

>>>>>> Table of Contents <<<<<<<<

| | | | |
|----|--------|------------|-----------------------------------|
| 2 | 000000 | | ABS |
| 3 | 000000 | * | UNL |
| 4 | 000000 | * PAGE | CONTENTS |
| 5 | 000000 | * 2 | SYSTEM ROM TABLE |
| 6 | 000000 | * 3 | RUNTIME TABLE |
| 7 | 000000 | * 8 | PARSE TABLE |
| 8 | 000000 | * 10 | RUNTIME ERROR ROUTINES |
| 9 | 000000 | * 11 | RUNTIME FETCH, STORE, OPTION BASE |
| 10 | 000000 | * 14 | RUNTIME ARRAY FETCH, STORE |
| 11 | 000000 | * 15 | RUNTIME STRING, SUBSTRING |
| 12 | 000000 | * 16 | RUNTIME MODE SET, REM, SKIP |
| 13 | 000000 | * 18 | RUNTIME PRINTER IS |
| 14 | 000000 | * 19 | RUNTIME GET OPTIONAL PARAMETERS |
| 15 | 000000 | * 20 | RUNTIME RELATIONAL OPERATORS |
| 16 | 000000 | * 22 | RUNTIME LOGICAL OPERATORS |
| 17 | 000000 | * 23 | RUNTIME BINARY PROGRAM LINK |
| 18 | 000000 | * ENTRIES: | |
| 19 | 000000 | | ENT ALCILN |
| 20 | 000000 | | ENT AL1OK |
| 21 | 000000 | | ENT ASCIIS |
| 22 | 000000 | | ENT ATSIGN |
| 23 | 000000 | | ENT BTAB.R |
| 24 | 000000 | | ENT DEFFN. |
| 25 | 000000 | * | ENT DIMAL? |
| 26 | 000000 | | ENT FETADR |
| 27 | 000000 | | ENT FETAOD |
| 28 | 000000 | | ENT FTADR |
| 29 | 000000 | | ENT FTAPU |
| 30 | 000000 | | ENT FTSTL1 |
| 31 | 000000 | | ENT FTSTL2 |
| 32 | 000000 | | ENT FTSVL |
| 33 | 000000 | | ENT GR. |
| 34 | 000000 | | ENT I#PUSH |
| 35 | 000000 | | ENT ICONST |
| 36 | 000000 | | ENT INTCON |
| 37 | 000000 | | ENT ON?I |
| 38 | 000000 | | ENT ON?R |
| 39 | 000000 | | ENT SCONST |
| 40 | 000000 | | ENT SKPDEF |
| 41 | 000000 | | ENT SKPLN |
| 42 | 000000 | | ENT STRIND |
| 43 | 000000 | | ENT TO?I |
| 44 | 000000 | | ENT TWOX |
| 45 | 000000 | | ENT TWOX0 |
| 46 | 000000 | | |

```
*****
>>>>> SYSTEM ROM <<<<<<<<<
) 000000 LOC 60000
4> 060000 000 OCT 0 ROM NUMBER 0
50 060001 000 OCT 0 2'S COMP OF 0
51 060002 015 140 DEF BTAB.R RUNTIME TABLE
52 060004 125 146 DEF ASCIIS ASCII TABLE
53 060006 213 141 DEF BASICS PARSE TABLE
54 060010 124 151 DEF ERMSG ERROR MESSAGES
55 060012 014 140 DEF ROINIT INITIALIZATION
56 060014 236 ROINIT RTN NOTHING
```

| >>>>> | | | | RUNTIME TABLE | | <<<<<<< | |
|-------|--------|-----|-----|---------------|-------------|--------------|--------------|
| 58 | 060015 | | | * | ROUTINE | NAME | TOKEN ATTRIB |
| 59 | 060015 | 330 | 142 | BTAB.R | DEF ERRORX | ERROR | 0 0,44 |
| 60 | 060017 | 040 | 143 | | DEF FTSVL | SNV | 1 0,1 |
| 61 | 060021 | 013 | 143 | | DEF SVADR | SAV | 2 0,1 |
| 62 | 060023 | 122 | 143 | | DEF FTSTL | STRVAR | 3 0,1 |
| 63 | 060025 | 361 | 142 | | DEF ICONST | REAL CONST | 4 0,4 |
| 64 | 060027 | 071 | 144 | | DEF SCONST | "QUOTED STR | 5 0,5 |
| 65 | 060031 | 071 | 144 | | DEF SCONST | UNQUOT STR | 6 0,5 |
| 66 | 060033 | 377 | 377 | | DEF STOST | STO, STRING | 7 0,31 |
| 67 | 060035 | 377 | 377 | | DEF STOSV | STORE SV | 10 0,31 |
| 68 | 060037 | 262 | 143 | | DEF AVADR1 | 1-DIM ADR | 11 0,32 |
| 69 | 060041 | 270 | 143 | | DEF AVADR2 | 2-DIM ADR | 12 0,32 |
| 70 | 060043 | 344 | 143 | | DEF AVVAL1 | 1-DIM VALUE | 13 0,32 |
| 71 | 060045 | 352 | 143 | | DEF AVVAL2 | 2-DIM VALUE | 14 0,32 |
| 72 | 060047 | 330 | 142 | | DEF ERRORX | CARRIAGE RTH | 15 0,44 |
| 73 | 060051 | 377 | 377 | | DEF GORTN | ENDSTMT | 16 0,0 |
| 74 | 060053 | 330 | 142 | | DEF ERRORX | DUMMY | 17 0,44 |
| 75 | 060055 | 330 | 142 | | DEF ERRORX | DUMMY | 20 0,44 |
| 76 | 060057 | 375 | 143 | | DEF FTADR | SNV ADR | 21 0,3 |
| 77 | 060061 | 005 | 143 | | DEF SVADR+ | SAV ADR | 22 0,3 |
| 78 | 060063 | 061 | 143 | | DEF FTSTLS | SAVE STR | 23 0,3 |
| 79 | 060065 | 377 | 377 | | DEF STOSYM | MULTI STO, | 24 0,43 |
| 80 | 060067 | 377 | 377 | | DEF STOSTH | MULTI STO* | 25 0,43 |
| 81 | 060071 | 377 | 377 | | DEF FNCAL. | FUNCTION CL | 26 0,6 |
| 82 | 060073 | 377 | 377 | | DEF FNCAL* | STR FUNC CL | 27 0,6 |
| 83 | 060075 | 377 | 377 | | DEF JTRUE# | JMP TRUE | 30 0,7 |
| 84 | 060077 | 336 | 142 | | DEF ERRERE | ILLEGAL END | 31 0,44 |
| 85 | 060101 | 371 | 142 | | DEF INTCON | INT CONST | 32 0,2 |
| 86 | 060103 | 377 | 377 | | DEF JFALS* | JMP FALSE | 33 0,11 |
| 87 | 060105 | 377 | 377 | | DEF JMPREL | JMP REL | 34 0,26 |
| 88 | 060107 | 141 | 144 | | DEF SUBST1 | 1 DIM SUBST | 35 0,34 |
| 89 | 060111 | 115 | 144 | | DEF SUBST2 | 2 DIM SUBST | 36 0,34 |
| 90 | 060113 | 377 | 377 | | DEF EJMP# | ELSE J# | 37 0,25 |
| 91 | 060115 | 027 | 143 | | DEF FTSTA | STRING ARAY | 40 0,3 |
| 92 | 060117 | 377 | 377 | | DEF JMPLB | THEN LABEL | 41 0,207 |
| 93 | 060121 | 327 | 142 | | DEF P#ARRAY | Array PRINT# | 42 0,36 |
| 94 | 060123 | 377 | 377 | | DEF EJMFLB | ELSE LABEL | 43 0,225 |
| 95 | 060125 | 330 | 142 | | DEF R#ARRAY | Array READ# | 44 0,44 |
| 96 | 060127 | 330 | 142 | | DEF ERRORX | : | 45 0,44 |
| 97 | 060131 | 377 | 377 | | DEF CONCA. | & CONCAT | 46 7,53 |
| 98 | 060133 | 355 | 142 | | DEF NOP47. | ; | 47 0,42 |
| 99 | 060135 | 330 | 142 | | DEF ERRORX | < | 50 0,44 |
| 100 | 060137 | 330 | 142 | | DEF ERRORX |) | 51 0,44 |
| 101 | 060141 | 377 | 377 | | DEF MPYROI | * | 52 12,51 |
| 102 | 060143 | 377 | 377 | | DEF ADDROI | + | 53 7,51 |
| 103 | 060145 | 330 | 142 | | DEF ERRORX | , | 54 0,44 |
| 104 | 060147 | 377 | 377 | | DEF SUBROI | - DIADIC | 55 7,51 |
| 105 | 060151 | 330 | 142 | | DEF ERRORX | . | 56 0,44 |
| 106 | 060153 | 377 | 377 | | DEF DIV2 | / | 57 12,51 |
| 107 | 060155 | 377 | 377 | | DEF YTX5 | ^ | 60 14,51 |
| 108 | 060157 | 377 | 377 | | DEF UNEQ#. | # | 61 6,53 |
| 109 | 060161 | 377 | 377 | | DEF LEQ#. | <= | 62 6,53 |
| 110 | 060163 | 377 | 377 | | DEF GEQ#. | >= | 63 6,53 |

| >>>>> | | | RUNTIME TABLE | | <<<<<<<< | |
|-------|--------|--------------|---------------|------------|----------|-------|
| 101 | 060165 | 377 377 | DEF UNEQ#. | <> | 64 | 6,53 |
| 102 | 060167 | 377 377 | DEF EQ#. | = | 65 | 6,53 |
| 113 | 060171 | 377 377 | DEF GR#. | > | 66 | 6,53 |
| 114 | 060173 | 377 377 | DEF LT#. | < | 67 | 6,53 |
| 115 | 060175 | 377 377 | DEF CHSROI | - MONADIC | 70 | 7,50 |
| 116 | 060177 | 232 145 | DEF UNEQ. | # | 71 | 6,51 |
| 117 | 060201 | 262 145 | DEF LEQ. | <= | 72 | 6,51 |
| 118 | 060203 | 334 145 | DEF GEQ. | >= | 73 | 6,51 |
| 119 | 060205 | 232 145 | DEF UNEQ. | <> | 74 | 6,51 |
| 120 | 060207 | 223 145 | DEF EQ. | = | 75 | 6,51 |
| 121 | 060211 | 305 145 | DEF GR. | > | 76 | 6,51 |
| 122 | 060213 | 243 145 | DEF LT. | < | 77 | 6,51 |
| 123 | 060215 | 343 142 | DEF ATSIGN | @ | 100 | 0,42 |
| 124 | 060217 | 377 377 | DEF ONERR. | ON ERROR | 101 | 0,241 |
| 125 | 060221 | 377 377 | DEF OFFER. | OFF ERROR | 102 | 0,241 |
| 126 | 060223 | 377 377 | DEF ONKEY. | ON KEY# | 103 | 0,241 |
| 127 | 060225 | 377 377 | DEF OFKEY. | OFF KEY# | 104 | 0,241 |
| 128 | 060227 | 377 377 | DEF AUTO. | AUTO | 105 | 0,141 |
| 129 | 060231 | 377 377 | DEF BEEP. | BEEP | 106 | 0,241 |
| 130 | 060233 | 377 377 | DEF CLEAR. | CLEAR | 107 | 0,241 |
| 131 | 060235 | 377 377 70 3 | DEF CONTI. | CONT | 110 | 0,141 |
| 132 | 060237 | 377 377 | DEF ONTIM. | ON TIMER# | 111 | 0,241 |
| 133 | 060241 | 377 377 | DEF INIT. | INIT | 112 | 0,141 |
| 134 | 060243 | 377 377 | DEF LIST. | LIST | 113 | 0,241 |
| 135 | 060245 | 324 142 | DEF BPLOT. | BPLOT | 114 | 0,241 |
| 136 | 060247 | 377 377 | DEF STIME. | SETTIME | 115 | 0,241 |
| 137 | 060251 | 324 142 | DEF CHAIN. | CHAIN | 116 | 0,241 |
| 138 | 060253 | 324 142 | DEF SECUR. | SECURE | 117 | 0,241 |
| 139 | 060255 | 324 142 | DEF READ#. | READ# | 120 | 0,241 |
| 140 | 060257 | 324 142 | DEF RENAM. | RENAME | 121 | 0,241 |
| 141 | 060261 | 377 377 | DEF ALPHA. | ALPHA | 122 | 0,241 |
| 142 | 060263 | 324 142 | DEF CRT. | CRT IS | 123 | 0,241 |
| 143 | 060265 | 377 377 74 2 | DEF RUN. | RUN | 124 | 0,141 |
| 144 | 060267 | 257 144 | DEF DEG. | DEG | 125 | 0,241 |
| 145 | 060271 | 377 377 | DEF DISP. | DISP | 126 | 0,241 |
| 146 | 060273 | 324 142 | DEF GCLR. | GCLEAR | 127 | 0,241 |
| 147 | 060275 | 377 377 | DEF SCRAT. | SCRATCH | 130 | 0,141 |
| 148 | 060277 | 176 143 | DEF DEFA+. | DEFAULT ON | 131 | 0,241 |
| 149 | 060301 | 377 377 | DEF JMPLN# | GOTO | 132 | 0,210 |
| 150 | 060303 | 377 377 | DEF JMPSUB | GOSUB | 133 | 0,210 |
| 151 | 060305 | 324 142 | DEF PRNT#. | PRINT # | 134 | 0,241 |
| 152 | 060307 | 274 144 | DEF GRAD. | GRAD | 135 | 0,241 |
| 153 | 060311 | 377 377 | DEF GRAPH. | GRAPH | 136 | 0,241 |
| 154 | 060313 | 377 377 | DEF INPUT. | INPUT | 137 | 0,241 |
| 155 | 060315 | 324 142 | DEF IDRAW. | IDRAW | 140 | 0,241 |
| 156 | 060317 | 377 377 | DEF FHLET. | LET FN | 141 | 0,217 |
| 157 | 060321 | 354 142 | DEF NOP. | LET | 142 | 0,241 |
| 158 | 060323 | 377 377 | DEF PRALL. | PRINT ALL | 143 | 0,241 |
| 159 | 060325 | 324 142 | DEF CAT. | CAT | 144 | 0,241 |
| 160 | 060327 | 324 142 | DEF DRAW. | DRAW | 145 | 0,241 |
| 161 | 060331 | 377 377 | DEF ON. | ON | 146 | 0,230 |
| 162 | 060333 | 324 142 | DEF LABEL. | LABEL | 147 | 0,241 |
| 163 | 060335 | 377 377 | DEF WAIT. | WAIT | 150 | 0,241 |

>>>> RUNTIME TABLE

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| | | | | | | |
|-----|--------|---------|------------|-------------|-----|-------|
| 164 | 060337 | 324 142 | DEF PLOT. | PLOT | 151 | 0,241 |
| 165 | 060341 | 324 142 | DEF PRNTR. | PRINTER IS | 152 | 0,241 |
| 166 | 060343 | 377 377 | DEF PRINT. | PRINT | 153 | 0,241 |
| 167 | 060345 | 267 144 | DEF RAD. | RAD | 154 | 0,241 |
| 168 | 060347 | 377 377 | DEF RNDIZ. | RANDOMIZE | 155 | 0,241 |
| 169 | 060351 | 377 377 | DEF READ. | READ | 156 | 0,241 |
| 170 | 060353 | 324 142 | DEF STORB. | STORE BIN | 157 | 0,241 |
| 171 | 060355 | 377 377 | DEF RESTO. | RESTORE | 160 | 0,241 |
| 172 | 060357 | 377 377 | DEF RETRN. | RETURN | 161 | 0,241 |
| 173 | 060361 | 377 377 | DEF OFTIM. | OFF TIMER# | 162 | 0,241 |
| 174 | 060363 | 324 142 | DEF MOVE. | MOVE | 163 | 0,241 |
| 175 | 060365 | 377 377 | DEF FLIP. | FLIP | 164 | 0,241 |
| 176 | 060367 | 377 377 | DEF STOP. | STOP | 165 | 0,241 |
| 177 | 060371 | 324 142 | DEF STORE. | STORE | 166 | 0,141 |
| 178 | 060373 | 324 142 | DEF PENUP. | PENUP | 167 | 0,241 |
| 179 | 060375 | 377 377 | DEF TRCVB. | TRACE VRBL | 170 | 0,241 |
| 180 | 060377 | 377 377 | DEF TRCAL. | TRACE ALL | 171 | 0,241 |
| 181 | 060401 | 324 142 | DEF XAXIS. | XAXIS | 172 | 0,241 |
| 182 | 060403 | 324 142 | DEF YAXIS. | YAXIS | 173 | 0,241 |
| 183 | 060405 | 324 142 | DEF COPY. | COPY | 174 | 0,241 |
| 184 | 060407 | 377 377 | DEF NORMA. | NORMAL | 175 | 0,241 |
| 185 | 060411 | 324 142 | DEF ERAST. | ERASE TAPE | 176 | 0,241 |
| 186 | 060413 | 302 144 | DEF INTEG. | INTEGER | 177 | 0,323 |
| 187 | 060415 | 320 144 | DEF SHORT. | SHORT | 200 | 0,322 |
| 188 | 060417 | 377 377 | DEF DELET. | DELETE | 201 | 0,141 |
| 189 | 060421 | 324 142 | DEF SCALE. | SCALE | 202 | 0,241 |
| 190 | 060423 | 377 377 | DEF SKIP! | REMARK | 203 | 0,241 |
| 191 | 060425 | 377 377 | DEF OPTIO. | OPTION BASE | 204 | 0,315 |
| 192 | 060427 | 336 144 | DEF COM. | COM | 205 | 0,324 |
| 193 | 060431 | 357 144 | DEF SKIPEM | DATA | 206 | 0,320 |
| 194 | 060433 | 016 145 | DEF DEFFN. | DEF FN | 207 | 0,312 |
| 195 | 060435 | 327 144 | DEF DIM. | DIM | 210 | 0,321 |
| 196 | 060437 | 377 377 | DEF KEYLA. | KEY LABEL | 211 | 0,241 |
| 197 | 060441 | 377 377 | DEF STOP. | END | 212 | 0,241 |
| 198 | 060443 | 377 377 | DEF FNRTN. | FN END | 213 | 0,313 |
| 199 | 060445 | 377 377 | DEF FOR. | FOR | 214 | 0,341 |
| 200 | 060447 | 335 142 | DEF ERRORT | IF | 215 | 0,344 |
| 201 | 060451 | 362 144 | DEF SKIPIT | IMAGE | 216 | 0,341 |
| 202 | 060453 | 377 377 | DEF NEXT. | NEXT | 217 | 0,341 |
| 203 | 060455 | 324 142 | DEF UNSEC. | UNSECURE | 220 | 0,141 |
| 204 | 060457 | 335 142 | DEF ERRORT | LET (IMPLY) | 221 | 0,244 |
| 205 | 060461 | 324 142 | DEF ASIGN. | ASSIGN | 222 | 0,241 |
| 206 | 060463 | 324 142 | DEF CREAT. | CREATE | 223 | 0,241 |
| 207 | 060465 | 324 142 | DEF PURGE. | PURGE | 224 | 0,241 |
| 208 | 060467 | 324 142 | DEF REWIN. | REWIND | 225 | 0,241 |
| 209 | 060471 | 324 142 | DEF LOADB. | LOADBIN | 226 | 0,241 |
| 210 | 060473 | 377 377 | DEF PAUSE. | PAUSE | 227 | 0,241 |
| 211 | 060475 | 324 142 | DEF LOAD. | LOAD | 230 | 0,141 |
| 212 | 060477 | 311 144 | DEF REAL. | REAL | 231 | 0,321 |
| 213 | 060501 | 377 377 | DEF RENUM. | REN | 232 | 0,141 |
| 214 | 060503 | 377 377 | DEF SKIP! | ! | 233 | 0,241 |
| 215 | 060505 | 204 143 | DEF DEFA-. | DEFAULT OFF | 234 | 0,241 |
| 216 | 060507 | 324 142 | DEF PEN. | PEN | 235 | 0,241 |

| RUNTIME TABLE | | | | <<<<<<<<< | | | |
|---------------|--------|-----|-----|----------------|-------------|-----|-------|
| 1 | 060511 | 377 | 377 | DEF PLIST. | PLIST | 236 | 0,241 |
| 2 | 060513 | 324 | 142 | DEF LDIR. | LDIR | 237 | 0,241 |
| 219 | 060515 | 324 | 142 | DEF IMOVE. | IMOVE | 240 | 0,241 |
| 220 | 060517 | 377 | 377 | DEF FNLET. | FN ILET | 241 | 0,217 |
| 221 | 060521 | 324 | 142 | DEF CTAPE. | CTAPE | 242 | 0,241 |
| 222 | 060523 | 377 | 377 | DEF TRACE. | TRACE | 243 | 0,241 |
| 223 | 060525 | 377 | 377 | DEF TO. | TO | 244 | 0,41 |
| 224 | 060527 | 024 | 146 | DEF OR. | OR | 245 | 2,51 |
| 225 | 060531 | 377 | 377 | DEF MAX10 | MAX | 246 | 40,55 |
| 226 | 060533 | 377 | 377 | DEF TIME. | TIME | 247 | 0,55 |
| 227 | 060535 | 377 | 377 | DEF DATE. | DATE | 250 | 0,55 |
| 229 | 060537 | 377 | 377 | DEF FP5 | FP | 251 | 20,55 |
| 229 | 060541 | 377 | 377 | DEF IP5 | IP | 252 | 20,55 |
| 230 | 060543 | 377 | 377 | DEF EPS10 | EPSILON | 253 | 0,55 |
| 231 | 060545 | 377 | 377 | DEF RMD10 | RMD | 254 | 40,55 |
| 232 | 060547 | 377 | 377 | DEF CEIL10 | CEIL | 255 | 20,55 |
| 233 | 060551 | 377 | 377 | DEF ATN2. | ATN(X/Y) | 256 | 40,55 |
| 234 | 060553 | 035 | 143 | DEF SKPLBL. | STMT LABEL | 257 | 0,3 |
| 235 | 060555 | 377 | 377 | DEF SQR5 | SQR | 260 | 20,55 |
| 236 | 060557 | 377 | 377 | DEF MIN10 | MIN | 261 | 40,55 |
| 237 | 060561 | 377 | 377 | DEF GTOLBL | GOTO LABEL | 262 | 0,210 |
| 238 | 060563 | 377 | 377 | DEF ABS5 | ABS | 263 | 20,55 |
| 239 | 060565 | 377 | 377 | DEF ICOS | ACS | 264 | 20,55 |
| 240 | 060567 | 377 | 377 | DEF ISIN | ASN | 265 | 20,55 |
| 241 | 060571 | 377 | 377 | DEF ITAN | ATH | 266 | 20,55 |
| 242 | 060573 | 377 | 377 | DEF SGN5 | SGN | 267 | 20,55 |
| 243 | 060575 | 377 | 377 | DEF GSUB. | GOSUB LABEL | 270 | 0,210 |
| 244 | 060577 | 377 | 377 | DEF COT10 | COT | 271 | 20,55 |
| 245 | 060601 | 377 | 377 | DEF CSEC10 | CSC | 272 | 20,55 |
| 246 | 060603 | 055 | 144 | DEF FTADR3 | 1-D ST ARAY | 273 | 0,1 |
| 247 | 060605 | 377 | 377 | DEF EXP5 | EXP | 274 | 20,55 |
| 248 | 060607 | 377 | 377 | DEF INT5 | INT | 275 | 20,55 |
| 249 | 060611 | 377 | 377 | DEF LOGT5 | LGT (10) | 276 | 20,55 |
| 250 | 060613 | 377 | 377 | BASICS DEF LNS | LOG (E) | 277 | 20,55 |
| 251 | 060615 | 063 | 144 | DEF FTADR4 | 2-D ST ARAY | 300 | 0,1 |
| 252 | 060617 | 377 | 377 | DEF SEC10 | SEC | 301 | 20,55 |
| 253 | 060621 | 377 | 377 | DEF CHR\$. | CHR\$ | 302 | 20,56 |
| 254 | 060623 | 377 | 377 | DEF VAL\$. | VAL\$ | 303 | 20,56 |
| 255 | 060625 | 377 | 377 | DEF LEN. | LEN | 304 | 30,55 |
| 256 | 060627 | 377 | 377 | DEF NUM. | NUM | 305 | 30,55 |
| 257 | 060631 | 377 | 377 | DEF VAL. | VAL | 306 | 30,55 |
| 258 | 060633 | 377 | 377 | DEF INF10 | INF | 307 | 0,55 |
| 259 | 060635 | 377 | 377 | DEF RND10 | RND | 310 | 0,55 |
| 260 | 060637 | 377 | 377 | DEF PI10 | PI | 311 | 0,55 |
| 261 | 060641 | 377 | 377 | DEF UPC\$. | UPC\$ | 312 | 30,56 |
| 262 | 060643 | 377 | 377 | DEF USING. | USING | 313 | 0,341 |
| 263 | 060645 | 330 | 142 | DEF ERRORX | THEN | 314 | 0,44 |
| 264 | 060647 | 326 | 142 | DEF TAB. | TAB | 315 | 20,45 |
| 265 | 060651 | 377 | 377 | DEF STEP. | STEP | 316 | 0,41 |
| 266 | 060653 | 037 | 146 | DEF EXOR. | EXOR | 317 | 2,51 |
| 267 | 060655 | 007 | 146 | DEF NOT. | NOT | 320 | 7,50 |
| 268 | 060657 | 377 | 377 | DEF INTDIV | DIV (\) | 321 | 12,51 |
| 269 | 060661 | 377 | 377 | DEF ERNUM. | ERRN | 322 | 0,55 |

>>>>> RUNTIME TABLE

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| | | | | | | | |
|-----|--------|-----|-----|-------------|--------------|-----|-------|
| 0 | 060663 | 377 | 377 | DEF ERRL. | ERRL | 323 | 0,55 |
| 271 | 060665 | 377 | 377 | DEF RESET. | RESET | 324 | 0,44 |
| 272 | 060667 | 263 | 145 | DEF AND. | AND | 325 | 4,51 |
| 273 | 060671 | 377 | 377 | DEF MOD10 | MOD | 326 | 12,51 |
| 274 | 060673 | 330 | 142 | DEF ERRORX | ELSE | 327 | 0,44 |
| 275 | 060675 | 377 | 377 | DEF SIN10 | SIN | 330 | 20,55 |
| 276 | 060677 | 377 | 377 | DEF COS10 | COS | 331 | 20,55 |
| 277 | 060701 | 377 | 377 | DEF TAN10 | TAN | 332 | 20,55 |
| 278 | 060703 | 357 | 142 | DEF NOP2. | TO (ASSIGN) | 333 | 77,51 |
| 279 | 060705 | 377 | 377 | DEF RSTO. | RESTORE LN | 334 | 0,227 |
| 280 | 060707 | 377 | 377 | DEF RESTL. | RESTORE LBL | 335 | 0,227 |
| 281 | 060711 | 330 | 142 | DEF ERRORX | [| 336 | 0,44 |
| 282 | 060713 | 330 | 142 | DEF ERRORX |] | 337 | 0,44 |
| 283 | 060715 | 377 | 377 | DEF INTDIY | \ | 340 | 12,51 |
| 284 | 060717 | 377 | 377 | DEF POS. | POS | 341 | 52,55 |
| 285 | 060721 | 377 | 377 | DEF DEG10 | RTD | 342 | 20,55 |
| 286 | 060723 | 377 | 377 | DEF RADIO | DTR | 343 | 20,55 |
| 287 | 060725 | 377 | 377 | DEF INTS | FLOOR | 344 | 20,55 |
| 288 | 060727 | 377 | 377 | DEF USIHL. | USING LABEL | 345 | 0,327 |
| 289 | 060731 | 377 | 377 | DEF READN. | READ (NUM) | 346 | 0,44 |
| 290 | 060733 | 377 | 377 | DEF ULIN#. | USING LINE # | 347 | 0,327 |
| 291 | 060735 | 377 | 377 | DEF INPUN. | INP NUMERIC | 350 | 0,33 |
| 292 | 060737 | 377 | 377 | DEF INPU\$. | INP STRING | 351 | 0,33 |
| 293 | 060741 | 377 | 377 | DEF FNRET. | LET FN(:=) | 352 | 0,16 |
| 294 | 060743 | 377 | 377 | DEF READS. | READ\$ | 353 | 0,44 |
| 295 | 060745 | 377 | 377 | DEF PRLINE | PRINT END | 354 | 0,35 |
| 296 | 060747 | 377 | 377 | DEF SEMIC. | PRINT; | 355 | 0,36 |
| 297 | 060751 | 377 | 377 | DEF COMMA. | PRINT, | 356 | 0,36 |
| 298 | 060753 | 377 | 377 | DEF SEMIC\$ | PRINT;\$ | 357 | 0,36 |
| 299 | 060755 | 377 | 377 | DEF COMMA\$ | PRINT,\$ | 360 | 0,36 |
| 300 | 060757 | 330 | 142 | DEF ERRORX | DUMMY | 361 | 0,241 |
| 301 | 060761 | 377 | 377 | DEF STEPK. | STEP KEY | 362 | 0,241 |
| 302 | 060763 | 041 | 144 | DEF FTADR1 | 1-D NUM ARY | 363 | 0,1 |
| 303 | 060765 | 047 | 144 | DEF FTADR2 | 2-D NUM ARY | 364 | 0,1 |
| 304 | 060767 | 377 | 377 | DEF TEST. | TEST KEY | 365 | 0,341 |
| 305 | 060771 | 330 | 142 | DEF ERRORX | DUMMY | 366 | 0,44 |
| 306 | 060773 | 171 | 143 | DEF INDEN. | INDENTATION | 367 | 0,2 |
| 307 | 060775 | 377 | 377 | DEF ROM:GO | EXTERNAL ROM | 370 | 0,214 |
| 308 | 060777 | 051 | 146 | DEF BP:GO | BINARY PROG | 371 | 0,214 |
| 309 | 061001 | 330 | 142 | DEF ERRORX | DUMMY | 372 | 0,44 |
| 310 | 061003 | 330 | 142 | DEF ERRORX | DUMMY | 373 | 0,44 |
| 311 | 061005 | 330 | 142 | DEF ERRORX | DUMMY | 374 | 0,44 |
| 312 | 061007 | 330 | 142 | DEF ERRORX | DUMMY | 375 | 0,44 |
| 313 | 061011 | 330 | 142 | DEF ERRORX | DUMMY | 376 | 0,44 |
| 314 | 061013 | 330 | 142 | DEF ERRORX | DUMMY | 377 | 0,44 |

PARSE TABLE

061015 +BASICS + 100, FIRST 100 NOT USED

| | | | | | | |
|-----|--------|-----|-----|------------|-----|-------------|
| 317 | 061015 | 377 | 377 | DEF ONERRD | 101 | ON ERROR |
| 318 | 061017 | 377 | 377 | DEF PUSH1A | 102 | OFF ERROR |
| 319 | 061021 | 377 | 377 | DEF ONKEY# | 103 | ON KEY# |
| 320 | 061023 | 377 | 377 | DEF OFKEY# | 104 | OFF KEY# |
| 321 | 061025 | 377 | 377 | DEF G012N | 105 | AUTO |
| 322 | 061027 | 377 | 377 | DEF G00R2N | 106 | BEEP |
| 323 | 061031 | 377 | 377 | DEF PUSH1A | 107 | CLEAR |
| 324 | 061033 | 377 | 377 | DEF G01N | 110 | CONT |
| 325 | 061035 | 377 | 377 | DEF ONTIME | 111 | ON TIMER# |
| 326 | 061037 | 377 | 377 | DEF PUSH1A | 112 | INIT |
| 327 | 061041 | 377 | 377 | DEF G012N | 113 | LIST |
| 328 | 061043 | 377 | 377 | DEF G#N | 114 | BPLOT |
| 329 | 061045 | 377 | 377 | DEF GET2N | 115 | SETTIME |
| 330 | 061047 | 377 | 377 | DEF GET1# | 116 | CHAIN |
| 331 | 061051 | 324 | 142 | DEF SECURE | 117 | SECURE |
| 332 | 061053 | 324 | 142 | DEF READ# | 120 | READ # |
| 333 | 061055 | 324 | 142 | DEF RENAME | 121 | RENAME |
| 334 | 061057 | 377 | 377 | DEF PUSH1A | 122 | ALPHA |
| 335 | 061061 | 377 | 377 | DEF G012N | 123 | CRT IS |
| 336 | 061063 | 377 | 377 | DEF G01N | 124 | RUN |
| 337 | 061065 | 377 | 377 | DEF PUSH1A | 125 | DEG |
| 338 | 061067 | 377 | 377 | DEF PRINT | 126 | DISP |
| 339 | 061071 | 377 | 377 | DEF TRY1N | 127 | GCLEAR |
| 340 | 061073 | 377 | 377 | DEF PUSH1A | 130 | SCRATCH |
| 341 | 061075 | 377 | 377 | DEF PUSH1A | 131 | DEFAULT ON |
| 342 | 061077 | 377 | 377 | DEF GOTOSU | 132 | GOTO |
| 343 | 061101 | 377 | 377 | DEF GOTOSU | 133 | GOSUB |
| 344 | 061103 | 324 | 142 | DEF PRINT# | 134 | PRINT # |
| 345 | 061105 | 377 | 377 | DEF PUSH1A | 135 | GRAD |
| 346 | 061107 | 377 | 377 | DEF PUSH1A | 136 | GRAPH |
| 347 | 061111 | 377 | 377 | DEF INPUT | 137 | INPUT |
| 348 | 061113 | 377 | 377 | DEF GET2N | 140 | IDRAW |
| 349 | 061115 | 377 | 377 | DEF FNLET | 141 | LET FN |
| 350 | 061117 | 377 | 377 | DEF LET | 142 | LET |
| 351 | 061121 | 377 | 377 | DEF PUSH1A | 143 | PRINT ALL |
| 352 | 061123 | 377 | 377 | DEF PUSH1A | 144 | CAT(ALOGUE) |
| 353 | 061125 | 377 | 377 | DEF GET2N | 145 | DRAW |
| 354 | 061127 | 377 | 377 | DEF ON | 146 | ON |
| 355 | 061131 | 377 | 377 | DEF GET1# | 147 | LABEL |
| 356 | 061133 | 377 | 377 | DEF GET1N | 150 | WAIT |
| 357 | 061135 | 377 | 377 | DEF GET2N | 151 | PLOT |
| 358 | 061137 | 377 | 377 | DEF G012N | 152 | PRINTER IS |
| 359 | 061141 | 377 | 377 | DEF PRINT | 153 | PRINT |
| 360 | 061143 | 377 | 377 | DEF PUSH1A | 154 | RAD |
| 361 | 061145 | 377 | 377 | DEF TRY1N | 155 | RANDOMIZE |
| 362 | 061147 | 377 | 377 | DEF READ | 156 | READ |
| 363 | 061151 | 377 | 377 | DEF GET1# | 157 | STORE BIN |
| 364 | 061153 | 377 | 377 | DEF RESTOR | 160 | RESTORE |
| 365 | 061155 | 377 | 377 | DEF PUSH1A | 161 | RETURN |
| 366 | 061157 | 377 | 377 | DEF GET1N | 162 | OFF TIMER# |
| 367 | 061161 | 377 | 377 | DEF GET2N | 163 | MOVE |
| 368 | 061163 | 377 | 377 | DEF PUSH1A | 164 | FLIP |

| >>>>> | | | | PARSE TABLE | <<<<<<<< | |
|-------|--------|-----|-----|-------------|----------|-------------|
| 369 | 061165 | 377 | 377 | DEF PUSH1A | 165 | STOP |
| 370 | 061167 | 377 | 377 | DEF GET1\$ | 166 | STORE |
| 371 | 061171 | 377 | 377 | DEF PUSH1A | 167 | PENUP |
| 372 | 061173 | 377 | 377 | DEF TRCVB | 170 | TRACE VRBL |
| 373 | 061175 | 377 | 377 | DEF PUSH1A | 171 | TRACE ALL |
| 374 | 061177 | 377 | 377 | DEF G120R4 | 172 | XAXIS |
| 375 | 061201 | 377 | 377 | DEF G120R4 | 173 | YAXIS |
| 376 | 061203 | 377 | 377 | DEF PUSH1A | 174 | COPY |
| 377 | 061205 | 377 | 377 | DEF PUSH1A | 175 | NORMAL |
| 378 | 061207 | 377 | 377 | DEF ERR88U | 176 | ERASE TAPE |
| 379 | 061211 | 377 | 377 | DEF TYPSTM | 177 | INTEGER |
| 380 | 061213 | 377 | 377 | DEF TYPSTM | 200 | SHORT |
| 381 | 061215 | 377 | 377 | DEF G012N | 201 | DELETE |
| 382 | 061217 | 377 | 377 | DEF GET4N | 202 | SCALE |
| 383 | 061221 | 377 | 377 | DEF REM | 203 | REM |
| 384 | 061223 | 377 | 377 | DEF OPTION | 204 | OPTION |
| 385 | 061225 | 377 | 377 | DEF COM | 205 | COM |
| 386 | 061227 | 377 | 377 | DEF DATA | 206 | DATA |
| 387 | 061231 | 377 | 377 | DEF DEF | 207 | DEF FN |
| 388 | 061233 | 377 | 377 | DEF DIM | 210 | DIM |
| 389 | 061235 | 377 | 377 | DEF PUSH1A | 211 | KEY LABEL |
| 390 | 061237 | 377 | 377 | DEF PUSH1A | 212 | END |
| 391 | 061241 | 377 | 377 | DEF FNEHD | 213 | FN END |
| 392 | 061243 | 377 | 377 | DEF FOR | 214 | FOR |
| 393 | 061245 | 377 | 377 | DEF IF | 215 | IF |
| 394 | 061247 | 377 | 377 | DEF REM | 216 | IMAGE |
| 395 | 061251 | 377 | 377 | DEF NEXT | 217 | NEXT |
| 396 | 061253 | 324 | 142 | DEF SECURE | 220 | UNSECURE |
| 397 | 061255 | 377 | 377 | DEF ILET | 221 | LET (IMPLY) |
| 398 | 061257 | 324 | 142 | DEF ASSIGN | 222 | ASSIGN |
| 399 | 061261 | 377 | 377 | DEF G*N+NN | 223 | CREATE |
| 400 | 061263 | 377 | 377 | DEF GET*N? | 224 | PURGE |
| 401 | 061265 | 377 | 377 | DEF ERR88U | 225 | REWIND |
| 402 | 061267 | 377 | 377 | DEF GET1\$ | 226 | LOADBIN |
| 403 | 061271 | 377 | 377 | DEF PUSH1A | 227 | PAUSE |
| 404 | 061273 | 377 | 377 | DEF GET1\$ | 230 | LOAD |
| 405 | 061275 | 377 | 377 | DEF TYPSTM | 231 | REAL |
| 406 | 061277 | 377 | 377 | DEF G012N | 232 | REN |
| 407 | 061301 | 377 | 377 | DEF REM | 233 | ! |
| 408 | 061303 | 377 | 377 | DEF PUSH1A | 234 | DEFAULT OFF |
| 409 | 061305 | 377 | 377 | DEF GET1N | 235 | PEN |
| 410 | 061307 | 377 | 377 | DEF G012N | 236 | PLIST |
| 411 | 061311 | 377 | 377 | DEF GET1N | 237 | LDIR |
| 412 | 061313 | 377 | 377 | DEF GET2N | 240 | MOVE |
| 413 | 061315 | 377 | 377 | DEF FNLET | 241 | FN ILET |
| 414 | 061317 | 377 | 377 | DEF ERR88U | 242 | CTAPE |
| 415 | 061321 | 377 | 377 | DEF PUSH1A | 243 | TRACE |
| 416 | 061323 | | | | | |

>>>>>> RUNTIME ERROR ROUTINES <<<<<<<<<

| ITEM | LOC | OBJECT CODE | SRC | OBJ | DATE | TIME | PG |
|------|--------|-------------|--------|-----|---------|-----------------------|----------------------|
| 1 | 061323 | 241 | | | OCT | 241 | |
| 419 | 061324 | | | | | | |
| 420 | 061324 | SECUR. | BSS | 0 | | | |
| 421 | 061324 | CHAIN. | BSS | 0 | | | |
| 422 | 061324 | READ#. | BSS | 0 | | | |
| 423 | 061324 | RENAM. | BSS | 0 | | | |
| 424 | 061324 | PRNT#. | BSS | 0 | | | |
| 425 | 061324 | CAT. | BSS | 0 | | | |
| 426 | 061324 | STORB. | BSS | 0 | | | |
| 427 | 061324 | STORE. | BSS | 0 | | | |
| 428 | 061324 | COPY. | BSS | 0 | | | |
| 429 | 061324 | ERAST. | BSS | 0 | | | |
| 430 | 061324 | UNSEC. | BSS | 0 | | | |
| 431 | 061324 | ASIGN. | BSS | 0 | | | |
| 432 | 061324 | CREAT. | BSS | 0 | | | |
| 433 | 061324 | PURGE. | BSS | 0 | | | |
| 434 | 061324 | REMIN. | BSS | 0 | | | |
| 435 | 061324 | LOADB. | BSS | 0 | | | |
| 436 | 061324 | LOAD. | BSS | 0 | | | |
| 437 | 061324 | CTAPE. | BSS | 0 | | | |
| 438 | 061324 | BPLOT. | BSS | 0 | | | |
| 439 | 061324 | GCLR. | BSS | 0 | | | |
| 440 | 061324 | IDRAW. | BSS | 0 | | | |
| 441 | 061324 | DRAW. | BSS | 0 | | | |
| 442 | 061324 | LABEL. | BSS | 0 | | | |
| 443 | 061324 | PLOT. | BSS | 0 | | | |
| 444 | 061324 | MOVE. | BSS | 0 | | | |
| 445 | 061324 | PENUP. | BSS | 0 | | | |
| 446 | 061324 | XAXIS. | BSS | 0 | | | |
| 447 | 061324 | YAXIS. | BSS | 0 | | | |
| 448 | 061324 | SCALE. | BSS | 0 | | | |
| 449 | 061324 | PEN. | BSS | 0 | | | |
| 450 | 061324 | LDIR. | BSS | 0 | | | |
| 451 | 061324 | IMOVE. | BSS | 0 | | | |
| 452 | 061324 | CRT. | BSS | 0 | | | |
| 453 | 061324 | PRNTR. | BSS | 0 | | | |
| 454 | 061324 | ASSIGN | BSS | 0 | | | |
| 455 | 061324 | PRINT# | BSS | 0 | | | |
| 456 | 061324 | RENAME | BSS | 0 | | | |
| 457 | 061324 | READ# | BSS | 0 | | | |
| 458 | 061324 | SECURE | BSS | 0 | | | |
| 459 | 061324 | | | | | | |
| 460 | 061324 | 020 045 | | | OCT | 20,45 | |
| 461 | 061326 | TAB. | BSS | 0 | | | FOR TRANSLATION |
| 462 | 061326 | | | | | | |
| 463 | 061326 | 036 | | | OCT | 36 | |
| 464 | 061327 | P#ARRAY | BSS | 0 | | | |
| 465 | 061327 | | | | | | |
| 466 | 061327 | 044 | | | OCT | 44 | ATTRIBUTE FOR ERRORX |
| 467 | 061330 | R#ARRAY | BSS | 0 | | | |
| 468 | 061330 | 316 377 377 | ERRORX | JSB | =ERROR+ | | BAD TOKEN |
| 469 | 061333 | 017 | | | OCT | 15D | |
| 470 | 061334 | | | | *** | ERROR ATTRIBUTE TABLE | ***** |

>>>> RUNTIME ERROR ROUTINES <<<<<<<<
471 061334 344 OCT 344
472 061335 *****
473 061335 ERROR BSS 0 FOR ATTRIBS ONLY!!!!
474 061335 *** ERRORE ATTRIBUTE TABLE *****
475 061335 044 OCT 44
476 061336 *****
477 061336 316 377 377 ERRORE JSB =ERROR+ MISSING STOP OR END
478 061341 060 OCT 48D

```

>>>>>  RUNTIME FETCH,STORE, OPTION BASE                                <<<<<<<<
3 061342          **** @ ATTRIBUTE TABLE*****
461 061342 042          OCT 42
482 061343          *****
483 061343 112 263 344 HTSIGN STND R12,=TOS
483 061346 203
484 061347 316 377 377      JSB =RELMEM
485 061352 236          RTN
486 061353
487 061353          +NOTE - The following NOP's can be grouped
488 061353          * only if attributes are harmless when executed
489 061353          ***** NOP ATTRIBUTE TABLE *****
490 061353 241          OCT 241          SEE NOTE ABOVE
491 061354          NOP,          BSS 0
492 061354          ***** TOKEN 47 ATTRIBUTE TABLE *****
493 061354 041          OCT 41          SEE NOTE ABOVE
494 061355          NOP47,       BSS 0          DUMMY
495 061355          ***** TOKEN 333 ATTRIBUTE TABLE *****
496 061355 001 051      OCT 1,51      SEE NOTE ABOVE
497 061357 236          NOP2,       RTN          DUMMY FOR ASSIGN "TO"
498 061360
499 061360
500 061360          ***** TOKEN 4 ATTRIBUTE TABLE *****
501 061360 004          OCT 4
502 061361          *****
503 061361 170 271 311  ICONST  LDMI R70,=PTR1-  FETCH CONST
503 061364 377
504 061365 012 345      PUMD R70,+R12  PUSH ONTO STACK
505 061367 236          RTN
506 061370
507 061370
508 061370          ***** TOKEN 32 ATTRIBUTES TABLE *****
509 061370 002          OCT 2
510 061371          *****
511 061371 175 271 311  INTCON  LDMI R75,=PTR1-  FETCH BINARY CONST
511 061374 377
512 061375 174 250 377  I#PUSH  LDB 74,=377      PUSH MARKER
513 061400 170 012 345  PUMD 70,+12  TO STACK
514 061403 236          RTN          DONE
515 061404
516 061404
517 061404          ***** TOKEN 22 ATTRIBUTES TABLE *****
518 061404 003          OCT 3
519 061405          *****
520 061405          SVADR+  BSS 0
521 061405 123 250 022  LDB  R23,=22      TOKEN FOR STORE NUM ARRAY
522 061410 360 004      JMP  SVADR1
523 061412
524 061412
525 061412          ***** TOKEN 2 ATTRIBUTES TABLE *****
526 061412 001          OCT 1
527 061413          *****
528 061413          SVADR  BSS 0
529 061413 123 250 002  LDB  R23,=2      TOKEN FOR FETCH NUM ARRAY

```


ITEM LOC OBJECT CODE SRC=CCGFRD OBJ=GENGF5 9/11/1981 12:01 PM PG 14

>>>> RUNTIME FETCH, STORE, OPTION BASE <<<<<<<<

```

061521      ****  TOKEN 3 ATTRIBUTES TABLE  ****
582 061521 001      OCT 1
583 061522      ****
584 061522      FTSTL  BSS  0
585 061522 123 250 003      LDB  R23,=3      TOKEN FOR FETCH SIM STR
586 061525 316 212 143      JSB  =FETADD      FETCH VAR ADR
587 061530 316 377 377      JSB  =FETSVA      GET HEADER & ABS ADR
588 061533 316 377 377      JSB  =3KPNM+      SKIP STRING VAR NAME
589 061536 161 271 315 STRIND LDHI R61,=PTR2-  POP TOT,MAX,ACT
589 061541 377
590 061542 120 061 241      LDM  R20,R61      COPY ACT
591 061545      STIND+  BSS  0
592 061545      ORP  120
593 061545 311 377 377      CMM  R20,=377,377 UNDEF?
594 061550 366 005      JNZ  FTSTLX      JIF NOT
595 061552 223      CLM  R20      ELSE FLAG ERROR
596 061553 316 377 377      JSB  =ERROR
597 061556 007      OCT  7D
599 061557      FTSTLX  BSS  0
600 061557 120 012 345      PUMD R20,+R12      PUSH ACT LENGTH
600 061562 175 261 314      LDMD R75,=PTR2      GET ADDR OF STRING
601 061566 345      PUMD R75,+R12      PUSH ABS ADR
602 061567 236      RTN
603 061570
604 061570
605 061570
606 061570 002
607 061571
608 061571
609 061571 270 311 377
610 061574 236
611 061575
612 061575
613 061575
614 061575
615 061575
616 061575
617 061575 241
618 061576
619 061576 136 222
620 061600 210
621 061601 360 003
622 061603
623 061603
624 061603
625 061603 241
626 061604
627 061604 136 222
628 061606 262 152 200 STORDF STBD R#,=DEFAULT  STORE 0 OR ONTOK
629 061611 236      RTN      DONE
630 061612
631 061612
    
```

```

****  INDENTATION ATTRIBUTES TABLE  ****
OCT 2
*****
INDEN.  BSS  0
LDHI R#,=PTR1-  SKIP INDENT COUNT
RTN
    
```

```

****  DEFAULT ATTRIBUTE TABLE  ****
OCT 241
*****
DEFA+,  CLB R36      CLEAR FLAG
        ICB R36      SET TO ON
        JMP STORDF   STORE IT
    
```

```

****  DEFAULT OFF ATTRIBUTE TABLE  ****
OCT 241
*****
DEFA-,  CLB R36      CLEAR FLAG
STORDF STBD R#,=DEFAULT  STORE 0 OR ONTOK
RTN      DONE
    
```

>>>> RUNTIME FETCH,STORE, OPTION BASE <<<<<<<<

```

632 061612
633 061612
633 061612
634 061612
635 061612
636 061612
637 061612
638 061612
639 061612
640 061612
641 061612
642 061612
642 061612
642 061612
643 061612
644 061612
645 061612 165 271 311
645 061615 377
646 061616 264 026
647 061620 230
648 061621 271 312 377
649 061624 136 020 342
650 061627 317 077 000
651 061632 316 070 145
652 061635 117 311 300
653 061640 373 005
654 061642 165 271 311
654 061645 377
655 061646 236
656 061647
657 061647
658 061647 136 006 343
659 061652 236
660 061653

```

```

*****
*
*   FETCH VAR ADDR
*
*   IN:
*       R20=RUN TIME ROUTINE ENTRY POINT
*       PTR1=POINTS TO ADDR
*
*   OUT:
*       PTR1=POINTS TO NAME
*       R65=REL ADDR OF VAR
*
*****
FETADD  BSS  0
FETADR  BSS  0          FETCH LINE ADDR
        LDMI R65,=PTR1-
        JNG  FETAD1      JIF LINE ALLOCATED
        BIN
        LDMI R65,=PTR1+  BACKUP
        POBD R36,-R20    GET ATTRIBUTE
        ANM  R36,=??,0   ISOLATE CLASS
        JSB  =AL1OK      ALLOC THIS TOKEN
        CMM  R17,=300    ANY ERROR
        JCY  FETAD2      JIF YES
        LDMI R65,=PTR1-  FETCH ADDR
        FETAD1  RTN
        FETAD2  BSS  0
        FOMD R36,-R6     TRASH ONE RTN
        RTN

```


>>>> RUNTIME ARRAY FETCH, STORE <<<<<<<<

| | | | | | | | | |
|-----|--------|-----|-----|-----|--|--------|---------------------------|--------------------------|
| 714 | 061751 | | | | | | | |
| 715 | 061751 | | | | | **** | TOKEN 14 ATTRIBUTE TABLE | ***** |
| 716 | 061751 | 032 | | | | | OCT 32 | |
| 717 | 061752 | | | | | ***** | | ***** |
| 718 | 061752 | 120 | 222 | | | AVVAL2 | CLB R20 | GET TOKEN IN 20 |
| 719 | 061754 | 012 | 344 | | | FU20+ | PUBD R#,+R12 | AND PUSH ON STACK |
| 720 | 061756 | 316 | 377 | 377 | | JSB | =FETAVA | GET ELEMENT ADDR |
| 721 | 061761 | 146 | 220 | | | TSB | R46 | STRING ARRAY? |
| 722 | 061763 | 264 | 266 | | | JNG | AVVST | JIF YES |
| 723 | 061765 | 316 | 377 | 377 | | JSB | =FETSYX | ELSE GET NUM VALUE |
| 724 | 061770 | 160 | 012 | 345 | | PUMD | R60,+R12 | PUSH VALUE |
| 725 | 061773 | 236 | | | | RTN | | |
| 726 | 061774 | | | | | | | |
| 727 | 061774 | | | | | **** | TOKEN 21 ATTRIBUTES TABLE | ***** |
| 728 | 061774 | 003 | | | | | OCT 3 | |
| 729 | 061775 | | | | | ***** | | ***** |
| 730 | 061775 | | | | | FTADR | BSS 0 | |
| 731 | 061775 | 123 | 250 | 021 | | LDB | R23,=21 | TOKEN FOR STORE SIM NUM |
| 732 | 062000 | | | | | FTADR+ | BSS 0 | |
| 733 | 062000 | 316 | 212 | 143 | | JSB | =FETAD0 | FETCH VAR ADDR |
| 734 | 062003 | 316 | 377 | 377 | | JSB | =FETSVA | GO FETCH VAR ADDR |
| 735 | 062006 | 316 | 377 | 377 | | JSB | =SKPNAM | SKIP VAR NAME |
| 736 | 062011 | 123 | 310 | 200 | | CMB | R23,=200 | A/A\$(), A/A\$(,) ? |
| 737 | 062014 | 372 | 004 | | | JNC | FTAPU | JIF NOT |
| 738 | 062016 | 161 | 271 | 315 | | LDHI | R61,=PTR2- | SKIP TOT,MAX ROW,MAX COL |
| 738 | 062021 | 377 | | | | | | |
| 739 | 062022 | | | | | FTAPU | BSS 0 | SHARED BY FNLET, FNRET |
| 740 | 062022 | 175 | 261 | 314 | | LDMD | R75,=PTR2 | GET BASE ADDR |
| 740 | 062025 | 377 | | | | | | |
| 741 | 062026 | 012 | 345 | | | PUMD | R75,+R12 | PUSH VAR ADR |
| 742 | 062030 | 165 | 070 | 241 | | LDM | R65,R70 | GET ABS ADR OF NAME |
| 743 | 062033 | 012 | 345 | | | PUMD | R65,+R12 | PUSH HEADER & NAME |
| 744 | 062035 | 146 | 344 | | | PUBD | R46,+R12 | |
| 745 | 062037 | 236 | | | | RTN | | |
| 746 | 062040 | | | | | | | |
| 747 | 062040 | 001 | | | | OCT | 1 | TOKEN 363 ATTRIBUTE |
| 748 | 062041 | | | | | FTADR1 | BSS 0 | |
| 749 | 062041 | 123 | 250 | 263 | | LDB | R23,=363 | 1-D NUM ARRAY |
| 750 | 062044 | 360 | 332 | | | JMP | FTADR+ | |
| 751 | 062046 | | | | | | | |
| 752 | 062046 | 001 | | | | OCT | 1 | |
| 753 | 062047 | | | | | FTADR2 | BSS 0 | |
| 754 | 062047 | 123 | 250 | 364 | | LDB | R23,=364 | 2-D NUM ARRAY |
| 755 | 062052 | 360 | 324 | | | JMP | FTADR+ | |
| 756 | 062054 | | | | | | | |
| 757 | 062054 | 001 | | | | OCT | 1 | |
| 758 | 062055 | | | | | FTADR3 | BSS 0 | |
| 759 | 062055 | 123 | 250 | 273 | | LDB | R23,=273 | 1-D STRING ARRAY |
| 760 | 062060 | 360 | 316 | | | JMP | FTADR+ | |
| 761 | 062062 | | | | | | | |
| 762 | 062062 | 001 | | | | OCT | 1 | |
| 763 | 062063 | | | | | FTADR4 | BSS 0 | |
| 764 | 062063 | 123 | 250 | 300 | | LDB | R23,=300 | 2-D STRING ARRAY |


```

>>>> RUNTIME STRING, SUBSTRING <<<<<<<<
769 062070      ****  TOKEN 5 & 6 ATTRIBUTES TABLE  *****
770 062070 605      OCT 5
771 062071      *****
772 062071      $CONST BSS 0
773 062071
774 062071      *      CLM R75      RESET STING LENGTH
775 062071      *      LDBI R75,=PTR1-  POP LENGTH
776 062071      *      LDM R36,R75      ONLY USE 2 BYTES
777 062071      *      FUMD R36,+R12      PUSH ON STACK
778 062071      *      LDMD R65,=PTR1      GET STRING ADDR
779 062071      *      PUMD R65,+R12      PUSH ON STACK
780 062071      *      BIN
781 062071      *      SBM R65,R75      PASS OVER STRING
782 062071      *      STMD R65,=PTR1      UPDATE PC
783 062071
784 062071 136 223      CLM R36      RESET COUNT
785 062073 270 311 377      LDBI R36,=PTR1-  GET STRING LEN
786 062076 012 345      PUMD R36,+R12      PUSH ON STACK
787 062100 165 261 310      LDMD R65,=PTR1      GET ADDR
788 062104 345      PUMD R65,+R12      PUSH ON STACK
789 062105 270 312 377      LDBI R65,=PTR1+  BACKUP ONE POS
790 062110 316 377 377      JSB =3KFNMI      SKIP THE STRING
791 062113 236      SCORTH RTN      THATS ALL, FOLKS!
792 062114
793 062114
794 062114      ****  TOKEN 36 ATTRIBUTE TABLE  *****
795 062114 034      OCT 34
796 062115      *****
797 062115      SUBST2 BSS 0
798 062115 316 221 144      JSB =TUOX      SUB1 TO 46, SUB2 TO 26
799 062120 126 056 243      STM R26,R56      SUB2 TO 56
800 062123 175 012 343      POMD R75,-R12      OLD PTR
801 062126 166 343      POMD R66,-R12      OLD COUNT
802 062130 056 301      CNM R66,R56      OLD COUNT-SUB2
803 062132 373 021      JCY STPTR      JIF NO OVERFLOW
804 062134 243      STM R66,R56      SUB2 = OLD COUNT
805 062135 234      ICE      SET ERROR
806 062136 360 015      JMP STPTR
807 062140
808 062140
809 062140      ****  TOKEN 35 ATTRIBUTE TABLE  *****
810 062140 034      OCT 34
811 062141      *****
812 062141      SUBST1 BSS 0
813 062141 120 222      CLB R20
814 062143 316 227 144      JSB =TUOX0
815 062146 175 012 343      POMD R75,-R12      ADDRESS
816 062151 166 343      POMD R66,-R12      LENGTH
817 062153 056 243      STN R66,R56      SAVE IT
818 062155      STPTR BSS 0
819 062155      DRP 166
820 062155 046 301      CNM R66,R46      SUB1 TOO LARGE ?
  
```

>>>> RUNTIME STRING, SUBSTRING <<<<<<<<<

| | | | | | | | |
|-----|--------|-----|-----|--------|------|----------|--------------------|
| 822 | 062157 | 373 | 001 | | JCY | STPTR0 | JIF NO |
| 823 | 062161 | 234 | | | ICE | | ELSE FLAG ERROR |
| 824 | 062162 | | | STPTR0 | BSS | 0 | |
| 825 | 062162 | 156 | 211 | | ICM | R56 | BIASED BY 1 |
| 826 | 062164 | 046 | 305 | | SBM | R56,R46 | NEW LEN |
| 827 | 062166 | 373 | 001 | | JCY | STPTR1 | JIF NO OVERFLOW |
| 828 | 062170 | 234 | | | ICE | | FLAG ERROR |
| 829 | 062171 | | | STPTR1 | BSS | 0 | |
| 830 | 062171 | 156 | 073 | 243 | STM | R56,R73 | SAVE NEW LENGTH |
| 831 | 062174 | 146 | 213 | | DCM | R46 | OFFSET=INDEX-1 |
| 832 | 062176 | 373 | 001 | | JCY | STPTR2 | JIF START >= 1 |
| 833 | 062200 | 234 | | | ICE | | SET ERROR |
| 834 | 062201 | | | STPTR2 | BSS | 0 | |
| 835 | 062201 | 146 | 055 | 243 | STM | R46,R55 | MAKE IT 3 BYTES |
| 836 | 062204 | 157 | 222 | | CLB | R57 | |
| 837 | 062206 | 175 | 305 | | SBM | R75,R55 | NEW PTR |
| 838 | 062210 | 173 | 012 | 345 | PUMC | R73,+R12 | PUSH IT |
| 839 | 062213 | 371 | 276 | | JEZ | SCORTH | JIF NO ERRORS |
| 840 | 062215 | 316 | 377 | 377 | JSB | =ERROR+ | STRING OVERFLOW |
| 841 | 062220 | 970 | | | OCT | 56D | |
| 842 | 062221 | | | | | | |
| 843 | 062221 | | | | | | |
| 844 | 062221 | | | | | | |
| 845 | 062221 | | | | | | |
| 846 | 062221 | | | | | | |
| 847 | 062221 | | | | | | |
| 848 | 062221 | | | | | | |
| 849 | 062221 | | | | | | |
| 850 | 062221 | | | | | | |
| 851 | 062221 | | | | | | |
| 852 | 062221 | | | | | | |
| 853 | 062221 | | | | | | |
| 854 | 062221 | | | | | | |
| 854 | 062221 | | | | | | |
| 854 | 062221 | | | | | | |
| 856 | 062221 | | | | | | |
| 856 | 062221 | | | TWOX | BSS | 0 | |
| 857 | 062221 | 316 | 242 | 144 | JSB | =ONEX1 | GET ONE PAR |
| 858 | 062224 | 146 | 026 | 243 | STM | R46,R26 | SAVE IT |
| 859 | 062227 | | | TWOX0 | BSS | 0 | |
| 860 | 062227 | 316 | 242 | 144 | JSB | =ONEX1 | GET ANOTHER PAR |
| 861 | 062232 | 230 | | | BIN | | |
| 862 | 062233 | 235 | | | CLE | | RESET ERROR FLAG |
| 863 | 062234 | 120 | 220 | | TSB | R20 | TEST OVFL/NEG FLAG |
| 864 | 062236 | 367 | 001 | | JZR | TWOXDN | JIF NO OVFL/NEG |
| 865 | 062240 | 234 | | | ICE | | ELSE FLAG ERROR |
| 866 | 062241 | 236 | | TWOXDN | RTN | | |
| 867 | 062242 | | | | | | |
| 868 | 062242 | | | ONEX1 | BSS | 0 | |
| 869 | 062242 | 316 | 377 | 377 | JSB | =ONEX1 | GET 1 16-BIT BIN # |
| 870 | 062245 | 132 | 220 | | TSB | R32 | NEGATIVE ? |

```

*****
*
*          IN:
*          R20=0
*
*
*          A
*          B
*          R12----->
*
*
*        OUT:
*          E   = OVFL/NEG FLAG (<0 IF NOT)
*          R46 = A
*          R26 = B
*
*****

```

=====

| >>>> | | RUNTIME STRING, SUBSTRING | | <<<<<<<< | | |
|------|----------------|---------------------------|-------|----------|-------|-----------------|
| 871 | 062247 376 001 | | | JRZ | ONEX2 | JIF NOT |
| 872 | 062251 233 | | | DCE | | FLAG IT |
| 873 | 062252 | | ONEX2 | BSS | 0 | |
| 874 | 062252 231 | | | SCD | | |
| 875 | 062253 120 200 | | | ELB | R20 | PUT FLAG IN R20 |
| 876 | 062255 236 | | | RTN | | |
| 877 | 062256 | | | | | |

```

>>>>>      RUNTIME MODE SET, REN, SKIP      <<<<<<<<<
9 062256          **** DEG ATTRIBUTE TABLE ****
880 062256 241          OCT 241
881 062257          ****
882 062257 136 250 220 DEG.      LDB 36,=90C      DEGREE FLAG= 90
883 062262 262 160 200 STODRG  STBD R# ,=DRG      PUT INTO DRG FLAG
884 062265 236          RTN      SIMPLE!
885 062266          **** RAD ATTRIBUTE TABLE ****
886 062266 241          OCT 241
887 062267          ****
888 062267 136 222      RAD.      CLB 36      RADIAN FLAG = 0
889 062271 360 367      JMP STODRG      STORE IT
890 062273          **** GRAD ATTRIBUTE TABLE ****
891 062273 241          OCT 241
892 062274          ****
893 062274 136 222      GRAD.     CLB 36      GRAD FLAG=99
894 062276 212          DCB      MAKE IT 99
895 062277 360 361      JMP. STODRG      STORE IT
896 062301
897 062301
898 062301
899 062301          **** INTEGER ATTRIBUTE TABLE ****
900 062301 323          OCT 323
901 062302          ****
902 062302          INTEG.     BSS 0
903 062302 130 251 377      LDM R30,=INT
903 062305 377
904 062306 360 032      JMP DIMS
905 062310
906 062310
907 062310
908 062310          **** REAL ATTRIBUTE TABLE ****
909 062310 321          OCT 321
910 062311          ****
911 062311          REAL.     BSS 0
912 062311 130 251 377      LDM R30,=REAL
912 062314 377
913 062315 360 023      JMP DIMS
914 062317
915 062317
916 062317
917 062317          **** SHORT ATTRIBUTE TABLE ****
918 062317 322          OCT 322
919 062320          ****
920 062320          SHORT.    BSS 0
921 062320 130 251 377      LDM R30,=SHORT
921 062323 377
922 062324 360 014      JMP DIMS
923 062326
924 062326
925 062326
926 062326          **** DIM ATTRIBUTES TABLE ****
927 062326 321          OCT 321
928 062327          ****
  
```

```

>>>>      RUNTIME MODE SET, REM, SKIP      <<<<<<<<
929 062327          DIM,      BSS 0
930 062327 130 251 377          LDM R30,=DIMAL
930 062332 377
931 062333 360 005          JMP DIMS
932 062335
933 062335
934 062335
935 062335          **** COM ATTRIBUTES TABLE *****
936 062335 324          OCT 324
937 062336          *****
938 062336          COM,      BSS 0
939 062336 130 251 377          LDM R30,=COMM
939 062341 377
940 062342          *          FALL THROUGH
941 062342
942 062342          DIMS      BSS 0
943 062342 230          BIN
944 062343          *          JSB =DIMAL?          DIM ALLOCATED?
945 062343          *          JNZ SKPLN          JIF YES
946 062343 030 306 000          JSB X30,ZR0          INIT SETUP
946 062346 000
947 062347 316 371 144          JSB =ALC1LN          ALLOCATE WHOLE LINE
948 062352 316 377 377          JSB =ALINI-          RESET FLAGS
949 062355 236          RTN
950 062356
951 062356          **** DATA ATTRIBUTE TABLE *****
952 062356 320          OCT 320
953 062357          *****
954 062357 360 001          SKIPEM JMP SKIPIT
955 062361
956 062361          **** SKIPIT ATTRIBUTE TABLE *****
957 062361 341          OCT 341
958 062362          *****
959 062362          SKIPIT BSS 0
960 062362          SKPLN BSS 0
961 062362 316 377 377          JSB =SKIPL          SKIP THE LINE
962 062365          DRP !75
963 062365 270 312 377          LDBI R75,=PTR1+          BACKUP TO EOL TOKEN
964 062370 236          RTN
965 062371
966 062371
967 062371          *****
967 062371          *          *
968 062371          *          DIM ALREADY ALLOCATED?          *
969 062371          *          *
970 062371          *          IN:          *
971 062371          *          PTR1=PTS TO AFTER DIM TOKEN          *
972 062371          *          *
973 062371          *          OUT:          *
974 062371          *          PTR1=UNCHANGED          *
975 062371          *          Z#0 IF ALREADY ALLOCATED          *
976 062371          *          Z=0 IF NOT ALLOCATED          *
977 062371          *          *
  
```

```

KARMA 03/14/81=====
ITEM   LOC   OBJECT CODE SRC=CCGPRD OBJ=GENGFS  9/11/1981 12:01 PM PG 24
=====
>>>>>  RUNTIME MODE SET, REM, SKIP <<<<<<<<
062371 +DINAL? BSS 0 *
979 062371 * LDMI R74,=PTR1--+ GT NXT TOK + ADDR *
980 062371 * LDM R65,R74 ISOLATE ADDR *
981 062371 * RTN *
981 062371 * *
982 062371 *
983 062371 *
984 062371 ALC1LN BSS 0 ALLOC WHOLE LINE
985 062371 262 001 377 STBD R#,,=GINTDS DISABLE ALL INTERRUPTS
986 062374 175 251 231 LDM R75,=231,231,12 PRETEND LAST LINE
986 062377 231 012
987 062401 263 237 210 STMD R75,=ALINE#
988 062404 * JSB =SETALO SET ALLOC FLAG
989 062404 316 377 377 JSB =NXTONE GO ALLOCATE
990 062407 175 270 312 LDBI R75,=PTR1+ BACKUP TO EOL TOKEN
990 062412 377
991 062413 360 103 JMP AL1T2
992 062415
993 062415
994 062415 312 OCT 312 ATTRIBUTE
995 062416 DEFFN. BSS 0
996 062416 230 BIN
997 062417 175 271 311 LDMI R75,=PTR1- FUNC ALLOCATED?
997 062422 377
998 062423 366 025 JNZ SKPDEF JIF YES
999 062425 174 271 312 LDMI R74,=PTR1+ ELSE BACKUP
999 062430 377
1000 062431 * JSB =SETALO SET ALLOC FLAG
1001 062431 ALFNCI BSS 0
1002 062431 262 001 377 STBD R#,,=GINTDS DISABLE INTERRUPTS
1003 062434 175 261 103 LDMD R75,=AUTO# GET LINE#
1003 062437 200
1004 062440 263 237 210 STMD R75,=ALINE# FOR ALLOCATOR
1005 062443 316 377 377 JSB =NXTONE ALLOCATE WHOLE BLK
1006 062446 262 000 377 STBD R#,,=GINTEN ENABLE INTERRUPTS
1007 062451 236 ALFEND RTN
1008 062452
1009 062452 SKPDEF BSS 0
1010 062452 316 377 377 JSB =SKPFI SKIP NAME
1011 062455 175 271 311 LDMI R75,=PTR1- GET JUMP ADDR
1011 062460 377
1012 062461 323 006 200 ADMD R75,=FWCURR ADD BASE ADDR
1013 062464 263 310 377 STMD R75,=PTR1 SKIP DEF FN BLK
1014 062467 236 RTN
1015 062470
1016 062470
1017 062470 *
1017 062470 * ALLOCATE FOR ONE TOKEN *
1018 062470 *
1019 062470 *
1020 062470 * IN: *
1020 062470 * R23=TOKEN *

```

=====

```

>>>>>          RUNTIME MODE SET, REM, SKIP          <<<<<<<<
1022 062470          *          R36=CLASS
1023 062470          *          R37=0
1024 062470          *          PTR1=PTS TO AFTER TOKEN
1024 062470          *
1024 062470          *          *****
1025 062470
1026 062470          AL1TOK  BSS  0
1027 062470 262 001 377          STBD R# ,=GINTDS  DISABLE INTERRUPTS
1028 062473 175 261 310          LDMD R75 ,=PTR1  SAVE PC
1028 062476 377
1029 062477 006 345          PUMD R75 ,+R6
1030 062501 136 205          LLM  R36          DOUBLE FOR JUMP
1031 062503 036 265 377          LDMD R36 ,X36 ,JATAB
1031 062506 377
1032 062507 306 000 000          JSB  X36 ,ZRD  ALLOCATE
1033 062512          *          *****
1034 062512          *          CMB  R17 ,=300  ANY ERROR  *
1035 062512          *          JNC  AL1T1  JIF NOT  *
1035 062512          *          JSB  =DALLOC  DEALLOCATE  *
1037 062512          *          *****
1038 062512          AL1T1  BSS  0
1039 062512 175 006 343          PUMD R75 ,-R6  RESTORE PC
1040 062515 263 310 377          STMD R75 ,=PTR1
1041 062520          AL1T2  BSS  0
1042 062520 262 000 377          STBD R# ,=GINTEN  ENABLE INTERRUPTS
1043 062523 236          RTN
1044 062524
1045 062524
1046 062524
    
```

| > >>>> | | RUNTIME | | | | <<<<<<< | |
|--------|--------|---------|-----|-----|--------|-------------|--------------------|
| 1 | 062524 | 316 | 377 | 377 | TST5 | JSB =TWORGI | GET A AND B |
| 1049 | 062527 | 370 | 004 | | | JEN TSTINT | JIF INTEGERS FOUND |
| 1050 | 062531 | 140 | 050 | 227 | | KRM R40,R50 | ARE THEY EQUAL? |
| 1051 | 062534 | 236 | | | | RTN | |
| 1052 | 062535 | 155 | 045 | 227 | TSTINT | KRM R55,R45 | SEE IF X=Y |
| 1053 | 062540 | 236 | | | | RTN | |

RUNTIME - GET OPTIONAL PARAMETERS

<<<<<<<<

```

1055 062541
1056 062541
1056 062541 *
1057 062541 * GET OPTIONAL 0-2 INTEGER PARAMETERS *
1058 062541 *
1059 062541 * OUT: *
1060 062541 * E=0 IF 0 PARAMETER *
1061 062541 * E#0 IF 1 OR 2 PARAMETERS *
1062 062541 * R50=1ST PAR *
1063 062541 * R40=2ND PAR *
1063 062541 *
1063 062541 *
1064 062541 *
1065 062541 316 160 145 TO?I JSB =ON?I GET ONE INT
1066 062544 371 011 JEZ NON?I JIF NONE
1067 062546 140 006 345 PUMD R40,+R6 SAVE FIRST
1068 062551 316 160 145 JSB =ON?I GET SECOND
1069 062554 006 343 POMD R#,-R6 FIRST TO R#
1070 062556 234 ICE COUNT = 1 OR 2
1071 062557 236 NON?I RTN
1072 062560
1073 062560
1074 062560 *
1074 062560 *
1075 062560 * GET OPTIONAL 0-1 INTEGER PAR *
1075 062560 *
1075 062560 *
1076 062560 235 ON?I CLE SET FLAG FOR INTEGER
1077 062561 234 ICE
1078 062562 360 001 JMP ON?IR DO COMBINED ROUTINE
1079 062564
1080 062564 *
1080 062564 *
1081 062564 * GET OPTIONAL 0-1 REAL PAR *
1081 062564 *
1081 062564 *
1082 062564 *
1083 062564 235 ON?R CLE CLEAR FLAG FOR REAL
1084 062565 230 ON?IR BIN COMPARES BINARY
1085 062566 112 321 344 CMMD 12,=TOS IS STACK EMPTY
1085 062571 203
1086 062572 231 BCD FOR RETURN
1087 062573 367 020 JZR NON?IR JIF STACK EMPTY
1088 062575 372 016 JNC NON?IR JIF STACK BACKWARD
1089 062577 370 005 JEN GETINT JIF WE WANT INTEGER
1090 062601 316 377 377 JSB =ONER GET ONE REAL
1091 062604 360 003 JMP GOT?IR DONE
1092 062606 316 377 377 GETINT JSB =ONEI GET ONE INTEGER
1093 062611 235 GOT?IR CLE
1094 062612 150 DRP 50
1095 062613 234 ICE
1096 062614 236 RTN DONE
1097 062615 140 223 NON?IR CLM 40 RETURN ZERO
  
```

=====

>>>> RUNTIME - GET OPTIONAL PARAMETERS <<<<<<<<

1) 062617 235 . CLE NOT FOUND

1099 062620 236 RTN

1100 062621

1101 062621

```

>>>>>>          RUNTIME - RELATIONAL OPERATORS          <<<<<<<<
1103 062621          * THESE CAN BE FIXED UP TO ACCEPT INTEGERS
1104 062621          *
1105 062621          **** TOKEN 75 ATTRIBUTE TABLE *****
1106 062621 006 051          OCT 6,51
1107 062623          *****
1108 062623 316 124 145 EQ,      JSB =TST5          SEE IF X=Y
1109 062626 360 043          JMP ZRTRUE          ZR0=TRUE
1110 062630
1111 062630          **** TOKEN 77 ATTRIBUTE TABLE *****
1112 062630 006 051          OCT 6,51
1113 062632          *****
1114 062632 316 124 145 UNEQ,   JSB =TST5          SEE IF X=Y
1115 062635 366 137          JNZ TRUE,          NO, NEQ TRUE
1116 062637 360 155          JMP FALSE.          YES, NEQ FALSE
1117 062641
1118 062641          **** TOKEN 74 ATTRIBUTE TABLE *****
1119 062641 006 051          OCT 6,51
1120 062643          *****
1121 062643 316 343 145 LT,     JSB =SUBT          SUBTRACT THEM
1122 062646 370 004          JEN LT,I          JIF INTEGERS
1123 062650 377 124          JRN TRUE,          JIF A-B NEGATIVE
1124 062652 360 142          JMP FALSE.          NO, A>=B
1125 062654 364 120          LT,I   JNG TRUE,          JIF A-B NEG
1126 062656 360 136          JMP FALSE.
1127 062660
1128 062660          **** TOKEN 72 ATTRIBUTE TABLE *****
1129 062660 006 051          OCT 6,51
1130 062662          *****
1131 062662 316 343 145 LEQ,   JSB =SUBT          SUBTRACT THEM
1132 062665 370 010          JEN LEQ,I        JIF INTEGERS
1133 062667 377 105          JRN TRUE,        JIF X-Y NEGATIVE
1134 062671 140 221          TSM R40          CHECK FOR ZERO
1135 062673 367 101          ZRTRUE JZR TRUE,  JIF ZERO
1136 062675 360 117          JMP FALSE.
1137 062677 364 075          LEQ,I  JNG TRUE,  JIF X-Y < 0
1138 062701 360 370          JMP ZRTRUE      SAME AS FLOATING
1139 062703
1140 062703          **** TOKEN 76 ATTRIBUTE TABLE *****
1141 062703 006 051          OCT 6,51
1142 062705          *****
1143 062705 316 343 145 GR,    JSB =SUBT          SUBTRACT THEM
1144 062710 370 012          JEN GR,I        JIF INTEGERS
1145 062712 140 221          TSM 40          CHECK SIGN
1146 062714 367 100          JZR FALSE.      JIF X=Y
1147 062716 141 220          TSB R41        CHECK SIGN
1148 062720 376 054          RZTRUE JRZ TRUE,  JIF X>Y
1149 062722 360 072          JMP FALSE.      X<Y
1150 062724 367 070          GR,I   JZR FALSE. JIF X=Y
1151 062726 365 046          PSTRUE JPS TRUE,  JIF X-Y>0
1152 062730 360 064          JMP FALSE.      X<Y
1153 062732
1154 062732          **** TOKEN 73 ATTRIBUTE TABLE *****
1155 062732 006 051          OCT 6,51
  
```



```

>>>>> LOGICAL OPERATORS <<<<<<<
1169 062761 . **** AND ATTRIBUTE TABLE *****
1170 062761 004 051 OCT 4,51
1171 062763 *****
1172 062763 316 377 377 AND. JSB =TWOROI GET X,Y
1173 062766 155 221 TSM R55 CHECK X
1174 062770 367 024 JZR FALSE. ONE FALSE, ALL FALSE
1175 062772 *GENERAL "LOGICAL IF 45 ZERO GO TO FALSE"
1176 062772 145 221 L45ZF TSM R45 HOW ABOUT Y?
1177 062774 367 020 JZR FALSE. FALSE
1178 062776 145 223 TRUE. CLM R45 ANSWER IS INTEGER 1
1179 063000 210 ICB R45
1180 063001 316 377 377 PUSHTF JSB =I#PU45 SET 377, PUSH 40
1181 063004 236 RTN
1182 063005 *****
1183 063005 007 050 **** NOT ATTRIBUTE TABLE *****
1184 063007 OCT 7,50 *****
1185 063007 316 377 377 NOT. JSB =ONEROI *****
1186 063012 *GENERAL "LOGICAL IF 45 ZERO GO TO TRUE"
1187 063012 145 221 L45ZT TSM R45 *****
1188 063014 367 360 JZR TRUE. JIF FALSE MAKE TRUE
1189 063016 145 223 FALSE. CLM R45 ANSWER IS INTEGER 0
1190 063020 360 357 JMP PUSHTF PUSH IT
1191 063022 *****
1192 063022 **** OR ATTRIBUTE TABLE *****
1193 063022 002 051 OCT 2,51 *****
1194 063024 *****
1195 063024 316 377 377 OR. JSB =TWOROI GET X,Y
1196 063027 155 221 TSM R55 CHECK X
1197 063031 266 343 JNZ TRUE. JIF ONE FALSE (ALL FALSE)
1198 063033 360 335 JMP L45ZF IF R45 ZERO, FALSE
1199 063035 *****
1200 063035 **** EXOR ATTRIBUTE TABLE *****
1201 063035 002 051 OCT 2,51 *****
1202 063037 *****
1203 063037 316 377 377 EXOR. JSB =TWOROI GET X,Y
1204 063042 155 221 TSM R55 CHECK X
1205 063044 367 324 JZR L45ZF IF R55=0, R45 ZERO IS F
1206 063046 360 342 JMP L45ZT R55#0,R45 ZERO IS T
  
```

```

>>>> BINARY PROGRAM <<<<<<<<
1. ) 063050 *****B.P. ATTRIBUTE TABLE*****
1209 063050 214 OCT 214
1210 063051 *****
1211 063051 230 BP:GO BIN FOR ADDS
1212 063052 122 270 311 LDBI R22,=PTR1- GET BPGM#
1212 063055 377
1213 063056 316 377 377 JSB =FBPGM FIND BIN PRGM
1214 063061 130 223 CLM R30
1215 063063 270 311 377 LDBI R30,=PTR1- GET TOKEN
1216 063066 134 251 070 LDMD R34,=BINTAB GET BASE ADDRESS
1216 063071 210
1217 063072 036 243 STM R34,R36 ALSO TO R36
1218 063074 313 030 000 ADM R34,=30,0 POINT TO POINTERS
1219 063077 132 034 341 FOMD R32,+R34 GET "BASE ADDRESS"
1220 063102 036 301 CMM R32,R36 IS IT CORRECT?
1221 063104 266 013 JNZ 5FERR MISSING B.P.
1222 063106 034 341 FOMD R32,+R34 GET RUNTIME BASE
1223 063110 030 303 ADM R32,R30 ADD TOKEN NUMBER
1224 063112 303 ADM R32,R30 TWICE
1225 063113 032 245 LDMD R32,R32 GET RUNTIME ADDRESS
1226 063115 306 000 000 JSB X32,ZRO GO THERE
1227 063120 236 RTN DONE
1228 063121 316 377 377 5FERR JSB =ERROR+ BIN PRGM MISSING
1229 063124 062 OCT 500
  
```

| >>>> BASIC STATEMENT TOKENS | | | | | <<<<<<<< | |
|-----------------------------|--------|-------------|--------|------------------|--------------------|----------------|
| 1231 | 063125 | | ASCII3 | ESS 0 | ASCII SYSTEM TABLE | |
| 1232 | 063125 | 272 | LTHEN | OCT 272 | 45 | : |
| 1233 | 063126 | 246 | | OCT 246 | 46 | & |
| 1234 | 063127 | 273 | | OCT 273 | 47 | : |
| 1235 | 063130 | 250 | | OCT 250 | 50 | < |
| 1236 | 063131 | 251 | | OCT 251 | 51 |) |
| 1237 | 063132 | 252 | | OCT 252 | 52 | * |
| 1238 | 063133 | 253 | | OCT 253 | 53 | + |
| 1239 | 063134 | 254 | | OCT 254 | 54 | , |
| 1240 | 063135 | 255 | | OCT 255 | 55 | - DIADIC |
| 1241 | 063136 | 256 | | OCT 256 | 56 | . |
| 1242 | 063137 | 257 | | OCT 257 | 57 | / |
| 1243 | 063140 | 336 | | OCT 336 | 60 | ^ |
| 1244 | 063141 | 243 | | OCT 243 | 61 | # |
| 1245 | 063142 | 040 074 275 | | OCT 40,74,275 | 62 | <= |
| 1246 | 063145 | 040 076 275 | | OCT 40,76,275 | 63 | >= |
| 1247 | 063150 | 040 074 276 | | OCT 40,74,276 | 64 | <> |
| 1248 | 063153 | 275 | | OCT 275 | 65 | = |
| 1249 | 063154 | 276 | | OCT 276 | 66 | > |
| 1250 | 063155 | 274 | | OCT 274 | 67 | < |
| 1251 | 063156 | 255 | | OCT 255 | 70 | - MONADIC |
| 1252 | 063157 | 243 | | OCT 243 | 71 | # |
| 1253 | 063160 | 074 275 | | OCT 74,275 | 72 | <= |
| 1254 | 063162 | 076 275 | | OCT 76,275 | 73 | >= |
| 1255 | 063164 | 074 276 | | OCT 74,276 | 74 | <> |
| 1256 | 063166 | 275 | | OCT 275 | 75 | = |
| 1257 | 063167 | 276 | | OCT 276 | 76 | > |
| 1258 | 063170 | 274 | | OCT 274 | 77 | < |
| 1259 | 063171 | 100 | | OCT 100 | 100 | @ |
| 1260 | 063172 | 240 | | OCT 240 | | TRAILING BLANK |
| 1261 | 063173 | 117 116 040 | | ASP 8,ON ERROR | | 101 ON ERROR |
| 1261 | 063176 | 105 122 122 | | | | |
| 1261 | 063201 | 117 322 | | | | |
| 1262 | 063203 | 117 106 106 | | ASP 11,OFF ERROR | 102 | |
| 1262 | 063206 | 040 105 122 | | | | |
| 1262 | 063211 | 122 117 | | | | |
| 1263 | 063213 | 322 | | | | |
| 1264 | 063214 | 117 116 040 | | ASP 7,ON KEY# | 103 | |
| 1264 | 063217 | 113 105 131 | | | | |
| 1264 | 063222 | 243 | | | | |
| 1265 | 063223 | 117 106 106 | | ASP 8,OFF KEY# | 104 | |
| 1265 | 063226 | 040 113 105 | | | | |
| 1265 | 063231 | 131 243 | | | | |
| 1266 | 063233 | 101 125 124 | | ASP 4,AUTO | 105 | |
| 1266 | 063236 | 317 | | | | |
| 1267 | 063237 | 102 105 105 | | ASP 4,BEEP | 106 | |
| 1267 | 063242 | 320 | | | | |
| 1268 | 063243 | 103 114 105 | | ASP 5,CLEAR | 107 | |
| 1268 | 063246 | 101 322 | | | | |
| 1269 | 063250 | 103 117 116 | | ASP 4,CONT | 110 | |
| 1269 | 063253 | 324 | | | | |
| 1270 | 063254 | 117 116 040 | | ASP 11,ON TIMER# | 111 | |
| 1270 | 063257 | 124 111 115 | | | | |

| >>>>> | | BASIC STATEMENT TOKENS | | | | <<<<<<<< | |
|-------|--------|------------------------|-----|-----|-------------------|----------|--|
| 1. | 063262 | 105 | 122 | | | | |
| 1271 | 063264 | 243 | | | | | |
| 1272 | 063265 | 111 | 116 | 111 | ASP 4,INIT | 112 | |
| 1272 | 063270 | 324 | | | | | |
| 1273 | 063271 | 114 | 111 | 123 | ASP 4,LIST | 113 | |
| 1273 | 063274 | 324 | | | | | |
| 1274 | 063275 | 102 | 120 | 114 | ASP 5,BPLOT | 114 | |
| 1274 | 063300 | 117 | 324 | | | | |
| 1275 | 063302 | 123 | 105 | 124 | ASP 7,SETTIME | 115 | |
| 1275 | 063305 | 124 | 111 | 115 | | | |
| 1275 | 063310 | 305 | | | | | |
| 1276 | 063311 | 103 | 110 | 101 | ASP 5,CHAIN | 116 | |
| 1276 | 063314 | 111 | 316 | | | | |
| 1277 | 063316 | 123 | 105 | 103 | ASP 6,SECURE | 117 | |
| 1277 | 063321 | 125 | 122 | 305 | | | |
| 1278 | 063324 | 122 | 105 | 101 | ASP 5,READ# | 120 | |
| 1278 | 063327 | 104 | 243 | | | | |
| 1279 | 063331 | 122 | 105 | 116 | ASP 6,RENAME | 121 | |
| 1279 | 063334 | 101 | 115 | 305 | | | |
| 1280 | 063337 | 101 | 114 | 120 | ASP 5,ALPHA | 122 | |
| 1280 | 063342 | 110 | 301 | | | | |
| 1281 | 063344 | 103 | 122 | 124 | ASP 6,CRT IS | 123 | |
| 1281 | 063347 | 040 | 111 | 323 | | | |
| 1282 | 063352 | 122 | 125 | 316 | ASP 3,RUN | 124 | |
| 1283 | 063355 | 104 | 105 | 307 | ASP 3,DEG | 125 | |
| 1284 | 063360 | 104 | 111 | 123 | ASP 4,DISP | 126 | |
| 1284 | 063363 | 320 | | | | | |
| 1285 | 063364 | 107 | 103 | 114 | ASP 6,GCLEAR | 127 | |
| 1285 | 063367 | 105 | 101 | 322 | | | |
| 1286 | 063372 | 123 | 103 | 122 | ASP 7,SCRATCH | 130 | |
| 1286 | 063375 | 101 | 124 | 103 | | | |
| 1286 | 063400 | 310 | | | | | |
| 1287 | 063401 | 104 | 105 | 106 | ASP 12,DEFAULT ON | 131 | |
| 1287 | 063404 | 101 | 125 | 114 | | | |
| 1287 | 063407 | 124 | 040 | | | | |
| 1288 | 063411 | 117 | 316 | | | | |
| 1289 | 063413 | 107 | 117 | 124 | ASP 4,GOTO | 132 | |
| 1289 | 063416 | 317 | | | | | |
| 1290 | 063417 | 107 | 117 | 123 | ASP 5,GOSUB | 133 | |
| 1290 | 063422 | 125 | 302 | | | | |
| 1291 | 063424 | 120 | 122 | 111 | ASP 6,PRINT# | 134 | |
| 1291 | 063427 | 116 | 124 | 243 | | | |
| 1292 | 063432 | 107 | 122 | 101 | ASP 4,GRAD | 135 | |
| 1292 | 063435 | 304 | | | | | |
| 1293 | 063436 | 107 | 122 | 101 | ASP 5,GRAPH | 136 | |
| 1293 | 063441 | 120 | 310 | | | | |
| 1294 | 063443 | 111 | 116 | 120 | ASP 5,INPUT | 137 | |
| 1294 | 063446 | 125 | 324 | | | | |
| 1295 | 063450 | 111 | 104 | 122 | ASP 5,IDRAW | 140 | |
| 1295 | 063453 | 101 | 327 | | | | |
| 1296 | 063455 | 114 | 105 | 124 | ASP 6,LET FN | 141 | |
| 1296 | 063460 | 040 | 106 | 316 | | | |
| 1297 | 063463 | 114 | 105 | 324 | ASP 3,LET | 142 | |

| | | | | BASIC STATEMENT TOKENS | | |
|------|--------|-------------|--|------------------------|-----|--------|
| 1298 | 063466 | 120 122 111 | | ASP 11,PRINT ALL | 143 | ←←←←←← |
| 1298 | 063471 | 116 124 040 | | | | |
| 1298 | 063474 | 101 114 | | | | |
| 1299 | 063476 | 314 | | | | |
| 1300 | 063477 | 103 101 324 | | ASP 3,CAT | 144 | |
| 1301 | 063502 | 104 122 101 | | ASP 4,DRAW | 145 | |
| 1301 | 063505 | 327 | | | | |
| 1302 | 063506 | 117 316 | | ASP 2,ON | 146 | |
| 1303 | 063510 | 114 101 102 | | ASP 5,LABEL | 147 | |
| 1303 | 063513 | 105 314 | | | | |
| 1304 | 063515 | 127 101 111 | | ASP 4,WAIT | 150 | |
| 1304 | 063520 | 324 | | | | |
| 1305 | 063521 | 120 114 117 | | ASP 4,PLOT | 151 | |
| 1305 | 063524 | 324 | | | | |
| 1306 | 063525 | 120 122 111 | | ASP 12,PRINTER IS | 152 | |
| 1306 | 063530 | 116 124 105 | | | | |
| 1306 | 063533 | 122 040 | | | | |
| 1307 | 063535 | 111 323 | | | | |
| 1308 | 063537 | 120 122 111 | | ASP 5,PRINT | 153 | |
| 1308 | 063542 | 116 324 | | | | |
| 1309 | 063544 | 122 101 304 | | ASP 3,RAD | 154 | |
| 1310 | 063547 | 122 101 116 | | ASP 11,RANDOMIZE | 155 | |
| 1310 | 063552 | 104 117 115 | | | | |
| 1310 | 063555 | 111 132 | | | | |
| 1311 | 063557 | 305 | | | | |
| 1312 | 063560 | 122 105 101 | | ASP 4,READ | 156 | |
| 1312 | 063563 | 304 | | | | |
| 1313 | 063564 | 123 124 117 | | ASP 8,STOREBIN | 157 | |
| 1313 | 063567 | 122 105 102 | | | | |
| 1313 | 063572 | 111 316 | | | | |
| 1314 | 063574 | 122 105 123 | | ASP 7,RESTORE | 160 | |
| 1314 | 063577 | 124 117 122 | | | | |
| 1314 | 063602 | 305 | | | | |
| 1315 | 063603 | 122 105 124 | | ASP 6,RETURN | 161 | |
| 1315 | 063606 | 125 122 316 | | | | |
| 1316 | 063611 | 117 106 106 | | ASP 12,OFF TIMER# | 162 | |
| 1316 | 063614 | 040 124 111 | | | | |
| 1317 | 063617 | 115 105 | | | | |
| 1317 | 063621 | 122 243 | | | | |
| 1318 | 063623 | 115 117 126 | | ASP 4,MOVE | 163 | |
| 1318 | 063626 | 305 | | | | |
| 1319 | 063627 | 106 114 111 | | ASP 4,FLIP | 164 | |
| 1319 | 063632 | 320 | | | | |
| 1320 | 063633 | 123 124 117 | | ASP 4,STOP | 165 | |
| 1320 | 063636 | 320 | | | | |
| 1321 | 063637 | 123 124 117 | | ASP 5,STORE | 166 | |
| 1321 | 063642 | 122 305 | | | | |
| 1322 | 063644 | 120 105 116 | | ASP 5,PENUP | 167 | |
| 1322 | 063647 | 125 320 | | | | |
| 1323 | 063651 | 124 122 101 | | ASP 11,TRACE VAR | 170 | |
| 1323 | 063654 | 103 105 040 | | | | |
| 1323 | 063657 | 126 101 | | | | |
| 1324 | 063661 | 322 | | | | |

| >>>>>> | | BASIC STATEMENT TOKENS | | <<<<<<< | |
|--------|--------|------------------------|--------------------|---------|------|
| 1 | 063662 | 124 122 101 | ASP 11,TRACE ALL | 171 | |
| 1325 | 063665 | 103 105 040 | | | |
| 1325 | 063670 | 101 114 | | | |
| 1326 | 063672 | 314 | | | |
| 1327 | 063673 | 130 101 130 | ASP 5,XAXIS | 172 | |
| 1327 | 063676 | 111 323 | | | |
| 1328 | 063700 | 131 101 130 | ASP 5,YAXIS | 173 | |
| 1328 | 063703 | 111 323 | | | |
| 1329 | 063705 | 103 117 120 | ASP 4,COPY | 174 | |
| 1329 | 063710 | 331 | | | |
| 1330 | 063711 | 116 117 122 | ASP 6,NORMAL | 175 | |
| 1330 | 063714 | 115 101 314 | | | |
| 1331 | 063717 | 105 122 101 | ASP 11,ERASETAPE | 176 | |
| 1331 | 063722 | 123 105 124 | | | |
| 1331 | 063725 | 101 120 | | | |
| 1332 | 063727 | 305 | | | |
| 1333 | 063730 | 111 116 124 | ASP 7,INTEGER | 177 | |
| 1333 | 063733 | 105 107 105 | | | |
| 1333 | 063736 | 322 | | | |
| 1334 | 063737 | 123 110 117 | ASP 5,SHORT | 200 | |
| 1334 | 063742 | 122 324 | | | |
| 1335 | 063744 | 104 105 114 | ASP 6,DELETE | 201 | |
| 1335 | 063747 | 105 124 305 | | | |
| 1336 | 063752 | 123 103 101 | ASP 5,SCALE | 202 | |
| 1336 | 063755 | 114 305 | | | |
| 1337 | 063757 | 122 105 315 | ASP 3,REM | 203 | |
| 1337 | 063762 | 117 120 124 | ASP 13,OPTION BASE | 204 | |
| 1338 | 063765 | 111 117 116 | | | |
| 1338 | 063770 | 040 102 | | | |
| 1339 | 063772 | 101 123 305 | | | |
| 1340 | 063775 | 103 117 315 | ASP 3,COM | 205 | |
| 1341 | 064000 | 104 101 124 | ASP 4,DATA | 206 | |
| 1341 | 064003 | 301 | | | |
| 1342 | 064004 | 104 105 106 | ASP 6,DEF FN | 207 | |
| 1342 | 064007 | 040 106 316 | | | |
| 1343 | 064012 | 104 111 315 | ASP 3,DIM | 210 | |
| 1343 | 064015 | 113 105 131 | ASP 11,KEY LABEL | 211 | |
| 1344 | 064020 | 040 114 101 | | | |
| 1344 | 064023 | 102 105 | | | |
| 1345 | 064025 | 314 | | | |
| 1346 | 064026 | 105 116 304 | ASP 3,END | 212 | |
| 1347 | 064031 | 106 116 040 | ASP 6,FN END | 213 | |
| 1347 | 064034 | 105 116 304 | | | |
| 1348 | 064037 | 106 117 322 | ASP 3,FOR | 214 | |
| 1349 | 064042 | 111 306 | ASP 2,IF | 215 | |
| 1350 | 064044 | 111 115 101 | ASP 5,IMAGE | 216 | |
| 1350 | 064047 | 107 305 | | | |
| 1351 | 064051 | 116 105 130 | ASP 4,NEXT | 217 | |
| 1351 | 064054 | 324 | | | |
| 1352 | 064055 | 125 116 123 | ASP 10,UNSECURE | 220 | |
| 1352 | 064060 | 105 103 125 | | | |
| 1352 | 064063 | 122 305 | | | |
| 1352 | 064065 | 200 | OCT 200 | 221 | ILET |

| BASIC STATEMENT TOKENS | | | | | |)))))) |
|------------------------|--------|-----|-----|-----|--------------------|--------|
| 1354 | 064066 | 101 | 123 | 123 | ASP 7,ASSIGN# | 222 |
| 1354 | 064071 | 111 | 107 | 116 | | |
| 1354 | 064074 | 243 | | | | |
| 1355 | 064075 | 103 | 122 | 105 | ASP 6,CREATE | 223 |
| 1355 | 064100 | 101 | 124 | 305 | | |
| 1356 | 064103 | 120 | 125 | 122 | ASP 5,PURGE | 224 |
| 1356 | 064106 | 107 | 305 | | | |
| 1357 | 064110 | 122 | 105 | 127 | ASP 6,REWIND | 225 |
| 1357 | 064113 | 111 | 116 | 304 | | |
| 1358 | 064116 | 114 | 117 | 101 | ASP 7,LOADBIN | 226 |
| 1358 | 064121 | 104 | 102 | 111 | | |
| 1358 | 064124 | 316 | | | | |
| 1359 | 064125 | 120 | 101 | 125 | ASP 5,PAUSE | 227 |
| 1359 | 064130 | 123 | 305 | | | |
| 1360 | 064132 | 114 | 117 | 101 | ASP 4,LOAD | 230 |
| 1360 | 064135 | 304 | | | | |
| 1361 | 064136 | 122 | 105 | 101 | ASP 4,REAL | 231 |
| 1361 | 064141 | 314 | | | | |
| 1362 | 064142 | 122 | 105 | 316 | ASP 3,REN | 232 |
| 1363 | 064145 | 241 | | | OCT 241 | 233 |
| 1364 | 064146 | 104 | 105 | 106 | ASP 13,DEFAULT OFF | 234 |
| 1364 | 064151 | 101 | 125 | 114 | | |
| 1364 | 064154 | 124 | 040 | | | |
| 1365 | 064156 | 117 | 106 | 306 | | |
| 1366 | 064161 | 120 | 105 | 316 | ASP 3,PEN | 235 |
| 1367 | 064164 | 120 | 114 | 111 | ASP 5,PLIST | 236 |
| 1367 | 064167 | 123 | 324 | | | |
| 1368 | 064171 | 114 | 104 | 111 | ASP 4,LDIR | 237 |
| 1368 | 064174 | 322 | | | | |
| 1369 | 064175 | 111 | 115 | 117 | ASP 5,IMOVE | 240 |
| 1369 | 064200 | 126 | 305 | | | |
| 1370 | 064202 | 106 | 316 | | ASP 2,FN | 241 |
| 1371 | 064204 | 103 | 124 | 101 | ASP 5,CTAPE | 242 |
| 1371 | 064207 | 120 | 305 | | | |
| 1372 | 064211 | 124 | 122 | 101 | ASP 5,TRACE | 243 |
| 1372 | 064214 | 103 | 305 | | | |
| 1373 | 064216 | 124 | 317 | | ASP 2,TO | 244 |
| 1373 | 064220 | 040 | 117 | 322 | ASP " OR" | 245 |
| 1375 | 064223 | 115 | 101 | 330 | ASP 3,MAX | 246 |
| 1376 | 064226 | 124 | 111 | 115 | ASP 4,TIME | 247 |
| 1376 | 064231 | 305 | | | | |
| 1377 | 064232 | 104 | 101 | 124 | ASP 4,DATE | 250 |
| 1377 | 064235 | 305 | | | | |
| 1378 | 064236 | 106 | 320 | | ASP 2,FP | 251 |
| 1379 | 064240 | 111 | 320 | | ASP 2,IP | 252 |
| 1380 | 064242 | 105 | 120 | 323 | ASP 3,EPS | 253 |
| 1381 | 064245 | 122 | 115 | 304 | ASP 3,RND | 254 |
| 1382 | 064250 | 103 | 105 | 111 | ASP 4,CEIL | 255 |
| 1382 | 064253 | 314 | | | | |
| 1383 | 064254 | 101 | 124 | 116 | ASP 4,ATN2 | 256 |
| 1383 | 064257 | 262 | | | | |
| 1384 | 064260 | 200 | | | OCT 200 | 257 |
| 1385 | 064261 | 123 | 121 | 322 | ASP 3,SQR | 260 |

REMAINDER

| >>>> | | BASIC STATEMENT TOKENS | | | | <<<<<<<< | |
|------|--------|------------------------|-----|-----|--------------|----------|----------|
| 1387 | 064264 | 115 | 111 | 316 | ASP 3,MIN | 261 | |
| 1387 | 064267 | 107 | 117 | 124 | ASP 4,GOTO | 262 | |
| 1388 | 064273 | 101 | 102 | 323 | ASP 3,ABS | 263 | |
| 1389 | 064276 | 101 | 103 | 323 | ASP 3,ACS | 264 | |
| 1390 | 064301 | 101 | 123 | 316 | ASP 3,ASN | 265 | |
| 1391 | 064304 | 101 | 124 | 316 | ASP 3,ATN | 266 | |
| 1392 | 064307 | 123 | 107 | 316 | ASP 3,SGN | 267 | |
| 1393 | 064312 | 107 | 117 | 123 | ASP 5,GOSUB | 270 | |
| 1393 | 064315 | 125 | 302 | | | | |
| 1394 | 064317 | 103 | 117 | 324 | ASP 3,COT | 271 | |
| 1395 | 064322 | 103 | 123 | 303 | ASP 3,CSC | 272 | COSECANT |
| 1396 | 064325 | 200 | | | OCT 200 | 273 | |
| 1397 | 064326 | 105 | 130 | 320 | ASP 3,EXP | 274 | |
| 1398 | 064331 | 111 | 116 | 324 | ASP 3,INT | 275 | |
| 1399 | 064334 | 114 | 107 | 324 | ASP 3,LGT | 276 | |
| 1400 | 064337 | 114 | 117 | 307 | ASP 3,LOG | 277 | |
| 1401 | 064342 | 200 | | | OCT 200 | 300 | |
| 1402 | 064343 | 123 | 105 | 303 | ASP 3,SEC | 301 | |
| 1403 | 064346 | 103 | 110 | 122 | ASP 4,CHR# | 302 | |
| 1403 | 064351 | 244 | | | | | |
| 1404 | 064352 | 126 | 101 | 114 | ASP 4,VAL# | 303 | |
| 1404 | 064355 | 244 | | | | | |
| 1405 | 064356 | 114 | 105 | 316 | ASP 3,LEN | 304 | |
| 1406 | 064361 | 116 | 125 | 315 | ASP 3,NUM | 305 | |
| 1407 | 064364 | 126 | 101 | 314 | ASP 3,VAL | 306 | |
| 1408 | 064367 | 111 | 116 | 306 | ASP 3,INF | 307 | |
| 1409 | 064372 | 122 | 116 | 304 | ASP 3,RND | 310 | |
| 1410 | 064375 | 120 | 311 | | ASP 2,PI | 311 | |
| 1411 | 064377 | 125 | 120 | 103 | ASP 4,UPC# | 312 | |
| 1411 | 064402 | 244 | | | | | |
| 1412 | 064403 | 125 | 123 | 111 | ASP 5,USING | 313 | |
| 1412 | 064406 | 116 | 307 | | | | |
| 1413 | 064410 | 124 | 110 | 105 | ASP 4,THEN | 314 | |
| 1413 | 064413 | 316 | | | | | |
| 1414 | 064414 | 124 | 101 | 302 | ASP 3,TAB | 315 | |
| 1415 | 064417 | 123 | 124 | 105 | ASP 4,STEP | 316 | |
| 1416 | 064422 | 320 | | | | | |
| 1416 | 064423 | 140 | 105 | 130 | ASP " EXOR " | 317 | |
| 1416 | 064426 | 117 | 322 | | | | |
| 1417 | 064430 | 116 | 117 | 324 | ASP "NOT" | 320 | |
| 1418 | 064433 | 140 | 104 | 111 | ASP " DIV " | 321 | |
| 1418 | 064436 | 326 | | | | | |
| 1419 | 064437 | 105 | 122 | 122 | ASP 4,ERR# | 322 | |
| 1419 | 064442 | 316 | | | | | |
| 1420 | 064443 | 105 | 122 | 122 | ASP 4,ERRL | 323 | |
| 1420 | 064446 | 314 | | | | | |
| 1421 | 064447 | 200 | | | OCT 200 | 324 | |
| 1422 | 064450 | 140 | 101 | 116 | ASP " AND " | 325 | |
| 1422 | 064453 | 304 | | | | | |
| 1423 | 064454 | 140 | 115 | 117 | ASP " MOD " | 326 | |
| 1423 | 064457 | 304 | | | | | |
| 1424 | 064460 | 105 | 114 | 123 | ASP 4,ELSE | 327 | |

>>>> BASIC STATEMENT TOKENS

<<<<<<<<

| | | | | | | | | | |
|------|--------|-----|-----|-----|-------------|--|--|-----|--------------|
| 1424 | 064463 | 305 | | | | | | | |
| 1425 | 064464 | 123 | 111 | 316 | ASP 3,SIN | | | 330 | |
| 1426 | 064467 | 103 | 117 | 323 | ASP 3,COS | | | 331 | |
| 1427 | 064472 | 124 | 101 | 316 | ASP 3,TAN | | | 332 | |
| 1428 | 064475 | 124 | 317 | | ASP 2,T0 | | | 333 | |
| 1429 | 064477 | 200 | | | OCT 200 | | | 334 | |
| 1430 | 064500 | 200 | | | OCT 200 | | | 335 | |
| 1431 | 064501 | 333 | | | OCT 333 | | | 336 | [|
| 1432 | 064502 | 335 | | | OCT 335 | | | 337 |] |
| 1433 | 064503 | 334 | | | OCT 334 | | | 340 | \ |
| 1434 | 064504 | 120 | 117 | 323 | ASP 3,POS | | | 341 | POS |
| 1435 | 064507 | 122 | 124 | 304 | ASP 3,RTD | | | 342 | RTD |
| 1436 | 064512 | 104 | 124 | 322 | ASP 3,DTR | | | 343 | DTR |
| 1437 | 064515 | 106 | 114 | 117 | ASP 5,FLOOR | | | 344 | FLOOR |
| 1437 | 064520 | 117 | 322 | | | | | | |
| 1438 | 064522 | 200 | | | OCT 200 | | | 345 | |
| 1439 | 064523 | 377 | | | OCT 377 | | | | END OF TABLE |

>>>> ALPHABET WITH PARITY <<<<<<<<

| | | | |
|------|--------|---|---------|
| 1441 | 064524 | A | EQU 301 |
| 1442 | 064524 | B | EQU 302 |
| 1443 | 064524 | C | EQU 303 |
| 1444 | 064524 | D | EQU 304 |
| 1445 | 064524 | E | EQU 305 |
| 1446 | 064524 | F | EQU 306 |
| 1447 | 064524 | G | EQU 307 |
| 1448 | 064524 | H | EQU 310 |
| 1449 | 064524 | I | EQU 311 |
| 1450 | 064524 | J | EQU 312 |
| 1451 | 064524 | K | EQU 313 |
| 1452 | 064524 | L | EQU 314 |
| 1453 | 064524 | M | EQU 315 |
| 1454 | 064524 | N | EQU 316 |
| 1455 | 064524 | O | EQU 317 |
| 1456 | 064524 | P | EQU 320 |
| 1457 | 064524 | Q | EQU 321 |
| 1458 | 064524 | R | EQU 322 |
| 1459 | 064524 | S | EQU 323 |
| 1460 | 064524 | T | EQU 324 |
| 1461 | 064524 | U | EQU 325 |
| 1462 | 064524 | V | EQU 326 |
| 1463 | 064524 | W | EQU 327 |
| 1464 | 064524 | X | EQU 330 |
| 1465 | 064524 | Y | EQU 331 |
| 1466 | 064524 | Z | EQU 332 |

| >>>> | | ERROR MESSAGES | | | | <<<<<<<< | |
|------|--------|----------------|-----|-----|--------------------------|----------|-------|
| 1497 | 064716 | 040 | 102 | 105 | | | |
| 1497 | 064721 | 106 | 117 | 122 | | | |
| 1497 | 064724 | 105 | 040 | | | | |
| 1498 | 064726 | 122 | 125 | 316 | | | |
| 1499 | 064731 | 106 | 117 | 122 | ASP 13, FOR NESTING | | 17 |
| 1499 | 064734 | 040 | 116 | 105 | | | |
| 1499 | 064737 | 123 | 124 | | | | |
| 1500 | 064741 | 111 | 116 | 307 | | | |
| 1501 | 064744 | 107 | 117 | 123 | ASP 15, GOSUB NESTING | | 18 |
| 1501 | 064747 | 125 | 102 | 040 | | | |
| 1501 | 064752 | 116 | 105 | | | | |
| 1502 | 064754 | 123 | 124 | 111 | | | |
| 1502 | 064757 | 116 | 307 | | | | |
| 1503 | 064761 | 115 | 105 | 115 | ASP 7, MEM OVF | | 19 |
| 1503 | 064764 | 040 | 117 | 126 | | | |
| 1503 | 064767 | 306 | | | | | |
| 1504 | 064770 | 117 | 125 | 124 | ASP 14, OUT OF PAPER | | 20 |
| 1504 | 064773 | 040 | 117 | 106 | | | |
| 1504 | 064776 | 040 | 120 | | | | |
| 1505 | 065000 | 101 | 120 | 105 | | | |
| 1505 | 065003 | 322 | | | | | |
| 1506 | 065004 | 122 | 117 | 115 | ASP 13, ROM MISSING | | 21 |
| 1506 | 065007 | 040 | 115 | 111 | | | |
| 1506 | 065012 | 123 | 123 | | | | |
| 1507 | 065014 | 111 | 116 | 307 | | | |
| 1508 | 065017 | 123 | 105 | 103 | ASP 7, SECURED | | 22 |
| 1509 | 065022 | 125 | 122 | 105 | | | |
| 1509 | 065025 | 304 | | | | | |
| 1509 | 065026 | 123 | 105 | 114 | ASP 11, SELF TEST | | 23 |
| 1509 | 065031 | 106 | 040 | 124 | | | |
| 1509 | 065034 | 105 | 123 | | | | |
| 1510 | 065036 | 324 | | | | | |
| 1511 | 065037 | 115 | 117 | 104 | ASP 4, MODE | | 24 |
| 1511 | 065042 | 305 | | | | | |
| 1512 | 065043 | 102 | 101 | 104 | ASP 14, BAD BIN LOAD | | 25 |
| 1512 | 065046 | 040 | 102 | 111 | | | |
| 1512 | 065051 | 116 | 040 | | | | |
| 1513 | 065053 | 114 | 117 | 101 | | | |
| 1513 | 065056 | 304 | | | | | |
| 1514 | 065057 | 123 | 124 | 101 | ASP "STACK OVFL" | | 26 |
| 1514 | 065062 | 103 | 113 | 040 | | | |
| 1514 | 065065 | 117 | 126 | | | | |
| 1515 | 065067 | 106 | 314 | | | | |
| 1516 | 065071 | 070 | 065 | 040 | ASP "85 ROM IGNORED" | | 27 |
| 1516 | 065074 | 122 | 117 | 115 | | | |
| 1516 | 065077 | 040 | 111 | | | | |
| 1517 | 065101 | 107 | 116 | 117 | | | |
| 1517 | 065104 | 122 | 105 | 304 | | | |
| 1518 | 065107 | 200 | | | OCT 200 | 28 | DUMMY |
| 1519 | 065110 | 200 | | | OCT 200 | 29 | DUMMY |
| 1520 | 065111 | | | | *****PROGRAM ERRORS***** | | |
| 1521 | 065111 | 117 | 120 | 124 | ASP 13, OPTION BASE | | 30 |
| 1521 | 065114 | 111 | 117 | 116 | | | |

>>>> ERROR MESSAGES

<<<<<<<<

| | | | | | | | | |
|------|--------|-----|-----|-----|--------------------------|--|--|----|
| 15 | 065117 | 040 | 102 | | | | | |
| 1522 | 065121 | 101 | 123 | 305 | | | | |
| 1523 | 065124 | 103 | 110 | 101 | ASP 5,CHAIN | | | 31 |
| 1523 | 065127 | 111 | 316 | | | | | |
| 1524 | 065131 | 103 | 117 | 115 | ASP 14,COM MISMATCH | | | 32 |
| 1524 | 065134 | 040 | 115 | 111 | | | | |
| 1524 | 065137 | 123 | 115 | | | | | |
| 1525 | 065141 | 101 | 124 | 103 | | | | |
| 1525 | 065144 | 310 | | | | | | |
| 1526 | 065145 | 104 | 101 | 124 | ASP 11,DATA TYPE | | | 33 |
| 1526 | 065150 | 101 | 040 | 124 | | | | |
| 1526 | 065153 | 131 | 120 | | | | | |
| 1527 | 065155 | 305 | | | | | | |
| 1528 | 065156 | 116 | 117 | 040 | ASP 7,NO DATA | | | 34 |
| 1528 | 065161 | 104 | 101 | 124 | | | | |
| 1528 | 065164 | 301 | | | | | | |
| 1529 | 065165 | 104 | 111 | 115 | ASP 16,DIM EXIST VRBL | | | 35 |
| 1529 | 065170 | 040 | 105 | 130 | | | | |
| 1529 | 065173 | 111 | 123 | | | | | |
| 1529 | 065175 | 124 | 040 | 126 | | | | |
| 1530 | 065200 | 122 | 102 | 314 | | | | |
| 1531 | 065203 | 104 | 111 | 115 | ASP 13,DIM ILLEGAL | | | 36 |
| 1531 | 065206 | 040 | 111 | 114 | | | | |
| 1531 | 065211 | 114 | 105 | | | | | |
| 1532 | 065213 | 107 | 101 | 314 | | | | |
| 1533 | 065216 | 104 | 125 | 120 | ASP 6,DUP FN | | | 37 |
| 1533 | 065221 | 040 | 106 | 316 | | | | |
| 1534 | 065224 | 116 | 117 | 040 | ASP 8,NO FNEND | | | 38 |
| 1534 | 065227 | 106 | 116 | 105 | | | | |
| 1534 | 065232 | 116 | 304 | | | | | |
| 1535 | 065234 | 106 | 116 | 040 | ASP 12,FN MISSING | | | 39 |
| 1535 | 065237 | 115 | 111 | 123 | | | | |
| 1535 | 065242 | 123 | 111 | | | | | |
| 1536 | 065244 | 116 | 307 | | | | | |
| 1537 | 065246 | 106 | 116 | 040 | ASP 8,FN PARAM | | | 40 |
| 1537 | 065251 | 120 | 101 | 122 | | | | |
| 1537 | 065254 | 101 | 315 | | | | | |
| 1537 | 065256 | 106 | 116 | 275 | ASP 3,FN= | | | 41 |
| 1537 | 065261 | 122 | 105 | 103 | ASP 21,RECURSIVE FN CALL | | | 42 |
| 1537 | 065264 | 125 | 122 | 123 | | | | |
| 1539 | 065267 | 111 | 126 | | | | | |
| 1540 | 065271 | 105 | 040 | 106 | | | | |
| 1540 | 065274 | 116 | 040 | 103 | | | | |
| 1540 | 065277 | 101 | 114 | | | | | |
| 1541 | 065301 | 314 | | | | | | |
| 1542 | 065302 | 116 | 125 | 115 | ASP 15,NUMERIC INPUT | | | 43 |
| 1542 | 065305 | 105 | 122 | 111 | | | | |
| 1542 | 065310 | 103 | 040 | | | | | |
| 1543 | 065312 | 111 | 116 | 120 | | | | |
| 1543 | 065315 | 125 | 324 | | | | | |
| 1544 | 065317 | 124 | 117 | 117 | ASP 16,TOO FEW INPUTS | | | 44 |
| 1544 | 065322 | 040 | 106 | 105 | | | | |
| 1544 | 065325 | 127 | 040 | | | | | |

| >>> | | ERROR MESSAGES | | | | <<<<<<<< | |
|------|--------|----------------|-----|-----|-------------------------|----------|--|
| 1545 | 065327 | 111 | 116 | 120 | | | |
| 1546 | 065332 | 125 | 124 | 323 | | | |
| 1546 | 065335 | 124 | 117 | 117 | ASP 17,TOO MANY INPUTS | 45 | |
| 1546 | 065340 | 040 | 115 | 101 | | | |
| 1546 | 065343 | 116 | 131 | | | | |
| 1547 | 065345 | 040 | 111 | 116 | | | |
| 1547 | 065350 | 120 | 125 | 124 | | | |
| 1547 | 065353 | 323 | | | | | |
| 1548 | 065354 | 116 | 105 | 130 | ASP 14,NEXT MISSING | 46 | |
| 1548 | 065357 | 124 | 040 | 115 | | | |
| 1548 | 065362 | 111 | 123 | | | | |
| 1549 | 065364 | 123 | 111 | 116 | | | |
| 1549 | 065367 | 307 | | | | | |
| 1550 | 065370 | 116 | 117 | 040 | ASP 17,NO MATCHING FOR | 47 | |
| 1550 | 065373 | 115 | 101 | 124 | | | |
| 1550 | 065376 | 103 | 110 | | | | |
| 1551 | 065400 | 111 | 116 | 107 | | | |
| 1551 | 065403 | 040 | 106 | 117 | | | |
| 1552 | 065406 | 322 | | | | | |
| 1552 | 065407 | 105 | 116 | 304 | ASP 3,END | 48 | |
| 1553 | 065412 | 116 | 125 | 114 | ASP 11,NULL DATA | 49 | |
| 1553 | 065415 | 114 | 040 | 104 | | | |
| 1553 | 065420 | 101 | 124 | | | | |
| 1554 | 065422 | 301 | | | | | |
| 1555 | 065423 | 102 | 111 | 116 | ASP 15,BIN PROG MISC | 50 | |
| 1555 | 065426 | 040 | 120 | 122 | | | |
| 1555 | 065431 | 117 | 107 | | | | |
| 1556 | 065433 | 040 | 115 | 111 | | | |
| 1556 | 065436 | 123 | 307 | | | | |
| 1557 | 065440 | 122 | 105 | 124 | ASP 20,RETURN W/O GOSUB | 51 | |
| 1557 | 065443 | 125 | 122 | 116 | | | |
| 1557 | 065446 | 040 | 127 | | | | |
| 1558 | 065450 | 057 | 117 | 040 | | | |
| 1558 | 065453 | 107 | 117 | 123 | | | |
| 1558 | 065456 | 125 | 302 | | | | |
| 1559 | 065460 | 111 | 115 | 101 | ASP 5,IMAGE | 52 | |
| 1559 | 065463 | 107 | 305 | | | | |
| 1560 | 065465 | 120 | 122 | 111 | ASP 13,PRINT USING | 53 | |
| 1560 | 065470 | 116 | 124 | 040 | | | |
| 1560 | 065473 | 125 | 123 | | | | |
| 1561 | 065475 | 111 | 116 | 307 | | | |
| 1562 | 065500 | 124 | 101 | 302 | ASP 3,TAB | 54 | |
| 1563 | 065503 | 123 | 125 | 102 | ASP 11,SUBSCRIPT | 55 | |
| 1563 | 065506 | 123 | 103 | 122 | | | |
| 1563 | 065511 | 111 | 120 | | | | |
| 1564 | 065513 | 324 | | | | | |
| 1565 | 065514 | 123 | 124 | 122 | ASP 12,STRING OVF | 56 | |
| 1565 | 065517 | 111 | 116 | 107 | | | |
| 1565 | 065522 | 040 | 117 | | | | |
| 1566 | 065524 | 126 | 306 | | | | |
| 1567 | 065526 | 115 | 111 | 123 | ASP 14,MISSING LINE | 57 | |
| 1567 | 065531 | 123 | 111 | 116 | | | |
| 1577 | 065534 | 107 | 040 | | | | |

| >>>> | | ERROR MESSAGES | | <<<<<<<< | |
|------|--------|----------------|-----|----------|-------------------------|
| 1568 | 065536 | 114 | 111 | 116 | |
| 1568 | 065541 | 305 | | | |
| 1569 | 065542 | 200 | | | OCT 200 58 DUMMY |
| 1570 | 065543 | 200 | | | OCT 200 59 DUMMY |
| 1571 | 065544 | | | | *****TAPE ERRORS***** |
| 1572 | 065544 | 127 | 122 | 111 | ASP 15,WRITE PROTECT 60 |
| 1572 | 065547 | 124 | 105 | 040 | |
| 1572 | 065552 | 120 | 122 | | |
| 1573 | 065554 | 117 | 124 | 105 | |
| 1573 | 065557 | 103 | 324 | | |
| 1574 | 065561 | 076 | 064 | 062 | ASP 11,>42 FILES 61 |
| 1574 | 065564 | 040 | 106 | 111 | |
| 1574 | 065567 | 114 | 105 | | |
| 1575 | 065571 | 323 | | | |
| 1576 | 065572 | 103 | 101 | 122 | ASP 15,CARTRIDGE OUT 62 |
| 1576 | 065575 | 124 | 122 | 111 | |
| 1576 | 065600 | 104 | 107 | | |
| 1577 | 065602 | 105 | 040 | 117 | |
| 1578 | 065605 | 125 | 324 | | |
| 1578 | 065607 | 104 | 125 | 120 | ASP 10,DUP NAME 63 |
| 1578 | 065612 | 040 | 116 | 101 | |
| 1578 | 065615 | 115 | 305 | | |
| 1579 | 065617 | 105 | 115 | 120 | ASP 12,EMPTY FILE 64 |
| 1579 | 065622 | 124 | 131 | 040 | |
| 1579 | 065625 | 106 | 111 | | |
| 1580 | 065627 | 114 | 305 | | |
| 1581 | 065631 | 105 | 116 | 104 | ASP 13,END OF TAPE 65 |
| 1581 | 065634 | 040 | 117 | 106 | |
| 1581 | 065637 | 040 | 124 | | |
| 1582 | 065641 | 101 | 120 | 305 | |
| 1583 | 065644 | 106 | 111 | 114 | ASP 13,FILE CLOSED 66 |
| 1583 | 065647 | 105 | 040 | 103 | |
| 1583 | 065652 | 114 | 117 | | |
| 1584 | 065654 | 123 | 105 | 304 | |
| 1585 | 065657 | 106 | 111 | 114 | ASP 11,FILE NAME 67 |
| 1585 | 065662 | 105 | 040 | 116 | |
| 1585 | 065665 | 101 | 115 | | |
| 1587 | 065667 | 305 | | | |
| 1587 | 065670 | 106 | 111 | 114 | ASP 11,FILE TYPE 68 |
| 1587 | 065673 | 105 | 040 | 124 | |
| 1587 | 065676 | 131 | 120 | | |
| 1588 | 065700 | 305 | | | |
| 1589 | 065701 | 122 | 101 | 116 | ASP 12,RANDOM OVF 69 |
| 1589 | 065704 | 104 | 117 | 115 | |
| 1589 | 065707 | 040 | 117 | | |
| 1590 | 065711 | 126 | 306 | | |
| 1591 | 065713 | 122 | 105 | 101 | ASP 4,READ 70 |
| 1591 | 065716 | 304 | | | |
| 1592 | 065717 | 105 | 117 | 306 | ASP 3,EOF 71 |
| 1593 | 065722 | 122 | 105 | 103 | ASP 6,RECORD 72 |
| 1593 | 065725 | 117 | 122 | 304 | |
| 1594 | 065730 | 123 | 105 | 101 | ASP 6,SEARCH 73 |
| 1594 | 065733 | 122 | 103 | 310 | |

| | | ERROR MESSAGES | | | | | |
|------|--------|----------------|-----|-----|---------------------------|----|----------|
| 1595 | 065736 | 123 | 124 | 101 | ASP 5,STALL | 74 | <<<<<<<< |
| 1596 | 065741 | 114 | 314 | | | | |
| 1596 | 065743 | 116 | 117 | 124 | ASP 16,NOT HP-85 FILE | 75 | |
| 1596 | 065746 | 040 | 110 | 120 | | | |
| 1596 | 065751 | 055 | 070 | | | | |
| 1597 | 065753 | 065 | 040 | 106 | | | |
| 1597 | 065756 | 111 | 114 | 305 | | | |
| 1598 | 065761 | 200 | | | OCT 200 | 76 | DUMMY |
| 1599 | 065762 | 200 | | | OCT 200 | 77 | DUMMY |
| 1600 | 065763 | 200 | | | OCT 200 | 78 | DUMMY |
| 1601 | 065764 | 200 | | | OCT 200 | 79 | DUMMY |
| 1602 | 065765 | | | | *****SYNTAX ERRORS***** | | |
| 1603 | 065765 | 051 | 040 | 105 | ASP 12,) EXPECTED | 80 | |
| 1603 | 065770 | 130 | 120 | 105 | | | |
| 1603 | 065773 | 103 | 124 | | | | |
| 1604 | 065775 | 105 | 304 | | | | |
| 1605 | 065777 | 102 | 101 | 104 | ASP 16,BAD EXPRESSION | 81 | |
| 1605 | 066002 | 040 | 105 | 130 | | | |
| 1606 | 066005 | 120 | 122 | | | | |
| 1606 | 066007 | 105 | 123 | 123 | | | |
| 1606 | 066012 | 111 | 117 | 316 | | | |
| 1607 | 066015 | 123 | 124 | 122 | ASP 13,STRING EXPR | 82 | |
| 1607 | 066020 | 111 | 116 | 107 | | | |
| 1607 | 066023 | 040 | 105 | | | | |
| 1608 | 066025 | 130 | 120 | 322 | | | |
| 1609 | 066030 | 042 | 054 | 042 | ASP 13,"," MISSING | 83 | |
| 1610 | 066033 | 040 | 115 | 111 | | | |
| 1610 | 066036 | 123 | 123 | | | | |
| 1610 | 066040 | 111 | 116 | 307 | | | |
| 1611 | 066043 | 105 | 130 | 103 | ASP 14,EXCESS CHARS | 84 | |
| 1611 | 066046 | 105 | 123 | 123 | | | |
| 1611 | 066051 | 040 | 103 | | | | |
| 1612 | 066053 | 110 | 101 | 122 | | | |
| 1612 | 066056 | 323 | | | | | |
| 1613 | 066057 | 105 | 130 | 120 | ASP 14,EXPR TOO BIG | 85 | |
| 1613 | 066062 | 122 | 040 | 124 | | | |
| 1613 | 066065 | 117 | 117 | | | | |
| 1614 | 066067 | 040 | 102 | 111 | | | |
| 1614 | 066072 | 307 | | | | | |
| 1615 | 066073 | 111 | 114 | 114 | ASP 22,ILLEGAL AFTER THEN | 86 | |
| 1615 | 066076 | 105 | 107 | 101 | | | |
| 1615 | 066101 | 114 | 040 | | | | |
| 1616 | 066103 | 101 | 106 | 124 | | | |
| 1616 | 066106 | 105 | 122 | 040 | | | |
| 1616 | 066111 | 124 | 110 | | | | |
| 1617 | 066113 | 105 | 316 | | | | |
| 1618 | 066115 | 102 | 101 | 104 | ASP 7,BAD DIM | 87 | |
| 1618 | 066120 | 040 | 104 | 111 | | | |
| 1618 | 066123 | 315 | | | | | |
| 1619 | 066124 | 102 | 101 | 104 | ASP 10,BAD STMT | 88 | |
| 1619 | 066127 | 040 | 123 | 124 | | | |
| 1619 | 066132 | 115 | 324 | | | | |
| 1620 | 066134 | 111 | 116 | 126 | ASP 15,INVALID PARAM | 89 | |

>>>> ERROR MESSAGES

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| | | | | | | |
|------|--------|-----|-----|-----|----------------------|----|
| 1620 | 066137 | 101 | 114 | 111 | | |
| 1620 | 066142 | 104 | 040 | | | |
| 1621 | 066144 | 120 | 101 | 122 | | |
| 1621 | 066147 | 101 | 315 | | | |
| 1622 | 066151 | 114 | 111 | 116 | ASP 13,LINE >99999 | 90 |
| 1622 | 066154 | 105 | 040 | 076 | | |
| 1622 | 066157 | 071 | 071 | | | |
| 1623 | 066161 | 071 | 071 | 271 | | |
| 1624 | 066164 | 115 | 111 | 123 | ASP 15,MISSING PARAM | 91 |
| 1624 | 066167 | 123 | 111 | 116 | | |
| 1624 | 066172 | 107 | 040 | | | |
| 1625 | 066174 | 120 | 101 | 122 | | |
| 1625 | 066177 | 101 | 315 | | | |
| 1626 | 066201 | 123 | 131 | 116 | ASP 6,SYNTAX | 92 |
| 1626 | 066204 | 124 | 101 | 330 | | |
| 1627 | 066207 | | | | UNL EXTERHALS | |

| >>>> | | EXTERHALS | <<<<<<<< |
|------|---|-----------|------------|
| 1 | 9 | 066207 | EXT ABS5 |
| 1630 | | 066207 | EXT ADDR01 |
| 1631 | | 066207 | EXT ALINI- |
| 1632 | | 066207 | EXT ALPHA. |
| 1633 | | 066207 | EXT ATN2. |
| 1634 | | 066207 | EXT AUTO. |
| 1635 | | 066207 | EXT BEEP. |
| 1636 | | 066207 | EXT BINDR2 |
| 1637 | | 066207 | EXT CALCIN |
| 1638 | | 066207 | EXT CEIL10 |
| 1639 | | 066207 | EXT CHR#. |
| 1640 | | 066207 | EXT CHSROI |
| 1641 | | 066207 | EXT CLEAR |
| 1642 | | 066207 | EXT CLEAR. |
| 1643 | | 066207 | EXT COM |
| 1644 | | 066207 | EXT COMM |
| 1645 | | 066207 | EXT COMMA# |
| 1646 | | 066207 | EXT COMMA. |
| 1647 | | 066207 | EXT COMBIN |
| 1648 | | 066207 | EXT CONCA. |
| 1649 | | 066207 | EXT CONTI. |
| 1650 | | 066207 | EXT COS10 |
| 1651 | | 066207 | EXT COT10 |
| 1652 | | 066207 | EXT CSEC10 |
| 1653 | | 066207 | EXT CUROPT |
| 1654 | | 066207 | EXT D32768 |
| 1655 | | 066207 | EXT DALLOC |
| 1656 | | 066207 | EXT DATA |
| 1657 | | 066207 | EXT DATE. |
| 1658 | | 066207 | EXT DEF |
| 1659 | | 066207 | EXT DEG |
| 1660 | | 066207 | EXT DEG10 |
| 1661 | | 066207 | EXT DELET. |
| 1662 | | 066207 | EXT DIM |
| 1663 | | 066207 | EXT DINAL |
| 1664 | | 066207 | EXT DISP. |
| 1665 | | 066207 | EXT DIV2 |
| 1666 | | 066207 | EXT EJMP# |
| 1667 | | 066207 | EXT EJMPFB |
| 1668 | | 066207 | EXT EPS10 |
| 1669 | | 066207 | EXT EQ#. |
| 1670 | | 066207 | EXT EQUA10 |
| 1671 | | 066207 | EXT ERNUM. |
| 1672 | | 066207 | EXT ERR80 |
| 1673 | | 066207 | EXT ERRL. |
| 1674 | | 066207 | EXT ERROR |
| 1675 | | 066207 | EXT ERROR+ |
| 1676 | | 066207 | EXT EXP5 |
| 1677 | | 066207 | EXT EXT;GO |
| 1678 | | 066207 | EXT FBPGM |
| 1679 | | 066207 | EXT FETAV |
| 1680 | | 066207 | EXT FETAVA |
| 1 | | 066207 | EXT FETSV |

| ITEM | LOC | OBJECT CODE | SRC=COGFR0 | OBJ=GENQF5 | 9/11/1981 | 12:01 PM | PG 49 |
|------|--------|-------------|------------|------------|-----------|----------|----------|
| >>>> | | EXTERNALS | | | | | <<<<<<<< |
| 1682 | 066207 | EXT FETSYA | | | | | |
| 1683 | 066207 | EXT FETSYX | | | | | |
| 1684 | 066207 | EXT FLIP. | | | | | |
| 1685 | 066207 | EXT FNCAL\$ | | | | | |
| 1686 | 066207 | EXT FNCAL. | | | | | |
| 1687 | 066207 | EXT FNEED | | | | | |
| 1688 | 066207 | EXT FNLET | | | | | |
| 1689 | 066207 | EXT FNLET. | | | | | |
| 1690 | 066207 | EXT FNRET. | | | | | |
| 1691 | 066207 | EXT FNRTN. | | | | | |
| 1692 | 066207 | EXT FNUM | | | | | |
| 1693 | 066207 | EXT FOR | | | | | |
| 1694 | 066207 | EXT FOR. | | | | | |
| 1695 | 066207 | EXT FP5 | | | | | |
| 1696 | 066207 | EXT G\$N | | | | | |
| 1697 | 066207 | EXT G\$N+NN | | | | | |
| 1698 | 066207 | EXT G012N | | | | | |
| 1699 | 066207 | EXT G01N | | | | | |
| 1700 | 066207 | EXT G00R2N | | | | | |
| 1701 | 066207 | EXT G120R4 | | | | | |
| 1702 | 066207 | EXT G10R2N | | | | | |
| 1703 | 066207 | EXT GEQ\$. | | | | | |
| 1704 | 066207 | EXT GET1\$ | | | | | |
| 1705 | 066207 | EXT GET1N | | | | | |
| 1706 | 066207 | EXT GET2N | | | | | |
| 1707 | 066207 | EXT GET4N | | | | | |
| 1708 | 066207 | EXT GETCMA | | | | | |
| 1709 | 066207 | EXT GETPAR | | | | | |
| 1710 | 066207 | EXT GORTN | | | | | |
| 1711 | 066207 | EXT GOTOSU | | | | | |
| 1712 | 066207 | EXT GR\$. | | | | | |
| 1713 | 066207 | EXT GRAD | | | | | |
| 1714 | 066207 | EXT GRAPH. | | | | | |
| 1715 | 066207 | EXT GRAFA. | | | | | |
| 1716 | 066207 | EXT GSUB. | | | | | |
| 1717 | 066207 | EXT GTOLBL | | | | | |
| 1718 | 066207 | EXT I#PU45 | | | | | |
| 1719 | 066207 | EXT ICOS | | | | | |
| 1720 | 066207 | EXT ICOSH | | | | | |
| 1721 | 066207 | EXT IF | | | | | |
| 1722 | 066207 | EXT ILET | | | | | |
| 1723 | 066207 | EXT INF10 | | | | | |
| 1724 | 066207 | EXT INFR3 | | | | | |
| 1725 | 066207 | EXT INIT. | | | | | |
| 1726 | 066207 | EXT INPU\$. | | | | | |
| 1727 | 066207 | EXT INPUN. | | | | | |
| 1728 | 066207 | EXT INPUT | | | | | |
| 1729 | 066207 | EXT INPUT. | | | | | |
| 1730 | 066207 | EXT INT | | | | | |
| 1731 | 066207 | EXT INT5 | | | | | |
| 1732 | 066207 | EXT INTOIV | | | | | |
| 1733 | 066207 | EXT IPS | | | | | |
| 1734 | 066207 | EXT ISIN | | | | | |

>>>> EXTERNALS <<<<<<<<

| | | | |
|------|---|--------|------------|
| 1 | 5 | 066207 | EXT ITAN |
| 1736 | | 066207 | EXT JATAB |
| 1737 | | 066207 | EXT JFALSR |
| 1738 | | 066207 | EXT JMPLN# |
| 1739 | | 066207 | EXT JMPLB |
| 1740 | | 066207 | EXT JMPREL |
| 1741 | | 066207 | EXT JMPSUB |
| 1742 | | 066207 | EXT JTRUE# |
| 1743 | | 066207 | EXT KEYLA. |
| 1744 | | 066207 | EXT LEN. |
| 1745 | | 066207 | EXT LEQ#. |
| 1746 | | 066207 | EXT LET |
| 1747 | | 066207 | EXT LIST. |
| 1748 | | 066207 | EXT LNS |
| 1749 | | 066207 | EXT LOGT5 |
| 1750 | | 066207 | EXT LT#. |
| 1751 | | 066207 | EXT MAX10 |
| 1752 | | 066207 | EXT MIN10 |
| 1753 | | 066207 | EXT MOD10 |
| 1754 | | 066207 | EXT MPYROI |
| 1755 | | 066207 | EXT NEXT. |
| 1756 | | 066207 | EXT NEXT |
| 1757 | | 066207 | EXT NORMA. |
| 1758 | | 066207 | EXT NORMAL |
| 1759 | | 066207 | EXT NUM. |
| 1760 | | 066207 | EXT NUMVA+ |
| 1761 | | 066207 | EXT NXTLIN |
| 1762 | | 066207 | EXT NXTONE |
| 1763 | | 066207 | EXT OFFER. |
| 1764 | | 066207 | EXT OFKEY# |
| 1765 | | 066207 | EXT OFKEY. |
| 1766 | | 066207 | EXT OFTIM. |
| 1767 | | 066207 | EXT ON. |
| 1768 | | 066207 | EXT ONEB |
| 1769 | | 066207 | EXT ONEI |
| 1770 | | 066207 | EXT ONER |
| 1771 | | 066207 | EXT ONEROI |
| 1772 | | 066207 | EXT ONERR. |
| 1773 | | 066207 | EXT ONERRO |
| 1774 | | 066207 | EXT ONEX |
| 1775 | | 066207 | EXT ON |
| 1776 | | 066207 | EXT ONKEY# |
| 1777 | | 066207 | EXT ONKEY. |
| 1778 | | 066207 | EXT ONTIM. |
| 1779 | | 066207 | EXT ONTIME |
| 1780 | | 066207 | EXT OPTION |
| 1781 | | 066207 | EXT OPTIO. |
| 1782 | | 066207 | EXT OTD10 |
| 1783 | | 066207 | EXT PAUSE. |
| 1784 | | 066207 | EXT P110 |
| 1785 | | 066207 | EXT PLIST. |
| 1786 | | 066207 | EXT POS. |
| 1787 | | 066207 | EXT PRALL. |

LOG BASE 10

GET ONE REAL

NO POP, PUSH PI

| ITEM | LOC | OBJECT CODE | SRC=COGFRD | OBJ=GEMGFS | 9/11/1981 | 12:01 PM | PG 51 |
|------|--------|-------------|------------|------------|-----------|------------------|----------|
| >>>> | | EXTERNALS | | | | | <<<<<<<< |
| 1788 | 066207 | EXT PRINIS | | | | | |
| 1789 | 066207 | EXT PRINT | | | | | |
| 1790 | 066207 | EXT PRINT. | | | | | |
| 1791 | 066207 | EXT PRLINE | | | | | |
| 1792 | 066207 | EXT PRPAR# | | | | | |
| 1793 | 066207 | EXT PUINTG | | | | | |
| 1794 | 066207 | EXT GET#N? | | | | | |
| 1795 | 066207 | EXT PUSH1A | | | | | |
| 1796 | 066207 | EXT RADIO | | | | | |
| 1797 | 066207 | EXT RANSET | | | | SET SEED FOR RAN | |
| 1798 | 066207 | EXT READ. | | | | | |
| 1799 | 066207 | EXT READN. | | | | | |
| 1800 | 066207 | EXT READS. | | | | | |
| 1801 | 066207 | EXT READ | | | | | |
| 1802 | 066207 | EXT REAL | | | | | |
| 1803 | 066207 | EXT REDLST | | | | | |
| 1804 | 066207 | EXT RELMEM | | | | | |
| 1805 | 066207 | EXT REM | | | | | |
| 1806 | 066207 | EXT REM10 | | | | | |
| 1807 | 066207 | EXT RENUM. | | | | | |
| 1808 | 066207 | EXT REPORT | | | | | |
| 1809 | 066207 | EXT RESET. | | | | | |
| 1810 | 066207 | EXT RESTOR | | | | | |
| 1811 | 066207 | EXT RESTO. | | | | | |
| 1812 | 066207 | EXT RETRN. | | | | | |
| 1813 | 066207 | EXT RETURN | | | | | |
| 1814 | 066207 | EXT RND10 | | | | | |
| 1815 | 066207 | EXT RNDCLK | | | | | |
| 1816 | 066207 | EXT RNDINI | | | | | |
| 1817 | 066207 | EXT RNDIZ. | | | | | |
| 1818 | 066207 | EXT RNDSET | | | | | |
| 1819 | 066207 | EXT ROM:GO | | | | | |
| 1820 | 066207 | EXT RSTO.. | | | | | |
| 1821 | 066207 | EXT RESTL. | | | | | |
| 1822 | 066207 | EXT RUN. | | | | | |
| 1823 | 066207 | EXT SCAN | | | | | |
| 1824 | 066207 | EXT SCRAT. | | | | | |
| 1825 | 066207 | EXT SEC10 | | | | | |
| 1826 | 066207 | EXT SEMIC# | | | | | |
| 1827 | 066207 | EXT SEMIC. | | | | | |
| 1828 | 066207 | EXT SEGNO | | | | | |
| 1829 | 066207 | EXT SGNS | | | | RTNS +,-,OR 0 | |
| 1830 | 066207 | EXT SHORT | | | | | |
| 1831 | 066207 | EXT SIN10 | | | | | |
| 1832 | 066207 | EXT SKIP! | | | | | |
| 1833 | 066207 | EXT SKIPL | | | | | |
| 1834 | 066207 | EXT SKPHAM | | | | | |
| 1835 | 066207 | EXT SKPHM1 | | | | | |
| 1836 | 066207 | EXT SKPHM+ | | | | | |
| 1837 | 066207 | EXT SQR5 | | | | SQUARE ROOT | |
| 1838 | 066207 | EXT STEP. | | | | | |
| 1839 | 066207 | EXT STEPK. | | | | | |
| 1840 | 066207 | EXT STINE. | | | | | |

| ITEM | LOC | OBJECT CODE | SRC=CCGFRD | OBJ=GEXGF5 | 9/11/1981 | 12:01 PM | PG 52 |
|------|-----|-------------|------------|-------------|-----------|----------|----------|
| >>>> | | EXTERNALS | | | | | <<<<<<<< |
| 1 |) | 066207 | | EXT STOP. | | | |
| 1842 | | 066207 | | EXT STOST | | | |
| 1843 | | 066207 | | EXT STOSTM | | | |
| 1844 | | 066207 | | EXT STOSV | | | |
| 1845 | | 066207 | | EXT STOSYM | | | |
| 1846 | | 066207 | | EXT STREX+ | | | |
| 1847 | | 066207 | | EXT SUBROI | | | |
| 1848 | | 066207 | | EXT TAN10 | | | |
| 1849 | | 066207 | | EXT TEST. | | | |
| 1850 | | 066207 | | EXT TIME. | | | |
| 1851 | | 066207 | | EXT TITLE. | | | |
| 1852 | | 066207 | | EXT TO. | | | |
| 1853 | | 066207 | | EXT TRACE | | | |
| 1854 | | 066207 | | EXT TRACE. | | | |
| 1855 | | 066207 | | EXT TRCVB | | | |
| 1856 | | 066207 | | EXT TRCAL. | | | |
| 1857 | | 066207 | | EXT TRCVB. | | | |
| 1858 | | 066207 | | EXT TRY1N | | | |
| 1859 | | 066207 | | EXT TUOB | | | |
| 1860 | | 066207 | | EXT TUOROI | | | |
| 1861 | | 066207 | | EXT TYPSTM | | | |
| 1862 | | 066207 | | EXT ULIN#. | | | |
| 1863 | | 066207 | | EXT UMIN | | | |
| 1864 | | 066207 | | EXT UNED\$. | | | |
| 1865 | | 066207 | | EXT UPC#. | | | |
| 1866 | | 066207 | | EXT USING. | | | |
| 1867 | | 066207 | | EXT USIHL. | | | |
| 1868 | | 066207 | | EXT VAL\$. | | | |
| 1869 | | 066207 | | EXT VAL. | | | |
| 1870 | | 066207 | | EXT WAIT. | | | |
| 1871 | | 066207 | | EXT YTX5 | | | |
| 1872 | | 066207 | | | | | |
| 1873 | | 066207 | | | | | |
| 1874 | | 066207 | | FIN | | | |

| SYMBOL | VALUE | TYPE | COUNT | Symbol Table |
|---------|--------|-------|-------|-----------------------|
| A | 000301 | EQU | 0 | <--- NOT REFERENCED?? |
| AP | 177777 | EXT | 1 | |
| AL ROI | 177777 | EXT | 1 | |
| AL1T1 | 062512 | LCL | 0 | <--- NOT REFERENCED?? |
| AL1T2 | 062526 | LCL | 1 | |
| AL1TOK | 062479 | ENT | 2 | |
| ALC1LN | 062371 | ENT | 2 | |
| ALFEND | 062451 | LCL | 0 | <--- NOT REFERENCED?? |
| ALFNC1 | 062431 | LCL | 0 | <--- NOT REFERENCED?? |
| ALINE# | 104237 | G DAD | 2 | |
| ALINI- | 177777 | EXT | 1 | |
| ALPHA. | 177777 | EXT | 1 | |
| AND. | 062763 | LCL | 1 | |
| ASCIIS | 063125 | ENT | 2 | |
| ASIGN. | 061324 | LCL | 1 | |
| ASSIGN | 061324 | LCL | 1 | |
| ATN2. | 177777 | EXT | 1 | |
| ATSIGN | 061343 | ENT | 2 | |
| AUTO# | 100103 | G DAD | 1 | |
| AUTO. | 177777 | EXT | 1 | |
| AVR1 | 061662 | LCL | 1 | |
| AVR2 | 061679 | LCL | 1 | |
| AVAST | 061730 | LCL | 1 | |
| AVVAL1 | 061744 | LCL | 1 | |
| AVVAL2 | 061752 | LCL | 1 | |
| AVVST | 061653 | LCL | 1 | |
| B | 000302 | EQU | 0 | <--- NOT REFERENCED?? |
| BASICS | 060613 | LCL | 1 | |
| BEEP. | 177777 | EXT | 1 | |
| BINDR2 | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| BINTAB | 104079 | G DAD | 1 | |
| BP:GO | 063051 | LCL | 1 | |
| BPERR | 063121 | LCL | 1 | |
| BPLOT. | 061324 | LCL | 1 | |
| BTAB.R | 060015 | ENT | 2 | |
| C | 000303 | EQU | 0 | <--- NOT REFERENCED?? |
| CALCIN | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| CAT. | 061324 | LCL | 1 | |
| CEIL10 | 177777 | EXT | 1 | |
| CHARN. | 061324 | LCL | 1 | |
| CH. | 177777 | EXT | 1 | |
| CHSROI | 177777 | EXT | 1 | |
| CLEAR | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| CLEAR. | 177777 | EXT | 1 | |
| COM | 177777 | EXT | 1 | |
| COM. | 062336 | LCL | 1 | |
| COMM | 177777 | EXT | 1 | |
| COMMA\$ | 177777 | EXT | 1 | |
| COMMA. | 177777 | EXT | 1 | |
| CONBIN | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| CONCA. | 177777 | EXT | 1 | |
| CONTI. | 177777 | EXT | 1 | |
| COPY. | 061324 | LCL | 1 | |
| COS10 | 177777 | EXT | 1 | |

| SYMBOL | VALUE | TYPE | COUNT | Symbol Table |
|---------|--------|-------|-------|-----------------------|
| CO | 0 | EXT | 1 | |
| EAT. | 061324 | LCL | 1 | |
| C | 061324 | LCL | 1 | |
| CSEC10 | 177777 | EXT | 1 | |
| CTAPE. | 061324 | LCL | 1 | |
| CUROPT | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| D | 000304 | EQU | 0 | <--- NOT REFERENCED?? |
| D32768 | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| DALLOC | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| DATA | 177777 | EXT | 1 | |
| DATE. | 177777 | EXT | 1 | |
| DEF | 177777 | EXT | 1 | |
| DEFA+. | 061576 | LCL | 1 | |
| DEFA-. | 061604 | LCL | 1 | |
| DEFAULT | 100152 | G DAD | 1 | |
| DEFFN. | 062416 | ENT | 2 | |
| DEG | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| DEG. | 062257 | LCL | 1 | |
| DEG10 | 177777 | EXT | 1 | |
| DESET. | 177777 | EXT | 1 | |
| F | 177777 | EXT | 1 | |
| DIM. | 062327 | LCL | 1 | |
| DIMAL | 177777 | EXT | 1 | |
| DIMS | 062342 | LCL | 4 | |
| DISP. | 177777 | EXT | 1 | |
| DIV2 | 177777 | EXT | 1 | |
| DRAW. | 061324 | LCL | 1 | |
| DRG | 100160 | G DAD | 1 | |
| E | 000305 | EQU | 0 | <--- NOT REFERENCED?? |
| E...# | 177777 | EXT | 1 | |
| EJMLB | 177777 | EXT | 1 | |
| EPS10 | 177777 | EXT | 1 | |
| EQ#. | 177777 | EXT | 1 | |
| EQ. | 062623 | LCL | 1 | |
| EQUA10 | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| ERAST. | 061324 | LCL | 1 | |
| ERMSG | 064524 | LCL | 1 | |
| ERNUM. | 177777 | EXT | 1 | |
| ERR38U | 177777 | EXT | 3 | |
| ERR. | 177777 | EXT | 1 | |
| ERROR | 177777 | EXT | 1 | |
| ERROR+ | 177777 | EXT | 4 | |
| ERRORE | 061336 | LCL | 1 | |
| ERRORT | 061335 | LCL | 2 | |
| ERRORX | 061330 | LCL | 21 | |
| EXOR. | 063037 | LCL | 1 | |
| EXP5 | 177777 | EXT | 1 | |
| EXT:GO | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| F | 000306 | EQU | 0 | <--- NOT REFERENCED?? |
| FALSE. | 063016 | LCL | 10 | |
| FBPGM | 177777 | EXT | 1 | |
| FETAD1 | 061646 | LCL | 1 | |
| FETAD2 | 061647 | LCL | 1 | |
| FETADD | 061612 | ENT | 6 | |

| KARMA 03/14/81 | | | | | |
|----------------|--------|-------|-------|-----------------------|--------------------------|
| SYMBOL | VALUE | TYPE | CCUNT | Symbol Table | 9/11/1981 12:01 PM PG 55 |
| FETDR | 061612 | ENT | 1 | | |
| FETAV | 177777 | EXT | 0 | <--- NOT REFERENCED?? | |
| FETAVA | 177777 | EXT | 2 | | |
| FETSV | 177777 | EXT | 1 | | |
| FETSVA | 177777 | EXT | 3 | | |
| FETS VX | 177777 | EXT | 1 | | |
| FLIP. | 177777 | EXT | 1 | | |
| FNCAL\$ | 177777 | EXT | 1 | | |
| FNCAL. | 177777 | EXT | 1 | | |
| FNEND | 177777 | EXT | 1 | | |
| FNLET | 177777 | EXT | 2 | | |
| FNLET. | 177777 | EXT | 2 | | |
| FNRET. | 177777 | EXT | 1 | | |
| FNRTN. | 177777 | EXT | 1 | | |
| FNUM | 177777 | EXT | 0 | <--- NOT REFERENCED?? | |
| FOR | 177777 | EXT | 1 | | |
| FOR. | 177777 | EXT | 1 | | |
| FP5 | 177777 | EXT | 1 | | |
| FTADR | 061775 | ENT | 2 | | |
| FTADR+ | 062000 | LCL | 4 | | |
| FTADR1 | 062041 | LCL | 1 | | |
| FTADR2 | 062047 | LCL | 1 | | |
| FTADR3 | 062055 | LCL | 1 | | |
| FTADR4 | 062063 | LCL | 1 | | |
| FTAPU | 062022 | ENT | 2 | | |
| FTSTA | 061427 | LCL | 1 | | |
| FTSTL | 061522 | LCL | 1 | | |
| FTSTL1 | 061475 | ENT | 1 | | |
| FTSTL2 | 061504 | ENT | 1 | | |
| FTSTLS | 061461 | LCL | 1 | | |
| FTSTLX | 061557 | LCL | 1 | | |
| FTSYL | 061440 | ENT | 2 | | |
| FWCURR | 100006 | G DAD | 1 | | |
| G | 000397 | EQU | 0 | <--- NOT REFERENCED?? | |
| G\$N | 177777 | EXT | 1 | | |
| G\$N+NN | 177777 | EXT | 1 | | |
| G012N | 177777 | EXT | 7 | | |
| G01N | 177777 | EXT | 2 | | |
| G00P2N | 177777 | EXT | 1 | | |
| G00R4 | 177777 | EXT | 2 | | |
| G00R2N | 177777 | EXT | 0 | <--- NOT REFERENCED?? | |
| GCLR. | 061324 | LCL | 1 | | |
| GEQ\$. | 177777 | EXT | 1 | | |
| GEQ. | 062734 | LCL | 1 | | |
| GET\$N? | 177777 | EXT | 1 | | |
| GET1\$ | 177777 | EXT | 6 | | |
| GET1N | 177777 | EXT | 4 | | |
| GET2N | 177777 | EXT | 6 | | |
| GET4N | 177777 | EXT | 1 | | |
| GETCMA | 177777 | EXT | 0 | <--- NOT REFERENCED?? | |
| GETINT | 062606 | LCL | 1 | | |
| GETPAR | 177777 | EXT | 0 | <--- NOT REFERENCED?? | |
| GINTDS | 177401 | G DAD | 3 | | |
| GINTEN | 177400 | G DAD | 2 | | |

| | | | | | | |
|--------|--------|-----|---|-----------------------|--|--|
| G00TN | 177777 | EXT | 1 | | | |
| G00PIR | 062511 | LCL | 1 | | | |
| G00JSU | 177777 | EXT | 2 | | | |
| GR#. | 177777 | EXT | 1 | | | |
| GR. | 062705 | ENT | 2 | | | |
| GR.I | 062724 | LCL | 1 | | | |
| GRAD | 177777 | EXT | 0 | <--- NOT REFERENCED?? | | |
| GRAD. | 062274 | LCL | 1 | | | |
| GRAFA. | 177777 | EXT | 0 | <--- NOT REFERENCED?? | | |
| GRAPH. | 177777 | EXT | 1 | | | |
| GSUB. | 177777 | EXT | 1 | | | |
| GTOLBL | 177777 | EXT | 1 | | | |
| H | 000310 | EQU | 0 | <--- NOT REFERENCED?? | | |
| I | 000311 | EQU | 0 | <--- NOT REFERENCED?? | | |
| I#PU45 | 177777 | EXT | 1 | | | |
| I#PUSH | 061375 | ENT | 1 | | | |
| ICONST | 061361 | ENT | 2 | | | |
| ICOS | 177777 | EXT | 1 | | | |
| ICOSH | 177777 | EXT | 0 | <--- NOT REFERENCED?? | | |
| IDRAW. | 061324 | LCL | 1 | | | |
| IF | 177777 | EXT | 1 | | | |
| I INT | 177777 | EXT | 1 | | | |
| IMOVE. | 061324 | LCL | 1 | | | |
| INDEN. | 061571 | LCL | 1 | | | |
| INF10 | 177777 | EXT | 1 | | | |
| INFR3 | 177777 | EXT | 0 | <--- NOT REFERENCED?? | | |
| INIT. | 177777 | EXT | 1 | | | |
| INPU#. | 177777 | EXT | 1 | | | |
| I'NH. | 177777 | EXT | 1 | | | |
| IN.UT | 177777 | EXT | 1 | | | |
| INPUT. | 177777 | EXT | 1 | | | |
| INT | 177777 | EXT | 1 | | | |
| INT5 | 177777 | EXT | 2 | | | |
| INTCON | 061371 | ENT | 2 | | | |
| INTDIV | 177777 | EXT | 2 | | | |
| INTEG. | 062302 | LCL | 1 | | | |
| IP5 | 177777 | EXT | 1 | | | |
| ISIN | 177777 | EXT | 1 | | | |
| ITAN | 177777 | EXT | 1 | | | |
| J | 000312 | EQU | 0 | <--- NOT REFERENCED?? | | |
| J AB | 177777 | EXT | 1 | | | |
| JFALSR | 177777 | EXT | 1 | | | |
| JMPLB | 177777 | EXT | 1 | | | |
| JMPLN# | 177777 | EXT | 1 | | | |
| JMPREL | 177777 | EXT | 1 | | | |
| JMPSUB | 177777 | EXT | 1 | | | |
| JTRUE# | 177777 | EXT | 1 | | | |
| K | 000313 | EQU | 0 | <--- NOT REFERENCED?? | | |
| KEYLA. | 177777 | EXT | 1 | | | |
| L | 000314 | EQU | 0 | <--- NOT REFERENCED?? | | |
| L45ZF | 062772 | LCL | 2 | | | |
| L45ZT | 063012 | LCL | 1 | | | |
| LABEL. | 061324 | LCL | 1 | | | |
| LDIR. | 061324 | LCL | 1 | | | |

| SYMBOL | VALUE | TYPE | CCOUNT | Symbol Table |
|--------|--------|------|--------|-----------------------|
| LE | 177777 | EXT | 1 | |
| LE# | 177777 | EXT | 1 | |
| LEQ. | 062662 | LCL | 1 | |
| LEQ.I | 062677 | LCL | 1 | |
| LET | 177777 | EXT | 1 | |
| LIST. | 177777 | EXT | 1 | |
| LN5 | 177777 | EXT | 1 | |
| LOAD. | 061324 | LCL | 1 | |
| LOADB. | 061324 | LCL | 1 | |
| LOGT5 | 177777 | EXT | 1 | |
| LT#. | 177777 | EXT | 1 | |
| LT. | 062643 | LCL | 1 | |
| LT.I | 062654 | LCL | 1 | |
| LTHEN | 063125 | LCL | 0 | <--- NOT REFERENCED?? |
| M | 000315 | EQU | 0 | <--- NOT REFERENCED?? |
| MAX10 | 177777 | EXT | 1 | |
| MIN10 | 177777 | EXT | 1 | |
| MOD10 | 177777 | EXT | 1 | |
| MOVE. | 061324 | LCL | 1 | |
| MPY.OI | 177777 | EXT | 1 | |
| N | 000316 | EQU | 0 | <--- NOT REFERENCED?? |
| NEXT | 177777 | EXT | 1 | |
| NEXT. | 177777 | EXT | 1 | |
| NON?I | 062557 | LCL | 1 | |
| NON?IR | 062615 | LCL | 2 | |
| NOP. | 061354 | LCL | 1 | |
| NOP2. | 061357 | LCL | 1 | |
| NOP47. | 061355 | LCL | 1 | |
| NORMA. | 177777 | EXT | 1 | |
| NORMAL | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| NOT. | 063007 | LCL | 1 | |
| NUM. | 177777 | EXT | 1 | |
| HUMVA+ | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| HXTLIN | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| HXTONE | 177777 | EXT | 2 | |
| O | 000317 | EQU | 0 | <--- NOT REFERENCED?? |
| OFFER. | 177777 | EXT | 1 | |
| OFKEY# | 177777 | EXT | 1 | |
| OFKEY. | 177777 | EXT | 1 | |
| OFM. | 177777 | EXT | 1 | |
| O | 177777 | EXT | 1 | |
| ON. | 177777 | EXT | 1 | |
| ON?I | 062560 | ENT | 3 | |
| ON?IR | 062565 | LCL | 1 | |
| ON?R | 062564 | ENT | 1 | |
| ONEB | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| ONEI | 177777 | EXT | 1 | |
| ONER | 177777 | EXT | 1 | |
| ONEROI | 177777 | EXT | 2 | |
| ONERR. | 177777 | EXT | 1 | |
| ONERRO | 177777 | EXT | 1 | |
| ONEX | 177777 | EXT | 1 | |
| ONEX1 | 062242 | LCL | 2 | |
| ONEX2 | 062252 | LCL | 1 | |

| SYMBOL | VALUE | TYPE | COUNT | Symbol Table |
|---------|--------|-------|-------|-----------------------|
| DNKEY# | 177777 | EXT | 1 | |
| DNKEY | 177777 | EXT | 1 | |
| DNKEY | 177777 | EXT | 1 | |
| DNKEY | 177777 | EXT | 1 | |
| DNKEY | 177777 | EXT | 1 | |
| DNKEY | 177777 | EXT | 1 | |
| OR. | 063024 | LCL | 1 | |
| P | 000320 | EQU | 0 | <--- NOT REFERENCED?? |
| P#ARRAY | 061327 | LCL | 1 | |
| PAUSE. | 177777 | EXT | 1 | |
| PEN. | 061324 | LCL | 1 | |
| PENUP. | 061324 | LCL | 1 | |
| PI10 | 177777 | EXT | 1 | |
| PLIST. | 177777 | EXT | 1 | |
| PLOT. | 061324 | LCL | 1 | |
| PNAM | 061720 | LCL | 1 | |
| PNAM2 | 061723 | LCL | 0 | <--- NOT REFERENCED?? |
| POS. | 177777 | EXT | 1 | |
| PRALL. | 177777 | EXT | 1 | |
| PREST | 061707 | LCL | 1 | |
| PROIS | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| PPOINT | 177777 | EXT | 2 | |
| PRINT# | 061324 | LCL | 1 | |
| PRINT. | 177777 | EXT | 1 | |
| PRLINE | 177777 | EXT | 1 | |
| PRNT#. | 061324 | LCL | 1 | |
| PRNTR. | 061324 | LCL | 1 | |
| PRPAR# | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| PVALUE | 062726 | LCL | 1 | |
| PTR1 | 177710 | G DAD | 4 | |
| PTR1+ | 177712 | G DAD | 5 | |
| PTR1- | 177711 | G DAD | 10 | |
| PTR2 | 177714 | G DAD | 4 | |
| PTR2- | 177715 | G DAD | 3 | |
| PU20 | 061672 | LCL | 1 | |
| PU20+ | 061754 | LCL | 1 | |
| PUINTG | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| PURGE. | 061324 | LCL | 1 | |
| PUSH1A | 177777 | EXT | 24 | |
| PUSHTF | 063001 | LCL | 1 | |
| Q | 000321 | EQU | 0 | <--- NOT REFERENCED?? |
| R | 000322 | EQU | 0 | <--- NOT REFERENCED?? |
| R#ARRAY | 061330 | LCL | 1 | |
| R0INIT | 060014 | LCL | 1 | |
| RAD. | 062267 | LCL | 1 | |
| RAD10 | 177777 | EXT | 1 | |
| RANSET | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| READ | 177777 | EXT | 1 | |
| READ# | 061324 | LCL | 1 | |
| READ#. | 061324 | LCL | 1 | |
| READ. | 177777 | EXT | 1 | |
| READN. | 177777 | EXT | 1 | |
| READS. | 177777 | EXT | 1 | |
| REAL | 177777 | EXT | 1 | |

| SYMBOL | VALUE | TYPE | CCUNT | Symbol Table |
|---------|--------|------|-------|-----------------------|
| RE | 062311 | LCL | 1 | |
| REPLST | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| REMEM | 177777 | EXT | 1 | |
| REM | 177777 | EXT | 3 | |
| REN10 | 177777 | EXT | 1 | |
| RENAM. | 061324 | LCL | 1 | |
| RENAME | 061324 | LCL | 1 | |
| RENUM. | 177777 | EXT | 1 | |
| REPORT | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| RESET. | 177777 | EXT | 1 | |
| RESTL. | 177777 | EXT | 1 | |
| RESTO. | 177777 | EXT | 1 | |
| RESTOR | 177777 | EXT | 1 | |
| RETRN. | 177777 | EXT | 1 | |
| RETURN | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| REWIND | 061324 | LCL | 1 | |
| RND10 | 177777 | EXT | 1 | |
| RNDCLK | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| RNDINI | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| RNDIZ. | 177777 | EXT | 1 | |
| RNDSET | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| R :GO | 177777 | EXT | 1 | |
| RSTO.. | 177777 | EXT | 1 | |
| RUN. | 177777 | EXT | 1 | |
| RZTRUE | 062720 | LCL | 1 | |
| S | 000323 | EQU | 0 | <--- NOT REFERENCED?? |
| SCALE. | 061324 | LCL | 1 | |
| SCAN | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| SCONST | 062071 | ENT | 3 | |
| SCORTH | 062113 | LCL | 1 | |
| SCRAT. | 177777 | EXT | 1 | |
| SEC10 | 177777 | EXT | 1 | |
| SECUR. | 061324 | LCL | 1 | |
| SECURE | 061324 | LCL | 2 | |
| SEMIC\$ | 177777 | EXT | 1 | |
| SEMIC. | 177777 | EXT | 1 | |
| SEQNO | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| SGN5 | 177777 | EXT | 1 | |
| SHORT | 177777 | EXT | 1 | |
| SHORT. | 062320 | LCL | 1 | |
| S 10 | 177777 | EXT | 1 | |
| SKIP! | 177777 | EXT | 2 | |
| SKIPEM | 062357 | LCL | 1 | |
| SKIPIT | 062362 | LCL | 2 | |
| SKIPL | 177777 | EXT | 1 | |
| SKPDEF | 062452 | ENT | 2 | |
| SKPLBL | 061435 | LCL | 1 | |
| SKPLN | 062362 | ENT | 1 | |
| SKPNAM | 177777 | EXT | 1 | |
| SKPNM+ | 177777 | EXT | 2 | |
| SKPNM1 | 177777 | EXT | 3 | |
| SQR5 | 177777 | EXT | 1 | |
| STEP. | 177777 | EXT | 1 | |
| STEPK. | 177777 | EXT | 1 | |

| SYMBOL | VALUE | TYPE | COUNT | Symbol Table |
|--------|--------|-------|-------|-----------------------|
| STONE. | 177777 | EXT | 1 | |
| STND+ | 061545 | LCL | 1 | |
| STDRG | 062262 | LCL | 2 | |
| STOP. | 177777 | EXT | 2 | |
| STORB. | 061324 | LCL | 1 | |
| STORDF | 061606 | LCL | 1 | |
| STORE. | 061324 | LCL | 1 | |
| STOST | 177777 | EXT | 1 | |
| STOSTM | 177777 | EXT | 1 | |
| STOSV | 177777 | EXT | 1 | |
| STOSVM | 177777 | EXT | 1 | |
| STPTR | 062155 | LCL | 2 | |
| STPTR0 | 062162 | LCL | 1 | |
| STPTR1 | 062171 | LCL | 1 | |
| STPTR2 | 062201 | LCL | 1 | |
| STRERR | 062215 | LCL | 0 | <--- NOT REFERENCED?? |
| STREX+ | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| STRIND | 061536 | ENT | 1 | |
| SUBROI | 177777 | EXT | 2 | |
| SUBST1 | 062141 | LCL | 1 | |
| SUBST2 | 062115 | LCL | 1 | |
| SUBT | 062743 | LCL | 4 | |
| SUBTI | 062756 | LCL | 1 | |
| SVADR | 061413 | LCL | 1 | |
| SVADR+ | 061405 | LCL | 1 | |
| SVADR1 | 061416 | LCL | 2 | |
| SVADR2 | 061454 | LCL | 2 | |
| SVVAL3 | 061451 | LCL | 0 | <--- NOT REFERENCED?? |
| T | 000324 | EQU | 0 | <--- NOT REFERENCED?? |
| THJ. | 061326 | LCL | 1 | |
| TANI0 | 177777 | EXT | 1 | |
| TEST. | 177777 | EXT | 1 | |
| TIME. | 177777 | EXT | 1 | |
| TITLE. | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| TO. | 177777 | EXT | 1 | |
| TO?I | 062541 | ENT | 1 | |
| TOS | 101744 | G DAD | 2 | |
| TRACE | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| TRACE. | 177777 | EXT | 1 | |
| TR L. | 177777 | EXT | 1 | |
| TRVB | 177777 | EXT | 1 | |
| TRCVB. | 177777 | EXT | 1 | |
| TRUE. | 062776 | LCL | 10 | |
| TRYIN | 177777 | EXT | 2 | |
| TST5 | 062524 | LCL | 2 | |
| TSTINT | 062535 | LCL | 1 | |
| TWOB | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| TWOROI | 177777 | EXT | 4 | |
| TWOX | 062221 | ENT | 2 | |
| TWOX0 | 062227 | ENT | 2 | |
| TWOXDN | 062241 | LCL | 1 | |
| TYPSTM | 177777 | EXT | 3 | |
| U | 000325 | EQU | 0 | <--- NOT REFERENCED?? |
| ULIN#. | 177777 | EXT | 1 | |

| SYMBOL | VALUE | TYPE | COUNT | Symbol Table |
|---------|--------|-------|-------|-----------------------|
| UMIN | 177777 | EXT | 0 | <--- NOT REFERENCED?? |
| UMIN\$. | 177777 | EXT | 2 | |
| UNLQ. | 062632 | LCL | 2 | |
| UNSEC. | 061324 | LCL | 1 | |
| UPC\$. | 177777 | EXT | 1 | |
| USING. | 177777 | EXT | 1 | |
| USINL. | 177777 | EXT | 1 | |
| V | 000326 | EQU | 0 | <--- NOT REFERENCED?? |
| VAL\$. | 177777 | EXT | 1 | |
| VAL. | 177777 | EXT | 1 | |
| W | 000327 | EQU | 0 | <--- NOT REFERENCED?? |
| WAIT. | 177777 | EXT | 1 | |
| X | 000330 | EQU | 0 | <--- NOT REFERENCED?? |
| XAXIS. | 061324 | LCL | 1 | |
| Y | 000331 | EQU | 0 | <--- NOT REFERENCED?? |
| YAXIS. | 061324 | LCL | 1 | |
| YTX5 | 177777 | EXT | 1 | |
| Z | 000332 | EQU | 0 | <--- NOT REFERENCED?? |
| ZRO | 000000 | G DAD | 3 | |
| ZRTRUE | 062673 | LCL | 2 | |

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|---|----|
| Table of Contents | 1 |
| SYSTEM ROM | 2 |
| EXECUTION TIME TABLE | 3 |
| PARSE TABLE | 8 |
| RUNTIME ERROR ROUTINES | 10 |
| RUNTIME FETCH, STORE, OPTION BASE | 12 |
| RUNTIME ARRAY FETCH, STORE | 16 |
| RUNTIME STRING, SUBSTRING | 19 |
| RUNTIME MODE SET, REM, SKIP | 22 |
| RUNTIME | 26 |
| RUNTIME - GET OPTIONAL PARAMETERS | 27 |
| RUNTIME - RELATIONAL OPERATORS | 29 |
| LOGICAL OPERATORS | 31 |
| BINARY PROGRAM | 32 |
| BASIC STATEMENT TOKENS | 33 |
| ALPHABET WITH PARITY | 40 |
| ERROR MESSAGES | 41 |
| EXTERNALS | 48 |

PROGRAM HAD 0 ERRORS 0 WARNINGS 452 LABELS LAST ERROR AT 0