECT ROUTINE  
FOR PROCESSING, THEN CHECK SPELLING ON REST

NUMBER OF STATEMENTS

INPUT (4) CHARS

NAMF = IBUF

INITIALIZE FOR LOOP THRU STMT. NAMES

READ IN REST OF  
CHECK REST OF SPELLING FOR

A MATCH ON 4 CHARACTERS  
NOT FOUND  
TEST FOR SPECIAL CASE OF  
INTEGER V.S. INTERRUPT  
X  
FIRST 4 CHARACTERS ARE NOT 'INTE'  
EXAMINE NEXT CHARACTER  
TEST FOR 'G'  
X  
X  
NO ... HOPEFULLY IT'S AN INTERRUPT STAT

FRTN2717  
FRTN2718  
FRTN2719  
FRTN2720  
FRTN2721  
FRTN2722  
FRTN2723  
FRTN2724  
FRTN2725  
FRTN2726  
FRTN2727  
FRTN2728  
FRTN2729  
FRTN2730  
FRTN2731  
FRTN2732  
FRTN2733  
FRTN2734  
FRTN2735  
FRTN2736  
FRTN2737  
FRTN2738  
FRTN2739  
FRTN2740  
FRTN2741  
FRTN2742  
FRTN2743  
FRTN2744  
FRTN2745  
FRTN2746  
FRTN2747  
FRTN2748  
FRTN2749  
FRTN2750  
FRTN2751  
FRTN2752  
FRTN2753

\* NAME: FRTN

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```
2754 04211 0 04 04154 STA A9T1
2755 04212 1 02 14426 LDA A9X3+STMT+1
2756 04213 0400 63 LRL 13
2757 04214 000201 IAR
2758 04215 0404 75 LGR 3
2759 04216 0 04 04155 STA A9T2
2760 04217 000201 IAB
2761 04220 0 10 04272 JST NP00
2762 04221 0 02 04154 A9B LDA A9T1
2763 04222 100040 SZE
2764 04223 0 01 04225 JMP A9C
2765 04224 -0 01 04155 JMP* A9T2
2766 *
2767 04225 0 07 00742 A9C SUB K106
2768 04226 100400 SPL
2769 04227 0 01 04241 JMP A9E
2770 04230 0 04 04154 STA A9T1
2771 04231 0 02 00742 LDA K106
2772 04232 0 04 04156 A9D STA A9T3
2773 04233 0 10 01253 JST IAO0
2774 04234 0 07 04156 SUB A9T3
2775 04235 101040 SNZ
2776 04236 0 01 04221 JMP A9B
2777 04237 0 10 02615 JST ER00
2778 04240 1*1720 MSPL BCI 1*SP
2779 04241 0 06 00742 A9E ADD K106
2780 04242 0 13 04154 IMA A9T1
2781 04243 140040 CPA
2782 04244 0 13 04154 IMA A9T1
2783 04245 0 01 04232 JMP A9D
2784 04246 0 12 00000 A9F IRS 0
2785 04247 0 01 04166 JMP A9A
2786 04250 0 02 00067 LDA TC
2787 04251 0 07 00702 SUR CRET
2788 04252 100040 SZE
2789 04253 0 01 04257 JMP A9G
2790 04254 0 02 00651 LDA LSTN
```

T1 = NUMBER OF REMAINING CHARACTERS  
LEFT TO CHECK

T2 = ADDRESS OF ROUTINE

FIRST NON-SPECIFIC CHECK -(A) =  
HIERARCHY CODE

MUST CHECK MORE CHARACTERS  
FINISHED CHARACTER CHECK. EXIT TO  
SPECIFIC ANALYZER.

REMAINING SPELLING IS CHECKED.

STATEMENT NAME MISSPELLED

LOOP CONTROL FOR STATEMENT NAMES.  
MORE NAMES - CONTINUE LOOP

TC = C/R

FRTN2754  
FRTN2755  
FRTN2756  
FRTN2757  
FRTN2758  
FRTN2759  
FRTN2760  
FRTN2761  
FRTN2762  
FRTN2763  
FRTN2764  
FRTN2765  
FRTN2766  
FRTN2767  
FRTN2768  
FRTN2769  
FRTN2770  
FRTN2771  
FRTN2772  
FRTN2773  
FRTN2774  
FRTN2775  
FRTN2776  
FRTN2777  
FRTN2778  
FRTN2779  
FRTN2780  
FRTN2781  
FRTN2782  
FRTN2783  
FRTN2784  
FRTN2785  
FRTN2786  
FRTN2787  
FRTN2788  
FRTN2789  
FRTN2790

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2791 04255 101040 SNZ  
2792 04256 0 01 03723 JMP C7  
2793 04257 0 10 02615 A9G JST EPOO  
2794 04260 144704 BCI 1-ID  
2795 \*  
2796 04261 000307 KACG OCT 307  
2797 \*  
2798 EJCT

AND LSTN = 0 - INPUT NEW STATEMENT  
UNRECOGNIZED STATEMENT  
'G'

FRTN2791  
FRTN2792  
FRTN2793  
FRTN2794  
FRTN2795  
FRTN2796  
FRTN2797  
FRTN2798

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2799 \*  
2800 \*  
2801 \*  
2802 \*  
2803 04262 0 02 00653 CONT LDA LSTP  
2804 04263 0 06 00651 ADD LSTN  
2805 04264 0 04 00653 STA LSTP  
2806 04265 0 01 03641 JMP C6  
2807 \*  
2808 04266 -1 177732 A9Z9 DAC\* -STMT\*1  
2809 EJCT

\*\*\*\*\*  
\*CONTINUE STATEMENT PROCESSOR\*  
\*\*\*\*\*

ACCOUNTS FOR POSSIBLE PATH ERROR  
ACCOUNTS FOR POSSIBLE PATH ERROR  
ACCOUNTS FOR POSSIBLE PATH ERROR

NO. OF ITEMS IN STMT TABLE

FRTN2799  
FRTN2800  
FRTN2801  
FRTN2802  
FRTN2803  
FRTN2804  
FRTN2805  
FRTN2806  
FRTN2807  
FRTN2808  
FRTN2809

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```
2810 *
2811 *
2812 *
2813 *
2814 *
2815 *
2816 *
2817 04267 0 00 00000 TONP PZE 0
2818 004267 NPT0 ECU TONP
2819 04270 0 00 00000 T2NP PZE 0
2820 04271 0 00 00000 T1NP PZE 0
2821 04272 0 000000 NP00 DAC **
2822 04273 0 04 04267 STA NPT0
2823 04274 0 02 00625 LDA A
2824 04275 0 04 04271 STA T1NP
2825 04276 0 02 04267 LDA NPT0
2826 04277 0 11 00743 CAS K107
2827 04300 0 01 04302 JMP **2
2828 04301 0 01 04313 JMP NP10
2829 04302 0 11 00634 CAS SPF
2830 04303 0 01 04352 JMP NP30
2831 04304 0 01 04340 JMP NP25
2832 04305 0 02 00067 LDA TC
2833 04306 0 07 00702 SUB CRET
2834 04307 101040 SNZ
2835 04310 0 01 04313 JMP NP10
2836 04311 0 10 02615 JST ER00
2837 04312 142730 BCI 1*EX
2838 *
2839 04313 0 02 00651 NP10 LDA LSTN
2840 04314 0 04 00625 STA A
2841 04315 101040 SNZ
2842 04316 0 01 04333 JMP NP16
2843 04317 0 10 02317 JST FA00
2844 04320 0 02 00737 LDA K103
2845 04321 0 07 00026 SUB AT
2846 04322 100040 SZE
```

\*\*\*\*\*  
\*FIRST NON-SPEC CHECK\*  
\*\*\*\*\*  
AT FIRST SHIFT IN LEVEL FROM ZERO, WRAP-UP  
SPECIFICATION STATEMENTS

TO = (A)  
T1 = A  
=7  
TRACE STMT. (MAY OCCUR ANYWHERE)  
TO = G.R. SPF, GO TO NP30  
TO = SPF, GO TO NP25  
IF TC = C/R  
GO TO NP10  
ELSE, ILLEGAL STATEMENT  
SPECIFICATION STATEMENT APPEARS AFTER  
SPECIFICATION STATEMENT CLEAN-JP  
A = LSTN  
IF ZERO, RETURN  
FETCH ASSIGNS  
STR-REL

FRTN2810  
FRTN2811  
FRTN2812  
FRTN2813  
FRTN2814  
FRTN2815  
FRTN2816  
FRTN2817  
FRTN2818  
FRTN2819  
FRTN2820  
FRTN2821  
FRTN2822  
FRTN2823  
FRTN2824  
FRTN2825  
FRTN2826  
FRTN2827  
FRTN2828  
FRTN2829  
FRTN2830  
FRTN2831  
FRTN2832  
FRTN2833  
FRTN2834  
FRTN2835  
FRTN2836  
FRTN2837  
FRTN2838  
FRTN2839  
FRTN2840  
FRTN2841  
FRTN2842  
FRTN2843  
FRTN2844  
FRTN2845  
FRTN2846

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```
2847 04323 0 01 04336 JMP NP20
2848 04324 0 02 00025 LDA AF
2849 04325 0 10 13257 JST OS00
2850 04326 0 10 03604 NP15 JST L000
2851 04327 0 02 00051 LDA L000
2852 04330 0 07 14264 SUB A9X5
2853 04331 100040 SZE
2854 04332 0 10 12754 JST TRSE
2855 04333 0 02 04271 NP16 LDA T1NP
2856 04334 0 04 00625 STA A
2857 04335 0 01 04272 JMP* NP00
2858 04336 0 10 02372 NP20 JST NR00
2859 04337 0 01 04326 JMP NP15
2860 04340 0 02 00650 NP25 LDA LIF
2861 04341 100040 SZE
2862 04342 0 01 04333 JMP NP16
2863 04343 0 02 00653 LDA LSTP
2864 04344 0 06 00651 ADD LSTN
2865 04345 100040 SZE
2866 04346 0 01 04313 JMP NP10
2867 04347 0 12 00653 IRS LSTP
2868 04350 0 10 02615 JST ER00
2869 04351 150310 BCI 1*PH
2870 04352 0 02 00634 NP30 LDA SPF
2871 04353 100040 SZE
2872 04354 0 01 04372 JMP NP37
2873 04355 0 02 00067 LDA TC
2874 04356 0 04 04270 STA T2NP
2875 04357 0 02 00643 LDA RPL
2876 04360 0 04 00640 STA XST
2877 04361 0 02 00644 LDA BDF
2878 04362 100040 SZE
2879 04363 0 01 10344 JMP C2
2880 04364 0 04 00625 STA A
2881 04365 0 02 13026 LDA CM15
2882 04366 0 10 13235 JST 0000
2883 04367 0 01 10344 JMP C2
```

OUTPUT STRING RPL  
DEFINE LOCATION  
OUTPUT TRACE COUPLING  
NON-REL TEST  
IF LSTP + LSTN = 0  
\*NO PATH\* ERROR  
NO PATH LEADING TO THE STATEMENT  
IF SPF 0 0  
T2 = TC  
XST = RPL  
BLOCK DATA SUBPROGRAM FLAG  
SKIP IF NOT BLOCK DATA SUBPROGRAM  
GO TO RELATE COMMON  
SET LISTING FOR OCTAL ADDR.  
JMP INSTRUCTION  
OUTPUT ABSOLUTE  
GO TO RELATE COMMON

FRTN2847  
FRTN2848  
FRTN2849  
FRTN2850  
FRTN2851  
FRTN2852  
FRTN2853  
FRTN2854  
FRTN2855  
FRTN2856  
FRTN2857  
FRTN2858  
FRTN2859  
FRTN2860  
FRTN2861  
FRTN2862  
FRTN2863  
FRTN2864  
FRTN2865  
FRTN2866  
FRTN2867  
FRTN2868  
FRTN2869  
FRTN2870  
FRTN2871  
FRTN2872  
FRTN2873  
FRTN2874  
FRTN2875  
FRTN2876  
FRTN2877  
FRTN2878  
FRTN2879  
FRTN2880  
FRTN2881  
FRTN2882  
FRTN2883

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|            |            |          |      |                             |  |          |
|------------|------------|----------|------|-----------------------------|--|----------|
| 2884 04370 | 0 02 04270 | NP35 LDA | T2NP |                             |  | FRTN2884 |
| 2885 04371 | 0 04 00067 | STA      | TC   |                             |  | FRTN2885 |
| 2886 04372 | 0 02 04267 | NP37 LDA | T0NP |                             |  | FRTN2886 |
| 2887 04373 | 0 04 00634 | STA      | SPF  | SPF = TO                    |  | FRTN2887 |
| 2888 04374 | 0 07 00740 | SUB      | K104 |                             |  | FRTN2888 |
| 2889 04375 | 100040     | SZE      |      |                             |  | FRTN2889 |
| 2890 04376 | 0 01 04313 | JMP      | NP10 |                             |  | FRTN2890 |
| 2891 04377 | 0 04 00625 | STA      | A    | SET LISTING FOR OCTAL ADDR. |  | FRTN2891 |
| 2892 04400 | 0 02 00640 | LDA      | XST  | LOCATION OF INITIAL JUMP    |  | FRTN2892 |
| 2893 04401 | 0 10 13257 | JST      | OS00 | OUTPUT STRING               |  | FRTN2893 |
| 2894 04402 | 0 02 00643 | LDA      | RPL  |                             |  | FRTN2894 |
| 2895 04403 | 0 04 00640 | STA      | XST  | XST = RPL                   |  | FRTN2895 |
| 2896 04404 | 0 01 04313 | JMP      | NP10 | GO TO NP10                  |  | FRTN2896 |
| 2897       |            | EJCT     |      |                             |  | FRTN2897 |

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|            |            |          |      |                                           |  |          |
|------------|------------|----------|------|-------------------------------------------|--|----------|
| 2898       | *          |          |      |                                           |  | FRTN2898 |
| 2899       | *          |          |      |                                           |  | FRTN2899 |
| 2900       | *          |          |      | *****                                     |  | FRTN2900 |
| 2901       | *          |          |      | *IF( PROCESSOR*                           |  | FRTN2901 |
| 2902       | *          |          |      | *****                                     |  | FRTN2902 |
| 2903       | *          |          |      | ARITHMETIC IF (\$1 \$2 \$3)               |  | FRTN2903 |
| 2904       | *          |          |      | IF \$2 NOT = \$3, JZE \$2                 |  | FRTN2904 |
| 2905       | *          |          |      | IF \$3 NOT = \$1, JPL \$3                 |  | FRTN2905 |
| 2906       | *          |          |      | (IF \$1 NOT = NEXT ST NO., JMP \$1) LATER |  | FRTN2906 |
| 2907       | *          |          |      | LOGICAL IF                                |  | FRTN2907 |
| 2908       | *          |          |      | OUTPUT JZE 77777 (FOR STRINGING AROUND    |  | FRTN2908 |
| 2909 04405 | 0 10 02224 | V3 JST   | I100 | IMBEDDED STATEMENT)                       |  | FRTN2909 |
| 2910 04406 | 101040     | SNZ      |      | INPUT ITEM                                |  | FRTN2910 |
| 2911 04407 | 0 01 04415 | JMP      | V310 | IM=0 (POSSIBLE UNARY + OR -)              |  | FRTN2911 |
| 2912 04410 | 0 02 00037 | LDA      | DFL  |                                           |  | FRTN2912 |
| 2913 04411 | 100040     | SZE      |      |                                           |  | FRTN2913 |
| 2914 04412 | 0 01 04415 | JMP      | V310 | FIRST ITEM IN EXPRESSION O.K.             |  | FRTN2914 |
| 2915 04413 | 0 10 02615 | V308 JST | ER00 | ERROR.....IF(SENSE SWITCH..ETC).....      |  | FRTN2915 |
| 2916 04414 | 144706     | BCI      | 1+IF | ILLEGAL IF STATEMENT TYPE                 |  | FRTN2916 |
| 2917 04415 | 140040     | V310 CRA |      | (A)=0                                     |  | FRTN2917 |
| 2918 04416 | 0 10 06225 | JST      | EX00 | EXPRESSION EVALUATOR                      |  | FRTN2918 |
| 2919 04417 | 0 02 00657 | LDA      | K4   |                                           |  | FRTN2919 |
| 2920 04420 | 0 10 02352 | JST      | TS00 | )-TEST                                    |  | FRTN2920 |
| 2921 04421 | 140040     | CRA      |      |                                           |  | FRTN2921 |
| 2922 04422 | 0 04 00625 | STA      | A    | SET A TO SPECIAL (IF) ENTRY IN DATA POOL  |  | FRTN2922 |
| 2923 04423 | 0 04 00000 | STA      | 0    |                                           |  | FRTN2923 |
| 2924 04424 | 0 02 00630 | LDA      | MFL  | SET MODE OF EXPRESSION INTO SPECIAL (IF)  |  | FRTN2924 |
| 2925 04425 | 0414 67    | LGL      | 9    |                                           |  | FRTN2925 |
| 2926 04426 | 1 04 17400 | STA      | OP+1 |                                           |  | FRTN2926 |
| 2927 04427 | 0 10 12754 | JST      | TRSE | OUTPUT TRACE COUPLING (IF NECESSARY)      |  | FRTN2927 |
| 2928 04430 | 0 02 00630 | LDA      | MFL  | CHECK MODE FLAG FOR LOGICAL               |  | FRTN2928 |
| 2929 04431 | 0 07 00737 | SUB      | K103 |                                           |  | FRTN2929 |
| 2930 04432 | 100040     | SZE      |      |                                           |  | FRTN2930 |
| 2931 04433 | 0 01 04450 | JMP      | V320 | ARITHMETIC IF                             |  | FRTN2931 |
| 2932 04434 | 0 02 00650 | LDA      | LIF  |                                           |  | FRTN2932 |
| 2933 04435 | 100040     | SZE      |      |                                           |  | FRTN2933 |
| 2934 04436 | 0 01 04413 | JMP      | V308 |                                           |  | FRTN2934 |

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|            |            |          |          |                                        |          |
|------------|------------|----------|----------|----------------------------------------|----------|
| 2935 04437 | 0 04 00025 | STA      | AF       | SET ADDR OF SNZ AND JMP INSTR TO 00000 | FRTN2935 |
| 2936 04440 | 0 02 13034 | LDA      | OMJ2     | =SNZ INSTR.                            | FRTN2936 |
| 2937 04441 | 0 10 13235 | JST      | OQ00     | OUTPUT ABSOLJTE                        | FRTN2937 |
| 2938 04442 | 0 02 00643 | LDA      | RPL      | SET LIF=CURRENT +DDR. (STRING BACK)    | FRTN2938 |
| 2939 04443 | 0 04 00650 | STA      | LIF      |                                        | FRTN2939 |
| 2940 04444 | 0 02 13026 | LDA      | OMI5     | =JMP 0 INSTR.                          | FRTN2940 |
| 2941 04445 | 0 10 13235 | JST      | OQ00     | OUTPUT ABSOLJTE                        | FRTN2941 |
| 2942 04446 | 0 10 02346 | JST      | XN00     | GO TO NEXT INPUT LINE                  | FRTN2942 |
| 2943 04447 | 0 01 04032 | JMP      | C8       | GO TO STATEMENT SCAN                   | FRTN2943 |
| 2944       |            | *        |          |                                        | FRTN2944 |
| 2945 04450 | 0 07 00736 | V320 SUB | K102     | CHECK FOR MODE = COMPLEX               | FRTN2945 |
| 2946 04451 | 101040     | SNZ      |          |                                        | FRTN2946 |
| 2947 04452 | 0 01 04413 | JMP      | V308     | ERROR....COMPLEX MODE EXPRESSION       | FRTN2947 |
| 2948 04453 | 0 02 00756 | LDA      | IA90     | --3                                    | FRTN2948 |
| 2949 04454 | 0 04 00626 | STA      | I        |                                        | FRTN2949 |
| 2950 04455 | 0 10 02264 | V324 JST | IS00     | INPUT STATEMENT NUMBER                 | FRTN2950 |
| 2951 04456 | 0 35 00626 | LDX      | I        |                                        | FRTN2951 |
| 2952 04457 | 0 02 00625 | LDA      | A        |                                        | FRTN2952 |
| 2953 04460 | 1 04 04526 | STA      | T1V3+3.1 | SAVE BRANCH ADDRESSES                  | FRTN2953 |
| 2954 04461 | 0 12 00626 | IRS      | I        | I=I+1                                  | FRTN2954 |
| 2955 04462 | 0 01 04511 | JMP      | V350     | CHECK FOR TERMINAL COMMA               | FRTN2955 |
| 2956 04463 | 0 02 04525 | LDA      | T3V3     |                                        | FRTN2956 |
| 2957 04464 | 0 11 04524 | CAS      | T2V3     | CHECK FOR ADDR-2 = ADDR-3              | FRTN2957 |
| 2958 04465 | 0 01 04467 | JMP      | **2      |                                        | FRTN2958 |
| 2959 04466 | 0 01 04476 | JMP      | V330     | ADDR-2 = ADDR-3                        | FRTN2959 |
| 2960 04467 | 140040     | CRA      |          |                                        | FRTN2960 |
| 2961 04470 | 0 04 00625 | STA      | A        |                                        | FRTN2961 |
| 2962 04471 | 0 02 13034 | LDA      | OMJ2     | =SNZ INSTR.                            | FRTN2962 |
| 2963 04472 | 0 10 13235 | JST      | OQ00     | OUTPUT ABSOLJTE                        | FRTN2963 |
| 2964 04473 | 0 02 04524 | LDA      | T2V3     |                                        | FRTN2964 |
| 2965 04474 | 0 10 04514 | JST      | V360     | OUTPUT A JMP(ADDR-2) INSTR.            | FRTN2965 |
| 2966 04475 | 0 02 04525 | LDA      | T3V3     |                                        | FRTN2966 |
| 2967 04476 | 0 11 04523 | V330 CAS | T1V3     | CHECK FOR ADDR-3 = ADDR-2              | FRTN2967 |
| 2968 04477 | 0 01 04501 | JMP      | **2      |                                        | FRTN2968 |
| 2969 04500 | 0 01 04507 | JMP      | V340     | ADDR-3 = ADDR-1                        | FRTN2969 |
| 2970 04501 | 140040     | CRA      |          |                                        | FRTN2970 |
| 2971 04502 | 0 04 00625 | STA      | A        |                                        | FRTN2971 |

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|            |             |          |      |                                          |          |
|------------|-------------|----------|------|------------------------------------------|----------|
| 2972 04503 | 0 02 13035  | LDA      | OMJ3 | =SMI INSTR.                              | FRTN2972 |
| 2973 04504 | 0 10 13235  | JST      | OQ00 | OUTPUT ABSOLJTE                          | FRTN2973 |
| 2974 04505 | 0 02 04525  | LDA      | T3V3 |                                          | FRTN2974 |
| 2975 04506 | 0 10 04514  | JST      | V360 | OUTPUT A JMP (ADDR-3) INSTR.             | FRTN2975 |
| 2976 04507 | 0 02 04523  | V340 LDA | T1V3 |                                          | FRTN2976 |
| 2977 04510 | 0 01 04533  | JMP      | R7B1 | SET IFF = ADDR-1, CHECK NO PATH          | FRTN2977 |
| 2978       |             | *        |      | AND INPUT NEXT STATEMENT                 | FRTN2978 |
| 2979       |             | *        |      |                                          | FRTN2979 |
| 2980 04511 | 0 02 00734  | V350 LDA | K5   |                                          | FRTN2980 |
| 2981 04512 | 0 10 02352  | JST      | TS00 | COMMA TEST                               | FRTN2981 |
| 2982 04513 | 0 01 04455  | JMP      | V324 | INPUT NEXT STATEMENT NO.                 | FRTN2982 |
| 2983       |             | *        |      |                                          | FRTN2983 |
| 2984       |             | *        |      |                                          | FRTN2984 |
| 2985       |             | *        |      |                                          | FRTN2985 |
| 2986 04514 | 0 000000    | V360 DAC | **   | -----SUBROUTINE TO OUTPUT A RELATIVE JMP | FRTN2986 |
| 2987 04515 | 0 04 00625  | STA      | A    | SET ADDR. OF JUMP REF. TO A              | FRTN2987 |
| 2988 04516 | 140040      | CRA      |      |                                          | FRTN2988 |
| 2989 04517 | 000201      | IAR      |      | SET (B) = 0                              | FRTN2989 |
| 2990 04520 | 0 02 13026  | LDA      | OMI5 | SET (A) = JMP INSTR.                     | FRTN2990 |
| 2991 04521 | 0 10 11471  | JST      | OQ00 | OUTPUT OA                                | FRTN2991 |
| 2992 04522 | -0 01 04514 | JMP*     | V360 | EXIT                                     | FRTN2992 |
| 2993       |             | *        |      |                                          | FRTN2993 |
| 2994 04523 | 0 00 00000  | T1V3 *** | **   | ADDR-1                                   | FRTN2994 |
| 2995 04524 | 0 00 00000  | T2V3 *** | **   | ADDR-2                                   | FRTN2995 |
| 2996 04525 | 0 00 00000  | T3V3 *** | **   | ADDR-3                                   | FRTN2996 |
| 2997       |             | EJCT     |      |                                          | FRTN2997 |

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```
2998 *
2999 *
3000 * *****
3001 * *GO TO*
3002 * *****
3003 * CHECK FOR NORMAL (R740), COMPUTED (R710) OR
3004 * ASSIGNED (R730). INPUT BRANCH LIST USED BY BOTH
3005 * R710 AND R730 FOR STATEMENT NO. LIST.
3006 *
3007 04526 0 10 02346 R7 JST XN00 EXAMINE NEXT CHAR
3008 04527 100040 SZE
3009 04530 0 01 04535 JMP R7B GO TO TEST DFL
3010 04531 0 10 02264 JST IS00 INPUT STMT =
3011 04532 0 02 00625 LDA A (GO TO 20)
3012 04533 0 04 00636 R7B1 STA IFF IFF = A
3013 04534 0 01 03633 JMP B6 CHECK NO PATH, INPUT NEXT STATEMENT
3014 04535 0 02 00037 R7B LDA DFL
3015 04536 100040 SZE
3016 04537 0 01 04550 JMP R7D
3017 04540 0 10 02260 JST IR00 GO TO I (10, 20, 30)
3018 04541 0400 40 LRL 32
3019 04542 0 02 13033 LDA K206 OUTPUT JMP* INSTRUCTION
3020 04543 0 10 11471 JST OB00 OUTPUT OA
3021 04544 0 02 00754 LDA K134
3022 04545 0 10 02352 JST TS00
3023 04546 0 10 04606 JST IB00
3024 04547 0 01 03633 JMP B6
3025 04550 0 10 04606 R7D JST IP00
3026 04551 0 02 00754 LDA K134
3027 04552 0 10 02352 JST TS00
3028 04553 0 10 02260 JST IR00
3029 04554 0400 40 LRL 32
3030 04555 0 02 13030 LDA K200
3031 04556 0 10 11471 JST OB00
3032 04557 140040 CRA
3033 04560 0 04 00625 STA A
3034 04561 0 04 00025 STA AF CAUSE OCTAL ADDRESS IN LISTING
```

FRTN2998  
FRTN2999  
FRTN3000  
FRTN3001  
FRTN3002  
FRTN3003  
FRTN3004  
FRTN3005  
FRTN3006  
FRTN3007  
FRTN3008  
FRTN3009  
FRTN3010  
FRTN3011  
FRTN3012  
FRTN3013  
FRTN3014  
FRTN3015  
FRTN3016  
FRTN3017  
FRTN3018  
FRTN3019  
FRTN3020  
FRTN3021  
FRTN3022  
FRTN3023  
FRTN3024  
FRTN3025  
FRTN3026  
FRTN3027  
FRTN3028  
FRTN3029  
FRTN3030  
FRTN3031  
FRTN3032  
FRTN3033  
FRTN3034

\* NAME: FRTN

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```
3035 04562 0 02 04634 LDA K75
3036 04563 0 10 13235 JST CQ00 OUTPUT ABS (STA 0) - INDEX LOAD
3037 04564 0 02 00643 LDA RPL
3038 04565 0 04 00025 STA AF CAUSE RPL TO BE IN LISTING
3039 04566 0 02 13046 LDA K207
3040 04567 0 10 13072 JST OR00 OUTPUT RELATIVE (JMP RPL,1)
3041 04570 0 02 00113 LDA L0
3042 04571 0 07 00735 P7F SUB K101
3043 04572 0 04 00626 STA I
3044 04573 0 35 00626 LDX I I = L (0)
3045 04574 1 02 17400 LDA DP,1
3046 04575 0 04 00625 STA A
3047 04576 0 35 00625 LDX A
3048 04577 101040 SNZ
3049 04600 0 01 03633 JMP B6
3050 04601 0410 60 LLL 16 FINISHED LOOPING ON LIST
3051 04602 0 02 13026 LDA K201
3052 04603 0 10 11471 JST OB00 OUTPUT JMP INSTRUCTIONS
3053 04604 0 02 00626 LDA I OUTPUT OA (JMP 0)
3054 04605 0 01 04571 JMP R7F
3055 EJECT
```

FRTN3035  
FRTN3036  
FRTN3037  
FRTN3038  
FRTN3039  
FRTN3040  
FRTN3041  
FRTN3042  
FRTN3043  
FRTN3044  
FRTN3045  
FRTN3046  
FRTN3047  
FRTN3048  
FRTN3049  
FRTN3050  
FRTN3051  
FRTN3052  
FRTN3053  
FRTN3054  
FRTN3055

\* NAME: FRTN

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```
3056 *
3057 *
3058 *
3059 *
3060 04606 0 000000 IB00 DAC *****
3061 04607 0 02 00113 LDA L0 *INPUT BRANCH LIST*
3062 04610 0 07 00735 SUR K101 *****
3063 04611 0 04 00626 STA I INPUT STATEMENT NO. LISTS FOR GO TO PROCESSOR
3064 04612 0 10 01157 JST CH00 **
3065 04613 0 02 14474 LDA K17 I = L0-1
3066 04614 0 10 02352 JST TS00 INPUT CHAR
3067 04615 0 10 02264 IB10 JST IS00 (- TEST
3068 04616 0 35 00626 LDX I INPUT STMNT =
3069 04617 0 02 00625 LDA A
3070 04620 1 04 17400 STA DP+1 SET POINTER OF ST. NO. INTO TRIAD TABLE
3071 * AREA
3072 04621 0 02 00626 LDA I DP (J) = A
3073 04622 0 07 00735 SUR K101
3074 04623 0 04 00626 STA I
3075 04624 0 02 00067 LDA TC I = I-1
3076 04625 0 07 00734 SUR K5 IF TC = , GO TO IB10
3077 04626 101040 SNZ
3078 04627 0 01 04615 JMP IB10 CONTINUE LOOP
3079 04630 140040 CRA
3080 04631 1 04 17377 STA DP-1,1 SET END FLAG INTO TABLE
3081 04632 0 10 02360 JST IP00 )- INPUT OPEN
3082 04633 -0 01 04606 JMP* IB00 EXIT
3083 04634 0 04 00000 K75 STA 0
3084 * EJECT
```

FRTN3056  
FRTN3057  
FRTN3058  
FRTN3059  
FRTN3060  
FRTN3061  
FRTN3062  
FRTN3063  
FRTN3064  
FRTN3065  
FRTN3066  
FRTN3067  
FRTN3068  
FRTN3069  
FRTN3070  
FRTN3071  
FRTN3072  
FRTN3073  
FRTN3074  
FRTN3075  
FRTN3076  
FRTN3077  
FRTN3078  
FRTN3079  
FRTN3080  
FRTN3081  
FRTN3082  
FRTN3083  
FRTN3084

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```
3085 *
3086 *
3087 *
3088 *
3089 *
3090 *
3091 04635 000317 K35 OCT 317 *****
3092 04636 0 10 02264 W3 JST IS00 *ASSIGN*
3093 04637 0 02 00625 LDA A *****
3094 04640 0 04 04700 STA T1W3 CHECK TO SEE THAT 'TO' IS INCLUDED PROPERLY
3095 04641 0 02 00067 LDA TC
3096 04642 0 07 00663 SUR K34
3097 04643 100040 SZE
3098 04644 0 01 04653 JMP W305
3099 04645 0 04 00625 STA A CLEAR A FOR OUTPUT REL
3100 04646 0 10 01157 JST CH00 CAUSE OCTAL ADDRESS IN LIST
3101 04647 0 02 00067 LDA TC INPUT CHAR
3102 04650 0 07 04635 SUR K35
3103 04651 101040 SNZ
3104 04652 0 01 04655 JMP **3
3105 04653 0 10 02615 W305 JST ER00 ERROR
3106 04654 152317 ECI 1,TO GO TO IN ASSIGN STATEMENT
3107 04655 0 02 00643 LDA RPL
3108 04656 0 06 00736 ADD K102
3109 04657 0 04 00025 STA AF
3110 04660 0 02 13030 LDA K200 OUTPUT REL LDA **2
3111 04661 0 10 13072 JST OR00 OUTPUT LDA **2
3112 04662 0 02 00643 LDA RPL OUTPUT REL
3113 04663 0 06 00736 ADD K102
3114 04664 0 04 00025 STA AF OUTPUT REL JMP **2
3115 04665 0 02 13026 LDA K201
3116 04666 0 10 13072 JST OR00 OUTPUT OA
3117 04667 040040 LRL 32
3118 04670 0 02 04700 LDA T1W3
3119 04671 0 04 00625 STA A RESTORE A
3120 04672 140040 CRA
3121 04673 0 10 11471 JST OR00 OUTPUT DAC ST. NO.
```

FRTN3085  
FRTN3086  
FRTN3087  
FRTN3088  
FRTN3089  
FRTN3090  
FRTN3091  
FRTN3092  
FRTN3093  
FRTN3094  
FRTN3095  
FRTN3096  
FRTN3097  
FRTN3098  
FRTN3099  
FRTN3100  
FRTN3101  
FRTN3102  
FRTN3103  
FRTN3104  
FRTN3105  
FRTN3106  
FRTN3107  
FRTN3108  
FRTN3109  
FRTN3110  
FRTN3111  
FRTN3112  
FRTN3113  
FRTN3114  
FRTN3115  
FRTN3116  
FRTN3117  
FRTN3118  
FRTN3119  
FRTN3120  
FRTN3121

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|      |       |                 |      |      |                           |          |
|------|-------|-----------------|------|------|---------------------------|----------|
| 3122 | 04674 | 0 10 02260      | JST  | IR00 | INPUT INTEGER VARIABLE    | FRTN3122 |
| 3123 | 04675 | 0400 40         | LRL  | 32   |                           | FRTN3123 |
| 3124 | 04676 | 0 02 13031      | LDA  | K202 | OUTPUT STA INSTRUCTION    | FRTN3124 |
| 3125 | 04677 | 0 01 05450      | JMP  | R8A  | OUTPUT OA, GO TO C/R TEST | FRTN3125 |
| 3126 | 04700 | 0 00 00000 T1W3 | PZE  | **   | TEMP STORE                | FRTN3126 |
| 3127 |       |                 | EJCT |      |                           | FRTN3127 |

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|      |       |                 |      |      |                   |          |
|------|-------|-----------------|------|------|-------------------|----------|
| 3128 |       | *               |      |      |                   | FRTN3128 |
| 3129 |       | *               |      |      |                   | FRTN3129 |
| 3130 |       | *               |      |      |                   | FRTN3130 |
| 3131 |       | *               |      |      |                   | FRTN3131 |
| 3132 |       | *               |      |      |                   | FRTN3132 |
| 3133 |       | *               |      |      |                   | FRTN3133 |
| 3134 |       | *               |      |      |                   | FRTN3134 |
| 3135 | 04701 | 0 00 00000 C9T0 | PZE  | **   |                   | FRTN3135 |
| 3136 | 04702 | 0 10 02264 C9   | JST  | IS00 | INPUT STATEMENT = | FRTN3136 |
| 3137 | 04703 | 0 10 02372      | JST  | NR00 | NON-REL TEST      | FRTN3137 |
| 3138 | 04704 | 0 02 00625      | LDA  | A    |                   | FRTN3138 |
| 3139 | 04705 | 0 04 04701      | STA  | C9T0 | T0 = A            | FRTN3139 |
| 3140 | 04706 | 0 10 01152      | JST  | UC00 | UNINPUT COLUMN    | FRTN3140 |
| 3141 | 04707 | 0 10 02260      | JST  | IR00 |                   | FRTN3141 |
| 3142 | 04710 | 0 02 00753      | LDA  | K153 |                   | FRTN3142 |
| 3143 | 04711 | 0 10 02352      | JST  | TS00 |                   | FRTN3143 |
| 3144 | 04712 | 0 02 04701      | LDA  | C9T0 | (A) = T0          | FRTN3144 |
| 3145 | 04713 | 0002C1          | IAB  |      |                   | FRTN3145 |
| 3146 | 04714 | 0 10 06064      | JST  | DP00 | DO INPJT          | FRTN3146 |
| 3147 | 04715 | 0 10 06131      | JST  | DS00 | DO INITIALIZE     | FRTN3147 |
| 3148 | 04716 | 0 01 03635      | JMP  | C5   | GO TO ILLTERM     | FRTN3148 |
| 3149 |       |                 | EJCT |      |                   | FRTN3149 |

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```
3150      *
3151      *
3152      *
3153      *      *****
3154      *      *END FILE*
3155      *      *****
3156      *      *****
3157      *      *BACKSPACE*
3158      *      *REWIND *
3158      *      *****
3159 04717 0 02 04730 V6 LDA K71
3160 04720 0 04 00052 V6A STA NAMF+1
3161 04721 0 10 02501 JST NF00
3162 04722 0 10 11337 JST OI00
3163 04723 0 01 03637 JMP A1
3164 04724 0 02 04731 V7 LDA K72
3165 04725 0 01 04720 JMP V6A
3166 04726 0 02 04732 V8 LDA K73
3167 04727 0 01 04720 JMP V6A
3168 04730 143316 K71 BCI 1*FN
3169 04731 142316 K72 BCI 1*DN
3170 04732 141316 K73 BCI 1*BN
3171      EJCT
```

SET UP NAMF  
OUTPUT I/O LINK  
GO TO C/R TEST

FN  
BN

FRTN3150  
FRTN3151  
FRTN3152  
FRTN3153  
FRTN3154  
FRTN3155  
FRTN3156  
FRTN3157  
FRTN3158  
FRTN3159  
FRTN3160  
FRTN3161  
FRTN3162  
FRTN3163  
FRTN3164  
FRTN3165  
FRTN3166  
FRTN3167  
FRTN3168  
FRTN3169  
FRTN3170  
FRTN3171

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```
3172      *
3173      *
3174      *
3175      *      *****
3176      *      *READ *
3177      *      *WRITE *
3178      *      *INPUT FORMAT*
3179      *      *****
3180      *      LIST ELEMENT DATA AND IMPLIED DO CONTROL
3181      *      STACKED IN TRIAD TABLE. PROCESSED BY
3182      *      OUTPUT TRIAD ROUTINE. SPECIAL OPERATORS
3183      *      ARE -I = DO INITIALIZATION
3184      *      T = DO TERMINATION
3185      *      C = I/O ARG TRANSFER
3185 04733 153716 K40 BCI 1*WN
3186 04734 141702 K42 BCI 1*CB
3187 04735 0 02 02336 V5 LDA K41
3188 04736 0 01 04740 JMP **2
3189 04737 0 02 04733 V4 LDA K40
3190 04740 0 04 00052 STA NAMF+1
3191 04741 0 10 02501 JST NF00
3192 04742 0 02 00642 LDA D
3193 04743 0 04 05115 STA V5T1
3194 04744 0 10 01157 JST CH00
3195 04745 0 02 14474 LDA K17
3196 04746 0 10 02352 JST TS00
3197 04747 0 10 11337 JST OI00
3198 04750 0 02 00067 LDA TC
3199 04751 0 07 00754 SUB K134
3200 04752 100040 SZE
3201 04753 0 01 05112 JMP V5J
3202 04754 0 10 05116 JST V5X
3203 04755 0 10 02360 V5P JST IP00
3204 04756 0 02 00067 LDA TC
3205 04757 0 07 00702 SUB GREY
3206 04760 100040 SZE
3207 04761 0 01 04770 JMP V5C
3208 04762 0 02 04734 V5B2 LDA K42
```

F\$RN

NAMF = F\$WN

SET UP REMAINING NAME

INPUT CHARACTER  
= '250.....'  
(-TEST  
OUTPUT I/O LINK  
IF TC .NE. ,  
= '17' (,)  
GO TO V5J

INPUT FORMAT  
) - INPUT OPERATOR

TEST FOR TC=C/R

NO, GO TO V5C  
YES, NAMF = ND

FRTN3172  
FRTN3173  
FRTN3174  
FRTN3175  
FRTN3176  
FRTN3177  
FRTN3178  
FRTN3179  
FRTN3180  
FRTN3181  
FRTN3182  
FRTN3183  
FRTN3184  
FRTN3185  
FRTN3186  
FRTN3187  
FRTN3188  
FRTN3189  
FRTN3190  
FRTN3191  
FRTN3192  
FRTN3193  
FRTN3194  
FRTN3195  
FRTN3196  
FRTN3197  
FRTN3198  
FRTN3199  
FRTN3200  
FRTN3201  
FRTN3202  
FRTN3203  
FRTN3204  
FRTN3205  
FRTN3206  
FRTN3207  
FRTN3208

\* NAME: FRTN

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|      |       |            |         |        |                         |  |          |
|------|-------|------------|---------|--------|-------------------------|--|----------|
| 3209 | 04763 | 0 04 00052 | STA     | NAMF+1 |                         |  |          |
| 3210 | 04764 | 0 10 11363 | JST     | CN00   | CALL NAME               |  | FRTN3209 |
| 3211 | 04765 | 0 02 05115 | LDA     | V5T1   |                         |  | FRTN3210 |
| 3212 | 04766 | 0 04 00642 | STA     | D      |                         |  | FRTN3211 |
| 3213 | 04767 | 0 01 03637 | JMP     | A1     | GO TO C/R TEST          |  | FRTN3212 |
| 3214 | 04770 | 0 10 01152 | V5C JST | UC00   |                         |  | FRTN3213 |
| 3215 | 04771 | 140040     | CRA     |        |                         |  | FRTN3214 |
| 3216 | 04772 | 0 04 00707 | STA     | IOF    | IOF = 0                 |  | FRTN3215 |
| 3217 | 04773 | 0 10 02224 | V5D JST | II00   | INPUT ITEM              |  | FRTN3216 |
| 3218 | 04774 | 100040     | SZE     |        |                         |  | FRTN3217 |
| 3219 | 04775 | 0 01 05012 | JMP     | V5E    | IF (A) NOT 0, GO TO V5E |  | FRTN3218 |
| 3220 | 04776 | 0 02 14474 | LDA     | K17    |                         |  | FRTN3219 |
| 3221 | 04777 | 0 10 02352 | JST     | TS00   | (-TEST                  |  | FRTN3220 |
| 3222 | 05000 | 140040     | CRA     |        |                         |  | FRTN3221 |
| 3223 | 05001 | 0 04 00060 | STA     | O2     | O2 = 0                  |  | FRTN3222 |
| 3224 | 05002 | 0 02 00707 | LDA     | IOF    |                         |  | FRTN3223 |
| 3225 | 05003 | 0 04 00057 | STA     | O1     | O1 = IOF                |  | FRTN3224 |
| 3226 | 05004 | 0 02 00760 | LDA     | K142   | =*27                    |  | FRTN3225 |
| 3227 | 05005 | 0 04 00061 | STA     | P      |                         |  | FRTN3226 |
| 3228 | 05006 | 0 10 07470 | JST     | ET00   |                         |  | FRTN3227 |
| 3229 | 05007 | 0 02 00627 | LDA     | L      | IOF = L                 |  | FRTN3228 |
| 3230 | 05010 | 0 04 00707 | STA     | IOF    | GO TO V5D               |  | FRTN3229 |
| 3231 | 05011 | 0 01 04773 | JMP     | V5D    | NON-CONSTANT TEST       |  | FRTN3230 |
| 3232 | 05012 | 0 10 02407 | V5E JST | NC00   | IF IU NOT ARR           |  | FRTN3231 |
| 3233 | 05013 | 0 02 00710 | LDA     | IU     |                         |  | FRTN3232 |
| 3234 | 05014 | 0 07 00737 | SUB     | K103   |                         |  | FRTN3233 |
| 3235 | 05015 | 100040     | SZE     |        |                         |  | FRTN3234 |
| 3236 | 05016 | 0 01 05061 | JMP     | V5H    | GO TO V5H               |  | FRTN3235 |
| 3237 | 05017 | 0 02 00067 | LDA     | TC     |                         |  | FRTN3236 |
| 3238 | 05020 | 0 07 14474 | SUR     | K17    | IF TC NOT -1,           |  | FRTN3237 |
| 3239 | 05021 | 100040     | SZE     |        |                         |  | FRTN3238 |
| 3240 | 05022 | 0 01 05056 | JMP     | V5G    | GO TO V5G               |  | FRTN3239 |
| 3241 | 05023 | 0 02 00737 | LDA     | K103   |                         |  | FRTN3240 |
| 3242 | 05024 | 140040     | TCA     |        |                         |  | FRTN3241 |
| 3243 | 05025 | 0 10 06225 | JST     | EX00   |                         |  | FRTN3242 |
| 3244 | 05026 | 0 02 00646 | LDA     | TPFA   |                         |  | FRTN3243 |
| 3245 | 05027 | 0 01 05031 | JMP     | **2    |                         |  | FRTN3244 |
|      |       |            |         |        |                         |  | FRTN3245 |

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|      |       |            |          |        |                    |  |          |
|------|-------|------------|----------|--------|--------------------|--|----------|
| 3246 | 05030 | 0 02 00625 | V5E4 LDA | A      |                    |  | FRTN3246 |
| 3247 | 05031 | 0 04 00057 | V5E5 STA | O1     |                    |  | FRTN3247 |
| 3248 | 05032 | 0 02 00625 | LDA      | A      |                    |  | FRTN3248 |
| 3249 | 05033 | 0 04 00060 | STA      | O2     |                    |  | FRTN3249 |
| 3250 | 05034 | 0 02 12423 | LDA      | OM50   |                    |  | FRTN3250 |
| 3251 | 05035 | 0 04 00061 | STA      | P      |                    |  | FRTN3251 |
| 3252 | 05036 | 0 10 07470 | JST      | ET00   | ENTER TRIAD        |  | FRTN3252 |
| 3253 | 05037 | 0 02 00067 | V5E7 LDA | TC     | IF TC = COMMA      |  | FRTN3253 |
| 3254 | 05040 | 0 07 00754 | SUR      | K134   | GO TO V5D          |  | FRTN3254 |
| 3255 | 05041 | 101040     | SNZ      |        |                    |  | FRTN3255 |
| 3256 | 05042 | 0 01 04773 | JMP      | V5D    |                    |  | FRTN3256 |
| 3257 | 05043 | 0 02 00707 | LDA      | IOF    | I = IOF            |  | FRTN3257 |
| 3258 | 05044 | 0 04 00626 | STA      | I      |                    |  | FRTN3258 |
| 3259 | 05045 | 100040     | SZE      |        | IF NOT ZERO,       |  | FRTN3259 |
| 3260 | 05046 | 0 01 05051 | JMP      | V5F    | GO TO V5F          |  | FRTN3260 |
| 3261 | 05047 | 0 10 11701 | JST      | OT00   | OUTPUT TRIADS      |  | FRTN3261 |
| 3262 | 05050 | 0 01 04762 | JMP      | V5B2   | GO TO V5B2         |  | FRTN3262 |
| 3263 | 05051 | 0 10 02360 | V5F JST  | IP00   | -INPJT OPERATOR    |  | FRTN3263 |
| 3264 | 05052 | 0 35 00626 | LDX      | I      |                    |  | FRTN3264 |
| 3265 | 05053 | 1 02 17401 | LDA      | DP*1.1 |                    |  | FRTN3265 |
| 3266 | 05054 | 0 04 00707 | STA      | IOF    | IOF = O1 (I)       |  | FRTN3266 |
| 3267 | 05055 | 0 01 05037 | JMP      | V5E7   |                    |  | FRTN3267 |
| 3268 | 05056 | 0 02 00625 | V5G LDA  | A      |                    |  | FRTN3268 |
| 3269 | 05057 | 140500     | SSM      |        |                    |  | FRTN3269 |
| 3270 | 05060 | 0 01 05031 | JMP      | V5E5   |                    |  | FRTN3270 |
| 3271 | 05061 | 0 10 03274 | V5H JST  | TV00   | TAG VARIABLE       |  | FRTN3271 |
| 3272 | 05062 | 0 02 00067 | LDA      | TC     |                    |  | FRTN3272 |
| 3273 | 05063 | 0 07 00753 | SUR      | K153   | =*16 (=)           |  | FRTN3273 |
| 3274 | 05064 | 100040     | SZE      |        | GO TO V5E5         |  | FRTN3274 |
| 3275 | 05065 | 0 01 05030 | JMP      | V5E4   |                    |  | FRTN3275 |
| 3276 | 05066 | 0 10 02433 | JST      | IT00   | INTEGER TEST       |  | FRTN3276 |
| 3277 | 05067 | 0 02 00707 | LDA      | IOF    |                    |  | FRTN3277 |
| 3278 | 05070 | 101040     | SNZ      |        | IF IOF = ZERO OR L |  | FRTN3278 |
| 3279 | 05071 | 0 01 05075 | JMP      | V5H7   |                    |  | FRTN3279 |
| 3280 | 05072 | 0 07 00627 | SUR      | L      |                    |  | FRTN3280 |
| 3281 | 05073 | 100040     | SZE      |        |                    |  | FRTN3281 |
| 3282 | 05074 | 0 01 05077 | JMP      | **3    | ERROR              |  | FRTN3282 |

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|      |       |             |      |      |      |                                     |          |
|------|-------|-------------|------|------|------|-------------------------------------|----------|
| 3283 | 05075 | 0 10 02615  | V5H7 | JST  | ER00 |                                     | FRTN3283 |
| 3284 | 05076 | 150322      |      | BCI  | 1,PR |                                     | FRTN3284 |
| 3285 | 05077 | 0 10 06064  |      | JST  | DP00 | PARENTHESES MISSING IN DO STATEMENT | FRTN3285 |
| 3286 | 05100 | 0 02 00707  |      | LDA  | IOF  | DO INPUT                            | FRTN3286 |
| 3287 | 05101 | 0 04 00626  |      | STA  | I    |                                     | FRTN3287 |
| 3288 | 05102 | 0 35 00626  |      | LDX  | I    |                                     | FRTN3288 |
| 3289 | 05103 | 0 02 00642  |      | LDA  | D    |                                     | FRTN3289 |
| 3290 | 05104 | 1 04 17400  |      | STA  | DP,1 | 02(IOF) = D                         | FRTN3290 |
| 3291 | 05105 | 0 04 00060  |      | STA  | O2   | 02 = 0                              | FRTN3291 |
| 3292 | 05106 | 0 02 00761  |      | LDA  | K143 | =*30                                | FRTN3292 |
| 3293 | 05107 | 0 04 00061  |      | STA  | P    |                                     | FRTN3293 |
| 3294 | 05110 | 0 10 07470  |      | JST  | ET00 | ENTER TRIAD *T*.                    | FRTN3294 |
| 3295 | 05111 | 0 01 05051  |      | JMP  | V5F  |                                     | FRTN3295 |
| 3296 | 05112 | 140040      | V5J  | CRA  |      |                                     | FRTN3296 |
| 3297 | 05113 | 0 10 13243  |      | JST  | OC00 | OUTPUT ABSOLUTE                     | FRTN3297 |
| 3298 | 05114 | 0 01 04755  |      | JMP  | V5B  |                                     | FRTN3298 |
| 3299 | 05115 | 0 00 00000  | V5T1 | PZE  | 0    |                                     | FRTN3299 |
| 3300 | 05116 | 0 000000    | V5X  | DAC  | **   | INPUT FORMAT                        | FRTN3300 |
| 3301 | 05117 | 0 10 02346  |      | JST  | XN00 | EXAM NEXT CHARACTER                 | FRTN3301 |
| 3302 | 05120 | 100040      |      | SZE  |      |                                     | FRTN3302 |
| 3303 | 05121 | 0 01 05126  |      | JMP  | V5X5 | GO TO INPUT ARRAY NAME              | FRTN3303 |
| 3304 | 05122 | 0 10 02264  |      | JST  | IS00 | INPUT STMT NO.                      | FRTN3304 |
| 3305 | 05123 | 0400 40     | V5X2 | LRL  | 32   | OUTPUT DAC A                        | FRTN3305 |
| 3306 | 05124 | 0 10 11471  |      | JST  | OB00 | OUTPUT OA                           | FRTN3306 |
| 3307 | 05125 | -0 01 05116 |      | JMP* | V5X  | RETURN                              | FRTN3307 |
| 3308 | 05126 | 0 10 02242  | V5X5 | JST  | NA00 | INPUT NAME                          | FRTN3308 |
| 3309 | 05127 | 0 10 02424  |      | JST  | AT00 | ARRAY TEST                          | FRTN3309 |
| 3310 | 05130 | 0 01 05123  |      | JMP  | V5X2 |                                     | FRTN3310 |
| 3311 |       | *           |      |      |      |                                     | FRTN3311 |
| 3312 |       |             |      | EJCT |      |                                     | FRTN3312 |

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| Address | Op-Code | Op-Code Hex | Instruction | Instruction Hex | Instruction Comment         | Instruction Comment Hex |
|---------|---------|-------------|-------------|-----------------|-----------------------------|-------------------------|
| 3313    |         |             |             |                 |                             |                         |
| 3314    |         |             |             |                 |                             |                         |
| 3315    |         |             |             |                 |                             |                         |
| 3316    |         |             |             |                 |                             |                         |
| 3317    |         |             |             |                 |                             |                         |
| 3318    |         |             |             |                 |                             |                         |
| 3319    |         |             |             |                 |                             |                         |
| 3320    | 05131   | 0 00 00000  | TOV2 PZE    | 0               |                             |                         |
| 3321    | 05132   | 0 00 00000  | T2V2 PZF    | 0               |                             |                         |
| 3322    | 05132   | 0 05132     | V2T2 EQU    | T2V2            |                             |                         |
| 3323    | 05133   | 0 02 14474  | V2 LDA      | K17             |                             |                         |
| 3324    | 05134   | 0 10 11444  | JST         | OK00            | OUTPUT RACK                 |                         |
| 3325    | 05135   | 140040      | CRA         |                 |                             |                         |
| 3326    | 05136   | 0 04 05131  | STA         | TOV2            | TO = 0                      |                         |
| 3327    | 05137   | 0 02 00653  | LDA         | LSTP            | IF LSTOP .NE. 0             |                         |
| 3328    | 05140   | 100040      | SZE         |                 |                             |                         |
| 3329    | 05141   | 0 01 05270  | JMP         | V2K             | GO TO V2K                   |                         |
| 3330    | 05142   | 0 10 05320  | V2A JST     | S100            | INPUT FORMAT STRING         |                         |
| 3331    | 05143   | 100040      | SZE         |                 |                             |                         |
| 3332    | 05144   | 0 01 05154  | JMP         | V2B             |                             |                         |
| 3333    | 05145   | 0 02 00067  | V2A1 LDA    | TC              |                             |                         |
| 3334    | 05146   | 0 07 00716  | SUB         | K12             | IF TC NOT MINUS             |                         |
| 3335    | 05147   | 100040      | SZE         |                 |                             |                         |
| 3336    | 05150   | 0 01 05232  | JMP         | V2F             | GO TO V2F                   |                         |
| 3337    | 05151   | 0 10 05313  | JST         | IN00            | INPUT NUMERIC FORMAT STRING |                         |
| 3338    | 05152   | 140040      | CRA         |                 |                             |                         |
| 3339    | 05153   | 0 04 00774  | STA         | TID             | TID = 0                     |                         |
| 3340    | 05154   | 0 02 00067  | V2B LDA     | TC              | IF TC .NE. P                |                         |
| 3341    | 05155   | 0 07 05344  | SUB         | K46             |                             |                         |
| 3342    | 05156   | 100040      | SZE         |                 |                             |                         |
| 3343    | 05157   | 0 01 05261  | JMP         | V2H             | GO TO V2H                   |                         |
| 3344    | 05160   | 0 10 05320  | JST         | S100            | INPUT FORMAT STRING         |                         |
| 3345    | 05161   | 100040      | SZE         |                 |                             |                         |
| 3346    | 05162   | 0 10 05305  | JST         | NZ00            | IF (A) .NE. 0               |                         |
| 3347    | 05163   | 0 02 00067  | V2C LDA     | TC              |                             |                         |
| 3348    | 05164   | 0 11 00763  | CAS         | K52             | IF TC = D.E.F. OR G         |                         |
| 3349    | 05165   | 101000      | NOP         |                 |                             |                         |

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|------|-------|---|----|--------|----------|------|-----------------------------|----------|
| 3350 | 05166 | 0 | 01 | 05170  | JMP      | **2  |                             | FRTN3350 |
| 3351 | 05167 | 0 | 01 | 05200  | JMP      | V2DA |                             | FRTN3351 |
| 3352 | 05170 | 0 | 11 | 05367  | CAS      | K53  |                             | FRTN3352 |
| 3353 | 05171 | 0 | 01 | 05221  | JMP      | V2E2 |                             | FRTN3353 |
| 3354 | 05172 |   |    | 101000 | NOP      |      |                             | FRTN3354 |
| 3355 | 05173 | 0 | 10 | 05313  | JST      | IN00 | INPUT NUMERIC FORMAT STRING | FRTN3355 |
| 3356 | 05174 | 0 | 10 | 05305  | JST      | NZ00 | NON-ZERO STRING TEST        | FRTN3356 |
| 3357 | 05175 | 0 | 02 | 00661  | LDA      | K10  |                             | FRTN3357 |
| 3358 | 05176 | 0 | 10 | 02352  | JST      | TS00 | PERIOD TEST                 | FRTN3358 |
| 3359 | 05177 | 0 | 10 | 05313  | JST      | IN00 | INPUT NUMERIC FORMAT STRING | FRTN3359 |
| 3360 | 05200 | 0 | 02 | 00067  | V2DA LDA | TC   | IF TC = )                   | FRTN3360 |
| 3361 | 05201 | 0 | 07 | 00657  | SUB      | K4   |                             | FRTN3361 |
| 3362 | 05202 |   |    | 100040 | SZE      |      |                             | FRTN3362 |
| 3363 | 05203 | 0 | 01 | 05214  | JMP      | V2E  |                             | FRTN3363 |
| 3364 | 05204 | 0 | 10 | 01157  | JST      | CH00 |                             | FRTN3364 |
| 3365 | 05205 | 0 | 10 | 11444  | JST      | OK00 | INPUT CHAR AND OUTPJT PACK  | FRTN3365 |
| 3366 | 05206 | 0 | 02 | 05131  | LDA      | TOV2 | IF F4 + ( = (               | FRTN3366 |
| 3367 | 05207 | 0 | 07 | 00735  | SUB      | K101 | GO TO V2E                   | FRTN3367 |
| 3368 | 05210 | 0 | 04 | 05131  | STA      | TOV2 |                             | FRTN3368 |
| 3369 | 05211 |   |    | 100400 | SPL      |      |                             | FRTN3369 |
| 3370 | 05212 | 0 | 01 | 03637  | JMP      | V2N  | ELSE,                       | FRTN3370 |
| 3371 | 05213 | 0 | 01 | 05200  | JMP      | V2DA |                             | FRTN3371 |
| 3372 |       |   |    | *      |          |      | GO TO C/R TEST              | FRTN3372 |
| 3373 | 05214 | 0 | 02 | 00067  | V2E LDA  | TC   | IF TC =,                    | FRTN3373 |
| 3374 | 05215 | 0 | 07 | 00734  | SUB      | K5   |                             | FRTN3374 |
| 3375 | 05216 |   |    | 101040 | SNZ      |      |                             | FRTN3375 |
| 3376 | 05217 | 0 | 01 | 05142  | JMP      | V2A  | GO TO V2A                   | FRTN3376 |
| 3377 | 05220 | 0 | 02 | 00720  | LDA      | K9   |                             | FRTN3377 |
| 3378 | 05221 | 0 | 10 | 02352  | V2E2 JST | TS00 | / TEST                      | FRTN3378 |
| 3379 | 05222 | 0 | 01 | 05142  | JMP      | V2A  |                             | FRTN3379 |
| 3380 | 05223 | 0 | 10 | 05320  | V2E5 JST | SI00 | INPUT FORMAT STRING         | FRTN3380 |
| 3381 | 05224 |   |    | 100040 | SZE      |      | IF (A) NOT 0,               | FRTN3381 |
| 3382 | 05225 | 0 | 01 | 05154  | JMP      | V2B  | GO TO V2B                   | FRTN3382 |
| 3383 | 05226 | 0 | 02 | 00037  | LDA      | DFL  | IF DFL .NE. ZERO,           | FRTN3383 |
| 3384 | 05227 |   |    | 100040 | SZE      |      |                             | FRTN3384 |
| 3385 | 05230 | 0 | 01 | 05200  | JMP      | V2DA | GO TO V2DA                  | FRTN3385 |
| 3386 | 05231 | 0 | 01 | 05145  | JMP      | V2A1 |                             | FRTN3386 |

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|------|-------|---|----|--------|---------|------|----------------------------------|----------|
| 3387 | 05232 | 0 | 02 | 00067  | V2F LDA | TC   | IF TC = H                        | FRTN3387 |
| 3388 | 05233 | 0 | 11 | 14501  | CAS     | K48  |                                  | FRTN3388 |
| 3389 | 05234 | 0 | 01 | 05236  | JMP     | **2  |                                  | FRTN3389 |
| 3390 | 05235 | 0 | 01 | 05352  | JMP     | V2P  | GO TO V2P                        | FRTN3390 |
| 3391 | 05236 | 0 | 11 | 05365  | CAS     | K47  |                                  | FRTN3391 |
| 3392 | 05237 | 0 | 01 | 05241  | JMP     | **2  |                                  | FRTN3392 |
| 3393 | 05240 | 0 | 01 | 05223  | JMP     | V2E5 |                                  | FRTN3393 |
| 3394 | 05241 | 0 | 11 | 14474  | CAS     | K17  | IF TC = (,                       | FRTN3394 |
| 3395 | 05242 | 0 | 01 | 05244  | JMP     | **2  |                                  | FRTN3395 |
| 3396 | 05243 | 0 | 01 | 05355  | JMP     | V2Q  | GO TO V2Q                        | FRTN3396 |
| 3397 | 05244 | 0 | 02 | 00067  | LDA     | TC   | IF TC .NE. A.I. OR L             | FRTN3397 |
| 3398 | 05245 | 0 | 11 | 00755  | CAS     | K49  | A                                | FRTN3398 |
| 3399 | 05246 | 0 | 01 | 05250  | JMP     | **2  |                                  | FRTN3399 |
| 3400 | 05247 | 0 | 01 | 05256  | JMP     | V2G  |                                  | FRTN3400 |
| 3401 | 05250 | 0 | 11 | 00664  | CAS     | K50  | I                                | FRTN3401 |
| 3402 | 05251 | 0 | 01 | 05253  | JMP     | **2  |                                  | FRTN3402 |
| 3403 | 05252 | 0 | 01 | 05256  | JMP     | V2G  |                                  | FRTN3403 |
| 3404 | 05253 | 0 | 07 | 05366  | SUB     | K51  | L                                | FRTN3404 |
| 3405 | 05254 |   |    | 100040 | SZE     |      |                                  | FRTN3405 |
| 3406 | 05255 | 0 | 01 | 05163  | JMP     | V2C  |                                  | FRTN3406 |
| 3407 | 05256 | 0 | 10 | 05313  | V2G JST | IN00 | INPUT NUMERIC FORMAT STRING      | FRTN3407 |
| 3408 | 05257 | 0 | 10 | 05305  | JST     | NZ00 | NON-ZERO STRING TEST             | FRTN3408 |
| 3409 | 05260 | 0 | 01 | 05200  | JMP     | V2DA |                                  | FRTN3409 |
| 3410 | 05261 | 0 | 10 | 05305  | V2H JST | NZ00 | NON-ZERO STRING TEST             | FRTN3410 |
| 3411 | 05262 | 0 | 02 | 00067  | LDA     | TC   | IF TC = H,                       | FRTN3411 |
| 3412 | 05263 | 0 | 07 | 14501  | SUB     | K48  |                                  | FRTN3412 |
| 3413 | 05264 |   |    | 100040 | SZE     |      |                                  | FRTN3413 |
| 3414 | 05265 | 0 | 01 | 05232  | JMP     | V2F  |                                  | FRTN3414 |
| 3415 | 05266 | 0 | 10 | 00646  | V2J JST | HS00 | TRANSMIT HOLLERITH STPING        | FRTN3415 |
| 3416 | 05267 | 0 | 01 | 05223  | JMP     | V2E5 | GO TO V2E5                       | FRTN3416 |
| 3417 | 05270 | 0 | 02 | 00651  | V2K LDA | LSTN | IF LSTN = C,                     | FRTN3417 |
| 3418 | 05271 |   |    | 100040 | SZE     |      |                                  | FRTN3418 |
| 3419 | 05272 | 0 | 01 | 05275  | JMP     | **3  |                                  | FRTN3419 |
| 3420 | 05273 | 0 | 10 | 02615  | JST     | ER00 | ERROR, NO PATH                   | FRTN3420 |
| 3421 | 05274 |   |    | 147306 | BCI     | 1,NF | NO REFERENCE TO FORMAT STATEMENT | FRTN3421 |
| 3422 | 05275 | 0 | 02 | 00643  | LDA     | RPL  | LIF = RPL                        | FRTN3422 |
| 3423 | 05276 | 0 | 04 | 00650  | STA     | LIF  |                                  | FRTN3423 |

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| PC | OP | OP2 | OP3 | OP4 | OP5 | OP6 | OP7 | OP8 | OP9 | OP10 | OP11 | OP12 | OP13 | OP14 | OP15 | OP16 | OP17 | OP18 | OP19 | OP20 | OP21 | OP22 | OP23 | OP24 | OP25 | OP26 | OP27 | OP28 | OP29 | OP30 | OP31 | OP32 | OP33 | OP34 | OP35 | OP36 | OP37 | OP38 | OP39 | OP40 | OP41 | OP42 | OP43 | OP44 | OP45 | OP46 | OP47 | OP48 | OP49 | OP50 | OP51 | OP52 | OP53 | OP54 | OP55 | OP56 | OP57 | OP58 | OP59 | OP60 | OP61 | OP62 | OP63 | OP64 | OP65 | OP66 | OP67 | OP68 | OP69 | OP70 | OP71 | OP72 | OP73 | OP74 | OP75 | OP76 | OP77 | OP78 | OP79 | OP80 | OP81 | OP82 | OP83 | OP84 | OP85 | OP86 | OP87 | OP88 | OP89 | OP90 | OP91 | OP92 | OP93 | OP94 | OP95 | OP96 | OP97 | OP98 | OP99 | OP100 | OP101 | OP102 | OP103 | OP104 | OP105 | OP106 | OP107 | OP108 | OP109 | OP110 | OP111 | OP112 | OP113 | OP114 | OP115 | OP116 | OP117 | OP118 | OP119 | OP120 | OP121 | OP122 | OP123 | OP124 | OP125 | OP126 | OP127 | OP128 | OP129 | OP130 | OP131 | OP132 | OP133 | OP134 | OP135 | OP136 | OP137 | OP138 | OP139 | OP140 | OP141 | OP142 | OP143 | OP144 | OP145 | OP146 | OP147 | OP148 | OP149 | OP150 | OP151 | OP152 | OP153 | OP154 | OP155 | OP156 | OP157 | OP158 | OP159 | OP160 | OP161 | OP162 | OP163 | OP164 | OP165 | OP166 | OP167 | OP168 | OP169 | OP170 | OP171 | OP172 | OP173 | OP174 | OP175 | OP176 | OP177 | OP178 | OP179 | OP180 | OP181 | OP182 | OP183 | OP184 | OP185 | OP186 | OP187 | OP188 | OP189 | OP190 | OP191 | OP192 | OP193 | OP194 | OP195 | OP196 | OP197 | OP198 | OP199 | OP200 | OP201 | OP202 | OP203 | OP204 | OP205 | OP206 | OP207 | OP208 | OP209 | OP210 | OP211 | OP212 | OP213 | OP214 | OP215 | OP216 | OP217 | OP218 | OP219 | OP220 | OP221 | OP222 | OP223 | OP224 | OP225 | OP226 | OP227 | OP228 | OP229 | OP230 | OP231 | OP232 | OP233 | OP234 | OP235 | OP236 | OP237 | OP238 | OP239 | OP240 | OP241 | OP242 | OP243 | OP244 | OP245 | OP246 | OP247 | OP248 | OP249 | OP250 | OP251 | OP252 | OP253 | OP254 | OP255 | OP256 | OP257 | OP258 | OP259 | OP260 | OP261 | OP262 | OP263 | OP264 | OP265 | OP266 | OP267 | OP268 | OP269 | OP270 | OP271 | OP272 | OP273 | OP274 | OP275 | OP276 | OP277 | OP278 | OP279 | OP280 | OP281 | OP282 | OP283 | OP284 | OP285 | OP286 | OP287 | OP288 | OP289 | OP290 | OP291 | OP292 | OP293 | OP294 | OP295 | OP296 | OP297 | OP298 | OP299 | OP300 | OP301 | OP302 | OP303 | OP304 | OP305 | OP306 | OP307 | OP308 | OP309 | OP310 | OP311 | OP312 | OP313 | OP314 | OP315 | OP316 | OP317 | OP318 | OP319 | OP320 | OP321 | OP322 | OP323 | OP324 | OP325 | OP326 | OP327 | OP328 | OP329 | OP330 | OP331 | OP332 | OP333 | OP334 | OP335 | OP336 | OP337 | OP338 | OP339 | OP340 | OP341 | OP342 | OP343 | OP344 | OP345 | OP346 | OP347 | OP348 | OP349 | OP350 | OP351 | OP352 | OP353 | OP354 | OP355 | OP356 | OP357 | OP358 | OP359 | OP360 | OP361 | OP362 | OP363 | OP364 | OP365 | OP366 | OP367 | OP368 | OP369 | OP370 | OP371 | OP372 | OP373 | OP374 | OP375 | OP376 | OP377 | OP378 | OP379 | OP380 | OP381 | OP382 | OP383 | OP384 | OP385 | OP386 | OP387 | OP388 | OP389 | OP390 | OP391 | OP392 | OP393 | OP394 | OP395 | OP396 | OP397 | OP398 | OP399 | OP400 | OP401 | OP402 | OP403 | OP404 | OP405 | OP406 | OP407 | OP408 | OP409 | OP410 | OP411 | OP412 | OP413 | OP414 | OP415 | OP416 | OP417 | OP418 | OP419 |
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|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

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| 3461 | 05343 | C 04 00774  | STA     | T10D |                              | FRTN3461 |
| 3462 | 05344 | C 02 00735  | LDA     | K101 | T2 = 1                       | FRTN3462 |
| 3463 | 05345 | 0 01 05323  | JMP     | SI05 |                              | FRTN3463 |
| 3464 | 05346 | C 02 05132  | LDA     | V2T2 | (A) = ERROR CONDITION OR NOT | FRTN3464 |
| 3465 | 05347 | -0 01 05320 | JMP*    | SI00 |                              | FRTN3465 |
| 3466 | 05350 | 0 10 02615  | V2M JST | ER00 |                              | FRTN3466 |
| 3467 | 05351 | 143322      | BCI     | 1+FR | FORMAT STATEMENT ERROR       | FRTN3467 |
| 3468 |       | 003637      | V2N EQU | A1   |                              | FRTN3468 |
| 3469 | 05352 | C 02 00735  | V2P LDA | K101 |                              | FRTN3469 |
| 3470 | 05353 | C 04 00774  | STA     | ID   | ID = 1                       | FRTN3470 |
| 3471 | 05354 | C 01 05266  | JMP     | V2J  | GO TO V2J                    | FRTN3471 |
| 3472 | 05355 | C 02 05131  | V2Q LDA | TOV2 |                              | FRTN3472 |
| 3473 | 05356 | 141206      | AOA     |      |                              | FRTN3473 |
| 3474 | 05357 | 0 04 05131  | STA     | TOV2 |                              | FRTN3474 |
| 3475 | 05360 | 0 07 00737  | SUB     | K103 |                              | FRTN3475 |
| 3476 | 05361 | 100040      | SZE     |      |                              | FRTN3476 |
| 3477 | 05362 | C 01 05142  | JMP     | V2A  |                              | FRTN3477 |
| 3478 | 05363 | C 01 05350  | JMP     | V2M  |                              | FRTN3478 |
| 3479 | 05364 | 000320      | K46 OCT | 320  | OP                           | FRTN3479 |
| 3480 | 05365 | 000330      | K47 OCT | 330  | OX                           | FRTN3480 |
| 3481 | 05366 | 000314      | K51 OCT | 314  | OL                           | FRTN3481 |
| 3482 |       | 000763      | K52 EQU | K11  | OD                           | FRTN3482 |
| 3483 | 05367 | 000307      | K53 OCT | 307  | OG                           | FRTN3483 |
| 3484 |       | 000664      | K50 EQU | K43  | OI                           | FRTN3484 |
| 3485 |       |             | EJCT    |      |                              | FRTN3485 |

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|------|-------|------------|----------|---------|----------------------------------------|--|----------|
| 3486 | *     |            |          |         |                                        |  | FRTN3486 |
| 3487 | *     |            |          |         |                                        |  | FRTN3487 |
| 3488 | *     |            |          |         |                                        |  | FRTN3488 |
| 3489 | *     |            |          | *****   |                                        |  | FRTN3489 |
| 3490 | *     |            |          | *STOP * |                                        |  | FRTN3490 |
| 3491 | *     |            |          | *PAUSE* |                                        |  | FRTN3491 |
| 3492 | *     |            |          | *****   |                                        |  | FRTN3492 |
| 3493 | 05370 | 0 00 00000 | T1W7 PZE | 0       | PAUSE AND STOP GENERATE CALLS TO F\$HT |  | FRTN3493 |
| 3494 | 05371 | 0 02 14275 | W7 LDA   | K55     |                                        |  | FRTN3494 |
| 3495 | 05372 | 0 04 05370 | W7A STA  | T1W7    |                                        |  | FRTN3495 |
| 3496 | 05373 | 0 02 05434 | LDA      | K74     |                                        |  | FRTN3496 |
| 3497 | 05374 | 0 04 00052 | STA      | NAMF+1  |                                        |  | FRTN3497 |
| 3498 | 05375 | 0 10 02501 | JST      | NF00    | NAMF = F\$HT                           |  | FRTN3498 |
| 3499 | 05376 | 0 10 02346 | JST      | XN00    | SET-UP REMAINING CHAR OF NAME          |  | FRTN3499 |
| 3500 | 05377 | 0 02 00067 | LDA      | TC      | EXAMINE NEXT CHAR                      |  | FRTN3500 |
| 3501 | 05400 | 0 07 00702 | SUB      | CRET    |                                        |  | FRTN3501 |
| 3502 | 05401 | 101040     | SNZ      |         |                                        |  | FRTN3502 |
| 3503 | 05402 | 0 01 05407 | JMP      | W7C     | TC = C/R - NOTING FOLLOWING            |  | FRTN3503 |
| 3504 | 05403 | 0 10 02253 | JST      | IV00    | INPUT INTEGER/VARIABLE                 |  | FRTN3504 |
| 3505 | 05404 | 0400 40    | LRL      | 32      |                                        |  | FRTN3505 |
| 3506 | 05405 | 0 02 13030 | LDA      | K200    | OUTPUT LDA                             |  | FRTN3506 |
| 3507 | 05406 | 0 10 11471 | JST      | OB00    | OUTPUT OA                              |  | FRTN3507 |
| 3508 | 05407 | 0 10 11363 | W7C JST  | CN00    | CALL NAME                              |  | FRTN3508 |
| 3509 | 05410 | 140040     | CRA      |         |                                        |  | FRTN3509 |
| 3510 | 05411 | 0 04 00035 | STA      | DF      | DF = 0                                 |  | FRTN3510 |
| 3511 | 05412 | 0 02 05370 | LDA      | T1W7    |                                        |  | FRTN3511 |
| 3512 | 05413 | 0 04 00774 | STA      | ID      |                                        |  | FRTN3512 |
| 3513 | 05414 | 0 10 03612 | JST      | AI00    | ASSIGN INTEGER CONSTANT                |  | FRTN3513 |
| 3514 | 05415 | 140040     | CRA      |         | OUTPUT DAC                             |  | FRTN3514 |
| 3515 | 05416 | 0 10 11471 | JST      | OB00    | OUTPUT OA OF ST/PA OR HT               |  | FRTN3515 |
| 3516 | 05417 | 0 02 05370 | LDA      | T1W7    |                                        |  | FRTN3516 |
| 3517 | 05420 | 0 07 14276 | SUB      | K54     |                                        |  | FRTN3517 |
| 3518 | 05421 | 101040     | SNZ      |         |                                        |  | FRTN3518 |
| 3519 | 05422 | 0 01 03635 | JMP      | C5      | PA-NOT THE CASE                        |  | FRTN3519 |
| 3520 | 05423 | 0 02 00643 | LDA      | RPL     |                                        |  | FRTN3520 |
| 3521 | 05424 | 0 04 00025 | STA      | AF      | OUTPUT JMP *                           |  | FRTN3521 |
| 3522 | 05425 | 140040     | CRA      |         |                                        |  | FRTN3522 |

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|      |       |            |         |      |                                     |  |          |
|------|-------|------------|---------|------|-------------------------------------|--|----------|
| 3523 | 05426 | 0 04 00625 | STA     | A    | CAUSE LISTING TO HAVE OCTAL ADDRESS |  | FRTN3523 |
| 3524 | 05427 | 0 02 13026 | LDA     | K201 |                                     |  | FRTN3524 |
| 3525 | 05430 | 0 10 13072 | JST     | OR00 | OUTPUT RELATIVE                     |  | FRTN3525 |
| 3526 | 05431 | 0 01 03633 | JMP     | B6   |                                     |  | FRTN3526 |
| 3527 | 05432 | 0 02 14276 | W8 LDA  | K54  |                                     |  | FRTN3527 |
| 3528 | 05433 | 0 01 05372 | JMP     | W7A  |                                     |  | FRTN3528 |
| 3529 | 05434 | 144324     | K74 BCI | 1,HT | HT                                  |  | FRTN3529 |
| 3530 |       |            | EJCT    |      |                                     |  | FRTN3530 |

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```
3531      *
3532      *
3533      *      R8      CALL
3534      *      GENERATES CALL DIRECTLY OR USES EXPRESSION TO
3535      *      ANALYZE AN ARGUMENT LIST.
3536 05435 0 10 02341 R8 JST SY00      INPUT SYMBOL
3537 05436 0 10 03222 JST TG00      TAG SJB PROGRAM
3538 05437 0 02 00067 LDA TC
3539 05440 0 07 14474 SUB K17      ='250 ( ( )
3540 05441 100040 SZE
3541 05442 0 01 05445 JMP **3
3542 05443 0 02 00676 LDA K123      SET A=-1 BEFORE EXPRESSION
3543 05444 0 01 05461 JMP G2A
3544 05445 140040 CRA
3545 05446 000201 IAB      (B)=0
3546 05447 0 02 13023 LDA OM12      =JST INSTR.
3547 05450 0 10 11471 R8A JST OB00      OUTPUT OA
3548 05451 0 01 03637 JMP A1      CR TEST
3549      EJCT
```

FRTN3531  
FRTN3532  
FRTN3533  
FRTN3534  
FRTN3535  
FRTN3536  
FRTN3537  
FRTN3538  
FRTN3539  
FRTN3540  
FRTN3541  
FRTN3542  
FRTN3543  
FRTN3544  
FRTN3545  
FRTN3546  
FRTN3547  
FRTN3548  
FRTN3549

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```
3550      *
3551      *
3552      *      *****
3553      *      *ASSIGNMENT STATEMENT*
3554      *      *****
3555 05452 0 02 00740 G2 LDA K104
3556 05453 0 10 04272 JST NP00      FIRST NON-SPEC CHECK
3557 05454 0 10 02224 JST II00      INPUT VARIABLE NAME
3558 05455 0 02 00054 LDA NT      INSURE NOT CONSTANT (I.E. 1=2)
3559 05456 100040 SZE      X
3560 05457 0 01 02247 JMP NA7X      ERROR...ATTEMPT TO REDEFINE A CONSTANT
3561 05460 0 02 00713 LDA MIN2      SET A=-2 BEFORE EXPRESSION
3562 05461 0 10 06225 G2A JST EX00
3563 05462 0 01 03637 JMP A1
3564      EJCT
```

FRTN3550  
FRTN3551  
FRTN3552  
FRTN3553  
FRTN3554  
FRTN3555  
FRTN3556  
FRTN3557  
FRTN3558  
FRTN3559  
FRTN3560  
FRTN3561  
FRTN3562

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```
3563 *
3564 *
3565 *
3566 *
3567 *
3568 *
3569 *
          *****
          *RETURN*
          *****
          OPTIMIZES EXIT CODING FOR FUNCTIONS TO MINIMIZE
          FETCHES OF THE FUNCTION VALUE.
3570 05463 0 02 00632 R9 LDA SBF A = SBF.
3571 05464 0 04 00625 STA A IF ZERO, GO TO ERROR
3572 05465 100040 SZE
3573 05466 0 01 05471 JMP **3
3574 05467 0 10 02615 JST ER00
3575 05470 151324 BCI 1,RT RETURN NOT ALLOWED IN MAIN PROGRAM
3576 05471 0 02 00631 LDA SFF ELSE, IF SFF = 0,
3577 05472 101040 SNZ
3578 05473 0 01 05501 JMP R9C GO TO R9C
3579 05474 000201 IAB OUTPUT LOAD OF FUNCTION NAME
3580 05475 0 02 00643 LDA RPL SFF = RPL
3581 05476 0 04 00631 STA SFF
3582 05477 0 02 12427 LDA K152 OUTPUT ITEM (F,A)
3583 05500 0 10 12247 JST OM00
3584 05501 0400 40 R9C LRL 32
3585 05502 0 04 00625 STA A SET FOR OCTAL ADDRESS IN LISTING
3586 05503 0 04 00025 STA AF SET RELATIVE ADDRESS TO ZERO
3587 05504 0 02 13033 LDA K206 JMP I, 0
3588 05505 0 10 13072 JST OR00 OUTPUT REL
3589 05506 0 01 03633 JMP B6 EXIT
3590 EJCT
```

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```
3591 *
3592 *
3593 *
3594 *
3595 *
3596 *
3597 *
          *****
          *STATEMENT FUNCTION*
          *****
          OLD ASSIGN VALUES ARE SAVED IN SFTB AND ARE
          RESTORED AT COMPLETION.
3598 05507 0 02 00737 G1 LDA K103 (A) = 3
3599 05510 0 10 04272 JST NP00 FIRST NON-SPEC CHECK
3600 05511 0 10 02341 JST SY00 INPUT SYMBOL
3601 05512 0 10 03604 JST L000 DEFINE LOCATION
3602 05513 0 02 00737 LDA K103
3603 05514 0 04 00642 STA D INITIALIZE DO PTR.
3604 05515 0 10 07514 JST GE00 GENERATE SUBPROGRAM ENTRANCE
3605 05516 0 02 00753 LDA K153 '=' TEST
3606 05517 0 10 02352 JST TS00
3607 05520 0 10 02224 JST I100 INPUT ITEM
3608 05521 140040 CRA
3609 05522 0 10 06225 JST EX00 EXPRESSION
3610 05523 0 12 00635 IPS TCF TCF = TCF+1
3611 05524 0 02 00642 G1A LDA D LOOP TO RESTORE ASSIGN TABLE ENTRY DATA
3612 05525 0 07 00737 SUB K103
3613 05526 0 04 00642 STA D DECREMENT D
3614 05527 101040 SNZ
3615 05530 0 01 05546 JMP G1B JMP IF DONE
3616 05531 0 06 00655 ADD DO OTHERWISE SET I=DO+D
3617 05532 0 04 00626 STA I
3618 05533 0 04 00000 STA 0
3619 05534 1 02 17401 LDA DP+1,1
3620 05535 0 04 00625 STA A SET A OF ENTRY
3621 05536 1 02 17403 LDA DP+3,1
3622 05537 0 35 00625 LDX A SET R TO A
3623 05540 1 04 17400 STA DP,1
3624 05541 0 35 00626 LDX I SET R TO I
3625 05542 1 02 17402 LDA DP+2,1
3626 05543 0 35 00625 LDX A SET R TO A
3627 05544 1 04 17401 STA DP+1,1
```

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```
3628 05545 0 01 05524 JMP G1A NO, GO TO G1A FRTN3628
3629 05546 0 02 04271 G1R LDA TINP RESTORE A TO FUN NAME FRTN3629
3630 05547 0 04 00625 STA A FRTN3630
3631 05550 0410 60 LLL 16 FRTN3631
3632 05551 0 02 13033 LDA OMJ1 FRTN3632
3633 05552 0 10 11471 JST OB00 FRTN3633
3634 05553 0 10 03222 JST TG00 TAG SUBPROGRAM FRTN3634
3635 05554 0 01 03637 JMP A1 GO TO C/R TEST FRTN3635
3636 * - W5 END FRTN3636
3637 EJCT FRTN3637
```

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```
3638 * ***** FRTN3638
3639 * *END PROCESSOR* FRTN3639
3640 * ***** FRTN3640
3641 * FIRST CHECK SUBPROGRAMS FOR CORRECT USAGE, THEN FRTN3641
3642 * GENERATE MAP AND STRING BACK VARIABLES FRTN3642
3643 * AND CONSTANTS. FRTN3643
3644 05555 0 00 00000 T1W5 PZE FRTN3644
3645 05556 0 02 00644 W5 LDA BDF IF BLOCK DATA, FRTN3645
3646 05557 100040 SZE FRTN3646
3647 05560 0 01 05672 JMP W5K GO TO W5K FRTN3647
3648 05561 0 02 00632 LDA SBF IF SBF NOT ZERO FRTN3648
3649 05562 0 04 00625 STA A INDICATES SUBROUTINES FRTN3649
3650 05563 100040 SZE OR FUNCTION, FRTN3650
3651 05564 0 01 05700 JMP W5M GO TO W5M FRTN3651
3652 05565 140040 W5P CRA FRTN3652
3653 05566 0 04 00625 STA A A=J=0 FRTN3653
3654 05567 0 01 05612 JMP W5H FRTN3654
3655 05570 0 10 03317 W5D JST FA00 FETCH ASSIGNS FRTN3655
3656 05571 0 35 00625 LDX A FRTN3656
3657 05572 0 02 00054 LDA NT FRTN3657
3658 05573 100040 SZE IF NT=1 (CONSTANT) FRTN3658
3659 05574 0 01 05721 JMP W50 GO TO W50 FRTN3659
3660 05575 0 02 00710 LDA IU FRTN3660
3661 05576 0 07 00735 SUR K101 IF IU=1 FRTN3661
3662 05577 100040 SZE INDICATES VARIABLE, FRTN3662
3663 05600 0 01 05776 JMP W5T GO TO W5T FRTN3663
3664 05601 0 02 00643 W5F LDA RPL SAVE RPL FRTN3664
3665 05602 0 04 05555 STA T1W5 RPL=-AF (INHIBIT LISTING) FRTN3665
3666 05603 0 02 00025 LDA AF FRTN3666
3667 05604 140500 SSM FRTN3667
3668 05605 0 04 00643 STA RPL FRTN3668
3669 05606 140040 CRA FRTN3669
3670 05607 0 10 13072 JST OR00 OUTPUT REL FRTN3670
3671 05610 0 02 05555 LDA T1W5 RESTORE RPL FRTN3671
3672 05611 0 04 00643 STA RPL FRTN3672
3673 05612 W5H EQU * FRTN3673
3674 05612 0 02 01060 LDA LIBF CHECK IF DIAGNOSTIC DUMPS REQUESTED FRTN3674
```

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|            |            |         |         |                              |  |          |
|------------|------------|---------|---------|------------------------------|--|----------|
| 3675 05613 | 0416 75    | ALR     | 3       |                              |  |          |
| 3676 05614 | 101400     | SMI     |         | MOVE BIT 4 TO SIGN BIT       |  | FRTN3675 |
| 3677 05615 | 0 01 05645 | JMP     | W5I     |                              |  | FRTN3676 |
| 3678 05616 | 0 10 13321 | JST     | PRSP    | IF NOT, OM11 TABLE OUTPUT    |  | FRTN3677 |
| 3679 05617 | 0 02 00625 | LDA     | A       |                              |  | FRTN3678 |
| 3680 05620 | 0 10 13272 | JST     | OR80    |                              |  | FRTN3679 |
| 3681 05621 | 0 013746   | DAC     | PRI+2   |                              |  | FRTN3680 |
| 3682 05622 | 0 35 00625 | LDX     | A       |                              |  | FRTN3681 |
| 3683 05623 | 1 02 17404 | LDA     | DP+4,1  |                              |  | FRTN3682 |
| 3684 05624 | 0 10 13272 | JST     | OR80    |                              |  | FRTN3683 |
| 3685 05625 | 0 013753   | DAC     | PRI+7   |                              |  | FRTN3684 |
| 3686 05626 | 1 02 17403 | LDA     | DP+3,1  |                              |  | FRTN3685 |
| 3687 05627 | 0 10 13272 | JST     | OR80    |                              |  | FRTN3686 |
| 3688 05630 | 0 013757   | DAC     | PRI+11  |                              |  | FRTN3687 |
| 3689 05631 | 1 02 17402 | LDA     | DP+2,1  |                              |  | FRTN3688 |
| 3690 05632 | 0 10 13272 | JST     | OR80    |                              |  | FRTN3689 |
| 3691 05633 | 0 013763   | DAC     | PRI+15  |                              |  | FRTN3690 |
| 3692 05634 | 1 02 17401 | LDA     | DP+1,1  |                              |  | FRTN3691 |
| 3693 05635 | 0 10 13272 | JST     | OR80    |                              |  | FRTN3692 |
| 3694 05636 | 0 013767   | DAC     | PRI+19  |                              |  | FRTN3693 |
| 3695 05637 | 1 02 17400 | LDA     | DP,1    |                              |  | FRTN3694 |
| 3696 05640 | 0 10 13272 | JST     | OR80    |                              |  | FRTN3695 |
| 3697 05641 | 0 013773   | DAC     | PRI+23  |                              |  | FRTN3696 |
| 3698 05642 | 0 10 00000 | CALL    | F4\$SYM |                              |  | FRTN3697 |
| 3699 05643 | 0 013744   | DAC     | PRI     |                              |  | FRTN3698 |
| 3700 05644 | 0 10 13321 | JST     | PRSP    | SET TO SPACES AFTER PRINTING |  | FRTN3699 |
| 3701 05645 | 0 02 00625 | W5I LDA | A       | A=A+5                        |  | FRTN3700 |
| 3702 05646 | 0 06 00741 | ADD     | K105    |                              |  | FRTN3701 |
| 3703 05647 | 0 04 00625 | STA     | A       |                              |  | FRTN3702 |
| 3704 05650 | 0 07 00637 | SUB     | ABAR    | IF A=ABAR, (DONE)            |  | FRTN3703 |
| 3705 05651 | 0 07 00741 | SUB     | K105    |                              |  | FRTN3704 |
| 3706 05652 | 100040     | SZE     |         |                              |  | FRTN3705 |
| 3707 05653 | 0 01 05570 | JMP     | W5D     | ELSE, GO TO W5D              |  | FRTN3706 |
| 3708 05654 | 0 10 13531 | W5J JST | F500    | FLUSH BUFFER                 |  | FRTN3707 |
| 3709 05655 | 0 02 00632 | LDA     | SBF     |                              |  | FRTN3708 |
| 3710 05656 | 100040     | SZE     |         |                              |  | FRTN3709 |
| 3711 05657 | 0 02 00667 | LDA     | W521    |                              |  | FRTN3710 |
|            |            |         |         |                              |  | FRTN3711 |

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|            |            |         |                   |                                          |  |          |
|------------|------------|---------|-------------------|------------------------------------------|--|----------|
| 3712 05660 | 0 05 00675 | ERA     | W522              |                                          |  | FRTN3712 |
| 3713 05661 | 0 04 13650 | STA     | OCI               |                                          |  | FRTN3713 |
| 3714 05662 | 0 02 00632 | LDA     | SBF               |                                          |  | FRTN3714 |
| 3715 05663 | 100040     | SZE     |                   |                                          |  | FRTN3715 |
| 3716 05664 | 0 02 00672 | LDA     | W523              |                                          |  | FRTN3716 |
| 3717 05665 | 0 04 13651 | STA     | OCI+1             |                                          |  | FRTN3717 |
| 3718 05666 | 0 02 00742 | LDA     | K106              |                                          |  | FRTN3718 |
| 3719 05667 | 0 04 00063 | STA     | OCNT              |                                          |  | FRTN3719 |
| 3720 05670 | 0 10 13531 | JST     | F500              |                                          |  | FRTN3720 |
| 3721 05671 | 0 01 01005 | JMP     | A051              | GO TO INITIALIZE                         |  | FRTN3721 |
| 3722 05672 | 0 02 00643 | W5K LDA | RPL               | IF RPL NOT ZERO,                         |  | FRTN3722 |
| 3723 05673 | 101040     | SNZ     |                   |                                          |  | FRTN3723 |
| 3724 05674 | 0 01 05654 | JMP     | W5J               |                                          |  | FRTN3724 |
| 3725 05675 | 0 10 02615 | JST     | ER00              | ERROR IN A BLOCK DATA SUBPROGRAM         |  | FRTN3725 |
| 3726 05676 | 041304     | VFD     | 1,0,7,*302,8,*304 | ASCII 'BD' WITH SIGN BIT +               |  | FRTN3726 |
| 3727 05677 | 0 01 05654 | JMP     | W5J               |                                          |  | FRTN3727 |
| 3728 05700 | 0 10 03317 | W5M JST | FA00              | FETCH ASSIGNS                            |  | FRTN3728 |
| 3729 05701 | 0 02 00631 | LDA     | SFF               | IF FUNCTION,                             |  | FRTN3729 |
| 3730 05702 | 100040     | SZE     |                   |                                          |  | FRTN3730 |
| 3731 05703 | 0 01 05712 | JMP     | W5N               | GO TO W5N                                |  | FRTN3731 |
| 3732 05704 | 0 10 02401 | JST     | NU00              | NO USE TEST                              |  | FRTN3732 |
| 3733 05705 | 0 35 00625 | LDX     | A                 |                                          |  | FRTN3733 |
| 3734 05706 | 1 02 17400 | LDA     | DP,1              | IF NO ERROR,                             |  | FRTN3734 |
| 3735 05707 | 140500     | SSM     |                   | NT(A)=1                                  |  | FRTN3735 |
| 3736 05710 | 1 04 17400 | STA     | DP,1              |                                          |  | FRTN3736 |
| 3737 05711 | 0 01 05565 | JMP     | W5B               | GO TO W5B                                |  | FRTN3737 |
| 3738 05712 | 0 02 00710 | W5N LDA | IU                |                                          |  | FRTN3738 |
| 3739 05713 | 0 07 00736 | SUB     | K102              | IU MUST BE VAR/CON,                      |  | FRTN3739 |
| 3740 05714 | 101040     | SNZ     |                   | ELSE,                                    |  | FRTN3740 |
| 3741 05715 | 0 01 05565 | JMP     | W5B               |                                          |  | FRTN3741 |
| 3742 05716 | 0 10 02615 | JST     | ER00              | NAME NOT DEFINED BY AN ARITH.STMT. ERROR |  | FRTN3742 |
| 3743 05717 | 043304     | VFD     | 1,0,7,*306,8,*304 | ASCII 'FD' WITH SIGN BIT +               |  | FRTN3743 |
| 3744 05720 | 0 01 05565 | JMP     | W5B               |                                          |  | FRTN3744 |
| 3745 05721 | 0 02 00710 | W5C LDA | IU                | IF IU=VAR/CON                            |  | FRTN3745 |
| 3746 05722 | 0 07 00736 | SUB     | K102              |                                          |  | FRTN3746 |
| 3747 05723 | 100040     | SZE     |                   |                                          |  | FRTN3747 |
| 3748 05724 | 0 01 05612 | JMP     | W5H               |                                          |  | FRTN3748 |

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|            |            |         |        |                               |  |          |
|------------|------------|---------|--------|-------------------------------|--|----------|
| 3749 05725 | C 02 00026 | LDA     | AT     |                               |  |          |
| 3750 05726 | 0 07 00737 | SUB     | K103   | AND AT = STR/REL              |  | FRTN3749 |
| 3751 05727 | 100040     | SZE     |        | A "STRING" REQ'D.             |  | FRTN3750 |
| 3752 05730 | 0 01 05612 | JMP     | W5H    |                               |  | FRTN3751 |
| 3753 05731 | 0 02 00030 | W5P LDA | D0     | IF D0 IS 4, THE               |  | FRTN3752 |
| 3754 05732 | 0 07 00740 | SUR     | K104   | CONSTANT IS COMPLEX,          |  | FRTN3753 |
| 3755 05733 | 100040     | SZE     |        | OTHERWISE                     |  | FRTN3754 |
| 3756 05734 | 0 01 05754 | JMP     | W5Q    | GO TO W5Q                     |  | FRTN3755 |
| 3757 05735 | 0 02 00025 | LDA     | AF     |                               |  | FRTN3756 |
| 3758 05736 | 0 10 13257 | JST     | OS00   | OUTPUT STRING                 |  | FRTN3757 |
| 3759 05737 | 0 35 00625 | LDX     | A      |                               |  | FRTN3758 |
| 3760 05740 | 1 02 17402 | LDA     | DP+2,1 | OUTPUT 4 WORDS                |  | FRTN3759 |
| 3761 05741 | 0 10 06036 | JST     | W5X    | OF CONSTANT                   |  | FRTN3760 |
| 3762 05742 | 1 02 17403 | LDA     | DP+3,1 |                               |  | FRTN3761 |
| 3763 05743 | 0 10 06036 | JST     | W5X    |                               |  | FRTN3762 |
| 3764 05744 | 0 02 00054 | LDA     | NT     |                               |  | FRTN3763 |
| 3765 05745 | 101040     | SNZ     |        |                               |  | FRTN3764 |
| 3766 05746 | 0 01 05763 | JMP     | W5S    |                               |  | FRTN3765 |
| 3767 05747 | 0 02 00625 | LDA     | A      | INCREMENT A                   |  | FRTN3766 |
| 3768 05750 | 0 06 00741 | ADD     | K105   |                               |  | FRTN3767 |
| 3769 05751 | 0 04 00625 | STA     | A      |                               |  | FRTN3768 |
| 3770 05752 | 0 35 00625 | LDX     | A      |                               |  | FRTN3769 |
| 3771 05753 | 0 01 05763 | JMP     | W5S    |                               |  | FRTN3770 |
| 3772 05754 | 0 02 00025 | W5G LDA | AF     |                               |  | FRTN3771 |
| 3773 05755 | 0 10 13257 | JST     | OS00   | OUTPUT STRING                 |  | FRTN3772 |
| 3774 05756 | 0 35 00625 | LDX     | A      |                               |  | FRTN3773 |
| 3775 05757 | 0 02 00030 | LDA     | D0     | IF D0=1,                      |  | FRTN3774 |
| 3776 05760 | 0 07 00735 | SUB     | K101   | INDICATES INTEGER, OR LOGICAL |  | FRTN3775 |
| 3777 05761 | 101040     | SNZ     |        |                               |  | FRTN3776 |
| 3778 05762 | 0 01 05773 | JMP     | W5R    | GO TO W5R                     |  | FRTN3777 |
| 3779 05763 | 1 02 17402 | W5S LDA | DP+2,1 | OUTPUT TWO WORDS              |  | FRTN3778 |
| 3780 05764 | 0 10 06036 | JST     | W5X    | FLOATING POINT CONSTANT       |  | FRTN3779 |
| 3781 05765 | 1 02 17403 | LDA     | DP+3,1 |                               |  | FRTN3780 |
| 3782 05766 | 0 10 06036 | JST     | W5X    |                               |  | FRTN3781 |
| 3783 05767 | 0 02 00030 | LDA     | D0     | IF DOUBLE PRECISION,          |  | FRTN3782 |
| 3784 05770 | 0 07 00737 | SUB     | K103   |                               |  | FRTN3783 |
| 3785 05771 | 100040     | SZE     |        |                               |  | FRTN3784 |
|            |            |         |        |                               |  | FRTN3785 |

\* NAME: FRTN

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|            |            |          |                   |                                        |  |          |
|------------|------------|----------|-------------------|----------------------------------------|--|----------|
| 3786 05772 | C 01 05612 | JMP      | W5H               |                                        |  | FRTN3786 |
| 3787 05773 | 1 02 17404 | W5R LDA  | DP+4,1            | OUTPUT THE 3RD WORD                    |  | FRTN3787 |
| 3788 05774 | 0 10 06036 | JST      | W5X               |                                        |  | FRTN3788 |
| 3789 05775 | 0 01 05612 | JMP      | W5H               | GO TO W5H                              |  | FRTN3789 |
| 3790 05776 | 0 02 00026 | W5T LDA  | AT                |                                        |  | FRTN3790 |
| 3791 05777 | 0 11 00737 | CAS      | K103              |                                        |  | FRTN3791 |
| 3792 06000 | 0 01 05601 | JMP      | W5F               | STRUNG VARIABLE (IU=NON 0)             |  | FRTN3792 |
| 3793 06001 | 0 01 06013 | JMP      | W5T5              |                                        |  | FRTN3793 |
| 3794 06002 | 0 11 00736 | CAS      | K102              | TEST FOR STG ABS ADDRESS               |  | FRTN3794 |
| 3795 06003 | 017400     | W5U OCT  | 17400             |                                        |  | FRTN3795 |
| 3796 06004 | 0 01 06006 | JMP      | **2               |                                        |  | FRTN3796 |
| 3797 06005 | 0 01 05601 | JMP      | W5F               | NO                                     |  | FRTN3797 |
| 3798 06006 | 1 02 17404 | LDA      | DP+4,1            | TEST FOR PREFIX G                      |  | FRTN3798 |
| 3799 06007 | 0 03 06003 | ANA      | W5U               |                                        |  | FRTN3799 |
| 3800 06010 | 0 07 06003 | SUB      | W5U               |                                        |  | FRTN3800 |
| 3801 06011 | 100040     | SZE      |                   |                                        |  | FRTN3801 |
| 3802 06012 | 0 01 05601 | JMP      | W5F               | STRUNG VARIABLE (IU=NON 0)             |  | FRTN3802 |
| 3803 06013 | 0 02 00710 | W5T5 LDA | IU                |                                        |  | FRTN3803 |
| 3804 06014 | 100040     | SZE      |                   |                                        |  | FRTN3804 |
| 3805 06015 | 0 01 05731 | JMP      | W5P               |                                        |  | FRTN3805 |
| 3806 06016 | 0 10 13321 | JST      | PRSP              | BLANK OUT BUFFER                       |  | FRTN3806 |
| 3807 06017 | 0 35 00625 | LDX      | A                 | ASSIGNMENT POINTER TO PRESENT ITEM     |  | FRTN3807 |
| 3808 06020 | 1 02 17404 | LDA      | DP+4,1            | FIRST WORD OF UNDEFINED STATEMENT NAME |  | FRTN3808 |
| 3809 06021 | 0 03 00670 | ANA      | K111              | RESET FIRST TWO BITS USED AS FLAGS     |  | FRTN3809 |
| 3810 06022 | 0 05 00703 | ERA      | HBIT              | X                                      |  | FRTN3810 |
| 3811 06023 | 0 04 13753 | STA      | PRI+7             | SAVE IN PRINT BUFFER                   |  | FRTN3811 |
| 3812 06024 | 1 02 17403 | LDA      | DP+3,1            | FETCH AND SAVE NEXT TWO CHARACTERS     |  | FRTN3812 |
| 3813 06025 | 0 04 13754 | STA      | PRI+8             | X                                      |  | FRTN3813 |
| 3814 06026 | 1 02 17402 | LDA      | DP+2,1            | FETCH AND SAVE LAST TWO CHARACTERS     |  | FRTN3814 |
| 3815 06027 | 0 04 13755 | STA      | PRI+9             | X                                      |  | FRTN3815 |
| 3816 06030 | 0 02 06033 | LDA      | SUED              | SET ERROR SUBROUTINE FOR A RETURN      |  | FRTN3816 |
| 3817 06031 | 0 04 02615 | STA      | ER00              | X                                      |  | FRTN3817 |
| 3818 06032 | 0 01 02617 | JMP      | ER04              | ENTER IT AFTER BUFFER IS BLANKED       |  | FRTN3818 |
| 3819 06033 | 0 006034   | SUED DAC | SUID              | STATEMENT UNDEFINED ERROR DAC          |  | FRTN3819 |
| 3820 06034 | 052723     | SUID VFD | 1,0,7,*325,8,*323 | ASCII 'US' WITH SIGN BIT +             |  | FRTN3820 |
| 3821 06035 | 0 01 05731 | JMP      | W5P               |                                        |  | FRTN3821 |
| 3822 06036 | 0 000000   | W5X DAC  | **                |                                        |  | FRTN3822 |

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|      |       |             |      |      |            |          |
|------|-------|-------------|------|------|------------|----------|
| 3823 | 06037 | 0 10 13243  | JST  | OC00 | OUTPUT AB: | FRTN3823 |
| 3824 | 06040 | 0 35 00625  | LDX  | A    |            | FRTN3824 |
| 3825 | 06041 | -0 01 06036 | JMP* | W5X  | EXIT       | FRTN3825 |
| 3826 |       | 000667      | W5Z1 | EGU  | K100       | FRTN3826 |
| 3827 |       | 000675      | W5Z2 | EGU  | K122       | FRTN3827 |
| 3828 |       | 000672      | W5Z3 | EGU  | K116       | FRTN3828 |
| 3829 |       |             |      | EJCT | 177400     | FRTN3829 |

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|      |       |             |      |      |             |          |
|------|-------|-------------|------|------|-------------|----------|
| 3830 |       |             | *    |      |             | FRTN3830 |
| 3831 |       |             | *    |      |             | FRTN3831 |
| 3832 |       |             | *    |      |             | FRTN3832 |
| 3833 |       |             | *    |      |             | FRTN3833 |
| 3834 |       |             | *    |      |             | FRTN3834 |
| 3835 |       |             | *    |      |             | FRTN3835 |
| 3836 |       |             | *    |      |             | FRTN3836 |
| 3837 |       |             | *    |      |             | FRTN3837 |
| 3838 | 06042 | 0 000000    | P000 | DAC  | **          | FRTN3838 |
| 3839 | 06043 | 0 10 01157  | JST  | CH00 | INPUT CHAR  | FRTN3839 |
| 3840 | 06044 | 0 10 11444  | JST  | OK00 | OUTPUT PACK | FRTN3840 |
| 3841 | 06045 | -0 01 06042 | JMP* | P000 | RETURN      | FRTN3841 |
| 3842 |       |             | EJCT |      |             | FRTN3842 |

\*\*\*\*\*  
\*INPUT CHAR/OUTPUT PACK\*  
\*\*\*\*\*

\* NAME: FRTN

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```
3843 *
3844 * *****
3845 * *TRANS HOLLERITH STRING*
3846 * *****
3847 * FORM HOLLERITH STRING. CHARACTER COUNT IN ID ON
      * ENTRY. C/R WILL ALSO TERMINATE STRING.
3848 06046 0 000000 HS00 DAC **
3849 06047 0 10 01061 HS10 JST IC00 INPUT 1 CHARACTER
3850 06050 0 11 00702 CAS CRET CHECK FOR CHAR = C/R
3851 06051 0 01 06053 JMP **2
3852 06052 0 01 06062 JMP HS15 HOLLERITH STRING EXTENDS PAST END OF CARD
3853 06053 0 10 11444 JST OK00 OUTPUT PACK THE CHARACTER
3854 06054 0 02 00774 LDA ID
3855 06055 0 07 00735 SUB K101 REDUCE CHARACTER COUNT BY 1
3856 06056 0 04 00774 STA ID
3857 06057 100040 SZE
3858 06060 0 01 06047 JMP HS10 INPUT MORE CHARACTERS
3859 06061 -0 01 06046 JMP* HS00
3860 06062 0 10 02615 HS15 JST ER00
3861 06063 144323 BCI 1*HS HOLLERITH STRING EXTENDS OVER STATEMENT
3862 EJECT
```

FRTN3843  
FRTN3844  
FRTN3845  
FRTN3846  
FRTN3847  
FRTN3848  
FRTN3849  
FRTN3850  
FRTN3851  
FRTN3852  
FRTN3853  
FRTN3854  
FRTN3855  
FRTN3856  
FRTN3857  
FRTN3858  
FRTN3859  
FRTN3860  
FRTN3861  
FRTN3862

\* NAME: FRTN

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```
3863 *
3864 *
3865 * *****
3866 * *DO INPUT*
3867 * *****
3868 * SET UP DO TABLE ENTRIES.
3869 06064 0 000000 DP00 DAC **
3870 06065 0 02 00642 LDA D D = D+5
3871 06066 0 06 00741 ADD K105 IFLG = NON-ZERO
3872 06067 0 04 00077 STA IFLG
3873 06070 0 04 00642 STA D
3874 06071 0 06 00655 ADD D0 I = D0+D
3875 06072 0 04 00626 STA I
3876 06073 0 35 00626 LDX I
3877 06074 0 02 00625 LDA A DP (I-4) = (B)
3878 06075 1 04 17376 STA DP-2+1 DP (I-2) = A
3879 06076 000201 IAB
3880 06077 1 04 17374 STA DP-4+1
3881 06100 0 10 02253 JST IV00 INPUT INT VAR/CON
3882 06101 0 02 00754 LDA K134 = ,
3883 06102 0 10 02352 JST TS00 COMMA TEST
3884 06103 0 35 00626 LDX I
3885 06104 0 02 00625 LDA A
3886 06105 1 04 17400 STA DP+1 DP(I) = INITIAL VALUE POINTER
3887 06106 0 10 02253 JST IV00 INPUT INT VAR/CON
3888 06107 0 35 00626 LDX I
3889 06110 0 02 00625 LDA A
3890 06111 1 04 17377 STA DP-1+1 DP (I-1) = A - FINAL VALUE POINTER
3891 06112 0 02 00647 LDA TC
3892 06113 0 07 00754 SUB K134 = ,
3893 06114 100040 SZE IF THIRD TERM
3894 06115 0 01 00125 JMP DP20
3895 06116 0 10 02253 JST IV00 READ AND ASSIGN.
3896 06117 0 35 00626 DP10 LDX I
3897 06120 0 02 00625 LDA A
3898 06121 1 04 17375 STA DP-3+1 DP(I-3) = INCREMENT POINTER
3899 06122 140040 CPA
```

FRTN3863  
FRTN3864  
FRTN3865  
FRTN3866  
FRTN3867  
FRTN3868  
FRTN3869  
FRTN3870  
FRTN3871  
FRTN3872  
FRTN3873  
FRTN3874  
FRTN3875  
FRTN3876  
FRTN3877  
FRTN3878  
FRTN3879  
FRTN3880  
FRTN3881  
FRTN3882  
FRTN3883  
FRTN3884  
FRTN3885  
FRTN3886  
FRTN3887  
FRTN3888  
FRTN3889  
FRTN3890  
FRTN3891  
FRTN3892  
FRTN3893  
FRTN3894  
FRTN3895  
FRTN3896  
FRTN3897  
FRTN3898  
FRTN3899

\* NAME: FRTN

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```
3900 06123 0 04 00077 STA IFLG
3901 06124 -0 01 06064 JMP* DP00
3902 06125 0 02 00735 DP20 LDA K101
3903 06126 0 04 00774 STA ID
3904 06127 0 10 03612 JST AI00
3905 06130 0 01 06117 JMP DP10
3906 EJCT
```

```
CLEAR IFLAG
EXIT
```

```
THIRD TERM = 1
ASSIGN CONSTANT
```

```
FRTN3900
FRTN3901
FRTN3902
FRTN3903
FRTN3904
FRTN3905
FRTN3906
```

\* NAME: FRTN

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```
3907 *
3908 *
3909 *
3910 *
3911 06131 0 000000 DS00 DAC **
3912 06132 0 35 00626 LDX I
3913 06133 1 02 17400 LDA DP+1
3914 06134 0 04 00625 STA A
3915 06135 0 02 13030 LDA K200
3916 06136 0 10 06146 JST DS20
3917 06137 1 02 17376 LDA DP-2+1
3918 06140 0 04 00625 STA A
3919 06141 0 02 00643 LDA RPL
3920 06142 1 04 17400 STA DP+1
3921 06143 0 02 13031 LDA K202
3922 06144 0 10 06146 JST DS20
3923 06145 -0 01 06131 JMP* DS00
3924 *
3925 06146 0 000000 DS20 DAC **
3926 06147 000201 IAS
3927 06150 0410 60 LLL 16
3928 06151 0 10 11471 JST 0900
3929 06152 0 35 00626 LDX I
3930 06153 -0 01 06146 JMP* DS20
3931 *
3932 EJCT
```

A = DP (I)

LOAD - LDA INITIAL VALUE

A = DP (I-2)

SET RETURN ADDRESS INTO DP(I)

STORE - STA VARIABLE NAME

OUTPUT OA SUBROUTINE

SET B = 0

OUTPUT OA

RESTORE I

RETURN

```
FRTN3907
FRTN3908
FRTN3909
FRTN3910
FRTN3911
FRTN3912
FRTN3913
FRTN3914
FRTN3915
FRTN3916
FRTN3917
FRTN3918
FRTN3919
FRTN3920
FRTN3921
FRTN3922
FRTN3923
FRTN3924
FRTN3925
FRTN3926
FRTN3927
FRTN3928
FRTN3929
FRTN3930
FRTN3931
FRTN3932
```

\* NAME: FRTN

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```
3933 *
3934 *
3935 * *****
3936 * *DO TERMINATION*
3937 * *****
3938 06154 0 00 00000 DS90 PZE 0
3939 06155 0 000000 DQ00 DAC **
3940 06156 0 35 00626 LDX I
3941 06157 1 02 17376 LDA DP-2.1
3942 06160 0 04 00625 STA A
3943 06161 0 02 13030 LDA K200
3944 06162 0 10 06146 JST DS20
3945 06163 1 02 17375 LDA DP-3.1
3946 06164 0 04 00625 STA A
3947 06165 0 02 13025 LDA K203
3948 06166 0 10 06146 JST DS20
3949 06167 0 02 13043 LDA CMK2
3950 06170 0 10 13235 JST DQ00
3951 06171 0 35 00626 LDX I
3952 06172 1 02 17377 LDA DP-1.1
3953 06173 0 04 00625 STA A
3954 06174 0 02 13056 LDA CMK9
3955 06175 0 10 06146 JST DS20
3956 06176 140040 CRA
3957 06177 0 04 00625 STA A
3958 06200 0 02 00643 LDA RPL
3959 06201 0 06 00737 ADD K103
3960 06202 0 04 00025 STA AF
3961 06203 1 02 17400 LDA DP.1
3962 06204 0 04 06154 STA DS90
3963 06205 0 02 13026 LDA OM15
3964 06206 0 10 13072 JST OR00
3965 06207 0 02 06154 LDA DS90
3966 06210 0 04 00025 STA AF
3967 06211 0 02 13026 LDA OM15
3968 06212 0 10 13072 JST OR00
3969 06213 0 02 13026 LDA OM15

          OUTPUT LDA VARIABLE NAME
          OUTPUT ADD INCREMENT
          OUTPUT SSC
          OUTPUT CAS FINAL VALUE
          JUMP **3
          OUTPUT REL
          JMP RPL (SAVED) - POINTS TO 'STA' INST.
          OUTPUT REL
          OUTPUT JMP RPL (SAVED)
```

FRTN3933  
FRTN3934  
FRTN3935  
FRTN3936  
FRTN3937  
FRTN3938  
FRTN3939  
FRTN3940  
FRTN3941  
FRTN3942  
FRTN3943  
FRTN3944  
FRTN3945  
FRTN3946  
FRTN3947  
FRTN3948  
FRTN3949  
FRTN3950  
FRTN3951  
FRTN3952  
FRTN3953  
FRTN3954  
FRTN3955  
FRTN3956  
FRTN3957  
FRTN3958  
FRTN3959  
FRTN3960  
FRTN3961  
FRTN3962  
FRTN3963  
FRTN3964  
FRTN3965  
FRTN3966  
FRTN3967  
FRTN3968  
FRTN3969

\* NAME: FRTN

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```
3970 06214 0 10 13072 JST CR00
3971 06215 -0 01 06155 JMP* DQ00
3972 EJCT
```

FRTN3970  
FRTN3971  
FRTN3972

\* NAME: FRTN

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```
3973 *
3974 *
3975 *
3976 *
3977 *
3978 06216 0 00 00000 TOEX PZE 0
3979 06216 0 00 00000 EXT0 EQU TOEX
3980 06217 0 00 00000 T1EX PZE 0
3981 06220 0 00 00000 T2EX PZE 0
3982 06221 0 00 00000 T3EX PZE 0
3983 06222 0 00 00000 T5EX PZE 0
3984 06223 0 00 00000 EXT7 PZE 0
3985 06224 0 00 00000 T9EX PZE 0
3986 06225 0 000000 EX00 DAC **
3987 06226 0 04 00045 STA F
3988 06227 0 02 00625 LDA A
3989 06230 0 04 00646 STA TRFA
3990 06231 0 02 00642 LDA D
3991 06232 0 06 00655 ADD D0
3992 06233 0 06 00744 ADD K125
3993 06234 0 04 00626 STA I
3994 06235 0 10 07106 JST EX99
3995 06236 0 35 00626 LDX I
3996 06237 140040 CRA
3997 06240 0 04 06216 STA EXT0
3998 06241 0 04 00036 STA B
3999 06242 0 04 06223 STA EXT7
4000 06243 0 06 14524 ADD EX92+12
4001 06244 0414 67 LGL 9
4002 06245 1 04 17377 STA DP-1,1
4003 06246 140401 CMA
4004 06247 0 04 00077 STA IFLG
4005 06250 0 02 00113 LDA L0
4006 06251 1 04 17376 STA DP-2,1
4007 06252 0 35 00626 EX10 LDX I
4008 06253 140040 CRA
4009 06254 0 04 06217 STA T1EX

*****
*EXPRESSION*
*****
THE RESULTANT OUTPUT IS A BUILT UP AOIN
TABLE THAT IS FURTHER PROCESSED BY SCAN.

F = (A)
SAVE POINTER TO FIRST VARIABLE
FOR LATER POSSIBLE TRACING
I = D+D0+10

=8

DATA POOL CHECK

T0 = 0
B = 0
T7 = 0

O(I-2) = '*'
O(I) = 0

IFLG NOT 0

O(I-2) = L0

T1 = 0
```

\* NAME: FRTN

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```
4010 06255 1 04 17400 STA DP+1
4011 06256 1 04 17401 STA DP+1,1
4012 06257 0 02 00706 LDA IM
4013 06260 100040 SZF
4014 06261 0 01 06477 JMP EX50
4015 06262 0 35 00762 LDX K130
4016 *
4017 06263 0 02 00067 EX11 LDA TC
4018 06264 1 07 14502 SUB K17+6,1
4019 06265 101040 SNZ
4020 06266 0 01 06270 JMP EX11
4021 06267 0 12 00000 IRS 0
4022 06270 0 01 06263 JMP EX11
4023 06271 0 35 00626 LDX I
4024 06272 0 02 01060 LDA LIBF
4025 06273 100400 SPL
4026 06274 0 01 06447 JMP EX39
4027 06275 0 01 07100 JMP EX95
4028 06276 1 02 14510 EX11 LDA EX91+6,1
4029 06277 0 04 00000 STA 0
4030 06300 1 01 00000 JMP 0,1
4031 *
4032 *
4033 *
4034 *
4035 *
4036 *
4037 06301 0 02 00036 EX12 LDA B
4038 06302 0 06 00666 ADD K109
4039 06303 0 04 00036 STA B
4040 06304 0 04 00633 STA SXF
4041 06305 0 10 02224 EX14 JST I100
4042 06306 0 01 06252 JMP EX10
4043 06307 0 35 00626 EX16 LDX I
4044 06310 0 02 00067 LDA TC
4045 06311 0414 67 LGL 9
4046 06312 0 06 00036 ADD B

AOIN(I) = T(I) = 0
IF IM NOT ZERO,
GO TO EX50
-6
PERFORM TABLE SEARCH
GO TO ROUTINE ACCORDING
TO TC.
IF NO MATCH, ERROR

SPECIAL LIBRARY FLAG
SKIP IF SPECIAL LIBRARY FLAG NOT SET

ERROR CONDITION

PROCESS LEADING OPERATOR
SPECIAL OPERATOR FLAG SET WHEN COMPILING THE FORTRAN
LIBRARY IN WHICH CASE THE OPERATIONS ( A= ) AND
( =A ) ARE REQUIRED. THIS LOGIC WILL ALLOW THESE
TO BE PROCESSED WITHOUT GIVING AN ERROR MESSAGE IF THE
SPECIAL LIBRARY FLAG (LIBF) IS SET TO NON-ZERO.

TC = (
B = B+16
SXF = NON-ZERO

INPUT ITEM
GO TO EX10
TC = *

OI (I-2) = *, B+13
```

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| Address | Instruction | Comments | Label  |
|---------|-------------|----------|--------|
| 4047    | 0 04 00751  | ADD      | K129   |
| 4048    | 1 05 17377  | EPA      | DP-1,1 |
| 4049    | 140100      | SSP      |        |
| 4050    | 101040      | SNZ      |        |
| 4051    | 0 01 06322  | JMP      | **3    |
| 4052    | 0 10 02615  | JST      | EP00   |
| 4053    | 1F0327      | BCI      | 1,PA   |
| 4054    | 0 02 00666  | LDA      | K109   |
| 4055    | 0414 67     | LGL      | 9      |
| 4056    | 1 13 17377  | IMA      | DP-1,1 |
| 4057    | 0 03 00673  | ANA      | K118   |
| 4058    | 141206      | AOA      |        |
| 4059    | 1 05 17377  | EPA      | DP-1,1 |
| 4060    | 1 04 17377  | STA      | DP-1,1 |
| 4061    | 0 01 06305  | JMP      | EX14   |
| 4062    | 0 02 00736  | LDA      | K102   |
| 4063    | 0 04 00067  | STA      | TC     |
| 4064    | 0 02 00744  | LDA      | K125   |
| 4065    | 0 04 06217  | STA      | T1EX   |
| 4066    | 0 35 00626  | LDX      | I      |
| 4067    | 1 02 17377  | LDA      | DP-1,1 |
| 4068    | 0 03 00673  | ANA      | K118   |
| 4069    | 0 07 00036  | SUB      | E      |
| 4070    | 0 07 06217  | SUB      | T1EX   |
| 4071    | 100400      | SPL      |        |
| 4072    | 0 01 06347  | JMP      | **3    |
| 4073    | 0 10 02615  | JST      | EP00   |
| 4074    | 147324      | BCI      | 1,NT   |
| 4075    | 0 02 06216  | LDA      | TOEX   |
| 4076    | 100040      | SZE      |        |
| 4077    | 0 01 06411  | JMP      | EX34   |
| 4078    | 0 02 00036  | LDA      | B      |
| 4079    | 0 06 00045  | ADD      | F      |
| 4080    | 100400      | SPL      |        |
| 4081    | 0 01 07102  | JMP      | EX96   |
| 4082    | 0 35 00626  | LDX      | I      |
| 4083    | 0 02 00067  | LDA      | TC     |

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| 4084 | 06367 | 0414 67    | LGL      | 9         |                                           |  | FRTN4084 |
| 4085 | 06367 | 0 06 06217 | ADD      | TIEX      |                                           |  | FRTN4085 |
| 4086 | 06367 | 0 06 00036 | ADD      | B         |                                           |  | FRTN4086 |
| 4087 | 06367 | 1 04 17401 | STA      | DP+1,1    | OI(I) = TC . T1+B                         |  | FRTN4087 |
| 4088 | 06367 | 0 10 07106 | JST      | EX99      | DATA POOL CHECK                           |  | FRTN4088 |
| 4089 | 06367 | 0 01 06305 | JMP      | EX14      |                                           |  | FRTN4089 |
| 4090 | 06367 | 177762     | K131 DEC | -14       |                                           |  | FRTN4090 |
| 4091 | 06367 | 0 35 00626 | EX26 LDX | I         |                                           |  | FRTN4091 |
| 4092 | 06370 | 1 02 17377 | LDA      | DP-1,1    |                                           |  | FRTN4092 |
| 4093 | 06371 | 0 03 00673 | ANA      | K118      | IF I (I-2) .LT. B                         |  | FRTN4093 |
| 4094 | 06372 | 0 11 00036 | CAS      | B         |                                           |  | FRTN4094 |
| 4095 | 06373 | 0 01 07104 | JMP      | EX97      | ERROR-----MULTIPLE + OR - SIGNS           |  | FRTN4095 |
| 4096 | 06374 | 101000     | NOP      |           |                                           |  | FRTN4096 |
| 4097 | 06375 | 0 35 06366 | EX30 LDX | K131      | SET TO SEARCH OPERATOR TABLE FOR TRAILING |  | FRTN4097 |
| 4098 | 06376 | 1 12 14526 | EX31 LDA | EX92+14,1 | OPERATOR AFTER HAVING ENCOUNTERED AN      |  | FRTN4098 |
| 4099 | 06377 | 0 17 00067 | SUB      | TC        | ITEM OR A NEGATE.                         |  | FRTN4099 |
| 4100 | 06407 | 171047     | SZE      |           |                                           |  | FRTN4100 |
| 4101 | 06401 | 0 01 06407 | JVP      | EX32      |                                           |  | FRTN4101 |
| 4102 | 06402 | 1 10 14544 | LDA      | EX93+14,1 |                                           |  | FRTN4102 |
| 4103 | 06403 | 0 14 06404 | STA      | **3       |                                           |  | FRTN4103 |
| 4104 | 06404 | 0 15 00674 | LDX      | I         |                                           |  | FRTN4104 |
| 4105 | 06405 | 0 11 06406 | JMP*     | **1       |                                           |  | FRTN4105 |
| 4106 | 06406 | 0 10 00000 | DAC      | **        |                                           |  | FRTN4106 |
| 4107 | 06407 | 0 12 00000 | EX32 IPS | 0         | CONTROL OPERATOR LOOP                     |  | FRTN4107 |
| 4108 | 06410 | 0 11 06374 | JMP      | EX31      | CONTINUE                                  |  | FRTN4108 |
| 4109 | 06411 | 0 02 00036 | EX34 LDA | B         | IF B = 0                                  |  | FRTN4109 |
| 4110 | 06412 | 0 07 06273 | SLE      | EXT7      |                                           |  | FRTN4110 |
| 4111 | 06413 | 170040     | SZE      |           |                                           |  | FRTN4111 |
| 4112 | 06414 | 0 11 06453 | JMP      | EX40      | NO, GO TO EX40                            |  | FRTN4112 |
| 4113 | 06415 | 0 02 06214 | LDA      | TOEX      | IF T (C) = 0                              |  | FRTN4113 |
| 4114 | 06416 | 170040     | SZE      |           |                                           |  | FRTN4114 |
| 4115 | 06417 | 0 1 06430  | JMP      | EX39      | NO, GO TO EX36                            |  | FRTN4115 |
| 4116 | 06421 | 0 14 00677 | STA      | IFLG      | IFLG = 0                                  |  | FRTN4116 |
| 4117 | 06421 | 0 10 00045 | LDA      | F         |                                           |  | FRTN4117 |
| 4118 | 06422 | 161276     | ADA      |           |                                           |  | FRTN4118 |
| 4119 | 06423 | 161460     | SFL      |           | F .GE. -1                                 |  | FRTN4119 |
| 4120 | 06424 | 0 1 06275  | JMP*     | EX00      | RETURN = NO                               |  | FRTN4120 |

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| 4121 06425 | 0 10 07125  | JST      | CA00   | SCAN                  | FRTN4121 |
| 4122 06426 | 0 10 11701  | JST      | OT00   | OUTPUT TRIALS         | FRTN4122 |
| 4123 06427 | -0 01 06225 | JMP*     | EX00   | RETURN                | FRTN4123 |
| 4124 06430 | 0 35 00626  | EX38 LDX | I      |                       | FRTN4124 |
| 4125 06431 | 0 02 00036  | LDA      | B      |                       | FRTN4125 |
| 4126 06432 | 0 07 00666  | SUB      | K109   |                       | FRTN4126 |
| 4127 06433 | 0 04 00036  | STA      | B      |                       | FRTN4127 |
| 4128 06434 | 0 02 00737  | LDA      | K103   |                       | FRTN4128 |
| 4129 06435 | 0 04 00630  | STA      | %FL    |                       | FRTN4129 |
| 4130 06436 | 0 02 06216  | LDA      | T0EX   |                       | FRTN4130 |
| 4131 06437 | 0414 67     | LGL      | 9      | O (I) = T (C)         | FRTN4131 |
| 4132 06440 | 0 06 00036  | ADD      | B      | I (I) = B+9           | FRTN4132 |
| 4133 06441 | 0 06 00745  | ADD      | K124   | I = I+2               | FRTN4133 |
| 4134 06442 | 1 04 17401  | STA      | DP+1,1 |                       | FRTN4134 |
| 4135 06443 | 0 10 07106  | JST      | EX99   | DATA POOL CHECK       | FRTN4135 |
| 4136 06444 | 140040      | CRA      |        |                       | FRTN4136 |
| 4137 06445 | 0 04 06216  | STA      | T0EX   | TO = 0                | FRTN4137 |
| 4138 06446 | 0 04 06223  | STA      | EXT7   | T7 = 0                | FRTN4138 |
| 4139 06447 | 0 02 00113  | EX39 LDA | LO     |                       | FRTN4139 |
| 4140 06450 | 0 04 00625  | STA      | A      | A = LO                | FRTN4140 |
| 4141 06451 | 0 04 00706  | STA      | IM     | IM NOT EQ 0           | FRTN4141 |
| 4142 06452 | 0 01 06252  | JMP      | EX10   |                       | FRTN4142 |
| 4143 06453 | 0 02 00067  | EX40 LDA | TC     | TC 0 ,                | FRTN4143 |
| 4144 06454 | 0 11 00734  | CAS      | K5     | =*254 (*) IN BCD MODE | FRTN4144 |
| 4145 06455 | 0 01 06457  | JMP      | **2    |                       | FRTN4145 |
| 4146 06456 | 0 01 06452  | JMP      | EX41   |                       | FRTN4146 |
| 4147 06457 | 0 07 00754  | SUB      | K134   | =17                   | FRTN4147 |
| 4148 06460 | 100040      | SZE      |        |                       | FRTN4148 |
| 4149 06461 | 0 01 06475  | JMP      | EX44   | NO, GO TO EX44        | FRTN4149 |
| 4150 06462 | 0 02 00626  | EX41 LDA | I      |                       | FRTN4150 |
| 4151 06463 | 0 07 00736  | EX42 SUB | K102   |                       | FRTN4151 |
| 4152 06464 | 0 04 00000  | STA      | 0      | B VS. I (J)           | FRTN4152 |
| 4153 06465 | 1 02 17401  | LDA      | DP+1,1 |                       | FRTN4153 |
| 4154 06466 | 0 03 00673  | ANA      | K118   |                       | FRTN4154 |
| 4155 06467 | 0 11 00036  | CAS      | 5      |                       | FRTN4155 |
| 4156 06470 | 0 01 06473  | JMP      | **3    |                       | FRTN4156 |
| 4157 06471 | 0 01 06356  | JMP      | EX24   | EQUAL, GO TO EX24     | FRTN4157 |

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| 4158 06472 | -0 01 06225 | JMP*     | EX00 | LESS, RETURN         | FRTN4158 |
| 4159 06473 | 0 02 00000  | LDA      | 0    | GREATER, REPEAT LOOP | FRTN4159 |
| 4160 06474 | 0 01 06463  | JMP      | EX42 |                      | FRTN4160 |
| 4161 06475 | 0 10 02360  | EX44 JST | IP00 | I - INPUT OPERATOR   | FRTN4161 |
| 4162 06476 | 0 01 06375  | JMP      | EX30 | GO TO EX30           | FRTN4162 |
| 4163 06477 | 0 35 00626  | EX50 LDX | I    |                      | FRTN4163 |
| 4164 06500 | 0 02 00625  | LDA      | A    | A(I) = A             | FRTN4164 |
| 4165 06501 | 1 04 17400  | STA      | DP,1 |                      | FRTN4165 |
| 4166 06502 | 0 02 00710  | LDA      | IU   | IU = SUB OR ARR      | FRTN4166 |
| 4167 06503 | 101100      | SLN      |      |                      | FRTN4167 |
| 4168 06504 | 0 01 06375  | JMP      | EX30 | NO, GO TO EX30       | FRTN4168 |
| 4169 06505 | 0 02 00067  | LDA      | TC   |                      | FRTN4169 |
| 4170 06506 | 0 07 14474  | SUB      | K17  | TC = (               | FRTN4170 |
| 4171 06507 | 100040      | SZE      |      |                      | FRTN4171 |
| 4172 06510 | 0 01 07026  | JMP      | EX76 | NO, GO TO EX76       | FRTN4172 |
| 4173 06511 | 0 02 00036  | LDA      | B    | YES, B = B+16        | FRTN4173 |
| 4174 06512 | 0 06 00666  | ADD      | K109 |                      | FRTN4174 |
| 4175 06513 | 0 04 00036  | STA      | B    |                      | FRTN4175 |
| 4176 06514 | 0 02 00710  | LDA      | IU   | IU = ARR             | FRTN4176 |
| 4177 06515 | 0 07 00737  | SUB      | K103 |                      | FRTN4177 |
| 4178 06516 | 100040      | SZE      |      |                      | FRTN4178 |
| 4179 06517 | 0 01 07023  | JMP      | EX75 | NO, GO TO EX75       | FRTN4179 |
| 4180 06520 | 1 04 17400  | STA      | DP,1 | A(I) = 0             | FRTN4180 |
| 4181 06521 | 0 04 00075  | STA      | X4   | X4 = 0               | FRTN4181 |
| 4182 06522 | 0 04 06221  | STA      | T3EX | T3 = 0               | FRTN4182 |
| 4183 06523 | 0 04 07117  | STA      | K    | T5 = A               | FRTN4183 |
| 4184 06524 | 0 02 00030  | LDA      | DO   |                      | FRTN4184 |
| 4185 06525 | 0 04 06224  | STA      | T9EX | T9 = DO              | FRTN4185 |
| 4186 06526 | 0 02 00625  | LDA      | A    |                      | FRTN4186 |
| 4187 06527 | 0 04 06222  | STA      | T5EX | T5 = A               | FRTN4187 |
| 4188 06530 | 0 02 00026  | LDA      | AT   |                      | FRTN4188 |
| 4189 06531 | 0 07 00741  | SUB      | K105 | AT = SUM             | FRTN4189 |
| 4190 06532 | 100040      | SZE      |      |                      | FRTN4190 |
| 4191 06533 | 0 01 07020  | JMP      | EX74 | NO, GO TO EX74       | FRTN4191 |
| 4192 06534 | 0 04 06220  | STA      | T2EX | YES, T (0) = 0       | FRTN4192 |
| 4193 06535 | 0 10 07106  | JST      | EX99 | DATA POOL CHECK      | FRTN4193 |
| 4194 06536 | 0 35 00626  | LDX      | I    |                      | FRTN4194 |

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| 4195 06537 | 0 02 00625 | LDA      | A      |                        |  | FRTN4195 |
| 4196 06540 | 1 04 17400 | STA      | DP+1   |                        |  | FRTN4196 |
| 4197 06541 | 0 02 00677 | LDA      | K132   | A(I) = A               |  | FRTN4197 |
| 4198 06542 | 0414 67    | LGL      | 9      | OI (I) = A, 11         |  | FRTN4198 |
| 4199 06543 | 0 06 00745 | ADD      | K124   |                        |  | FRTN4199 |
| 4200 06544 | 1 04 17401 | STA      | DP+1,1 | I=9                    |  | FRTN4200 |
| 4201 06545 | 0 02 00030 | EX54 LDA | DO     | IF DO = 1. GO TO EX56  |  | FRTN4201 |
| 4202 06546 | 0 07 00735 | SUR      | K101   |                        |  | FRTN4202 |
| 4203 06547 | 101040     | SNZ      |        |                        |  | FRTN4203 |
| 4204 06550 | 0 01 06570 | JMP      | EX56   |                        |  | FRTN4204 |
| 4205 06551 | 0 10 07106 | JST      | EX99   | DATA POOL CHECK        |  | FRTN4205 |
| 4206 06552 | 0 01 06554 | JMP      | *+2    |                        |  | FRTN4206 |
| 4207 06553 | 0 12 07117 | EX55 IFS | K      | K = K+1                |  | FRTN4207 |
| 4208 06554 | 0 45 07117 | LDX      | K      |                        |  | FRTN4208 |
| 4209 06555 | 1 02 00071 | LDA      | X+1    |                        |  | FRTN4209 |
| 4210 06556 | 0 35 00626 | LDX      | I      |                        |  | FRTN4210 |
| 4211 06557 | 1 04 17400 | STA      | DP+1   | O(I) = *               |  | FRTN4211 |
| 4212 06560 | 0 02 00737 | LDA      | K103   | I (I) = T3+13          |  | FRTN4212 |
| 4213 06561 | 0414 67    | LGL      | 9      | T3 = T3+16             |  | FRTN4213 |
| 4214 06562 | 0 06 06221 | ADD      | T3EX   | A (A) = T6             |  | FRTN4214 |
| 4215 06563 | 0 06 00751 | ADD      | K129   | =13                    |  | FRTN4215 |
| 4216 06564 | 1 04 17401 | STA      | DP+1,1 |                        |  | FRTN4216 |
| 4217 06565 | 0 03 00673 | ANA      | K118   |                        |  | FRTN4217 |
| 4218 06566 | 0 06 00737 | ADD      | K103   |                        |  | FRTN4218 |
| 4219 06567 | 0 04 06221 | STA      | T3EX   | T3 = A(A)              |  | FRTN4219 |
| 4220 06570 | 0 10 02253 | EX56 JST | IV00   | INPUT INTEGER VARIABLE |  | FRTN4220 |
| 4221 06571 | 0 10 07106 | EX59 JST | EX99   | DATA POOL CHECK        |  | FRTN4221 |
| 4222 06572 | 0 35 00626 | LDX      | I      |                        |  | FRTN4222 |
| 4223 06573 | 0 02 00625 | LDA      | A      | A(I) = A               |  | FRTN4223 |
| 4224 06574 | 1 04 17400 | STA      | DP+1   |                        |  | FRTN4224 |
| 4225 06575 | 0 02 00054 | LDA      | NT     |                        |  | FRTN4225 |
| 4226 06576 | 100040     | SZE      |        |                        |  | FRTN4226 |
| 4227 06577 | 0 01 06755 | JMP      | EX68   | CONSTANT ENCOUNTERED   |  | FRTN4227 |
| 4228 06600 | 0 10 01152 | JST      | UC00   | UNINPT COLUMN          |  | FRTN4228 |
| 4229 06601 | 0 10 01350 | JST      | DN00   | INPUT DO NOT ASSIGN    |  | FRTN4229 |
| 4230 06602 | 101040     | SNZ      |        |                        |  | FRTN4230 |
| 4231 06603 | 0 01 06611 | JMP      | EX57   | IM = 0                 |  | FRTN4231 |

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| 4232 06604 | 0 07 00735 | SUR      | K101   |                                      |  | FRTN4232 |
| 4233 06605 | 101040     | SNZ      |        |                                      |  | FRTN4233 |
| 4234 06606 | 0 01 06611 | JMP      | EX57   | IM = INTEGER                         |  | FRTN4234 |
| 4235 06607 | 0 10 02415 | JST      | ER00   |                                      |  | FRTN4235 |
| 4236 06610 | 151725     | BCI      | 1,5U   | SUBSCRIPT INCREMENTER NOT A CONSTANT |  | FRTN4236 |
| 4237 06611 | 0 35 00626 | EX57 LDX | I      |                                      |  | FRTN4237 |
| 4238 06612 | 0 02 00735 | LDA      | K101   |                                      |  | FRTN4238 |
| 4239 06613 | 0414 67    | LGL      | 9      |                                      |  | FRTN4239 |
| 4240 06614 | 0 06 06221 | ADD      | T3EX   |                                      |  | FRTN4240 |
| 4241 06615 | 0 06 00747 | ADD      | K127   |                                      |  | FRTN4241 |
| 4242 06616 | 1 04 17401 | STA      | DP+1,1 | O(I) = +, I(I) = T3+11               |  | FRTN4242 |
| 4243 06617 | 0 10 07106 | JST      | EX99   | DATA POOL CHECK                      |  | FRTN4243 |
| 4244 06620 | 0 02 06224 | EX58 LDA | T9EX   |                                      |  | FRTN4244 |
| 4245 06621 | 0 04 00030 | STA      | DO     | RESET D(O)                           |  | FRTN4245 |
| 4246 06622 | 0 02 00774 | LDA      | ID     | SUBSCRIPT SIZE                       |  | FRTN4246 |
| 4247 06623 | 0 07 00735 | SUR      | K101   | ID = ID-1                            |  | FRTN4247 |
| 4248 06624 | 0 04 00774 | STA      | ID     |                                      |  | FRTN4248 |
| 4249 06625 | 101040     | SNZ      |        | IF ZERO, GO TO EX60                  |  | FRTN4249 |
| 4250 06626 | 0 01 06640 | JMP      | EX60   |                                      |  | FRTN4250 |
| 4251 06627 | 0 35 07117 | LDX      | K      |                                      |  | FRTN4251 |
| 4252 06630 | 1 02 00030 | LDA      | DO+1   | D(K) = 0                             |  | FRTN4252 |
| 4253 06631 | 101040     | SNZ      |        |                                      |  | FRTN4253 |
| 4254 06632 | 0 01 06742 | JMP      | EX67   | YES - (DUMMY DIMENSION)              |  | FRTN4254 |
| 4255 06633 | 000201     | IAR      |        |                                      |  | FRTN4255 |
| 4256 06634 | 0 02 00774 | LDA      | ID     |                                      |  | FRTN4256 |
| 4257 06635 | 0 10 02462 | JST      | IM00   |                                      |  | FRTN4257 |
| 4258 06636 | 0 06 06220 | ADD      | T2EX   |                                      |  | FRTN4258 |
| 4259 06637 | 0 04 06220 | STA      | T2EX   | T2 = T2+ID*D(K)                      |  | FRTN4259 |
| 4260 06640 | 0 02 06224 | EX60 LDA | T9EX   |                                      |  | FRTN4260 |
| 4261 06641 | 0 04 00030 | STA      | DO     | RESET D(O)                           |  | FRTN4261 |
| 4262 06642 | 0 35 07117 | LDX      | K      |                                      |  | FRTN4262 |
| 4263 06643 | 1 02 00073 | LDA      | X+2+1  | X(K+2) = 0                           |  | FRTN4263 |
| 4264 06644 | 101040     | SNZ      |        |                                      |  | FRTN4264 |
| 4265 06645 | 0 01 06656 | JMP      | EX62   | YES - FINISHED                       |  | FRTN4265 |
| 4266 06646 | 0 02 00754 | LDA      | K134   | =17                                  |  | FRTN4266 |
| 4267 06647 | 0 10 02352 | JST      | TS00   | COMMA TEST                           |  | FRTN4267 |
| 4268 06650 | 1 02 00031 | LDA      | DO+1,1 |                                      |  | FRTN4268 |

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| 4269 06651 | 000201     | IAR      |        |  |                           | FRTN4269 |
| 4270 06652 | 1 02 00030 | LDA      | D0.1   |  |                           | FRTN4270 |
| 4271 06653 | 0 10 02462 | JST      | IM00   |  |                           | FRTN4271 |
| 4272 06654 | 1 04 00031 | STA      | D0+1.1 |  |                           | FRTN4272 |
| 4273 06655 | 0 01 06553 | JMP      | EX55   |  | D(K+1) = D(K+1)*D(K)      | FRTN4273 |
| 4274 06656 | 0 35 00626 | EX62 LDX | I      |  |                           | FRTN4274 |
| 4275 06657 | 1 02 17377 | LDA      | DP-1.1 |  | DOES D(I-2) = *           | FRTN4275 |
| 4276 06660 | 140100     | SSP      |        |  |                           | FRTN4276 |
| 4277 06661 | 0404 67    | LGR      | 9      |  |                           | FRTN4277 |
| 4278 06662 | 0 11 00737 | CAS      | K103   |  |                           | FRTN4278 |
| 4279 06663 | 0 01 06665 | JMP      | **2    |  |                           | FRTN4279 |
| 4280 06664 | 0 01 06736 | JMP      | EX66   |  | YES.                      | FRTN4280 |
| 4281 06665 | 101040     | SNZ      |        |  | NO.                       | FRTN4281 |
| 4282 06666 | 0 01 06722 | JMP      | EX64   |  | O(I-2) = 0 - YES          | FRTN4282 |
| 4283 06667 | 0 11 00677 | CAS      | K132   |  | DOES D(I-2) = A           | FRTN4283 |
| 4284 06670 | 0 01 06676 | JMP      | EX63   |  |                           | FRTN4284 |
| 4285 06671 | 0 01 06673 | JMP      | **2    |  | YES                       | FRTN4285 |
| 4286 06672 | 0 01 06676 | JMP      | EX63   |  |                           | FRTN4286 |
| 4287 06673 | 0 02 06220 | LDA      | T2EX   |  | IS T2 = 0                 | FRTN4287 |
| 4288 06674 | 101040     | SNZ      |        |  |                           | FRTN4288 |
| 4289 06675 | 0 01 06727 | JMP      | EX65   |  | YES (JUMMY ARRAY (1.1.1)) | FRTN4289 |
| 4290 06676 | 0 02 00735 | EX63 LDA | K101   |  |                           | FRTN4290 |
| 4291 06677 | 1 04 17377 | STA      | DP-1.1 |  | OI(I-2) = 1               | FRTN4291 |
| 4292 06700 | 0 02 06220 | LDA      | T2EX   |  | A(I) = T2                 | FRTN4292 |
| 4293 06701 | 1 04 17400 | STA      | DP+1   |  |                           | FRTN4293 |
| 4294 06702 | 0 02 06721 | LDA      | K137   |  | O=*X* (*24), I=2          | FRTN4294 |
| 4295 06703 | 1 04 17401 | STA      | DP+1.1 |  |                           | FRTN4295 |
| 4296 06704 | 140040     | CFA      |        |  |                           | FRTN4296 |
| 4297 06705 | 1 04 17403 | STA      | DP+3.1 |  | OI(I+2) = 0               | FRTN4297 |
| 4298 06706 | 0 02 06222 | LDA      | T5EX   |  |                           | FRTN4298 |
| 4299 06707 | 1 04 17402 | STA      | DP+2.1 |  | A(I+2) = T5               | FRTN4299 |
| 4300 06710 | 0 10 07106 | JST      | EX99   |  | DATA POOL CHECK           | FRTN4300 |
| 4301 06711 | 0 10 07125 | JST      | CA00   |  | SCAN                      | FRTN4301 |
| 4302 06712 | 0 02 00057 | LDA      | O1     |  |                           | FRTN4302 |
| 4303 06713 | 0 04 00625 | STA      | A      |  | A = O1                    | FRTN4303 |
| 4304 06714 | 0 35 00625 | LDX      | A      |  |                           | FRTN4304 |
| 4305 06715 | 1 02 17402 | LDA      | DP+2.1 |  | S(A) = NON-ZERO           | FRTN4305 |

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|------------|------------|----------|--------|--|---------------------|----------|
| 4306 06716 | 140500     | SSM      |        |  |                     | FRTN4306 |
| 4307 06717 | 1 04 17402 | STA      | DP+2.1 |  | S(A) = 1            | FRTN4307 |
| 4308 06720 | 0 01 06475 | JMP      | EX44   |  |                     | FRTN4308 |
| 4309 06721 | 024002     | K137 OCT | 24002  |  |                     | FRTN4309 |
| 4310 06722 | 0 02 00113 | EX64 LDA | L0     |  |                     | FRTN4310 |
| 4311 06723 | 1 04 17400 | STA      | DP+1   |  | A(I) = L0           | FRTN4311 |
| 4312 06724 | 0 10 07106 | JST      | EX99   |  | DATA POOL CHECK     | FRTN4312 |
| 4313 06725 | 0 35 00626 | LDX      | I      |  |                     | FRTN4313 |
| 4314 06726 | 0 01 06676 | JMP      | EX63   |  |                     | FRTN4314 |
| 4315 06727 | 0 02 00626 | EX65 LDA | I      |  |                     | FRTN4315 |
| 4316 06730 | 0 07 00740 | SUB      | K104   |  |                     | FRTN4316 |
| 4317 06731 | 0 04 00626 | STA      | I      |  | I = I-4             | FRTN4317 |
| 4318 06732 | 0 02 06222 | LDA      | T5EX   |  |                     | FRTN4318 |
| 4319 06733 | 1 04 17374 | STA      | DP-4.1 |  | A(I) = T5           | FRTN4319 |
| 4320 06734 | 0 04 00625 | STA      | A      |  |                     | FRTN4320 |
| 4321 06735 | 0 01 06475 | JMP      | EX44   |  |                     | FRTN4321 |
| 4322 06736 | 0 02 00626 | EX66 LDA | I      |  |                     | FRTN4322 |
| 4323 06737 | 0 07 00736 | SUB      | K102   |  |                     | FRTN4323 |
| 4324 06740 | 0 04 00626 | STA      | I      |  | I = I-2             | FRTN4324 |
| 4325 06741 | 0 01 06656 | JMP      | EX62   |  | ASSIGN INT CONSTANT | FRTN4325 |
| 4326 06742 | 0 10 03612 | EX67 JST | AI00   |  |                     | FRTN4326 |
| 4327 06743 | 0 35 00626 | LDX      | I      |  |                     | FRTN4327 |
| 4328 06744 | 0 02 00625 | LDA      | A      |  |                     | FRTN4328 |
| 4329 06745 | 1 04 17400 | STA      | DP+1   |  | A(I) = A            | FRTN4329 |
| 4330 06746 | 0 02 00735 | LDA      | K101   |  |                     | FRTN4330 |
| 4331 06747 | 0414 67    | LGL      | 9      |  |                     | FRTN4331 |
| 4332 06750 | 0 06 06221 | ADD      | T3EX   |  |                     | FRTN4332 |
| 4333 06751 | 0 06 00747 | ADD      | K127   |  |                     | FRTN4333 |
| 4334 06752 | 1 04 17401 | STA      | DP+1.1 |  | OI(I) = +, T3+11    | FRTN4334 |
| 4335 06753 | 0 10 07106 | JST      | EX99   |  | DATA POOL CHECK     | FRTN4335 |
| 4336 06754 | 0 01 06640 | JMP      | EX60   |  |                     | FRTN4336 |
| 4337 06755 | 0 02 00667 | EX68 LDA | TC     |  | IS TC               | FRTN4337 |
| 4338 06756 | 0 11 00737 | CAS      | K103   |  | = *                 | FRTN4338 |
| 4339 06757 | 0 01 06761 | JMP      | **2    |  |                     | FRTN4339 |
| 4340 06760 | 0 11 06762 | JMP      | **2    |  |                     | FRTN4340 |
| 4341 06761 | 0 11 06620 | JMP      | EX58   |  | NO                  | FRTN4341 |
| 4342 06760 | 0414 67    | LGL      | 9      |  |                     | FRTN4342 |

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| 4343 | 06763 | 0 06 06221 | ADD  | T3EX   |                             |  | FRTN4343 |
| 4344 | 06764 | 0 06 06751 | ADD  | K129   | =13                         |  | FRTN4344 |
| 4345 | 06765 | 1 04 17401 | STA  | DP+1,1 | OI(I) = *, T3+13            |  | FRTN4345 |
| 4346 | 06766 | 0 10 02260 | JST  | IR00   | INPUT INTEGER VAR/CON       |  | FRTN4346 |
| 4347 | 06767 | 0 01 06571 | JMP  | EX59   |                             |  | FRTN4347 |
| 4348 | 06770 | 140040     | EX69 | CRA    | SET LISTING FOR OCTAL ADDR  |  | FRTN4348 |
| 4349 | 06771 | 0 04 00625 | STA  | A      |                             |  | FRTN4349 |
| 4350 | 06772 | 0 02 13026 | LDA  | OMI5   | JMP 0 INSTRUCTION           |  | FRTN4350 |
| 4351 | 06773 | 0 10 13235 | JST  | OQ00   | OUTPUT ABSOLUTE             |  | FRTN4351 |
| 4352 | 06774 | 0 02 00643 | LDA  | RPL    |                             |  | FRTN4352 |
| 4353 | 06775 | 0 04 00060 | STA  | O2     |                             |  | FRTN4353 |
| 4354 | 06776 | 0 02 00700 | LDA  | K138   |                             |  | FRTN4354 |
| 4355 | 06777 | 0 04 00061 | STA  | P      | P = H                       |  | FRTN4355 |
| 4356 | 07000 | 0 10 07470 | JST  | ET00   | ENTER TRIAD                 |  | FRTN4356 |
| 4357 | 07001 | 0 10 06046 | JST  | HS00   | TRANSFER HOLLERITH STRING   |  | FRTN4357 |
| 4358 | 07002 | 0 02 00702 | LDA  | CRET   | (A) = C/R                   |  | FRTN4358 |
| 4359 | 07003 | 0 10 11444 | JST  | OK00   | OUTPUT PACK                 |  | FRTN4359 |
| 4360 | 07004 | 140040     | CRA  |        |                             |  | FRTN4360 |
| 4361 | 07005 | 0 04 00000 | STA  | O      | SET LISTING FOR OCTAL ADDR. |  | FRTN4361 |
| 4362 | 07006 | 0 04 00625 | STA  | A      | SET LISTING FOR OCTAL ADDR. |  | FRTN4362 |
| 4363 | 07007 | 0 02 00060 | LDA  | O2     |                             |  | FRTN4363 |
| 4364 | 07010 | 0 07 00735 | SUB  | K101   |                             |  | FRTN4364 |
| 4365 | 07011 | 0 10 13257 | JST  | OS00   | OUTPUT STRING RPL-1         |  | FRTN4365 |
| 4366 | 07012 | 0 10 01157 | JST  | CH00   | INPUT CHARACTER             |  | FRTN4366 |
| 4367 | 07013 | 0 10 01307 | JST  | FN00   |                             |  | FRTN4367 |
| 4368 | 07014 | 0 35 00626 | LDX  | I      | RESET INDEX                 |  | FRTN4368 |
| 4369 | 07015 | 0 02 00627 | LDA  | L      |                             |  | FRTN4369 |
| 4370 | 07016 | 1 04 17400 | STA  | DP+1   | A(I) = L                    |  | FRTN4370 |
| 4371 | 07017 | 0 01 07026 | JMP  | EX76   |                             |  | FRTN4371 |
| 4372 | 07020 | 0 02 00025 | EX74 | LDA    | T2 = AF                     |  | FRTN4372 |
| 4373 | 07021 | 0 04 06220 | STA  | T2EX   | GO TO EX54                  |  | FRTN4373 |
| 4374 | 07022 | 0 01 06545 | JMP  | EX54   |                             |  | FRTN4374 |
| 4375 | 07023 | 0 02 00754 | EX75 | LDA    | TC = ,                      |  | FRTN4375 |
| 4376 | 07024 | 0 04 00067 | STA  | TC     | GO TO EX24                  |  | FRTN4376 |
| 4377 | 07025 | 0 01 06356 | JMP  | EX24   |                             |  | FRTN4377 |
| 4378 | 07026 | 1 02 17377 | EX76 | LDA    |                             |  | FRTN4378 |
| 4379 | 07027 | 0404 67    | LGR  | 9      |                             |  | FRTN4379 |

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| 4380 | 07030 | 0 03 00764 | ANA  | K133   |                                           |  | FRTN4380 |
| 4381 | 07031 | 0 07 00754 | SUR  | K134   |                                           |  | FRTN4381 |
| 4382 | 07032 | 101040     | SNZ  |        |                                           |  | FRTN4382 |
| 4383 | 07033 | 0 01 06411 | JMP  | EX34   | WITHIN AN ARGUMENT LIST                   |  | FRTN4383 |
| 4384 | 07034 | 0 10 02615 | JST  | ER00   |                                           |  | FRTN4384 |
| 4385 | 07035 | 140707     | BCI  | 1*AG   | SUBROUTINE OR ARRAY NAME NOT IN ARG. LIST |  | FRTN4385 |
| 4386 | 07036 | 0 02 00747 | EX78 | LDA    |                                           |  | FRTN4386 |
| 4387 | 07037 | 0 04 06217 | EX79 | STA    | T (1) = 11                                |  | FRTN4387 |
| 4388 | 07040 | 0 01 06352 | JMP  | EX22   |                                           |  | FRTN4388 |
| 4389 | 07041 | 0 02 00751 | EX80 | LDA    | T (1) = 13                                |  | FRTN4389 |
| 4390 | 07042 | 0 01 07037 | JMP  | EX79   |                                           |  | FRTN4390 |
| 4391 | 07043 | 0 02 00742 | EX81 | LDA    |                                           |  | FRTN4391 |
| 4392 | 07044 | 0 04 06217 | EX86 | STA    | T (1) = 6                                 |  | FRTN4392 |
| 4393 | 07045 | 0 01 06347 | JMP  | EX20   |                                           |  | FRTN4393 |
| 4394 | 07046 | 0 02 00740 | EX82 | LDA    | T (1) = 4                                 |  | FRTN4394 |
| 4395 | 07047 | 0 01 07044 | JMP  | EX86   |                                           |  | FRTN4395 |
| 4396 | 07050 | 0 02 06216 | EX83 | LDA    | T (0) = 0                                 |  | FRTN4396 |
| 4397 | 07051 | 100040     | SZE  |        |                                           |  | FRTN4397 |
| 4398 | 07052 | 0 01 07066 | JMP  | EX84   |                                           |  | FRTN4398 |
| 4399 | 07053 | 0 02 00067 | LDA  | TC     | YES,                                      |  | FRTN4399 |
| 4400 | 07054 | 0 04 06216 | STA  | TOEX   | T (0) = TC                                |  | FRTN4400 |
| 4401 | 07055 | 0 02 14511 | LDA  | EX92+1 |                                           |  | FRTN4401 |
| 4402 | 07056 | 0 04 00067 | STA  | TC     | TC = -                                    |  | FRTN4402 |
| 4403 | 07057 | 0 02 00036 | LDA  | B      |                                           |  | FRTN4403 |
| 4404 | 07060 | 0 06 00666 | ADD  | K109   |                                           |  | FRTN4404 |
| 4405 | 07061 | 0 04 00036 | STA  | B      |                                           |  | FRTN4405 |
| 4406 | 07062 | 0 04 06223 | STA  | EXT7   |                                           |  | FRTN4406 |
| 4407 | 07063 | 0 02 07065 | LDA  | **2    |                                           |  | FRTN4407 |
| 4408 | 07064 | 0 01 07037 | JMP  | EX79   |                                           |  | FRTN4408 |
| 4409 | 07065 | 177773     | DEC  | -5     |                                           |  | FRTN4409 |
| 4410 | 07066 | 0 10 02615 | EX84 | JST    | ERROR                                     |  | FRTN4410 |
| 4411 | 07067 | 151314     | BCI  | 1*RL   | MORE THAN 1 RELATIONAL OPERATOR           |  | FRTN4411 |
| 4412 | 07070 | 0 02 00045 | EXP5 | LDA    |                                           |  | FRTN4412 |
| 4413 | 07071 | 0 06 00736 | ADD  | K102   | T (5) = T (5) +2 = B = 0                  |  | FRTN4413 |
| 4414 | 07072 | 0 04 00045 | STA  | F      |                                           |  | FRTN4414 |
| 4415 | 07073 | 0 06 00036 | ADD  | B      |                                           |  | FRTN4415 |
| 4416 | 07074 | 101040     | SNZ  |        |                                           |  | FRTN4416 |

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4417 07075 0 01 06356 JMP EX24
4418 07076 0 10 02615 JST ER00
4419 07077 142721 BCI 1*EQ ERROR FRTN4417
4420 07100 0 10 02615 EX95 JST EP00 MULTIPLE =*, OR EXPRESSION TO LEFT OF = FRTN4418
4421 07101 147720 BCI 1*OP MORE THAN ONE OPERATOR IN A ROW FRTN4419
4422 07102 0 10 02615 EX96 JST ER00 ERROR FRTN4420
4423 07103 150301 BCI 1*PA OPERATOR MUST BE WITHIN PARENTHESES FRTN4421
4424 07104 0 10 02615 EX97 JST ER00 ERROR FRTN4422
4425 07105 152717 BCI 1*UO MULTIPLE + OR - SIGNS NOT AS UNARY OPS FRTN4423
4426 * BUMP THE I COUNT BY TWO AND CHECK FOR DATA OVERFLOW FRTN4424
4427 07106 0 000000 EX99 DAC ** FRTN4425
4428 07107 0 12 00626 IRS I FRTN4426
4429 07110 0 12 00626 IRS I FRTN4427
4430 07111 0 02 00626 LDA I FRTN4428
4431 07112 141206 ACA FRTN4429
4432 07113 0 11 00627 CAS L FRTN4430
4433 07114 101000 NOP FRTN4431
4434 07115 0 01 03213 JMP AS50 FRTN4432
4435 07116 -0 01 07106 JMP* EX99 FRTN4433
4436 07117 0 00 00000 K PZE 0 FRTN4434
4437 EJECT FRTN4435
FRTN4436
FRTN4437
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4438 * FRTN4438
4439 * FRTN4439
4440 * FRTN4440
4441 * FRTN4441
4442 * FRTN4442
4443 * ***** FRTN4443
4444 * *SCAN * FRTN4444
4445 * *TRIAD SEARCH * FRTN4445
4446 * *TEMP STORE CHECK* FRTN4446
4447 * ***** FRTN4447
4447 07120 177770 KMB DEC -8 FRTN4448
4448 07121 0 00 00000 T0CA PZE 0 FRTN4449
4449 07122 0 00 00000 T1CA PZF 0 FRTN4450
4450 07123 0 00 00000 T2CA PZE 0 FRTN4451
4451 07124 0 00 00000 T9CA PZE 0 FRTN4452
4452 * THE ADIN TABLE IS PROCESSED FROM THE BOTTOM FRTN4453
4453 * UP AND ENTRIES ARE FORMED FOR INCLUSION FRTN4454
4454 * IN THE TRIAD TABLE. LEVELS ARE USED FRTN4455
4455 * TO CONTROL THE ORDER OF ENTRY INTO FRTN4456
4456 * THE TRIADS. SIGN CONTROL IS ALSO FRTN4457
4457 * ACCOMPLISHED IN THIS ROUTINE. FRTN4458
4458 * FRTN4459
4459 07125 0 000000 CA00 DAC ** FRTN4460
4460 07126 0 02 00113 LDA L0 FRTN4461
4461 07127 0 04 07512 STA ACCP INDICATE EMPTY ACCUM FRTN4462
4462 07130 0 05 00626 CA04 LDX I FRTN4463
4463 07131 0 15 07122 STX T1CA T1 = I FRTN4464
4464 07132 1 02 17377 LDA DP-1,1 FRTN4465
4465 07133 0 03 00673 ANA K118 IF I (I-2) = 0, FRTN4466
4466 * OR .LT. I (I) FRTN4467
4467 07134 0 04 07124 STA T9CA FRTN4468
4468 07135 1 02 17401 LDA DP+1,1 FRTN4469
4469 07136 0 03 00673 ANA K118 FRTN4470
4470 07137 0 11 07124 CAS T9CA FRTN4471
4471 07140 0 01 07144 JMP CA08 GO TO CA08 FRTN4472
4472 07141 101000 NOP FRTN4473
4473 07142 0 02 00626 LDA I FRTN4474
4474 07143 0 07 00736 SUB K102
4475 07144 0 04 00626 STA I I = I-2
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|------------|------------|----------|----------|---------------------------------|----------|
| 4475 07145 | 0 04 00000 | STA      | 0        |                                 | FRTN4475 |
| 4476 07146 | 1 02 17403 | CA05 LDA | DP+3,1   |                                 | FRTN4476 |
| 4477 07147 | 1 05 17401 | ERA      | DP+1,1   |                                 | FRTN4477 |
| 4478 07150 | 0 04 07121 | STA      | TOCA     |                                 | FRTN4478 |
| 4479 07151 | 1 02 17401 | LDA      | DP+1,1   |                                 | FRTN4479 |
| 4480 07152 | 0 03 00673 | ANA      | K118     |                                 | FRTN4480 |
| 4481 07153 | 0 04 07123 | STA      | T2CA     |                                 | FRTN4481 |
| 4482 07154 | 1 02 17401 | LDA      | DP+1,1   |                                 | FRTN4482 |
| 4483 07155 | 140100     | SSP      |          |                                 | FRTN4483 |
| 4484 07156 | 0404 67    | LGR      | 9        | P = 0 (I)                       | FRTN4484 |
| 4485 07157 | 0 04 00061 | STA      | P        |                                 | FRTN4485 |
| 4486 07160 | 0 11 00736 | CAS      | K102     | IF P IS NOT * OR /, GO TO CCA10 | FRTN4486 |
| 4487 07161 | 0 11 00741 | CAS      | K105     |                                 | FRTN4487 |
| 4488 07162 | 0 01 07165 | JMP      | CA10     |                                 | FRTN4488 |
| 4489 07163 | 0 01 07165 | JMP      | CA10     |                                 | FRTN4489 |
| 4490 07164 | 0 01 07220 | JMP      | CA14     | GO TO CA14                      | FRTN4490 |
| 4491 07165 | 0 15 07124 | CA10 STX | T9CA     |                                 | FRTN4491 |
| 4492 07166 | 0 02 07121 | LDA      | TOCA     |                                 | FRTN4492 |
| 4493 07167 | 101400     | SMI      |          |                                 | FRTN4493 |
| 4494 07170 | 0 01 07203 | JMP      | CA13     |                                 | FRTN4494 |
| 4495 07171 | 0 35 07120 | LDX      | KM8      |                                 | FRTN4495 |
| 4496 07172 | 0 02 00061 | LDA      | P        |                                 | FRTN4496 |
| 4497 07173 | 1 11 14554 | CAS      | CA90+8,1 |                                 | FRTN4497 |
| 4498 07174 | 0 01 07176 | JMP      | **2      |                                 | FRTN4498 |
| 4499 07175 | 0 01 07201 | JMP      | **4      |                                 | FRTN4499 |
| 4500 07176 | 0 12 00000 | IRS      | 0        |                                 | FRTN4500 |
| 4501 07177 | 0 01 07173 | JMP      | *-4      |                                 | FRTN4501 |
| 4502 07200 | 0 01 07400 | JMP      | CA45     |                                 | FRTN4502 |
| 4503 07201 | 1 02 14564 | LDA      | CA91+8,1 |                                 | FRTN4503 |
| 4504 07202 | 0 04 00061 | STA      | P        |                                 | FRTN4504 |
| 4505 07203 | 0 35 00762 | CA13 LDX | K130     |                                 | FRTN4505 |
| 4506 07204 | 0 02 00061 | LDA      | P        |                                 | FRTN4506 |
| 4507 07205 | 1 11 14554 | CAS      | CA90+8,1 |                                 | FRTN4507 |
| 4508 07206 | 0 01 07210 | JMP      | **2      |                                 | FRTN4508 |
| 4509 07207 | 0 01 07215 | JMP      | CA50     |                                 | FRTN4509 |
| 4510 07210 | 0 12 00000 | IRS      | 0        |                                 | FRTN4510 |
| 4511 07211 | 0 01 07205 | JMP      | *-4      |                                 | FRTN4511 |

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|------------|------------|----------|--------|---------------------|----------|
| 4512 07212 | 0 35 07124 | LDX      | T9CA   |                     | FRTN4512 |
| 4513 07213 | 1 02 17401 | LDA      | DP+1,1 |                     | FRTN4513 |
| 4514 07214 | 0 01 07216 | JMP      | **2    |                     | FRTN4514 |
| 4515 07215 | 140040     | CA50 CRA |        |                     | FRTN4515 |
| 4516 07216 | 0 04 07121 | STA      | TOCA   |                     | FRTN4516 |
| 4517 07217 | 0 35 07124 | LDX      | T9CA   |                     | FRTN4517 |
| 4518 07220 | 1 02 17400 | CA14 LDA | DP+1   |                     | FRTN4518 |
| 4519 07221 | 0 04 00057 | STA      | 01     | 01=A(I)             | FRTN4519 |
| 4520 07222 | 1 02 17402 | LDA      | DP+2,1 |                     | FRTN4520 |
| 4521 07223 | 0 04 00060 | STA      | 02     | 02 = A (I+2)        | FRTN4521 |
| 4522 07224 | 0 02 07123 | LDA      | T2CA   |                     | FRTN4522 |
| 4523 07225 | 101040     | SNZ      |        |                     | FRTN4523 |
| 4524 07226 | 0 01 07355 | JMP      | CA37   | IF ZERO, GO TO CA37 | FRTN4524 |
| 4525 07227 | 1 02 17377 | LDA      | DP-1,1 |                     | FRTN4525 |
| 4526 07230 | 140100     | SSP      |        |                     | FRTN4526 |
| 4527 07231 | 0404 67    | LGR      | 9      |                     | FRTN4527 |
| 4528 07232 | 0 04 07122 | STA      | T1CA   |                     | FRTN4528 |
| 4529 07233 | 1 02 17377 | LDA      | DP-1,1 |                     | FRTN4529 |
| 4530 07234 | 0 03 00673 | ANA      | K118   | IF T2 .GT. I (I-2)  | FRTN4530 |
| 4531 07235 | 0 07 07123 | SUR      | T2CA   |                     | FRTN4531 |
| 4532 07236 | 100400     | SPL      |        |                     | FRTN4532 |
| 4533 07237 | 0 01 07260 | JMP      | CA18   |                     | FRTN4533 |
| 4534 07240 | 100040     | SZE      |        |                     | FRTN4534 |
| 4535 07241 | 0 01 07130 | JMP      | CA04   |                     | FRTN4535 |
| 4536 07242 | 0 02 00060 | LDA      | 02     |                     | FRTN4536 |
| 4537 07243 | 0 07 07512 | SUR      | ACCP   |                     | FRTN4537 |
| 4538 07244 | 100040     | SZE      |        |                     | FRTN4538 |
| 4539 07245 | 0 01 07130 | JMP      | CA04   |                     | FRTN4539 |
| 4540 07246 | 0 02 00061 | LDA      | P      |                     | FRTN4540 |
| 4541 07247 | 0 07 00737 | SUR      | K103   |                     | FRTN4541 |
| 4542 07250 | 101400     | SMI      |        |                     | FRTN4542 |
| 4543 07251 | 0 01 07370 | JMP      | CA39   |                     | FRTN4543 |
| 4544 07252 | 0 02 07122 | LDA      | T1CA   |                     | FRTN4544 |
| 4545 07253 | 0 07 00061 | SUR      | P      |                     | FRTN4545 |
| 4546 07254 | 100040     | SZE      |        |                     | FRTN4546 |
| 4547 07255 | 0 02 00735 | LDA      | K101   | GO TO               | FRTN4547 |
| 4548 07256 | 141206     | AQA      |        | P = - OR +          | FRTN4548 |

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|      |       |            |      |        |        |                     |          |
|------|-------|------------|------|--------|--------|---------------------|----------|
| 4549 | 07257 | 0 04 00061 | STA  | P      |        |                     | FRTN4549 |
| 4550 | 07260 | 0 35 00626 | CA18 | LDX    | I      |                     | FRTN4550 |
| 4551 | 07261 | 1 02 17402 | CA20 | LDA    | DP+2,1 |                     | FRTN4551 |
| 4552 | 07262 | 1 04 17400 | STA  | DP,1   |        | AOIN(J) = AOIN(J+2) | FRTN4552 |
| 4553 | 07263 | 1 02 17403 | LDA  | DP+3,1 |        |                     | FRTN4553 |
| 4554 | 07264 | 1 04 17401 | STA  | DP+1,1 |        |                     | FRTN4554 |
| 4555 | 07265 | 140100     | SSP  |        |        |                     | FRTN4555 |
| 4556 | 07266 | 101040     | SNZ  |        |        |                     | FRTN4556 |
| 4557 | 07267 | 0 01 07273 | JMP  | CA22   |        |                     | FRTN4557 |
| 4558 | 07270 | 0 12 00000 | IRS  | 0      |        | J = J+2             | FRTN4558 |
| 4559 | 07271 | 0 12 00000 | IRS  | 0      |        |                     | FRTN4559 |
| 4560 | 07272 | 0 01 07261 | JMP  | CA20   |        |                     | FRTN4560 |
| 4561 | 07273 | 0 35 00626 | CA22 | LDX    | I      |                     | FRTN4561 |
| 4562 | 07274 | 1 02 17401 | LDA  | DP+1,1 |        |                     | FRTN4562 |
| 4563 | 07275 | 140100     | SSP  |        |        | IF O (I) = ,        | FRTN4563 |
| 4564 | 07276 | 0404 67    | LGR  | 9      |        |                     | FRTN4564 |
| 4565 | 07277 | 0 11 00061 | CAS  | P      |        |                     | FRTN4565 |
| 4566 | 07300 | 0 01 07304 | JMP  | CA24   |        |                     | FRTN4566 |
| 4567 | 07301 | 0 11 00754 | CAS  | K134   |        |                     | FRTN4567 |
| 4568 | 07302 | 0 01 07304 | JMP  | CA24   |        |                     | FRTN4568 |
| 4569 | 07303 | 0 01 07332 | JMP  | CA30   |        | GO TO CA30          | FRTN4569 |
| 4570 | 07304 | 0 10 07411 | CA24 | JST    | ST00   | TRIAD SEARCH        | FRTN4570 |
| 4571 | 07305 | 0 02 00061 | LDA  | P      |        |                     | FRTN4571 |
| 4572 | 07306 | 0 11 00677 | CAS  | K132   |        | IF P = +,*, AND, OR | FRTN4572 |
| 4573 | 07307 | 0 01 07330 | JMP  | CA28   |        |                     | FRTN4573 |
| 4574 | 07310 | 0 01 07355 | JMP  | CA37   |        | GO TO CA37          | FRTN4574 |
| 4575 | 07311 | 0 11 00743 | CAS  | K107   |        |                     | FRTN4575 |
| 4576 | 07312 | 0 01 07330 | JMP  | CA28   |        | ELSE, GO TO CA26    | FRTN4576 |
| 4577 | 07313 | 0 01 07355 | JMP  | CA37   |        |                     | FRTN4577 |
| 4578 | 07314 | 0 11 00742 | CAS  | K106   |        |                     | FRTN4578 |
| 4579 | 07315 | 0 01 07330 | JMP  | CA28   |        |                     | FRTN4579 |
| 4580 | 07316 | 0 01 07355 | JMP  | CA37   |        |                     | FRTN4580 |
| 4581 | 07317 | 0 11 00737 | CAS  | K103   |        |                     | FRTN4581 |
| 4582 | 07320 | 0 01 07330 | JMP  | CA28   |        |                     | FRTN4582 |
| 4583 | 07321 | 0 01 07355 | JMP  | CA37   |        |                     | FRTN4583 |
| 4584 | 07322 | 0 11 00735 | CAS  | K101   |        |                     | FRTN4584 |
| 4585 | 07323 | 0 01 07325 | JMP  | CA26   |        |                     | FRTN4585 |

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|------|-------|------------|------|--------|------|------------------|----------|
| 4586 |       | *          |      |        |      |                  | FRTN4586 |
| 4587 |       | *          |      |        |      |                  | FRTN4587 |
| 4588 |       | *          |      |        |      |                  | FRTN4588 |
| 4589 | 07324 | 0 01 07355 | JMP  | CA37   |      |                  | FRTN4589 |
| 4590 | 07325 | 0 11 00736 | CA26 | CAS    | K102 |                  | FRTN4590 |
| 4591 | 07326 | 0 01 07330 | JMP  | *+2    |      | IF P = -         | FRTN4591 |
| 4592 | 07327 | 0 01 07352 | JMP  | CA35   |      | GO TO            | FRTN4592 |
| 4593 | 07330 | 0 02 00057 | CA26 | LDA    | O1   |                  | FRTN4593 |
| 4594 | 07331 | 0 10 07456 | JST  | TC00   |      | TEMP STORE CHECK | FRTN4594 |
| 4595 | 07332 | 0 02 00060 | CA30 | LDA    | O2   |                  | FRTN4595 |
| 4596 | 07333 | 0 10 07456 | JST  | TC00   |      | TEMP STORE CHECK | FRTN4596 |
| 4597 | 07334 | 0 10 07470 | CA31 | JST    | ET00 | ENTER TRIAD      | FRTN4597 |
| 4598 | 07335 | 0 35 00626 | CA32 | LDX    | I    |                  | FRTN4598 |
| 4599 | 07336 | 0 02 00057 | LDA  | O1     |      |                  | FRTN4599 |
| 4600 | 07337 | 1 04 17400 | STA  | DP,1   |      |                  | FRTN4600 |
| 4601 | 07340 | 1 02 17401 | LDA  | DP+1,1 |      |                  | FRTN4601 |
| 4602 | 07341 | 0400 61    | LRL  | 15     |      |                  | FRTN4602 |
| 4603 | 07342 | 0 02 07121 | LDA  | TOCA   |      |                  | FRTN4603 |
| 4604 | 07343 | 0404 61    | LGR  | 15     |      |                  | FRTN4604 |
| 4605 | 07344 | 0410 61    | LLL  | 15     |      |                  | FRTN4605 |
| 4606 | 07345 | 1 04 17401 | STA  | DP+1,1 |      |                  | FRTN4606 |
| 4607 | 07346 | 0 02 07123 | LDA  | T2CA   |      | IF T2 NOT ZERO,  | FRTN4607 |
| 4608 | 07347 | 100040     | SZF  |        |      |                  | FRTN4608 |
| 4609 | 07350 | 0 01 07130 | JMP  | CA04   |      | GO TO CA04       | FRTN4609 |
| 4610 | 07351 | 0 01 07125 | JMP* | CA00   |      | ELSE, RETURN     | FRTN4610 |
| 4611 | 07352 | 0 02 07121 | CA35 | LDA    | TOCA |                  | FRTN4611 |
| 4612 | 07353 | 0 05 13021 | ERA  | CM10   |      |                  | FRTN4612 |
| 4613 | 07354 | 0 04 07121 | STA  | TOCA   |      |                  | FRTN4613 |
| 4614 | 07355 | 0 02 00060 | CA37 | LDA    | O2   |                  | FRTN4614 |
| 4615 | 07356 | 0 13 00057 | IMA  | O1     |      | O1 = O2          | FRTN4615 |
| 4616 | 07357 | 0 04 00060 | STA  | O2     |      |                  | FRTN4616 |
| 4617 | 07360 | 101040     | SNZ  |        |      | IF O2 = 0,       | FRTN4617 |
| 4618 | 07361 | 0 01 07335 | JMP  | CA32   |      | GO TO CA32       | FRTN4618 |
| 4619 |       | *          |      |        |      |                  | FRTN4619 |
| 4620 |       | *          |      |        |      |                  | FRTN4620 |
| 4621 |       | *          |      |        |      |                  | FRTN4621 |
| 4622 | 07361 | 0 07411    | JST  | ST00   |      | TRIAD SEARCH     | FRTN4622 |

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|      |       |                 |      |      |                  |  |          |
|------|-------|-----------------|------|------|------------------|--|----------|
| 4623 | 07363 | 0 02 07121      | LDA  | TOCA |                  |  | FRTN4623 |
| 4624 | 07364 | 101400          | SMI  |      |                  |  | FRTN4624 |
| 4625 | 07365 | 0 01 07330      | JMP  | CA28 | GO TO CA28       |  | FRTN4625 |
| 4626 | 07366 | 0 02 00061      | LDA  | P    |                  |  | FRTN4626 |
| 4627 | 07367 | 0 01 07325      | JMP  | CA26 | ELSE, GO TO CA26 |  | FRTN4627 |
| 4628 | 07370 | 0 07 00750 CA39 | SUB  | K128 |                  |  | FRTN4628 |
| 4629 | 07371 | 101040          | SNZ  |      | IF P = , OR      |  | FRTN4629 |
| 4630 | 07372 | 0 01 07130      | JMP  | CA04 |                  |  | FRTN4630 |
| 4631 | 07373 | 0 02 07122      | LDA  | T1CA |                  |  | FRTN4631 |
| 4632 | 07374 | 0 07 00740      | SUB  | K104 |                  |  | FRTN4632 |
| 4633 | 07375 | 100040          | SZE  |      | ELSE,            |  | FRTN4633 |
| 4634 | 07376 | 0 01 07260      | JMP  | CA18 | GO TO CA18       |  | FRTN4634 |
| 4635 | 07377 | 0 01 07130      | JMP  | CA04 |                  |  | FRTN4635 |
| 4636 | 07400 | 0 02 07122 CA45 | LDA  | T1CA |                  |  | FRTN4636 |
| 4637 | 07401 | 0 04 00626      | STA  | I    | I = T1           |  | FRTN4637 |
| 4638 | 07402 | 0 04 07123      | STA  | T2CA |                  |  | FRTN4638 |
| 4639 | 07403 | 140040          | CRA  |      |                  |  | FRTN4639 |
| 4640 | 07404 | 0 04 07121      | STA  | TOCA | *****            |  | FRTN4640 |
| 4641 | 07405 | 0 04 00060      | STA  | O2   | O2 = C = 0       |  | FRTN4641 |
| 4642 | 07406 | 0 07 00671      | SUB  | K110 | P = C            |  | FRTN4642 |
| 4643 | 07407 | 0 04 00061      | STA  | P    |                  |  | FRTN4643 |
| 4644 | 07410 | 0 01 07304      | JMP  | CA24 | GO TO CA24       |  | FRTN4644 |
| 4645 |       |                 | EJCT |      |                  |  | FRTN4645 |

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|      |       |             |      |                                                   |                            |          |
|------|-------|-------------|------|---------------------------------------------------|----------------------------|----------|
| 4646 |       | *           |      | IF THE CURRENT TRIAD (IN WORKING STORAGE) MATCHES |                            | FRTN4646 |
| 4647 |       | *           |      | ANY TRIAD TABLE ENTRY, EXIT WITH THE              |                            | FRTN4647 |
| 4648 |       | *           |      | POINTER VALUE OF THE MATCHING ENTRY               |                            | FRTN4648 |
| 4649 |       | *           |      | (THIS ACCOMPLISHES ELIMINATION OF REDUNDANT       |                            | FRTN4649 |
| 4650 |       | *           |      | SUBEXPRESSION CALCULATIONS.                       |                            | FRTN4650 |
| 4651 | 07411 | 0 000000    | ST00 | DAC **                                            | TRIAD SEARCH               | FRTN4651 |
| 4652 | 07412 | 0 02 00045  | LDA  | F                                                 |                            | FRTN4652 |
| 4653 | 07413 | 0 06 00737  | ADD  | K103                                              |                            | FRTN4653 |
| 4654 | 07414 | 100040      | SZE  |                                                   |                            | FRTN4654 |
| 4655 | 07415 | 0 01 07427  | JMP  | ST10                                              | GO TO ST10                 | FRTN4655 |
| 4656 | 07416 | 0 02 00061  | ST05 | LDA                                               | P                          | FRTN4656 |
| 4657 | 07417 | 0 07 00701  | SUB  | K139                                              | ELSE, IF P = X             | FRTN4657 |
| 4658 | 07420 | 101040      | SNZ  |                                                   |                            | FRTN4658 |
| 4659 | 07421 | 0 01 07334  | JMP  | CA31                                              | GO TO CA31                 | FRTN4659 |
| 4660 | 07422 | 0 02 00057  | LDA  | O1                                                | ELSE, IF O1=ACCP           | FRTN4660 |
| 4661 | 07423 | 0 07 07512  | SUB  | ACCP                                              |                            | FRTN4661 |
| 4662 | 07424 | 101040      | SNZ  |                                                   |                            | FRTN4662 |
| 4663 | 07425 | 0 01 07332  | JMP  | CA30                                              | GO TO CA30                 | FRTN4663 |
| 4664 | 07426 | -0 01 07411 | JMP* | ST00                                              | ELSE, RETURN               | FRTN4664 |
| 4665 | 07427 | 0 05 00113  | ST10 | LDA                                               |                            | FRTN4665 |
| 4666 | 07430 | 0 02 00000  | ST20 | LDA                                               | O                          | FRTN4666 |
| 4667 | 07431 | 0 07 00737  | SUB  | K103                                              |                            | FRTN4667 |
| 4668 | 07432 | 0 04 00000  | STA  | O                                                 | J = J-2                    | FRTN4668 |
| 4669 | 07433 | 0 07 00627  | SUB  | L                                                 | IF J .LT. L                | FRTN4669 |
| 4670 | 07434 | 100400      | SFL  |                                                   |                            | FRTN4670 |
| 4671 | 07435 | 0 01 07414  | JMP  | ST05                                              | GO TO ST05                 | FRTN4671 |
| 4672 | 07436 | 0 02 00060  | LDA  | O2                                                |                            | FRTN4672 |
| 4673 | 07437 | 1 07 17400  | SUB  | DP+1                                              | IF O1/P/O2 .NE. O1/P/O2(J) | FRTN4673 |
| 4674 | 07440 | 100040      | SZF  |                                                   |                            | FRTN4674 |
| 4675 | 07441 | 0 01 07430  | JMP  | ST20                                              | GO TO ST20                 | FRTN4675 |
| 4676 | 07442 | 1 02 17402  | LDA  | DP+2,1                                            |                            | FRTN4676 |
| 4677 | 07443 | 140100      | SSP  |                                                   | EXTRACT OFF STORE BIT      | FRTN4677 |
| 4678 | 07444 | 0 07 00061  | SUB  | P                                                 |                            | FRTN4678 |
| 4679 | 07445 | 100040      | SZE  |                                                   |                            | FRTN4679 |
| 4680 | 07446 | 0 01 07430  | JMP  | ST20                                              |                            | FRTN4680 |
| 4681 | 07447 | 0 02 00057  | LDA  | O1                                                |                            | FRTN4681 |
| 4682 | 07450 | 1 07 17401  | SUB  | DP+1,1                                            |                            | FRTN4682 |

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|            |            |      |      |            |  |          |
|------------|------------|------|------|------------|--|----------|
| 4683 07451 | 100040     | SZE  |      |            |  |          |
| 4684 07452 | 0 01 07430 | JMP  | ST20 | 01 =       |  | FRTN4683 |
| 4685 07453 | 0 02 00000 | LDA  | 0    |            |  | FRTN4684 |
| 4686 07454 | 0 04 00057 | STA  | 01   |            |  | FRTN4685 |
| 4687 07455 | 0 01 07335 | JMP  | CA32 | GO TO CA32 |  | FRTN4686 |
| 4688       |            | EJCT |      |            |  | FRTN4687 |
|            |            |      |      |            |  | FRTN4688 |

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|            |             |          |        |                                            |  |          |
|------------|-------------|----------|--------|--------------------------------------------|--|----------|
| 4689       |             | *        |        | IF J IS A REFERENCE TO A TRIAD, THE TEMP   |  | FRTN4689 |
| 4690       |             | *        |        | STORE BIT OF THE REFERENCED TRIAD IS SET.) |  | FRTN4690 |
| 4691 07454 | 0 000000    | TCCC DAC | **     | TEMP STORE CHECK                           |  | FRTN4691 |
| 4692 07457 | 0 04 00000  | STA      | 0      |                                            |  | FRTN4692 |
| 4693 07460 | 0 02 00637  | LDA      | ABAR   |                                            |  | FRTN4693 |
| 4694 07461 | 0 07 00000  | SUB      | 0      |                                            |  | FRTN4694 |
| 4695 07462 | 101400      | SMI      |        | IS J .GR. ABAR                             |  | FRTN4695 |
| 4696 07463 | -0 01 07456 | JMP*     | TC00   | NO.                                        |  | FRTN4696 |
| 4697 07464 | 1 02 17402  | LDA      | DP+2,1 | YES.                                       |  | FRTN4697 |
| 4698 07465 | 140500      | SSW      |        |                                            |  | FRTN4698 |
| 4699 07466 | 1 04 17402  | STA      | DP+2,1 | S(J) = 1                                   |  | FRTN4699 |
| 4700 07467 | -0 01 07456 | JMP*     | TC00   |                                            |  | FRTN4700 |
| 4701       |             | EJCT     |        |                                            |  | FRTN4701 |

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4702      *
4703      *
4704      *
4705      *
4706      *
4707      *
4708      *
4709 07470 0 000000 ET00 DAC **
4710 07471 0 15 07511 STX ETXS          SAVE INDEX
4711 07472 0 02 00627 LDA L
4712 07473 0 07 00737 SUR K103          =3
4713 07474 0 04 00627 STA L          L=L-3
4714 07475 0 04 07512 STA ACCP        SET ACCUM PTR TO LAST TRIAD ENTRY
4715 07476 0 04 00000 STA 0          J=L
4716 07477 0 02 00061 LDA P
4717 07500 1 04 17402 STA DP+2,1      P(J) = P
4718 07501 0 02 00057 LDA 01
4719 07502 1 04 17401 STA DP+1,1      01(J) = 01
4720 07503 0 02 00060 LDA 02
4721 07504 1 04 17400 STA DP,1        02(J) = 02
4722 07505 0 02 00000 LDA 0
4723 07506 0 04 00057 STA 01          01=J
4724 07507 0 35 07511 LDX ETXS        RESTORE INDEX
4725 07510 -0 01 07470 JMP* ET00
4726 07511      ETXS BSS 1          TEMP STORAGE FOR INDEX
4727 07512 0 000000 ACCP DAC **      ACCUM POINTER
4728      EJCT
```

FRTN4702  
FRTN4703  
FRTN4704  
FRTN4705  
FRTN4706  
FRTN4707  
FRTN4708  
FRTN4709  
FRTN4710  
FRTN4711  
FRTN4712  
FRTN4713  
FRTN4714  
FRTN4715  
FRTN4716  
FRTN4717  
FRTN4718  
FRTN4719  
FRTN4720  
FRTN4721  
FRTN4722  
FRTN4723  
FRTN4724  
FRTN4725  
FRTN4726  
FRTN4727  
FRTN4728

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```
4729      *
4730      *
4731      *
4732      *
4733      *
4734      *
4735      *
4736 07513 0 00 00000 TOGE PZE 0
4737 07514 0 000000 GE00 DAC **
4738 07515 140040 CRA
4739 07516 0 04 07513 STA TOGE
4740 07517 0 02 14474 LDA K17          TEST
4741 07520 0 10 02352 JST TS00
4742 07521 0 10 02242 GE10 JST NA00    INPUT NAME
4743 07522 0 02 00642 LDA D          IFF D=0,
4744 07523 101040 SMZ
4745 07524 0 01 07546 JMP GE20        GO TO GE20
4746 07525 0 06 00737 ADD K103
4747 07526 0 04 00642 STA D
4748 07527 0 06 00655 ADD D0
4749 07530 0 04 00626 STA I          IF FULL, GO TO GE30
4750 07531 0 35 00625 LDX A
4751 07532 1 02 17400 LDA DP,1
4752 07533 0 35 00626 LDX I
4753 07534 1 04 17400 STA DP,1
4754 07535 0 35 00625 LDX A
4755 07536 1 02 17401 LDA DP+1,1
4756 07537 0 35 00626 LDX I
4757 07540 1 04 17377 STA DP-1,1
4758 07541 0 02 00625 LDA A
4759 07542 1 04 17376 STA DP-2,1
4760 07543 0 35 00625 LDX A
4761 07544 140040 CRA
4762 07545 1 04 17401 STA DP+1,1      CLEAR OLD USAGE
4763 07546 0 02 00741 GE20 LDA K105
4764 07547 000201 IAH
4765 07550 0 02 00643 LDA RPL
```

FRTN4729  
FRTN4730  
FRTN4731  
FRTN4732  
FRTN4733  
FRTN4734  
FRTN4735  
FRTN4736  
FRTN4737  
FRTN4738  
FRTN4739  
FRTN4740  
FRTN4741  
FRTN4742  
FRTN4743  
FRTN4744  
FRTN4745  
FRTN4746  
FRTN4747  
FRTN4748  
FRTN4749  
FRTN4750  
FRTN4751  
FRTN4752  
FRTN4753  
FRTN4754  
FRTN4755  
FRTN4756  
FRTN4757  
FRTN4758  
FRTN4759  
FRTN4760  
FRTN4761  
FRTN4762  
FRTN4763  
FRTN4764  
FRTN4765

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|      |       |             |      |        |                             |  |          |
|------|-------|-------------|------|--------|-----------------------------|--|----------|
| 4766 | 07551 | 0 06 07513  | ADD  | TOGE   |                             |  | FRTN4766 |
| 4767 | 07552 | 0 06 00737  | ADD  | K103   |                             |  | FRTN4767 |
| 4768 | 07553 | 0 10 03571  | JST  | AFC0   | (B) = DUM                   |  | FRTN4768 |
| 4769 | 07554 | 0 12 07513  | IRS  | TOGE   | DEFINE AFT (A=RPL+T0+3)     |  | FRTN4769 |
| 4770 | 07555 | 0 02 00754  | LDA  | K134   | T0 = T0+1                   |  | FRTN4770 |
| 4771 | 07556 | 0 07 00067  | SUB  | TC     |                             |  | FRTN4771 |
| 4772 | 07557 | 101040      | SNZ  |        | IF TC = ,                   |  | FRTN4772 |
| 4773 | 07560 | 0 01 07521  | JMP  | GE10   | GO TO GE10                  |  | FRTN4773 |
| 4774 | 07561 | 0 10 02360  | JST  | IP00   | INPUT OPERATOR              |  | FRTN4774 |
| 4775 | 07562 | 0 10 13243  | JST  | OC00   | OUTPUT AB5 (0)              |  | FRTN4775 |
| 4776 | 07563 | 0 02 07513  | LDA  | TOGE   |                             |  | FRTN4776 |
| 4777 | 07564 | 0 04 00774  | STA  | ID     | ID = T0                     |  | FRTN4777 |
| 4778 | 07565 | 0 02 07601  | LDA  | K69    |                             |  | FRTN4778 |
| 4779 | 07566 | 0 04 00052  | STA  | NAMF+1 | NAMF = AT                   |  | FRTN4779 |
| 4780 | 07567 | 0 10 02501  | JST  | NF00   | FILL IN REMAINING NAMF      |  | FRTN4780 |
| 4781 | 07570 | 0 10 11332  | JST  | OL00   | OUTPUT OBJECT LINK          |  | FRTN4781 |
| 4782 | 07571 | 0 02 07513  | LDA  | TOGE   |                             |  | FRTN4782 |
| 4783 | 07572 | 140407      | TCA  |        |                             |  | FRTN4783 |
| 4784 | 07573 | 0 04 07513  | STA  | TOGE   |                             |  | FRTN4784 |
| 4785 | 07574 | 140040      | CRA  |        |                             |  | FRTN4785 |
| 4786 | 07575 | 0 10 13243  | JST  | OC00   | OUTPUT NUMBER OF ARGS       |  | FRTN4786 |
| 4787 | 07576 | 0 12 07513  | IRS  | TOGE   | OUTPUT SPACE FOR ARG. ADDR. |  | FRTN4787 |
| 4788 | 07577 | 0 01 07574  | JMP  | **3    |                             |  | FRTN4788 |
| 4789 | 07600 | -0 01 07514 | JMP* | GE00   | RETURN                      |  | FRTN4789 |
| 4790 | 07601 | 140724      | K69  | BCI    | AT                          |  | FRTN4790 |
| 4791 |       |             |      | EJCT   |                             |  | FRTN4791 |

\* NAME: FRTN

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|      |       |             |      |                  |                                      |  |          |
|------|-------|-------------|------|------------------|--------------------------------------|--|----------|
| 4792 |       |             | *    |                  |                                      |  | FRTN4792 |
| 4793 |       |             | *    |                  |                                      |  | FRTN4793 |
| 4794 |       |             | *    | *****            |                                      |  | FRTN4794 |
| 4795 |       |             | *    | *EXCHANGE LINKS* |                                      |  | FRTN4795 |
| 4796 |       |             | *    | *****            |                                      |  | FRTN4796 |
| 4797 | 07602 | 0 000000    | EL00 | DAC              | CL SUBA IS INTERCHANGED WITH CL SUBF |  | FRTN4797 |
| 4798 | 07603 | 0 35 00625  | LDX  | A                | **                                   |  | FRTN4798 |
| 4799 | 07604 | 1 02 17400  | LDA  | DP,1             |                                      |  | FRTN4799 |
| 4800 | 07605 | 0 04 07624  | STA  | EL90             | CL (F) == CL (A)                     |  | FRTN4800 |
| 4801 | 07606 | 0 35 00045  | LDX  | F                |                                      |  | FRTN4801 |
| 4802 | 07607 | 0 10 07613  | JST  | EL40             |                                      |  | FRTN4802 |
| 4803 | 07610 | 0 35 00625  | LDX  | A                |                                      |  | FRTN4803 |
| 4804 | 07611 | 0 10 07613  | JST  | EL40             |                                      |  | FRTN4804 |
| 4805 | 07612 | -0 01 07602 | JMP* | EL00             |                                      |  | FRTN4805 |
| 4806 | 07613 | 0 000000    | EL40 | DAC              | **                                   |  | FRTN4806 |
| 4807 | 07614 | 1 02 17400  | LDA  | DP,1             |                                      |  | FRTN4807 |
| 4808 | 07615 | 0 13 07624  | IMA  | EL90             |                                      |  | FRTN4808 |
| 4809 | 07616 | 0 03 00673  | ANA  | K118             |                                      |  | FRTN4809 |
| 4810 | 07617 | 1 13 17400  | IMA  | DP,1             |                                      |  | FRTN4810 |
| 4811 | 07620 | 0 03 00674  | ANA  | K119             |                                      |  | FRTN4811 |
| 4812 | 07621 | 1 06 17400  | ADD  | DP,1             |                                      |  | FRTN4812 |
| 4813 | 07622 | 1 04 17400  | STA  | DP,1             |                                      |  | FRTN4813 |
| 4814 | 07623 | -0 01 07613 | JMP* | EL40             |                                      |  | FRTN4814 |
| 4815 | 07624 | 0 00 00000  | EL90 | PZE              | 0                                    |  | FRTN4815 |
| 4816 |       |             |      | EJCT             |                                      |  | FRTN4816 |

\* NAME: FRTN

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```
4817      *
4818      *
4819      *
4820      *
4821      *
4822 07625  0 000000 NM00 DAC **
4823 07626  0 02 00026 LDA AT
4824 07627  0 07 00740 SUB K104
4825 07630 100040 SZE
4826 07631 -0 01 07625 JMP* NM00
4827 07632  0 10 02615 JST ER00
4828 07633 141722 BCI 1*CR
4829      EJCT
```

\*\*\*\*\*  
\*NON COMMON TEST\*  
\*\*\*\*\*

NON-COMMON TEST

ILLEGAL COMMON REFERENCE

FRTN4817  
FRTN4818  
FRTN4819  
FRTN4820  
FRTN4821  
FRTN4822  
FRTN4823  
FRTN4824  
FRTN4825  
FRTN4826  
FRTN4827  
FRTN4828  
FRTN4829

\* NAME: FRTN

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```
4830      *
4831      *
4832      *
4833      *
4834      *
4835 07634  0 000000 ND00 DAC **
4836 07635  0 02 00026 LDA AT
4837 07636  0 07 00741 SUB K105
4838 07637 100040 SZE
4839 07640  0 01 07643 JMP ND10
4840 07641  0 10 02615 JST ER00
4841 07642 142301 BCI 1*DA
4842 07643  0 10 02415 ND10 JST NS00
4843 07644 -0 01 07634 JMP* ND00
4844      EJCT
```

\*\*\*\*\*  
\*NON DUMMY OR SUBPRO TEST\*  
\*\*\*\*\*

TEST

ILLEGAL USE OF A DUMMY ARGUMENT

FRTN4830  
FRTN4831  
FRTN4832  
FRTN4833  
FRTN4834  
FRTN4835  
FRTN4836  
FRTN4837  
FRTN4838  
FRTN4839  
FRTN4840  
FRTN4841  
FRTN4842  
FRTN4843  
FRTN4844

\* NAME: FRTN

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```
4845      *
4846      *
4847      *
4848      *
4849      *
4850      *
4851      *
4852      *
4853 07645 0 000000 IG00 DAC **      INPUT INTEGER
4854 07646 0 10 01350 JST DN00      INPUT - DNA
4855 07647 0 02 01342 LDA F1
4856 07650 100040      SZE
4857 07651 0 01 07663 JMP IG20      IF F1 = 0,
4858 07652 0 02 00054 LDA NT          AND NT = 1,
4859 07653 101040      SNZ          AND IM = INT,
4860 07654 0 01 07663 JMP IG20      AND TID L2**15,
4861 07655 0 02 00706 LDA IM          GO TO IG10
4862 07656 0 07 00735 SUB K101      ELSE, GO TO IG20
4863 07657 100040      SZE
4864 07660 0 01 07663 JMP IG20
4865 07661 0 02 00774 LDA TID
4866 07662 -0 01 07645 JMP* IG00
4867 07663 0 10 02615 IG20 JST ER00      ERROR
4868 07664 144716      BCI 1*IN      INTEGER REQUIRED
4869      EJECT
```

FRTN4845  
FRTN4846  
FRTN4847  
FRTN4848  
FRTN4849  
FRTN4850  
FRTN4851  
FRTN4852  
FRTN4853  
FRTN4854  
FRTN4855  
FRTN4856  
FRTN4857  
FRTN4858  
FRTN4859  
FRTN4860  
FRTN4861  
FRTN4862  
FRTN4863  
FRTN4864  
FRTN4865  
FRTN4866  
FRTN4867  
FRTN4868  
FRTN4869

\* NAME: FRTN

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```
4870      *
4871      *
4872      *
4873      *
4874      *
4875 07665 0 00 00000 SCT0 PZE 0
4876 07666 0 000000 SCT00 DAC **
4877 07667 0 04 07665 STA SCT0      TO = (A)
4878 07670 140040      CRA
4879 07671 0 04 00053 STA NS
4880 07672 0 04 00065 STA S2
4881 07673 0 04 00066 STA S3
4882 07674 0 02 14474 LDA K17
4883 07675 0 10 02352 JST TS00
4884 07676 0 02 00654 SC10 LDA EBAR      (-TEST
4885 07677 101400      SMI
4886 07700 0 01 07704 JMP SC15      EBAR . GR. 0
4887 07701 0 10 02346 JST XN00      EXAMINE NEXT CHAR.
4888 07702 100040      SZE
4889 07703 0 01 07741 JMP SC70
4890 07704 0 10 07645 SC15 JST IG00      IF (A) NON ZERO,
4891 07705 0 02 07665 LDA SCT0      GO TO SCT0
4892 07706 100040      SZE      INPUT INTEGE
4893 07707 100400      SPL
4894 07710 0 01 07714 JMP SC60
4895 07711 0 02 00774 LDA ID
4896 07712 0 07 00735 SUR K101
4897 07713 0 01 07716 JMP SC30
4898 07714 0 10 02762 SC60 JST AS00
4899 07715 0 02 00625 SC20 LDA A      ASSIGN ITEM
4900 07716 000201 SC30 IAB      S (NS+1) = A
4901 07717 0 02 07753 LDA SC90
4902 07720 0 06 00053 ADD NS
4903 07721 0 04 07754 STA SC91
4904 07722 000201 IAB
4905 07723 -0 04 07754 STA* SC91
4906 07724 0 02 00053 LDA NS
```

FRTN4870  
FRTN4871  
FRTN4872  
FRTN4873  
FRTN4874  
FRTN4875  
FRTN4876  
FRTN4877  
FRTN4878  
FRTN4879  
FRTN4880  
FRTN4881  
FRTN4882  
FRTN4883  
FRTN4884  
FRTN4885  
FRTN4886  
FRTN4887  
FRTN4888  
FRTN4889  
FRTN4890  
FRTN4891  
FRTN4892  
FRTN4893  
FRTN4894  
FRTN4895  
FRTN4896  
FRTN4897  
FRTN4898  
FRTN4899  
FRTN4900  
FRTN4901  
FRTN4902  
FRTN4903  
FRTN4904  
FRTN4905  
FRTN4906

\* NAME: FRTN

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```
4907 07725 141206 AOA
4908 07726 0 04 00053 STA NS
4909 07727 0 07 00737 SUB K103
4910 07730 100040 SZE
4911 07731 0 01 07734 JMP SC50
4912 07732 0 10 02360 SC40 JST IP00
4913 07733 -0 01 07666 JMP* SC00
4914 07734 0 02 00067 SC50 LDA TC
4915 07735 0 07 00754 SUB K134
4916 07736 100040 SZE
4917 07737 0 01 07732 JMP SC40
4918 07740 0 01 07676 JMP SC10
4919 07741 0 10 02260 SC70 JST IR00
4920 07742 0 02 07665 LDA SCT0
4921 07743 101040 SNZ
4922 07744 0 01 07715 JMP SC20
4923 07745 0 02 00026 LDA AT
4924 07746 0 07 00741 SUB K105
4925 07747 101040 SNZ
4926 07750 0 01 07715 JMP SC20
4927 07751 0 10 02615 JST ER00
4928 07752 153304 BCI 1,VD
4929 07753 0 000064 SC90 DAC S1
4930 07754 0 000000 SC91 DAC **
4931 EJECT
```

NS = NS + 1

MORE SUBSCRIPTS PERMITTED  
)-INPJT OPERATOR  
RETURN

TERMINATOR NOT A COMMA  
GO TO SC10  
INPUT INT VARIABLE  
CHECK FOR NON-DUMMY  
VARIABLE DIMENSIONS

ILLEGAL SYMBOLIC SUBSCRIPT

FRTN4907  
FRTN4908  
FRTN4909  
FRTN4910  
FRTN4911  
FRTN4912  
FRTN4913  
FRTN4914  
FRTN4915  
FRTN4916  
FRTN4917  
FRTN4918  
FRTN4919  
FRTN4920  
FRTN4921  
FRTN4922  
FRTN4923  
FRTN4924  
FRTN4925  
FRTN4926  
FRTN4927  
FRTN4928  
FRTN4929  
FRTN4930  
FRTN4931

\* NAME: FRTN

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```
4932 *
4933 *
4934 *
4935 *
4936 *
4937 *
4938 07755 0 000000 IL00 DAC **
4939 07756 0 10 02242 JST NA00
4940 07757 0 02 00026 LDA AT
4941 07760 0 07 00741 SUR K105
4942 07761 100040 SZE
4943 07762 0 01 07765 JMP **3
4944 07763 0 10 02615 JST ER00
4945 07764 142304 BCI 1,DD
4946 07765 0 02 00710 LDA IU
4947 07766 0 07 00737 SUR K103
4948 07767 100040 SZE
4949 07770 0 01 10026 JMP IL30
4950 07771 0 02 00737 LDA K103
4951 07772 0 10 07666 JST SC00
4952 07773 0 10 03317 JST FA00
4953 07774 0 02 00076 LDA ND
4954 07775 0 07 00053 SUB NS
4955 07776 100040 SZE
4956 07777 0 01 10016 JMP IL10
4957 10000 0 02 00066 LDA S3
4958 10001 000201 IAS
4959 10002 0 02 00032 LDA D2
4960 10003 0 10 02462 JST IM00
4961 10004 0 06 00065 ADD S2
4962 10005 000201 IAS
4963 10006 0 02 00031 LDA D1
4964 10007 0 10 02462 JST IM00
4965 10010 0 06 00064 ADD S1
4966 10011 000201 IL16 IAS
4967 10012 0 02 00030 LDA D0
4968 10013 0 10 02462 JST IM00
```

\*\*\*\*\*  
\*INPUT LIST ELEMENT\*  
\*\*\*\*\*

IF THE ITEM IS AN ARRAY, PROCESS THE SUPSCRIPT

INPUT NAME

NON-DUMMY TEST

USAGE ERROR  
DUMMY ITEM IN AN EQUIV. OR DATA LIST  
IF IU NOT APP,

GO TO IL30

INPUT SUBSCRIPTS  
FETCH ASSIGNS  
IF ND = NS

S1 = D\* S1 + D1\* (S2+D2\*S3)  
ELSE, GO TO IL10

FRTN4932  
FRTN4933  
FRTN4934  
FRTN4935  
FRTN4936  
FRTN4937  
FRTN4938  
FRTN4939  
FRTN4940  
FRTN4941  
FRTN4942  
FRTN4943  
FRTN4944  
FRTN4945  
FRTN4946  
FRTN4947  
FRTN4948  
FRTN4949  
FRTN4950  
FRTN4951  
FRTN4952  
FRTN4953  
FRTN4954  
FRTN4955  
FRTN4956  
FRTN4957  
FRTN4958  
FRTN4959  
FRTN4960  
FRTN4961  
FRTN4962  
FRTN4963  
FRTN4964  
FRTN4965  
FRTN4966  
FRTN4967  
FRTN4968

\* NAME: FRTN

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```
4969 10014 0 04 00064 IL18 STA S1 FRTN4969
4970 10015 -0 01 07755 JMP* IL00 FRTN4970
4971 10016 0 02 00053 IL10 LDA NS RETURN FRTN4971
4972 10017 0 07 00735 SUB K101 IF NS NOT 1 FRTN4972
4973 10020 100040 SZE FRTN4973
4974 10021 0 01 10024 JMP IL20 GO TO IL20 FRTN4974
4975 10022 0 02 00064 LDA S1 ELSE, 20 FRTN4975
4976 10023 0 01 10011 JMP IL16 FRTN4976
4977 10024 0 10 02615 IL20 JST ER00 FRTN4977
4978 10025 147304 BCI 1*ND WRONG NUMBER OF DIMENSIONS IN ARRAY ELEMENT FRTN4978
4979 10026 0 10 03274 IL30 JST TV00 TAG VARIABLE FRTN4979
4980 10027 140040 CRA S1 = 0 FRTN4980
4981 10030 0 01 10014 JMP IL18 RETURN FRTN4981
4982 * FRTN4982
4983 * FRTN4983
4984 * FRTN4984
4985 * FRTN4985
4986 * FRTN4986
4987 * FRTN4987
4988 * FRTN4988
4989 * FRTN4989
4990 10031 0 02 00735 R1 LDA K101 FRTN4990
4991 10032 0 04 00631 STA SFF SFF = 1 FRTN4991
4992 10033 0 02 00652 R2 LDA LSTF FRTN4992
4993 10034 100040 SZE IF LSTF = 0 FRTN4993
4994 10035 0 01 10040 JMP R2A FRTN4994
4995 10036 0 10 02615 R2B JST ER00 ILLEGAL STATEMENT FRTN4995
4996 10037 143323 BCI 1*FS NOT FIRST STATEMENT IN SUBPROGRAM FRTN4996
4997 10040 0 10 02242 R2A JST NA00 INPUT NAME FRTN4997
4998 10041 0 02 00625 LDA A FRTN4998
4999 10042 0 04 00632 STA SBF SBF = A FRTN4999
5000 10043 140040 CRA ADDR=0, S/C CODE =0 FRTN5000
5001 10044 0 10 13331 JST ON00 OUTPUT NAME BLOCK TO THE LOADER FRTN5001
5002 10045 0 02 00630 LDA MFL FRTN5002
5003 10046 100040 SZE FRTN5003
5004 10047 0 10 03464 JST DM00 DEFINE IM FRTN5004
5005 10050 0 02 00067 LDA TC FRTN5005
```

\* NAME: FRTN

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```
5006 10051 0 07 00702 SUB CRET IF TC NOT C/R FRTN5006
5007 10052 100040 SZE FRTN5007
5008 10053 0 01 10061 JMP R2C GO TO FRTN5008
5009 10054 0 02 00631 LDA SFF IF SFF = 0 FRTN5009
5010 10055 101040 SNZ FRTN5010
5011 10056 0 01 10065 JMP R2D GO TO R2D FRTN5011
5012 10057 0 10 02615 JST ER00 ERROR FRTN5012
5013 10060 143301 BCI 1*FA FUNCTION HAS NO ARGUMENTS FRTN5013
5014 10061 140040 R2C CRA FRTN5014
5015 10062 0 04 00626 STA I I = 0 FRTN5015
5016 10063 0 10 07514 JST GE00 GENERATE SUBPROGRAM ENTRY FRTN5016
5017 10064 0 01 03637 JMP A1 GO TO C/R TEST FRTN5017
5018 10065 0 10 13243 R2D JST OC00 FRTN5018
5019 10066 0 01 03641 JMP C6 GO TO CONTINJE FRTN5019
5020 EJCT FRTN5020
```

\* NAME: FRTN

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```
5021 *
5022 *
5023 *
5024 *
5025 *
5026 *
5027 *
5028 *
5029 *
5030 *
5031 *
5032 10067 0 02 00735 A3 LDA K101
5033 10070 0 01 10100 JMP A7A
5034 10071 0 02 00736 A4 LDA K102
5035 10072 0 01 10100 JMP A7A
5036 10073 0 02 00742 A5 LDA K106
5037 10074 0 01 10100 JMP A7A
5038 10075 0 02 00741 A6 LDA K105
5039 10076 0 01 10100 JMP A7A
5040 10077 0 02 00737 A7 LDA K103
5041 10100 0 04 00630 A7A STA MFL
5042 10101 0 02 00652 LDA LSTF
5043 10102 101040 SNZ
5044 10103 0 01 10125 JMP A7B
5045 10104 0 02 00656 LDA CC
5046 10105 0 04 10131 STA A790
5047 10106 140040 CRA
5048 10107 0 04 00705 STA ICSW
5049 10110 0 10 01350 JST DN00
5050 10111 0 02 10131 LDA A790
5051 10112 0 04 00656 STA CC
5052 10113 0 04 00705 STA ICSW
5053 10114 0 02 00037 LDA DFL
5054 10115 100040 SZE
5055 10116 0 01 10125 JMP A7B
5056 10117 0 02 00774 LDA TID
5057 10120 0 07 14251 SUB A7K

*****
*INTEGER *
*REAL *
*DOUBLE PRECISION*
*COMPLEX *
*LOGICAL *
*****
THE MODE FLAG (MFL) IS SET TO THE APPROPRIATE
VALUE AND ANY ARRAY INFO IS PROCESSED
INTEGER
TMFL = INT
REAL
TMFL = REAL
DOUBLE PRECISION
TMFL = DBL
COMPLEX
TMFL = CPX
LOGICAL
TMFL = _OG
IF LSTF = 0, GO TO A7B (2)
ELSE,
SAVE CC
INPUT DNA
RESTORE CC
ICSW = IPL
IF DFL NOT = 0, GO TO A7B
IF ID = FUNCTI,
GO TO A}
```

FRTN5021  
FRTN5022  
FRTN5023  
FRTN5024  
FRTN5025  
FRTN5026  
FRTN5027  
FRTN5028  
FRTN5029  
FRTN5030  
FRTN5031  
FRTN5032  
FRTN5033  
FRTN5034  
FRTN5035  
FRTN5036  
FRTN5037  
FRTN5038  
FRTN5039  
FRTN5040  
FRTN5041  
FRTN5042  
FRTN5043  
FRTN5044  
FRTN5045  
FRTN5046  
FRTN5047  
FRTN5048  
FRTN5049  
FRTN5050  
FRTN5051  
FRTN5052  
FRTN5053  
FRTN5054  
FRTN5055  
FRTN5056  
FRTN5057

\* NAME: FRTN

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```
5058 10121 101040 SNZ
5059 10122 0 01 04157 JMP A9
5060 10123 0 10 02615 JST ER00
5061 10124 152306 BCI 1,TF
5062 10125 0 10 02242 A7B JST NA00
5063 10126 0 02 00630 LDA MFL
5064 10127 0 10 03464 JST DM00
5065 10130 0 01 10226 JMP B7
5066 10131 0 00 00000 A790 PZE 0
5067 EJCT

SKIP IF NOT 'FUNCTION'
FUNCTION PROCESSOR
CONSTRUCTION ERROR
'TYPE' NOT FOLLOWED BY 'FUNCTION' OR LIST
INPUT NAME
DEFINE IM
GO TO INPUT DIMENSION
```

FRTN5058  
FRTN5059  
FRTN5060  
FRTN5061  
FRTN5062  
FRTN5063  
FRTN5064  
FRTN5065  
FRTN5066  
FRTN5067

\* NAME: FRTN

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```

5068          *
5069          *
5070          *          B1
5071          *          COMMA OR C/R TEST
5072 10132      C 02 00754 B1 LDA K134
5073 10133      C 07 00067 SUB TC
5074 10134      101040 SNZ
5075 10135      -0 01 04155 JMP* A9T2
5076 10136      0 01 03637 JMP A1
5077          EJCT
                    GO TO SIDSW
                    ELSE, GO TO C/R TEST

```

\* NAME: FRTN

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```

5078          *
5079          *
5080          * -      B2      EXTERNAL
5081          *      TAGS  NAME AS SUBPROGRAM
5082 10137  0 10 02242  B2  JST  NA00      EXTERNAL, INPUT NAME
5083 10140  0 10 03222      JST  TG00      TAG SUBPROGRAM
5084 10141  0 01 10132      JMP  B1        GO TO , OP C/R TEST
5085          EJCT

```

\* NAME: FRTN

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```
5086 *
5087 *
5088 *
5089 *
5090 *
5091 *
5092 *
5093 *
5094 10142 0 00 00000 B3T0 PZE 0
5095 10143 0 00 00000 B3T1 PZE 0
5096 10144 0 00 00000 B3T3 PZE 0
5097 10145 0 10 02242 B3 JST NA00
5098 10146 0 02 00026 B3A LDA AT
5099 10147 0 07 00741 SUR K105
5100 10150 100040 SZE
5101 10151 140500 SSM
5102 10152 0 04 10142 STA B3T0
5103 10153 0 02 00025 LDA AF
5104 10154 0 04 10144 STA B3T3
5105 10155 0 02 00625 LDA A
5106 10156 0 04 10143 STA B3T1
5107 10157 0 02 00026 LDA AT
5108 10160 0 07 00741 SUR K105
5109 10161 100040 SZE
5110 10162 0 10 02401 JST NU00
5111 10163 0 02 10142 LDA B3T0
5112 10164 0 10 07666 JST SC00
5113 10165 0 02 00064 LDA S1
5114 10166 0 04 00774 STA ID
5115 10167 0 02 00065 LDA S2
5116 10170 0 04 00775 STA ID+1
5117 10171 0 02 00066 LDA S3
5118 10172 0 04 00776 STA ID+2
5119 10173 0 02 00053 LDA NS
5120 10174 0400 60 LRL 16
5121 10175 0 10 03623 JST AA00
5122 10176 0 35 00625 LDx A

*****
*DIMENSION *
*INPUT DIMENSION*
*****
PROCESS ARRAYS, PUT DIMENSION INFO IN SPECIAL
ARRAY POINTER ITEM

IF AT = DUM
(A) = 0
ELSE (A) = .LT. 0

TO = (A)
T3 = AF
T1 = A
TEST FOR AT=DUMMY
=5
SKIP NO-USAGE TEST IF DUMMY
NO USAGE TEST
(A) = TO
INPUT SUBSCRIPT

PLACE SUBSCRIPTS IN ID

(A) = 0, B = NS
ASSIGN SPECIAL
```

FRTN5086  
FRTN5087  
FRTN5088  
FRTN5089  
FRTN5090  
FRTN5091  
FRTN5092  
FRTN5093  
FRTN5094  
FRTN5095  
FRTN5096  
FRTN5097  
FRTN5098  
FRTN5099  
FRTN5100  
FRTN5101  
FRTN5102  
FRTN5103  
FRTN5104  
FRTN5105  
FRTN5106  
FRTN5107  
FRTN5108  
FRTN5109  
FRTN5110  
FRTN5111  
FRTN5112  
FRTN5113  
FRTN5114  
FRTN5115  
FRTN5116  
FRTN5117  
FRTN5118  
FRTN5119  
FRTN5120  
FRTN5121  
FRTN5122

\* NAME: FRTN

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```
5123 10177 1 02 17401 LDA DP+1,1
5124 10200 0412 76 LLR 2
5125 10201 0 02 10144 LDA B3T3
5126 10202 0414 76 LGL 2
5127 10203 0402 76 LRR 2
5128 10204 1 04 17401 STA DP+1,1
5129 10205 0 02 00625 LDA A
5130 10206 0400 62 LRL 14
5131 10207 0 02 10143 LDA B3T1
5132 10210 0 04 00625 STA A
5133 10211 0 04 00000 STA 0
5134 10212 0 02 00737 LDA K103
5135 10213 0410 62 LLL 14
5136 10214 1 04 17401 STA DP+1,1
5137 10215 0 02 00067 B3D LDA TC
5138 10216 0 07 00740 SUR K104
5139 10217 100040 SZE
5140 10220 0 01 10132 JMP B1
5141 10221 0 02 04155 LDA A9T2
5142 10222 0 07 10303 SUR B4Z9
5143 10223 100040 SZE
5144 10224 0 01 10132 JMP B1
5145 10225 0 01 10245 JMP B40
5146 10226 0 02 00067 B7 LDA TC
5147 10227 0 07 14474 SUR K17
5148 10230 100040 SZE
5149 10231 0 01 10215 JMP B3D
5150 10232 0 01 10146 JMP B3A
5151 EJCT

DEFINE GF TO GF(A)
A = T1
DEFINE GF TO GF(A)
IF TC NOT SLASH
GO TO *-C/R TEST
IF SIDSW = COMMON-4
GO TO B4 (COMMON-0)
ELSE, GO TO *-C/R TEST
IF TC = (
```

FRTN5123  
FRTN5124  
FRTN5125  
FRTN5126  
FRTN5127  
FRTN5128  
FRTN5129  
FRTN5130  
FRTN5131  
FRTN5132  
FRTN5133  
FRTN5134  
FRTN5135  
FRTN5136  
FRTN5137  
FRTN5138  
FRTN5139  
FRTN5140  
FRTN5141  
FRTN5142  
FRTN5143  
FRTN5144  
FRTN5145  
FRTN5146  
FRTN5147  
FRTN5148  
FRTN5149  
FRTN5150  
FRTN5151

\* NAME: FRTN

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```
5152 *
5153 *
5154 *
5155 *
5156 *
5157 *
5158 *
5159 *
5160 10233 0 02 00765 B4 LDA K81
5161 10234 0 04 00774 STA ID
5162 10235 0 04 00775 STA ID+1
5163 10236 0 04 00776 STA ID+2
5164 10237 0 02 10303 LDA B4Z9
5165 10240 0 04 04155 STA A9T2
5166 10241 0 10 01157 JST CH00
5167 10242 0 07 00720 SUB K9
5168 10243 100040 SZE
5169 10244 0 01 10301 JMP B4E
5170 10245 0 10 01350 B40 JST DN00
5171 10246 0 02 00740 LDA K104
5172 10247 0 10 02352 JST T500
5173 10250 0400 40 B4B LRL 32
5174 10251 0 02 00735 LDA K101
5175 10252 0 10 03623 JST AA00
5176 10253 0 02 00625 LDA A
5177 10254 0 04 00045 STA F
5178 10255 0 10 03426 JST FL00
5179 10256 100040 SZE
5180 10257 0 01 10270 JMP B4D
5181 10260 0 35 00641 LDX CFL
5182 10261 1 02 17401 LDA DP+1,1
5183 10262 0 35 00625 LDX A
5184 10263 1 04 17401 STA DP+1,1
5185 10264 0 35 00641 LDX CFL
5186 10265 0 02 00625 LDA A
5187 10266 0 06 00675 ADD K122
5188 10267 1 04 17401 STA DP+1,1

*****
*COMMON*
*****
INPUT BLOCK NAMES AND LINK THEM WITH THE
FOLLOWING VAR/ARRAY NAMES. BLOCK NAMES
ARE LINKED TOGETHER THROUGH THEIR GENERAL FIELDS

SET SWITCH IN INPUT DIMENSION

INPUT CHAR
IF NOT SLASH
GO TO

INPUT DNA
SLASH TEST

(A) = SUB, (B) = 0
ASSIGN SPECIAL

FETCH LINK

GF(CFL)

GF(A) = GF(CFL)

=*040000
GF(CFL) = A
```

FRTN5152  
FRTN5153  
FRTN5154  
FRTN5155  
FRTN5156  
FRTN5157  
FRTN5158  
FRTN5159  
FRTN5160  
FRTN5161  
FRTN5162  
FRTN5163  
FRTN5164  
FRTN5165  
FRTN5166  
FRTN5167  
FRTN5168  
FRTN5169  
FRTN5170  
FRTN5171  
FRTN5172  
FRTN5173  
FRTN5174  
FRTN5175  
FRTN5176  
FRTN5177  
FRTN5178  
FRTN5179  
FRTN5180  
FRTN5181  
FRTN5182  
FRTN5183  
FRTN5184  
FRTN5185  
FRTN5186  
FRTN5187  
FRTN5188

\* NAME: FRTN

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```
5189 10270 0 10 02242 B4D JST NA00
5190 10271 0 10 07634 JST ND00
5191 10272 0 10 07625 JST NM00
5192 10273 0 10 07602 JST EL00
5193 10274 1 02 17400 LDA DP,1
5194 10275 0 03 00757 ANA B4F
5195 10276 0 06 00675 ADD K122
5196 10277 1 04 17400 STA DP,1
5197 10300 0 01 10226 JMP B7
5198 10301 0 10 01152 B4E JST UC00
5199 10302 0 01 10250 JMP B4B
5200 10303 0 010270 B4Z9 DAC B4D
5201 *
5202 *
5203 *
5204 *
5205 *
5206 *
5207 *
5208 10304 0 02 00042 B5 LDA E0
5209 10305 0 04 00626 STA I
5210 10306 0 07 00735 SUB K101
5211 10307 0 04 00042 STA E0
5212 10310 0 07 00637 SUB ABAR
5213 10311 101400 SMI
5214 10312 0 01 10315 JMP **3
5215 10313 0 10 02615 JST ER00
5216 10314 146717 BCI 1,MO
5217 10315 0 35 00626 LDX I
5218 10316 140040 CRA
5219 10317 1 04 17400 STA DP,1
5220 10320 0 10 01157 B5E JST CH00
5221 10321 1 02 17400 LDA DP,1
5222 10322 100040 SZE
5223 10323 0 01 10340 JMP B5D
5224 10324 0 02 00067 LDA TC
5225 10325 0414 70 LGL 8

INPUT NAME
NON DJUMMY/SUBPROG TEST
NON-COMMON TEST
EXCHANGE LINKS

=*107777
AT(A) = COM (= *040000)

UNINPJT COLUMN

GO TO INPUT DIMENSION

*****
*EQUIVALENCE*
*****
STORE EQUIV INFO IN THE DATA POOL FOR LATER
PROCESSING BY GROUP EQUIV (PART OF SPECS WRAPUP)

L=NEXT WORD IN EQUIVALENCE TABLE
I=L
(=1)
L=L-1

DATA POOL FULL
MEMORY OVERFLOW

DP (I) = 0

INPUT CHAR

PUT IN FIRST CHARACTER
PACK INTO DP (I)
```

FRTN5189  
FRTN5190  
FRTN5191  
FRTN5192  
FRTN5193  
FRTN5194  
FRTN5195  
FRTN5196  
FRTN5197  
FRTN5198  
FRTN5199  
FRTN5200  
FRTN5201  
FRTN5202  
FRTN5203  
FRTN5204  
FRTN5205  
FRTN5206  
FRTN5207  
FRTN5208  
FRTN5209  
FRTN5210  
FRTN5211  
FRTN5212  
FRTN5213  
FRTN5214  
FRTN5215  
FRTN5216  
FRTN5217  
FRTN5218  
FRTN5219  
FRTN5220  
FRTN5221  
FRTN5222  
FRTN5223  
FRTN5224  
FRTN5225

\* NAME: FRTN

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|      |       |            |     |      |      |                         |          |
|------|-------|------------|-----|------|------|-------------------------|----------|
| 5226 | 10326 | 1 04 17400 | B5C | STA  | DP,1 |                         | FRTN5226 |
| 5227 | 10327 | 0 02 00067 |     | LDA  | TC   |                         | FRTN5227 |
| 5228 | 10330 | 0 07 00702 |     | SUB  | CRET |                         | FRTN5228 |
| 5229 | 10331 | 101040     |     | SNZ  |      |                         | FRTN5229 |
| 5230 | 10332 | 0 01 03641 |     | JMP  | C6   | CHARACTER E C/R - EXIT  | FRTN5230 |
| 5231 | 10333 | 1 02 17400 |     | LDA  | DP,1 |                         | FRTN5231 |
| 5232 | 10334 | 141050     |     | CAL  |      |                         | FRTN5232 |
| 5233 | 10335 | 101040     |     | SNZ  |      |                         | FRTN5233 |
| 5234 | 10336 | 0 01 10320 |     | JMP  | B5B  | WORD NOT FULL           | FRTN5234 |
| 5235 | 10337 | 0 01 10304 |     | JMP  | B5   | OBTAIN NEW WORD         | FRTN5235 |
| 5236 | 10340 | 0 02 00067 | B5D | LDA  | TC   | PUT IN SECOND CHARACTER | FRTN5236 |
| 5237 | 10341 | 1 05 17400 |     | ERA  | DP,1 |                         | FRTN5237 |
| 5238 | 10342 | 0 01 10326 |     | JMP  | B5C  |                         | FRTN5238 |
| 5239 |       |            |     | EJCT |      |                         | FRTN5239 |

\* NAME: FRTN

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|      |       |            |      |     |      |                         |          |
|------|-------|------------|------|-----|------|-------------------------|----------|
| 5240 |       |            |      | *   |      |                         | FRTN5240 |
| 5241 |       |            |      | *   |      |                         | FRTN5241 |
| 5242 |       |            |      | *   |      |                         | FRTN5242 |
| 5243 |       |            |      | *   |      |                         | FRTN5243 |
| 5244 |       |            |      | *   |      |                         | FRTN5244 |
| 5245 |       |            |      | *   |      |                         | FRTN5245 |
| 5246 |       |            |      | *   |      |                         | FRTN5246 |
| 5247 |       |            |      | *   |      |                         | FRTN5247 |
| 5248 |       |            |      | *   |      |                         | FRTN5248 |
| 5249 | 10343 | 0 00 00000 | C2T0 | PZE | 0    |                         | FRTN5249 |
| 5250 | 10344 | 0 02 00641 | C2   | LDA | CFL  |                         | FRTN5250 |
| 5251 | 10345 | 0 04 00625 |      | STA | A    | A = F = CFL             | FRTN5251 |
| 5252 | 10346 | 140040     | C2A  | CRA |      |                         | FRTN5252 |
| 5253 | 10347 | 0 04 10343 |      | STA | C2T0 | TO = 0                  | FRTN5253 |
| 5254 | 10350 | 0 02 00625 |      | LDA | A    |                         | FRTN5254 |
| 5255 | 10351 | 0 04 00045 |      | STA | F    | F = A                   | FRTN5255 |
| 5256 | 10352 | 0 10 03426 | C2B  | JST | FL00 | FETCH LINK              | FRTN5256 |
| 5257 | 10353 | 101040     |      | SNZ |      |                         | FRTN5257 |
| 5258 | 10354 | 0 01 10362 |      | JMP | C2D  |                         | FRTN5258 |
| 5259 | 10355 | 0 02 00030 |      | LDA | D0   |                         | FRTN5259 |
| 5260 | 10356 | 0 06 10343 |      | ADD | C2T0 | TO = TO + D0            | FRTN5260 |
| 5261 | 10357 | 0 04 10343 |      | STA | C2T0 |                         | FRTN5261 |
| 5262 | 10360 | 0 10 03477 |      | JST | DA0C | DEFINE ADDRESS FIELD    | FRTN5262 |
| 5263 | 10361 | 0 01 10352 |      | JMP | C2B  |                         | FRTN5263 |
| 5264 | 10362 | 0 10 03426 | C2D  | JST | FL00 | FETCH LINK              | FRTN5264 |
| 5265 | 10363 | 100040     |      | SZE |      |                         | FRTN5265 |
| 5266 | 10364 | 0 01 10373 |      | JMP | C2F  |                         | FRTN5266 |
| 5267 | 10365 | 0 02 00025 |      | LDA | AF   |                         | FRTN5267 |
| 5268 | 10366 | 0 04 00625 |      | STA | A    | A = AF                  | FRTN5268 |
| 5269 | 10367 | 0 07 00641 |      | SUB | CFL  |                         | FRTN5269 |
| 5270 | 10370 | 100040     |      | SZE |      |                         | FRTN5270 |
| 5271 | 10371 | 0 01 10346 |      | JMP | C2A  | AF = CFL, NO            | FRTN5271 |
| 5272 | 10372 | 0 01 10410 |      | JMP | C3   | YES - GROUP EQUIVALENCE | FRTN5272 |
| 5273 | 10373 | 0 02 10343 | C2F  | LDA | C2T0 |                         | FRTN5273 |
| 5274 | 10374 | 0 07 00025 |      | SUB | AF   | (A) = T0 - AF           | FRTN5274 |
| 5275 | 10375 | 0 10 03477 |      | JST | DA0C | DEFINE AF               | FRTN5275 |
| 5276 | 10376 | 0 02 00710 |      | LDA | IU   |                         | FRTN5276 |

\* NAME: FRTN

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```
5277 10377 100040      SZE
5278 10400 0 01 10362   JMP   C2D
5279 10401 0 10 03274   JST   TV00
5280 10402 0 01 10362   JMP   C2D
5281                EJCT
```

TAG VARIABLE

```
FRTN5277
FRTN5278
FRTN5279
FRTN5280
FRTN5281
```

\* NAME: FRTN

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```
5282      *
5283      *
5284      *
5285      *
5286      *
5287      *
5288      *
5289      *
5290      *
5291 10403 0 00 00000 C3T0 PZE 0
5292 10404 0 00 00000 C3T1 PZE 0
5293 10405 0 00 00000 C3T2 PZE 0
5294 10406 0 00 00000 C3T3 PZE 0
5295 10407 0 00 00000 C3T4 PZE 0
5296      010403 T0C3 EQU C3T0
5297      010404 T1C3 EQU C3T1
5298      010406 T3C3 EQU C3T3
5299      010407 T4C3 EQU C3T4
5300 10410 0 02 00042 C3   LDA E0
5301 10411 0 04 00654      STA EBAR
5302 10412 0 02 00113      LDA L0
5303 10413 0 04 00040      STA E
5304 10414 0 02 00702      LDA CRET
5305 10415 0 04 00067      STA TC
5306 10416 0 02 00040 C3E LDA E
5307 10417 0 04 00041      STA EP
5308 10420 140040      CRA
5309 10421 0 04 00045      STA F
5310 10422 0 02 00736      LDA K102
5311 10423 0 04 10407      STA C3T4
5312 10424 0 10 01157      JST CH00
5313 10425 0 02 14474      LDA K17
5314 10426 0 10 02352      JST TS00
5315 10427 0 10 07755 C3D JST IL00
5316 10430 0 10 10717      JST SAF
5317 10431 0 02 00064      LDA S1
5318 10432 0 07 00025      SUB AF
```

```
*****
*GROUP EQUIVALENCE*
*****
```

```
THE EQUIV GROUPS ARE PROCESSED NOW. ANY COMMON
USAGE IS CHECKED TO SEE THAT THE ORIGIN
IS NOT MOVED AND THAT ONLY ONE ITEM IS
COMMON.
```

EBAR=E(0) = END OF EQUIVALENCE TABLE

E=L(0) = START OF EQUIVALENCE TABLE

E-PRIME = E

I = 0

T4 = STR-ABS

INPUT CHARACTER

(TEST

INPUT LIST ELEMENT

T1 = S1-AF

```
FRTN5282
FRTN5283
FRTN5284
FRTN5285
FRTN5286
FRTN5287
FRTN5288
FRTN5289
FRTN5290
FRTN5291
FRTN5292
FRTN5293
FRTN5294
FRTN5295
FRTN5296
FRTN5297
FRTN5298
FRTN5299
FRTN5300
FRTN5301
FRTN5302
FRTN5303
FRTN5304
FRTN5305
FRTN5306
FRTN5307
FRTN5308
FRTN5309
FRTN5310
FRTN5311
FRTN5312
FRTN5313
FRTN5314
FRTN5315
FRTN5316
FRTN5317
FRTN5318
```

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|      |       |            |          |      |                                 |           |
|------|-------|------------|----------|------|---------------------------------|-----------|
| 5319 | 10433 | 0 04 10404 | STA      | C3T1 |                                 | FRTN53119 |
| 5320 | 10434 | 0 02 00625 | LDA      | A    | T2 = A                          | FRTN5320  |
| 5321 | 10435 | 0 04 10405 | STA      | C3T2 |                                 | FRTN5321  |
| 5322 | 10436 | 0 02 00045 | LDA      | F    | IF I=0, GO TO C3P               | FRTN5322  |
| 5323 | 10437 | 101040     | SNZ      |      |                                 | FRTN5323  |
| 5324 | 10440 | 0 01 10554 | JMP      | C3P  |                                 | FRTN5324  |
| 5325 | 10441 | 0 02 00045 | C3G LDA  | F    | ELSE,                           | FRTN5325  |
| 5326 | 10442 | 0 07 00625 | SUB      | A    | IF A = I, GO TO C3N             | FRTN5326  |
| 5327 | 10443 | 101040     | SNZ      |      |                                 | FRTN5327  |
| 5328 | 10444 | 0 01 10523 | JMP      | C3N  |                                 | FRTN5328  |
| 5329 | 10445 | 0 02 00026 | C3H LDA  | AT   | ELSE,                           | FRTN5329  |
| 5330 | 10446 | 0 07 00740 | SUR      | K104 | IF AT = COM, GO TO C3O          | FRTN5330  |
| 5331 | 10447 | 101040     | SNZ      |      |                                 | FRTN5331  |
| 5332 | 10450 | 0 01 10530 | JMP      | C3O  |                                 | FRTN5332  |
| 5333 | 10451 | 0 02 10404 | C3H2 LDA | T1C3 |                                 | FRTN5333  |
| 5334 | 10452 | 0 06 00025 | ADD      | AF   | T(0) = AF + T (1)               | FRTN5334  |
| 5335 | 10453 | 0 04 10403 | STA      | T0C3 |                                 | FRTN5335  |
| 5336 | 10454 | 0 02 10407 | LDA      | T4C3 | IF T(4) = 0, GO TO C3K          | FRTN5336  |
| 5337 | 10455 | 0 07 00740 | SUB      | K104 |                                 | FRTN5337  |
| 5338 | 10456 | 100040     | SZE      |      |                                 | FRTN5338  |
| 5339 | 10457 | 0 01 10467 | JMP      | C3K  |                                 | FRTN5339  |
| 5340 | 10460 | 0 02 10406 | LDA      | T3C3 | ELSE,                           | FRTN5340  |
| 5341 | 10461 | 0 07 10403 | SUB      | T0C3 | T(0) = T(3)-T(0)                | FRTN5341  |
| 5342 | 10462 | 0 04 10403 | STA      | T0C3 |                                 | FRTN5342  |
| 5343 | 10463 | 101400     | SMI      |      |                                 | FRTN5343  |
| 5344 | 10464 | 0 01 10467 | JMP      | C3K  | IF T(0)<0,                      | FRTN5344  |
| 5345 | 10465 | 0 10 02615 | JST      | ER00 |                                 | FRTN5345  |
| 5346 | 10466 | 144703     | BCI      | 1,IC | IMPOSSIBLE COMMON EQUIVALENCING | FRTN5346  |
| 5347 | 10467 | 0 02 10407 | C3K LDA  | C3T4 |                                 | FRTN5347  |
| 5348 | 10470 | 000201     | IAB      |      | AT (A) = COM                    | FRTN5348  |
| 5349 | 10471 | 0 02 10403 | LDA      | T0C3 |                                 | FRTN5349  |
| 5350 | 10472 | 0415 76    | ALS      | 2    |                                 | FRTN5350  |
| 5351 | 10473 | 0404 76    | LGR      | 2    |                                 | FRTN5351  |
| 5352 | 10474 | 0 10 03571 | JST      | AF00 | DEFINE AF                       | FRTN5352  |
| 5353 | 10475 | 0 10 03426 | JST      | FL00 | FETCH LINK                      | FRTN5353  |
| 5354 | 10476 | 0 10 10717 | JST      | SAF  |                                 | FRTN5354  |
| 5355 | 10477 | 0 02 00625 | LDA      | A    |                                 | FRTN5355  |

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| Address | Hex | Label | Op | Op2 | Op3 | Op4 | Op5 | Op6 | Op7 | Op8 | Op9 | Op10 | Op11 | Op12 | Op13 | Op14 | Op15 | Op16 | Op17 | Op18 | Op19 | Op20 | Op21 | Op22 | Op23 | Op24 | Op25 | Op26 | Op27 | Op28 | Op29 | Op30 | Op31 | Op32 | Op33 | Op34 | Op35 | Op36 | Op37 | Op38 | Op39 | Op40 | Op41 | Op42 | Op43 | Op44 | Op45 | Op46 | Op47 | Op48 | Op49 | Op50 | Op51 | Op52 | Op53 | Op54 | Op55 | Op56 | Op57 | Op58 | Op59 | Op60 | Op61 | Op62 | Op63 | Op64 | Op65 | Op66 | Op67 | Op68 | Op69 | Op70 | Op71 | Op72 | Op73 | Op74 | Op75 | Op76 | Op77 | Op78 | Op79 | Op80 | Op81 | Op82 | Op83 | Op84 | Op85 | Op86 | Op87 | Op88 | Op89 | Op90 | Op91 | Op92 | Op93 | Op94 | Op95 | Op96 | Op97 | Op98 | Op99 | Op100 | Op101 | Op102 | Op103 | Op104 | Op105 | Op106 | Op107 | Op108 | Op109 | Op110 | Op111 | Op112 | Op113 | Op114 | Op115 | Op116 | Op117 | Op118 | Op119 | Op120 | Op121 | Op122 | Op123 | Op124 | Op125 | Op126 | Op127 | Op128 | Op129 | Op130 | Op131 | Op132 | Op133 | Op134 | Op135 | Op136 | Op137 | Op138 | Op139 | Op140 | Op141 | Op142 | Op143 | Op144 | Op145 | Op146 | Op147 | Op148 | Op149 | Op150 | Op151 | Op152 | Op153 | Op154 | Op155 | Op156 | Op157 | Op158 | Op159 | Op160 | Op161 | Op162 | Op163 | Op164 | Op165 | Op166 | Op167 | Op168 | Op169 | Op170 | Op171 | Op172 | Op173 | Op174 | Op175 | Op176 | Op177 | Op178 | Op179 | Op180 | Op181 | Op182 | Op183 | Op184 | Op185 | Op186 | Op187 | Op188 | Op189 | Op190 | Op191 | Op192 | Op193 | Op194 | Op195 | Op196 | Op197 | Op198 | Op199 | Op200 | Op201 | Op202 | Op203 | Op204 | Op205 | Op206 | Op207 | Op208 | Op209 | Op210 | Op211 | Op212 | Op213 | Op214 | Op215 | Op216 | Op217 | Op218 | Op219 | Op220 | Op221 | Op222 | Op223 | Op224 | Op225 | Op226 | Op227 | Op228 | Op229 | Op230 | Op231 | Op232 | Op233 | Op234 | Op235 | Op236 | Op237 | Op238 | Op239 | Op240 | Op241 | Op242 | Op243 | Op244 | Op245 | Op246 | Op247 | Op248 | Op249 | Op250 | Op251 | Op252 | Op253 | Op254 | Op255 | Op256 | Op257 | Op258 | Op259 | Op260 | Op261 | Op262 | Op263 | Op264 | Op265 | Op266 | Op267 | Op268 | Op269 | Op270 | Op271 | Op272 | Op273 | Op274 | Op275 | Op276 | Op277 | Op278 | Op279 | Op280 | Op281 | Op282 | Op283 | Op284 | Op285 | Op286 | Op287 | Op288 | Op289 | Op290 | Op291 | Op292 | Op293 | Op294 | Op295 | Op296 | Op297 | Op298 | Op299 | Op300 | Op301 | Op302 | Op303 | Op304 | Op305 | Op306 | Op307 | Op308 | Op309 | Op310 | Op311 | Op312 | Op313 | Op314 | Op315 | Op316 | Op317 | Op318 | Op319 | Op320 | Op321 | Op322 | Op323 | Op324 | Op325 | Op326 | Op327 | Op328 | Op329 | Op330 | Op331 | Op332 | Op333 | Op334 | Op335 | Op336 | Op337 | Op338 | Op339 | Op340 | Op341 | Op342 | Op343 | Op344 | Op345 | Op346 | Op347 | Op348 | Op349 | Op350 | Op351 | Op352 | Op353 | Op354 | Op355 | Op356 | Op357 | Op358 | Op359 | Op360 | Op361 | Op362 | Op363 | Op364 | Op365 | Op366 | Op367 | Op368 | Op369 | Op370 | Op371 | Op372 | Op373 | Op374 | Op375 | Op376 | Op377 | Op378 | Op379 | Op380 | Op381 | Op382 | Op383 | Op384 | Op385 | Op386 | Op387 | Op388 | Op389 | Op390 | Op391 | Op392 | Op393 | Op394 | Op395 | Op396 | Op397 | Op398 | Op399 | Op400 | Op401 | Op402 | Op403 | Op404 | Op405 | Op406 | Op407 | Op408 | Op409 | Op410 | Op411 | Op412 | Op413 | Op414 | Op415 | Op416 | Op417 |  |
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|      |       |                |      |      |               |          |
|------|-------|----------------|------|------|---------------|----------|
| 5393 | 10544 | 0 04 00625     | STA  | A    | A = I         | FRTN5393 |
| 5394 | 10545 | 0 13 10405     | IMA  | C3T2 |               | FRTN5394 |
| 5395 | 10546 | 0 04 00045     | STA  | F    |               | FRTN5395 |
| 5396 | 10547 | 140040         | CRA  |      | T1 = 0        | FRTN5396 |
| 5397 | 10550 | 0 04 10404     | STA  | C3T1 |               | FRTN5397 |
| 5398 | 10551 | 0 10 03317     | JST  | FA00 | FETCH ASSIGNS | FRTN5398 |
| 5399 | 10552 | 0 10 10717     | JST  | SAF  |               | FRTN5399 |
| 5400 | 10553 | 0 01 10451     | JMP  | C3H2 | GO TO C3H2    | FRTN5400 |
| 5401 | 10554 | 0 02 00625 C3P | LDA  | A    |               | FRTN5401 |
| 5402 | 10555 | 0 04 00045     | STA  | F    |               | FRTN5402 |
| 5403 | 10556 | 0 01 10445     | JMP  | C3H  |               | FRTN5403 |
| 5404 |       |                | EJCT |      |               | FRTN5404 |

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|      |       |                |      |      |                                          |          |
|------|-------|----------------|------|------|------------------------------------------|----------|
| 5405 |       | *              |      |      |                                          | FRTN5405 |
| 5406 |       | *              |      |      |                                          | FRTN5406 |
| 5407 |       | *              |      |      |                                          | FRTN5407 |
| 5408 |       | *              |      |      |                                          | FRTN5408 |
| 5409 |       | *              |      |      |                                          | FRTN5409 |
| 5410 |       | *              |      |      |                                          | FRTN5410 |
| 5411 |       | *              |      |      |                                          | FRTN5411 |
| 5412 | 10557 | 0 00 00000     | C4TC | PZE  | 0                                        | FRTN5412 |
| 5413 | 10560 | 0 00 00000     | C4T1 | PZE  | 0                                        | FRTN5413 |
| 5414 | 10561 | 0 04 00625     | C4B  | STA  | A                                        | FRTN5414 |
| 5415 | 10562 | 0 02 00625     | C4C  | LDA  | A                                        | FRTN5415 |
| 5416 | 10563 | 0 06 00741     | ADD  | K105 | I = A = A+5                              | FRTN5416 |
| 5417 | 10564 | 0 04 00625     | STA  | A    |                                          | FRTN5417 |
| 5418 | 10565 | 0 04 00045     | STA  | F    |                                          | FRTN5418 |
| 5419 | 10566 | 0 11 00637     | CAS  | ABAR |                                          | FRTN5419 |
| 5420 | 10567 | 0 01 04370     | JMP  | NP35 | RETURN TO FIRST NON-SPEC CHECK (POINT 1) | FRTN5420 |
| 5421 | 10570 | 101000         | NOP  |      |                                          | FRTN5421 |
| 5422 | 10571 | 0 10 03317     | JST  | FA00 | ELSE, FETCH ASSIGN                       | FRTN5422 |
| 5423 | 10572 | 0 02 00026     | LDA  | AT   |                                          | FRTN5423 |
| 5424 | 10573 | 0 07 00736     | SUB  | K102 | IF AT = STR-ABS                          | FRTN5424 |
| 5425 | 10574 | 100040         | SZE  |      | IU=VAR. OR ARR. AND                      | FRTN5425 |
| 5426 | 10575 | 0 01 10562     | JMP  | C4C  | NT = 0                                   | FRTN5426 |
| 5427 | 10576 | 0 02 00710     | LDA  | IU   | GO TO C4E                                | FRTN5427 |
| 5428 | 10577 | 0 07 00736     | SUB  | K102 | ELSE, GO TO C4C                          | FRTN5428 |
| 5429 | 10600 | 100400         | SPL  |      |                                          | FRTN5429 |
| 5430 | 10601 | 0 01 10562     | JMP  | C4C  |                                          | FRTN5430 |
| 5431 | 10602 | 0 02 00054     | LDA  | NT   |                                          | FRTN5431 |
| 5432 | 10603 | 100040         | SZE  |      |                                          | FRTN5432 |
| 5433 | 10604 | 0 01 10562     | JMP  | C4C  |                                          | FRTN5433 |
| 5434 | 10605 | 0 04 10557     | STA  | C4T0 | TO = 0, T1 =-MAX                         | FRTN5434 |
| 5435 | 10606 | 0 07 00670     | SUB  | K111 |                                          | FRTN5435 |
| 5436 | 10607 | 0 04 10560     | STA  | C4T1 |                                          | FRTN5436 |
| 5437 | 10610 | 0 10 03443     | JST  | KT00 | SET D(0) = NO. OF WORDS PER ITEM         | FRTN5437 |
| 5438 | 10611 | 0 10 10717 C4F | JST  | SAF  |                                          | FRTN5438 |
| 5439 | 10612 | 0 11 10557     | CAS  | C4T0 |                                          | FRTN5439 |
| 5440 | 10613 | 0 04 10557     | STA  | C4T0 |                                          | FRTN5440 |
| 5441 | 10614 | 101000         | NOP  |      |                                          | FRTN5441 |

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|------|-------|-----------------|-----|------|----------------------------------------|--|----------|
| 5442 | 10615 | 0 02 00030      | LDA | D0   |                                        |  | FRTN5442 |
| 5443 | 10616 | 0 07 00025      | SUB | AF   | (A) = D(0) - AF                        |  | FRTN5443 |
| 5444 | 10617 | 0 11 10560      | CAS | C4T1 |                                        |  | FRTN5444 |
| 5445 | 10620 | 0 04 10560      | STA | C4T1 |                                        |  | FRTN5445 |
| 5446 | 10621 | 101000          | NOP |      |                                        |  | FRTN5446 |
| 5447 | 10622 | 0 10 03426      | JST | FL00 | FETCH LINK ( (A)=A - F                 |  | FRTN5447 |
| 5448 | 10623 | 100040          | SZE |      |                                        |  | FRTN5448 |
| 5449 | 10624 | 0 01 10611      | JMP | C4F  | GO TO C4F                              |  | FRTN5449 |
| 5450 | 10625 | 0 02 00643      | LDA | RPL  |                                        |  | FRTN5450 |
| 5451 | 10626 | 0 06 10557      | ADD | C4T0 | RPL = RPL + T0 + T1                    |  | FRTN5451 |
| 5452 | 10627 | 0 04 10557      | STA | C4T0 |                                        |  | FRTN5452 |
| 5453 | 10630 | 0 06 10560      | ADD | C4T1 | T0 = RPL-T1                            |  | FRTN5453 |
| 5454 | 10631 | 0 04 00643      | STA | RPL  |                                        |  | FRTN5454 |
| 5455 | 10632 | 0 10 10717 C4I  | JST | SAF  |                                        |  | FRTN5455 |
| 5456 | 10633 | 0 02 00735      | LDA | K101 |                                        |  | FRTN5456 |
| 5457 | 10634 | 000201          | IAB |      | (B) = REL                              |  | FRTN5457 |
| 5458 | 10635 | 0 02 10557      | LDA | C4T0 | (A) = T0-AF                            |  | FRTN5458 |
| 5459 | 10636 | 0 07 00025      | SUB | AF   |                                        |  | FRTN5459 |
| 5460 | 10637 | 0 10 03571      | JST | AF00 | DEFINE AFT                             |  | FRTN5460 |
| 5461 | 10640 | 0 10 03426      | JST | FL00 | FETCH LINK                             |  | FRTN5461 |
| 5462 | 10641 | 100040          | SZE |      | IF (A) NOT ZERO,                       |  | FRTN5462 |
| 5463 | 10642 | 0 01 10632      | JMP | C4I  | NOT END OF EQUIVALENCE GROUP           |  | FRTN5463 |
| 5464 | 10643 | 0 01 10562      | JMP | C4C  | CHECK NEXT ITEM IN ASSIGNMENT TABLE    |  | FRTN5464 |
| 5465 |       | *               |     |      |                                        |  | FRTN5465 |
| 5466 | 10644 | 0 02 00044 C4L2 | LDA | FLT1 | = LINK LOCATION TO COMMON BLOCK NAME   |  | FRTN5466 |
| 5467 | 10645 | 0 04 10560      | STA | C4T1 |                                        |  | FRTN5467 |
| 5468 | 10646 | 0 02 00625 C4L3 | LDA | A    |                                        |  | FRTN5468 |
| 5469 | 10647 | 0 04 00626      | STA | I    | SAVE A FOR LATER MODIFICATION          |  | FRTN5469 |
| 5470 | 10650 | 0 10 03426      | JST | FL00 | FETCH LINK                             |  | FRTN5470 |
| 5471 | 10651 | 101040          | SNZ |      |                                        |  | FRTN5471 |
| 5472 | 10652 | 0 01 10677      | JMP | C4M  | END OF COMMON GROUP                    |  | FRTN5472 |
| 5473 | 10653 | 0 35 00626      | LDX | I    | SET INDEX TO POINT TO CURRENT ITEM IN  |  | FRTN5473 |
| 5474 |       | *               |     |      | COMMON GROUP.                          |  | FRTN5474 |
| 5475 | 10654 | 1 02 17400      | LDA | DP+1 | SET CL FIELD TO POINT AT COMMON BLOCK  |  | FRTN5475 |
| 5476 |       | *               |     |      | NAME.                                  |  | FRTN5476 |
| 5477 | 10655 | 0 03 00674      | ANA | K119 | (=*177000)                             |  | FRTN5477 |
| 5478 | 10656 | 0 06 10560      | ADD | C4T1 | (= LINK LOCATION OF COMMON BLOCK NAME) |  | FRTN5478 |

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|      |       |                 |     |      |                                             |  |          |
|------|-------|-----------------|-----|------|---------------------------------------------|--|----------|
| 5479 | 10657 | 1 04 17400      | STA | DP+1 |                                             |  | FRTN5479 |
| 5480 | 10660 | 0 01 10646      | JMP | C4L3 | PROCESS NEXT ITEM IN COMMON BLOCK           |  | FRTN5480 |
| 5481 |       | *               |     |      |                                             |  | FRTN5481 |
| 5482 | 10661 | 0 02 00641 C4   | LDA | CFL  | LOC. OF FIRST (BLANK) COMMON BLOCK          |  | FRTN5482 |
| 5483 | 10662 | 0 04 00045      | STA | F    |                                             |  | FRTN5483 |
| 5484 | 10663 | 0 04 00625 C4L6 | STA | A    |                                             |  | FRTN5484 |
| 5485 | 10664 | 140040          | CRA |      |                                             |  | FRTN5485 |
| 5486 | 10665 | 0 04 10557      | STA | C4T0 |                                             |  | FRTN5486 |
| 5487 | 10666 | 0 10 03426 C4L  | JST | FL00 | FETCH LINK                                  |  | FRTN5487 |
| 5488 | 10667 | 101040          | SNZ |      |                                             |  | FRTN5488 |
| 5489 | 10670 | 0 01 10644      | JMP | C4L2 | NO MORE ITEMS IN COMMON BLOCK               |  | FRTN5489 |
| 5490 | 10671 | 0 02 00030      | LDA | D0   | ELSE, IF TO .LT. D0+AF,                     |  | FRTN5490 |
| 5491 | 10672 | 0 06 00025      | ADD | AF   |                                             |  | FRTN5491 |
| 5492 | 10673 | 0 11 10557      | CAS | C4T0 | T0 = D0 + AF                                |  | FRTN5492 |
| 5493 | 10674 | 0 04 10557      | STA | C4T0 |                                             |  | FRTN5493 |
| 5494 | 10675 | 101000          | NOP |      |                                             |  | FRTN5494 |
| 5495 | 10676 | 0 01 10666      | JMP | C4L  | GO TO C4L                                   |  | FRTN5495 |
| 5496 | 10677 | 0 02 00025 C4M  | LDA | AF   |                                             |  | FRTN5496 |
| 5497 | 10700 | 0 04 00045      | STA | F    | I=AF                                        |  | FRTN5497 |
| 5498 | 10701 | 0 02 10557      | LDA | C4T0 | (A) = T0                                    |  | FRTN5498 |
| 5499 | 10702 | 0 10 03477      | JST | DA00 | DEFINE AF                                   |  | FRTN5499 |
| 5500 |       | *....           |     |      | OUTPUT COMMON BLOCK NAME AND SIZE TO LOADER |  | FRTN5500 |
| 5501 | 10703 | 0 02 00025      | LDA | AF   | LENGTH OF COMMON BLOCK                      |  | FRTN5501 |
| 5502 | 10704 | 101040          | SNZ |      |                                             |  | FRTN5502 |
| 5503 | 10705 | 0 01 10711      | JMP | *+4  | DON'T GENERATE BLOCK OF LENGTH ZERO         |  | FRTN5503 |
| 5504 | 10706 | 0 03 00670      | ANA | K111 | =*37777                                     |  | FRTN5504 |
| 5505 | 10707 | 0 06 00675      | ADD | K122 | =*40000 (S/C CODE = 1)                      |  | FRTN5505 |
| 5506 | 10710 | 0 10 13331      | JST | ON00 | OUTPUT NAME BLOCK TO LOADER                 |  | FRTN5506 |
| 5507 | 10711 | 0 02 00045      | LDA | F    |                                             |  | FRTN5507 |
| 5508 | 10712 | 0 07 00641      | SUB | CFL  | IF I = CFL                                  |  | FRTN5508 |
| 5509 | 10713 | 101040          | SNZ |      |                                             |  | FRTN5509 |
| 5510 | 10714 | 0 01 10561      | JMP | C4B  |                                             |  | FRTN5510 |
| 5511 | 10715 | 0 02 00045      | LDA | F    |                                             |  | FRTN5511 |
| 5512 | 10716 | 0 01 10663      | JMP | C4L6 |                                             |  | FRTN5512 |
| 5513 |       | *               |     |      |                                             |  | FRTN5513 |
| 5514 | 10717 | 0 000000        | SAF | DAC  | **                                          |  | FRTN5514 |
| 5515 | 10720 | 0 02 00025      | LDA | AF   |                                             |  | FRTN5515 |

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5516 10721 0414 76 LGL 2
5517 10722 0405 76 ARS 2
5518 10723 0 04 00025 STA AF
5519 10724 -0 01 10717 JMP* SAF
5520 EJCT
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FRTN5516
FRTN5517
FRTN5518
FRTN5519
FRTN5520
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5521 *
5522 *
5523 *****
5524 * DATA STATEMENT PROCESSOR*
5525 *****
5526 *
5527 10725 0 00 00000 TOW4 PZE 0
5528 10726 0 00 00000 TIW4 PZE 0
5529 10727 000300 ALOW OCT 300
5530 10730 000333 AHGH OCT 333
5531 10731 0 00 00000 G PZE 0
5532 10732 0 02 00113 W4 LDA LO
5533 10733 0 04 00626 STA I
5534 10734 0 10 07755 W4B JST IL00
5535 10735 0 02 00026 LDA AT
5536 10736 0 07 00736 SUB K102
5537 10737 101040 SNZ
5538 10740 0 01 11273 JMP W4T
5539 10741 0 35 00626 LDX I
5540 10742 0 02 00064 LDA S1
5541 10743 0 06 00025 ADD AF
5542 10744 1 04 17400 STA DP+1
5543 10745 0 02 00625 W4C LDA A
5544 10746 1 04 17377 STA DP-1+1
5545 10747 0 02 00626 LDA I
5546 10750 0 07 00736 SUB K102
5547 10751 0 04 00626 STA I
5548 10752 0 04 10731 STA G
5549 10753 0 02 00067 LDA TC
5550 10754 0 07 00754 SUB K134
5551 10755 101040 SNZ
5552 10756 0 01 10734 JMP W4B
5553 10757 0 02 00740 LDA K104
5554 10760 0 10 02352 JST TS00
5555 10761 0 02 00643 LDA RPL
5556 10762 0 04 10726 STA TIW4
5557 10763 0 02 00113 LDA LO
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FRTN5521
FRTN5522
FRTN5523
FRTN5524
FRTN5525
FRTN5526
FRTN5527
FRTN5528
FRTN5529
FRTN5530
FRTN5531
FRTN5532
FRTN5533
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FRTN5557
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|------------|------------|---------|--------|---------------------------------------|----------|
| 5558 10764 | 0 04 00626 | STA     | I      | I= END OF DATA POOL                   | FRTN5558 |
| 5559 10765 | 140040     | W4E CRA |        |                                       | FRTN5559 |
| 5560 10766 | 0 04 00712 | STA     | KPRM   | K' = KBAR = 0                         | FRTN5560 |
| 5561 10767 | 0 04 00711 | STA     | KBAR   |                                       | FRTN5561 |
| 5562 10770 | 0 10 02346 | W4F JST | XN00   | TEST FOR SPECIAL CASE OR \$ OR NAME   | FRTN5562 |
| 5563 10771 | 0 02 00067 | LDA     | TC     | X                                     | FRTN5563 |
| 5564 10772 | 0 11 00662 | CAS     | K15    | '\$'                                  | FRTN5564 |
| 5565 10773 | 100000     | SKP     |        | NO                                    | FRTN5565 |
| 5566 10774 | 0 01 11036 | JMP     | W4G    | YES ... TREAT SPECIAL                 | FRTN5566 |
| 5567 10775 | 0 11 10727 | CAS     | ALOW   | A NAME BY CHANCE                      | FRTN5567 |
| 5568 10776 | 0 11 10730 | CAS     | AHGH   | X                                     | FRTN5568 |
| 5569 10777 | 0 01 11022 | JMP     | W4X    | NO ... PROCESS NORMALLY               | FRTN5569 |
| 5570 11000 | 0 01 11022 | JMP     | W4X    | DITTO                                 | FRTN5570 |
| 5571 11001 | 0 10 02242 | JST     | NA00   | INPUT VARIABLE NAME                   | FRTN5571 |
| 5572 11002 | 0 15 10725 | W4Y STX | TOW4   | SAVE POINTER TO NAME (OR STMT #)      | FRTN5572 |
| 5573 11003 | 0 35 00626 | LDX     | I      | POINTS TO VAR WE'RE ORG'ING TO        | FRTN5573 |
| 5574 11004 | 0 15 00712 | STX     | KPRM   | KILL REPETITION COUNT                 | FRTN5574 |
| 5575 11005 | 1 02 17400 | LDA     | DP+1   | SET PGM COUNTER                       | FRTN5575 |
| 5576 11006 | 0 04 00643 | STA     | RPL    | X                                     | FRTN5576 |
| 5577 11007 | 1 02 17377 | LDA     | DP-1,1 | MAKE SURE TARGET IS INTEGER           | FRTN5577 |
| 5578 11010 | 0 04 00625 | STA     | A      | X                                     | FRTN5578 |
| 5579 11011 | 0 10 03317 | JST     | FA00   | X                                     | FRTN5579 |
| 5580 11012 | 0 02 00706 | LDA     | IM     | X                                     | FRTN5580 |
| 5581 11013 | 0 05 00735 | EPA     | K101   | X                                     | FRTN5581 |
| 5582 11014 | 100040     | SZE     |        | X                                     | FRTN5582 |
| 5583 11015 | 0 01 11173 | JMP     | WERR   | ERROR ... DAC MUST BE INTEGER         | FRTN5583 |
| 5584 11016 | 0 35 10725 | LDX     | TOW4   | SET A TO NAME OR STMT # WE DAC'ING AT | FRTN5584 |
| 5585 11017 | 0 15 00625 | STX     | A      | X                                     | FRTN5585 |
| 5586 11020 | 0 10 11471 | JST     | OB00   | OUTPUT DAC                            | FRTN5586 |
| 5587 11021 | 0 01 11175 | JMP     | W420   | CONTINUE NORMALLY                     | FRTN5587 |
| 5588 11022 | 0 10 01350 | W4X JST | DN00   | INPUT, DNA                            | FRTN5588 |
| 5589 11023 | 0 02 00054 | LDA     | NT     |                                       | FRTN5589 |
| 5590 11024 | 100040     | SZE     |        | IF NT = 0                             | FRTN5590 |
| 5591 11025 | 0 01 11043 | JMP     | W4G    | VARIABLE OR ARRAY                     | FRTN5591 |
| 5592 11026 | 0 02 00067 | LDA     | TC     | LAST CHARACTER                        | FRTN5592 |
| 5593 11027 | 0 11 14474 | CAS     | K17    | =*250 ( = ( )                         | FRTN5593 |
| 5594 11030 | 0 01 11032 | JMP     | **2    |                                       | FRTN5594 |

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|------------|------------|---------|--------|----------------------------------|----------|
| 5595 11031 | 0 01 11034 | JMP     | **3    | START OF COMPLEX CONSTANT        | FRTN5595 |
| 5596 11032 | 0 10 02615 | JST     | ER00   | ERROR                            | FRTN5596 |
| 5597 11033 | 141716     | BCI     | 1+CN   | NON-CON DATA                     | FRTN5597 |
| 5598 11034 | 0 04 00633 | STA     | SXF    | SET SXF TO NON-ZERO              | FRTN5598 |
| 5599 11035 | 0 01 10770 | JMP     | W4F    | FINISH INPUT OF COMPLEX CONSTANT | FRTN5599 |
| 5600 11036 | 0 10 01157 | W4G JST | CH00   | STEP OVER '\$'                   | FRTN5600 |
| 5601 11037 | 0 10 02264 | JST     | IS00   | INPUT STATEMENT NUMBER           | FRTN5601 |
| 5602 11040 | 0 15 10725 | STX     | TOW4   | SAVE POINTER TO STMT #           | FRTN5602 |
| 5603 11041 | 0 10 01307 | JST     | FN00   | FUDGE TERMINATING CHARACTER      | FRTN5603 |
| 5604 11042 | 0 01 11003 | JMP     | W4Y+1  | JOIN COMMON PROCESSING           | FRTN5604 |
| 5605 11043 | 0 02 00711 | W4G LDA | KBAR   | MULTIPLY COUNT                   | FRTN5605 |
| 5606 11044 | 100040     | SZE     |        |                                  | FRTN5606 |
| 5607 11045 | 0 01 11057 | JMP     | W4K    | GO TO W4K                        | FRTN5607 |
| 5608 11046 | 0 02 00067 | LDA     | TC     | IF TC NOT *                      | FRTN5608 |
| 5609 11047 | 0 07 00737 | SUB     | K103   |                                  | FRTN5609 |
| 5610 11050 | 100040     | SZE     |        |                                  | FRTN5610 |
| 5611 11051 | 0 01 11062 | JMP     | W4L    |                                  | FRTN5611 |
| 5612 11052 | 0 02 00774 | LDA     | ID     |                                  | FRTN5612 |
| 5613 11053 | 0 07 00735 | SUB     | K101   |                                  | FRTN5613 |
| 5614 11054 | 0 04 00711 | STA     | KBAR   | KBAR = ID-1                      | FRTN5614 |
| 5615 11055 | 0 10 02433 | JST     | IT00   | INTEGER TEST                     | FRTN5615 |
| 5616 11056 | 0 01 10770 | JMP     | W4F    |                                  | FRTN5616 |
| 5617 11057 | 0 02 00712 | W4K LDA | KPRM   | IF K NOT ZERO                    | FRTN5617 |
| 5618 11060 | 100040     | SZE     |        |                                  | FRTN5618 |
| 5619 11061 | 0 01 11067 | JMP     | W4M    | GO TO W4M                        | FRTN5619 |
| 5620 11062 | 0 02 00711 | W4L LDA | KBAR   |                                  | FRTN5620 |
| 5621 11063 | 0415 77    | ALS     | 1      | K' = E-3* KBAR                   | FRTN5621 |
| 5622 11064 | 140407     | TC4     |        |                                  | FRTN5622 |
| 5623 11065 | 0 06 00626 | ADD     | I      |                                  | FRTN5623 |
| 5624 11066 | 0 04 00712 | STA     | KPRM   |                                  | FRTN5624 |
| 5625 11067 | 0 35 00626 | W4M LDX | I      |                                  | FRTN5625 |
| 5626 11070 | 1 02 17377 | LDA     | DP-1,1 |                                  | FRTN5626 |
| 5627 11071 | 0 04 00625 | STA     | A      | A = DP (E-1)                     | FRTN5627 |
| 5628 11072 | 0 02 00706 | LDA     | IM     |                                  | FRTN5628 |
| 5629 11073 | 0 04 10725 | STA     | TOW4   | TO = IM                          | FRTN5629 |
| 5630 11074 | 0 10 03317 | JST     | FA00   |                                  | FRTN5630 |
| 5631 11075 | 0 02 00644 | LDA     | BDF    | IF BDF NOT ZERO                  | FRTN5631 |

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|------|-------|------------|------|-----|--------|----------|
| 5632 | 11076 | 10C040     |      | SZE |        | FRTN5632 |
| 5633 | 11077 | 0 01 11222 |      | JMP | W45    | FRTN5633 |
| 5634 | 11100 | 0 10 07625 |      | JST | NM00   | FRTN5634 |
| 5635 | 11101 | 0 35 00626 | W40  | LDX | I      | FRTN5635 |
| 5636 | 11102 | 1 02 17400 |      | LDA | DP+1   | FRTN5636 |
| 5637 | 11103 | 0 04 00643 |      | STA | RPL    | FRTN5637 |
| 5638 | 11104 | 0 10 13531 |      | JST | FS00   | FRTN5638 |
| 5639 | 11105 | 0 02 01347 |      | LDA | HCLF   | FRTN5639 |
| 5640 | 11106 | 10C040     |      | SZE |        | FRTN5640 |
| 5641 | 11107 | 0 C1 11125 |      | JMP | WHOW   | FRTN5641 |
| 5642 | 11110 | 0 35 00030 |      | LDX | D0     | FRTN5642 |
| 5643 | 11111 | 1 C1 11111 |      | JMP | *+1    | FRTN5643 |
| 5644 | 11112 | 0 C1 11164 |      | JMP | W405   | FRTN5644 |
| 5645 | 11113 | C 01 11154 |      | JMP | W403   | FRTN5645 |
| 5646 | 11114 | 0 01 11160 |      | JMP | W404   | FRTN5646 |
| 5647 | 11115 | 0 02 00776 |      | LDA | TID+2  | FRTN5647 |
| 5648 | 11116 | 0 10 13243 |      | JST | OC00   | FRTN5648 |
| 5649 | 11117 | 0 02 00775 |      | LDA | TID+1  | FRTN5649 |
| 5650 | 11120 | 0 10 13243 |      | JST | OC00   | FRTN5650 |
| 5651 | 11121 | 0 02 03273 |      | LDA | TIDB+2 | FRTN5651 |
| 5652 | 11122 | 0 10 13243 |      | JST | OC00   | FRTN5652 |
| 5653 | 11123 | 0 02 03272 |      | LDA | TIDB+1 | FRTN5653 |
| 5654 | 11124 | 0 01 11165 |      | JMP | W406   | FRTN5654 |
| 5655 | 11125 | 0 02 00030 | WHOW | LDA | D0     | FRTN5655 |
| 5656 | 11126 | 0415 77    |      | ALS | 1      | FRTN5656 |
| 5657 | 11127 | 0 04 00056 |      | STA | NTID   | FRTN5657 |
| 5658 | 11130 | 0 07 01347 |      | SUB | HOLF   | FRTN5658 |
| 5659 | 11131 | 10C040     |      | SPL |        | FRTN5659 |
| 5660 | 11132 | 0 01 11173 |      | JMP | WERR   | FRTN5660 |
| 5661 | 11133 | 0 02 00774 |      | LDA | ID     | FRTN5661 |
| 5662 | 11134 | 0 10 11144 |      | JST | WSNG   | FRTN5662 |
| 5663 | 11135 | 0 02 00775 |      | LDA | ID+1   | FRTN5663 |
| 5664 | 11136 | 0 10 11144 |      | JST | WSNG   | FRTN5664 |
| 5665 | 11137 | 0 02 00776 |      | LDA | ID+2   | FRTN5665 |
| 5666 | 11140 | 0 10 11144 |      | JST | WSNG   | FRTN5666 |
| 5667 | 11141 | 0 02 00777 |      | LDA | ID+3   | FRTN5667 |
| 5668 | 11142 | 0 10 13243 |      | JST | OC00   | FRTN5668 |

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|------|-------|-------------|----------|-------|--------------------------------------|----------|
| 5669 | 11143 | C 01 11175  | JMP      | W420  | TO CHECK NEXT DATA                   | FRTN5669 |
| 5670 |       |             | *        |       |                                      | FRTN5670 |
| 5671 | 11144 | 0 00 00000  | WSNG PZE | 0     |                                      | FRTN5671 |
| 5672 | 11145 | 0 10 13243  | JST      | OC00  | OUTPUT (A)                           | FRTN5672 |
| 5673 | 11146 | 0 02 00056  | LDA      | NTID  | NO. OF CHARS. REMAINED TO BE OUTPUT  | FRTN5673 |
| 5674 | 11147 | 0 07 00736  | SUB      | K102  |                                      | FRTN5674 |
| 5675 | 11150 | 0 04 00056  | STA      | NTID  | NTID=NTID-2                          | FRTN5675 |
| 5676 | 11151 | 101040      | SNZ      |       |                                      | FRTN5676 |
| 5677 | 11152 | 0 01 11175  | JMP      | W420  | ALL FINISHED; CHECK NEXT ITEM        | FRTN5677 |
| 5678 | 11153 | -0 01 11144 | JMP*     | WSNG  | SOME COLLERITH CHARS. REMAINED       | FRTN5678 |
| 5679 | 11154 | 0 02 00776  | W403 LDA | TID+2 | REAL OUTPUT                          | FRTN5679 |
| 5680 | 11155 | 0 10 13243  | JST      | OC00  |                                      | FRTN5680 |
| 5681 | 11156 | 0 02 00775  | LDA      | TID+1 |                                      | FRTN5681 |
| 5682 | 11157 | 0 01 11165  | JMP      | W406  |                                      | FRTN5682 |
| 5683 | 11160 | 0 02 00776  | W404 LDA | TID+2 | DOUBLE PRECISION OUTPUT              | FRTN5683 |
| 5684 | 11161 | 0 10 13243  | JST      | OC00  |                                      | FRTN5684 |
| 5685 | 11162 | 0 02 00775  | LDA      | TID+1 |                                      | FRTN5685 |
| 5686 | 11163 | 0 10 13243  | JST      | OC00  |                                      | FRTN5686 |
| 5687 | 11164 | 0 02 00774  | W405 LDA | TID   | INTEGER OUTPUT                       | FRTN5687 |
| 5688 | 11165 | 0 10 13243  | W406 JST | OC00  |                                      | FRTN5688 |
| 5689 | 11166 | 0 02 10725  | LDA      | TOW4  |                                      | FRTN5689 |
| 5690 | 11167 | 0 05 00706  | ERA      | I*    |                                      | FRTN5690 |
| 5691 | 11170 | 0 03 00741  | ANA      | K105  |                                      | FRTN5691 |
| 5692 | 11171 | 101040      | SNZ      |       |                                      | FRTN5692 |
| 5693 | 11172 | 0 01 11175  | JMP      | **+3  |                                      | FRTN5693 |
| 5694 |       |             | *        |       | TO BE OUTPUT, RETURN                 | FRTN5694 |
| 5695 | 11173 | 0 10 02615  | WERR JST | ER00  |                                      | FRTN5695 |
| 5696 | 11174 | 142315      | BCI      | 14DM  |                                      | FRTN5696 |
| 5697 | 11175 | 0 02 00626  | W420 LDA | I     | DATA AND DATA NAME MODE DO NOT AGREE | FRTN5697 |
| 5698 | 11176 | 0 07 00736  | SUB      | K102  |                                      | FRTN5698 |
| 5699 | 11177 | 0 04 00626  | STA      | I     | I = I-2                              | FRTN5699 |
| 5700 | 11200 | 0 11 00712  | CAS      | KPRM  |                                      | FRTN5700 |
| 5701 | 11201 | 101000      | NOP      |       |                                      | FRTN5701 |
| 5702 | 11202 | 0 01 11067  | JMP      | W4M   | MORE TO DO                           | FRTN5702 |
| 5703 | 11203 | 0 07 10731  | SUB      | G     | TEST FOR COMPLETE                    | FRTN5703 |
| 5704 | 11204 | 100040      | SZE      |       |                                      | FRTN5704 |
| 5705 | 11205 | 0 01 11217  | JMP      | W4P   |                                      | FRTN5705 |

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| 5706 | 11206 | C 02 00740     | LDA | K104   |                              | FRTN5706 |
| 5707 | 11207 | O 10 02352     | JST | TS00   |                              | FRTN5707 |
| 5708 | 11210 | O 02 10726     | LDA | T1W4   |                              | FRTN5708 |
| 5709 | 11211 | O 04 00643     | STA | RPL    |                              | FRTN5709 |
| 5710 | 11212 | O 10 01157     | JST | CH00   | INPUT NEXT CHARACTER         | FRTN5710 |
| 5711 | 11213 | C 07 00734     | SUB | K5     | =*254 (,)                    | FRTN5711 |
| 5712 | 11214 | 100040         | SZE |        | SKIP IF CHAR = COMMA         | FRTN5712 |
| 5713 | 11215 | O Q1 03637     | JMP | A1     | CHECK FOR (CR)               | FRTN5713 |
| 5714 | 11216 | O 01 10732     | JMP | W4     | PROCESS NEXT DATA GROUP      | FRTN5714 |
| 5715 | 11217 | O 02 00754 W4P | LDA | K134   |                              | FRTN5715 |
| 5716 | 11220 | O 10 02352     | JST | TS00   |                              | FRTN5716 |
| 5717 | 11221 | O 01 10765     | JMP | W4E    |                              | FRTN5717 |
| 5718 | 11222 | O 10 13531 W4S | JST | FS00   | FLUSH BUFFER IF NECESSARY    | FRTN5718 |
| 5719 | 11223 | O 02 00025     | LDA | AF     | POSITION WITHIN COMMON BLOCK | FRTN5719 |
| 5720 | 11224 | 0400 62        | LRL | 14     |                              | FRTN5720 |
| 5721 | 11225 | O 02 00742     | LDA | K106   | FORMAT BCD OUTPUT            | FRTN5721 |
| 5722 | 11226 | 0414 72        | LGL | 6      |                              | FRTN5722 |
| 5723 | 11227 | 0410 72        | LLL | 6      |                              | FRTN5723 |
| 5724 | 11230 | O 04 13650     | STA | OCI    |                              | FRTN5724 |
| 5725 | 11231 | 000201         | IAB |        |                              | FRTN5725 |
| 5726 | 11232 | O 03 00672     | ANA | K116   |                              | FRTN5726 |
| 5727 | 11233 | O 04 13651     | STA | OCI+1  |                              | FRTN5727 |
| 5728 | 11234 | O 10 03426     | JST | FL00   | FETCH LINK                   | FRTN5728 |
| 5729 | 11235 | 1 02 17404     | LDA | DP+4,1 |                              | FRTN5729 |
| 5730 | 11236 | 140500         | SSM |        |                              | FRTN5730 |
| 5731 | 11237 | 0416 77        | ALR | 1      |                              | FRTN5731 |
| 5732 | 11240 | 140500         | SSM |        |                              | FRTN5732 |
| 5733 | 11241 | 0406 77        | ARR | 1      |                              | FRTN5733 |
| 5734 | 11242 | 0400 70        | LRL | 8      |                              | FRTN5734 |
| 5735 | 11243 | O 05 13651     | ERA | OCI+1  |                              | FRTN5735 |
| 5736 | 11244 | O 04 13651     | STA | OCI+1  |                              | FRTN5736 |
| 5737 | 11245 | 1 02 17403     | LDA | DP+3,1 |                              | FRTN5737 |
| 5738 | 11246 | 000201         | IAB |        |                              | FRTN5738 |
| 5739 | 11247 | 1 02 17404     | LDA | DP+4,1 |                              | FRTN5739 |
| 5740 | 11250 | 0410 70        | LLL | 8      |                              | FRTN5740 |
| 5741 | 11251 | O 04 13652     | STA | OCI+2  |                              | FRTN5741 |
| 5742 | 11252 | 1 02 17402     | LDA | DP+2,1 |                              | FRTN5742 |

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| 5743 | 11253 | 000201         | IAB |        |                                                | FRTN5743 |
| 5744 | 11254 | 1 02 17403     | LDA | DP+3,1 |                                                | FRTN5744 |
| 5745 | 11255 | 0410 70        | LLL | 8      |                                                | FRTN5745 |
| 5746 | 11256 | O 04 13653     | STA | OCI+3  |                                                | FRTN5746 |
| 5747 | 11257 | 1 02 17402     | LDA | DP+2,1 |                                                | FRTN5747 |
| 5748 | 11260 | 0414 76        | LGL | 2      |                                                | FRTN5748 |
| 5749 | 11261 | O 06 00737     | ADD | K103   |                                                | FRTN5749 |
| 5750 | 11262 | 0414 72        | LGL | 6      |                                                | FRTN5750 |
| 5751 | 11263 | O 04 13654     | STA | OCI+4  |                                                | FRTN5751 |
| 5752 | 11264 | O 02 00750     | LDA | K128   |                                                | FRTN5752 |
| 5753 | 11265 | O 04 00063     | STA | OCNT   |                                                | FRTN5753 |
| 5754 | 11266 | O 35 00626     | LDX | I      | I POINTS TO DATA TABLE                         | FRTN5754 |
| 5755 | 11267 | 1 02 17377     | LDA | DP-1,1 | SET A TO VARIABLE                              | FRTN5755 |
| 5756 | 11270 | O 04 00625     | STA | A      |                                                | FRTN5756 |
| 5757 | 11271 | O 10 03317     | JST | FA00   |                                                | FRTN5757 |
| 5758 | 11272 | O 01 11101     | JMP | W40    |                                                | FRTN5758 |
| 5759 | 11273 | O 02 00735 W4T | LDA | K101   | =1 (=REL)                                      | FRTN5759 |
| 5760 | 11274 | 000201         | IAB |        |                                                | FRTN5760 |
| 5761 | 11275 | O 02 00643     | LDA | RPL    |                                                | FRTN5761 |
| 5762 | 11276 | O 10 03571     | JST | AF00   | DEFINE AFT (AT=REL, AF=RPL)                    | FRTN5762 |
| 5763 | 11277 | O 35 00626     | LDX | I      | SET POINTER IN DATA POOL                       | FRTN5763 |
| 5764 | 11300 | O 02 00643     | LDA | RPL    |                                                | FRTN5764 |
| 5765 | 11301 | 1 04 17400     | STA | DP,1   | DP(I) = RPL OF VARIABLE                        | FRTN5765 |
| 5766 | 11302 | O 06 00030     | ADD | D0     |                                                | FRTN5766 |
| 5767 | 11303 | C 04 00643     | STA | RPL    |                                                | FRTN5767 |
| 5768 | 11304 | O 01 10745     | JMP | W4C    |                                                | FRTN5768 |
| 5769 |       | *              |     |        |                                                | FRTN5769 |
| 5770 |       | *              |     |        |                                                | FRTN5770 |
| 5771 |       | *              |     |        |                                                | FRTN5771 |
| 5772 |       | *              |     |        |                                                | FRTN5772 |
| 5773 |       | *              |     |        |                                                | FRTN5773 |
| 5774 |       | *              |     |        |                                                | FRTN5774 |
| 5775 | 11305 | O 02 00652 R3  | LDA | LSTF   | SET BLOCK DATA FLAG AND OUTPUT FORCE LOAD CODE | FRTN5775 |
| 5776 | 11306 | 100040         | SZE |        | =0 IF FIRST STATEMENT IN THE SUBPROGRAM        | FRTN5776 |
| 5777 | 11307 | O C1 11312     | JMP | *+3    |                                                | FRTN5777 |
| 5778 | 11310 | O 10 02615     | JST | ER00   | ERROR...NOT FIRST STATEMENT                    | FRTN5778 |
| 5779 | 11311 | 141314         | ECI | 1*BL   | 'BLOCK DATA' NOT FIRST STATEMENT               | FRTN5779 |

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| 5780 | 11312 | 0 04 00644 | STA  | BDF  | SET BLOCK DATA FLAG ON (NON-ZERO) | FRTN5780 |
| 5781 | 11313 | 0 10 01157 | JST  | CH00 | INPUT NEXT CHARACTER              | FRTN5781 |
| 5782 | 11314 | 0 01 03637 | JMP  | A1   | CHECK FOR (CR) AND EXIT           | FRTN5782 |
| 5783 |       |            | EJCT |      |                                   | FRTN5783 |

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| 5784 |       |            | *    |     |                                                | FRTN5784 |
| 5785 |       |            | *    |     |                                                | FRTN5785 |
| 5786 |       |            | *    |     |                                                | FRTN5786 |
| 5787 |       |            | *    |     |                                                | FRTN5787 |
| 5788 |       |            | *    |     |                                                | FRTN5788 |
| 5789 |       |            | *    |     |                                                | FRTN5789 |
| 5790 |       |            | *    |     |                                                | FRTN5790 |
| 5791 |       |            | *    |     |                                                | FRTN5791 |
| 5792 |       |            | *    |     |                                                | FRTN5792 |
| 5793 |       |            | *    |     |                                                | FRTN5793 |
| 5794 |       |            | *    |     |                                                | FRTN5794 |
| 5795 | 11315 | 0 10 02346 | TRAC | JST | *****                                          | FRTN5795 |
| 5796 | 11316 | 100040     |      | SZE | *TRACE STATEMENT PROCESSOR*                    | FRTN5796 |
| 5797 | 11317 | 0 01 11324 |      | JMP | *****                                          | FRTN5797 |
| 5798 | 11320 | 0 10 02264 |      | JST | SETS TRACE TAG ON VARIABLES OR SETS TRACE FLAG | FRTN5798 |
| 5799 | 11321 | 0 02 00625 |      | LDA | XN00                                           | FRTN5799 |
| 5800 | 11322 | 0 04 00645 |      | STA | EXAMINE NEXT CHARACTER                         | FRTN5800 |
| 5801 | 11323 | 0 01 03637 |      | JMP | SKIP IF CHAR. WAS A DIGIT                      | FRTN5801 |
| 5802 |       |            | *    |     | JUMP IF CHAR. WAS A LETTER                     | FRTN5802 |
| 5803 | 11324 | 0 10 02242 | TRAD | JST | INPUT STATEMENT NO.                            | FRTN5803 |
| 5804 | 11325 | 0 35 00625 |      | LDX | STATEMENT NO. POINTER                          | FRTN5804 |
| 5805 | 11326 | 1 02 17404 |      | LDA | SET TRACE FLAG ON                              | FRTN5805 |
| 5806 | 11327 | 140024     |      | CHS | TEST FOR (CR) AND EXIT                         | FRTN5806 |
| 5807 | 11330 | 1 04 17404 |      | STA | INPUT NAME                                     | FRTN5807 |
| 5808 | 11331 | 0 01 10132 |      | JMP | SET INDEX TO NAME ENTRY                        | FRTN5808 |
| 5809 |       |            | EJCT |     | TT(A) TRACE TAG                                | FRTN5809 |
|      |       |            |      |     | DP+4,1                                         |          |
|      |       |            |      |     | BI                                             |          |
|      |       |            |      |     | (,) OR (CR) TEST                               |          |

\* NAME: FRTN

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```
5810      *                                (RETURN TO TRAC IF (.) )
5811      *
5812      *
5813      *
5814      *
5815      *          *****
5816      *          *OUTPUT OBJECT LINK*
5817      *          *****
5817 11332    0 000000  OL00 DAC    **
5818 11333    0 10 11363    JST  CN00          CALL NAME
5819 11334    0 02 00774    LDA  ID            (A) = IP
5820 11335    0 10 13243    JST  OC00          OUTPUT ABS
5821      *
5822 11336   -0 01 11332    JMP*  OL00
5823      EJCT
```

FRTN5810  
FRTN5811  
FRTN5812  
FRTN5813  
FRTN5814  
FRTN5815  
FRTN5816  
FRTN5817  
FRTN5818  
FRTN5819  
FRTN5820  
FRTN5821  
FRTN5822  
FRTN5823

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```
5824      *
5825      *          *****
5826      *          *OUTPUT I/O LINK*
5827      *          *****
5828      *          GENERATE I/O DRIVER LINKAGE CODE. NAME OF
5829      *          CALLED ROUTINE IS CHANGED IF UNIT DESIGNATOR
5830      *          IS A CONSTANT.
5831 11337    0 000000  OI00 DAC    **
5832 11340    0 10 02253    JST  IV00          INPUT INT VAR/CON
5833 11341    0 02 00054    LDA  NT
5834 11342    101040      SNZ
5835 11343    0 01 11357    JMP  OI20          IF NT = 0
5836 11344    0 02 00774    LDA  ID            GO TO OI20
5837 11345    0 07 00746    SUB  K126          IF ID CR 9
5838 11346    101400      SMI
5839 11347    0 01 11357    JMP  OI20          GO TO OI20
5840      *
5841 11350    0 02 00052      LDA  NAME+1          FORM FSRN OR FSWN
5842 11351    0 03 00672      ANA  K116
5843 11352    0 06 00774      ADD  ID
5844 11353    0 06 00665      ADD  K60          = '260 (SP)
5845 11354    0 04 00052      STA  NAME+1
5846 11355    0 10 11363  OI10 JST  CN00          CALL NAME
5847 11356   -0 01 11337    JMP*  OI00          RETURN
5848 11357    0400 40      OI20 LRL  32
5849 11360    0 02 13030    LDA  OM17          OUTPUT OA
5850 11361    0 10 11471    JST  OB00          (LOAD A (UNIT NO.))
5851 11362    0 01 11355    JMP  OI10          FO TO OI10
5852      EJCT
```

FRTN5824  
FRTN5825  
FRTN5826  
FRTN5827  
FRTN5828  
FRTN5829  
FRTN5830  
FRTN5831  
FRTN5832  
FRTN5833  
FRTN5834  
FRTN5835  
FRTN5836  
FRTN5837  
FRTN5838  
FRTN5839  
FRTN5840  
FRTN5841  
FRTN5842  
FRTN5843  
FRTN5844  
FRTN5845  
FRTN5846  
FRTN5847  
FRTN5848  
FRTN5849  
FRTN5850  
FRTN5851  
FRTN5852

\* NAME: FRTN

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```
5853      *
5854      *
5855      *
5856      *
5857      *
5858      *
5859 11363  0 000000  CN00 DAC  **      SET UP NAME AND GENERATE CODE FOR CALLING IT.
5860 11364  0 02 13023  LDA  OMI2      SET FTOP TO 'JST'
5861 11365  0 04 00043  STA  FTOP
5862 11366  0 10 11370  JST  RE00      OUTPUT 'JST NAME'
5863 11367 -0 01 11363  JMP* CN00      RETURN
5864      EJCT
```

FRTN5853  
FRTN5854  
FRTN5855  
FRTN5856  
FRTN5857  
FRTN5858  
FRTN5859  
FRTN5860  
FRTN5861  
FRTN5862  
FRTN5863  
FRTN5864

\* NAME: FRTN

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```
5865      *
5866      *
5867      *
5868      *
5869      *
5870      *
5871 11370  0 011370  RE00 DAC  *
5872 11371  0 10 13531  JST  FS00      FLUSH THE BUFFER
5873 11372  0 02 00043  LDA  FTOP      SET FTOP INTO OCI FOR OUTPUT
5874 11373  0 04 74     LGR  4
5875 11374  0 06 11441  ADD  KRE1
5876 11375  0 04 13650  STA  OCI
5877 11376  0 10 13321  JST  PRSP      SET PRINT BUFFER TO SPACES
5878 11377  0 02 00052  LDA  NAMF+1    OCI = NAMF
5879 11400  0 04 13755  STA  PRI+9
5880 11401  000201     IAB
5881 11402  0 02 00051  LDA  NAMF      ALSO TO PRINT BUFFER
5882 11403  0 04 13754  STA  PRI+8
5883 11404  0400 70     LRL  8
5884 11405  0 04 13651  STA  OCI+1
5885 11406  0410 60     LLL  16
5886 11407  0 04 13652  STA  OCI+2
5887 11410  0 02 00053  LDA  NAMF+2
5888 11411  0 04 13756  STA  PRI+10
5889 11412  000201     IAB
5890 11413  0 02 00052  LDA  NAMF+1
5891 11414  0410 70     LLL  8
5892 11415  0 04 13653  STA  OCI+3
5893 11416  0410 60     LLL  16
5894 11417  0 04 13654  STA  OCI+4
5895 11420  0 02 00750  LDA  K128      =*14
5896 11421  0 04 00063  STA  OCNT      OCNT = 6
5897 11422  0 10 13133  JST  OR23      ENTER SYMBOLIC OP INTO LIST BUFFER
5898 11423  0 02 00643  LDA  RPL
5899 11424  0 10 13272  JST  OR80
5900 11425  0 013744    DAC  PRI
5901 11426  0 02 01060  LDA  LIBF      CHECK TO SEE IF BIT 3 IS SET
```

FRTN5865  
FRTN5866  
FRTN5867  
FRTN5868  
FRTN5869  
FRTN5870  
FRTN5871  
FRTN5872  
FRTN5873  
FRTN5874  
FRTN5875  
FRTN5876  
FRTN5877  
FRTN5878  
FRTN5879  
FRTN5880  
FRTN5881  
FRTN5882  
FRTN5883  
FRTN5884  
FRTN5885  
FRTN5886  
FRTN5887  
FRTN5888  
FRTN5889  
FRTN5890  
FRTN5891  
FRTN5892  
FRTN5893  
FRTN5894  
FRTN5895  
FRTN5896  
FRTN5897  
FRTN5898  
FRTN5899  
FRTN5900  
FRTN5901

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|      |       |             |          |                 |                            |          |
|------|-------|-------------|----------|-----------------|----------------------------|----------|
| 5902 | 11427 | 0 03 14677  | ANA      | =*20000         |                            | FRTN5902 |
| 5903 | 11430 | 0 05 14677  | ERA      | =*20000         |                            | FRTN5903 |
| 5904 | 11431 | 101040      | C2R2 SNZ |                 |                            | FRTN5904 |
| 5905 | 11432 | 0 01 11435  | JMP      | **3             | SKIP IF BIT 3 IS NOT SET   | FRTN5905 |
| 5906 | 11433 | 0 10 00000  | CALL     | F4SSYM          | INHIBIT SYMBOLIC OUTPUT    | FRTN5906 |
| 5907 | 11434 | 0 013744    | DAC      | PRI             | OUTPUT SYMBOLIC LINE.      | FRTN5907 |
| 5908 | 11435 | 0 12 00643  | IRS      | RPL             | RPL = RPL + 1              | FRTN5908 |
| 5909 | 11436 | 0 10 13321  | JST      | PRSP            | SET PRINT BUFFER TO SPACES | FRTN5909 |
| 5910 | 11437 | 0 10 13531  | JST      | FS00            | FLUSH                      | FRTN5910 |
| 5911 | 11440 | -0 01 11370 | JMP*     | RE00            | RETURN                     | FRTN5911 |
| 5912 | 11441 | 050000      | KRE1 OCT | 50000           |                            | FRTN5912 |
| 5913 |       |             | *        | *****           |                            | FRTN5913 |
| 5914 |       |             | *        | *OUTPUT PACK*   |                            | FRTN5914 |
| 5915 |       |             | *        | *****           |                            | FRTN5915 |
| 5916 |       |             | *        | OUTPUT THE PACK | WORD WHEN IT IS FULL.      | FRTN5916 |
| 5917 | 11442 | 0 00 00000  | PKF PZE  | 0               | PACK FLAG                  | FRTN5917 |
| 5918 | 11443 | 0 00 00000  | TOOK PZE | 0               |                            | FRTN5918 |
| 5919 | 11444 | 0 000000    | OK00 DAC | **              |                            | FRTN5919 |
| 5920 | 11445 | 0 11 00702  | CAS      | CRET            | IF (A) = C/R               | FRTN5920 |
| 5921 | 11446 | 0 01 11450  | JMP      | **2             |                            | FRTN5921 |
| 5922 | 11447 | 0 01 11462  | JMP      | OK30            | GO TO OK30                 | FRTN5922 |
| 5923 | 11450 | 0 12 11442  | IRS      | PKF             | PKF = PKF + 1              | FRTN5923 |
| 5924 | 11451 | 0 01 11455  | JMP      | OK20            | IF NON-ZERO, GO TO OK20    | FRTN5924 |
| 5925 | 11452 | 0 06 11443  | OK10 ADD | TOOK            | (A) = (A) + TO             | FRTN5925 |
| 5926 | 11453 | 0 10 13243  | JST      | OC00            | OUTPUT ABS                 | FRTN5926 |
| 5927 | 11454 | -0 01 11444 | JMP*     | OK00            |                            | FRTN5927 |
| 5928 | 11455 | 0414 70     | OK20 LGL | 8               |                            | FRTN5928 |
| 5929 | 11456 | 0 04 11443  | STA      | TOOK            |                            | FRTN5929 |
| 5930 | 11457 | 0 02 00676  | LDA      | K123            | PKF = -- 1                 | FRTN5930 |
| 5931 | 11460 | 0 04 11442  | STA      | PKF             |                            | FRTN5931 |
| 5932 | 11461 | -0 01 11444 | JMP*     | OK00            | RETURN                     | FRTN5932 |
| 5933 | 11462 | 0 02 11442  | OK30 LDA | PKF             | IF PKF = 0                 | FRTN5933 |
| 5934 | 11463 | 101040      | SNZ      |                 |                            | FRTN5934 |
| 5935 | 11464 | -0 01 11444 | JMP*     | OK00            | RETURN                     | FRTN5935 |
| 5936 | 11465 | 0 02 00660  | LDA      | K8              | ELSE (A) = SPACE,          | FRTN5936 |
| 5937 | 11466 | 0 04 11442  | STA      | PKF             |                            | FRTN5937 |
| 5938 | 11467 | 0 01 11452  | JMP      | OK10            | GO TO OK10                 | FRTN5938 |

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EJCT

FRTN5939

\* NAME: FRTN

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```
5940 *
5941 *
5942 *
5943 *
5944 *
5945 *
5946 *
5947 *
5948 *
5949 11470 0 00 00000 T105 PZE 0
5950 11471 0 000000 OB00 DAC **
5951 11472 0 04 00043 STA FTOP
5952 11473 000201 IAB
5953 11474 0 04 11470 STA T10B
5954 11475 0 35 00625 LDX A
5955 11476 0 02 00625 LDA A
5956 11477 101040 SNZ
5957 11500 0 01 11540 JMP OB08
5958 11501 0 10 03317 JST FA00
5959 11502 0 02 00647 LDA SOF
5960 11503 100040 SZE
5961 11504 0 01 11660 JMP OB60
5962 11505 0 02 00025 LDA AF
5963 11506 0 04 11470 STA T10B
5964 11507 0 02 00026 LDA AT
5965 11510 0 07 00741 SUR K105
5966 11511 101040 SNZ
5967 11512 0 01 11550 JMP OB15
5968 11513 0 02 00710 LDA IU
5969 11514 0 07 00735 SUR K101
5970 11515 101040 SNZ
5971 11516 0 01 11653 JMP OB40
5972 11517 0 02 00026 OB06 LDA AT
5973 11520 0 11 00740 CAS K104
5974 11521 0 01 11523 JMP **2
5975 11522 0 01 11554 JMP OB20
5976 11523 0 11 00735 CAS K101

*****
*OUTPUT 0A*
*****
GENERAL OUTPUT ROUTINE. MAKES CHECKS AGAINST
THE ASSIGNMENT TABLE ENTRY TO PROCESS DUMMY,
EXTERNAL, RELATIVE, ABSOLUTE OR STRING
REFERENCES PROPERLY.

FTOP = (A)

IF A = 0
GO TO OB08
FETCH ASSIGNS
SPECIAL OUTPU1 FLAT

SUBSCRIPT CONSTANT DEFLECTION

TO = AF

IF AT = 'DUM'

GO TO OB15

IF IU = 'SUB'

GO TO OB40

IF AT = 'COM'

GO TO OB20
```

FRTN5940  
FRTN5941  
FRTN5942  
FRTN5943  
FRTN5944  
FRTN5945  
FRTN5946  
FRTN5947  
FRTN5948  
FRTN5949  
FRTN5950  
FRTN5951  
FRTN5952  
FRTN5953  
FRTN5954  
FRTN5955  
FRTN5956  
FRTN5957  
FRTN5958  
FRTN5959  
FRTN5960  
FRTN5961  
FRTN5962  
FRTN5963  
FRTN5964  
FRTN5965  
FRTN5966  
FRTN5967  
FRTN5968  
FRTN5969  
FRTN5970  
FRTN5971  
FRTN5972  
FRTN5973  
FRTN5974  
FRTN5975  
FRTN5976

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```
5977 11524 0 01 11526 JMP **2
5978 11525 0 01 11543 JMP OB10
5979 11526 0 02 00737 LDA K103
5980 11527 000201 IAB
5981 11530 0 02 00643 LDA RPL
5982 11531 0 10 03571 JST AF00
5983 11532 0 02 00026 LDA AT
5984 11533 0 07 00737 SUB K103
5985 11534 101040 SNZ
5986 11535 0 01 11543 JMP OB10
5987 11536 140040 CRA
5988 11537 0 04 00025 STA AF
5989 11540 0 02 00043 OB08 LDA FTOP
5990 11541 0 10 13235 JST 0000
5991 11542 -0 01 11471 JMP* OB00
5992 11543 0 02 11470 OB10 LDA T10B
5993 11544 0 04 00025 STA AF
5994 11545 0 02 00043 LDA FTOP
5995 11546 0 10 13072 JST OB00
5996 11547 -0 01 11471 JMP* OB00
5997 11550 0 02 00043 OB15 LDA FTOP
5998 11551 140024 CHS
5999 11552 0 04 00043 STA FTOP
6000 11553 0 01 11543 JMP OB10
6001 11554 0 10 13531 OB20 JST FS00
6002 11555 0 02 11470 LDA T10B
6003 11556 0400 62 LRL 14
6004 11557 0 02 00043 LDA FTOP
6005 11560 0404 66 LGR 10
6006 11561 0 06 11673 ADD K150
6007 11562 0410 72 LLL 6
6008 11563 0 04 13650 STA OCI
6009 11564 0410 70 LLL 8
6010 11565 0 04 13651 STA OCI+1
6011 11566 0 15 11636 STX BRXS
6012 11567 0 10 03426 JST FLOC
6013 11570 1 02 17402 LDA DP+2+1

IF AT = 'REL'
GO TO OB10

DEFINE AF AND AT
IF AT = 'STR-RE'

GO TO OB10

AF = 0

OUTPUT ABSOLUTE
RETURN

OUTPUT REL
RETURN

GO TO OB10
OUTPUT COMMON REQUEST
PACK ADDRESS INTO BLOCK

SAVE INDEX
```

FRTN5977  
FRTN5978  
FRTN5979  
FRTN5980  
FRTN5981  
FRTN5982  
FRTN5983  
FRTN5984  
FRTN5985  
FRTN5986  
FRTN5987  
FRTN5988  
FRTN5989  
FRTN5990  
FRTN5991  
FRTN5992  
FRTN5993  
FRTN5994  
FRTN5995  
FRTN5996  
FRTN5997  
FRTN5998  
FRTN5999  
FRTN6000  
FRTN6001  
FRTN6002  
FRTN6003  
FRTN6004  
FRTN6005  
FRTN6006  
FRTN6007  
FRTN6008  
FRTN6009  
FRTN6010  
FRTN6011  
FRTN6012  
FRTN6013

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|      |       |             |          |        |                                   |          |
|------|-------|-------------|----------|--------|-----------------------------------|----------|
| 6014 | 11571 | 0 04 13761  | STA      | PRI+13 | SET COMMON NAME INTO PRINT BUFFER | FRTN6014 |
| 6015 | 11572 | 0412 70     | LLR      | 8      |                                   | FRTN6015 |
| 6016 | 11573 | 0 04 13654  | STA      | OCI+4  |                                   | FRTN6016 |
| 6017 | 11574 | 0410 70     | LLL      | 8      |                                   | FRTN6017 |
| 6018 | 11575 | 1 02 17403  | LDA      | DP+3.1 |                                   | FRTN6018 |
| 6019 | 11576 | 0 04 13760  | STA      | PRI+12 | SET COMMON NAME INTO PRINT BUFFER | FRTN6019 |
| 6020 | 11577 | 0412 70     | LLR      | 8      |                                   | FRTN6020 |
| 6021 | 11600 | 0 04 13653  | STA      | OCI+3  |                                   | FRTN6021 |
| 6022 | 11601 | 0410 70     | LLL      | 8      |                                   | FRTN6022 |
| 6023 | 11602 | 1 02 17404  | LDA      | DP+4.1 |                                   | FRTN6023 |
| 6024 | 11603 | 0 03 00670  | ANA      | K111   | =*037777                          | FRTN6024 |
| 6025 | 11604 | 0 11 11605  | CAS      | *+1    | LOOK FOR BLANK COMMON             | FRTN6025 |
| 6026 | 11605 | 020240      | BLKC OCT | 020240 |                                   | FRTN6026 |
| 6027 | 11606 | 0 05 00675  | ERA      | K122   |                                   | FRTN6027 |
| 6028 | 11607 | 0 05 00703  | ERA      | HBIT   |                                   | FRTN6028 |
| 6029 | 11610 | 0 04 13757  | STA      | PRI+11 | SET NAME INTO PRINT BUFFER        | FRTN6029 |
| 6030 | 11611 | 0412 70     | LLR      | 8      |                                   | FRTN6030 |
| 6031 | 11612 | 0 04 13652  | STA      | OCI+2  |                                   | FRTN6031 |
| 6032 | 11613 | 0410 70     | LLL      | 8      |                                   | FRTN6032 |
| 6033 | 11614 | 0 02 13651  | LDA      | OCI+1  |                                   | FRTN6033 |
| 6034 | 11615 | 0410 70     | LLL      | 8      |                                   | FRTN6034 |
| 6035 | 11616 | 0 04 13651  | STA      | OCI+1  |                                   | FRTN6035 |
| 6036 | 11617 | 0 02 00750  | LDA      | K128   | =*14                              | FRTN6036 |
| 6037 | 11620 | 0 04 00063  | STA      | OCNT   |                                   | FRTN6037 |
| 6038 | 11621 | 0 35 11636  | LDX      | OBXS   | RESTORE INDEX                     | FRTN6038 |
| 6039 | 11622 | 0 15 00625  | STX      | A      | RESTORE A TO POINT AT NAME        | FRTN6039 |
| 6040 | 11623 | 0 02 00643  | LDA      | RPL    | SET RPL MINUS                     | FRTN6040 |
| 6041 | 11624 | 140500      | SSM      |        | TO DISABLE WORD OUTPUT            | FRTN6041 |
| 6042 | 11625 | 0 04 00643  | STA      | RPL    |                                   | FRTN6042 |
| 6043 | 11626 | 0 02 00043  | LDA      | FTOP   | OUTPUT WORD TO LIST               | FRTN6043 |
| 6044 | 11627 | 0 10 13072  | JST      | OR00   | SYMBOLIC COMMAND                  | FRTN6044 |
| 6045 | 11630 | 0 02 00643  | LDA      | RPL    | RESTORE AND                       | FRTN6045 |
| 6046 | 11631 | 140100      | SSP      |        | INCREMENT PROGRAM                 | FRTN6046 |
| 6047 | 11632 | 141206      | AOA      |        | COUNTER FOR COMMON                | FRTN6047 |
| 6048 | 11633 | 0 04 00643  | STA      | RPL    | OUTPUT                            | FRTN6048 |
| 6049 | 11634 | 0 10 13531  | JST      | FS00   | CLOSE OUT BLOCK                   | FRTN6049 |
| 6050 | 11635 | -0 01 11471 | JMP*     | OB00   | EXIT                              | FRTN6050 |

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|      |       |             |          |                        |                           |
|------|-------|-------------|----------|------------------------|---------------------------|
| 6051 | 11636 | OBXS BSS    | 1        | TEMP STORAGE FOR INDEX | FRTN6051                  |
| 6052 | 11637 | 1 02 17404  | OB30 LDA | DP+4.1                 | FRTN6052                  |
| 6053 | 11640 | 140500      | SSM      |                        | FRTN6053                  |
| 6054 | 11641 | 0416 77     | ALR      | 1                      | FRTN6054                  |
| 6055 | 11642 | 140500      | SSM      |                        | FRTN6055                  |
| 6056 | 11643 | 0406 77     | ARR      | 1                      | FRTN6056                  |
| 6057 | 11644 | 0 04 00051  | STA      | NAMF                   | FRTN6057                  |
| 6058 | 11645 | 1 02 17403  | LDA      | DP+3.1                 | FRTN6058                  |
| 6059 | 11646 | 0 04 00052  | STA      | NAMF+1                 | FRTN6059                  |
| 6060 | 11647 | 1 02 17402  | LDA      | DP+2.1                 | FRTN6060                  |
| 6061 | 11650 | 0 04 00053  | STA      | NAMF+2                 | FRTN6061                  |
| 6062 | 11651 | 0 10 11370  | JST      | RE00                   | OUTPUT FTOP EXTERNAL      |
| 6063 | 11652 | -0 01 11471 | JMP*     | OB00                   | FRTN6062                  |
| 6064 | 11653 | 0 02 00026  | OB40 LDA | AT                     | FRTN6063                  |
| 6065 | 11654 | 0 07 00736  | SUB      | K102                   | FRTN6064                  |
| 6066 | 11655 | 101040      | SNZ      |                        | FRTN6065                  |
| 6067 | 11656 | 0 01 11637  | JMP      | OB30                   | FRTN6066                  |
| 6068 | 11657 | 0 01 11517  | JMP      | OB06                   | FRTN6067                  |
| 6069 |       | *           |          |                        | FRTN6068                  |
| 6070 | 11660 | 140040      | OB60 CRA |                        | FRTN6069                  |
| 6071 | 11661 | 0 04 00647  | STA      | SOF                    | FRTN6070                  |
| 6072 | 11662 | 0 02 00026  | LDA      | AT                     | RESET SPECIAL OUTPUT FLAG |
| 6073 | 11663 | 0 11 00741  | CAS      | K105                   | ADDRESS TYPE              |
| 6074 | 11664 | 0 01 11517  | JMP      | OR06                   | TEST FOR DUMMY            |
| 6075 | 11665 | 0 01 11667  | JMP      | OB61                   | PROCESS NORMALLY          |
| 6076 | 11666 | 0 01 11517  | JMP      | OB06                   | FRTN6075                  |
| 6077 | 11667 | 0 02 11470  | OB61 LDA | T106                   | PROCESS NORMALLY          |
| 6078 | 11670 | 0 04 00043  | STA      | FTOP                   | FRTN6076                  |
| 6079 | 11671 | 0 10 13243  | JST      | OC00                   | FRTN6077                  |
| 6080 | 11672 | -0 01 11471 | JMP*     | OB00                   | FRTN6078                  |
| 6081 |       | *           |          |                        | FRTN6079                  |
| 6082 | 11673 | 000700      | K150 OCT | 700                    | RETURN                    |
| 6083 |       |             | EJCT     |                        | FRTN6080                  |

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```
6084 *
6085 *
6086 *
6087 *
6088 *
6089 *
6090 *
6091 *
6092 *
6093 11674 C 00 00000 T00T PZE 0
6094 11675 0 00 00000 T20T PZE 0
6095 11676 0 00 00000 T10T PZE 0
6096 11677 0 00 00000 T30T PZE 0
6097 11700 0 00 00000 T40T PZE 0
6098 11701 0 000000 OT00 DAC **
6099 11702 C 15 12231 STX OTX5
6100 11703 0 02 01060 LDA LIBF
6101 11704 0416 75 ALR 3
6102 11705 101400 SMI
6103 11706 0 01 11740 JMP OT04
6104 11707 0 02 00627 LDA L
6105 11710 0 11 00113 CT02 CAS L0
6106 11711 0 01 11737 JMP OT03
6107 11712 0 01 11737 JMP OT03
6108 11713 0 04 00626 STA I
6109 11714 0 10 13272 JST OR80
6110 11715 0 013746 DAC PRI+2
6111 11716 0 35 00626 LDX I
6112 11717 1 02 17402 LDA DP+2,1
6113 11720 0 10 13272 JST OR80
6114 11721 0 013753 DAC PRI+7
6115 11722 0 35 00626 LDX I
6116 11723 1 02 17401 LDA DP+1,1
6117 11724 0 10 13272 JST OR80
6118 11725 0 013757 DAC PRI+11
6119 11726 0 35 00626 LDX I
6120 11727 1 02 17400 LDA DP,1
```

\*\*\*\*\*  
\*OUTPUT TRIADS\*  
\*\*\*\*\*  
PROCESSES THE TRIAD TABLE. HANDLES FETCH  
GENERATION AND RELATIONAL OPERATOR CODE  
GENERATION. DRIVES OUTPLT ITEM. ASSIGNS  
AND OUTPUT TEMP STORES.

TEMP STORE FOR P

SAVE INDEX  
CHECK IF DIAGNOSTIC DUMPS REQUESTED  
MOVE BIT 4 TO SIGN BIT

IF NOT, OMIT TABLE OUTPUT

TEST FOR FINISH  
ALL DONE

PRINT L

PRINT P

PRINT 01

PRINT 02

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```
6121 11730 0 10 13272 JST OR80
6122 11731 0 013753 DAC PRI+15
6123 11732 0 10 00000 CALL F4$SYM
6124 11733 0 013744 DAC PRI
6125 11734 0 02 00626 LDA I
6126 11735 0 06 00737 ADD K103
6127 11736 0 01 11710 JMP OT02
6128 11737 0 10 13321 OT03 JST PRSP
6129 *
6130 011740 OT04 EQU *
6131 11740 0 02 00113 LDA L0
6132 11741 0 04 00626 STA I
6133 11742 140040 CRA
6134 11743 0 04 11674 STA T00T
6135 11744 0 04 00077 STA IFLG
6136 11745 0 04 11676 OT06 STA T10T
6137 11746 0 02 00626 OT10 LDA I
6138 11747 0 07 00737 SUB K103
6139 11750 0 04 00626 STA I
6140 11751 0 04 00000 STA 0
6141 11752 0 04 11675 STA T20T
6142 11753 0 07 00627 SUB L
6143 11754 100400 SPL
6144 11755 0 01 12225 JMP OT60
6145 11756 1 02 17402 LDA DP+2,1
6146 11757 140100 SSP
6147 11760 0 11 00701 CAS K139
6148 11761 0 01 11753 JMP **2
6149 11762 0 01 11746 JMP OT10
6150 11763 0 11 00700 CAS K138
6151 11764 0 01 11766 JMP **2
6152 11765 0 01 11746 JMP OT10
6153 11766 0 11 00760 CAS K142
6154 11767 0 01 11771 JMP **2
6155 11770 0 01 12216 JMP OT50
6156 11771 0 11 00761 CAS K143
6157 11772 0 01 11774 JMP **2
```

PRINT -- NOW

BUMP I

SET TO SPACES AFTER PRINTING

I = L0

T0 = 0

T1 = I

I = I-3

T2 = I

IF FINISHED, GO TO OT60

CHECK P (I)

X

H

I

T

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|      |       |            |          |        |                                       |          |
|------|-------|------------|----------|--------|---------------------------------------|----------|
| 6158 | 11773 | 0 01 12207 | JMP      | OT40   |                                       | FRTN6158 |
| 6159 | 11774 | 0 11 12423 | CAS      | OM50   | G                                     | FRTN6159 |
| 6160 | 11775 | 0 01 11777 | JMP      | **2    |                                       | FRTN6160 |
| 6161 | 11776 | 0 01 12140 | JMP      | OT35   |                                       | FRTN6161 |
| 6162 | 11777 | 0 04 11677 | STA      | T30T   | SAVE P                                | FRTN6162 |
| 6163 | 12000 | 1 02 17401 | LDA      | DP+1,1 |                                       | FRTN6163 |
| 6164 | 12001 | 0 04 00625 | STA      | A      | A = 01(I)                             | FRTN6164 |
| 6165 | 12002 | 0 11 11676 | CAS      | T10T   |                                       | FRTN6165 |
| 6166 | 12003 | 0 01 12005 | JMP      | **2    |                                       | FRTN6166 |
| 6167 | 12004 | 0 01 12054 | JMP      | OT30   |                                       | FRTN6167 |
| 6168 | 12005 | 0 11 00113 | CAS      | L0     |                                       | FRTN6168 |
| 6169 | 12006 | 0 01 12061 | JMP      | OT16   |                                       | FRTN6169 |
| 6170 | 12007 | 0 01 12232 | JMP      | OT99   | MAYBE SPECIAL LOAD FOR (A=) STATEMENT | FRTN6170 |
| 6171 | 12010 | 0 01 12061 | JMP      | OT16   |                                       | FRTN6171 |
| 6172 | 12011 | 0 35 00626 | OT18 LDX | I      |                                       | FRTN6172 |
| 6173 | 12012 | 1 02 17400 | LDA      | DP,1   |                                       | FRTN6173 |
| 6174 | 12013 | 0 04 00625 | STA      | A      | A = 02 (I)                            | FRTN6174 |
| 6175 | 12014 | 1 02 17402 | LDA      | DP+2,1 |                                       | FRTN6175 |
| 6176 | 12015 | 140100     | SSP      |        |                                       | FRTN6176 |
| 6177 | 12016 | 0 10 12247 | JST      | OM00   | OUTPUT ITEM(P(I),A = 02(I))           | FRTN6177 |
| 6178 | 12017 | 0 35 00626 | OT22 LDX | I      |                                       | FRTN6178 |
| 6179 | 12020 | 1 02 17402 | LDA      | DP+2,1 |                                       | FRTN6179 |
| 6180 | 12021 | 101400     | SMI      |        |                                       | FRTN6180 |
| 6181 | 12022 | 0 01 12052 | JMP      | OT28   |                                       | FRTN6181 |
| 6182 | 12023 | 140040     | CRA      |        | ASSIGN TEMP STOR                      | FRTN6182 |
| 6183 | 12024 | 0 04 00054 | STA      | NT     | NT = 0                                | FRTN6183 |
| 6184 | 12025 | 0 02 00736 | LDA      | K102   |                                       | FRTN6184 |
| 6185 | 12026 | 0 04 00710 | STA      | IU     | IU = VAR                              | FRTN6185 |
| 6186 | 12027 | 0 02 11674 | LDA      | T00T   |                                       | FRTN6186 |
| 6187 | 12030 | 0400 72    | LRL      | 6      |                                       | FRTN6187 |
| 6188 | 12031 | 0 02 00635 | LDA      | TCF    | ID =                                  | FRTN6188 |
| 6189 | 12032 | 0400 75    | LRL      | 3      | TS-IM-TCF-TO                          | FRTN6189 |
| 6190 | 12033 | 0 02 00630 | LDA      | MFL    |                                       | FRTN6190 |
| 6191 | 12034 | 0 04 00706 | STA      | IM     |                                       | FRTN6191 |
| 6192 | 12035 | 0410 67    | LLL      | 9      |                                       | FRTN6192 |
| 6193 | 12036 | 0 10 13272 | JST      | OR80   |                                       | FRTN6193 |
| 6194 | 12037 | 0 000774   | DAC      | ID     |                                       | FRTN6194 |

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|      |       |            |          |        |                                     |          |
|------|-------|------------|----------|--------|-------------------------------------|----------|
| 6195 | 12040 | 0 02 12240 | LDA      | K77    |                                     | FRTN6195 |
| 6196 | 12041 | 0 04 00774 | STA      | ID     |                                     | FRTN6196 |
| 6197 | 12042 | 0 12 11674 | IRS      | T00T   | TO = TO+1                           | FRTN6197 |
| 6198 | 12043 | 0 10 02762 | JST      | AS00   | ASSIGN ITEM                         | FRTN6198 |
| 6199 | 12044 | 0 35 00626 | LDX      | I      |                                     | FRTN6199 |
| 6200 | 12045 | 0 02 00625 | LDA      | A      |                                     | FRTN6200 |
| 6201 | 12046 | 1 04 17400 | STA      | DP,1   | 02(I) = A                           | FRTN6201 |
| 6202 | 12047 | 0 02 00753 | LDA      | K153   |                                     | FRTN6202 |
| 6203 | 12050 | 140500     | SSM      |        | SURPRESS TRACE OF TEMPORARY STORAGE | FRTN6203 |
| 6204 | 12051 | 0 10 12247 | JST      | OM00   | OUTPUT ITEM (=,A)                   | FRTN6204 |
| 6205 | 12052 | 0 02 00626 | OT28 LDX | I      |                                     | FRTN6205 |
| 6206 | 12053 | 0 01 11745 | JMP      | OT06   |                                     | FRTN6206 |
| 6207 | 12054 | 0 35 00625 | OT30 LDX | A      |                                     | FRTN6207 |
| 6208 | 12055 | 1 02 17402 | LDA      | DP+2,1 |                                     | FRTN6208 |
| 6209 | 12056 | 140100     | SSP      |        | IF P (A) = 0                        | FRTN6209 |
| 6210 | 12057 | 100040     | SZE      |        |                                     | FRTN6210 |
| 6211 | 12060 | 0 01 12063 | JMP      | OT32   |                                     | FRTN6211 |
| 6212 | 12061 | 0 02 12427 | OT16 LDA | K152   | GENERATE FETCH                      | FRTN6212 |
| 6213 | 12062 | 0 10 12247 | JST      | OM00   | OUTPUT ITEM                         | FRTN6213 |
| 6214 | 12063 | 0 02 11677 | OT32 LDA | T30T   | CHECK FOR RELATIONALS               | FRTN6214 |
| 6215 | 12064 | 0 07 00744 | SUB      | K125   | =*10                                | FRTN6215 |
| 6216 | 12065 | 100400     | SPL      |        |                                     | FRTN6216 |
| 6217 | 12066 | 0 01 12011 | JMP      | OT18   | NOT LOGICAL OPERATOR                | FRTN6217 |
| 6218 | 12067 | 0 07 00742 | SUB      | K106   | =6                                  | FRTN6218 |
| 6219 | 12070 | 101400     | SMI      |        |                                     | FRTN6219 |
| 6220 | 12071 | 0 01 12011 | JMP      | OT18   | NOT A LOGICAL OPERATOR              | FRTN6220 |
| 6221 | 12072 | 0 04 00000 | STA      | 0      | SET INDEX = -1 TO -6                | FRTN6221 |
| 6222 | 12073 | 0 02 00737 | LDA      | K103   | =3 (LOG)                            | FRTN6222 |
| 6223 | 12074 | 0 13 00630 | IMA      | MFL    | SET MODE TO LOGICAL                 | FRTN6223 |
| 6224 | 12075 | 0 11 00741 | CAS      | K105   | CHECK PREVIOUS MODE                 | FRTN6224 |
| 6225 | 12076 | 100000     | SKP      |        |                                     | FRTN6225 |
| 6226 | 12077 | 0 01 12135 | JMP      | OT3H   | IF IT WAS COMPLEX, FLAG ERROR       | FRTN6226 |
| 6227 | 12100 | 140040     | CRA      |        |                                     | FRTN6227 |
| 6228 | 12101 | 0 04 00625 | STA      | A      | SET FOR OCTAL ADDRESS               | FRTN6228 |
| 6229 | 12102 | 1 01 12111 | JMP      | **7,1  | BRANCH TO OPERATOR PROCESSOR        | FRTN6229 |
| 6230 | 12103 | 0 01 12133 | JMP      | OT3G   | .LT.                                | FRTN6230 |
| 6231 | 12104 | 0 01 12127 | JMP      | OT3E   | .LE.                                | FRTN6231 |

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|            |            |          |        |                                        |          |
|------------|------------|----------|--------|----------------------------------------|----------|
| 6232 12105 | 0 01 12120 | JMP      | OT3C   | .EO.                                   | FRTN6232 |
| 6233 12106 | 0 01 12116 | JMP      | OT3B   | .GE.                                   | FRTN6233 |
| 6234 12107 | 0 01 12114 | JMP      | OT3A   | .GT.                                   | FRTN6234 |
| 6235 12110 | 0 02 13036 | LDA      | OMJ4   | .NE. =ALS 16                           | FRTN6235 |
| 6236 12111 | 0 10 13235 | JST      | 0000   | OUTPUT ABSOLUTE                        | FRTN6236 |
| 6237 12112 | 0 02 13040 | LDA      | OMJ6   | =ACA                                   | FRTN6237 |
| 6238 12113 | 0 01 12125 | JMP      | OT3D   |                                        | FRTN6238 |
| 6239 12114 | 0 02 13041 | OT3A LDA | OMJ7   | =TCA                                   | FRTN6239 |
| 6240 12115 | 0 01 12132 | JMP      | OT3F   |                                        | FRTN6240 |
| 6241 12116 | 0 02 13042 | OT3B LDA | OMK1   | =CMA                                   | FRTN6241 |
| 6242 12117 | 0 01 12132 | JMP      | OT3F   |                                        | FRTN6242 |
| 6243 12120 | 0 02 13036 | OT3C LDA | OMJ4   | = ALS 16                               | FRTN6243 |
| 6244 12121 | 0 10 13235 | JST      | 0000   |                                        | FRTN6244 |
| 6245 12122 | 0 02 13043 | LDA      | OMK2   | =SSC                                   | FRTN6245 |
| 6246 12123 | 0 10 13235 | JST      | 0000   | OUTPUT ABSOLUTE                        | FRTN6246 |
| 6247 12124 | 0 02 13044 | LDA      | OMK3   | =AOA                                   | FRTN6247 |
| 6248 12125 | 0 10 13235 | OT3D JST | 0000   | OUTPUT ABSOLUTE                        | FRTN6248 |
| 6249 12126 | 0 01 12017 | JMP      | OT22   |                                        | FRTN6249 |
| 6250 12127 | 0 02 13034 | OT3E LDA | OMJ2   | =SNZ                                   | FRTN6250 |
| 6251 12130 | 0 10 13235 | JST      | 0000   | OUTPUT ABSOLUTE                        | FRTN6251 |
| 6252 12131 | 0 02 13045 | LDA      | OMK4   | =SSM                                   | FRTN6252 |
| 6253 12132 | 0 10 13235 | OT3F JST | 0000   | OUTPUT ABSOLUTE                        | FRTN6253 |
| 6254 12133 | 0 02 13037 | OT3G LDA | OMJ5   | =LGR 15                                | FRTN6254 |
| 6255 12134 | 0 01 12125 | JMP      | OT3D   |                                        | FRTN6255 |
| 6256 12135 | 0 10 02615 | OT3H JST | EP00   | ERROR                                  | FRTN6256 |
| 6257 12136 | 151303     | ECI      | 1*RC   | COMPLEX VALUE IN RELATIONAL EXPRESSION | FRTN6257 |
| 6258       |            | *        |        |                                        | FRTN6258 |
| 6259 12137 | 14*260     | K78 SCI  | 1*LC   |                                        | FRTN6259 |
| 6260       |            | *        |        |                                        | FRTN6260 |
| 6261 12140 | 1 02 17401 | OT35 LDA | DP+1.1 |                                        | FRTN6261 |
| 6262 12141 | 0 04 00625 | STA      | A      |                                        | FRTN6262 |
| 6263 12142 | 0 10 03317 | JST      | FA00   |                                        | FRTN6263 |
| 6264 12143 | 0 02 00706 | LDA      | IM     | NAME WILL BE FSL(IM)                   | FRTN6264 |
| 6265 12144 | 0 06 12137 | ADD      | K78    |                                        | FRTN6265 |
| 6266 12145 | 0 04 11700 | STA      | T40T   |                                        | FRTN6266 |
| 6267 12146 | 0 02 00625 | LDA      | A      |                                        | FRTN6267 |
| 6268 12147 | 100400     | SPL      |        |                                        | FRTN6268 |

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|            |            |          |        |                                     |          |
|------------|------------|----------|--------|-------------------------------------|----------|
| 6269 12150 | 0 10 03443 | JST      | KT00   |                                     | FRTN6269 |
| 6270 12151 | 0 02 00030 | LDA      | D0     |                                     | FRTN6270 |
| 6271 12152 | 100040     | SZE      |        | SKIP IF UNKNOWN (ADJ. DIM. ARRAY)   | FRTN6271 |
| 6272 12153 | 0 01 12201 | JMP      | OT37   |                                     | FRTN6272 |
| 6273 12154 | 0 02 00071 | LDA      | X      | OUTPUT CODE TO COMPTF SIZE          | FRTN6273 |
| 6274 12155 | 0 04 00625 | STA      | A      |                                     | FRTN6274 |
| 6275 12156 | 0 02 12427 | LDA      | K152   |                                     | FRTN6275 |
| 6276 12157 | 0 10 12247 | JST      | OM00   | (OUTPUT LOAD = DIMENSION N)         | FRTN6276 |
| 6277 12160 | 0 02 00076 | LDA      | ND     |                                     | FRTN6277 |
| 6278 12161 | 0 04 00000 | STA      | 0      |                                     | FRTN6278 |
| 6279 12162 | 0 07 00735 | SUB      | K101   |                                     | FRTN6279 |
| 6280 12163 | 100400     | SPL      |        | SKIP IF NOT THROUGH                 | FRTN6280 |
| 6281 12164 | 0 01 12172 | JMP      | OT36   |                                     | FRTN6281 |
| 6282 12165 | 0 04 00076 | STA      | ND     |                                     | FRTN6282 |
| 6283 12166 | 1 02 00071 | LDA      | X*1    |                                     | FRTN6283 |
| 6284 12167 | 0 04 00625 | STA      | A      |                                     | FRTN6284 |
| 6285 12170 | 0 02 00737 | LDA      | K103   | (OUTPUT MULT = DIMENSION N-1)       | FRTN6285 |
| 6286 12171 | 0 01 12250 | JMP      | OM01   | REPEAT ABOVE TILL DONE              | FRTN6286 |
| 6287 12172 | 140040     | OT36 CRA |        | FORCE OCTAL LISTING FOR NEXT OUTPUT | FRTN6287 |
| 6288 12173 | 0 04 00625 | STA      | A      |                                     | FRTN6288 |
| 6289 12174 | 0 02 00643 | LDA      | SPL    | OUTPUT *STORE **2*                  | FRTN6289 |
| 6290 12175 | 0 06 00736 | ADD      | K102   |                                     | FRTN6290 |
| 6291 12176 | 0 04 00025 | STA      | AF     |                                     | FRTN6291 |
| 6292 12177 | 0 02 13031 | LDA      | OM18   |                                     | FRTN6292 |
| 6293 12201 | 0 10 13173 | JST      | OR00   |                                     | FRTN6293 |
| 6294 12201 | 0 04 00774 | OT37 STA | ID     |                                     | FRTN6294 |
| 6295 12201 | 0 02 11700 | LDA      | T40T   |                                     | FRTN6295 |
| 6296 12203 | 0 04 00057 | STA      | NAMF+1 |                                     | FRTN6296 |
| 6297 12204 | 0 10 02501 | JST      | AF00   |                                     | FRTN6297 |
| 6298 12204 | 0 10 11332 | JST      | OL00   | OUTPUT OBJECT LINK                  | FRTN6298 |
| 6299 12204 | 0 01 12011 | JMP      | OT18   | GO TO OT18                          | FRTN6299 |
| 6300 12207 | 1 02 17400 | OT40 LDA | DP*1   |                                     | FRTN6300 |
| 6301 12210 | 0 06 00655 | ADD      | D0     |                                     | FRTN6301 |
| 6302 12211 | 0 04 00626 | STA      | I      | I = 02 (I) + D0                     | FRTN6302 |
| 6303 12212 | 0 10 06155 | JST      | 0000   | D0 TERMINATION                      | FRTN6303 |
| 6304 12213 | 0 02 11675 | OT45 LDA | T20T   |                                     | FRTN6304 |
| 6305 12214 | 0 04 00626 | STA      | I      | I = T2                              | FRTN6305 |

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|------|-------|-------------|----------|-------|-------------------------|--|----------|
| 6306 | 12215 | C 01 12052  | JMP      | OT28  |                         |  | FRTN6306 |
| 6307 | 12216 | 1 02 17400  | OT50 LDA | DP+1  |                         |  | FRTN6307 |
| 6308 | 12217 | 0 06 00655  | ADD      | DO    | I=02(I)+DO              |  | FRTN6308 |
| 6309 | 12220 | 0 04 00626  | STA      | I     | IF I = DO               |  | FRTN6309 |
| 6310 | 12221 | 0 07 00655  | SUB      | DO    |                         |  | FRTN6310 |
| 6311 | 12222 | 100040      | SZE      |       | GO TO OT45              |  | FRTN6311 |
| 6312 | 12223 | 0 10 06131  | JST      | DS00  | DO INITIALIZE           |  | FRTN6312 |
| 6313 | 12224 | 0 01 12213  | JMP      | OT45  | GO TO OT45              |  | FRTN6313 |
| 6314 | 12225 | 0 35 12231  | OT60 LDX | OTXS  | RESTORE INDEX           |  | FRTN6314 |
| 6315 | 12226 | 0 02 00113  | LDA      | LO    | RESET TRIAD TABLE       |  | FRTN6315 |
| 6316 | 12227 | 0 04 00627  | STA      | L     |                         |  | FRTN6316 |
| 6317 | 12230 | -0 01 11701 | JMP*     | OT00  |                         |  | FRTN6317 |
| 6318 | 12231 |             | OTXS BSS | 1     | TEMP STORAGE FOR INDEX  |  | FRTN6318 |
| 6319 |       |             | *        |       |                         |  | FRTN6319 |
| 6320 | 12232 | 0 02 11677  | OT99 LDA | T30T  |                         |  | FRTN6320 |
| 6321 | 12233 | 0 07 00753  | SUB      | K153  | CODE FOR =              |  | FRTN6321 |
| 6322 | 12234 | 100040      | SZE      |       |                         |  | FRTN6322 |
| 6323 | 12235 | 0 01 12061  | JMP      | OT16  | NOT SPECIAL LOAD        |  | FRTN6323 |
| 6324 | 12236 | 0 04 00630  | STA      | MFL   | SPECIAL LOAD, SET MFL=0 |  | FRTN6324 |
| 6325 | 12237 | 0 01 12011  | JMP      | OT18  | OUTPUT A STORE          |  | FRTN6325 |
| 6326 | 12240 | 152244      | K77 BCI  | 1+T\$ | T\$                     |  | FRTN6326 |
| 6327 |       |             | EJCT     |       |                         |  | FRTN6327 |

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|------|-------|------------|-----------------------------------------------|------|-------------------|----------|
| 6328 |       | *          | *****                                         |      |                   | FRTN6328 |
| 6329 |       | *          | *OUTPUT ITEM*                                 |      |                   | FRTN6329 |
| 6330 |       | *          | *****                                         |      |                   | FRTN6330 |
| 6331 |       | *          |                                               |      |                   | FRTN6331 |
| 6332 |       | *          |                                               |      |                   | FRTN6332 |
| 6333 |       | *          | DRIVES BASIC OUTPUT ROUTINES. HANDLES SPECIAL |      |                   | FRTN6333 |
| 6334 |       | *          | SUBSCRIPT PROCESSING. GENERATES NECESSARY     |      |                   | FRTN6334 |
| 6335 |       | *          | MODE CONVERSION CALLS AND HANDLES MODE        |      |                   | FRTN6335 |
| 6336 |       | *          | CHECKING. IN-LINE ARITHMETIC CODE IS          |      |                   | FRTN6336 |
| 6337 |       | *          | GENERATED WHERE POSSIBLE. OTHERWISE CALLS     |      |                   | FRTN6337 |
| 6338 |       | *          | TO ARITHMETIC ROUTINES ARE GENERATED.         |      |                   | FRTN6338 |
| 6339 | 12241 | 0 00 00000 | T0CM PZE                                      | 0    |                   | FRTN6339 |
| 6340 | 12242 | 0 00 00000 | T10M PZE                                      | 0    |                   | FRTN6340 |
| 6341 | 12243 | 0 00 00000 | T20M PZE                                      | 0    |                   | FRTN6341 |
| 6342 | 12244 | 0 00 00000 | T80M PZE                                      | 0    |                   | FRTN6342 |
| 6343 | 12245 | 0 00 00000 | T90M PZE                                      | 0    |                   | FRTN6343 |
| 6344 | 12246 | 0 00 00000 | TX0M PZE                                      | 0    |                   | FRTN6344 |
| 6345 |       | *          |                                               |      |                   | FRTN6345 |
| 6346 |       | *          | -----OUTPUT ITEM                              |      |                   | FRTN6346 |
| 6347 | 12247 | 0 000000   | OM00 DAC                                      | **   | RETURN ADDR       | FRTN6347 |
| 6348 | 12250 | 0 04 12244 | OM01 STA                                      | T80M |                   | FRTN6348 |
| 6349 | 12251 | 140100     | SSP                                           |      |                   | FRTN6349 |
| 6350 | 12252 | 0 04 12241 | STA                                           | T00M | R(0)=(A)=*P* CODE | FRTN6350 |
| 6351 | 12253 | 0 11 00754 | CAS                                           | K134 |                   | FRTN6351 |
| 6352 | 12254 | 0 01 12256 | JMP                                           | *+2  |                   | FRTN6352 |
| 6353 | 12255 | 0 01 12745 | JMP                                           | OMD1 |                   | FRTN6353 |
| 6354 | 12256 | 0 02 12246 | LDA                                           | TX0M |                   | FRTN6354 |
| 6355 | 12257 | 0 11 00735 | CAS                                           | K101 |                   | FRTN6355 |
| 6356 | 12260 | 0 01 12747 | JMP                                           | OME1 |                   | FRTN6356 |
| 6357 | 12261 | 0 01 12751 | JMP                                           | OME5 |                   | FRTN6357 |
| 6358 | 12262 | 140040     | OM05 CRA                                      |      |                   | FRTN6358 |
| 6359 | 12263 | 0 04 12242 | STA                                           | T10M | T(1)=0            | FRTN6359 |
| 6360 | 12264 | 0 04 12245 | STA                                           | T90M | T(9)=0            | FRTN6360 |
| 6361 | 12265 | 0 02 00625 | LDA                                           | A    |                   | FRTN6361 |
| 6362 | 12266 | 0 04 12243 | STA                                           | T20M | T(2)=A            | FRTN6362 |
| 6363 | 12267 | 100040     | SZE                                           |      |                   | FRTN6363 |
| 6364 | 12270 | 0 01 12273 | JMP                                           | OM07 |                   | FRTN6364 |

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|------------|-------------|----------|----------|-----------------------------------------|----------|
| 6365 12271 | 0 12 00630  | LDA      | MFL      |                                         | FRTN6365 |
| 6366 12272 | 0 01 12305  | JMP      | OM13     |                                         | FRTN6366 |
| 6367 12273 | 0 11 00113  | OM07 CAS | LO       |                                         | FRTN6367 |
| 6368 12274 | 0 01 12276  | JMP      | **2      |                                         | FRTN6368 |
| 6369 12275 | 0 01 13067  | JMP      | OML1     |                                         | FRTN6369 |
| 6370 12276 | 0 11 00637  | CAS      | ABAR     |                                         | FRTN6370 |
| 6371 12277 | 0 01 12511  | JMP      | OM76     | A .LE. ABAR.....WITHIN TRIAD TABLE      | FRTN6371 |
| 6372 12300 | 0 01 12301  | JMP      | **1      |                                         | FRTN6372 |
| 6373 12301 | 0 35 00625  | OM10 LDX | A        |                                         | FRTN6373 |
| 6374 12302 | 1 02 17400  | LDA      | DP.1     |                                         | FRTN6374 |
| 6375 12303 | 0405 67     | ARS      | 9        | SES IM=MODE OF ITEM                     | FRTN6375 |
| 6376 12304 | 0 03 00743  | ANA      | K107     |                                         | FRTN6376 |
| 6377 12305 | 0 04 00706  | OM13 STA | IM       |                                         | FRTN6377 |
| 6378 12306 | 0 02 00630  | OM14 LDA | MFL      | SET MFL.IM AS DIGITS INTO NAME          | FRTN6378 |
| 6379 12307 | 0415 70     | ALS      | 8        |                                         | FRTN6379 |
| 6380 12310 | 0 06 00706  | ADD      | IM       |                                         | FRTN6380 |
| 6381 12311 | 0 05 12615  | ERA      | OM90     | ADD '0''0'                              | FRTN6381 |
| 6382 12312 | 0 04 00052  | STA      | NAMF+1   |                                         | FRTN6382 |
| 6383 12313 | 0 35 00762  | LDX      | K130     | =-6                                     | FRTN6383 |
| 6384 12314 | 0 02 12241  | LDA      | TOOM     |                                         | FRTN6384 |
| 6385 12315 | 1 11 12431  | CAS      | OM50+6.1 | CHECK FOR SPECIAL OPERATOR              | FRTN6385 |
| 6386 12316 | 0 01 12320  | JMP      | **2      | '1                                      | FRTN6386 |
| 6387 12317 | -1 01 12437 | JMP*     | OM52+6.1 | 'P'='Q','I','J','O','A','F', OR 'E'     | FRTN6387 |
| 6388 12320 | 0 12 00000  | IRS      | 0        |                                         | FRTN6388 |
| 6389 12321 | 0 01 12315  | JMP      | **4      |                                         | FRTN6389 |
| 6390 12322 | 0 02 00630  | LDA      | MFL      |                                         | FRTN6390 |
| 6391 12323 | 101040      | SNZ      |          |                                         | FRTN6391 |
| 6392 12324 | 0 01 12452  | JMP      | OM62     | SPECIAL LIBRARY FIX FOR ( A = )         | FRTN6392 |
| 6393 12325 | 0 11 00706  | CAS      | IM       | CHECK FOR MODE MIXING                   | FRTN6393 |
| 6394 12326 | 0 01 12330  | JMP      | **2      |                                         | FRTN6394 |
| 6395 12327 | 0 01 12623  | JMP      | OMA1     | ITEM MODE SAME AS CURRENT MODE          | FRTN6395 |
| 6396 12330 | 0 02 00737  | OM20 LDA | K103     |                                         | FRTN6396 |
| 6397 12331 | 0 10 12411  | JST      | OM44     | CHECK MODE FOR LOG                      | FRTN6397 |
| 6398 12332 | 0 02 00736  | LDA      | K102     | =2 (MODE CODE FOR REAL)                 | FRTN6398 |
| 6399 12333 | 0 11 00630  | CAS      | MFL      | MODE OF EXPRESSION                      | FRTN6399 |
| 6400 12334 | 0 01 12336  | JMP      | **2      |                                         | FRTN6400 |
| 6401 12335 | 0 01 12343  | JMP      | OM26     | IF MODE=REAL, ALLOW COMPLEX MODE MIXING | FRTN6401 |

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|------------|------------|----------|--------|-----------------------------------------|----------|
| 6402 12336 | 0 11 00706 | CAS      | IM     | MODE OF ITEM                            | FRTN6402 |
| 6403 12337 | 0 01 12341 | JMP      | **2    |                                         | FRTN6403 |
| 6404 12340 | 0 01 12343 | JMP      | OM26   | IF MODE=REAL, ALLOW COMPLEX MODE MIXING | FRTN6404 |
| 6405 12341 | 0 02 00741 | LDA      | K105   |                                         | FRTN6405 |
| 6406 12342 | 0 10 12411 | JST      | OM44   | TEST FOR MODE= COMPLEX                  | FRTN6406 |
| 6407 12343 | 0 02 12241 | OM26 LDA | TOOM   | OPERATOR BEING PROCESSED                | FRTN6407 |
| 6408 12344 | 0 11 00753 | CAS      | K153   |                                         | FRTN6408 |
| 6409 12345 | 0 01 12347 | JMP      | **2    |                                         | FRTN6409 |
| 6410 12346 | 0 01 12372 | JMP      | OM36   | T(O)='*' (ALLOW INTEGER MODE)           | FRTN6410 |
| 6411 12347 | 0 02 00735 | LDA      | K101   |                                         | FRTN6411 |
| 6412 12350 | 0 10 12411 | JST      | OM44   | TEST FOR MODE=INTEGER                   | FRTN6412 |
| 6413 12351 | 0 02 00706 | LDA      | IM     |                                         | FRTN6413 |
| 6414 12352 | 0 11 00630 | CAS      | MFL    |                                         | FRTN6414 |
| 6415 12353 | 0 01 12374 | JMP      | OM38   | CONVERT MODE OF ACCUMULATOR             | FRTN6415 |
| 6416 12354 | 0 01 12355 | JMP      | **1    |                                         | FRTN6416 |
| 6417 12355 | 0 10 02501 | OM30 JST | NFOO   | SET LBUF+2 TO SPACES                    | FRTN6417 |
| 6418 12356 | 0 35 12241 | LDX      | TOOM   |                                         | FRTN6418 |
| 6419 12357 | 1 02 14426 | LDA      | ARX4.1 | PICK-UP PRINT CODE FOR *P* OPERATOR     | FRTN6419 |
| 6420 12360 | 0405 72    | ARS      | 6      |                                         | FRTN6420 |
| 6421 12361 | 141050     | CAL      |        | =*377                                   | FRTN6421 |
| 6422 12362 | 101040     | SNZ      |        |                                         | FRTN6422 |
| 6423 12363 | 0 01 12421 | JMP      | OM46   | MODE MIXING ERROR                       | FRTN6423 |
| 6424 12364 | 0414 70    | LCL      | 8      |                                         | FRTN6424 |
| 6425 12365 | 0 05 00662 | EPA      | K15    | ADD 'S'                                 | FRTN6425 |
| 6426 12366 | 0 04 00051 | STA      | NAMF   |                                         | FRTN6426 |
| 6427 12367 | 0 02 00754 | LDA      | K134   |                                         | FRTN6427 |
| 6428 12370 | 0 04 12241 | STA      | TOOM   | T(O)='*'                                | FRTN6428 |
| 6429 12371 | 0 01 12401 | JMP      | OM40   |                                         | FRTN6429 |
| 6430       |            | *        |        |                                         | FRTN6430 |
| 6431 12372 | 0 02 00741 | OM36 LDA | K105   |                                         | FRTN6431 |
| 6432 12373 | 0 10 12411 | JST      | OM44   | CHECK FOR MODE=COMPLEX                  | FRTN6432 |
| 6433 12374 | 0 02 00706 | OM36 LDA | IM     |                                         | FRTN6433 |
| 6434 12375 | 0 04 00630 | STA      | MFL    |                                         | FRTN6434 |
| 6435 12376 | 0 10 02501 | JST      | NFOO   | SET LBUF+2 TO SPACES                    | FRTN6435 |
| 6436 12377 | 0 02 12516 | LDA      | OM92   | 'CS'                                    | FRTN6436 |
| 6437 12400 | 0 04 00051 | STA      | NAMF   |                                         | FRTN6437 |
| 6438 12401 | 0 10 11363 | OM40 JST | OM00   | OUTPUT....CALL NAME                     | FRTN6438 |

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6439 12402 0 02 00630 LDA MFL FRTN6439
6440 12403 0 04 00706 STA IM FRTN6440
6441 12404 C 02 00051 LDA NAMF SET ITEM MODE TO CURRENT MODE FRTN6441
6442 12405 0 11 12622 CAS OM96 FRTN6442
6443 12406 0 01 12306 JMP OM14 FRTN6443
6444 12407 -0 01 12247 JMP* OM00 FRTN6444
6445 12410 0 01 12306 JMP OM14 OUTPUT ARGUMENT ADDRESS FRTN6445
6446 FRTN6446
6447 * FRTN6447
6448 12411 0 000000 OM44 DAC ** RETURN ADDR. FRTN6448
6449 12412 0 11 00706 CAS IM CHECK FOR IM0(A) FRTN6449
6450 12413 0 01 12415 JMP **2 FRTN6450
6451 12414 0 01 12421 JMP OM46 ERROR FRTN6451
6452 12415 0 11 00630 CAS MFL CHECK FOR MFL=(A) FRTN6452
6453 12416 -0 01 12411 JMP* OM44 FRTN6453
6454 12417 0 01 12421 JMP OM46 ERROR FRTN6454
6455 12420 -0 01 12411 JMP* OM44 FRTN6455
6456 12421 0 10 02615 OM46 JST ER00 NON-RECOVERABLE ERROR..... FRTN6456
6457 12422 146715 BCI 1*MM MODE MIXING ERROR FRTN6457
6458 FRTN6458
6459 * FRTN6459
6460 12423 000032 OM50 OCT 32 'Q' FRTN6460
6461 12424 000017 OCT 17 'I' FRTN6461
6462 12425 000000 OCT 00 '0' FRTN6462
6463 12426 000022 OCT 22 'A' FRTN6463
6464 12427 000031 K152 OCT 31 'F' FRTN6464
6465 12430 000020 OCT 20 'E' FRTN6465
6466 12431 0 012703 OM52 DAC OMB3 ('Q') FRTN6466
6467 12432 0 012703 DAC OMB3 ('I') FRTN6467
6468 12433 0 012703 DAC OMB3 ('0') FRTN6468
6469 12434 0 012437 DAC OM56 ('A') FRTN6469
6470 12435 0 012441 DAC OM60 ('F') FRTN6470
6471 12436 0 012477 DAC OM70 ('E') FRTN6471
6472 FRTN6472
6473 * FRTN6473
6474 12437 0 02 13022 OM56 LDA OMI1 SET T(1) = ADD* FRTN6474
6475 12440 C 01 12701 JMP OMB1 FRTN6475
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6476 FRTN6476
6477 12441 0 35 00625 OM60 LDX A FRTN6477
6478 12442 1 02 17401 LDA DP+1.1 FRTN6478
6479 12443 0404 62 LGR 14 SET UV=IU(A) FRTN6479
6480 12444 0 04 00710 STA IU FRTN6480
6481 12445 0 35 00626 LDX I FRTN6481
6482 12446 1 02 17402 LDA DP+2.1 P(I) FRTN6482
6483 12447 0 03 00764 ANA K133 =*77 FRTN6483
6484 12450 101040 SNZ FRTN6484
6485 12451 0 01 12466 JMP OM64 (POSSIBLE DUMMY ARRAY FETCH) FRTN6485
6486 12452 C 02 00706 OM62 LDA IM FRTN6486
6487 12453 C 04 00630 STA MFL SET CURRENT MODE TO ITEM MODE FRTN6487
6488 12454 0414 70 LGL 8 FRTN6488
6489 12455 0 06 00706 ADD IM FRTN6489
6490 12456 0 05 12615 ERA OM90 FRTN6490
6491 12457 0 04 00052 STA NAMF+1 FRTN6491
6492 12460 C 02 00710 LDA IU FRTN6492
6493 12461 C 07 00735 SUB K101 CHECK FOR IU=1 (SUBROUTINE) FRTN6493
6494 12462 100040 SZE FRTN6494
6495 12463 C 01 12623 JMP OMA1 FRTN6495
6496 12464 0 02 13023 LDA OM12 SET T(1) = JST FRTN6496
6497 12465 0 01 12475 JMP OM66 FRTN6497
6498 12466 C 02 00710 OM64 LDA IU FRTN6498
6499 12467 0 07 00737 SUB K103 CHECK FOR IV=3 (ARRAY) FRTN6499
6500 12470 100040 SZE FRTN6500
6501 12471 0 01 12452 JMP OM62 FRTN6501
6502 12472 0 02 00735 LDA K101 SET CURRENT MODE TO INTEGER FRTN6502
6503 12473 0 04 00630 STA MFL FRTN6503
6504 12474 0 02 13024 LDA OM13 SET T(1) = LDA* FRTN6504
6505 12475 0 04 12242 OM66 STA TIOM FRTN6505
6506 12476 0 01 12703 JMP OMB3 FRTN6506
6507 FRTN6507
6508 12477 0 02 00735 OM70 LDA K101 FRTN6508
6509 12500 0 11 00706 CAS IM CHECK ITEM MODE EQUALS INTEGER FRTN6509
6510 12501 0 01 12503 JMP **2 FRTN6510
6511 12502 0 01 12506 JMP OM74 FRTN6511
6512 12503 0 02 00741 LDA K105 CHECK FOR MODE = COMPLEX FRTN6512
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|      |       |            |          |        |                                     |          |
|------|-------|------------|----------|--------|-------------------------------------|----------|
| 6513 | 12504 | 0 10 12411 | JST      | OM44   |                                     |          |
| 6514 | 12505 | 0 01 12330 | JMP      | OM20   |                                     | FRTN6513 |
| 6515 | 12506 | 0 02 00737 | OM74 LDA | K103   |                                     | FRTN6514 |
| 6516 | 12507 | 0 10 12411 | JST      | OM44   | CHECK FOR MODE = LOGICAL            | FRTN6515 |
| 6517 | 12510 | 0 01 12355 | JMP      | OM30   | OUTPUT SUBROUTINE CALL              | FRTN6516 |
| 6518 |       |            |          |        |                                     | FRTN6517 |
| 6519 | 12511 | 0 35 00625 | OM76 LDX | A      |                                     | FRTN6518 |
| 6520 | 12512 | 1 02 17400 | LDA      | DP+1   | O2(A)                               | FRTN6519 |
| 6521 | 12513 | 0 04 12243 | STA      | T20M   | T(2)=O2(A)                          | FRTN6520 |
| 6522 | 12514 | 1 02 17402 | LDA      | DP+2+1 | P(A)                                | FRTN6521 |
| 6523 | 12515 | 0 03 00764 | ANA      | K133   | =*77                                | FRTN6522 |
| 6524 | 12516 | 101040     | SNZ      |        |                                     | FRTN6523 |
| 6525 | 12517 | 0 01 12563 | JMP      | OM84   | P(A)=*0* (SUBSCRIPTED VARIABLE)     | FRTN6524 |
| 6526 | 12520 | 0 11 00701 | CAS      | K139   |                                     | FRTN6525 |
| 6527 | 12521 | 0 01 12523 | JMP      | **2    |                                     | FRTN6526 |
| 6528 | 12522 | 0 01 12531 | JMP      | OM80   | P(A)=*X* (END OF ARRAY CALCULATION) | FRTN6527 |
| 6529 | 12523 | 0 11 00700 | CAS      | K138   |                                     | FRTN6528 |
| 6530 | 12524 | 0 01 12526 | JMP      | **2    |                                     | FRTN6529 |
| 6531 | 12525 | 0 01 12605 | JMP      | OMHW   | P(4)=*H* (HOLLERITH DATA)           | FRTN6530 |
| 6532 | 12526 | 0 02 12243 | OM78 LDA | T20M   |                                     | FRTN6531 |
| 6533 | 12527 | 0 04 00625 | STA      | A      | RESET A                             | FRTN6532 |
| 6534 | 12530 | 0 01 12301 | JMP      | OM10   |                                     | FRTN6533 |
| 6535 |       |            |          |        |                                     | FRTN6534 |
| 6536 | 12531 | 0 35 00626 | OM80 LDX | I      |                                     | FRTN6535 |
| 6537 | 12532 | 0 02 12243 | LDA      | T20M   |                                     | FRTN6536 |
| 6538 | 12533 | 1 04 17401 | STA      | DP+1+1 | O1(I) = T(2)                        | FRTN6537 |
| 6539 | 12534 | 0 02 00625 | LDA      | A      | SAVE A                              | FRTN6538 |
| 6540 | 12535 | 0 04 12242 | STA      | T10M   |                                     | FRTN6539 |
| 6541 | 12536 | 140040     | CRA      |        | SET A=0 (NOT SYMBOLIC)              | FRTN6540 |
| 6542 | 12537 | 0 04 11676 | STA      | T10T   |                                     | FRTN6541 |
| 6543 | 12540 | 0 04 00625 | STA      | A      |                                     | FRTN6542 |
| 6544 | 12541 | 0 02 00643 | LDA      | RPL    |                                     | FRTN6543 |
| 6545 | 12542 | 0 06 00736 | ADD      | K102   | AF=RPL+2                            | FRTN6544 |
| 6546 | 12543 | 0 04 00025 | STA      | AF     |                                     | FRTN6545 |
| 6547 | 12544 | 0 02 13025 | LDA      | OM14   | =ADD INSTRUCTION                    | FRTN6546 |
| 6548 | 12545 | 0 10 13072 | JST      | OR00   | OUTPUT RELATIVE                     | FRTN6547 |
| 6549 | 12546 | 0 02 00643 | LDA      | RPL    |                                     | FRTN6548 |
|      |       |            |          |        |                                     | FRTN6549 |

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|------|-------|------------|----------|--------|-------------------------------------|----------|
| 6550 | 12547 | 0 06 00736 | ADD      | K102   | AF = RPL P+ 2                       | FRTN6550 |
| 6551 | 12550 | 0 04 00025 | STA      | AF     |                                     | FRTN6551 |
| 6552 | 12551 | 0 02 13026 | LDA      | OM15   | = JMP INSTR.                        | FRTN6552 |
| 6553 | 12552 | 0 10 13072 | JST      | OR00   | OUTPUT RELATIVE                     | FRTN6553 |
| 6554 | 12553 | 0 02 12242 | LDA      | T10M   |                                     | FRTN6554 |
| 6555 | 12554 | 0 04 00625 | STA      | A      | RESTORE A                           | FRTN6555 |
| 6556 | 12555 | 0 04 00647 | STA      | SOF    | SET SPECIAL OUTPUT FLAG TO NON-ZERO | FRTN6556 |
| 6557 | 12556 | 140040     | CRA      |        | = DAC INSTR.                        | FRTN6557 |
| 6558 | 12557 | 0 04 12242 | STA      | T10M   |                                     | FRTN6558 |
| 6559 | 12560 | 0 02 00735 | LDA      | K101   |                                     | FRTN6559 |
| 6560 | 12561 | 0 04 00026 | STA      | AT     |                                     | FRTN6560 |
| 6561 | 12562 | 0 01 12601 | JMP      | OM88   |                                     | FRTN6561 |
| 6562 | 12563 | 1 02 17401 | OM84 LDA | DP+1+1 | C1(A)                               | FRTN6562 |
| 6563 | 12564 | 0 04 00625 | STA      | A      | A=O1(A)                             | FRTN6563 |
| 6564 | 12565 | 0 11 00113 | CAS      | LO     |                                     | FRTN6564 |
| 6565 | 12566 | 0 01 12570 | JMP      | **2    |                                     | FRTN6565 |
| 6566 | 12567 | 0 01 12573 | JMP      | OM86   | A=L(0)....CONSTANT SUBSCRIPT ONLY   | FRTN6566 |
| 6567 | 12570 | 0 02 13021 | LDA      | OM10   | T(1) = INDIRECT BIT                 | FRTN6567 |
| 6568 | 12571 | 0 04 12242 | STA      | T10M   |                                     | FRTN6568 |
| 6569 | 12572 | 0 01 12301 | JMP      | OM10   |                                     | FRTN6569 |
| 6570 |       |            |          |        |                                     | FRTN6570 |
| 6571 | 12573 | 0 02 12243 | OM86 LDA | T20M   | A=T(2)                              | FRTN6571 |
| 6572 | 12574 | 0 04 00625 | STA      | A      |                                     | FRTN6572 |
| 6573 | 12575 | 0 04 00000 | STA      | 0      |                                     | FRTN6573 |
| 6574 | 12576 | 0 04 00647 | STA      | SOF    |                                     | FRTN6574 |
| 6575 | 12577 | 1 02 17400 | LDA      | DP+1   | T(2) = O2(A)                        | FRTN6575 |
| 6576 | 12600 | 0 04 12243 | STA      | T20M   |                                     | FRTN6576 |
| 6577 | 12601 | 0 35 00625 | OM86 LDX | A      |                                     | FRTN6577 |
| 6578 | 12602 | 1 02 17401 | LDA      | DP+1+1 | C1(A)                               | FRTN6578 |
| 6579 | 12603 | 0 04 12245 | STA      | T20M   | T(9)=O1(A)                          | FRTN6579 |
| 6580 | 12604 | 0 01 12526 | JMP      | OM78   |                                     | FRTN6580 |
| 6581 | 12605 | 0 02 12243 | OMHW LDA | T20M   |                                     | FRTN6581 |
| 6582 | 12606 | 0 04 00025 | STA      | AF     |                                     | FRTN6582 |
| 6583 | 12607 | 0 02 00741 | LDA      | K105   |                                     | FRTN6583 |
| 6584 | 12610 | 0 04 00026 | STA      | AT     |                                     | FRTN6584 |
| 6585 | 12611 | 140040     | CRA      |        |                                     | FRTN6585 |
| 6586 | 12612 | 0 04 00625 | STA      | A      |                                     | FRTN6586 |

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|------|-------|-------------|------|------|--------|------------------------------------------|----------|
| 6587 | 12613 | 0 10 13072  | JST  | OR00 |        |                                          |          |
| 6588 | 12614 | -0 01 12247 | JMP* | OM00 |        |                                          | FRTN6587 |
| 6589 |       |             |      |      |        |                                          | FRTN6588 |
| 6590 | 12615 | 130260      | OM90 | OCT  | 130260 | '00'                                     | FRTN6589 |
| 6591 | 12616 | 141644      | OM92 | OCT  | 141644 | 'C\$'                                    | FRTN6590 |
| 6592 | 12617 | 152322      | OM93 | OCT  | 152322 | 'TR'                                     | FRTN6591 |
| 6593 | 12620 | 000021      | OM94 | OCT  | 000021 | 'C' CODE                                 | FRTN6592 |
| 6594 | 12621 | 017777      | OM95 | OCT  | 017777 | (MASK)                                   | FRTN6593 |
| 6595 | 12622 | 147244      | OM96 | BCI  | 1,N\$  |                                          | FRTN6594 |
| 6596 |       |             |      |      |        |                                          | FRTN6595 |
| 6597 | 12623 | 0 02 00706  | OMA1 | LDA  | IM     | CHECK FOR IM=LOGICAL                     | FRTN6596 |
| 6598 | 12624 | 0 11 00737  | CAS  | K103 |        |                                          | FRTN6597 |
| 6599 | 12625 | 0 01 12355  | JMP  | OM30 |        |                                          | FRTN6598 |
| 6600 | 12626 | 0 01 12722  | JMP  | OMC1 |        | IM=LOGICAL                               | FRTN6599 |
| 6601 | 12627 | 0 05 00735  | ERA  | K101 |        |                                          | FRTN6600 |
| 6602 | 12630 | 100040      | SZE  |      |        |                                          | FRTN6601 |
| 6603 | 12631 | 0 01 12355  | JMP  | CM30 |        |                                          | FRTN6602 |
| 6604 |       |             |      |      |        |                                          | FRTN6603 |
| 6605 | 12632 | 0 02 12241  | LDA  | T00M |        | CHECK FOR T(0) = '+'                     | FRTN6604 |
| 6606 | 12633 | 0 11 00737  | CAS  | K103 |        | =3                                       | FRTN6605 |
| 6607 | 12634 | 0 01 12636  | JMP  | *+2  |        |                                          | FRTN6606 |
| 6608 | 12635 | 0 01 12645  | JMP  | OMA4 |        | T(0) = '**                               | FRTN6607 |
| 6609 | 12636 | 0 11 12620  | CAS  | OM94 |        | T(0) = 'C'                               | FRTN6608 |
| 6610 | 12637 | 0 01 12641  | JMP  | *+2  |        |                                          | FRTN6609 |
| 6611 | 12640 | 0 01 12662  | JMP  | OMA6 |        | OUTPUT 'TCA'                             | FRTN6610 |
| 6612 | 12641 | 0 11 00735  | CAS  | K101 |        |                                          | FRTN6611 |
| 6613 | 12642 | 0 01 12656  | JMP  | OMA5 |        |                                          | FRTN6612 |
| 6614 | 12643 | 0 02 13025  | LDA  | OMI4 |        | =ADD INSTR.                              | FRTN6613 |
| 6615 | 12644 | 0 01 12701  | JMP  | OMB1 |        |                                          | FRTN6614 |
| 6616 | 12645 | 0 02 12243  | OMA4 | LDA  | T20M   | VALUE OF A                               | FRTN6615 |
| 6617 | 12646 | 0 07 00746  | SUB  | K126 |        | = '12 KNOWN LOCATION OF A FOR 2          | FRTN6616 |
| 6618 | 12647 | 100040      | SZE  |      |        | SKIP IF MULTIPLIER IS A CONSTANT OF 2    | FRTN6617 |
| 6619 | 12650 | 0 01 12355  | JMP  | OM30 |        | COUPLE TO THE MULTIPLY SUBROUTINE        | FRTN6618 |
| 6620 | 12651 | 0 04 00625  | STA  | A    |        | SET A AND AF TO ZERO (FOR LISTING FLAGS) | FRTN6619 |
| 6621 | 12652 | 0 04 00025  | STA  | AF   |        |                                          | FRTN6620 |
| 6622 | 12653 | 0 02 13053  | LDA  | OML2 |        | ALS 1 INSTRUCTION                        | FRTN6621 |
| 6623 | 12654 | 0 10 13235  | JST  | OQ00 |        | OUTPUT ABSOLUTE                          | FRTN6622 |
|      |       |             |      |      |        |                                          | FRTN6623 |

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|------|-------|-------------|------|------|------|------------------------------------|----------|
| 6624 | 12655 | -0 01 12247 | JMP* | OM00 |      | EXIT OUTPUT ITEM                   | FRTN6624 |
| 6625 | 12656 | 0 11 00736  | OMA5 | CAS  | K102 | CHECK FOR T(0) = '-'               | FRTN6625 |
| 6626 | 12657 | 0 01 12670  | JMP  | OMA7 |      |                                    | FRTN6626 |
| 6627 | 12660 | 0 02 13027  | LDA  | OMI6 |      | =SUB INSTR.                        | FRTN6627 |
| 6628 | 12661 | 0 01 12701  | JMP  | OMB1 |      |                                    | FRTN6628 |
| 6629 | 12662 | 140040      | OMA6 | CRA  |      |                                    | FRTN6629 |
| 6630 | 12663 | 0 04 00625  | STA  | A    |      | CAUSE OCTAL ADDR LISTING           | FRTN6630 |
| 6631 | 12664 | 0 04 00025  | STA  | AF   |      |                                    | FRTN6631 |
| 6632 | 12665 | 0 02 13054  | LDA  | OML3 |      | TCA INSTRUCTION                    | FRTN6632 |
| 6633 | 12666 | 0 10 13235  | JST  | OQ00 |      | OUTPUT ABSOLUTE                    | FRTN6633 |
| 6634 | 12667 | -0 01 12247 | JMP* | OM00 |      | EXIT                               | FRTN6634 |
| 6635 | 12670 | 0 11 00753  | OMA7 | CAS  | K153 | CHECK FOR T(0) = '='               | FRTN6635 |
| 6636 | 12671 | 0 01 12673  | JMP  | *+2  |      |                                    | FRTN6636 |
| 6637 | 12672 | 0 01 12700  | JMP  | OMA9 |      | OUTPUT A STA INSTR.                | FRTN6637 |
| 6638 | 12673 | 0 07 12427  | SUB  | K152 |      | CHECK FOR T(0) = 'F'               | FRTN6638 |
| 6639 | 12674 | 100040      | SZE  |      |      |                                    | FRTN6639 |
| 6640 | 12675 | 0 01 12355  | JMP  | OM30 |      |                                    | FRTN6640 |
| 6641 | 12676 | 0 02 13030  | OMA8 | LDA  | OMI7 | =LDA INSTR.                        | FRTN6641 |
| 6642 | 12677 | 0 01 12701  | JMP  | OMB1 |      |                                    | FRTN6642 |
| 6643 | 12700 | 0 02 13031  | OMA9 | LDA  | OMI8 | =STA INSTR.                        | FRTN6643 |
| 6644 | 12701 | 0 06 12242  | OMB1 | ADD  | T10M | T(1) = T(1) + INSTR.               | FRTN6644 |
| 6645 | 12702 | 0 04 12242  | STA  | T10M |      |                                    | FRTN6645 |
| 6646 | 12703 | 0 02 12243  | OMB3 | LDA  | T20M | SET A=T(2)                         | FRTN6646 |
| 6647 | 12704 | 0 04 00625  | STA  | A    |      |                                    | FRTN6647 |
| 6648 | 12705 | 0 02 12245  | LDA  | T90M |      | OUTPUT INSTR. WITH T(1) AND T(9)   | FRTN6648 |
| 6649 | 12706 | 000021      | IAE  |      |      |                                    | FRTN6649 |
| 6650 | 12707 | 0 02 12242  | LDA  | T10M |      |                                    | FRTN6650 |
| 6651 | 12710 | 0 10 11471  | JST  | OB00 |      | OUTPUT OA                          | FRTN6651 |
| 6652 | 12711 | 0 02 12244  | LDA  | T80M |      | CHECK FOR T(8) = '='               | FRTN6652 |
| 6653 | 12712 | 0 11 00753  | CAS  | K153 |      | = '16                              | FRTN6653 |
| 6654 | 12713 | -0 01 12247 | JMP* | OM00 |      |                                    | FRTN6654 |
| 6655 | 12714 | 0 01 12716  | JMP  | *+2  |      |                                    | FRTN6655 |
| 6656 | 12715 | -0 01 12247 | JMP* | OM00 |      | EXIT                               | FRTN6656 |
| 6657 | 12716 | 0 02 00646  | LDA  | TRFA |      | POINTER TO FIRST VARIABLE OR ARRAY | FRTN6657 |
| 6658 | 12717 | 0 04 00625  | STA  | A    |      | PROCESSED IN EXPRESSION            | FRTN6658 |
| 6659 | 12720 | 0 10 12754  | JST  | TRSE |      | OUTPUT TRACE COUPLING IF REQUIRED  | FRTN6659 |
| 6660 | 12721 | -0 01 12247 | JMP* | OM00 |      | EXIT OUTPUT ITEM                   | FRTN6660 |

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|------|-------|------------|------|-----|--------|-------------------------------------|----------|
| 6661 |       | *          |      |     |        |                                     | FRTN6661 |
| 6662 |       | *          |      |     |        |                                     | FRTN6662 |
| 6663 | 12722 | 0 02 12241 | OMC1 | LDA | T00M   |                                     | FRTN6663 |
| 6664 | 12723 | 0 11 12427 |      | CAS | K152   | CHECK FOR T(0) = 'F'                | FRTN6664 |
| 6665 | 12724 | 0 01 12726 |      | JMP | **2    |                                     | FRTN6665 |
| 6666 | 12725 | 0 01 12676 |      | JMP | OMA8   | OUTPUT A LDA INSTR.                 | FRTN6666 |
| 6667 | 12726 | 0 11 00753 |      | CAS | K153   | CHECK FOR T(0) = '='                | FRTN6667 |
| 6668 | 12727 | 0 01 12731 |      | JMP | **2    |                                     | FRTN6668 |
| 6669 | 12730 | 0 01 12700 |      | JMP | OMA9   | OUTPUT A STA INSTR.                 | FRTN6669 |
| 6670 | 12731 | 0 11 12620 |      | CAS | OM94   | CHECK FOR T(0) = 'C'                | FRTN6670 |
| 6671 | 12732 | 0 01 12734 |      | JMP | **2    |                                     | FRTN6671 |
| 6672 | 12733 | 0 01 12355 |      | JMP | OM30   | OUTPUT COMPLEMENT CODING            | FRTN6672 |
| 6673 | 12734 | 0 11 00742 |      | CAS | K106   |                                     | FRTN6673 |
| 6674 | 12735 | 0 01 12737 |      | JMP | **2    |                                     | FRTN6674 |
| 6675 | 12736 | 0 01 12743 |      | JMP | OMC5   | OUTPUT AN ANA INSTR.                | FRTN6675 |
| 6676 | 12737 | 0 11 00743 |      | CAS | K107   |                                     | FRTN6676 |
| 6677 | 12740 | 0 01 12421 |      | JMP | OM46   | ERROR                               | FRTN6677 |
| 6678 | 12741 | 0 01 12355 |      | JMP | OM30   |                                     | FRTN6678 |
| 6679 | 12742 | 0 01 12421 |      | JMP | OM46   | ERROR                               | FRTN6679 |
| 6680 | 12743 | 0 02 13032 | OMC5 | LDA | OMI9   | =ANA INSTR.                         | FRTN6680 |
| 6681 | 12744 | 0 01 12701 |      | JMP | OMB1   |                                     | FRTN6681 |
| 6682 | 12745 | 0 12 12246 | OMD1 | IRS | TXOM   | TO = TO+1                           | FRTN6682 |
| 6683 | 12746 | 0 01 12262 |      | JMP | OM05   |                                     | FRTN6683 |
| 6684 | 12747 | 140040     | OME1 | CRA |        | OUTPUT 'OCT 0000'                   | FRTN6684 |
| 6685 | 12750 | 0 10 13243 |      | JST | OC00   | X                                   | FRTN6685 |
| 6686 | 12751 | 140040     | OME5 | CRA |        |                                     | FRTN6686 |
| 6687 | 12752 | 0 04 12246 |      | STA | TXOM   | TO = 0                              | FRTN6687 |
| 6688 | 12753 | 0 01 12262 |      | JMP | OM05   |                                     | FRTN6688 |
| 6689 |       | *          |      |     |        |                                     | FRTN6689 |
| 6690 | 12754 | 0 000000   | TRSE | DAC | 0      | SUBROUTINE TO OUTPUT TRACE COUPLING | FRTN6690 |
| 6691 | 12755 | 0 35 00625 |      | LDX | A      |                                     | FRTN6691 |
| 6692 | 12756 | 101040     |      | LDA | A      |                                     | FRTN6692 |
| 6693 | 12757 | 100040     |      | SZE |        |                                     | FRTN6693 |
| 6694 | 12760 | 1 02 17404 |      | LDA | DP+4,1 | CHECK STATUS OF TRACE TAG           | FRTN6694 |
| 6695 | 12761 | 100400     |      | SPL |        |                                     | FRTN6695 |
| 6696 | 12762 | 0 01 12773 |      | JMP | TR57   |                                     | FRTN6696 |
| 6697 | 12763 | 0 02 01060 |      | LDA | LIBF   | CHECK TO SEE IF BIT 6 IS SET        | FRTN6697 |

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|------|-------|-------------------------|------|------|--------|-------------------------------------|----------|
| 6698 | 12764 | 0 03 14700              |      | ANA  | =*2000 |                                     | FRTN6698 |
| 6699 | 12765 | 0 05 14700              |      | ERA  | =*2000 |                                     | FRTN6699 |
| 6700 | 12766 | 101040                  | CSR4 | SNZ  |        | SKIP IF BIT 5 IS NOT SET            | FRTN6700 |
| 6701 | 12767 | 0 01 12773              |      | JMP  | TR57   |                                     | FRTN6701 |
| 6702 | 12770 | 0 02 00645              |      | LDA  | TRF    | CHECK STATUS OF TRACE FLAG          | FRTN6702 |
| 6703 | 12771 | 101040                  |      | SNZ  |        |                                     | FRTN6703 |
| 6704 | 12772 | -0 01 12754             |      | JMP* | TRSE   |                                     | FRTN6704 |
| 6705 | 12773 | 0 10 02501              | TR57 | JST  | NF00   | SET LBUF TO 'F\$', LBUF+2 TO SPACES | FRTN6705 |
| 6706 | 12774 | 0 02 12617              |      | LDA  | OM93   | =*TR'                               | FRTN6706 |
| 6707 | 12775 | 0 04 00052              |      | STA  | NAMF+1 |                                     | FRTN6707 |
| 6708 | 12776 | 0 10 11363              |      | JST  | CN00   | OUTPUT.....CALL NAME                | FRTN6708 |
| 6709 | 12777 | 0 35 00625              |      | LDX  | A      |                                     | FRTN6709 |
| 6710 | 13000 | 1 02 17404              |      | LDA  | DP+4,1 |                                     | FRTN6710 |
| 6711 | 13001 | 0 03 12621              |      | ANA  | CM95   |                                     | FRTN6711 |
| 6712 | 13002 | 0 04 12242              |      | STA  | T10M   |                                     | FRTN6712 |
| 6713 | 13003 | 1 02 17403              |      | LDA  | DP+3,1 |                                     | FRTN6713 |
| 6714 | 13004 | 0 04 12244              |      | STA  | T80M   |                                     | FRTN6714 |
| 6715 | 13005 | 1 02 17402              |      | LDA  | DP+2,1 |                                     | FRTN6715 |
| 6716 | 13006 | 0 04 12245              |      | STA  | T90M   |                                     | FRTN6716 |
| 6717 | 13007 | 1 02 17400              |      | LDA  | DP,1   | MERGE IM WITH ITEM NAME             | FRTN6717 |
| 6718 | 13010 | 0405 67                 |      | ARS  | 9      |                                     | FRTN6718 |
| 6719 | 13011 | 0414 63                 |      | LCL  | 13     |                                     | FRTN6719 |
| 6720 | 13012 | 0 05 12242              |      | ERA  | T10M   |                                     | FRTN6720 |
| 6721 | 13013 | 0 10 13243              |      | JST  | OC00   | OUTPUT ABSOLUTE (FIRST 2 CHAR.)     | FRTN6721 |
| 6722 | 13014 | 0 02 13244              |      | LDA  | T80M   |                                     | FRTN6722 |
| 6723 | 13015 | 0 10 13243              |      | JST  | OC00   | OUTPUT ABSOLUTE (NEXT 2 CHAR.)      | FRTN6723 |
| 6724 | 13016 | 0 02 12245              |      | LDA  | T90M   |                                     | FRTN6724 |
| 6725 | 13017 | 0 10 13243              |      | JST  | OC00   | OUTPUT ABSOLUTE (LAST 2 CHAR.)      | FRTN6725 |
| 6726 | 13020 | -0 01 12754             |      | JMP* | TRSE   |                                     | FRTN6726 |
| 6727 |       | *                       |      |      |        |                                     | FRTN6727 |
| 6728 |       | *.....INSTRUCTION TABLE |      |      |        |                                     | FRTN6728 |
| 6729 | 13021 | 100000                  | OM10 | OCT  | 100000 | INDIRECT BIT                        | FRTN6729 |
| 6730 | 13022 | 114000                  | OM11 | OCT  | 114000 | ADD*                                | FRTN6730 |
| 6731 | 13023 | 020000                  | OM12 | OCT  | 020000 | JST                                 | FRTN6731 |
| 6732 | 13024 | 104000                  | OM13 | OCT  | 104000 | LDA*                                | FRTN6732 |
| 6733 | 13025 | 014000                  | OM14 | OCT  | 014000 | ADD                                 | FRTN6733 |
| 6734 | 13026 | 002000                  | OM15 | OCT  | 002000 | JMP                                 | FRTN6734 |

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6735 13027 016000 OM16 OCT 016000 SUB
6736 13030 004000 OM17 OCT 004000 LDA
6737 13031 010000 OM18 OCT 010000 STA
6738 13032 006000 OM19 OCT 006000 ANA
6739 13033 102000 OMJ1 OCT 102000 JMP*
6740 13034 101040 OMJ2 OCT 101040 SNZ
6741 13035 101400 OMJ3 OCT 101400 SMI
6742 13036 0415 60 OMJ4 ALS 16
6743 13037 040461 OMJ5 OCT 040461 LGR 15
6744 13040 141216 OMJ6 OCT 141216 ACA
6745 13041 140407 OMJ7 OCT 140407 TCA
6746 13042 140401 OMK1 OCT 140401 CMA
6747 13043 101001 OMK2 OCT 101001 SSC
6748 13044 141206 OMK3 OCT 141206 AOA
6749 13045 140500 OMK4 OCT 140500 SSM
6750 13046 042000 OMK5 OCT 042000 JMP 0,1
6751 13047 000000 OCT 000000 DAC **
6752 13050 0 35 00000 LDX 0
6753 13051 001001 INH
6754 13052 000401 ENB
6755 13053 0415 77 OML2 ALS 1
6756 13054 140407 OML3 TCA
6757 13055 176000 OMK7 OCT 176000 STG
6758 13056 0 11 00000 OMK9 CAS 0
6759 13057 -0 04 00000 STA* 0
6760 13060 -0 07 00000 SUB* 0
6761 13061 -0 000000 DAC* **
6762 13062 131001 OCT 131001
6763 13063 030000 OCT 030000 SUBR
6764 13064 -0 11 00000 CAS* 0
6765 13065 -0 10 00000 OMK8 JST* 0
6766 13066 000000 OCT 0
6767 13067 0 02 00735 OML1 LDA K101
6768 13070 0 04 00026 STA AT
6769 13071 0 01 11746 JMP OT10
6770 *
6771 * *****
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FRTN6735  
FRTN6736  
FRTN6737  
FRTN6738  
FRTN6739  
FRTN6740  
FRTN6741  
FRTN6742  
FRTN6743  
FRTN6744  
FRTN6745  
FRTN6746  
FRTN6747  
FRTN6748  
FRTN6749  
FRTN6750  
FRTN6751  
FRTN6752  
FRTN6753  
FRTN6754  
FRTN6755  
FRTN6756  
FRTN6757  
FRTN6758  
FRTN6759  
FRTN6760  
FRTN6761  
FRTN6762  
FRTN6763  
FRTN6764  
FRTN6765  
FRTN6766  
FRTN6767  
FRTN6768  
FRTN6769  
FRTN6770  
FRTN6771

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6772 *
6773 *
6774 *
6775 13072 0 000000 OR00 DAC
6776 13073 0 04 00043 STA
6777 13074 0 02 00736 LDA
6778 13075 0 04 00035 STA
6779 13076 0 04 00027 OR10 STA
6780 13077 0 02 00643 LDA
6781 13100 140100 SSP
6782 13101 0 10 13272 JST
6783 13102 0 013744 DAC
6784 13103 0 02 00035 LDA
6785 13104 100040 SZE
6786 13105 0 01 13170 JMP
6787 13106 0 02 13131 LDA
6788 13107 0 04 13751 STA
6789 13110 0 02 13132 LDA
6790 13111 0 04 13752 STA
6791 13112 0 02 00043 LDA
6792 13113 0 10 13272 OR13 JST
6793 13114 0 013754 DAC
6794 13115 0 02 00643 OR15 LDA
6795 13116 101400 SMI
6796 13117 0 10 13402 JST
6797 13120 0 02 01060 LDA
6798 13121 0 03 14677 ANA
6799 13122 0 05 14677 ERA
6800 13123 101040 C3R2 SNZ
6801 13124 0 01 13127 JMP
6802 13125 0 10 00000 CALL
6803 13126 0 013744 DAC
6804 13127 0 10 13321 JST
6805 13130 -0 01 13072 JMP*
6806 13131 147703 OR16 OCT
6807 13132 152240 OR19 OCT
6808 *
```

\*OUTPUT REL\*  
\*\*\*\*\*  
ALSO DRIVES SYMBOLIC INSTRUCTION OUTPUT.  
\*\*  
FTOP  
K102  
DF = NON ZERO  
CODE = 2  
CODE  
RPL  
LIST RPL  
OR80  
PRI  
DF  
IF DF NOT ZERO  
OR20  
GO TO OR20  
=147703  
OR18  
PRI+5  
OR19  
PRI+6  
FTOP  
OR80  
PRI+8  
RPL  
IF RPL PLUS  
OW00  
OUTPUT WORD  
CHECK 10 SEE IF BIT 3 IS SET  
=20000  
=20000  
SKIP IF BIT 3 IS NOT SET  
SURPRESS SYMBOLIC OUTPUT  
LIST LINE  
PRI  
PRSP  
SET PRINT BUFFER TO SPACES  
OR00  
RETURN  
(O) (C)  
(T) (SP)  
SUBR TO ENTER SYMBOLIC OF IN LISTING

FRTN6772  
FRTN6773  
FRTN6774  
FRTN6775  
FRTN6776  
FRTN6777  
FRTN6778  
FRTN6779  
FRTN6780  
FRTN6781  
FRTN6782  
FRTN6783  
FRTN6784  
FRTN6785  
FRTN6786  
FRTN6787  
FRTN6788  
FRTN6789  
FRTN6790  
FRTN6791  
FRTN6792  
FRTN6793  
FRTN6794  
FRTN6795  
FRTN6796  
FRTN6797  
FRTN6798  
FRTN6799  
FRTN6800  
FRTN6801  
FRTN6802  
FRTN6803  
FRTN6804  
FRTN6805  
FRTN6806  
FRTN6807  
FRTN6808

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|------------|-------------|----------|-------------|-------------------------------|--|----------|
| 6809 13133 | 0 013133    | OR23 DAC | *           |                               |  | FRTN6809 |
| 6810 13134 | 0 15 13167  | STX      | ORXS        |                               |  | FRTN6810 |
| 6811 13135 | 0 02 13320  | LDA      | OR90        | SAVE INDEX                    |  | FRTN6811 |
| 6812 13136 | 140407      | TCA      |             | SEARCH OP-CODE LIST           |  | FRTN6812 |
| 6813 13137 | 0 04 00000  | STA      | 0           |                               |  | FRTN6813 |
| 6814 13140 | 0 02 00043  | LDA      | FTOP        | PUT BCI IN PRINT IMAGE        |  | FRTN6814 |
| 6815 13141 | 140100      | SSP      |             |                               |  | FRTN6815 |
| 6816 13142 | 100040      | SZE      |             |                               |  | FRTN6816 |
| 6817 13143 | 0 01 13153  | JMP      | OR24        |                               |  | FRTN6817 |
| 6818 13144 | 0 02 00026  | LDA      | AT          |                               |  | FRTN6818 |
| 6819 13145 | 0 11 00737  | CAS      | K103        |                               |  | FRTN6819 |
| 6820 13146 | 0 07 00742  | SUB      | K106        |                               |  | FRTN6820 |
| 6821 13147 | 0 06 00736  | ADD      | K102        |                               |  | FRTN6821 |
| 6822 13150 | 140401      | CMA      |             |                               |  | FRTN6822 |
| 6823 13151 | 0 03 00743  | ANA      | K107        |                               |  | FRTN6823 |
| 6824 13152 | 0 04 00027  | STA      | CODE        |                               |  | FRTN6824 |
| 6825 13153 | 0 02 00043  | OR24 LDA | FTOP        |                               |  | FRTN6825 |
| 6826 13154 | 1 11 13065  | CAS      | OR91+NINS+1 |                               |  | FRTN6826 |
| 6827 13155 | 0 01 13157  | JMP      | **2         |                               |  | FRTN6827 |
| 6828 13156 | 0 01 13161  | JMP      | **3         |                               |  | FRTN6828 |
| 6829 13157 | 0 12 00000  | IRS      | 0           |                               |  | FRTN6829 |
| 6830 13160 | 0 01 13154  | JMP      | *-4         |                               |  | FRTN6830 |
| 6831 13161 | 1 02 14627  | LDA      | OR92+NINS+1 |                               |  | FRTN6831 |
| 6832 13162 | 0 04 13751  | STA      | PRI+5       |                               |  | FRTN6832 |
| 6833 13163 | 1 02 14674  | LDA      | OR93+NINS+1 |                               |  | FRTN6833 |
| 6834 13164 | 0 04 13752  | STA      | PRI+6       |                               |  | FRTN6834 |
| 6835 13165 | 0 35 13167  | LDX      | ORXS        | RESTORE INDEX                 |  | FRTN6835 |
| 6836 13166 | -0 01 13133 | JMP*     | OR23        | RETURN                        |  | FRTN6836 |
| 6837 13167 |             | ORXS BSS | 1           | TEMP STORAGE FOR INDEX        |  | FRTN6837 |
| 6838       |             | *        |             |                               |  | FRTN6838 |
| 6839 13170 | 0 10 13133  | OR20 JST | OR23        | ENTER SYMBOLIC OP IN LISTING  |  | FRTN6839 |
| 6840 13171 | 0 02 00625  | LDA      | A           |                               |  | FRTN6840 |
| 6841 13172 | 100040      | SZE      |             |                               |  | FRTN6841 |
| 6842 13173 | 0 01 13177  | JMP      | OR30        |                               |  | FRTN6842 |
| 6843 13174 | 0 02 00025  | LDA      | AF          |                               |  | FRTN6843 |
| 6844 13175 | 0 03 00670  | ANA      | K111        |                               |  | FRTN6844 |
| 6845 13176 | 0 01 13113  | JMP      | OR13        | MASK OUT HIGH BITS OF ADDRESS |  | FRTN6845 |

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|            |            |          |        |                                    |  |          |
|------------|------------|----------|--------|------------------------------------|--|----------|
| 6846 13177 | 0 35 00625 | OR30 LDX | A      |                                    |  | FRTN6846 |
| 6847 13200 | 1 02 17400 | LDA      | DP+1   |                                    |  | FRTN6847 |
| 6848 13201 | 101400     | SMI      |        |                                    |  | FRTN6848 |
| 6849 13202 | 0 01 13222 | JMP      | OR40   |                                    |  | FRTN6849 |
| 6850 13203 | 0 02 13401 | LDA      | K149   |                                    |  | FRTN6850 |
| 6851 13204 | 0 04 13754 | STA      | PRI+8  | SET '=' INTO LISTING               |  | FRTN6851 |
| 6852 13205 | 1 02 17400 | LDA      | DP+1   | CHECK IM (A)                       |  | FRTN6852 |
| 6853 13206 | 0414 74    | LGL      | 4      |                                    |  | FRTN6853 |
| 6854 13207 | 100400     | SPL      |        | SKIP IF NOT COMPLEX                |  | FRTN6854 |
| 6855 13210 | 0 01 13214 | JMP      | **4    |                                    |  | FRTN6855 |
| 6856 13211 | 0414 76    | LGL      | 2      |                                    |  | FRTN6856 |
| 6857 13212 | 100400     | SPL      |        | SKIP IF INTEGER OR LOGICAL         |  | FRTN6857 |
| 6858 13213 | 0 01 13216 | JMP      | **3    |                                    |  | FRTN6858 |
| 6859 13214 | 1 02 17402 | LDA      | DP+2+1 |                                    |  | FRTN6859 |
| 6860 13215 | 0 01 13217 | JMP      | **2    |                                    |  | FRTN6860 |
| 6861 13216 | 1 02 17404 | LDA      | DP+4+1 | LIST EXPONENT AND PART OF FRACTION |  | FRTN6861 |
| 6862 13217 | 0 10 13272 | JST      | OR80   | LIST INTEGER VALUE                 |  | FRTN6862 |
| 6863 13220 | 0 013755   | DAC      | PRI+9  | CONVERT OCTAL                      |  | FRTN6863 |
| 6864 13221 | 0 01 13115 | JMP      | OR15   |                                    |  | FRTN6864 |
| 6865 13222 | 1 02 17404 | OR40 LDA | DP+4+1 | CONVERT AND PACK INTO              |  | FRTN6865 |
| 6866 13223 | 0416 77    | ALR      | 1      |                                    |  | FRTN6866 |
| 6867 13224 | 140500     | SSM      |        | SYMBOLIC IMAGE                     |  | FRTN6867 |
| 6868 13225 | 0406 77    | ARR      | 1      |                                    |  | FRTN6868 |
| 6869 13226 | 140500     | SSM      |        |                                    |  | FRTN6869 |
| 6870 13227 | 0 04 13754 | STA      | PRI+8  |                                    |  | FRTN6870 |
| 6871 13230 | 1 02 17403 | LDA      | DP+3+1 |                                    |  | FRTN6871 |
| 6872 13231 | 0 04 13755 | STA      | PRI+9  |                                    |  | FRTN6872 |
| 6873 13232 | 1 02 17402 | LDA      | DP+2+1 |                                    |  | FRTN6873 |
| 6874 13233 | 0 04 13756 | STA      | PRI+10 |                                    |  | FRTN6874 |
| 6875 13234 | 0 01 13115 | JMP      | OR15   |                                    |  | FRTN6875 |
| 6876       |            | EJCT     |        |                                    |  | FRTN6876 |

\* NAME: FRTN

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```
6877      *          OUTPUT NON-REL SYMBOLIC          FRTN6877
6878      *
6879      *
6880      *
6881      *
6882 13235  0 000000  0000 DAC  **          FRTN6882
6883 13236  0 13 00035      IMA  DF          SET DF <> 0 SO THAT FRTN6883
6884 13237 141206      AOA          LISTING WILL BE SYMBOLIC FRTN6884
6885 13240  0 13 00035      IMA  DF          X          FRTN6885
6886 13241  0 10 13251      JST  0A00        OUTPUT ABSOLUTE INSTRUCTION FRTN6886
6887 13242 -0 01 13235      JMP* 0000        RETURN          FRTN6887
6888      *
6889      *
6890      *
6891      *
6892      *          EJCT          FRTN6892
```

\* NAME: FRTN

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```
6893      *          OUTPUT OCTAL CONSTANT          FRTN6893
6894      *
6895      *
6896      *
6897      *
6898 13243  0 000000  0000 DAC  **          FRTN6898
6899 13244  0 13 00035      IMA  DF          SET DF ZERO SO THAT FRTN6899
6900 13245 140040      CRA          SYMBOLIC LISTING WILL FRTN6900
6901 13246  0 13 00035      IMA  DF          BE 'OCT' FRTN6901
6902 13247  0 10 13251      JST  0A00        OUTPUT THE CONSTANT FRTN6902
6903 13250 -0 01 13243      JMP* 0000        REEURN          FRTN6903
6904      *
6905      *
6906      *
6907      *
6908      *          EJCT          FRTN6908
```

\* NAME: FRTN

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```
6909      *
6910      *          *****
6911      *          *OUTPUT ABS*
6912      *          *****
6912 13251  0 000000 0A00 DAC **
6913 13252  0 04 00043 STA FTOP
6914 13253  0 02 13251 LDA 0A00
6915 13254  0 04 13072 STA OR00
6916 13255 140040 CRA
6917 13256  0 01 13076 JMP OR10
6918      EJCT
```

FRTN6909  
FRTN6910  
FRTN6911  
FRTN6912  
FRTN6913  
FRTN6914  
FRTN6915  
FRTN6916  
FRTN6917  
FRTN6918

\* NAME: FRTN

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```
6919      *
6920      *          *****
6921      *          *OUTPUT STRING-RPL*
6922      *          *****
6922 13257  0 000000 0500 DAC 00
6923 13260  0 04 00025 STA AF
6924 13261  0 02 13055 LDA OMK7
6925 13262  0 04 00043 STA FTOP
6926 13263  0 02 13257 LDA 0500
6927 13264  0 04 13072 STA OR00
6928 13265  0 02 00740 LDA K104
6929 13266  0 04 00027 STA CODE
6930 13267  0 04 13472 STA STFL
6931 13270  0 10 13321 JST PRSP
6932 13271  0 01 13170 JMP OR20
6933 13272  0 000000 0R80 DAC **
6934 13273 000201 IAB
6935 13274 -0 02 13272 LDA* OR80
6936 13275  0 04 13317 STA OR89
6937 13276 140040 CRA
6938 13277 0402 76 LRR 2
6939 13300  0 12 13272 IRS OR80
6940 13301  0 10 13305 JST OR85
6941 13302  0 10 13305 JST OR85
6942 13303  0 10 13305 JST OR85
6943 13304 -0 01 13272 JMP* OR80
6944 13305  0 000000 0R85 DAC **
6945 13306  0 06 13347 ADD K140
6946 13307 0412 75 LLR 3
6947 13310 0414 73 LGL 5
6948 13311  0 06 13347 ADD K140
6949 13312 0410 75 LLL 3
6950 13313 -0 04 13317 STA* OR89
6951 13314  0 12 13317 IRS OR89
6952 13315 140040 CRA
6953 13316 -0 01 13305 JMP* OR85
6954 13317  0 00 00000 0R89 PZE 0
6955 13320  0 00043 0R90 DAC NINS
```

SET RETURN INTO OUTPUT REL

STRING FLAG = NON ZERO  
SET PRINT BUF. TO SPACES  
JMP-OUTPUT REL FOR SYMBOLIC AND BINARY

FRTN6919  
FRTN6920  
FRTN6921  
FRTN6922  
FRTN6923  
FRTN6924  
FRTN6925  
FRTN6926  
FRTN6927  
FRTN6928  
FRTN6929  
FRTN6930  
FRTN6931  
FRTN6932  
FRTN6933  
FRTN6934  
FRTN6935  
FRTN6936  
FRTN6937  
FRTN6938  
FRTN6939  
FRTN6940  
FRTN6941  
FRTN6942  
FRTN6943  
FRTN6944  
FRTN6945  
FRTN6946  
FRTN6947  
FRTN6948  
FRTN6949  
FRTN6950  
FRTN6951  
FRTN6952  
FRTN6953  
FRTN6954  
FRTN6955

\* NAME: FRTN

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|      |        |          |      |          |
|------|--------|----------|------|----------|
| 6956 | 013030 | K200 EQU | OMI7 | FRTN6956 |
| 6957 | 013026 | K201 EQU | OMI5 | FRTN6957 |
| 6958 | 013031 | K202 EQU | OMI8 | FRTN6958 |
| 6959 | 013025 | K203 EQU | OMI4 | FRTN6959 |
| 6960 | 013033 | K206 EQU | OMJ1 | FRTN6960 |
| 6961 | 013046 | K207 EQU | OMK5 | FRTN6961 |
| 6962 | 013022 | OR91 EQU | OMI1 | FRTN6962 |
| 6963 | 000043 | NIMS EQU | 35   | FRTN6963 |
| 6964 |        | EJCT     |      | FRTN6964 |

\* NAME: FRTN

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|      |       |             |                 |                                   |          |
|------|-------|-------------|-----------------|-----------------------------------|----------|
| 6965 |       | *           |                 |                                   | FRTN6965 |
| 6966 | 13321 | 0 000000    | PRSP DAC **     | SUBR. TO SET PRINT BUF. TO SPACES | FRTN6966 |
| 6967 | 13322 | 0 35 13330  | LDX PRSK        | =-40                              | FRTN6967 |
| 6968 | 13323 | 0 02 01151  | LDA KASP        | (SP) (SP)                         | FRTN6968 |
| 6969 | 13324 | 1 04 14014  | STA PRI+40.1    |                                   | FRTN6969 |
| 6970 | 13325 | 0 12 00000  | IRS 0           |                                   | FRTN6970 |
| 6971 | 13326 | 0 01 13324  | JMP *-2         |                                   | FRTN6971 |
| 6972 | 13327 | -0 01 13321 | JMP* PRSP       | EXIT                              | FRTN6972 |
| 6973 | 13330 | 177730      | PRSK OCT 177730 | =-40                              | FRTN6973 |
| 6974 |       |             | EJCT            |                                   | FRTN6974 |

\* NAME: FRTN

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```
6975
6976
6977
6978
6979
6980
6981 13331 0 000000 ON00 DAC **
6982 13332 0 04 13400 STA ONT1
6983 13333 0 10 13531 JST FS00
6984 13334 0 02 13400 LDA ONT1
6985 13335 0400 62 LRL 14
6986 13336 0 04 13400 STA ONT1
6987 13337 0 02 13377 LDA ON02
6988 13340 0410 72 LLL 6
6989 13341 0 04 13650 STA OCI
6990 13342 0400 70 LRL 8
6991 13343 0 35 00625 LDX A
6992 13344 1 02 17404 LDA DP+4,1
6993 13345 0 03 00670 ANA K111
6994 13346 0 11 11605 CAS BLKC
6995 13347 000026 K140 OCT 26
6996 13350 0 05 00675 ERA K122
6997 13351 0 05 00703 ERA HRIT
6998 13352 0402 70 LRR 8
6999 13353 0 04 13651 STA OCI+1
7000 13354 0400 70 LRL 8
7001 13355 1 02 17403 LDA DP+3,1
7002 13356 0402 70 LRR 8
7003 13357 0 04 13652 STA OCI+2
7004 13360 0400 70 LRL 8
7005 13361 1 02 17402 LDA DP+2,1
7006 13362 0402 70 LRR 8
7007 13363 0 04 13653 STA OCI+3
7008 13364 0410 70 LLL 8
7009 13365 0414 76 LGL 2
7010 13366 0 06 13400 ADD ONT1
7011 13367 0414 72 LGL 6

*****
*OUTPUT SUBROUTINE/COMMON BLOCK NAME*
*****
OUTPUT AN EXTERNAL REFERENCE NAME.

FRTN6975
FRTN6976
FRTN6977
FRTN6978
FRTN6979
FRTN6980
FRTN6981
FRTN6982
FRTN6983
FRTN6984
FRTN6985
FRTN6986
FRTN6987
FRTN6988
FRTN6989
FRTN6990
FRTN6991
FRTN6992
FRTN6993
FRTN6994
FRTN6995
FRTN6996
FRTN6997
FRTN6998
FRTN6999
FRTN7000
FRTN7001
FRTN7002
FRTN7003
FRTN7004
FRTN7005
FRTN7006
FRTN7007
FRTN7008
FRTN7009
FRTN7010
FRTN7011
```

\* NAME: FRTN

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```
7012 13370 0 04 13654 STA OCI+4
7013 13371 140040 CRA
7014 13372 0 04 13655 STA OCI+5
7015 13373 0 02 00750 LDA K128
7016 13374 0 04 00063 STA OCNT
7017 13375 0 10 13531 JST FS00
7018 13376 -0 01 13331 JMP* ON00
7019 13377 000600 ON02 OCT 600
7020 13400 000000 ONT1 OCT 0
7021
7022 13401 136647 K149 BCI 1,=*
7023
7024 13402 0 000000 OW00 DAC **
7025 13403 0 15 13471 STX OWXS
7026 13404 0 02 00643 LDA RPL
7027 13405 0 07 13475 SUB ORPL
7028 13406 100400 SPL
7029 13407 140407 TCA
7030 13410 0 11 00735 CAS K101
7031 13411 0 10 13531 JST FS00
7032 13412 101000 NOP
7033 13413 0 02 00063 LDA OCNT
7034 13414 0 06 00737 ADD K103
7035 13415 0 11 13530 CAS K146
7036 13416 101000 NOP
7037 13417 0 10 13531 JST FS00
7038 13420 0 02 00063 LDA OCNT
7039 13421 0 06 00737 ADD K103
7040 13422 0 04 00063 STA OCNT
7041 13423 0 07 00737 SUB K103
7042 13424 0406 77 ARR 1
7043 13425 0 04 00000 STA 0
7044 13426 101400 SMI
7045 13427 0 01 13473 JMP OW20
7046 13430 0 10 13476 JST PU00
7047 13431 0400 70 LRL 8
7048 13432 1 13 13650 IMA OCI,1

BUFFER
SET SIZE = 0
BUFFER
=*14
SET BLOCK SIZE (DOUBLED)
FLUSH BUFFER
EXIT
BLOCK CODE NUMBER (6)
TEMP STORE

FRTN7012
FRTN7013
FRTN7014
FRTN7015
FRTN7016
FRTN7017
FRTN7018
FRTN7019
FRTN7020
FRTN7021
FRTN7022
FRTN7023
FRTN7024
FRTN7025
FRTN7026
FRTN7027
FRTN7028
FRTN7029
FRTN7030
FRTN7031
FRTN7032
FRTN7033
FRTN7034
FRTN7035
FRTN7036
FRTN7037
FRTN7038
FRTN7039
FRTN7040
FRTN7041
FRTN7042
FRTN7043
FRTN7044
FRTN7045
FRTN7046
FRTN7047
FRTN7048

SAVE INDEX

FLUSH BUFFER IF DIFFERENCE IN RPL'S NOT 1

CCNT = OCNT+3

OCI (OUTPUT CARD IMAGE)

LEFT OR RIGHT POS.

IF BUFFER FULL
```

\* NAME: FRTN

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|            |             |          |         |                                 |  |          |
|------------|-------------|----------|---------|---------------------------------|--|----------|
| 7049 13433 | 0 03 00672  | ANA      | K116    |                                 |  |          |
| 7050 13434 | 1 05 13650  | EPA      | OCI+1   | CALL FLUSH (FS00)               |  | FRTN7049 |
| 7051 13435 | 1 04 13650  | OW10 STA | OCI+1   |                                 |  | FRTN7050 |
| 7052 13436 | 000201      | IAR      |         |                                 |  | FRTN7051 |
| 7053 13437 | 1 04 13651  | STA      | OCI+1,1 |                                 |  | FRTN7052 |
| 7054 13440 | 0 02 13764  | LDA      | PRI+16  |                                 |  | FRTN7053 |
| 7055 13441 | 0404 74     | LGR      | 4       | POSITION IN LOW 12 BITS         |  | FRTN7054 |
| 7056 13442 | 0 10 13272  | JST      | OR80    |                                 |  | FRTN7055 |
| 7057 13443 | 0 013764    | DAC      | PRI+16  |                                 |  | FRTN7056 |
| 7058 13444 | 0 02 13762  | LDA      | PRI+14  |                                 |  | FRTN7057 |
| 7059 13445 | 0 10 13272  | JST      | OR80    | SET DIGITS IN PRI+15, PRI+16    |  | FRTN7058 |
| 7060 13446 | 0 013762    | DAC      | PRI+14  |                                 |  | FRTN7059 |
| 7061 13447 | 0 02 01060  | LDA      | LIBF    | CHECK TO SEE IF BIT 2 IS SET    |  | FRTN7060 |
| 7062 13450 | 0414 76     | LGL      | 2       |                                 |  | FRTN7061 |
| 7063 13451 | 0 02 01151  | LDA      | KASP    |                                 |  | FRTN7062 |
| 7064 13452 | 100001      | CSRI SRC |         | SKIP IF BIT 2 IS NOT SET        |  | FRTN7063 |
| 7065 13453 | 0 01 13460  | JMP      | OW14    |                                 |  | FRTN7064 |
| 7066 13454 | 0 04 13763  | STA      | PRI+15  | OVERWRITE BINARY DATA IN        |  | FRTN7065 |
| 7067 13455 | 0 04 13764  | STA      | PRI+16  | PRINT BUFFER WITH SPACES        |  | FRTN7066 |
| 7068 13456 | 0 04 13765  | STA      | PRI+17  | IF NO BINARY LISTING IS WANTED  |  | FRTN7067 |
| 7069 13457 | 0 04 13766  | STA      | PRI+18  |                                 |  | FRTN7068 |
| 7070 13460 | 0 04 13762  | OW14 STA | PRI+14  |                                 |  | FRTN7069 |
| 7071 13461 | 0 35 13471  | LDX      | OWXS    | RESTORE INDEX                   |  | FRTN7070 |
| 7072 13462 | 0 02 00643  | LDA      | RPL     |                                 |  | FRTN7071 |
| 7073 13463 | 0 04 13475  | STA      | ORPL    | ORPL=RPL                        |  | FRTN7072 |
| 7074 13464 | 140040      | CRA      |         |                                 |  | FRTN7073 |
| 7075 13465 | 0 13 13472  | IMA      | STFL    | INDICATE WORD WAS KEY TO LOADER |  | FRTN7074 |
| 7076 13466 | 101040      | SNZ      |         | THEN LEAVE RPL ALONE            |  | FRTN7075 |
| 7077 13467 | 0 12 00643  | IRS      | RPL     | RPL = RPL+                      |  | FRTN7076 |
| 7078 13470 | -0 01 13402 | JMP*     | OW00    |                                 |  | FRTN7077 |
| 7079 13471 |             | OWXS BSS | 1       | TEMP STORAGE FOR INDEX          |  | FRTN7078 |
| 7080 13472 | 0 00 00000  | STFL PZE | 0       |                                 |  | FRTN7079 |
| 7081 13473 | 0 10 13476  | OW20 JST | PU00    |                                 |  | FRTN7080 |
| 7082 13474 | 0 01 13435  | JMP      | OW10    |                                 |  | FRTN7081 |
| 7083 13475 | 0 00 00000  | ORPL PZE | 0       |                                 |  | FRTN7082 |
| 7084 13476 | 0 000000    | PU00 DAC | **      |                                 |  | FRTN7083 |
| 7085 13477 | 0 02 00027  | LDA      | CODE    | COMBINE CODES TO                |  | FRTN7084 |
|            |             |          |         |                                 |  | FRTN7085 |

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|            |             |          |        |                  |  |          |
|------------|-------------|----------|--------|------------------|--|----------|
| 7086 13500 | 0 11 00740  | CAS      | K104   | =4               |  | FRTN7086 |
| 7087 13501 | 101000      | NOP      |        |                  |  | FRTN7087 |
| 7088 13502 | 0 01 13515  | JMP      | PU10   |                  |  | FRTN7088 |
| 7089 13503 | 100040      | SZE      |        | SKIP IF ABS      |  | FRTN7089 |
| 7090 13504 | 0 01 13515  | JMP      | PU10   | JUMP IF REL.     |  | FRTN7090 |
| 7091 13505 | 0400 70     | LRL      | 8      |                  |  | FRTN7091 |
| 7092 13506 | 0 02 00043  | LDA      | FTOP   |                  |  | FRTN7092 |
| 7093 13507 | 0400 74     | PU08 LRL | 4      |                  |  | FRTN7093 |
| 7094 13510 | 0 04 13762  | STA      | PRI+14 | SAVE FOR LISTING |  | FRTN7094 |
| 7095 13511 | 000201      | IAB      |        |                  |  | FRTN7095 |
| 7096 13512 | 0 04 13764  | STA      | PRI+16 |                  |  | FRTN7096 |
| 7097 13513 | 0402 64     | LRR      | 12     | RESTORE POSITION |  | FRTN7097 |
| 7098 13514 | -0 01 13476 | JMP*     | PU00   |                  |  | FRTN7098 |
| 7099 13515 | 0400 74     | PU10 LRL | 4      |                  |  | FRTN7099 |
| 7100 13516 | 0 02 00025  | LDA      | AF     |                  |  | FRTN7100 |
| 7101 13517 | 100400      | SPL      |        |                  |  | FRTN7101 |
| 7102 13520 | 0 01 13524  | JMP      | PU11   |                  |  | FRTN7102 |
| 7103 13521 | 0400 74     | PU12 LRL | 4      |                  |  | FRTN7103 |
| 7104 13522 | 0 05 00043  | ERA      | FTOP   |                  |  | FRTN7104 |
| 7105 13523 | 0 01 13507  | JMP      | PU08   |                  |  | FRTN7105 |
| 7106 13524 | 0 02 00744  | PU11 LDA | K125   |                  |  | FRTN7106 |
| 7107 13525 | 0400 74     | LRL      | 4      |                  |  | FRTN7107 |
| 7108 13526 | 0 02 00025  | LDA      | AF     |                  |  | FRTN7108 |
| 7109 13527 | 0 01 13521  | JMP      | PU12   |                  |  | FRTN7109 |
| 7110 13530 | 000117      | K146 OCT | 117    |                  |  | FRTN7110 |
| 7111       |             | EJCT     |        |                  |  | FRTN7111 |

\* NAME: FRTN

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```
7112 *
7113 *
7114 *
7115 *
7116 *
7117 13531 0 000000 FS00 DAC **
7118 13532 0 02 00063 LDA OCNT
7119 13533 0 15 13633 STX FSX5
7120 13534 0 07 00740 SUB K104
7121 13535 100400 SPL
7122 13536 0 01 13614 JMP FS20
7123 13537 0 06 00741 ADD K105
7124 13540 0405 77 ARS 1
7125 13541 140407 TCA
7126 13542 0 04 00063 STA OCNT
7127 13543 0 07 00735 SUB K101
7128 13544 0 04 00062 STA PCNT
7129 13545 0 02 13650 LDA OCI
7130 13546 0400 64 LRL 12
7131 13547 0 11 00736 CAS K102
7132 13550 0 01 13552 JMP **2
7133 13551 0 01 13634 JMP FS30
7134 *
7135 *
7136 *
7137 *
7138 *
7139 13552 0 02 01060 FS09 LDA LIBF
7140 13553 0 03 14676 ANA
7141 13554 0 05 14676 ERA
7142 13555 100040 FS10 SZE
7143 13556 0 01 13601 JMP FS11
7144 13557 0 10 00000 CALL F4$SYM
7145 13560 0 013744 DAC PRI
7146 13561 0 02 13645 LDA FS41
7147 13562 0 04 13751 STA PRI+5
7148 13563 0 02 13646 LDA FS41+1

*****
*FLUSH SUBROUTINE*
*****

BUFFER OCCUPANCY SIZE
SAVE INDEX
CHECK FOR OCNT .GT. 4

SKIP OUTPUT IF BUFFER IS EMPTY
ADD 1/2 AT B14
DIVIDE BY 2

OCNT = -WORDS/BUFFER
=1
BUFFER SIZE INCLUDING CHECKSUM
FIRST WORD IN BUFFER
=2

BLOCK TYPE = 2 (RELOCATABLE CODE)
EVERY TIME A BLOCK OF OBJECT OUTPUT IS DUMPED, THE FIRST
3 WORDS OF THE BLOCK IS INSERTED IN THE SYMBOLIC OUTPUT
ALONG WITH AN EOB OPERATOR CODE IF SENSE SWITCH 1 IS DOWN.
TO INHIBIT THIS LINE, REPLACE FROM FS10 TO AND INCLUDING
FS11 WITH (FS10 CRA ).
CHECK TO SEE IF BIT 2 IS SET
= '40000
= '40000

SKIP IF BIT 2 IS SET
NO BINARY LISTING UNLESS BIT 2 IS SET
OUTPUT WHATEVER MIGHT BE IN SYMBOLIC BUF.
= (E) (J)
ENTER 'EOB' INTO LISTING
= (B) (SP)
```

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```
7149 13564 0 04 13752 STA PRI+6
7150 13565 0 02 13650 LDA OCI
7151 13566 0 10 13272 JST OR80
7152 13567 0 013754 DAC PRI+8
7153 13570 0 02 13651 LDA OCI+1
7154 13571 0 10 13272 JST OR80
7155 13572 0 013760 DAC PRI+12
7156 13573 0 02 13652 LDA OCI+2
7157 13574 0 10 13272 JST OR80
7158 13575 0 013764 DAC PRI+16
7159 13576 0 10 00000 CALL F4$SYM
7160 13577 0 013744 DAC PRI
7161 13600 0 10 13321 JST PRSP
7162 13601 140040 FS11 CRA
7163 13602 0 04 00000 STA 0
7164 13603 1 05 13650 FS12 ERA OCI+1
7165 13604 0 12 00000 IRS 0
7166 13605 0 12 00063 IRS OCNT
7167 13606 0 01 13603 JMP FS12
7168 13607 1 04 13650 STA OCI+1
7169 13610 0 02 00062 LDA PCNT
7170 13611 0 13 00000 IMA 0
7171 13612 0 06 13644 ADD FS40
7172 13613 0 10 00000 CALL F4$OUT
7173 13614 0 35 13330 FS20 LDX PRSK
7174 13615 140040 CRA
7175 13616 1 04 13720 STA OCI+40+1
7176 13617 0 12 00000 IRS 0
7177 13620 0 01 13616 JMP **2
7178 13621 0 02 00643 LDA RPL
7179 13622 0400 70 LRL 8
7180 13623 0 06 13647 ADD K145
7181 13624 0 04 13650 STA OCI
7182 13625 000201 IAB
7183 13626 0 04 13651 STA OCI+1
7184 13627 0 02 00737 LDA K103
7185 13628 0 04 00063 STA OCNT

ENTER FIRST WORD FROM BUFFER INTO LISTING

ENTER WORD 2 FROM BUFFER INTO LISTING

ENTER WORD 3 FROM BUFFER INTO LISTING

OUTPUT SYMBOLIC BUFFER

RESET SYMBOLIC BUFFER TO SPACES

COMPUTE CHECKSUM
MERGE BUFFER WORD INTO CHECKSUM
INCREMENT BUFFER POSITION
DECREMENT BUFFER SIZE

SET CHECKSUM INTO BUFFER
= NO. OF WORDS IN BUFFER
= OCI+1+1
PUNCH BUFFER
=-40 BUFFER SIZE

CLEAR BUFFER BEFORE USING

SET UP BUFFER FOR NEXT OUTPUT

= '2000 (BLOCK CODE 2)

SET FIRST 2 WORDS OF BUFFER
=0
RESET BUFFER OCCUPANCY SIZE
```

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|      |       |             |      |      |               |                                     |          |
|------|-------|-------------|------|------|---------------|-------------------------------------|----------|
| 7186 | 13631 | 0 35 13633  | LDX  | FSXS | RESTORE INDEX | FRTN7186                            |          |
| 7187 | 13632 | -0 01 13531 | JMP* | FS00 | EXIT          | FRTN7187                            |          |
| 7188 | 13633 |             | FSXS | BSS  | 1             | TEMP STORAGE FOR INDEX              | FRTN7188 |
| 7189 |       |             | *    |      |               |                                     | FRTN7189 |
| 7190 | 13634 | 0414 72     | FS30 | LGL  | 6             | MERGE BUFFER SIZE INTO BLOCK HEADER | FRTN7190 |
| 7191 | 13635 | 0 07 00063  | SUB  | OCNT |               | BUFFER SIZE                         | FRTN7191 |
| 7192 | 13636 | 141206      | AOA  |      |               | (ACCOJNT FOR CHECKSUM)              | FRTN7192 |
| 7193 | 13637 | 0412 72     | LLR  | 6    |               |                                     | FRTN7193 |
| 7194 | 13640 | 0404 72     | LGR  | 6    |               |                                     | FRTN7194 |
| 7195 | 13641 | 0410 72     | LLL  | 6    |               | BRING IN UPPER HALF OF ADDRESSES    | FRTN7195 |
| 7196 | 13642 | 0 04 13650  | STA  | OCI  |               | STORE INTO BJJFFER                  | FRTN7196 |
| 7197 | 13643 | 0 01 13552  | JMP  | FS09 |               | COMPUTE THE CHECKSUM                | FRTN7197 |
| 7198 |       |             | *    |      |               |                                     | FRTN7198 |
| 7199 | 13644 | 1 013651    | FS40 | DAC  | OCI+1*1       |                                     | FRTN7199 |
| 7200 | 13645 | 142717      | FS41 | BCI  | 2*EOB         | *EOB*                               | FRTN7200 |
|      | 13646 | 141240      |      |      |               |                                     |          |
| 7201 | 13647 | 020000      | K145 | OCT  | 20000         | BLOCK TYPE 2 CODE                   | FRTN7201 |
| 7202 |       |             | *    |      |               |                                     | FRTN7202 |
| 7203 | 13650 | 000000      | OCI  | BSZ  | 40            |                                     | FRTN7203 |
| 7204 | 13720 | 000000      |      | BSZ  | 20            | PAD BJJFFER WITH ZERO'S             | FRTN7204 |
| 7205 |       | 013657      | OCI7 | EQU  | OCI+7         |                                     | FRTN7205 |
| 7206 |       | 013660      | OCI8 | EQU  | OCI+8         |                                     | FRTN7206 |
| 7207 | 13744 |             | PRJ  | BSS  | 40            | 40 WORD PRINT BJJFFER               | FRTN7207 |
| 7208 | 14014 | 120240      |      | BCI  | 20,           |                                     | FRTN7208 |
|      | 14015 | 120240      |      |      |               |                                     |          |
|      | 14016 | 120240      |      |      |               |                                     |          |
|      | 14017 | 120240      |      |      |               |                                     |          |
|      | 14020 | 120240      |      |      |               |                                     |          |
|      | 14021 | 120240      |      |      |               |                                     |          |
|      | 14022 | 120240      |      |      |               |                                     |          |
|      | 14023 | 120240      |      |      |               |                                     |          |
|      | 14024 | 120240      |      |      |               |                                     |          |
|      | 14025 | 120240      |      |      |               |                                     |          |
|      | 14026 | 120240      |      |      |               |                                     |          |
|      | 14027 | 120240      |      |      |               |                                     |          |
|      | 14030 | 120240      |      |      |               |                                     |          |
|      | 14031 | 120240      |      |      |               |                                     |          |

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|------|-------|--------|------|-----|----------|----------|
|      | 14032 | 120240 |      |     |          |          |
|      | 14033 | 120240 |      |     |          |          |
|      | 14034 | 120240 |      |     |          |          |
|      | 14035 | 120240 |      |     |          |          |
|      | 14036 | 120240 |      |     |          |          |
|      | 14037 | 120240 |      |     |          |          |
| 7209 |       |        | *    |     |          | FRTN7209 |
| 7210 | 14040 |        | CI   | BSS | 40       | FRTN7210 |
| 7211 | 14110 | 120240 |      | BCI | 20,      | FRTN7211 |
|      | 14111 | 120240 |      |     |          |          |
|      | 14112 | 120240 |      |     |          |          |
|      | 14113 | 120240 |      |     |          |          |
|      | 14114 | 120240 |      |     |          |          |
|      | 14115 | 120240 |      |     |          |          |
|      | 14116 | 120240 |      |     |          |          |
|      | 14117 | 120240 |      |     |          |          |
|      | 14120 | 120240 |      |     |          |          |
|      | 14121 | 120240 |      |     |          |          |
|      | 14122 | 120240 |      |     |          |          |
|      | 14123 | 120240 |      |     |          |          |
|      | 14124 | 120240 |      |     |          |          |
|      | 14125 | 120240 |      |     |          |          |
|      | 14126 | 120240 |      |     |          |          |
|      | 14127 | 120240 |      |     |          |          |
|      | 14130 | 120240 |      |     |          |          |
|      | 14131 | 120240 |      |     |          |          |
|      | 14132 | 120240 |      |     |          |          |
|      | 14133 | 120240 |      |     |          |          |
| 7212 | 14134 | 152322 | K1   | BCI | 3,TRUE.  | FRTN7212 |
|      | 14135 | 152705 |      |     |          |          |
|      | 14136 | 127240 |      |     |          |          |
| 7213 | 14137 | 143301 | K2   | BCI | 3,FALSE. | FRTN7213 |
|      | 14140 | 146323 |      |     |          |          |
|      | 14141 | 142656 |      |     |          |          |
| 7214 | 14142 | 147317 | KNOT | BCI | 3,NOT.   | FRTN7214 |
|      | 14143 | 152256 |      |     |          |          |
|      | 14144 | 120240 |      |     |          |          |

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|------|-------|--------|----------|---|--------------|--|
| 7215 |       |        |          |   |              |  |
| 7216 | 14145 | 142305 |          |   |              |  |
|      | 14146 | 141705 |          |   |              |  |
|      | 14147 | 142314 |          |   |              |  |
|      | 14150 | 141714 |          |   |              |  |
|      | 14151 | 142314 |          |   |              |  |
|      | 14152 | 142323 |          |   |              |  |
| 7217 | 14153 | 141723 | BCI      | 6 | CSDCCCDSCSDA |  |
|      | 14154 | 142303 |          |   |              |  |
|      | 14155 | 141703 |          |   |              |  |
|      | 14156 | 142323 |          |   |              |  |
|      | 14157 | 141723 |          |   |              |  |
|      | 14160 | 142301 |          |   |              |  |
| 7218 | 14161 | 142301 | BCI      | 6 | DADMDADMOMDS |  |
|      | 14162 | 142315 |          |   |              |  |
|      | 14163 | 142301 |          |   |              |  |
|      | 14164 | 142315 |          |   |              |  |
|      | 14165 | 142315 |          |   |              |  |
|      | 14166 | 142323 |          |   |              |  |
| 7219 | 14167 | 142302 | BCI      | 3 | DBC MCO      |  |
|      | 14170 | 141715 |          |   |              |  |
|      | 14171 | 141717 |          |   |              |  |
| 7220 | 14172 | 154320 | TGT2 BCI | 6 | XPXPOGOGOGIN |  |
|      | 14173 | 154320 |          |   |              |  |
|      | 14174 | 147707 |          |   |              |  |
|      | 14175 | 147707 |          |   |              |  |
|      | 14176 | 147707 |          |   |              |  |
|      | 14177 | 144716 |          |   |              |  |
| 7221 | 14200 | 144716 | BCI      | 6 | INOSOSQRQRTA |  |
|      | 14201 | 147723 |          |   |              |  |
|      | 14202 | 147723 |          |   |              |  |
|      | 14203 | 150722 |          |   |              |  |
|      | 14204 | 150722 |          |   |              |  |
|      | 14205 | 152301 |          |   |              |  |
| 7222 | 14206 | 152301 | BCI      | 6 | TAODBSAXINIG |  |
|      | 14207 | 147704 |          |   |              |  |
|      | 14210 | 141323 |          |   |              |  |

FRTN7215  
FRTN7216

FRTN7217

FRTN7218

FRTN7219

FRTN7220

FRTN7221

FRTN7222

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|------|-------|--------|----------|---|----------|--|
|      | 14211 | 140730 |          |   |          |  |
|      | 14212 | 144716 |          |   |          |  |
|      | 14213 | 144707 |          |   |          |  |
| 7223 | 14214 | 146305 | BCI      | 3 | LEPLNJ   |  |
|      | 14215 | 150314 |          |   |          |  |
|      | 14216 | 147312 |          |   |          |  |
| 7224 | 14217 | 120240 | TGT3 BCI | 6 | 10       |  |
|      | 14220 | 120240 |          |   |          |  |
|      | 14221 | 120240 |          |   |          |  |
|      | 14222 | 120240 |          |   |          |  |
|      | 14223 | 130660 |          |   |          |  |
|      | 14224 | 120240 |          |   |          |  |
| 7225 | 14225 | 120240 | BCI      | 6 | T T N    |  |
|      | 14226 | 120240 |          |   |          |  |
|      | 14227 | 120240 |          |   |          |  |
|      | 14230 | 152240 |          |   |          |  |
|      | 14231 | 152240 |          |   |          |  |
|      | 14232 | 147240 |          |   |          |  |
| 7226 | 14233 | 147262 | BCI      | 6 | N2 1 1 N |  |
|      | 14234 | 120240 |          |   |          |  |
|      | 14235 | 120240 |          |   |          |  |
|      | 14236 | 130640 |          |   |          |  |
|      | 14237 | 130640 |          |   |          |  |
|      | 14240 | 147240 |          |   |          |  |
| 7227 | 14241 | 120240 | BCI      | 3 | X G      |  |
|      | 14242 | 152240 |          |   |          |  |
|      | 14243 | 143640 |          |   |          |  |
| 7228 | 14244 | 144716 | A9X1 BCI | 2 | INRE     |  |
|      | 14245 | 151305 |          |   |          |  |
| 7229 | 14246 | 142317 | K19 BCI  | 1 | DO       |  |
| 7230 | 14247 | 141717 | BCI      | 2 | COLO     |  |
|      | 14250 | 142317 |          |   |          |  |
| 7231 | 14251 | 143325 | A7K BCI  | 1 | FU       |  |
| 7232 | 14252 | 151725 | BCI      | 4 | SUBLEXDI |  |
|      | 14253 | 141314 |          |   |          |  |
|      | 14254 | 142730 |          |   |          |  |
|      | 14255 | 142311 |          |   |          |  |

FRTN7223

FRTN7224

FRTN7225

FRTN7226

FRTN7227

FRTN7228

FRTN7229

FRTN7230

FRTN7231

FRTN7232

CONSTANT FOR FUNCTION CHECK

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| 7233 | 14256 | 141717 | BCI      | 6.COEQGOCARECO           | FRTN7233  |
|      | 14257 | 142721 |          |                          |           |
|      | 14260 | 143717 |          |                          |           |
|      | 14261 | 141701 |          |                          |           |
|      | 14262 | 151305 |          |                          |           |
|      | 14263 | 141717 |          |                          |           |
| 7234 | 14264 | 143317 | A9X5 BCI | 1.FO                     | FRTN7234  |
| 7235 | 14265 | 144706 | BCI      | 3.IFWRRE                 | FRTN7235  |
|      | 14266 | 153722 |          |                          |           |
|      | 14267 | 151305 |          |                          |           |
| 7236 | 14270 | 141301 | BCI      | 5.BAENREENAS             | FRTN7236. |
|      | 14271 | 142716 |          |                          |           |
|      | 14272 | 151305 |          |                          |           |
|      | 14273 | 142716 |          |                          |           |
|      | 14274 | 140723 |          |                          |           |
| 7237 | 14275 | 151724 | K55 BCI  | 1.ST                     | FRTN7237  |
| 7238 | 14276 | 150301 | K54 BCI  | 1.PA                     | FRTN7238  |
| 7239 | 14277 | 142301 | BCI      | 2.DATR                   | FRTN7239  |
|      | 14300 | 152322 |          |                          |           |
| 7240 | 14301 | 144305 | BCI      | 1.HE                     | FRTN7240  |
| 7241 | 14302 | 153701 | BCI      | 1.WA                     | FRTN7241  |
| 7242 | 14303 | 152305 | BCI      | 1.TE                     | FRTN7242  |
| 7243 | 14304 | 151305 | BCI      | 1.RE                     | FRTN7243  |
| 7244 | 14305 | 141717 | BCI      | 1.CO                     | FRTN7244  |
| 7245 | 14306 | 142311 | BCI      | 1.DI                     | FRTN7245  |
| 7246 | 14307 | 151703 | BCI      | 1.SC                     | FRTN7246  |
| 7247 | 14310 | 144716 | BCI      | 1.IN                     | FRTN7247  |
| 7248 | 14311 | 150322 | BCI      | 1.PR                     | FRTN7248  |
| 7249 | 14312 | 152305 | A9X2 BCI | 10.TEALUBMPGINC BROCTEME | FRTN7249  |
|      | 14313 | 140714 |          |                          |           |
|      | 14314 | 152702 |          |                          |           |
|      | 14315 | 146720 |          |                          |           |
|      | 14316 | 143711 |          |                          |           |
|      | 14317 | 147303 |          |                          |           |
|      | 14320 | 141322 |          |                          |           |
|      | 14321 | 147703 |          |                          |           |
|      | 14322 | 152305 |          |                          |           |

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|------|-------|----------|----------|-------------------------|----------|
| 7250 | 14323 | 146705   |          |                         |          |
|      | 14324 | 146715   | BCI      | 10.MMUITOLLTUNTRM( ITAD | FRTN7250 |
|      | 14325 | 152711   |          |                         |          |
|      | 14326 | 152317   |          |                         |          |
|      | 14327 | 146314   |          |                         |          |
|      | 14330 | 152325   |          |                         |          |
|      | 14331 | 147324   |          |                         |          |
|      | 14332 | 151315   |          |                         |          |
|      | 14333 | 124240   |          |                         |          |
|      | 14334 | 144724   |          |                         |          |
|      | 14335 | 140704   |          |                         |          |
| 7251 | 14336 | 141713   | BCI      | 3.CKDFWI                | FRTN7251 |
|      | 14337 | 142306   |          |                         |          |
|      | 14340 | 153711   |          |                         |          |
| 7252 | 14341 | 142215   | OCT      | 142215                  | FRTN7252 |
| 7253 | 14342 | 151711   | BCI      | 3.SIOPUS                | FRTN7253 |
|      | 14343 | 147720   |          |                         |          |
|      | 14344 | 152723   |          |                         |          |
| 7254 | 14345 | 152301   | BCI      | 2.TAAC                  | FRTN7254 |
|      | 14346 | 140703   |          |                         |          |
| 7255 | 14347 | 140704   | BCI      | 1.AD                    | FRTN7255 |
| 7256 | 14350 | 144724   | BCI      | 1.IT                    | FRTN7256 |
| 7257 | 14351 | 151315   | BCI      | 1.RM                    | FRTN7257 |
| 7258 | 14352 | 150725   | BCI      | 1.QU                    | FRTN7258 |
| 7259 | 14353 | 147316   | BCI      | 1.NN                    | FRTN7259 |
| 7260 | 14354 | 151703   | BCI      | 1.SC                    | FRTN7260 |
| 7261 | 14355 | 144305   | BCI      | 1.HE                    | FRTN7261 |
| 7262 | 14356 | 152305   | BCI      | 1.TE                    | FRTN7262 |
| 7263 | 14357 | 144716   | BCI      | 1.IN                    | FRTN7263 |
| 7264 | 14360 | 0 010067 | A9X3 DAC | A3                      | FRTN7264 |
| 7265 | 14361 | 0 010071 | DAC      | A4                      | FRTN7265 |
| 7266 | 14362 | 0 010073 | DAC      | A5                      | FRTN7266 |
| 7267 | 14363 | 0 010075 | DAC      | A6                      | FRTN7267 |
| 7268 | 14364 | 0 010077 | DAC      | A7                      | FRTN7268 |
| 7269 | 14365 | 0 010031 | DAC      | R1                      | FRTN7269 |
| 7270 | 14366 | 0 010033 | DAC      | R2                      | FRTN7270 |
| 7271 | 14367 | 0 011305 | DAC      | R3                      | FRTN7271 |

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| 7272 14370 | 0 010137  | DAC       | B2            |                               |         | FRTN7272 |
| 7273 14371 | 0 010145  | DAC       | B3            |                               |         | FRTN7273 |
| 7274 14372 | 0 010233  | DAC       | B4            |                               |         | FRTN7274 |
| 7275 14373 | 0 010304  | DAC       | B5            |                               |         | FRTN7275 |
| 7276 14374 | -0 004526 | DAC*      | R7            |                               |         | FRTN7276 |
| 7277 14375 | -0 005435 | DAC*      | R8            |                               |         | FRTN7277 |
| 7278 14376 | -0 005463 | DAC*      | R9            |                               |         | FRTN7278 |
| 7279 14377 | -0 004262 | DAC*      | CONT          |                               |         | FRTN7279 |
| 7280 14400 | -0 005133 | DAC*      | V2            |                               |         | FRTN7280 |
| 7281 14401 | -0 004405 | DAC*      | V3            |                               |         | FRTN7281 |
| 7282 14402 | -0 004737 | DAC*      | V4            |                               |         | FRTN7282 |
| 7283 14403 | -0 004735 | DAC*      | V5            |                               |         | FRTN7283 |
| 7284 14404 | -0 004717 | DAC*      | V6            |                               |         | FRTN7284 |
| 7285 14405 | -0 004724 | DAC*      | V7            |                               |         | FRTN7285 |
| 7286 14406 | -0 004726 | DAC*      | V8            |                               |         | FRTN7286 |
| 7287 14407 | 0 025556  | DAC       | W5+*20000     |                               |         | FRTN7287 |
| 7288 14410 | -0 004636 | DAC*      | W3            |                               |         | FRTN7288 |
| 7289 14411 | -0 005371 | DAC*      | W7            |                               |         | FRTN7289 |
| 7290 14412 | -0 005432 | DAC*      | W8            |                               |         | FRTN7290 |
| 7291 14413 | 1 010732  | DAC       | W4,1          |                               |         | FRTN7291 |
| 7292 14414 | -1 031315 | DAC*      | TRAC+*20000,1 | TRACE STATEMENT               |         | FRTN7292 |
| 7293 14415 | 0 000000  | DAC       | HEAD          | HEADER STATEMENT              |         | FRTN7293 |
| 7294 14416 | -0 000000 | DAC*      | WAIT          | WAIT STATEMENT                |         | FRTN7294 |
| 7295 14417 | -0 000000 | DAC*      | TERM          | TERMINATE STATEMENT           |         | FRTN7295 |
| 7296 14420 | -0 000000 | DAC*      | REQU          | REQUEST STATEMENT             |         | FRTN7296 |
| 7297 14421 | -0 000000 | DAC*      | CONN          | CONNECT CLOCK/INTERRUPT       |         | FRTN7297 |
| 7298 14422 | -0 000000 | DAC*      | DISC          | DISCONNECT CLOCK/INTERRUPT    |         | FRTN7298 |
| 7299 14423 | -0 000000 | DAC*      | SCHE          | SCHEDJLE                      |         | FRTN7299 |
| 7300 14424 | -1 020000 | IPTR DAC* | 0000+*20000,1 | WILL BE FILLED IN LATER !!!!! |         | FRTN7300 |
| 7301 14425 | -0 000000 | DAC*      | PRIN          | PRINT ERROR STATEMENT         |         | FRTN7301 |
| 7302       |           |           |               |                               |         | FRTN7302 |
| 7303       |           |           |               |                               |         | FRTN7303 |
| 7304 14426 | 000003    | A9X4 OCT  | 000003        | (00)                          |         | FRTN7304 |
| 7305 14427 | 030100    | OCT       | 030100        | (01) +                        | (A\$--) | FRTN7305 |
| 7306 14430 | 032313    | OCT       | 032313        | (02) -                        | (S\$--) | FRTN7306 |
| 7307 14431 | 031503    | OCT       | 031503        | (03) *                        | (M\$--) | FRTN7307 |
| 7308 14432 | 030403    | OCT       | 030403        | (04) /                        | (D\$--) | FRTN7308 |

\*-----THE FOLLOWING TABLE IS USED BY STATEMENT ID  
\*----- (RIGHT 6 BITS) AND OUTPUT ITEM.

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|------------|--------|---------|--------|------------|----------|----------|
| 7309 14433 | 000004 | OCT     | 000004 | (05) .NOT. |          | FRTN7309 |
| 7310 14434 | 000006 | OCT     | 000006 | (06) .AND. |          | FRTN7310 |
| 7311 14435 | 031405 | OCT     | 031405 | (07) .OR.  | (L\$--)  | FRTN7311 |
| 7312 14436 | 000004 | OCT     | 000004 | (10) .LT.  |          | FRTN7312 |
| 7313 14437 | 000005 | OCT     | 000005 | (11) .LE.  |          | FRTN7313 |
| 7314 14440 | 000002 | OCT     | 000002 | (12) .EQ.  |          | FRTN7314 |
| 7315 14441 | 000007 | OCT     | 000007 | (13) .GE.  |          | FRTN7315 |
| 7316 14442 | 000000 | OCT     | 000000 | (14) .GT.  |          | FRTN7316 |
| 7317 14443 | 000000 | OCT     | 000000 | (15) .NE.  |          | FRTN7317 |
| 7318 14444 | 031003 | OCT     | 031003 | (16) =     | (H\$--)  | FRTN7318 |
| 7319 14445 | 000005 | OCT     | 000005 | (17) ,     |          | FRTN7319 |
| 7320 14446 | 030503 | OCT     | 030503 | (20) 'E'   | (E\$--)  | FRTN7320 |
| 7321 14447 | 031600 | OCT     | 031600 | (21) 'C'   | (NC\$--) | FRTN7321 |
| 7322 14450 | 000001 | OCT     | 000001 | (22) 'A'   |          | FRTN7322 |
| 7323 14451 | 000000 | OCT     | 000000 | (23)       |          | FRTN7323 |
| 7324 14452 | 000005 | OCT     | 000005 | (24) 'X'   |          | FRTN7324 |
| 7325 14453 | 000003 | OCT     | 000003 | (25) 'H'   |          | FRTN7325 |
| 7326 14454 | 000002 | OCT     | 000002 | (26) 'L'   |          | FRTN7326 |
| 7327 14455 | 000000 | OCT     | 000000 | (27) 'I'   |          | FRTN7327 |
| 7328 14456 | 000002 | OCT     | 000002 | (30) 'T'   |          | FRTN7328 |
| 7329 14457 | 031400 | OCT     | 031400 | (31) 'F'   | (L\$--)  | FRTN7329 |
| 7330 14460 | 000001 | OCT     | 000001 | (32) 'Q'   |          | FRTN7330 |
| 7331 14461 | 000000 | OCT     | 000000 |            |          | FRTN7331 |
| 7332 14462 | 000001 | OCT     | 000001 |            |          | FRTN7332 |
| 7333 14463 | 000002 | OCT     | 000002 |            |          | FRTN7333 |
| 7334 14464 | 000000 | OCT     | 000000 |            |          | FRTN7334 |
| 7335 14465 | 000005 | OCT     | 000005 |            |          | FRTN7335 |
| 7336 14466 | 000003 | OCT     | 000003 |            |          | FRTN7336 |
| 7337 14467 | 000003 | OCT     | 3      |            |          | FRTN7337 |
| 7338 14470 | 000006 | OCT     | 6      |            |          | FRTN7338 |
| 7339 14471 | 000004 | OCT     | 4      |            |          | FRTN7339 |
| 7340 14472 | 000005 | OCT     | 5      |            |          | FRTN7340 |
| 7341 14473 | 000006 | OCT     | 6      |            |          | FRTN7341 |
| 7342 14474 | 000250 | K17 OCT | 250    | (          |          | FRTN7342 |
| 7343 14475 | 000003 | OCT     | 3      | *          |          | FRTN7343 |
| 7344 14476 | 000005 | OCT     | 5      | NOT        |          | FRTN7344 |
| 7345 14477 | 000001 | OCT     | 1      | +          |          | FRTN7345 |

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| 7346 | 14500 | 000002   | OCT      | 2    | -             | FRTN7346 |
| 7347 | 14501 | 000310   | K14 OCT  | 310  | H             | FRTN7347 |
| 7348 |       | 014501   | K48 EQU  | K14  |               | FRTN7348 |
| 7349 | 14502 | 0 006301 | EX91 DAC | EX12 | (             | FRTN7349 |
| 7350 | 14503 | 0 006307 | DAC      | EX16 | *             | FRTN7350 |
| 7351 | 14504 | 0 006332 | DAC      | EX18 | NOT           | FRTN7351 |
| 7352 | 14505 | 0 006367 | DAC      | EX26 | +             | FRTN7352 |
| 7353 | 14506 | 0 006367 | DAC      | EX26 | -             | FRTN7353 |
| 7354 | 14507 | 0 006770 | DAC      | EX69 | H             | FRTN7354 |
| 7355 | 14510 | 000001   | EX92 OCT | 1    | +             | FRTN7355 |
| 7356 | 14511 | 000002   | OCT      | 2    | -             | FRTN7356 |
| 7357 | 14512 | 000003   | OCT      | 3    | *             | FRTN7357 |
| 7358 | 14513 | 000004   | OCT      | 4    | /             | FRTN7358 |
| 7359 | 14514 | 000006   | OCT      | 6    | AND           | FRTN7359 |
| 7360 | 14515 | 000007   | OCT      | 7    | OR            | FRTN7360 |
| 7361 | 14516 | 000015   | OCT      | 15   | NE            | FRTN7361 |
| 7362 | 14517 | 000012   | OCT      | 12   | EQ            | FRTN7362 |
| 7363 | 14520 | 000014   | OCT      | 14   | GT            | FRTN7363 |
| 7364 | 14521 | 000010   | OCT      | 10   | LT            | FRTN7364 |
| 7365 | 14522 | 000013   | OCT      | 13   | GE            | FRTN7365 |
| 7366 | 14523 | 000011   | OCT      | 11   | LE            | FRTN7366 |
| 7367 | 14524 | 000016   | OCT      | 16   | =             | FRTN7367 |
| 7368 | 14525 | 000016   | OCT      | 16   | = (ERROR)     | FRTN7368 |
| 7369 | 14526 | 0 007036 | EX93 DAC | EX78 | +             | FRTN7369 |
| 7370 | 14527 | 0 007036 | DAC      | EX78 |               | FRTN7370 |
| 7371 | 14530 | 0 007041 | DAC      | EX80 | *             | FRTN7371 |
| 7372 | 14531 | 0 007041 | DAC      | EX80 | /             | FRTN7372 |
| 7373 | 14532 | 0 007043 | DAC      | EX81 | AND           | FRTN7373 |
| 7374 | 14533 | 0 007046 | DAC      | EX82 | OR            | FRTN7374 |
| 7375 | 14534 | 0 007050 | DAC      | EX83 | NE            | FRTN7375 |
| 7376 | 14535 | 0 007050 | DAC      | EX83 | EQ            | FRTN7376 |
| 7377 | 14536 | 0 007050 | DAC      | EX83 | GT            | FRTN7377 |
| 7378 | 14537 | 0 007050 | DAC      | EX83 | LT            | FRTN7378 |
| 7379 | 14540 | 0 007050 | DAC      | EX83 | GE            | FRTN7379 |
| 7380 | 14541 | 0 007050 | DAC      | EX83 | LE            | FRTN7380 |
| 7381 | 14542 | 0 007070 | DAC      | EX85 | =             | FRTN7381 |
| 7382 | 14543 | 0 006411 | DAC      | EX34 | NONE OF THESE | FRTN7382 |

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|------|-------|--------|----------|--------------------------------------------------|----------|
| 7383 | 14544 | 000001 | CA90 OCT | 1,2,11,10,13,14,12,15                            | FRTN7383 |
|      | 14545 | 000002 |          |                                                  |          |
|      | 14546 | 000011 |          |                                                  |          |
|      | 14547 | 000010 |          |                                                  |          |
|      | 14550 | 000013 |          |                                                  |          |
|      | 14551 | 000014 |          |                                                  |          |
|      | 14552 | 000012 |          |                                                  |          |
|      | 14553 | 000015 |          |                                                  |          |
| 7384 | 14554 | 000002 | CA91 OCT | 2,1,13,14,11,10,12,15                            | FRTN7384 |
|      | 14555 | 000001 |          |                                                  |          |
|      | 14556 | 000013 |          |                                                  |          |
|      | 14557 | 000014 |          |                                                  |          |
|      | 14560 | 000011 |          |                                                  |          |
|      | 14561 | 000010 |          |                                                  |          |
|      | 14562 | 000012 |          |                                                  |          |
|      | 14563 | 000015 |          |                                                  |          |
| 7385 | 14564 | 140704 | OR92 BCI | 22,ADJSLDADJMSULDSTANJMSNS 4LLLRACTCCMSSA0SSJMDA | FRTN7385 |
|      | 14565 | 145323 |          |                                                  |          |
|      | 14566 | 146304 |          |                                                  |          |
|      | 14567 | 140704 |          |                                                  |          |
|      | 14570 | 145315 |          |                                                  |          |
|      | 14571 | 151725 |          |                                                  |          |
|      | 14572 | 146304 |          |                                                  |          |
|      | 14573 | 151724 |          |                                                  |          |
|      | 14574 | 140716 |          |                                                  |          |
|      | 14575 | 145315 |          |                                                  |          |
|      | 14576 | 151716 |          |                                                  |          |
|      | 14577 | 151715 |          |                                                  |          |
|      | 14600 | 146314 |          |                                                  |          |
|      | 14601 | 146322 |          |                                                  |          |
|      | 14602 | 140703 |          |                                                  |          |
|      | 14603 | 152303 |          |                                                  |          |
|      | 14604 | 141715 |          |                                                  |          |
|      | 14605 | 151723 |          |                                                  |          |
|      | 14606 | 140717 |          |                                                  |          |
|      | 14607 | 151723 |          |                                                  |          |
|      | 14610 | 145315 |          |                                                  |          |

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|------|-------|--------|----------|------------------------------------------------|----------|
| 7386 | 14611 | 146301 |          |                                                |          |
|      | 14612 | 146304 | BCI      | 3*LDINEN                                       | FRTN7386 |
|      | 14613 | 144716 |          |                                                |          |
|      | 14614 | 142716 |          |                                                |          |
| 7387 | 14615 | 140714 | BCI      | 2*ALTC                                         | FRTN7387 |
|      | 14616 | 152303 |          |                                                |          |
| 7388 | 14617 | 151724 | BCI      | 10*STCASTSUDAERSUCAJS//                        | FRTN7388 |
|      | 14620 | 141701 |          |                                                |          |
|      | 14621 | 151724 |          |                                                |          |
|      | 14622 | 151725 |          |                                                |          |
|      | 14623 | 142301 |          |                                                |          |
|      | 14624 | 142722 |          |                                                |          |
|      | 14625 | 151725 |          |                                                |          |
|      | 14626 | 141701 |          |                                                |          |
|      | 14627 | 145323 |          |                                                |          |
|      | 14630 | 127657 |          |                                                |          |
| 7389 | 14631 | 142252 | OR93 BCI | 22*D*T*A*D P B A A A P*Z I 1515A A A C A M PXC | FRTN7389 |
|      | 14632 | 152252 |          |                                                |          |
|      | 14633 | 140652 |          |                                                |          |
|      | 14634 | 142240 |          |                                                |          |
|      | 14635 | 150240 |          |                                                |          |
|      | 14636 | 141240 |          |                                                |          |
|      | 14637 | 140640 |          |                                                |          |
|      | 14640 | 140640 |          |                                                |          |
|      | 14641 | 140640 |          |                                                |          |
|      | 14642 | 150252 |          |                                                |          |
|      | 14643 | 155240 |          |                                                |          |
|      | 14644 | 144640 |          |                                                |          |
|      | 14645 | 130665 |          |                                                |          |
|      | 14646 | 130665 |          |                                                |          |
|      | 14647 | 140640 |          |                                                |          |
|      | 14650 | 140640 |          |                                                |          |
|      | 14651 | 140640 |          |                                                |          |
|      | 14652 | 141640 |          |                                                |          |
|      | 14653 | 140640 |          |                                                |          |
|      | 14654 | 146640 |          |                                                |          |
|      | 14655 | 150330 |          |                                                |          |

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| 7390 | 14656 | 141640 |     |                        |          |
|      | 14657 | 154240 | BCI | 3*X H B                | FRTN7390 |
|      | 14660 | 144240 |     |                        |          |
|      | 14661 | 141240 |     |                        |          |
| 7391 | 14662 | 151661 | BCI | 2*S1A                  | FRTN7391 |
|      | 14663 | 140640 |     |                        |          |
| 7392 | 14664 | 142640 | BCI | 10*G S A*B*C*R/ERS*T*/ | FRTN7392 |
|      | 14665 | 151640 |     |                        |          |
|      | 14666 | 140652 |     |                        |          |
|      | 14667 | 141252 |     |                        |          |
|      | 14670 | 141652 |     |                        |          |
|      | 14671 | 151257 |     |                        |          |
|      | 14672 | 141322 |     |                        |          |
|      | 14673 | 151652 |     |                        |          |
|      | 14674 | 152252 |     |                        |          |
|      | 14675 | 127640 |     |                        |          |
| 7393 |       |        | *   |                        | FRTN7393 |
| 7394 |       |        | *   |                        | FRTN7394 |
| 7395 |       |        | *   |                        | FRTN7395 |
| 7396 |       |        | *   |                        | FRTN7396 |
| 7397 |       |        | *   |                        | FRTN7397 |
| 7398 |       |        | *   |                        | FRTN7398 |
| 7399 |       |        | *   |                        | FRTN7399 |
| 7400 | 14676 | 040000 | END | A0                     | FRTN7400 |
|      | 14677 | 020000 |     |                        |          |
|      | 14700 | 002000 |     |                        |          |

|      |         |      |         |      |         |      |         |
|------|---------|------|---------|------|---------|------|---------|
| A    | 000625A | A0   | 001001A | A051 | 001005A | A055 | 001035A |
| A090 | 001056A | A091 | 001057A | A1   | 003637A | A3   | 010067A |
| A4   | 010071A | A5   | 010073A | A6   | 010075A | A7   | 010077A |
| A790 | 010131A | A7A  | 010100A | A7B  | 010125A | A7K  | 014251A |
| A9   | 004157A | A9A  | 004166A | A9B  | 004221A | A9C  | 004225A |
| A9D  | 004232A | A9E  | 004241A | A9F  | 004246A | A9G  | 004257A |
| A9T1 | 004144A | A9T2 | 004155A | A9T3 | 004156A | A9X1 | 014244A |
| A9X2 | 014312A | A9X3 | 014360A | A9X4 | 014426A | A9X5 | 014264A |
| A9Z9 | 004244A | AAC0 | 003623A | ABAR | 000637A | ACCP | 007512A |

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| AD3  | 002442A | AF   | 000025A | AF00 | 003571A | AHGH | 010730A |
| AI00 | 003612A | ALOW | C10727A | AS00 | 002762A | AS04 | 002705A |
| AS05 | 002767A | AS15 | 003065A | AS16 | 003066A | AS18 | 003103A |
| AS19 | 003111A | AS20 | 003113A | AS32 | 003123A | AS40 | 003145A |
| AS41 | 003164A | AS46 | 003203A | AS50 | 003213A | AS60 | 00325A  |
| AS91 | 003220A | AS92 | 003221A | ASMB | 000000E | AT   | 000006A |
| AT00 | 002424A | B    | 000036A | B1   | 010132A | B2   | 010137A |
| B3   | 010145A | B3A  | 010146A | B3D  | 010215A | B3T0 | 010142A |
| B3T1 | 010143A | B3T3 | 010144A | B4   | 010233A | B40  | 010245A |
| B4B  | 010250A | B4D  | 010270A | B4E  | 010301A | B4F  | 000717A |
| B4Z9 | 010303A | P5   | 010304A | B5B  | 010320A | B5C  | 010316A |
| B5D  | 010340A | R6   | 003633A | B7   | 010226A | PDF  | 000644A |
| BLKC | 011605A | FLAK | 002510A | BLXS | 002522A | BUD  | 003510A |
| C1R2 | 002752A | C2   | 010344A | C2A  | 010346A | C2B  | 010312A |
| C2D  | 010362A | C2F  | 010373A | C2R2 | 011431A | C2T0 | 010343A |
| C3   | 010410A | C3B  | 010416A | C3D  | 010427A | C3G  | 010411A |
| C3H  | 010445A | C3H2 | 010451A | C3K  | 010467A | C3M  | 010514A |
| C3N  | 010523A | C3N5 | 010526A | C30  | 010530A | C3P  | 010514A |
| C3R2 | 013123A | C3T0 | 010403A | C3T1 | 010404A | C3T2 | 010415A |
| C3T3 | 010406A | C3T4 | 010407A | C4   | 010661A | C4B  | 010511A |
| C4C  | 010542A | C4F  | 010611A | C4I  | 010632A | C4L  | 010616A |
| C4L2 | 010644A | C4L3 | 010646A | C4L6 | 010663A | C4M  | 010617A |
| C4T0 | 010557A | C4T1 | 010560A | C5   | 003635A | C6   | 003641A |
| C6A  | 003644A | C6B  | 003647A | C6C  | 003651A | C6D  | 003616A |
| C6E  | 003677A | C6H  | 003703A | C6J  | 003714A | C6K  | 003721A |
| C7   | 003723A | C7I  | 003751A | C7A  | 003757A | C7B  | 003710A |
| C7C  | 003762A | C7L5 | 004002A | C7LT | 003771A | C7LU | 004004A |
| C8   | 004032A | C8A  | 004040A | C8B  | 004041A | C8B2 | 004046A |
| C8B4 | 004051A | C8C  | 004056A | C8C4 | 004065A | C8D  | 004071A |
| C8D2 | 004100A | C8E  | 004102A | C8G  | 004140A | C8T1 | 004031A |
| C8X9 | 004153A | C9   | 004702A | C9T0 | 004701A | CA00 | 007125A |
| CA04 | 007130A | CA08 | 007146A | CA10 | 007165A | CA13 | 007203A |
| CA14 | 007220A | CA18 | 007260A | CA20 | 007261A | CA22 | 007273A |
| CA24 | 007304A | CA26 | 007325A | CA28 | 007330A | CA30 | 007332A |
| CA31 | 007334A | CA32 | 007335A | CA35 | 007352A | CA37 | 007355A |
| CA39 | 007370A | CA45 | 007400A | CA50 | 007215A | CA90 | 014544A |
| CA91 | 014554A | CC   | 000656A | CCRD | 004007A | CCRK | 004030A |

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| CERR | 002647A | CFL  | 000641A | CH00 | 001157A | CH02 | 001202A |
| CH03 | 001163A | CH04 | 001167A | CH05 | 001203A | CH06 | 001206A |
| CH10 | 001212A | CH11 | 001213A | CH12 | 001233A | CI   | 014040A |
| CIB  | 002533A | CIB5 | 002540A | CIBC | 002546A | CIBD | 002551A |
| CIBZ | 002553A | CIX5 | 002554A | CL   | 000046A | CN00 | 011363A |
| CODE | 000027A | CONN | 000000E | CONT | 004262A | CPET | 000702A |
| CSR1 | 013452A | CSR4 | 012766A | D    | 000642A | D0   | 000030A |
| D1   | 000041A | D2   | 000032A | D3   | 000033A | DA00 | 003477A |
| DA10 | 003503A | DA20 | 003513A | DF   | 000035A | DFL  | 000037A |
| DISC | 000000E | DM00 | 003464A | DN00 | 001350A | DN01 | 001351A |
| DN06 | 001363A | DN07 | 001365A | DN10 | 001374A | DN14 | 001435A |
| DN16 | 001441A | DN17 | 001456A | DN22 | 001461A | DN25 | 001476A |
| DN26 | 001507A | DN28 | 001512A | DN29 | 001514A | DN30 | 001517A |
| DN50 | 001533A | DN52 | 001567A | DN54 | 001577A | DN56 | 001605A |
| DN58 | 001610A | DN63 | 001627A | DN64 | 001632A | DN66 | 001634A |
| DN67 | 001643A | DN68 | 001644A | DN69 | 001647A | DN70 | 001651A |
| DN71 | 001652A | DN72 | 001656A | DN74 | 001663A | DN78 | 001705A |
| DN80 | 001707A | DN91 | 001710A | DN82 | 001723A | DN84 | 001725A |
| DN85 | 001751A | DN87 | 002000A | DN8A | 001742A | DN8B | 001745A |
| DN8C | 001747A | DN90 | 002015A | DN9A | 002023A | DN9B | 002037A |
| DN9C | 002036A | DN9D | 002050A | DN9E | 002104A | DN9G | 002122A |
| DN9H | 002153A | DN9J | 002175A | DN9K | 002212A | DN9N | 002214A |
| DN01 | 002044A | DN02 | 001555A | DNOC | 001554A | DNX1 | 002221A |
| D0   | 000655A | DP   | 017400A | DP00 | 006064A | DP10 | 006117A |
| DP20 | 006125A | DQ00 | 006155A | DS00 | 006131A | DS20 | 006143A |
| DS90 | 006154A | DT   | 000047A | E    | 000040A | E0   | 000042A |
| EBAR | 000654A | EL00 | 007602A | EL40 | 007613A | EL90 | 007624A |
| EP   | 000041A | ER00 | 002615A | ER01 | 002634A | ER02 | 002637A |
| ER03 | 002621A | ER04 | 002617A | ER20 | 002666A | ER91 | 002673A |
| ER92 | 002674A | ET00 | 007470A | ETX5 | 007511A | EX00 | 006225A |
| EX10 | 006252A | EX11 | 006263A | EX12 | 006301A | EX14 | 006305A |
| EX16 | 006307A | EX18 | 006332A | EX20 | 006347A | EX22 | 006352A |
| EX24 | 006356A | EX26 | 006367A | EX30 | 006375A | EX31 | 006375A |
| EX32 | 006407A | EX34 | 006411A | EX38 | 006430A | EX39 | 006447A |
| EX40 | 006453A | EX41 | 006462A | EX42 | 006463A | EX44 | 006475A |
| EX50 | 006477A | EX54 | 006545A | EX55 | 006553A | EX56 | 006570A |
| EX57 | 006611A | EX58 | 006620A | EX59 | 006571A | EX60 | 006640A |

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| EX62 | 006656A | EX63 | 006676A | EX64 | 006722A | EX65 | 006727A |
| EX66 | 006736A | EX67 | 006742A | EX68 | 006755A | EX69 | 006770A |
| EX74 | 007020A | EX75 | 007023A | EX76 | 007026A | EX78 | 007036A |
| EX79 | 007037A | EX80 | 007041A | EX81 | 007043A | EX82 | 007046A |
| EX83 | 007050A | EX84 | 007066A | EX85 | 007070A | EX86 | 007044A |
| EX91 | 014502A | EX92 | 014510A | EX93 | 014526A | EX95 | 007100A |
| EX96 | 007102A | EX97 | 007104A | EX99 | 007106A | EX11 | 006276A |
| EXT0 | 006216A | EXT7 | 006223A | F    | 000045A | F1   | 001342A |
| F2   | 001343A | F3   | 001344A | F4   | 001345A | F6   | 001346A |
| FA00 | 003317A | FA10 | 003353A | FA22 | 003377A | FA24 | 003402A |
| FA26 | 003405A | FA40 | 003413A | FA91 | 003423A | FL00 | 003426A |
| FLT1 | 000044A | FN00 | 001307A | FN05 | 001317A | FN10 | 001320A |
| FN20 | 001330A | FN82 | 001315A | FN90 | 000715A | FS00 | 013531A |
| FS09 | 013552A | FS10 | 013555A | FS11 | 013601A | FS12 | 013603A |
| FS20 | 013614A | FS30 | 013634A | FS40 | 013644A | FS41 | 013645A |
| FSXS | 013633A | FTOP | 000043A | G    | 010731A | G1   | 005507A |
| G1A  | 005524A | G1R  | 005546A | G2   | 005452A | G2A  | 005461A |
| GE00 | 007514A | GE10 | 007521A | GE20 | 007546A | GFA  | 000704A |
| HBIT | 000703A | HC2  | 000714A | HEAD | 000000E | HOLF | 001347A |
| HS00 | 006046A | HS10 | 006047A | HS15 | 006062A | I    | 000626A |
| IA00 | 001253A | IA10 | 001261A | IA20 | 001270A | IA50 | 001272A |
| IA90 | 000756A | IA99 | 001305A | IAX5 | 001306A | IB00 | 004606A |
| IB10 | 004615A | IBUF | 001333A | IC00 | 001061A | IC12 | 001072A |
| IC18 | 001111A | IC19 | 001120A | IC20 | 001131A | IC21 | 001121A |
| IC22 | 001132A | IC24 | 001135A | IC26 | 001140A | IC30 | 001144A |
| ICSW | 000705A | ICXS | 001134A | ID   | 000774A | ID00 | 001240A |
| ID1  | 000775A | ID10 | 001251A | IFF  | 000636A | IFLG | 000077A |
| IG00 | 007645A | IG20 | 007663A | I100 | 002224A | IL00 | 007755A |
| IL10 | 010016A | IL16 | 010011A | IL18 | 010014A | IL20 | 010024A |
| IL30 | 010026A | IM   | 000706A | IM00 | 002462A | IM10 | 002470A |
| IN00 | 005313A | IOF  | 000707A | IP00 | 002360A | IPTR | 014424A |
| IR00 | 002260A | IS00 | 002264A | IS04 | 002265A | IS10 | 002274A |
| IS20 | 002312A | IS22 | 002316A | IS25 | 002320A | ISTR | 000767A |
| IT00 | 002433A | IU   | 000710A | IV00 | 002253A | K    | 007117A |
| K1   | 014134A | K10  | 000661A | K100 | 000667A | K101 | 000735A |
| K102 | 000736A | K103 | 000737A | K104 | 000740A | K105 | 000741A |
| K106 | 000742A | K107 | 000743A | K108 | 001150A | K109 | 000666A |

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| K11  | 000763A | K110 | 000671A | K111 | 000670A | K116 | 000672A |
| K118 | 000673A | K119 | 000674A | K12  | 000716A | K120 | 002461A |
| K122 | 000675A | K123 | 000676A | K124 | 000745A | K125 | 000744A |
| K126 | 000746A | K127 | 000747A | K128 | 000750A | K129 | 000751A |
| K130 | 000762A | K131 | 006366A | K132 | 000677A | K133 | 000764A |
| K134 | 000754A | K137 | 006721A | K138 | 000700A | K139 | 000701A |
| K14  | 014501A | K140 | 013347A | K142 | 000760A | K143 | 000761A |
| K145 | 013647A | K146 | 013530A | K149 | 013401A | K15  | 000662A |
| K150 | 011673A | K152 | 012427A | K153 | 000753A | K155 | 001336A |
| K156 | 001337A | K157 | 001340A | K158 | 001341A | K16  | 001147A |
| K17  | 014474A | K18  | 000733A | K19  | 014246A | K2   | 014137A |
| K200 | 013030A | K201 | 013026A | K202 | 013031A | K203 | 013025A |
| K206 | 013033A | K207 | 013046A | K34  | 000663A | K35  | 004635A |
| K357 | 001146A | K4   | 000657A | K40  | 004733A | K41  | 002336A |
| K42  | 004734A | K43  | 000664A | K46  | 005364A | K47  | 005365A |
| K48  | 014501A | K49  | 000755A | K5   | 000734A | K50  | 000664A |
| K51  | 005366A | K52  | 000763A | K53  | 005367A | K54  | 014276A |
| K55  | 014275A | K60  | 000665A | K62  | 001722A | K63  | 001236A |
| K69  | 007601A | K71  | 004730A | K72  | 004731A | K73  | 004732A |
| K74  | 005434A | K75  | 004634A | K77  | 012240A | K772 | 001237A |
| K78  | 012137A | K79  | 002337A | K79X | 002340A | K8   | 000660A |
| K80  | 002507A | K81  | 000765A | K9   | 000720A | K90  | 001576A |
| KACG | 004261A | KAEQ | 000726A | KASP | 001151A | KBAR | 000711A |
| KMB  | 007120A | KM92 | 003310A | KNOT | 014142A | KPRM | 000712A |
| KRE1 | 011441A | KTC0 | 003443A | L    | 000627A | L0   | 000113A |
| LIEF | 001060A | LIF  | 000650A | LIST | 002745A | L000 | 003604A |
| LSTF | 000652A | LSTN | 000651A | LSTP | 000653A | M    | 000027A |
| MFL  | 000630A | MIN2 | 000713A | MCV3 | 002523A | MSPL | 004240A |
| NAC0 | 002242A | NA10 | 002251A | NATX | 002247A | NAMF | 000051A |
| NC00 | 002407A | ND   | 000076A | ND00 | 007634A | ND10 | 007643A |
| NF00 | 002501A | NIL5 | 000043A | NM00 | 007625A | NMF1 | 000052A |
| NP00 | 004272A | NP10 | 004313A | NP15 | 004326A | NP16 | 004333A |
| NP20 | 004336A | NP25 | 004340A | NP30 | 004352A | NP35 | 004370A |
| NP37 | 004372A | NPT0 | 004267A | NR00 | 002372A | NS   | 000053A |
| NS00 | 002415A | NT   | 000054A | NTF  | 000055A | NTID | 000056A |
| NU00 | 002401A | NZ00 | 005305A | NZ10 | 005311A | O1   | 000057A |
| O2   | 000060A | OAC0 | 013251A | OB00 | 011471A | OR06 | 011517A |

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|------|---------|------|---------|------|---------|------|---------|
| OB08 | 011540A | OB10 | 011543A | OB15 | 011550A | OB20 | 011554A |
| OB30 | 011637A | OB40 | 011653A | OB60 | 011660A | OB61 | 011567A |
| OBXS | 011636A | OC00 | 013243A | OCI  | 013650A | OCI7 | 013557A |
| OC18 | 013660A | OCNT | 000063A | OI00 | 011337A | OI10 | 011355A |
| OI20 | 011357A | OK00 | 011444A | OK10 | 011452A | OK20 | 011455A |
| OK30 | 011462A | OL00 | 011332A | OM00 | 012247A | OM01 | 012250A |
| OM05 | 012262A | OM07 | 012273A | OM10 | 012301A | OM13 | 012305A |
| OM14 | 012306A | OM20 | 012330A | OM26 | 012343A | OM30 | 012355A |
| OM36 | 012372A | OM38 | 012374A | OM40 | 012401A | OM44 | 012411A |
| OM46 | 012421A | OM50 | 012423A | OM52 | 012431A | OM56 | 012437A |
| OM60 | 012441A | OM62 | 012452A | OM64 | 012466A | OM66 | 012475A |
| OM70 | 012477A | OM74 | 012506A | OM76 | 012511A | OM78 | 012526A |
| OM80 | 012531A | OM84 | 012563A | OM86 | 012573A | OM88 | 012601A |
| OM90 | 012615A | OM92 | 012616A | OM93 | 012617A | OM94 | 012620A |
| OM95 | 012621A | OM96 | 012622A | OMA1 | 012623A | OMA4 | 012645A |
| OMA5 | 012656A | OMA6 | 012662A | OMA7 | 012670A | OMAB | 012676A |
| OMA9 | 012700A | OMB1 | 012701A | OMB3 | 012703A | OMC1 | 012722A |
| OMC5 | 012743A | OMD1 | 012745A | OME1 | 012747A | OME5 | 012751A |
| OMHW | 012605A | OMI0 | 013021A | OMI1 | 013022A | OMI2 | 013023A |
| OMI3 | 013024A | OMI4 | 013025A | OMI5 | 013026A | OMI6 | 013027A |
| OMI7 | 013030A | OMI8 | 013031A | OMI9 | 013032A | OMJ1 | 013033A |
| OMJ2 | 013034A | OMJ3 | 013035A | OMJ4 | 013036A | OMJ5 | 013037A |
| OMJ6 | 013040A | OMJ7 | 013041A | OMK1 | 013042A | OMK2 | 013043A |
| OMK3 | 013044A | OMK4 | 013045A | OMK5 | 013046A | OMK7 | 013055A |
| OMK8 | 013065A | OMK9 | 013056A | OML1 | 013067A | OML2 | 013053A |
| OML3 | 013054A | ON00 | 013331A | ON02 | 013377A | ONT1 | 013400A |
| OP00 | 002232A | OPST | 000000E | OQ00 | 013235A | OR00 | 013072A |
| OR10 | 013076A | OR13 | 013113A | OR15 | 013115A | OR18 | 013131A |
| OR19 | 013132A | OR20 | 013170A | OR23 | 013133A | OR24 | 013153A |
| OR30 | 013177A | OR40 | 013222A | OR80 | 013272A | OR85 | 013305A |
| OR89 | 013317A | OR90 | 013320A | OR91 | 013022A | OR92 | 014564A |
| OR93 | 014631A | ORPL | 013475A | ORXS | 013167A | OS00 | 013257A |
| OT00 | 011701A | OT02 | 011710A | OT03 | 011737A | OT04 | 011740A |
| OT06 | 011745A | OT10 | 011746A | OT16 | 012061A | OT18 | 012011A |
| OT22 | 012017A | OT28 | 012052A | OT30 | 012054A | OT32 | 012063A |
| OT35 | 012140A | OT36 | 012172A | OT37 | 012201A | OT3A | 012114A |
| OT3B | 012116A | OT3C | 012120A | OT3D | 012125A | OT3E | 012127A |

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| OT3F | 012132A | OT3G | 012133A | OT3H | 012135A | OT40 | 012207A |
| OT45 | 012213A | OT50 | 012216A | OT60 | 012225A | OT99 | 012232A |
| OTXS | 012231A | OW00 | 013402A | OW10 | 013435A | OW14 | 013460A |
| OW20 | 013473A | OWXS | 013471A | P    | 000061A | PACK | 002555A |
| PAK1 | 002560A | PAK2 | 002573A | PAK3 | 002576A | PAK4 | 002603A |
| PAK7 | 002612A | PAK8 | 002613A | PAK9 | 002614A | PCNT | 000062A |
| PKF  | 011442A | P000 | 006042A | PRI  | 013744A | PRIN | 000000E |
| PRSK | 013330A | PRSP | 013321A | PU00 | 013476A | PU08 | 013507A |
| PU10 | 013515A | PU11 | 013524A | PU12 | 013521A | R1   | 010031A |
| R2   | 010033A | R2A  | 010040A | R2B  | 010036A | R2C  | 010061A |
| R2D  | 010065A | R3   | 011305A | R7   | 004526A | R7B  | 004535A |
| R7B1 | 004533A | R7D  | 004550A | R7F  | 004571A | R8   | 004535A |
| R8A  | 005450A | R9   | 005463A | R9C  | 005501A | RE00 | 011370A |
| REQU | 000000E | RPL  | 000643A | S1   | 000064A | S2   | 000065A |
| S3   | 000066A | SAF  | 010717A | SBF  | 000632A | SC00 | 007666A |
| SC10 | 007676A | SC15 | 007704A | SC20 | 007715A | SC30 | 007716A |
| SC40 | 007732A | SC50 | 007734A | SC60 | 007714A | SC70 | 007741A |
| SC90 | 007753A | SC91 | 007754A | SCHE | 000000E | SC70 | 007665A |
| SFF  | 000631A | SFT  | 002720A | SFXS | 002744A | SI00 | 005520A |
| SI05 | 005323A | SI10 | 005346A | SKIP | 001427A | SOF  | 000647A |
| SPF  | 000634A | SRT  | 002675A | SRXS | 002717A | ST00 | 007411A |
| ST05 | 007416A | ST10 | 007427A | ST20 | 007430A | STFL | 013472A |
| STMT | 000046A | SUED | 006033A | SUID | 006034A | SXF  | 000633A |
| SY00 | 002341A | TOAS | 002761A | T0C3 | 010403A | T0CA | 007121A |
| T0EX | 006216A | T0GE | 007513A | T0NP | 004267A | T0OK | 011443A |
| T0OM | 012241A | T0OT | 011674A | T0V2 | 005131A | T0W4 | 010725A |
| T1C3 | 010404A | T1CA | 007122A | T1EX | 006217A | T1IM | 002477A |
| T1NP | 004271A | T1OB | 011470A | T1OM | 012242A | T1OT | 011676A |
| T1V3 | 004523A | T1W3 | 004700A | T1W4 | 010726A | T1W5 | 005555A |
| T1W7 | 005370A | T2CA | 007123A | T2EX | 006220A | T2IM | 002500A |
| T2NP | 004270A | T2OM | 012243A | T2OT | 011675A | T2V2 | 005132A |
| T2V3 | 004524A | T3C3 | 010406A | T3EX | 006221A | T3OT | 011677A |
| T3V3 | 004525A | T4C3 | 010407A | T4OT | 011700A | T5EX | 006222A |
| T8OM | 012244A | T9CA | 007124A | T9EX | 006224A | T9OM | 012245A |
| TC   | 000067A | TC00 | 007456A | TCF  | 000635A | TERM | 000000E |
| TG00 | 003222A | TG04 | 003231A | TG06 | 003235A | TG08 | 003237A |
| TG10 | 003250A | TG22 | 003270A | TGT1 | 014145A | TGT2 | 014172A |

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| TGT3 | 014217A | TID  | 000774A | TIDB | 003271A | TIDN | 000766A |
| TRAC | 011315A | TRAD | 011324A | TRF  | 000645A | TRFA | 000646A |
| TRS7 | 012773A | TRSE | 012754A | TS00 | 002352A | TT   | 000670A |
| TV00 | 003274A | TXOM | 012246A | UC00 | 001152A | V2   | 005133A |
| V2A  | 005142A | V2A1 | 005145A | V2B  | 005154A | V2C  | 005163A |
| V2DA | 005200A | V2E  | 005214A | V2E2 | 005221A | V2E5 | 005223A |
| V2F  | 005232A | V2G  | 005256A | V2H  | 005261A | V2J  | 005266A |
| V2K  | 005270A | V2M  | 005350A | V2N  | 003637A | V2P  | 005352A |
| V2Q  | 005355A | V2T2 | 005132A | V3   | 004405A | V308 | 004413A |
| V310 | 004415A | V320 | 004450A | V324 | 004455A | V330 | 004476A |
| V340 | 004507A | V350 | 004511A | V360 | 004514A | V4   | 004737A |
| V5   | 004735A | V5B  | 004755A | V5B2 | 004762A | V5C  | 004770A |
| V5D  | 004773A | V5E  | 005012A | V5E4 | 005030A | V5E5 | 005031A |
| V5E7 | 005037A | V5F  | 005051A | V5G  | 005056A | V5H  | 005061A |
| V5H7 | 005075A | V5J  | 005112A | V5T1 | 005115A | V5X  | 005116A |
| V5X2 | 005123A | V5X5 | 005126A | V6   | 004717A | V6A  | 004720A |
| V7   | 004724A | V8   | 004726A | W3   | 004636A | W305 | 004653A |
| W4   | 010732A | W420 | 011175A | W4B  | 010734A | W4C  | 010745A |
| W4E  | 010765A | W4F  | 010770A | W4G  | 011043A | W4K  | 011057A |
| W4L  | 011062A | W4M  | 011067A | W4O  | 011101A | W4O3 | 011154A |
| W4O4 | 011160A | W4O5 | 011164A | W4O6 | 011165A | W4P  | 011217A |
| W4Q  | 011036A | W4S  | 011222A | W4T  | 011273A | W4X  | 011022A |
| W4Y  | 011002A | W5   | 005556A | W5B  | 005565A | W5D  | 005570A |
| W5F  | 005601A | W5H  | 005612A | W5I  | 005645A | W5J  | 005654A |
| W5K  | 005672A | W5M  | 005700A | W5N  | 005712A | W5O  | 005721A |
| W5P  | 005731A | W5Q  | 005754A | W5R  | 005773A | W5S  | 005763A |
| W5T  | 005776A | W5T5 | 006013A | W5U  | 006003A | W5X  | 006036A |
| W5Z1 | 000667A | W5Z2 | 000675A | W5Z3 | 000672A | W7   | 005371A |
| W7A  | 005372A | W7C  | 005407A | W8   | 005432A | WAIT | 000000E |
| WERR | 011173A | WHCW | 011125A | WSNG | 011144A | X    | 000071A |
| X1   | 000072A | X2   | 000073A | X3   | 000074A | X4   | 000075A |
| XN00 | 002346A | XST  | 000640A | ZERO | 003313A |      |         |

0000 WARNING OR ERROR FLAGS

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