


```

101                                ORG    101B
                                   *
                                   *
                                   *    ASSEMBLY PARAMETERS
                                   *
0    TSS      EQU    0
0    TRCFLG   EQU    0
                                   *
12   BUFF1    EQU    10           . BUFFER SIZE BETWEEN DYNAMIC
                                   . STORAGE AREA AND THE STACK
50   BUFF2    EQU    40           . MINIMUM NUMBER OF WORDS ON THE
                                   . FREE CHAIN IN GRBCOLL
24   BUFF3    EQU    20           . EXPECTED LENGTH OF A PATTERN
50   BUFF4    EQU    40           . STATIC STORAGE INCREMENT
                                   *
1000  FLDINCR EQU    1000B        . FIELD LENGTH INCREMENT
                                   *
                                   IFNE    TSS,0,2
106   STAKSP  EQU    70           . SPACE ALLOCATED FOR P2-P3 STACKS
2     BGP3STK EQU    2
101   7       BSSZ    STAKSP-101B+BGP3STK
110   BGP2STK EQU    *
                                   *
110 17257100000000000000000000   HASHLWD DATA 57.0           . LENGTH OF THE HASH-TABLE
71   HASHLN   EQU    57           . LENGTH OF THE HASH-TABLE
111   HASHTBL EQU    *           .
111   71     BSSZ    HASHLN        . HASH-TABLE
                                   *
                                   *    OTHER EQU-S
                                   *
377777 MARK EQU 377777B           . USED IN PM.YSTAR
202 000000000000000000000201     BUFSIZE DATA 129
70   LINES    EQU    56           LINES AVAILABLE / PAGE
                                   *
                                   *    PASS 2 STATE-MACHINE STATES
                                   *
0    ST1      EQU    0
4    ST2      EQU    4
10   ST3      EQU    8
14   ST4      EQU    12
20   ST5      EQU    16
24   ST6      EQU    20
30   ST7      EQU    24
34   ST8      EQU    28
40   ST9      EQU    32
44   ST10     EQU    36
50   ST11     EQU    40
54   ST12     EQU    44
60   ST13     EQU    48
64   ST14     EQU    52
70   ST15     EQU    56
                                   *
                                   *    PASS 2 OPERAND SITUATIONS
                                   *
-1   OPSVAR   EQU    -1           . IDENTIFIER OPERAND
-2   OPSLIT   EQU    -2           . LITERAL STRING
    
```

```

-3 OPSINT EQU -3 . INTEGER CONSTANT
-4 OPSREAL EQU -4 . REAL CONSTANT
-5 OPSEXP EQU -5 . EXPRESSION AS OPERAND
-6 OPSSPEC EQU -6 . ARRAY OR FUNCTION OPERAND
*
* PASS 3 OPERATOR PRIORITIES
*
12 PRIORA EQU 10 . UNDOL,UNPRD,UNSTAR,DOL,PRD
11 PRIORB EQU 9 . **
10 PRIORC EQU 8 . *, /
7 PRIORD EQU 7 . +, -, UNPL, UNMIN
6 PRIORE EQU 6 . CAT
5 PRIORF EQU 5 . ALT, COMMA, ), RGTBR
4 PRIORG EQU 4 . (, LFTBR, PM, END GO TO
3 PRIORH EQU 3 . =, ASGNPM, GO TO
2 PRIORI EQU 2 . COLON, SEMICOLON
1 PRIORJ EQU 1 . STACK BASE
*
* SOPME PASS 2 INPUT VALUES
*
-1 P2VAR EQU OPSVAR . IDENTIFIER
-2 P2LIT EQU OPSLIT . LITERAL STRING
-3 P2INT EQU OPSINT . INTEGER CONSTANT
-4 P2REAL EQU OPSREAL . REAL CONSTANT
*
* SIMPLE VARIABLE TYPES
*
0 SFTY EQU 0 . TEMPORARY STRING IN LIST FORM
1 STY EQU 1 . STRING IN CHARACTER FORM
2 SSTY EQU 2 . STRING IN LIST FORM
3 SITY EQU 3 . INTEGER CONSTANTS
4 PSTY EQU 4 . SIMPLE PATTERN
5 PATY EQU 5 . ALTERNATED PATTERNS
6 PETY EQU 6 . CONCATENATED PATTERNS
7 ITY EQU 7 . BINARY INTEGER
10 RTY EQU 8 . REAL VALUE
11 ATY EQU 9 . ARRAY REFERENCE
12 DTY EQU 10 . DATA REFERENCE
13 NTY EQU 11 . NAME
14 CTY EQU 12 . CODE REFERENCE
15 INTY EQU 13 . INPUT ASSOCIATED
16 OUTTY EQU 14 . OUTPUT ASSOCIATED
16 SPECTY EQU 14 . LEFT OPERAND IN STACK
0 SKIPTY EQU 0 . EMPTY WORD IN STATIC
*
* STATIC RECORD TYPES
*
36 VARTYP EQU 37B-1 . SIMPLE VARIABLE
35 CALLTYP EQU 37B-2 . FUNCTION
34 LBLTYP EQU 37B-3 . LABEL
33 LITYP EQU 37B-4 . LITERAL STRING
32 SPCTYP EQU 37B-5 . ANYTHING WHATSOEVER
31 INTTYP EQU 37B-6 . INTEGER CONSTANS
30 REALTYP EQU 37B-7 . REAL CONSTANS
*
* FUNCTION TYPES
*

```

```

0   PROCTYP EQU 0           . PROCEDURE
1   DATATYP EQU 1           . DATA FUNCTION
2   FLDTYP  EQU 2           . FIELD FUNCTION
3   UNDFTYP EQU 3           . UNDEFINED FUNCTION
*
*   WORKING STORAGE USED BOTH DURING COMPILATION AND EXECUTION
*
203 00000000000000000000 FIELDLN DATA 0           . FIELDLENGTH
204 00000000000000000000 MAXSTAT DATA 0           . LIMITS OF THE STATIC STORAGE
205 00000000000000010522 MINSTAT VFD 60/STTBASE .
206 00000000000000000000 MAXSTAK DATA 0           . LIMITS FOR THE STACK
207 00000000000000000000 MINSTAK DATA 0           .
210 77777777777777777777 NXTWRD DATA -1          . COMPILER SOURCE MEDIUM DESCR.
211 00000000000000000000 FRSTWRD DATA 0           .
212 00000000000000000000 INFAIL DATA 0           . SIGN BIT - SIGNAL ERROR ON FAILURE
213 00000000000000000000 STAKTOP DATA 0           . STACK TOP AFTER LAST PROCEDURE
. CALL
. CHAIN OF TRANSLATED CODE PIECES
214 00000000000000000000 CODELINK DATA 0
*
*   SOME KEYWORDS
*
215 00000000000000030000 FLDLM DATA 30000B . LIMIT FOR FIELDLN
216 00000000000000037776 MXLNTH VFD 60/MARK-1 . MAXIMUM STRING LENGTH
217 00000000000000000001 STCOUNT DATA 1
220 00000000000575360400 STLIM DATA 100000000 LIMIT FOR STATEMENT(RULE) COUNT
221 00000000000000000000 ANCHOR DATA 0           . NOTZERO INDICATES ANCHORED SEARCH
*
*   WORKING STORAGE USED ONLY DURING COMPILATION
*
222 00000000000000000000 TEMPBASE EQU *
222 00000000000000000000 ARROWD DATA 0           . ERROR FLAG FOR CURRENT LINE
223 00000000000000000000 LBLLINK DATA 0           . CHAIN OF LABELS
224 00000000000000000000 VARLINK DATA 0           . CHAIN OF VARIABLES
225 00000000000000000000 TESTCND DATA 0          . USED IN P3
226 00000000000000000000 TSTPMOP DATA 0          . USED IN P2
227 00000000000000000000 PRGBASE DATA 0           .
230 00000000000000000000 CHAR BSSZ 12           . CHARACTER BUFFER FOR PASS1
244 00000000000000000000 COMPB7 DATA 0           .
245 77777777777777777777 P1ERFLG DATA -1          .
246 00000000000000000000 CHARLEN DATA 0           .
247 00000000000000000000 COLS DATA 0           .
250 00000000000000000000 CPERW DATA 0           .
251 00000000000000000000 LC DATA 0           .
252 00000000000000000000 PAGENO DATA 1           .
253 00000000000000000000 P1MAX DATA 0           .
254 00000000000000000000 P1SVX3 DATA 0           .
255 00000000000000000000 P1SVX5 DATA 0           .
256 00000000000000000000 RULENO DATA 1           .
257 00000000000000000000 P1SVTAB DATA 0           .
254 00000000000000000000 P4SVX4 EQU P1SVX3
253 00000000000000000000 P4SVB5 EQU P1MAX
255 00000000000000000000 TRCSVX7 EQU P1SVX5
260 00000000000000000000 FETHEAD VFD 60/OUTFET-1
261 11162025240000000000 INFET VFD 60/5LINPUT
262 00000000000000000000 BSSZ 4
266 00000000000000000000 VFD 60/0
267 17252420252400000000 OUTFET VFD 60/6LOUTPUT

```

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4

BSSZ

4

```

3          RECALL  MACRO  FILE          GENERATE PERIODIC OR AUTO RECALL CALL
              IFC    EQ,$FILE$$
              SX0    B0
              ELSE
              SX0    1
              ENDIF
              RJ     RCL
              ENDM

*
3          WAIT    MACRO
              LOCAL  NEXT          . WAIT FOR FILE QUIET
              SA1    B2
              LX1    59
              NG     X1,NEXT      . IT IS ALREADY QUIET
              RECALL B2
              NEXT   BSS          0
              ENDM

*
3          *
              *          MACRO  =,ACTION,CODE          GENERATE FILE ACTION MACROS
              *          ACTION IS NAME OF FILE ACTION
              *          MACRO, CODE IS FUNCTION CODE TO
              *          INSERT IN FET BEFORE CIO CALL.
              ACTION MACRO  RECALL
              IFC    EQ,$RECALL$$
              SX0    B0
              ELSE
              SX0    1
              ENDIF
              SX7    CODE
              RJ     CIO
              ENDM
              ENDM

3          274    READ    =          10B          BUFFERED READ
              READ    MACRO  RECALL          =          .1
              WRITE   =          14B          BUFFERED WRITE
3          274    WRITE  MACRO  RECALL          =          .1
              WRITER  =          24B          WRITE END OF LOGICAL RECORD
3          274    WRITER MACRO  RECALL          =          .1
              REWIND  =          50B          REWIND FILE
3          274    REWIND MACRO  RECALL          =          .1
              274    BWRITER =          26B
              CLOSE   =          150B          CLOSE A FILE
3          274    CLOSE  MACRO  RECALL          =          .1
              UNLOAD  =          60B
3          274    UNLOAD MACRO  RECALL          =          .1
              *
              *
              *
              *
              MACRO HEAD,X,A,B,C,D,E,F,G,H,I,J,K,L,M,N,O
              X      EQU    *-P2TBL
              VFD    4/O,4/N,4/M,4/L,4/K,4/J,4/I,4/H
              VFD    4/G,4/F,4/E,4/D,4/C,4/B,4/A
              ENDM
              *
              TAIL   MACRO  A,B,C,D,E
              VFD    8/A,8/B,8/C,18/D,18/E
  
```

```

      ENDM
*
      MACRO TABLE, A, B, C, D, E, F
A      EQU    *-P3TBL
      VFD    6/B, 12/C, 6/D, 18/E, 18/F
      ENDM
*
      MACRO MICOP, A, B, C, D, E
A      EQU    *-MCOPTBL
      IFC    EQ, $$, 2
+      EQ     B
      IFNE   ,, 1
+      VFD   30/-1
-      VFD   7/C, 5/D, 18/B
      ENDM
*
SWITCH MACRO Q, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O
+      VFD   4/O, 4/N, 4/M, 4/L, 4/K, 4/J, 4/I, 4/H
      VFD   4/G, 4/F, 4/E, 4/D, 4/C, 4/B, 4/A
Q      EQU   *
      ENDM
*
      MACRO TEMP, PARAM
      IF     -DEF, CCXXCC, 1
CCXXCC SET   -1
CCXXCC SET   CCXXCC+1
PARAM   EQU   TEMPBASE+CCXXCC
      ENDM
*
ERROR   MACRO   NUMBER
      SB5     NUMBER
      EQ      RTERROR
      ENDM
*
```



```
*
PIX      TEMP
SIX      TEMP
PIB      TEMP
LENFAIL  TEMP
SBASE    TEMP
TEMPDOL  TEMP
TEMPDOL1 TEMP          . REFERRED TO AS TEMPDOL+1
SLENGTH  TEMP
PCHAIN   TEMP
PMASX6   TEMP
PMASX0   TEMP
PMASX3   TEMP
PMASX2   TEMP
PMASX4   TEMP
PMASB1   TEMP
PMASB2   TEMP
PMASB4   TEMP
CALLB5P  TEMP          . USED IN CALL
DATAWD   TEMP          . USED IN DATA
PMA5     TEMP
SPOS     TEMP
DTYPWD   TEMP
UA       TEMP          . RETURN - PM CHEK INFO
235 PMSTX3 EQU PMASX3
240 PMSTB1 EQU PMASB1
241 PMSTB3 EQU PMASB2
242 PMSTB4 EQU PMASB4
235 PMFA0  EQU PMASX3
240 PMFX4  EQU PMASB1
241 PMFA4  EQU PMASB2
235 QARSV  EQU PMASX3
235 QIOSV  EQU PMASX3
235 QDEFSV1 EQU PMASX3
240 QDEFSV2 EQU PMASB1
241 QDEFSV3 EQU PMASB2
235 QFRZSV EQU PMASX3
235 QEQSV  EQU PMASX3
235 QDATSV1 EQU PMASX3
```

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KLOOJE KLOOJE KLOOJE

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274		TRACE1	BSS	0
274		TRACE2	BSS	0
274	6150000040	ERR32	ERROR	32
274		ADDS1	EQU	ERR32
274		ADDS2	EQU	ERR32
274		SUBTRS	EQU	ERR32
274		MULTS	EQU	ERR32
274		DIVS	EQU	ERR32
274		EXPS	EQU	ERR32

```

*
*
275          ERRORG  BSS  0          . ORIGIN FOR THE ERROR OVERLAY
*
275 6150000000 NOEND  ERROR 0
276 6150000001 ERR1   ERROR  1
277 6150000002 ERR2   ERROR  2
300 6150000003 ERR3   ERROR  3
301 6150000004 ERR4   ERROR  4
302 6150000005 ERR5   ERROR  5
303 6150000006 ERR6   ERROR  6
304 6150000007 ERR7   ERROR  7
305 6150000010 ERR8   ERROR  8
306 6150000011 ERR9   ERROR  9
307 6150000012 ERR10  ERROR 10
310 6150000013 ERR11  ERROR 11
311 6150000015 ERR13  ERROR 13
312 6150000016 ERR14  ERROR 14
313 6150000017 ERR15  ERROR 15
314 6150000020 ERR16  ERROR 16
315 6150777756 ERR17  ERROR -17
316 6150000023 ERR19  ERROR 19
317 6150000024 ERR20  ERROR 20
320 6150000025 ERR21  ERROR 21
321 6150000026 ERR22  ERROR 22
322 6150000027 ERR23  ERROR 23
323 6150000030 ERR24  ERROR 24
324 6150000031 ERR25  ERROR 25
325 6150000032 ERR26  ERROR 26
326 6150000033 ERR27  ERROR 27
327 6150000034 ERR28  ERROR 28
330 6150000035 ERR29  ERROR 29
331 6150000036 ERR30  ERROR 30
332 6150000037 ERR31  ERROR 31
333 6150000043 ERR35  ERROR 35
334 6150000044 ERR36  ERROR 36
335 6150000045 ERR37  ERROR 37
336 6150000046 ERR38  ERROR 38
337 6150000047 ERR39  ERROR 39
340 6150000050 ERR40  ERROR 40
341 6150000051 ERR41  ERROR 41
342 6150000052 ERR42  ERROR 42
343 6150000053 ERR43  ERROR 43
344 6150000054 ERR44  ERROR 44
345 6150000060 ERR48  ERROR 48
346 6150000061 ERR49  ERROR 49
347 6150000062 ERR50  ERROR 50
350 6150000064 ERR52  ERROR 52
351 6150000065 ERR53  ERROR 53
352 6150000067 ERR55  ERROR 55
353 6150000070 ERR56  ERROR 56
354 6120000267 FATBUMP SB2   OUTFET
          7160000000          SX6   0
355 6150777711          SB5   -54
          0100004272          RJ    PB
356 0400003341          EQ    RTERROR
  
```

357		MCOPTBL	BSS	0
357	0400000441	XNOOP	MICOP	NOOP,0,2
		*		
360	0400000525	XCATCHK	MICOP	CATCHK,0,0
361	0400000547	XALTCHK	MICOP	ALTCHK,0,0
362	0400000636	XPMCHK	MICOP	PMCHK,0,0
363	0400001027	XASCHK	MICOP	ASCHEK,0,0
364	0400001027	XMCHK	MICOP	MCHEK,0,0
365	0400001027	XDCHEK	MICOP	DCHEK,0,0
366	0400001027	XEXPCHK	MICOP	EXPCHK,0,0
367	0400001165	XCONCAT	MICOP	CONCAT,0,0
370	0400000757	XALT	MICOP	ALTER,0,0
371	0400001042	XAND	MICOP	ZAND,0,0
372	0400001053	XNOT	MICOP	ZNOT,0,0
373	0400001047	XEOR	MICOP	ZEOR,0,0
374	0400001051	XOR	MICOP	ZOR,0,0
375	0400001056	XLEFT	MICOP	ZLEFT,0,0
376	0400001061	XRITE	MICOP	ZRITE,0,0
377	0400001071	XADD	MICOP	ADD,0,0
400	0400001101	XSUBTR	MICOP	SUBTR,0,0
401	0400001036	XUNADD	MICOP	UNADD,0,0
402	0400001035	XUNSUB	MICOP	UNSUB,0,0
403	0400001107	XMULT	MICOP	MULT,0,0
404	0400001120	XDIV	MICOP	DIV,0,0
405	0400001130	XEXP	MICOP	EXP,0,0
406	0400001322	XPM	MICOP	PM,0,0
407	0400001454	XPRD	MICOP	PRD,0,6
410	0400001453	XDOL	MICOP	DOL,0,6
411	0400001452	XSTAR	MICOP	STAR,0,6
412	0400001566	XASGN	MICOP	ASGN,0,4
413	0400001577	XASGNPM	MICOP	ASGNPM,0,4
414	0400001534	XSUBCM	MICOP	SUBCOM,0,0
415	0400001647	XPARAM	MICOP	PARAM,0,0
416	0400000457	XSKIP	MICOP	SKIP,0,0
417	0400001561	XINDRCN	MICOP	INDRCN,0,0
420	0400001563	XINDRCV	MICOP	INDRCV,XINDRCN,2
421	0400000521	XEND	MICOP	END,0,0
422	0400000275	XNOEND	MICOP	NOEND,0,0
423	0400001520	XZERO	MICOP	ZERO,0,2
424	0400001513	XNULL	MICOP	NULL,0,2
425	0400001525	XARRAY	MICOP	ARRAY,0,1
426	0400001541	XARRAYN	MICOP	ARRAYN,0,2
427	0400001542	XARRAYV	MICOP	ARRAYV,XARRAYN,3
430	7777777776	XCALL	MICOP	CALL,0,12B,SPEC
431	0400001522	XNAME	MICOP	NAME,0,1
432	0400001565	XOPRND	MICOP	OPRND,XNAME,23B
		53	XGOX	EQU *-MCOPTBL-1
433	7777777776	XGOS	MICOP	GOS,0,2,SPEC
434	7777777776	XGOF	MICOP	GOF,0,2,SPEC
435	7777777776	XGOTO	MICOP	GOTO,0,2,SPEC
436	0400000504	XGOTOT	MICOP	GOTOT,0,2
437	0400000500	XGOTOC	MICOP	GOTOC,0,2
440	0400000476	XNOFAIL	MICOP	NOFAIL,0,2

```

*
441 505577776      NEXTMIC SA5  A5-1      . NEXT MICRO-OPERATION
      63150          SB1  X5        . OPERATION PART
      21522          AX5  18        . ADDRESS PART
442 0335000443    NG    X5,NEWRULE . BRANCH IF END OF RULE
      0211000000    JP    B1+0      . BRANCH TO THE CODE FOR THE MICOP
*
      441          NOOP  EQU  NEXTMIC
*
443 5110000217    NEWRULE SA1  STCOUNT . BUMP STCOUNT
      5120000220    SA2  STLIM    . AND CHECK AGAINST STLIM
444 7170000001    SX7  1
      36771          IX7  X7+X1
      37212          IX2  X1-X2
445 54710          SA7  A1
      0322000316    PL   X2,ERR19
446 0211000000    JP    B1
*
447 0335000451    GOTO  NG    X5,GOTO1 . GO TO TERMINATES THE RULE
      6110000451    SB1  GOTO1
450 0400000443    EQ    NEWRULE
451 73550          GOTO1 SX5  X5
      0335001776    NG    X5,RETUN . BRANCH IF RETURN OR UNDEFINED
      53550          SA5  X5        . FETCH MICOP ADDRESSED
452 63150          SB1  X5
      21522          AX5  18
      0335000443    NG    X5,NEWRULE
453 0211000000    SSKIP1 JP    B1
*
454 0400000447    GOS   EQ    GOTO    . SLIGHTLY DIFFERENT THAN GOTO
*
455 54550          SNDMIC SA5  A5        . HIGH ORDER MICRO-INSTRUCTION
      43067          MX0  55
      20506          LX5  6
      15150          BX1  -X0*X5 . MASK OFF OPERATION CODE
456 21552          AX5  42        . ADDRESS PART OF X5
      63110          SB1  X1        . MCOPTBL CONTAINS EQ JUMPS TO THE
      0211000357    JP    B1+MCOPTBL . COPE FOR THE PARTICULAR MICOP
*
457 6110000441    SKIP  SB1  NEXTMIC
460 5110000213    SSKIP SA1  STAKTOP . SKIP OPERANDS IN STACK
      63210          SB2  X1
461 0462000453    SSKIP2 EQ   B6,B2,SSKIP1
      56160          SA1  B6
      63310          SB3  X1
462 67663          SB6  B6-B3
      21167          AX1  55
      0311000461    NZ   X1,SSKIP2 . IF OPERAND IS OF SF TYPE
463 501177776    SA1  A1-1 . RELEASE IT
      76770          SX7  B7
      63710          SB7  X1
464 21122          AX1  18
      53710          SA7  X1
      0400000461    EQ   SSKIP2
*
465 5110000212    FAIL  SA1  INFAL . FAILURE IN CURRENT RULE
      0331000306    NG   X1,ERR9 . ERROR IF IN GO TO PART
    
```

466	6110000467		SB1	FAIL1		
	0400000460		EQ	SSKIP	.	SKIP OPERANDS IN THE STACK
467	6120000474	FAIL1	SB2	GOF		
	6140000447		SB4	GOTO		
470	5055000001		SA5	A5+1		
471	5055777776	FAIL2	SA5	A5-1	.	SKIP MICOPS UNTIL END OF THE RULE
	6235000000		SB3	X5+0	.	OR A GOF JUMP IS FOUND.
472	0423000475		EQ	B2,B3,FAIL3		
	0434000475		EQ	B3,B4,FAIL3	.	UNCONDITIONAL JUMP
473	0325000471		PL	X5,FAIL2		
474	0400000441	GOF	EQ	NEXTMIC	.	GOF IS IGNORED OTHERWISE
475	21522	FAIL3	AX5	18		
	0400000451		EQ	GOTO1	.	BUT NOW IT IS EXECUTED
		*				
		*				
476	43701	NOFAIL	MX7	1	.	MICRO OPERATION
	5170000212		SA7	INFAIL	.	SET VARIABLE TO SIGNAL ERRO
477	0400000455		EQ	SNDMIC	.	ON FAILURE (IN GO TO PART)
		*				
500	56160	GOTOC	SA1	B6	.	MICRO OPERATION
	21167		AX1	55	.	TRANSFER CONTROL TO TRANSLATED
	6211777763		SB1	X1-CTY	.	CODE
501	0510000507		NE	B1,B0,ERR34	.	TOP OPERAND HAS TO BE OF CODE TYPE
	5156777776		SA5	B6-1		
502	6166777775	GOTOC1	SB6	B6-2	.	REMOVE TOP OPERAND
	13777		BX7	X7-X7		
503	5170000212		SA7	INFAIL	.	CLEAR INFAIL
	0400000447		EQ	GOTO		
		*				
504	5120000506	GOTOT	SA2	GTTWD	.	MICRO OPERATION
	6130000507		SB3	GTTSW	.	GO TO THE LABEL DESCRIBED AT THE
505	0400000526		EQ	CHEK	.	TOP OF THE STACK
		*				
506	0000000000	GTTWD	SWITCH	GTTSW,2,1,3,3,0,0,0,0,0,0,0,0,0,0		
507	6150000042	ERR34	ERROR	34	.	0, P,I,R,A,D,N,C
510	0100000540	+	RJ	SCATS	.	1, S
511	5146777776	+	SA4	B6-1	.	2, SF
	0400000513		EQ	GOTOT1		
512	5146777776	+	SA4	B6-1	.	3, SS,SI
	5244000000		SA4	X4+0		
513	7100000034	GOTOT1	SX0	LBLTYP	.	SEARCH FOR LABEL TYPE
	10144		BX1	X4	.	FIRST TO B5
	63540		SB5	X4		
514	21144		AX1	36		
	20067		LX0	55		
	63310		SB3	X1	.	LENGTH TO B3
515	0100002675		RJ	SEARCH	.	PERFORM SEARCH
516	0301000307		ZR	X1,ERR10	.	ERROR IF NOT FOUND
	53510		SA5	X1	.	LABEL DESCRIPTION TO X5
	76770		SX7	B7		
517	73550		SX5	X5		
	0540000502		NE	B4,B0,GOTOC1		
	63740		SB7	X4	.	RELEASE OPERAND IF SF
520	21422		AX4	18		
	53740		SA7	X4		
	0400000502		EQ	GOTOC1	.	COMPLETE GO TO

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PROGRAM TERMINATION

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521	0100004341	END	RJ	CLOSEOUT	. TERMINATE ALL OUTPUT - TYPE FILES
522	7170051604	.END.	SX7	3LEND	. MONITOR REQUEST TO QUIT
	20752		LX7	42	
523	5170000001		SA7	1	
524	0400000524	+	EQ	*	. WAIT FOR MONITOR

```

525 6130000532          CATCHCK SB3  CATCSW          . MICRO OPERATION
      5120000531          SA2  CATCWD          . CHECK LEFT OPERAND FOR CONCAT
*
*      CHECK TOP OPERAND  X0,X1,X2,B1,B3,B4,
*
526 5116000000          CHEK    SA1  B6+0          . FETCH TOP OPERAND
      21167              AX1  55          . TYPE PART TO X1
      20102              LX1  2
527 6241000000          SB4  X1+0          . GO TO STORE(X2(X1)+B3)
      23242              AX2  B4,X2          .
      43070              MX0  56          . X2 IS TREATED HERE AS A LINEAR
530 15220              BX2  -X0*X2        . ARRAY OF 4 BIT INTEGERS
      63323              SB3  X2+B3
      0233000000          JP    B3
*
531 00021042100        CATCWD  SWITCH CATCSW,2,1,3,3,2,2,2,0,2,2,2,2,0,0
*
532 6110000441          +      SB1  NEXTMIC          . 0, I
      0400002401          EQ    ITOSFTP
533 0100000540          +      RJ    SCATS          . 1, S
534 0400000441          +      EQ    NEXTMIC          . 2, SF,P,R,A,D,N,C
535 5116777776          CATCSS  SA1  B6-1          . 3, SS,SI
      7170000002          SX7  2
536 53210              SA2  X1
      56760              SA7  B6          . STORE SF TYPE HEADING
      0100002350          RJ    SSTOSF          . COPY THE STRING
537 5166777776          SA6  B6-1          . STORE THE SVD OF THE COPY
      0400000441          EQ    NEXTMIC
*
540 46000              SCATS  NO
541 56160              +      SA1  B6
      6241777776          SB4  X1-1          . STRING LENGTH TO B4
      67264              SB2  B6-B4          . FIRST
542 6136777776          SB3  B6-1          . LAST
      0540000544          NZ    B4,SCATS1          . IF NULL STRING THEN ONE
543 5100000001          SA0  1          . MORE WORD HAS TO BE RESERVED
      0100002052          RJ    RESERVE          . IN THE STACK
544 6162000001          SCATS1 SB6  B2+1          . NEW SF TYPE STACK ENTRY CONSISTS
      0100002300          RJ    STOSFX6          . OF TWO WORDS
545 7170000002          SX7  2
      5166777776          SA6  B6-1          . THE SVD
546 56760              SA7  B6          . AND THE HEADING
      66400              SB4  B0          . ZERO IN B4 SIGNALS SF TYPE USUALLY
      0400000540          EQ    SCATS
*
547 6130000552          ALTCHK SB3  ALTCSW          . MICRO OPERATION CHECK LEFT
      5120000551          SA2  ALT CWD          . OPERAND FOR ALTERATION
550 0400000526          EQ    CHEK
*
551 00000000016        ALT CWD SWITCH ALTCSW,2,8,1,1,5,3,4,7,0,0,0,0,0,0,0
552 6150000014          +      ERROR 12          . 0, R,A,D,N,C
553 5146777776          +      SA4  B6-1
      0400000602          EQ    ALT CSS          . 1, SS
554 7146777776          +      SX4  B6-1
      0400000602          EQ    ALTCSF          . 2, SF
555 56160              +      SA1  B6
      63410              SB4  X1
    
```


	0400000615		EQ	ALTCPA	. 3, PA
556	43074	+	MX0	60	
	0400000563		EQ	ALTCS1	. 4, PE
557	6110000001	+	SB1	1	
	77001		SX0	B0-B1	
	56260		SA2	B6	
560	63420	+	SB4	X2	
	0400000564		EQ	ALTCS2	. 5, PS
561	0100002255	+	RJ	ITOS	. 7, I
562	7100000000	+	SX0	0	. 8, S
563	6110000002	ALTCS1	SB1	2	
	56260		SA2	B6	
	63420		SB4	X2	
564	66260	ALTCS2	SB2	B6	
	56010		SA0	B1	. RESERVE LOCATIONS FOR ALT AND
	0100002052		RJ	RESERVE	. PERHAPS LIT
565	66341		SB3	B4+B1	
	67363		SB3	B6-B3	
566	6122777776	ALTCS3	SB2	B2-1	. PUSH TOP OPERAND DOWN B1 WORDS
	0423000571		EQ	B2,B3,ALTCS4	
567	56120		SA1	B2	
	10711		BX7	X1	
	54711		SA7	A1+B1	
570	0400000566		EQ	ALTCS3	
571	0320000610	ALTCS4	PL	X0,ALTCSS2	. BRANCH IF S OR I
	7160001643		SX6	ALTPM	
572	20660		LX6	48	
	0300000574		ZR	X0,ALTCPE1	. BRANCH IF PE
	57664		SA6	B6-B4	. PS
573	0400000613		EQ	ALTCSS3	
574	7170001645	ALTCPE1	SX7	EXPPM	
	20760		LX7	48	
575	7114000001		SX1	B4+1	
	12717		BX7	X1+X7	. PUT EXP AND ENDEX BRACKETS
	57764		SA7	B6-B4	. AROUND THE PATTERN EXPRESSION
576	5067777776		SA6	A7-1	
	7170001624		SX7	ENDEXPM	
577	20760		LX7	48	
	56760		SA7	B6	
	5100000001		SA0	1	
600	0100002052		RJ	RESERVE	
601	6110000003		SB1	3	
	0400000613		EQ	ALTCSS3	
		*			
602		ALTCSS	BSS	0	
602	53140	ALTCSF	SA1	X4	. FETCH DESCRIPTOR
	21144		AX1	36	
	6110000002		SB1	2	
603	63510		SB5	X1	. LENGTH TO B5
	5201000001		SA0	X1+1	
604	0100002052		RJ	RESERVE	
605	53140		SA1	X4	
	10411		BX4	X1	
	0100002275		RJ	SSTOS	. CONVERT THE LIST INTO S FORMAT
606	66340		SB3	B4	
	64400		SB4	A0	
	0530000610		NE	B3,B0,ALTCSS2	. RELEASE IF SF

607	76770		SX7	B7	
	63740		SB7	X4	
	21422		AX4	18	
	53740		SA7	X4	
610	7160001643	ALTCSS2	SX6	ALTPM	
	7170002046		SX7	LITPM	
611	20760		LX7	48	. COMMON PROGRAM TO PLACE THE
	76140		SX1	B4	. ALT AND LIT PM OPERATIONS
	20660		LX6	48	
	12771		BX7	X7+X1	
612	57764		SA7	B6-B4	
	5067777776		SA6	A7-1	
613	7170000016	ALTCSS3	SX7	SPECTY	. PUT THE HEADER WORD INTO THE STACK
	20767		LX7	55	. SPEC TYPE DOES NOT MATTER
	76441		SX4	B4+B1	
614	12747		BX7	X4+X7	
	56760		SA7	B6	
	0400000441		EQ	NEXTMIC	
		*			
615	21122	ALTCPA	AX1	18	. UNPACK PA PARAMETER
	66360		SB3	B6	
	63110		SB1	X1	. INTO B1
	67261		SB2	B6-B1	
616	5113777776	ALTCPA1	SA1	B3-1	
	10711		BX7	X1	
	56730		SA7	B3	
617	6133777776		SB3	B3-1	
	0532000616		NE	B3,B2,ALTCPA1	
620	7170001643		SX7	ALTPM	. PUT ALT OPERATION IN THE FRONT
	20760		LX7	48	. OF THE LAST ELEMENT (B1 POINTS
	56720		SA7	B2	. TO THE BEGINNING OF IT RELATIVE
621	5100000001		SA0	1	. TO THE END OF THE PATTERN)
	0100002052		RJ	RESERVE	
622	6130777645		SB3	EXPPM-1777B	
	6150777751		SB5	ARBNOPM-1777B	
623	67164		SB1	B6-B4	
	43014		MX0	12	
	56210		SA2	B1	
	11202		BX2	X0*X2	
624	6111000001	ALTCPA2	SB1	B1+1	. LINK ALL ALT OPERATIONS ON THE
625	0416000634	ALTCPA3	EQ	B1,B6,ALTCPA6	. ZERO LEVEL TOGETHER
	56110		SA1	B1	
	26721		UX7	B2,X1	
626	0371000624		ID	X1,ALTCPA2	. PRDPM OR DOLPM
	0602000630		GE	B0,B2,ALTCPA5	
627	63111	ALTCPA4	SB1	X1+B1	. ANY, SPAN OR THE LIKE
	0400000625		EQ	ALTCPA3	
630	0423000627	ALTCPA5	EQ	B2,B3,ALTCPA4	
	0425000627		EQ	B2,B5,ALTCPA4	. EXP OR ARBNO
631	6122000134		SB2	B2-ALTPM+1777B	
	0520000624		NE	B2,B0,ALTCPA2	. ANYTHING ELSE
632	64220		SB2	A2	
	77312		SX3	B1-B2	. A2 HOLDS THE LINK
	12723		BX7	X2+X3	
	54720		SA7	A2	
633	54210		SA2	A1	
	11202		BX2	X0*X2	

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0400000624
634 6110000001      ALTCPA6 EQ  ALTCPA2
                        SB1  1          . END OF SCAN
                        . MARK END OF LINK WITH ZERO
                        10722
                        54720
635 0400000613      *
                        *
                        *
636 6130000641      PMCHEK SB3  PMCSW          . MICRO INSTRUCTION
                        5120000640 SA2  PMCWD          . CHECK LEFT OPERAND FOR PATTERN
637 0400000526      EQ    CHEK          . MATCH
                        *
                        *
640 00000000002     PMCWD  SWITCH FOR PMCHECK, IN GENERAL EVERYTHING IS PUT INTO S FORMAT
641 6150000017      +      ERROR 15          . 0, P,R,A,D,N,C
642 0100002255      +      RJ    ITOS          . 1, I
643 56160           +      SA1  B6          . 2, S
                        10611
                        0400000654
644 7146777776      +      EQ    PMC1
                        SX4  B6-1
                        0400000646
645 5146777776      +      EQ    PMCSF          . 3, SF
646 53140           PMCSEF SA4  B6-1          . 4, SS,SI
                        SA1  X4
                        21144
                        63510
647 5201777776      SA0  X1-1          . B6 MAY BE DECREASED IN FACT
                        0100002052
650 53140           RJ    RESERVE
                        SA1  X4
                        10411
                        0100002275
651 7020000002     SX2  A0+2
                        0540000653
652 76770           NE    B4,B0,PMCSF1 . RELEASE IF SF
                        63740
                        21422
                        53740
653 7160000001     PMCSF1 SX6  STY          . STRING HEADER WORD INTO X6
                        20667
                        12626
654 73550           PMC1  SX5  X5          . PACK ADDRESS OF OPERAND
                        5110000250 SA1  UA          . OR UA IF IT IS ZERO INTO
                        20522
655 20122           LX5  18          . THE HEADING
                        0315000656
                        10511
656 12665           PMC2  BX6  X6+X5
                        56660
                        0400000441
                        EQ    NEXTMIC
                        *
                        *
                        *
                        *
                        *
                        *
                        *
                        *
                        *
                        *
657 7100000002     SACHEK1 SX0  2          . RETURN INTEGER TYPE
                        12770
                        BX7  X7+X0
660 46000           SACHEK  NO          . ENTRY
661 56360           +      SA3  B6
    
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	5120000664		SA2	ARITWD	. SWITCH ON TYPE OF TOP OPERAND
	21367		AX3	55	
662	20302		LX3	2	
	63430		SB4	X3	
	23242		AX2	B4,X2	
	43370		MX3	56	
663	15223		BX2	-X3*X2	
	63320		SB3	X2	
	0233000665		JP	B3+ARITSW	
		*			
664	00000000054		ARITWD	SWITCH ARITSW,3,5,2,4,0,0,0,6,1,0,0,0,0	
665	6150000057		ERR47	ERROR 47	. 0, P,A,D,N,C
666	76700		+	SX7 B0	. 1, R
	0400000660		EQ	SACHEK	
667	5146777776		+	SA4 B6-1	. 2, SS
	0400000715		EQ	ACHEKSF	
670	7146777776		+	SX4 B6-1	. 3, SF
	0400000715		EQ	ACHEKSF	
671	5146777776		+	SA4 B6-1	. 4, SI
	0400000700		EQ	ACHEKSI	
672	56160		+	SA1 B6	. 5, S
	63510		SB5	X1	
	0400000711		EQ	ACHEKS	
673	5116777776		+	SA1 B6-1	. 6, I
	0321000675		PL	X1,ACHEKI1	
674	14111		BX1	-X1	. ABS VALUE
675	37010	ACHEKI1	IX0	X1-X0	
	7170000007		SX7	ITY	
	20767		LX7	55	
676	0330000657		NG	X0,SACHEK1	. LESS THAN X0, RETURN INTEGER TYPE
	0100002255		RJ	ITOS	. ELSE CONVERT TO STRING.
677	0400000660		EQ	SACHEK	
700	53240	ACHEKSI	SA2	X4	. SI FORMAT
	5212777776		SA1	X2-1	. TEST INTEGER PART FIRST
	37010		IX0	X1-X0	
701	0320000705		PL	X0,ACSI1	. IF TOO BIG, GO GET THE STRING PART
	10611		BX6	X1	
	54640		SA6	A4	
702	7170000007	ACHKSI1	SX7	ITY	. ELSE PUT THE INTEGER TO THE
	7100000002		SX0	2	. TOP OF THE STACK
703	20767		LX7	55	
	12707		BX7	X0+X7	
	5176000000		SA7	B6+0	
704	0400000660		EQ	SACHEK	. RETURN
705	10422	ACSI1	BX4	X2	
	21444		AX4	36	. LENGTH OF THE STRING TO X4
	6254000000		SB5	X4+0	
706	5204777776		SA0	X4-1	. RESERVE SPACE
	0100002052		RJ	RESERVE	. (AO MAY BE NEGATIVE)
707	10122		BX1	X2	
	0100002275		RJ	SSTOS	. CONVERT SI TO S
710	7214000001		SX1	X4+1	
	0400000754		EQ	ACHEKS5	. GO TO FORM AN S TYPE HEADING
		*			
711	6110000000	ACHEKS	SB1	0	. PROCESS A NUMBER GIVEN IN S FORM
	6120000000		SB2	0	. SET STATE AND COUNT TO ZERO
712	67365		SB3	B6-B5	. NORMALIZED STRING WILL BE STORED

	76200		SX2	B0	. FROM B0. X2 IS BINARY VALUE
	6140000713		SB4	ACHEKSR	. RETURN ADDRESS
713	6155777776	ACHEKSR	SB5	B5-1	
	0450000744		EQ	B5,B0,ACHEKS1	
714	57165		SA1	B6-B5	. EXAMINE ALL CHARACTERS
	0400000731		EQ	DIGIT	
		*			
715	53140	ACHEKSF	SA1	X4	. RESERVE SPACE IN STACK FOR
	21144		AX1	36	. LONGEST POSSIBLE RESULT
	64500		SB5	A0	. SAVE A0
	53010		SA0	X1	
716	0100002052		RJ	RESERVE	
717	53440		SA4	X4	
	10044		BX0	X4	
	6030000000		SB3	A0+0	
720	10644		BX6	X4	
	56050		SA0	B5	
	66540		SB5	B4	. B5 IS 0 IFF SF
	67363		SB3	B6-B3	
721	6133777775		SB3	B3-2	
	66100		SB1	B0	. INITIALIZE DIGIT COUNT
722	6140000725		SB4	ACHKSFR	. RETURN ADDRESS
	66200		SB2	B0	. STATE
	76200		SX2	B0	. BINARY VALUE
723	0300000727	ACHKSF2	ZR	X0,ACHKSF3	
	5240000000		SA4	X0+0	. NEXT WORD FROM THE LIST
724	73040		SX0	X4	
	13440		BX4	X4-X0	
725	43366	ACHKSFR	MX3	54	. UNPACK CHARACTERS AND CALL DIGIT
	20406		LX4	6	
	15143		BX1	-X3*X4	
726	0311000731		NZ	X1,DIGIT	
	0400000723		EQ	ACHKSF2	
727	0550000744	ACHKSF3	NE	B5,B0,ACHEKS1	. RELEASE LIST IF SF
	76770		SX7	B7	
	63760		SB7	X6	
730	21622		AX6	18	
	53760		SA7	X6	
	0400000744		EQ	ACHEKS1	
		*			
731	7271000000	DIGIT	SX7	X1+0	. OPEN SUBROUTINE TO CONVERT
	7211777732		SX1	X1-1R+	. STRINGS TO INTEGERS
732	0321000741		PL	X1,DIGIT2	. BRANCH IF NOT DIGIT
	7211000012		SX1	X1+10	
733	0331000277		NG	X1,ERR2	. ERROR IF LETTER
	0311000735		NZ	X1,DIGIT4	. IGNORE LEADING BLANKS
734	0602000742		GE	B0,B2,DIGIT3	
735	10322	DIGIT4	BX3	X2	
	66240		SB2	B4	
	20202		LX2	2	. MULTIPLY ACCUMULATED VALUE BY 10
	36223		IX2	X2+X3	. AND ADD NEW DIGIT
736	20201		LX2	1	
	36221		IX2	X2+X1	
737	6111000001	DIGIT1	SB1	B1+1	. BUMP DIGIT COUNT
	56713		SA7	B1+B3	. STORE NEXT DIGIT
740	0244000000	DIGIT6	JP	B4	. RETURN
741	0520000277	DIGIT2	NE	B2,B0,ERR2	. ERROR IF AFTER SIGN

	7231777776		SX3	X1-1	
742	6120777776	DIGIT3	SB2	-1	. SET STATE TO AFTER SIGN
	0301000740		ZR	X1,DIGIT6	. IGNORE +
743	0303000737		ZR	X3,DIGIT1	. BRANCH IF -
	0400000277		EQ	ERR2	
		*			
744	66631	ACHEKS1	SB6	B3+B1	. AFTER CONVERSION
	0410000751		EQ	B1,B0,ACHEKS3	. BRANCH IF NULL STRING
745	5113000001		SA1	B3+1	. PICK UP FIRST CHARACTER
	7211777731		SX1	X1-1R-	
746	0311000750		NZ	X1,ACHEKS2	. BYPASS IF NOT -
	13000		BX0	X0-X0	
747	6111777776		SB1	B1-1	
	37202		IX2	X0-X2	. CHANGE THE SIGN OF THE BINARY VALUE
750	75001	ACHEKS2	SX0	A0-B1	
	0330000753		NG	X0,ACHEKS4	. TOO LONG, PRODUCE S TYPE RESULT
751	6163000002	ACHEKS3	SB6	B3+2	
	10622		BX6	X2	
752	5166777776		SA6	B6-1	. I TYPE RESULT OTHERWISE
	0400000702		EQ	ACHKS11	
753	7111000001	ACHEKS4	SX1	B1+1	
754	7170000001	ACHEKS5	SX7	STY	. S TYPE HEADING TO X7 USING X1
	6166000001		SB6	B6+1	
755	20767		LX7	55	
	12771		BX7	X7+X1	
	56760		SA7	B6	
756	0400000660		EQ	SACHEK	
		*			
757	6130000762	ALTER	SB3	ALTSW	. MICRO OPERATION
	5120000761		SA2	ALTWD	. ALTERNATION
760	0400000526		EQ	CHEK	
		*			
761	14631463150	ALTWD		SWITCH ALTSW,7,5,8,8,0,1,2,4,3,3,3,3,3,3	
762	6130000000	+	SB3	0	. 0, PS
763	56460	+	SA4	B6	
	63240		SB2	X4	
	0400001012		EQ	ALTPA1	. 1, PA
764	56160	+	SA1	B6	
	63210		SB2	X1	
	0400001021		EQ	ALTPE1	. 2, PE
765	6150000014	+	ERROR	12	. 3, R,A,D,N,C
766	0100002255	+	RJ	ITOS	. 4, I
767	56160	+	SA1	B6	. 5, S
	63210		SB2	X1	
	57262		SA2	B6-B2	
	63120		SB1	X2	
770	0400001001		EQ	ALTS2	
771	7146777776	+	SX4	B6-1	
	0400000773		EQ	ALTSS1	. 6, SF
772	5146777776	+	SA4	B6-1	
	6130000000		SB3	0	. 7, SS,SI
773	5116777775	ALTSS1	SA1	B6-2	
	53240		SA2	X4	
	63110		SB1	X1	. CONVERT THE LIST STRUCTURE INTO
774	64210		SB2	A1	. A LIT OPERATION
	21244		AX2	36	
	63520		SB5	X2	

775	5202777776		SA0	X2-1	
		0100002052	RJ	RESERVE	
776	53140		SA1	X4	
		10411	BX4	X1	
		0100002275	RJ	SSTOS	
777	67262		SB2	B6-B2	
		0430001001	EQ	B3,B0,ALTS2	. RELEASE LIST IF SF
		76770	SX7	B7	
1000	63740		SB7	X4	
		21422	AX4	18	
		53740	SA7	X4	
1001	7170002046		SX7	LITPM	
		20760	LX7	48	
1002	7112000000		SX1	B2+0	
		12717	BX7	X1+X7	
		57762	SA7	B6-B2	
1003	7160000005		SX6	PATY	. INSERT PA TYPE HEADING
		76020	SX0	B2	
		20667	LX6	55	
1004	20022		LX0	18	
		76121	SX1	B2+B1	
		12606	BX6	X0+X6	
		12616	BX6	X1+X6	
1005	66121		SB1	B2+B1	. UPDATE THE CHAIN OF ALT
		67161	SB1	B6-B1	. OPERATIONS. ALL ALT-S WILL POINT
		5166000000	SA6	B6+0	. TO THE END OF THE PATTERN+1
1006	6111000001		SB1	B1+1	
		43014	MX0	12	
1007	56110		SA1	B1	
		63210	SB2	X1	
		77261	SX2	B6-B1	
		11701	BX7	X0*X1	
1010	12727		BX7	X2+X7	
		5071000000	SA7	A1+0	
		64112	SB1	A1+B2	
1011	0520001007		NE	B2,B0,ALTS5	
		0400000441	EQ	NEXTMIC	
			*		
1012	57362		ALTPA1	SA3	B6-B2
		67462	SB4	B6-B2	
		63130	SB1	X3	
1013	6122777776		SB2	B2-1	
		6166777776	SB6	B6-1	
1014	6144000001		ALTPA2	SB4	B4+1
		56140	SA1	B4	. POP THE PATTERNONE WORD UP
		10711	BX7	X1	
1015	5071777776		SA7	A1-1	
		0546001014	NE	B4,B6,ALTPA2	
1016	0403001003		EQ	B0,B3,ALTS3	. BRANCH IF SIMPLE PATTERN
		7160000005	SX6	PATY	
1017	21422		AX4	18	. THE RESULT PARAMETER IS THE PARA
		20667	LX6	55	. METER OF THE SECOND OPERAND IN
		73040	SX0	X4	. THIS CASE.
1020	0400001004		EQ	ALTS4	
			*		
1021	57362		ALTPE1	SA3	B6-B2
		67362	SB3	B6-B2	

1022	5100000001	63130	SB1	X3	. PUT EXP AND ENDEX BRACKETS
		0100002052	SA0	1	. AROUND THE PATTERN EXPRESSION
1023	7170001645		RJ	RESERVE	
		6122000001	SX7	EXPPM	
1024	20760		SB2	B2+1	
		76020	LX7	48	
		7160001624	SX0	B2	
1025	12707		SX6	ENDEXPM	
		20660	BX7	X0+X7	
		56730	LX6	48	
1026	5166777776		SA7	B3	
		0400001003	SA6	B6-1	
			EQ	ALTS3	
			*		
1027	5110001034		ASCHEK	SA1 TENTO15	ALLOW 48 BIT NUMBERS FOR DICK ROTH
		5100000017		SA0 15	HERE IS THE LOG OF TEN TO THE 15TH
1030	10011		ACHEK1	BX0 X1	. SUBTRACTION
		0100000660	RJ	SACHEK	
1031	0400000441		EQ	NEXTMIC	
			*		
		1027	MCHEK	EQU ASCHEK	
		1027	DCHEK	EQU ASCHEK	
		1027	EXPCHK	EQU ASCHEK	
			*		
1032	0000000007346545000		TENTO9	DATA 1000000000	
1033	00000000112402762000		TENTO10	DATA 10000000000	
1034	00034327724461500000		TENTO15	DATA 1000000000000000	
			*		
			*		
1035	6110001101		UNSUB	SB1 SUBTR	. MICRO OPERATION UNARY MINUS
		0400001037	EQ	UNX	
1036	6110001071		UNADD	SB1 ADD	. MICRO OPERATION UNARY PLUS
1037	5116000000		UNX	SA1 B6+0	. TEST FOR REAL OPERAND
		10711		BX7 X1	
		21167		AX1 55	
1040	7211777767		SX1	X1-RTY	
		0311000453	NZ	X1,SSKIP1	
1041	5176777775		SA7	B6-2	. CHANGE LEFTOPERAND TO REAL
		0211000000	JP	B1	. TYPE
			*		
			*		
1042	0100001064		ZAND	RJ BOOLPCK	
1043	11712			BX7 X1*X2	
1044	54720		BOOLXIT	SA7 A2	
		43103		MX1 3	
		7170777775		SX7 -2	
1045	20172		LX1	60+3-5	SHIFT THE DESCRIPTOR PROPERLY
		63676	SB6	X7+B6	
		37717	IX7	X1-X7	
		56760	SA7	B6+B0	
1046	0400000441		EQ	NEXTMIC	
1047	0100001064		ZEOR	RJ BOOLPCK	
1050	13712			BX7 X1-X2	
		0400001044	EQ	BOOLXIT	
1051	0100001064		ZOR	RJ BOOLPCK	
1052	12712			BX7 X1+X2	

1053	0400001044		EQ	BOOLXIT	
	6110001054	ZNOT	SB1	ZXNOT	
			EQ	UNX	
1054	0100001064	ZXNOT	RJ	BOOLPCK	
1055	17721		BX7	-X1-X2	
			EQ	BOOLXIT	
1056	0400001044	ZLEFT	RJ	BOOLPCK	
1057	0100001064		SX0	B6	
	76060		SB6	X1	
			LX7	B6,X2	
	63610		SB6	X0	
			EQ	BOOLXIT	
1060	0400001044		RJ	BOOLPCK	
1061	0100001064	ZRITE	SX0	B6	
1062	76060		SB6	X1	
			AX7	B6,X2	
	63610		SB6	X0	
			EQ	BOOLXIT	
1063	0400001044		BSSZ	1	
1064		1	SA1	TENTO15	
1065	5110001034		SA0	15	
			BX0	X1	
1066	10011		RJ	SACHEK	
			SA1	B6-1	
	0100000660		SA2	B6-3	
1067	5116777776		EQ	BOOLPCK	
1070	0400001064				
		*			
		*			
1071	5110001034	ADD	SA1	TENTO15	
			SA0	15	
	5100000017		BX0	X1	
1072	10011		RJ	SACHEK	. CHECK RIGHT OPERAND
			SA1	B6-2	
1073	5116777775		LX7	3	
			LX1	3	
	20703		PL	X7,ADDSR1	. BRANCH IF ANY OF THE OPERANDS
1074	0327001160		PL	X1,ADDSR1	
			SA1	B6-1	
1075	5116777776		SA2	B6-3	
			IX7	X1+X2	. ADD THE INTEGERS
1076	36712		BX1	X1-X1	
1077	13111	ADDEXIT	IX7	X1+X7	. ENSURE NO MINUS ZERO
			SA7	A2+0	
	5072000000		SB6	B6-2	
1100	6166777775		EQ	NEXTMIC	
	0400000441				
		*			
1101	5110001034	SUBTR	SA1	TENTO15	
			SA0	15	
	5100000017		BX0	X1	
1102	10011		RJ	SACHEK	. CHECK RIGHT OPERAND
			SB2	SUBTR1	
	0100000660		EQ	ARITH	
1103	6120001106		EQ	SUBTRS	. BRANCH IF STRING SUBTRACTION
			FX7	X2-X1	. REAL OPERANDS
	0400001150		EQ	ARITH4	
1104	0400000274	+	IX7	X2-X1	
1105	31721	+	EQ	ADDEXIT	
	0400001163				
1106	37721	SUBTR1			
	0400001077				

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*
1107 5110001034      MULT      SA1  TENTO15
      5100000017      SA0   15
1110 10011           BX0    X1
      0100000660      RJ    SACHEK      . OPERAND CHECK AS ABOVE
1111 6120001114      SB2    MULT1
      0400001150      EQ    ARITH
1112 0400000274      +      EQ    MULTS      . BRANCH IF STRING MULTIPLICATION
1113 40721           +      FX7    X2*X1      . REAL OPERANDS
      0400001163      EQ    ARITH4
1114 27101           MULT1    PX1    X1      . PERFORM INTEGER MULTIPLICATION
      27202           PX2    X2
      42712           DX7    X1*X2
      26707           UX7    X7
1115 40312           FX3    X1*X2
      10177           BX1    X7

      24303           NX3    X3
      21160           AX1    48      48 BITS INTEGERS IN STAR
1116 0313000274      NZ    X3,ERR32
      0311000274      NZ    X1,ERR32
1117 0400001077      EQ    ADDEXIT
*
1120 5110001034      DIV      SA1  TENTO15
      5100000017      SA0   15
1121 10011           BX0    X1
      0100000660      RJ    SACHEK      . OPERAND CHECK AS ABOVE
1122 6120001125      SB2    DIV1
      0400001150      EQ    ARITH
1123 0400000274      +      EQ    DIVS      . BRANCH IF STRING DIVISION
1124 44721           +      FX7    X2/X1      . REAL OPERANDS
      0400001163      EQ    ARITH4
1125 0301000300      DIV1    ZR    X1,ERR3      . ERROR - DIVISION BY ZERO
      27101           PX1    X1      . INTEGER DIVISION
      27202           PX2    X2
1126 24101           NX1    X1
      44721           FX7    X2/X1
      26737           UX7    B3,X7
      22737           LX7    B3,X7
1127 0400001077      EQ    ADDEXIT
*
1130 5110001034      EXP      SA1  TENTO15
      5100000017      SA0   15
1131 10011           BX0    X1
      0100000660      RJ    SACHEK
1132 6120001135      SB2    EXP1
      0400001150      EQ    ARITH
1133 0400000274      +      EQ    EXPS
1134 0400000274      +      EQ    EXPS
1135 0331001145      EXP1    NG    X1,EXP4
    
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	7211777776		SX1	X1-1	
1136	0331001146		NG	X1,EXP2	SOMETHING TO THE ZEROth IS ONE
		0301001147	ZR	X1,EXP8	SOMETHING TO THE FIRST IS THE SOMETHING
1137	63210		SB2	X1 B2	IS THE EXPONENTIATION COUNT
	10122		BX1	X2	
	27202		PX2	X2	THIS IS THE UNIVERSAL MULTIPLIER
1140	27101	EXP3	PX1	X1	THIS IS THE BASE OF THE MULTIPLY LOOP
	42712		DX7	X1*X2	GET THE LOWER 48 BITS
	40312		FX3	X1*X2	GET THE HIGH ORDER BITS
	26707		UX7	X7	UNPACK NICELY
1141	10177		BX1	X7	COPY THE PARTIAL RESULT BACK INTO X1
	24303		NX3	X3	NORMALIZE THE HIGH BIT RESULT
	21160		AX1	48	A ZERO EXPONENT WOULD BE NICE
1142	0313000274		NZ	X3,ERR32	FOR SHAME THERE IS SOMETHING IN THE TOP 48
		0311000274	NZ	X1,ERR32	AN OVERFLOW IN THE BOTTOM 48 PERCHANCE
1143	10177		BX1	X7	RELOAD X1 WITH THE PARTIAL RESULT
	6122777776		SB2	B2-1	DECREMENT THE REPEAT FACTOR
1144	0520001140		NE	B2,B0,EXP3	IF NON-ZERO DO IT ALL AGAIN
	0400001077		EQ	ADDEXIT	
1145	76700	EXP4	SX7	B0	
	0400001077		EQ	ADDEXIT	A MIN US POWER GIVES ZERO RIGHT NOW...
1146	7170000001	EXP2	SX7	1	N**0
	0400001077		EQ	ADDEXIT	
1147	10722	EXP8	BX7	X2	N**1
	0400001077		EQ	ADDEXIT	
			*		USED ONLY BY SUBTR,MULT AND DIV
			*		
1150	5116777775	ARITH	SA1	B6-2	. SAME AS IN ADD
	20103		LX1	3	
	20703		LX7	3	
1151	0327001154		PL	X7,ARITH1	
		0321001154	PL	X1,ARITH1	. OF THE OPERANDS IS AN INTEGER
1152	5116777776		SA1	B6-1	
	5126777774		SA2	B6-3	
1153	0222000000		JP	B2	
1154	20173	ARITH1	LX1	59	
	0317001157		NZ	X7,ARITH3	
1155	0331000336		NG	X1,ERR38	
	5116777776		SA1	B6-1	
1156	5126777774		SA2	B6-3	
	0222777776		JP	B2-1	
1157	0222777775	ARITH3	JP	B2-2	
			*		
			*		
1160	20173	ADDSR1	LX1	59	
	0317000274		NZ	X7,ADDS1	
1161	0331000336		NG	X1,ERR38	
	5116777776		SA1	B6-1	
1162	5126777774		SA2	B6-3	
	30712		FX7	X1+X2	. PERFORM REAL ADDITION
1163	0357000335	ARITH4	OR	X7,ERR37	
	0377000335		ID	X7,ERR37	
1164	24707		NX7	X7	. NORMALIZE IN CASE OP WAS + OR -
	0200001077		JP	ADDEXIT	
			*		
			*		
1165	56460	CONCAT	SA4	B6	. RIGHT OPERAND HEADING

	63540		SB5	X4	
	21467		AX4	55	
	57365		SA3	B6-B5	. LEFT OPERAND HEADING
1166	21367		AX3	55	
	20302		LX3	2	. UNPACK TYPES
	20402		LX4	2	
	63230		SB2	X3	
1167	5110001173		SA1	CATWD	
	43070		MX0	56	
	23121		AX1	B2,X1	
1170	15110		BX1	-X0*X1	. SELECT SWITCH WORD DEPENDING ON
	5221001174		SA2	X1+CATSW1	. LEFT OPERAND TYPE
	63340		SB3	X4	
1171	23132		AX1	B3,X2	
	15110		BX1	-X0*X1	. SWITCH ON RIGHT OPERAND TYPE
	63210		SB2	X1	
1172	0222001177		JP	B2+CATSW2	
		*			
1173	00000000000	CATWD	SWITCH	CATSW1,1,0,0,0,2,2,2,0,0,0,0,0,0,0	LEFT OP
1174	00000000000		SWITCH	DUMMY1,7,8,7,7,0,0,0,0,0,0,0,0,0,0	R,A,D,N,C
1175	31463146324		SWITCH	DUMMY2,14,12,14,14,1,1,1,10,6,6,6,6,6,6	SF
1176	00000000006		SWITCH	CATSW2,5,4,5,5,2,2,2,3,0,0,0,0,0,0	PS,PA,PE
		*			
		*			TYPE X HERE DENOTES R,A,D,N,C P IS AS USUAL
		*			
1177	6150000001	+	ERROR	1	. 0, XX,XP,PX,XI,XSI
1200	5043777776	+	SA4	A3-1	. 1, SFP
	0400001301		EQ	CATSFP	
1201	67165	CATPP2	SB1	B6-B5	. 2, PP
	57265		SA2	B6-B5	
	0400001256		EQ	CATPP	
1202	0100002255	+	RJ	ITOS	. 3, PI
1203	56460	+	SA4	B6	. 4, PS
	63140		SB1	X4	
	0400001264		EQ	CATPS	
1204	7146777776	SX4	B6-1		. 5, PSF, PSS, PSI
	0400001270		EQ	CATPSF	
1205	5116777774	+	SA1	B6-3	. 6, SFX
	0400001250		EQ	CATSFR	
1206	5116777776	+	SA1	B6-1	. 7, XSF,XSS
	0400001252		EQ	CATSFR1	
1207	5116000000	+	SA1	B6+0	. 8, XS
	7211777776		SX1	X1-1	
1210	6166777776		SB6	B6-1	
	0400001254		EQ	CATSFR2	
1211	5116777776	+	SA1	B6-1	. 10, SFI
	0100002364		RJ	ITOSF	
1212	5166777776		SA6	B6-1	
	0400001214		EQ	*+2	
1213	0100000540	+	RJ	SCATS	. 12, SFS
1214	6130000000	+	SB3	0	
1215	5146777774	+	SA4	B6-3	. 14, SFSS,SFSI,SFSF
	21422		AX4	18	
	53440		SA4	X4	. FETCH LAST WORD OF LEFTOPERAND
1216	43006		MX0	6	
	10744		BX7	X4	
	6110000074		SB1	60	

1217	11240	CTSFSS1	BX2	X4*X0	. COUNT THE NUMBER OF CHARACTERS
	0302001221		ZR	X2,CTSFSS2	. IN THE LAST WORD
	20406		LX4	6	
1220	6111777771		SB1	B1-6	
	0400001217		EQ	CTSFSS1	. RIGHT SHIFT TO B1
1221	5126777776	CTSFSS2	SA2	B6-1	. SVD OF RIGTH OPERAND TO X2
	6121777755		SB2	B1-18	. LEFT SHIFT TO B2
1222	74340		SX3	A4	. NOTE HOW X3 IS USED
	0430001223		EQ	B3,B0,CTSFSS3	. SKIP IF SF ON THE RIGHT
	53220		SA2	X2	
1223	6150001237	CTSFSS3	SB5	CTSFSSR	. RETURN ADDRESS
		*			
1224	6141777771	CATSF	SB4	B1-6	
	23640		AX6	X0,B4	. MASK FOR RIGHT SHIFT
	10566		BX5	X6	
1225	20522		LX5	18	. MASK FOR LEFT SHIFT
	76470		SX4	B7	
	43052		MX0	42	. MASK FOR ADDRESS FIELD
1226	73220	CATSF4	SX2	X2	. TAKE NEXT WORD FROM RIGHT OPERAND
	0302001227		ZR	X2,CATSF5	
	53220		SA2	X2	
1227	11126	CATSF5	BX1	X2*X6	. PREPARE FOR RIGHT SHIFT
	22111		LX1	B1,X1	. RIGHT SHIFT
	12771		BX7	X7+X1	. ADD TO REST OF PREVIOUS WORD
	15110		BX1	-X0*X1	
1230	11707		BX7	X0*X7	
	0301001236		ZR	X1,CATSF8	. READY IF LAST 18 BITS ARE ZERO
	63740		SB7	X4	
1231	53140		SA1	X4	. GET NEXT FREE WORD
	12774		BX7	X7+X4	. ADD LINK TO LAST WORD
	0301001234		ZR	X1,CATSF7	
1232	15410	CATSF6	BX4	-X0*X1	
	53730		SA7	X3	. AND STORE
	74310		SX3	A1	
	15125		BX1	-X5*X2	. PREPARE FOR LEFT SHIFT
1233	22721		LX7	B2,X1	. LEFT SHIFT
	0400001226		EQ	CATSF4	. LOOP
1234	0100002057	CATSF7	RJ	MORFREE	
1235	0400001232		EQ	CATSF6	
1236	63740	CATSF8	SB7	X4	
	0255000000		JP	B5	. RETURN FROM CATSF
1237	53730	CTSFSSR	SA7	X3	. STORE LAST WORD
	5116777776		SA1	B6-1	
	53210		SA2	X1	
1240	0530001242		NE	B3,B0,CTSFSS9	. RELEASE RIGHT OPERAND IF SF
	10211		BX2	X1	
	76770		SX7	B7	
1241	63710		SB7	X1	
	21122		AX1	18	
	53710		SA7	X1	
1242	5146777774	CTSFSS9	SA4	B6-3	. LEFT OPERAND SVD
	6166777775		SB6	B6-2	
1243	21244		AX2	36	. LENGTH OF RIGHT OPERAND
	15220		BX2	-X0*X2	
	20322		LX3	18	
	20022		LX0	18	
1244	20244		LX2	36	

	11604		BX6	X0*X4	. MASK LAST OFF
	36662		IX6	X6+X2	. TOTAL LENGTH
	12663		BX6	X6+X3	. ADD LAST TO SVD
1245	54640		SA6	A4	. STORE RESULT SVD
	5110000216		SA1	MXLNGTH	
	21644		AX6	36	. CHECK LENGTH AGAINST LIMIT
1246	37116		IX1	X1-X6	
	0321000441		PL	X1,NEXTMIC	
1247	6150000022	ERR18	ERROR	18	
		*			
1250	54215	CATSFR	SA2	A1+B5	. RELEASE LEFT OPERAND
	56460		SA4	B6	. RESULT EQUALS TO RIGHT
	10622		BX6	X2	. OPERAND
	10744		BX7	X4	. NOTE - B5 HAPPENS TO CONTAIN 2
1251	54610		SA6	A1	
	54730		SA7	A3	
	7140777776		SX4	-1	. MAKE X4 NEGATIVE
1252	53110	CATSFR1	SA1	X1	. ERROR IF SF DOES NOT CONTAIN ZERO
	67665		SB6	B6-B5	. REMOVE RIGHT OPERAND
	0530001254		NE	B3,B0,CATSFR2	. RELEASE RIGHT OPERAND IF SF
1253	76770		SX7	B7	
	77406		SX4	B0-B6	. MAKE X4 NEGATIVE
	64710		SB7	A1	
	54710		SA7	A1	
1254	0334001255	CATSFR2	NG	X4,CATSFR3	
	5211000000		SA1	X1+0	. VALUE TO X1 IF SS OR SI
1255	0301000441	CATSFR3	ZR	X1,NEXTMIC	. ERROR IF X1 NOT ZERO
	0400000311		EQ	ERR13	
		*			
1256	6111000001	CATPP	SB1	B1+1	
	5111000000		SA1	B1+0	
1257	0416001261		EQ	B1,B6,CATPP1	. PUSH RIGHT OPERAND ONE WORD UP
	10611		BX6	X1	. IN THE STACK
1260	5161777776		SA6	B1-1	
	0400001256		EQ	CATPP	
1261	7100000006	CATPP1	SX0	PETY	. RESULT IS OF PE TYPE
	6212777776		SB1	X2-1	
1262	6166777776		SB6	B6-1	
	20067		LX0	55	
	73611		SX6	X1+B1	. CALCULATE BYPASS
1263	12660		BX6	X6+X0	
	56660		SA6	B6	. FORM AND STORE HEADING
	0400000441		EQ	NEXTMIC	
		*			
1264	57361	CATPS	SA3	B6-B1	
	7100002046		SX0	LITPM	. CONVERT STRING TO A LITPM OPERATION
	76610		SX6	B1	. OVERWRITING THE HEADING
1265	20060		LX0	48	. OF THE LEFT OPERAND PATTERN
	12660		BX6	X6+X0	
	54630		SA6	A3	
	73631		SX6	X3+B1	. CALCULATE BYPASS
1266	7100000006	CATPS1	SX0	PETY	
	20067		LX0	55	
	12660		BX6	X6+X0	
1267	56660		SA6	B6	
	0400000441		EQ	NEXTMIC	
		*			

1270	0430001271	CATPSF	EQ	B3,B0,CATPSF2	
	5244000000		SA4	X4+0	
1271	53140	CATPSF2	SA1	X4	
	21144		AX1	36	
	5201777776		SA0	X1-1	
1272	54330		SA3	A3	. LEFT OPERAND HEADING
	6211000001		SB1	X1+1	. LENGTH + 1
	63510		SB5	X1	. LENGTH FOR SSTOS
1273	63430		SB4	X3	. BYPASS OF LEFT OPERAND
	0100002052		RJ	RESERVE	. RESERVE LENGTH - 1 WORDS
1274	53140		SA1	X4	. TAKE SVD AFRESH
	10411		BX4	X1	
	0100002275		RJ	SSTOS	. BREAK DOWN THE STRING
1275	7160002046		SX6	LITPM	. ONE CHARACTER PER WORD
	0530001277		NE	B3,B0,CATPSF1	. RELEASE RIGHT OPERAND IF SF
1276	76770		SX7	B7	
	63740		SB7	X4	
	21422		AX4	18	
	53740		SA7	X4	
1277	76010	CATPSF1	SX0	B1	
	20660		LX6	48	
	12706		BX7	X0+X6	
	76641		SX6	B4+B1	. NEW BYPASS FOR HEADING
1300	57761		SA7	B6-B1	. STORE LITPM
	0400001266		EQ	CATPS1	
1301	21444	CATSFP	AX4	36	
	63540		SB5	X4	
	6024000000		SB2	A4+0	
1302	6043000001		SB4	A3+1	
	0450001316		EQ	B5,B0,CATSFP2	. BRANCH IF SF IS OF ZERO LENGTH
1303	5204777776		SA0	X4-1	
	66160		SB1	B6	
	64300		SB3	A0	
1304	0100002052		RJ	RESERVE	. RESERVE SPACE FOR LITPM
1305	6111777776	CATSFP1	SB1	B1-1	. DISPLACE THE PATTERN B3 WORDS
	56110		SA1	B1	. TOWARD THE HIGH CORE
	10611		BX6	X1	
1306	54613		SA6	A1+B3	
	0514001305		NE	B1,B4,CATSFP1	
	56120		SA1	B2	. FETCH THE SVD AFRESH
1307	66460		SB4	B6	. SAVE B6
	10411		BX4	X1	
	64660		SB6	A6	
	76670		SX6	B7	
1310	0100002275		RJ	SSTOS	. BREAK DOWN THE STRING
1311	63740		SB7	X4	. RELEASE LEFT OPERAND
	21422		AX4	18	
	53640		SA6	X4	
	66640		SB6	B4	. RESTORE B6
1312	7100002046		SX0	LITPM	. FORM AND STORE LITPM
	20060		LX0	48	
1313	7173000002		SX7	B3+2	
	12770		BX7	X7+X0	
	56720		SA7	B2	
1314	67262		SB2	B6-B2	
	7162000001		SX6	B2+1	. AND THE HEADING
1315	0400001266		EQ	CATPS1	

```

*
1316 54140          CATSFP2   SA1   A4           . USE CATPP TO DISPLACE THE
      76770          SX7   B7           . PATTERN TOWARDS LOW CORE
      63710          SB7   X1
      53710          SA7   X1
1317 7160002046    SX6   LITPM
      20660          LX6   48
1320 7100000001    SX0   1
      12606          BX6   X0+X6
      56160          SA1   B6
1321 54640          SA6   A4
      63510          SB5   X1
      0400001201     EQ    CATPP2
1322 6130001325    PM      SB3   PMSW       . MICRO OPERATION
      5120001324    SA2   PMWD       . PATTERN MATCH
1323 6110001353    SB1   PM1         . RETURN FOR STOP
      0400000526    EQ    CHEK        . SWITCH ON RIGHT OPERAND TYPE
*
* SWITCH FOR PATTERN MATCH RIGHT OPERAND
*
1324 10421042110   PMWD    SWITCH PMSW,0,5,1,1,1,3,3,3,4,2,2,2,2,2,2
1325 7146777776    +      SX4   B6-1
      0400001344    EQ    PMSF         . 0, SF
1326 5146777776    +      SA4   B6-1
      0400001344    EQ    PMSSSI      . 1, SS,SI
1327 6150000020    +      ERROR 16      . 2, R,A,D,N,C
1330 0400001353    +      EQ    PM1         . 3, PS,PE,PA
1331 0100002255    +      RJ    ITOS        . 4, I
1332 6110001353    SB1   PM1         . 5, S
1333 5100000001    STOP   SA0      1
*
* THE FOLLOWING CODE FORMS A SIMPLE PATTERN USING THE TOP
* OPERAND STRING. ACTUALLY A LIT PM OPERATION IS CREATED
*
      0100002052    RJ    RESERVE      . PUSH THE STRING DOWN ONE WORD
1334 5116777776    SA1   B6-1        . (TOWARDS HIGH CORE)
      63410          SB4   X1           . TOP OF HEADER BYPASS PART TO B4
      66200          SB2   B0
1335 6251777776    SB5   X1-1
      0425001340    EQ    B2,B5,STOP2
1336 5011777776    STOP1  SA1   A1-1        . LOOP B4-1 TIMES
      6122000001    SB2   B2+1
1337 10711          BX7   X1
      57762          SA7   B6-B2
      0525001336    NE    B2,B5,STOP1
1340 7110002046    STOP2  SX1   LITPM
      20160          LX1   48           . LIT OPERATION WITH PROPER
      76740          SX7   B4           . BYPASS PART TO X7
1341 12717          BX7   X1+X7
      7110000004    SX1   PSTY
      57764          SA7   B6-B4        . PUT IT TO THE FRONT OF THE STRING
1342 20167          LX1   55
      7164000001    SX6   B4+1
      12616          BX6   X1+X6        . PS HEADER WORD
1343 56660          SA6   B6
      0211000000    JP    B1           . RETURN
*
    
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*          SS,SI AND SF TYPES HAVE TO BE CONVERTED INTO S FORM. AN EXTRA
*          WORD IN THE FRONT OF THE STRING WILL BE ALLOWED FOR THE
*          LIT OPERATION. THE LIST HOLDING SF WILL BE RELEASED
*
1344          PMSSSI  BSS  0
*
1344  53140      PMSF   SA1  X4          . X4 IS THE ADDRESS WHERE THE SVD
          21144      AX1  36          . CAN BE FOUND
          53010      SA0  X1          .
1345  0100002052  RJ    RESERVE
1346  53140      SA1  X4          . SVD MIGHT HAVE CHANGED
          10411      BX4  X1
          64500      SB5  A0
1347  0100002275  RJ    SSTOS          . CONVERT TO S FORMAT
1350  0540001352  NE    B4,B0,PMSF1    . RELEASE LIST IF SF
          76770      SX7  B7
          63740      SB7  X4
1351  21422      AX4  18
          53740      SA7  X4
1352  6040000001 PMSF1  SB4  A0+1
          0400001340 EQ    STOP2          . GO TREAT LIKE S
*
1353  56160      PM1    SA1  B6          . PREPARE THE RIGHT OPERAND
          63210      SB2  X1
          7176000001 SX7  B6+1          . INITI AL VALUE FOR PCHAIN
1354  67562      SB5  B6-B2          . FIRST ELEMENT IN THE PATTERN-1
          67462      SB4  B6-B2
          5170000232 SA7  PCHAIN
1355  5100000002 SA0  2          . THE HEADING OF THE RIGHT OPERAND
          0100002052 RJ    RESERVE          . WILL BE OVERWRITTEN
1356  7110001624 PM1F   SX1  ENDEXPM          . THIS ENDEX TERMINATES THE PATTERN
          13666      BX6  X6-X6
          20160      LX1  48
1357  5166777776 SA6  B6-1          . STORE END OF PCHAIN
          7120000004 SX2  PSTY
1360  12771      BX7  X7+X1
          77665      SX6  B6-B5
          20267      LX2  55
1361  5176777775 SA7  B6-2
          12662      BX6  X6+X2
          56660      SA6  B6          . STORE A TEMPORARY HEADING
1362  6144000001 PM1A   SB4  B4+1
1363  0446001407 PM1B   EQ    B4,B6,PM2          . FETCH ELEMENTS ONE BY ONE
          56140      SA1  B4
1364  0371001362 ID    X1,PM1A          . SKIP $ AND .
          26531      UX5  X1,B3
1365  0603001367 GE    B0,B3,PM1C          . BRANCH IF NOT STRING ARGUMENTED
          63414      SB4  B4+X1          . ELEMENT (LIT,ANY ETC.)
1366  0400001363 EQ    PM1B
1367  0530001362 PM1C   NE    B3,B0,PM1A          . BRANCH IF NOT STAR (*)
          5215000000 SA1  X5+0          . OPERAND OF STAR
1370  10311      BX3  X1
          21367      AX3  55          . TYPE OF OPERAND
          7233777773 SX3  X3-4
1371  0333001362 NG    X3,PM1A          . BRANCH IF SS,SI
          7233777774 SX3  X3-3
1372  0333001376 NG    X3,PM1D          . BRANCH IF PS,PE,PA

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		0313001362		NZ	X3,PM1A	. BRANCH IF I
1373	43006			MX0	6	
		15110		BX1	-X0*X1	. REPLACE I TYPE VALUE WITH SS
		0100002364		RJ	ITOSF	
1374	7110000002			SX1	SSTY	
		20167		LX1	55	
		12616		BX6	X1+X6	
1375	53650			SA6	X5	
		0400001362		EQ	PM1A	
1376	5120000232		PM1D	SA2	PCHAIN	. SEARCH PCHAIN FOR THE SAME PATTERN
1377	53320		PM1E	SA3	X2	
		73230		SX2	X3	
		21322		AX3	18	
		13035		BX0	X3-X5	
1400	0300001362			ZR	X0,PM1A	. BRANCH IF FOUND
		0312001377		NZ	X2,PM1E	
1401	64130			SB1	A3	. ADDRESS OF LAST LINK TO B1
		73450	SX4	X5		
		0100002317		RJ	PTOPX4	. LOAD THE PATTERN TO THE STACK
1402	57065			SA0	B6-B5	. RESERVE 3 MORE LOCATIONS
		5000000003		SA0	A0+3	. (NOTE THAT B6-A0 WILL POINT TO
		66650		SB6	B5	. B5 IN GETSTAK)
1403	7160377777			SX6	MARK	
		0100002052		RJ	RESERVE	
1404	7176777776			SX7	B6-1	. LINK THE PATTERN TO PCHAIN
		20522		LX5	18	
		12775		BX7	X7+X5	
1405	56710			SA7	B1	
		5161000001		SA6	B1+1	. INITIALIZE HOPE
		13777		BX7	X7-X7	. SET ADDRESS OF TERMINATING ENDEX
1406	0400001356			EQ	PM1F	. TO ZERO
			*			
			*			
1407	74750		PM2	SX7	A5	. SAVE A5
		5170000245		SA7	PMA5	
		56150		SA1	B5	
1410	63210			SB2	X1	
		77652		SX6	B5-B2	
		5160000226		SA6	SBASE	. INITIALIZE STRING BASE
1411	6145000001			SB4	B5+1	. INDEX
		6135777776		SB3	B5-1	. STRING LENGTH
1412	76730			SX7	B3	
		5170000231		SA7	SLENGTH	
		13333		BX3	X3-X3	. SIX
1413	66100			SB1	B0	. SIB
		13777		BX7	X7-X7	
		5170000224		SA7	PIB	. PIX
1414	5170000222			SA7	PIX	. PIB
		5120000206		SA2	MAXSTAK	
1415	63520			SB5	X2	. B5 IS MAXSTAK
		5140000221		SA4	ANCHOR	
		13555		BX5	X5-X5	. LOCP, LOCS ARE ZERO
1416	5206000001			SA0	X6+1	
1417	74700		PM2A	SX7	A0	
		5170000246		SA7	SPOS	. STORE POS IN FIRST LEVEL
		76040		SX0	B4	
1420	20022			LX0	18	

	12770		BX7	X7+X0	
	0100002730		RJ	ENTER	. TRY TO MATCH THE PATTERN
1421	0314001425		NZ	X4, PMABT	. FAILURE IF PATTERN FAILS IN
	6020000000		SB2	A0+0	. ANCHORED MODE
1422	5110000225		SA1	LENFAIL	
	5102000001		SA0	B2+1	
1423	0732001425		LT	B3, B2, PMABT	
	0301001425		ZR	X1, PMABT	. TEST ON LENGTH FAILURE
1424	7170001417		SX7	PM2A	. RESET P AND S STACKS
	0400002767		EQ	SETSIPI	
1425	7150000000	PMABT	SX5	0	. GET RID OF P AND S STACKS
	7170001427		SX7	PM2B	
1426	0400002767		EQ	SETSIPI	
1427	6163000001	PM2B	SB6	B3+1	. RESET B6
	5110000245		SA1	PMA5	
1430	53510		SA5	X1	. RESTORE A5
	0400000465		EQ	FAIL	. SIGNAL FAILURE
1431	6163000002	PMFOUND	SB6	B3+2	. RESET B6 (PROVIDE 1 WORD FOR
	7070777776		SX7	A0-1	. THE RESULT)
1432	5140000222		SA4	PIX	
	5170000235		SA7	PMFA0	
1433	0304001444	PMF1	ZR	X4, PMF2	. GO THROUGH THE P CHAIN AND
	53440		SA4	X4	. PERFORM (.) TYPE ASSIGNMENTS
	53340		SA3	X4	. ADDRESS OF VARIABLE TO X3
1434	21422		AX4	18	
	63240		SB2	X4	. FIRST
	21422		AX4	18	
	63340		SB3	X4	. LAST
1435	10733		BX7	X3	
	74630		SX6	A3	
	5170000240		SA7	PMFX4	
1436	5160000241		SA6	PMFA4	
	0100002300		RJ	STOSFX6	. CONVERT INTO SF FORMAT
1437	5160000227		SA6	TEMPDOL	
	6026000001		SB2	A6+1	
1440	56620		SA6	B2	
	21322		AX3	18	. PREPARE ADDRESS OF VARIABLE
	0100002537		RJ	SASSIGN	. AND ASSIGN
1441	5140000240		SA4	PMFX4	
	73440		SX4	X4	
	76770		SX7	B7	
1442	0314001433		NZ	X4, PMF1	. GO BACK IF NOT END OF CHAIN
	5110000222		SA1	PIX	
1443	5120000241		SA2	PMFA4	
	63710		SB7	X1	
	53720		SA7	X2	
1444	5110000235	PMF2	SA1	PMFA0	
	5140000226		SA4	SBASE	. PACK THE RELATIVE FWA AND LWA OF
1445	5120000246		SA2	SPOS	. SUBSTRING MATCHED INTO THE
	5130001451		SA3	PMFHD	. HEADING
1446	37114		IX1	X1-X4	
	37224		IX2	X2-X4	
	20122		LX1	18	
	12112		BX1	X1+X2	
1447	5150000245		SA5	PMA5	
	20122		LX1	18	
	53550		SA5	X5	

1450	12713		BX7	X1+X3	
	56760		SA7	B6	. STORE THE HEADING
	0400000441		EQ	NEXTMIC	
		*			
1451	34000000000000000001	PMFHD	VFD	5/SPECTY,55/1	
1452	7170002000	STAR	SX7	STARPM	. MICRO OPERATION STAR
	0400001455		EQ	PRD1	
		*			
1453	7170006000	DOL	SX7	DOLPM	MICRO OPERATION DOL
	0400001455		EQ	PRD1	
		*			
1454	7170001777	PRD	SX7	PRDPM	MICRO OPERATION PERIOD
1455	73550	PRD1	SX5	X5	
	20760		LX7	48	
	6110001503		SB1	PRD4	RETURN ADDRESS OF STOP
1456	0315001460		NZ	X5,PRD2	BRANCH IF ADDRESS IS GIVEN
	6166777775		SB6	B6-2	
1457	5116000001		SA1	B6+1	IF NOT, USE TOPOPERAND NAME
	7251000000		SX5	X1+0	INSTEAD
1460	12775	PRD2	BX7	X7+X5	
	0367001507		DF	X7,STAR1	. BRANCH IF STAR
1461	6130001464		SB3	PRDSW	
	5120001463		SA2	PRDWD	
1462	10577		BX5	X7	. PACK PM OP. INTO X5
	0400000526		EQ	CHEK	SWITCH ON OPERAND TYPE
		*			
1463	0000000002	PRDWD	SWITCH	PRDSW,3,2,4,4,5,6,6,1,0,0,0,0,0,0	
		*			
1464	6150000055	+	ERROR	45	. 0, R,A,D,N,C
1465	0100002255	+	RJ	ITOS	. 1, I
1466	6110001503	+	SB1	PRD4	. 2, S
	0400001333		EQ	STOP	
1467	7146777776	+	SX4	B6-1	3, SF
	0400001344		EQ	PMSF	
1470	5146777776	+	SA4	B6-1	4, SS,SI
	0400001344		EQ	PMSSSI	
1471	0400001503	+	EQ	PRD4	5, PS
1472	56260	+	SA2	B6	6, PE,PA
	63120		SB1	X2	EXPPM BRACKETS HAVE TO BE
	67261		SB2	B6-B1	INSERTED AROUND THE PATTERN
	66360		SB3	B6	
1473	5100000002		SA0	2	RESERVE TWO WORDS FOR THE BRACKETS
	0100002052		RJ	RESERVE	
1474	6140000001		SB4	1	
	7100001645		SX0	EXPPM	
1475	67334	PRD3	SB3	B3-B4	PUSH PATTERN ONE WORD TOWARDS
	56130		SA1	B3	HIGH CORE
	0423001477		EQ	B2,B3,PRD5	
1476	10711		BX7	X1	
	56734		SA7	B3+B4	
	0400001475		EQ	PRD3	
1477	7170001624	PRD5	SX7	ENDEXPM	
	7120000004		SX2	PSTY	
1500	20060		LX0	48	
	20760		LX7	48	
	20267		LX2	55	
	57764		SA7	B6-B4	STORE ENDEXPM

1501	76614		SX6	B1+B4	
	73764		SX7	X6+B4	
	12660		BX6	X6+X0	
	12772		BX7	X7+X2	
1502	56624		SA6	B2+B4	STORE EXPPM
	5176000000		SA7	B6+0	STORE HEADING
1503	5100000001	PRD4	SA0	1	COMMON PART
	0100002052		RJ	RESERVE	RESERVE ONE WORD FOR PRD OR DOL
1504	5116777776		SA1	B6-1	
	10755		BX7	X5	
	74000		SX0	A0	
1505	54710		SA7	A1	STORE PRD OR DOL
	36610		IX6	X1+X0	BUMP BYPASS
	5166000000		SA6	B6+0	
1506	0400000455		EQ	SNDMIC	
		*			
1507	5100000002	STAR1	SA0	2	STAR CREATES A PS TYPE ENTRY
	0100002052		RJ	RESERVE	IN THE STACK
1510	7160000006		SX6	PETY	
	74100		SX1	A0	
	20667		LX6	55	
1511	12616		BX6	X1+X6	
	5176777776		SA7	B6-1	
	56660		SA6	B6	
1512	0400000455		EQ	SNDMIC	
		*			
		*			
1513	6110000455	NULL	SB1	SNDMIC	
	0100002342		RJ	ZROX7	
1514	43005		MX0	5	
	13222		BX2	X2-X2	. PUT AN SF TYPE ENTRY
	15770		BX7	-X0*X7	. TO THE TOP OF THE STACK
1515	5100000002	NULL1	SA0	2	. POINTING TO A NULL STRING
	0100002052		RJ	RESERVE	
1516	7160000002		SX6	2	
	5176777776		SA7	B6-1	
1517	12662		BX6	X6+X2	
	56660		SA6	B6	. NOTE, THIS IS A LEFT-PART ONLY
	0211000000		JP	B1	. OPERATION
		*			. MICRO OPERATION ZERO
1520	7120000007	ZERO	SX2	ITY	. SAME WITH A 0 VALUED INTEGER
	76700		SX7	B0	
	20267		LX2	55	
1521	6110000455		SB1	SNDMIC	
	0400001515		EQ	NULL1	
		*			. MICRO OPERATION NAME
1522	73150	NAME	SX1	X5	. SAME WITH A NAME IN X5
	6110000455		SB1	SNDMIC	
		*			
1523	10711	X1NAME	BX7	X1	. SAME WITH A NAME IN X1
	7120000013		SX2	NTY	
	20267		LX2	55	
1524	12772		BX7	X7+X2	
	0400001515		EQ	NULL1	
		*			
		*			
		*			

1525	5100000003	ARRAY	SA0	3	. MICRO OPERATION
	0100002052		RJ	RESERVE	. ARRAY LEFT BRACKET
1526	53150		SA1	X5	
	10711		BX7	X1	
	21167		AX1	55	
	13666		BX6	X6-X6	
1527	7211777766		SX1	X1-ATY	. ERROR, LEFT OPERAND
	0311000301		NZ	X1,ERR4	
1530	5176777776		SA7	B6-1	. INITIALIZE DOPE POINTER
	5166777775		SA6	B6-2	. INITIALIZE VECTOR SUM
1531	7110000003		SX1	3	
	7170000016		SX7	SPECTY	. SPECIAL TYPE WILL BE REMOVED
1532	20767		LX7	55	. BY RIGHT BRACKET
	12771		BX7	X7+X1	
	56760		SA7	B6	
1533	0400000441		EQ	NEXTMIC	
		*			
1534	0100001547	SUBCOM	RJ	SARRAY	. MICRO OPERATION SUBSCRIPTCOMMA
1535	0334000303		NG	X4,ERR6	. ERROR, TOO MANY SUBSCRIPTS
	5044000001		SA4	A4+1	. FETCH MULTIPLYER
1536	54730		SA7	A3	. STORE INCREASED DOPE INDEX
	27606		PX6	X6	. OLD VECTOR SUM + X - L
	21444		AX4	36	
	73140		SX1	X4	. U-L+1
1537	27101		PX1	X1	
	42616		DX6	X1*X6	
	26606		UX6	X6	
	54620		SA6	A2	. STORE NEW VECTOR SUM
1540	0400000441		EQ	NEXTMIC	
		*			
1541	7150001523	ARRAYN	SX5	X1NAME	. MICRO OPERATION ARRAY NAME
	0400001543		EQ	ARRAYV1	.
		*			
1542	7150002470	ARRAYV	SX5	X1VALUE	. MICRO OPERATION ARRAY VALUE
1543	0100001547	ARRAYV1	RJ	SARRAY	
1544	0324000304		PL	X4,ERR7	. ERROR, TOO FEW SUBSCRIPTS
	65621		SB6	A2-B1	
	21722		AX7	18	
1545	73170		SX1	X7	. FINAL ADDRESS IS THE BASE
	36116		IX1	X1+X6	. PLUS THE VECTOR SUM
	6110000455		SB1	SNDMIC	
1546	0222000000		JP	B2	
		*			
		*		THIS SUBROUTINE IS USED ONLY BY SUBCOM AND ARRAYV	
		*			
1547	46000	SARRAY	NO		
1550	5110001032	+	SA1	TENTO9	. CHECK VALUE OF INDEX EXPRESSION
	5100000011		SA0	9	
1551	10011		BX0	X1	
	0100000660		RJ	SACHEK	
1552	20703		LX7	3	
	0327000465		PL	X7,FAIL	. BRANCH IF NOT INTEGER TYPE
	63250		SB2	X5	
1553	6110000001		SB1	1	
	57161		SA1	B6-B1	. INDEX VALUE X
	65611		SB6	A1-B1	
1554	57361		SA3	B6-B1	

	76710		SX7	B1	
	55231		SA2	A3-B1	
		36773	IX7	X7+X3	. NEXT DOPE INDEX
1555	53470		SA4	X7	
	73540		SX5	X4	. UPPER LIMIT
	21422		AX4	18	
		73340	SX3	X4	. LOWER LIMIT
1556	37551		IX5	X5-X1	
	37013		IX0	X1-X3	
	36620		IX6	X2+X0	. ADD X - L TO VECTORSUM
1557	0335000465		NG	X5,FAIL	. FAIL IF OUT OF BOUNDS
	0320001547		PL	X0,SARRAY	. RETURN
1560	0400000465		EQ	FAIL	
			*		
			*		
			*		
1561	0100002624		INDRCN	RJ	INDRCT
1562	6110000455		SB1	SNDMIC	
	0400001523		EQ	X1NAME	
			*		
1563	0100002624		INDRCV	RJ	INDRCT
1564	0400002470		EQ	X1VALUE	
			*		
1565	73150		OPRND	SX1	X5
	0400002470		EQ	X1VALUE	
			*		
1566	7235000000		ASGN	SX3	X5+0
	0303001573		ZR	X3,ASGN1	
1567	66260		SB2	B6	
	0100002537		RJ	SASSIGN	
1570	56160		SA1	B6	. SKIP ASSIGNED VALUE
	6211000000		SB1	X1+0	
	67661		SB6	B6-B1	
1571	0400000441		EQ	NEXTMIC	
1572	6221000001		SB2	X1+1	
1573	56160		ASGN1	SA1	B6
	63210		SB2	X1	. FETCH LEFTOPERAND NAME
	6122000001		SB2	B2+1	
1574	57362		SA3	B6-B2	
	66260		SB2	B6	
	0100002537		RJ	SASSIGN	. PERFORM ASSIGNMENT
1575	56160		SA1	B6	. SKIP BOTH OPERANDS
	63210		SB2	X1	
	57162		SA1	B6-B2	
	63210		SB2	X1	
1576	65612		SB6	A1-B2	
	0400000441		EQ	NEXTMIC	
			*		
1577	6130001602		ASGNPM	SB3	ASPMSW
	5120001601		SA2	ASPMWD	. MICRO OPERATION
1600	0400000526		EQ	CHEK	. ASSIGNMENT WITH A PATTERN MATCH
					. LEFT OPERAND
			*		
1601	0000000002		ASPMWD	SWITCH ASPMSW,3,2,4,4,0,0,0,1,0,0,0,0,0,0	
			*		
1602	6150000056		+	ERROR	46 . 0, P,R,A,N,D,C
1603	6110001605		+	SB1	*+2 . 1, I
	0400002401		EQ	ITOSFTP	

1604	0100000540		+	RJ	SCATS		. 2, S
1605	7146777776		+	SX4	B6-1		. 3, SF
		0400001607		EQ	ASPM0		
1606	5146777776		+	SA4	B6-1		. 4, SS,SI
1607	5126777774		ASPM0	SA2	B6-3		
		5136777775		SA3	B6-2		
1610	63320			SB3	X2		
	65523			SB5	A2-B3		. STRING BASE
	21322			AX3	18		
		63235		SB2	X3+B5		. FIRST CHARACTER MATCHED
1611	66370			SB3	B7		. FIRST OF RESULT STRING
	13777			BX7	X7-X7		. OUTPUT WORD
		6140000060		SB4	48		. OUTPUT POSITION COUNT
1612	5203777776		ASPM1	SA0	X3-1		. LENGTH IS BEING ACCUMULATED IN A0
1613	6155000001		ASPM2	SB5	B5+1		
		0652001622		GE	B5,B2,ASPM5		. END PACK
1614	5125000000			SA2	B5+0		. NEXT CHAR
		6144777771		SB4	B4-6		
1615	0540001621			NE	B4,B0,ASPM4		. BYPASS IF WORD IS NOT FULL
		5117000000		SA1	B7+0		
1616	0311001617			NZ	X1,ASPM3		. GET A FREE WORD
		0100002057		RJ	MORFREE		
1617	73110		ASPM3	SX1	X1		
	63710			SB7	X1		
		20722		LX7	18		
		12671		BX6	X7+X1		. ADD LINK
1620	13777			BX7	X7-X7		
	54610			SA6	A1		. STORE OUTPUT WORD
		6140000052		SB4	42		
1621	20706		ASPM4	LX7	6		. PACK CHAR INTO OUTPUT WORD
	12772			BX7	X7+X2		
		0400001613		EQ	ASPM2		
1622	20714		ASPM5	LX7	12		
	22747			LX7	X7,B4		. LEFT JUSTIFY LAST WORD
		5117000000		SA1	B7+0		
1623	0311001624			NZ	X1,ASPM6		. GET A FREE WORD
		0100002057		RJ	MORFREE		
1624	63710		ASPM6	SB7	X1		
	0430001640			EQ	B3,B0,ASPM8		. EXIT IF FLAG IS SET
		43006		MX0	6		. OTHERWISE PREPARE FOR CONCATENA-
1625	53240			SA2	X4		. TION
	74310			SX3	A1		
		6150001631		SB5	ASPMR		. RETURN TO B5
1626	10422			BX4	X2		
	21444			AX4	36		
		63240		SB2	X4		
		54002		SA0	A0+B2		. SUM LENGTHS IN A0
1627	6124777771			SB2	B4-6		. SET SHIFTS FOR CONCAT
		6112000022		SB1	B2+18		
1630	0400001224			EQ	CATSF		. PERFORM CONCATENATION
1631	76670		ASPMR	SX6	B7		. UPON RETURN AN EXTRA WORD HAS
	63730			SB7	X3		. BEEN RESERVED, RELEASE IT
		53630		SA6	X3		
		43006		MX0	6		
1632	76530			SX5	B3		. FIRST TO X5
	66300			SB3	B0		. SET FLAG TO EXIT
		5116777775		SA1	B6-2		

1633	5126777774		SA2	B6-3	
	21144		AX1	36	. LAST CHARACTER MATCHED TO B5
	63520		SB5	X2	
1634	64220		SB2	A2	
	65525		SB5	A2-B5	
	63515		SB5	B5+X1	
	67125		SB1	B2-B5	
1635	74301		SX3	A0+B1	. FINAL LENGTH + 1
	6140000060		SB4	48	
1636	11107	ASPM7	BX1	X0*X7	. RIGHT JUSTIFY LAST WORD
	0301001612		ZR	X1,ASPM1	
	20706		LX7	6	
1637	6144777771		SB4	B4-6	
	0400001636		EQ	ASPM7	
1640	5071000000	ASPM8	SA7	A1+0	
	5136777774		SA3	B6-3	
1641	74110		SX1	A1	. LAST
	74200		SX2	A0	. LENGTH
	20122		LX1	18	
	20244		LX2	36	
1642	12652		BX6	X5+X2	
	12661		BX6	X6+X1	. FORM SVD IN B6
	5160000227		SA6	TEMPDOL	
1643	6120000230		SB2	TEMPDOL+1	
	56620		SA6	B2	
	21322		AX3	18	
1644	7233000000		SX3	X3+0	
	0303000324		ZR	X3,ERR25	. LEFT OPERAND NOT VARIABLE
1645	0100002537		RJ	SASSIGN	. PERFORM ASSIGNMENT
1646	0400000457		EQ	SKIP	. SKIP ENTRIES IN THE STACK
		*			
		*			
1647	0100001651	PARAM	RJ	SPARAM	. MICRO OPERATION
1650	0400000441		EQ	NEXTMIC	. PARAMETER COMMA
		*			
1651	46000	SPARAM	NO		
1652	5120001654	+	SA2	PRMWD	. SWITCH ON TYPE OF TOOPERAND
	6130001655		SB3	PRMSW	
1653	0400000526		EQ	CHEK	
		*			
1654	04210421042	PRMWD		SWITCH PRMSW,1,0,2,3,1,1,1,1,1,1,1,1,1	
1655	0100000540	+	RJ	SCATS	. 0, S
1656	0400001651	+	EQ	SPARAM	. 1, SF,PS,PA,PE,I,R,A,D,N,C
1657	5116777776	+	SA1	B6-1	. 2, SS
	0400001663		EQ	PRMSS	
1660	5116777776	+	SA1	B6-1	. 3, SI
	5130001667		SA3	ITYWD	. REPLACE SI BY I
1661	5221000001		SA2	X1+1	. HEADING TO X3, INTEGER TO X2
	10733		BX7	X3	
	10622		BX6	X2	
1662	56760		SA7	B6	
	54610		SA6	A1	
	0400001651		EQ	SPARAM	
1663	7170000002	PRMSS	SX7	2	. MAKE A COPY OF SS
	53210		SA2	X1	
	56760		SA7	B6	. SF TYPE HEADING
1664	0100002350		RJ	SSTOSF	

1665	5166777776		SA6	B6-1	
	0400001651		EQ	SPARAM	
		*			
1666	04000000000000000000	SSTYWD	VFD	5/SSTY,55/2	. SS TYPE HEADING
1667	16000000000000000000	ITYWD	VFD	5/ITY,55/2	. I TYPE HEADING
1670	0100001651	CALL	RJ	SPARAM	. MICRO OPERATION - CALL
1671	54550		SA5	A5	
	21522		AX5	18	
	53450		SA4	X5	
1672	0334001732		NG	X4,CALLSTD	
	21522		AX5	18	
	63150		SB1	X5	. ACTUAL PARAMETERS TO B1
1673	10144		BX1	X4	
	21122		AX1	18	. FORMAL PARAMETERS
	63210		SB2	X1	
1674	0721000305		LT	B2,B1,ERR8	. ERROR, TOO MANY ACTUAL PARAMS.
	66560		SB5	B6	
	56350		SA3	B5	
1675	63430	CALL1	SB4	X3	. LINK ACTUAL PARAMETERS
	76740		SX7	B4	. TOGETHER IN REVERSE ORDER.
	76650		SX6	B5	
	67554		SB5	B5-B4	
1676	6111777776		SB1	B1-1	
	0410001701		EQ	B1,B0,CALL2	
1677	20744		LX7	36	
	56350		SA3	B5	
	12737		BX7	X3+X7	
	54730		SA7	A3	
1700	0400001675		EQ	CALL1	
1701	21122	CALL2	AX1	18	
	63110		SB1	X1	. APPETITE TO B1
	21123		AX1	19	
	66115		SB1	B1+B5	
1702	0311001733		NZ	X1,DORF	. BRANCH IF NOT FUNCTION CALL
	0661001704		GE	B6,B1,CALL3	. MAKE SURE THAT THERE WILL BE
1703	57016		SA0	B1-B6	. ENOUGH SPACE FOR THE FORMALS
	0100002052		RJ	RESERVE	
1704	54440	CALL3	SA4	A4	. PROCEDURE DESCRIPTION MIGHT HAVE
	63140		SB1	X4	. CHANGED
	63260		SB2	X6	
	76650		SX6	B5	
1705	5160000243		SA6	CALLB5P	
1706	56310	CALL4	SA3	B1	. THIS LOOP TAKES THE ACTUAL
	21322		AX3	18	. PARAMETERS AND ASSIGNS THEM TO
	53130		SA1	X3	. THE FORMAL VARIABLES FROM THE
	76700		SX7	B0	. LEFT TO THE RIGHT. THE ORIGINAL
1707	10511		BX5	X1	. DESCRIPTORS AS WELL AS THEIR
	54710		SA7	A1	. ADDRESSES ARE SAVED IN THE STACK
	0100002537		RJ	SASSIGN	
1710	56220		SA2	B2	
	21244		AX2	36	. LINK TO NEXT ACTUAL PARAM
	63222		SB2	X2+B2	
	10755		BX7	X5	
1711	6155000002		SB5	B5+2	
	5175777776		SA7	B5-1	. STORE ORIGINAL DESCRIPTOR
1712	63320		SB3	X2	

	56210		SA2	B1	
	63120		SB1	X2	. FORMAL ADDRESSES ARE TAKEN FROM
	21222		AX2	18	. THIS LIST
1713	10722		BX7	X2	
	56750		SA7	B5	. STORE FORMAL ADDRESS
	0530001706		NE	B3,B0,CALL4	. ZERO MARKS END OF PARAM-LINK
1714	56210	CALL5	SA2	B1	. IF THERE ARE LESS ACTUALS THAN
	0332001721		NG	X2,CALL6	. FORMALS, NULL VALUE IS SIMULATED
	63120		SB1	X2	. FOR THE REST
1715	6155000002		SB5	B5+2	
	21222		AX2	18	
	53320		SA3	X2	
1716	10733		BX7	X3	
	5175777776		SA7	B5-1	
	73720		SX7	X2	
1717	56750		SA7	B5	
	0100002342		RJ	ZROX7	
1720	53720		SA7	X2	
	0400001714		EQ	CALL5	
1721	5130000213	CALL6	SA3	STAKTOP	. SYSTEM VARIABLES HAS TO BE
	5110000212		SA1	INFAIL	. STACKED AS WELL
1722	5140000207		SA4	MINSTAK	
	74750		SX7	A5	
	37334		IX3	X3-X4	
1723	7160000000		SX6	0	
	5160000212		SA6	INFAIL	. CLEAR INFAIL
1724	20322		LX3	18	
	12717		BX7	X1+X7	
	21222		AX2	18	. ENTRY LABEL IN X2
	12737		BX7	X3+X7	
1725	53420		SA4	X2	
	6165000002		SB6	B5+2	. NEW B6
	43001		MX0	1	. PROCEDURE CALL TYPE
1726	5110000243		SA1	CALLB5P	
	5175000001		SA7	B5+1	
1727	63510		SB5	X1	
	76660		SX6	B6	
	77165		SX1	B6-B5	. BYPASS VALUE
	54630		SA6	A3	. STORE NEW STAKTOP
1730	12701		BX7	X0+X1	
	5176000000		SA7	B6+0	
	73540		SX5	X4	. DO NOT TOUCH A5 YET
1731	6110000451		SB1	GOTO1	
	0400000443		EQ	NEWRULE	
		*			
1732	63140	CALLSTD	SB1	X4	. CALL STANDARD PROCEDURE
	21522		AX5	18	
	0211000000		JP	B1	
		*			
		*			
		*			
1733	7211777776	DORF	SX1	X1-1	
	0311001762		NZ	X1,FIELD	. BRANCH IF NOT DATA FUNCTION
1734	20545		LX5	37	. ERROR , DATA CANNOT GIVE NAME
	0335000327		NG	X5,ERR28	. RESULT
	63460		SB4	X6	
1735	5130000207		SA3	MINSTAK	

1736	7262000001	5120000204		SA2	MAXSTAT	. RESERVE SPACE IN STATIC
		73662		SX6	X2+1	
		76520		SX6	X6+B2	
1737	54620			SX5	B2	
	63330			SA6	A2	
		6216000000		SB3	X3	
1740	0713001742			SB1	X6+0	
		6132000050		LT	B1,B3,DATA2	. THERE IS ENOUGH ROOM
1741	66443			SB3	B2+BUFF4	. ROUND UP
	66553			SB4	B4+B3	
		0100002042		SB5	B5+B3	
1742	73640		DATA2	RJ	PUSHSTK	. THE STACK HAS TO BE PUSHED TO MAKE
	63150			SX6	X4	. SPACE
		53620		SB1	X5	
1743	7064777776			SA6	X2	. POINTER TO DATA DESCRIPTION
		73520		SX6	A4-1	. POINTER FOR DATATYPE FUNCTION
		20622		SX5	X2	
1744	12726			LX6	18	
	66240			BX7	X2+X6	
		5170000244		SB2	B4	
1745	6111777776		DATA3	SA7	DATAWD	
		7255000001		SB1	B1-1	. MUCH LIKE TO A PROCEDURE CALL
1746	76600			SX5	X5+1	. THE PARAMETERS ARE ASSIGNED TO
	10355			SX6	B0	. NEW VARIABLES
		53650		BX3	X5	
1747	0100002537			SA6	X5	
1750	56220			RJ	SASSIGN	
	21244			SA2	B2	. LINK TO THE NEXT PARAMETER
		63222		AX2	36	
		63320		SB2	X2+B2	
1751	0530001745			SB3	X2	
		0410001755		NE	B3,B0,DATA3	
1752	7255000001		DATA4	EQ	B1,B0,DATA5	
		0100002342		SX5	X5+1	. NULL STRINGS WILL BE SUBSTITUTED
1753	53750			RJ	ZROX7	. FOR MISSING PARAMETERS
	6111777776			SA7	X5	
1754	0510001752			SB1	B1-1	
1755	7100000012		DATA5	NE	B1,B0,DATA4	
		6165000002		SX0	DTY	. PUT A REFERENCE TO THE NEW DATA
1756	7110000002			SB6	B5+2	. TO THE TOP OF THE STACK
		20067		SX1	2	
1757	5120000244			LX0	55	
		12601		SA2	DATAWD	
		12702		BX6	X0+X1	
1760	56660			BX7	X0+X2	
	5176777776			SA6	B6	
1761	0400000441			SA7	B6-1	
				EQ	NEXTMIC	
1762	7211777776		FIELD			
		0311000312		SX1	X1-1	
1763	56160			NZ	X1,ERR14	. ERROR,THE FUNCTION IS UNDEFINED
	21167			SA1	B6	. FIELD FUNCTION
		6166777775		AX1	55	
1764	7211777765			SB6	B6-2	
		6110000001		SX1	X1-DTY	
1765	0311000320			SB1	1	. TOP OPERAND MUST BE OF DATA TYPE
				NZ	X1,ERR21	. ERROR IF IT IS NOT

		5116000001	SA1	B6+1	
1766	64240		SB2	A4	
		53210	SA2	X1	
1767	53321		FIELD1 SA3	X2+B1	. SCAN DATA DOPE VECTOR FOR
					. THE FIELD ,FIELD ID IS IN B2)
		63330	SB3	X3	
		0423001772	EQ	B2,B3, FIELD2	
1770	6111000001		SB1	B1+1	
		0323001767	PL	X3, FIELD1	
1771	0400000321		EQ	ERR22	. ERROR-NO SUCH FIELD IN THIS DATA
1772	74121		FIELD2 SX1	A2+B1	. THE RELATIVE ADDRESS OF THE FIELD
		20545	LX5	37	. IN THE DOPE IS THE SAME AS THE
		7261000000	SX6	X1+0	
1773	7241000000		SX4	X1+0	
		6110000441	SB1	NEXTMIC	
1774	5160000250		SA6	UA	. SAVE ADDRESS FOR PMCHEK
		0325002472	PL	X5,SOPERN	. ADDRESS OF THE DESIGNATED
1775	0400001523		EQ	X1NAME	. VARIABLE AMONG THE DATA
			*		
1776	7255377774		RETUN SX5	X5+MARK-3	
		0325000307	PL	X5,ERR10	. JUMP TO UNDEFINED LABEL
1777	56260		XRETURN SA2	B6	
		63520	SB5	X2	
		0322000322	PL	X2,ERR23	. ERROR, RETURN FROM ZERO LEVEL
2000	67565		SB5	B6-B5	
		6166777775	SB6	B6-2	
		66150	SB1	B5	
2001	6111000002		XRET1 SB1	B1+2	. LOOP FOR RELEASING FORMAL
		0616002007	GE	B1,B6,XRET3	. PARAMETERS, AND FOR RESTORING
2002	56310		XRET4 SA3	B1	. THEIR DESCRIPTORS FROM THE STACK
		0100002524	RJ	FREESVD	
2003	0640002005		GE	B4,B0,XRET2	
		53430	SA4	X3	. I/O TYPE NEEDS EXTRA TREATMENT
		76770	SX7	B7	
2004	63740		SB7	X4	
		53740	SA7	X4	
2005	5121777776		XRET2 SA2	B1-1	
		10622	BX6	X2	
		53630	SA6	X3	
2006	0400002001		EQ	XRET1	
2007	6235000002		XRET3 SB3	X5+2	. RELEASE PROCEDURE VALUE
		0530002011	NE	B3,B0,XRET5	. IF FRETURN
2010	76500		SX5	B0	
		0400002002	EQ	XRET4	
2011	6120000001		XRET5 SB2	1	
		56362	SA3	B6+B2	. SYSTEM VARIABLES
		57262	SA2	B6-B2	. SVD OF PROCEDURE VALUE
2012	56160		SA1	B6	. ADDRESS OF PROCEDURE VALUE
		53530	SA5	X3	. MICRO P COUNTER
		5140000207	SA4	MINSTAK	
2013	43001		MX0	1	
		21322	AX3	18	
		11703	BX7	X0*X3	
		43073	MX0	59	
2014	73630		SX6	X3	
		36664	IX6	X6+X4	
		5170000250	SA7	UA	. CLEAR UA

2015	5140000217		SA4	STCOUNT	. DECREASE STCOUNT
	5170000212		SA7	INFAIL	
2016	66650		SB6	B5	
	36704		IX7	X0+X4	
	54740		SA7	A4	
	10722		BX7	X2	. SVD TO X7
2017	5160000213		SA6	STAKTOP	
	0723000465		LT	B2,B3,FAIL	. FINISHED IF FRETURN
2020	5120000205		SA2	MINSTAT	
	53310		SA3	X1	
	53710		SA7	X1	. RESTORE ORIGINAL VALUE OF PRO-
2021	7242000000		SX4	X2+XWDREL	. CEDURE NAME
	10633		BX6	X3	
	20501		LX5	1	. CHECK NAME BIT
2022	0630002025		GE	B3,B0,XRET6	. BRANCH IF NOT NRETURN
	21367		AX3	55	
	14555		BX5	-X5	
2023	7233777764		SX3	X3-NTY	
	0313000325		NZ	X3,ERR26	. ERROR,NRETURN ETC.
2024	0335002040		NG	X5,XRET9	. BRANCH IF VALUE IS NEEDED
2025	0335000324	XRET6	NG	X5,ERR25	. ERROR, NO NRETURN WHEN NAME IS
	21367		AX3	55	. NEEDED
2026	7233777775		SX3	X3-SSTY	. BRANCH IF VALUE IS NOT A STRING
	0313002032		NZ	X3,XRET8	
2027	7170000002		SX7	2	
	63676		SB6	X7+B6	. STACK SF TYPE ENTRY
	20606		LX6	6	. CLEAR SS TYPE BITS
2030	56760		SA7	B6	
	21606		AX6	6	
	5166777776		SA6	B6-1	
2031	0400000441		EQ	NEXTMIC	
2032	5264000000	XRET8	SA6	X4+0	. PUT PROCEDURE VALUE TO THE TOP OF
	6110002034		SB1	XRETR	. THE STACK. NOTE THAT THE SVD IS
2033	0400002472		EQ	SOPERND	. STORED IN STATIC WHERE AN EVENTUAL
2034	10344	XRETR	BX3	X4	. GARBAGE COLLECTION CAN FIND IT
	0100002524		RJ	FRESVD	. RELEASE PROCEDURE VALUE
2035	13777		BX7	X7-X7	
	53730		SA7	X3	. CLEAR XWRD
	0640000441		GE	B4,B0,NEXTMIC	. I/O TYPE NEEDS EXTRA TREATMENT
2036	53430		SA4	X3	
	76770		SX7	B7	
	63740		SB7	X4	
	53740		SA7	X4	
2037	0400000441		EQ	NEXTMIC	
2040	7246000000	XRET9	SX4	X6+0	. VALUE OF NRETURN
	6110000441		SB1	NEXTMIC	
2041	5160000250		SA6	UA	. NOTE NRETURN FOR PMCHECK
	0400002472		EQ	SOPERND	

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*          X1,X7,B1,B2,B3,A0
2042 46000          PUSHSTK NO
2043 56030          +      SA0  B3
                                RJ  RESERVE          . RESERVE ENOUGH SPACE
                                SA1 MINSTAK          . BUMP MINSTAK
                                SB2  X1
2044 5110000207    0100002052
                                SX7 X1+B3
                                SB1 B6-B3
                                SA7  A1
                                PSHSTK1 SA1  B1
                                SB1 B1-1
                                BX7  X1
                                SA7  A1+B3
                                GE  B1,B2,PSHSTK1
2045 67163          54710
                                PSHSTK2 SA1  STAKTOP          . BUMP STACKTOP
                                SX7 X1+B3
                                SA7  A1
                                EQ  PUSHSTK
2046 56110          6111777776
                                *
                                * THIS PROCEDURE RESERVES X1 WORDS IN THE STACK. B6 IS UPDATED
                                * X1,A0
                                *
2047 54713          0612002046
                                RESERVE NO
2050 5110000213    73713
                                +      SA1  MAXSTAK
                                SB6  A0+B6          . CHECK IF NEW B6 NOT GREATER
                                BX1  -X1          . THAN MAXSTAK
                                SX1  X1+B6
                                NG  X1,RESERVE
2051 0400002042    54710
                                RJ  GETSTAK          . GET STACK SPACE IF IT IS
                                EQ  RESERVE
                                *
                                *
                                * SUBROUTINE MOREFREE HAS TO BE CALLED WHENEVER THE END OF THE
                                * FREE CHAIN IS MET. ( A ZERO WORD ) HALF OF THE SPACE BETWEEN
                                * THE STACK AND DYNAMIC WILL BE RESERVED, OR IF IT IS TOO SHORT
                                * ADDITIONAL FIELDLENGTH WILL BE REQUESTED.
                                * X1
                                *
2052 46000          MORFREE NO
2053 5110000206    64606
                                +      SA7  MFX7          . SAVE SOME REGISTERS
                                SA6  MFX6
                                BX7  X2
                                SA7  MFX2
2054 73116          0331002052
                                SA1  MAXSTAK
                                SX2  B6
                                IX6  X1-X2
2055 0100002112    14111
                                SX2  X6-BUFF1          . STORAGE
                                NG  X2,MFLEN          . TOO SHORT
                                AX6  1
                                IX7  X1-X6          . RESERVE HALF OF IT
                                SA7  A1
2056 0400002052
                                MFCHN BX6  X1          . FILL UP STORE WITH A FREE CHAIN
                                SA6  B7+0          . FROM X1 TO X7 TOWARD LOW CORE
                                MFCHN1 SX6  X1-1
                                SA6  X1
                                SX1  X6
2057 46000          73160
                                BX2  X1-X7
2060 5170002111    5160002110
2061 10722          5170002107
2062 5110000206    76260
                                37612
2063 7226777765    0332002074
2064 21601          37716
                                54710
2065 10611          5167000000
2066 7261777776    53610
                                73160
2067 13217

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	0312002066		NZ	X2,MFCHN1	
		76700	SX7	B0	. END OF CHAIN WORD
2070	54760		SA7	A6	
	5110002110		SA1	MFX6	. RESTORE REGISTERS
2071	5120002111		SA2	MFX7	
	10611		BX6	X1	
		10722	BX7	X2	
2072	56170		SA1	B7	. TO ASSIST CALLING SIDE
	5120002107		SA2	MFX2	
2073	0400002057		EQ	MORFREE	. RETURN
2074	7160001000	MFLN	SX6	FLDINCR	
2075	5110000203	MFLN1	SA1	FIELDLN	
	36716		IX7	X1+X6	
2076	5120000215		SA2	FLDLM	
	37227		IX2	X2-X7	
2077	0332000315		NG	X2,ERR17	. ERROR.MAX FIELDLENGTH HAS BEEN
	54710		SA7	A1	. EXCEEDED
		20736	LX7	30	
			IFNE	TRCFLG,0,1	
2100	5170002106		SA7	FLDSTAT	
		5120002105	SA2	FLDCALL	
2101	10722		BX7	X2	
	5170000001		SA7	1	. CALL MEM WITH RECALL
2102	721177776		SX1	X1-1	
2103	5120000001	+	SA2	1	
	0312002103		NZ	X2,*	. WAIT UNTIL COMPLETE
2104	36116		IX1	X1+X6	
	37716		IX7	X1-X6	. GO TO FILL UP VIRGIN STORAGE
	0400002065		EQ	MFCHN	. WITH FREE CHAIN
			*		
2105	15051520000000002106	FLDCALL	VFD	18/3LMEM,2/1,40/FLDSTAT	
2106	00000000000000000000	FLDSTAT	DATA	0	. STATUS WORD
			*		
2107	00000000000000000000	MFX2	DATA	0	. REGISTER SAVE WORDS
2110	00000000000000000000	MFX6	DATA	0	
2111	00000000000000000000	MFX7	DATA	0	
			*		
			*		
			*	GETSTAK PRODUCES SPACE FOR THE STACK UP TO B6. B6-A0 MUST	
			*	CONTAIN THE LAST SENSIBLE STACK ENTRY. A GARBAGE COLLECTION	
			*	WILL BE PERFORMED IF NECESSARY	
			*	A0,X1	
			*		
2112	46000	GETSTAK	NO		
2113	5160002110	+	SA6	GSX6	. SAVE REGISTERS USED IN GETSTAK
	5170002111		SA7	GSX7	
2114	76630		SX6	B3	
	76740		SX7	B4	
	5160002145		SA6	GSB3	
2115	5170002146		SA7	GSB4	
	10622		BX6	X2	
2116	5160002107		SA6	GSX2	
	76270		SX2	B7	
2117	7110000000		SX1	B0+0	
2120	7211000001	GS1	SX1	X1+1	. NUMBER OF FREE WORDS TO X1
	53220		SA2	X2	
2121	0312002120		NZ	X2,GS1	

2122	66370		SX1	X1-1	
	64720		SB3	B7	
	76660		SB7	A2	
2123	5120000206		SX6	B6	
	37226		SA2	MAXSTAK	
	36112		IX2	X2-X6	
2124	0331002126		IX1	X1+X2	
	7211777727		NG	X1,GS2	. IF FREE SPACE NOT ENOUGH OR
2125	0321002132		SX1	X1-BUFF2	. GARBAGE COLLECTION WOULD NOT BE
2126	14611	GS2	PL	X1,GS3	. EFFICIENT, REQUEST MORE FIELDLENGTH
	7266000100		BX6	-X1	
	21606		SX6	X6+100B	
2127	20606		AX6	6	. ROUND THE AMOUNT OF FIELDLENGTH
	5110002131		LX6	6	. NEEDED UP TO THE NEXT OCTAL
	10711		SA1	GSRET	. HUNDRED
2130	5170002057		BX7	X1	
	0400002075		SA7	MORFREE	. GO TO REQUEST FIELDLENGTH
2131	0400002132	GSRET	EQ	MFLen1	
2132	76610	GS3	EQ	GS3	
	76720		SX6	B1	. SAVE REGISTERS USED IN GRBCOLL
	5160002143		SX7	B2	
2133	5170002144		SA6	GSB1	
	66730		SA7	GSB2	
	64100		SB7	B3	
2134	67661		SB1	A0	
	0100002147		SB6	B6-B1	. RESET D6 TO A REASONABLE VALUE
2135	64606		RJ	GRBCOLL	. COLLECT GARBAGE
	5110002110		SB6	B6+A0	. RESTORE B6
2136	5120002111		SA1	GSX6	
	10611		SA2	GSX7	. RESTORE ALL REGISTERS USED
	10722		BX6	X1	
2137	5110002143		BX7	X2	
	5120002144		SA1	GSB1	
2140	63110		SA2	GSB2	
	63220		SB1	X1	
	5110002145		SB2	X2	
2141	5120002146		SA1	GSB3	
	63310		SA2	GSB4	
	63420		SB3	X1	
2142	5120002107		SB4	X2	
	0400002112		SA2	GSX2	
			EQ	GETSTAK	. RETURN
		*			
	2107	GSX2	EQU	MFX2	
	2110	GSX6	EQU	MFX6	
	2111	GSX7	EQU	MFX7	
2143	00000000000000000000	GSB1	DATA	0	
2144	00000000000000000000	GSB2	DATA	0	
2145	00000000000000000000	GSB3	DATA	0	
2146	00000000000000000000	GSB4	DATA	0	

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*          GARBAGE COLLECTION BEGINS WITH COUNTING THE NUMBER OF WORDS
*          ON THE FREE CHAIN. OUR AIM IS TO GATHER ALL FREE WORDS TO
*          THE LOWER PART OF THE DYNAMIC AREA THAT WE CAN DELETE THEM.
*          THIS CAN BE OBTAINED BY SCANNING ALL EXISTING CHAINS AND
*          MOVE THOSE LINKS IN THE LOWER PART TO A FREE LINK IN THE
*          UPPER.
*          X1,X2,X6,X7,B1,B2,B3,B4
2147 46000          GRBCOLL NO
2150 76270          +      SX2   B7
                               SX6   B0
                               SA1   MAXSTAK
                               5110000206
2151 7266000001    GRB1   SX6   X6+1          . COUNT THE NUMBER OF FREE WORDS
                               SX7   A2
                               SA2   X2
                               74720          53220
                               NZ    X2,GRB1
                               36616          IX6   X1+X6
                               63160          SB1   X6          . B1 IS THE LIMIT BETWEEN THE LOWER
2153 7266777776    SX6   X6-1
                               SA6   A1
                               54610          SB4   B6
                               66460          RJ    GRBFW          . AND THE UUPER PART
2154 0100002200    SB2   A2          . IF THE END OF FREE CHAIN IS IN
2155 64220          GE    B2,B1,GRB3          . THE LOWER PART, RELOCATE
                               0621002160          SX6   A1
                               74610          SA6   X7          . UPDATE THE LINK LEADING TO THE
2156 53670          SX7   B0+0          . END WORD
                               7170000000          SA7   A1
                               54710          RJ    GRBFW
2157 0100002200    GRB3   SA2   B4          . CRIPTIONS OF THE MISSING LINKS
2160 56240          SB3   X2          . NOTE THAT THERE IS NO LIMIT ON
                               63320          ZR    X2,GRB2
                               0302002175          NG    X2,GRB4          . THE LOOP, RETURN OCCURS IN GRBFW
2161 0332002171    SB4   B4-B3
                               67443          AX2   55
                               21267          NZ    X2,GRB3
2162 0312002160    SA2   B4+1          . SF TYPE FOUND IN STACK
                               5124000001          RJ    GRBLINK
2163 0100002204    GE    B3,B0,GRB3          . LAST WAS NOT CHANGED
2164 0630002160    MX1   42
                               43152          SA2   B4+1
2165 5124000001    SX7   A1
                               74710          LX1   18          . UPDATE LAST IF CHANGED
                               20122          LX7   18
2166 20722          BX2   X1*X2
                               11212          BX7   X2+X7
                               12727          SA7   A2
                               54720          RJ    GRBFW
2167 0100002200    EQ    GRB3
2170 0400002160    GRB4   SB4   B4-1          . PROCEDURE CALL FOUND IN STACK
2171 6144777776    SB2   B4-B3          . SCAN STACKED FORMAL PARAMETERS
                               67243          SB2   B2+2          . NOTE THAT STACKED ADDRESSES WILL
2172 6122000002    RJ    GRBSCAN          . BE SKIPPED OVER IN CRBSCAN
                               0100002216          SA2   B4+1
2173 5124000001    SB3   X2
                               63320          SB4   A2-B3
                               65423
2174 0400002160    EQ    GRB3
2175 5120000205    GRB2   SA2   MINSTAT          . SCAN STATIC TO UPDATE

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	63220		SB2	X2	. LIST DESCRIPTORS
	67402		SB4	B0-B2	
2176	0100002216		RJ	GRBSCAN	. NO RETURN
		*			
		*			
		*			GRBFW SUPPLIES THE NEXT FREE LINK WHICH IS IN THE UPPER
		*			PART. GARBAGE COLLECTION ENDS WHEN THE END WORD IS MET.
		*			(I.E. THERE ARE NO MORE FREE WORDS IN UPPER Q.E.D.)
		*			LOCAL TO GRBCOLL
2177	6271000000		GRB5	SB7 X1+0	. NO, THIS IS NOT THE ENTRY
2200	46000		GRBFW	NO	
2201	56170		GRB6	SA1 B7	. NEXT FREE LINK
	0301002147		ZR	X1,GRBCOLL	. BRANCH IF ENDWORD
2202	0671002177		GE	B7,B1,GRB5	. BRANCH IF IN UPPER
	63710		SB7	X1	
2203	0400002201		EQ	GRB6	. LOOP IF IN POWER
		*			
		*			THIS SUBROUTINE FOLLOWS A LIST STRUCTURE. IF A LINK IS
		*			IN LOWER, IT WILL BE RELOCATED.
		*			LOCAL TO GRBCOLL
2204	46000		GRBLINK	NO	
2205	63320		GRBL1	SB3 X2	. POINTER TO NEXT WORD
	0403002204		EQ	B0,B3,GRBLINK	. BRANCH IF END LIST
2206	0631002215		GRBL2	GE B3,B1,GRBL4	. BRANCH IF IN UPPER
	74710		SX7	A1	
	43152		MX1	42	
2207	11112		BX1	X1*X2	. UPDATE LINK AND RELOCATE
	12717		BX7	X1+X7	
	54720		SA7	A2	
	56230		SA2	B3	
2210	10722		BX7	X2	
	54710		SA7	A1	
	54270		SA2	A7	
	63320		SB3	X2	
2211	0503002213		NE	B0,B3,GRBL3	. IF END LIST THEN
	6130777776		SB3	-1	. SIGNAL LAST IS RELOCATED
2212	0400002204		EQ	GRBLINK	. AND RETURN
2213	0100002200		GRBL3	RJ GRBFW	
2214	0400002206		EQ	GRBL2	
2215	53220		GRBL4	SA2 X2	. IN UPPER, GET NEXT WORD
	0400002205		EQ	GRBL1	
		*			LOCAL TO GRBCOLL
		*			
2216	46000		GRBSCAN	NO	
2217	0424002216		GRBS1	EQ B2,B4,GRBSCAN	. END OF AREA
	56220		SA2	B2	
2220	0322002230		PL	X2,GRBS3	. BRANCH IF SVD
	21222		AX2	18	
2221	7162000001		SX6	B2+1	
	63222		SB2	X2+B2	. X2 IS BYPASS
	21245		AX2	37	
2222	7222000002		SX2	X2+2	. BRANCH IF NOT VARIABLE OR
	0332002217		NG	X2,GRBS1	. FUNCTION NAME
2223	0312002227		NZ	X2,GRBS2	
	53260		SA2	X6	
	10122		BX1	X2	
2224	21167		AX1	55	
	0311002217		NZ	X1,GRBS1	. IF PROCEDURE

2225	0100002204		RJ	GRBLINK	. UPDATE PROCEDURE DOPE	
2226	0730002243		LT	B3,B0,GRBS4		
		0400002217	EQ	GRBS1		
2227	53260		GRBS2	SA2	X6	. IF VARIABLE
		6122777776		SB2	B2-1	. FETCH SVD
2230	6122000001		GRBS3	SB2	B2+1	
		10122		BX1	X2	. SWITCH ON TYPE OF SVD
		21167		AX1	55	
2231	7211777775		SX1	X1-2		
		0301002237		ZR	X1,GRBSS	. SS TYPE
2232	7211777775		SX1	X1-2		
		0331002217		NG	X1,GRBS1	. SKIP OR SI TYPE
2233	7211777774		SX1	X1-3		
		0331002237		NG	X1,GRBSS	. PS,PA OR PE
2234	7211777776		SX1	X1-1		
		0301002245		ZR	X1,GRBR	. R TYPE
2235	7211777772		SX1	X1-5		
		0331002217		NG	X1,GRBS1	. A,D,N OR C
2236	0100002247		GRBIO	RJ	GRBSNGL	. IN OR OUT, SVD IS IN DYNAMIC
						. STORAGE TOO
2237	74620		GRBSS	SX6	A2	
		0100002204		RJ	GRBLINK	. UPDATE LIST
2240	0630002217		GE	B3,B0,GRBS1		
		43152		MX1	42	. CHANGE LAST IF CHANGED
		53260		SA2	X6	
2241	74710			SX7	A1	
		20122		LX1	18	
		20722		LX7	18	
		11212		BX2	X1*X2	
2242	12727			BX7	X2+X7	
		54720		SA7	A2	
2243	0100002200		GRBS4	RJ	GRBFW	. GRBFW HAS TO BE CALLED WHENEVER
2244	0400002217			EQ	GRBS1	. GRBLINK RETURNS A LAST CHANGED
						. SIGNAL
2245	0100002247		GRBR	RJ	GRBSNGL	. ACTION ON R TYPE
2246	0400002217			EQ	GRBS1	
			*			
			*	LOCAL	TO GRBCOLL	
			*			
2247	46000		GRBSNGL	NO		
2250	63320		+	SB3	X2	
		0631002247		GE	B3,B1,GRBSNGL	. RETURN IF IN UPPER
		74710		SX7	A1	
2251	43152			MX1	42	
		11112		BX1	X1*X2	. RELOCATE AND UPDATE LINK
		12717		BX7	X1+X7	
		54720		SA7	A2	
2252	56230			SA2	B3	
		10722		BX7	X2	
		54710		SA7	A1	
		54210		SA2	A1	
2253	0100002200			RJ	GRBFW	
2254	0400002247			EQ	GRBSNGL	

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*          ROUTINE MUST BE CALLED WITH AN INTEGER TOP OPERAND. IT
*          WILL BE REMOVED AND REPLACED WITH A NORMALIZED STRING (S)
*          X1,X2,X3,X4,X6,X7,B1
*
2255 46000          ITOS   NO
2256 5100000012    +      SA0   10          . RESERVE FOR WORST CASE, TEN
                                RJ   RESERVE          . DIGITS AND A SIGN
                                SA1  B6-11         . B6 HAS BEEN INCREASED
2257 5116777764    0100002052  RJ   ICX1X6        . CONVERT INTEGER TO STRING
                                MX2  54          . MASK 1 CHAR LONG
2260 43266          SB1   A1
                                NG   X7,ITOS1       . IF THE NUMBER WAS NEGATIVE
                                SB6  B6-1          . FIRST CHAR IS A -
                                EQ   ITOS3          .
2261 6166777776    0337002262  ITOS1  SX7  1R-
2262 7170000046    0400002264  ITOS2  SA7  B1          . LOOP, STORE NEXT CHAR
2263 56710          SB1   B1+1
                                LX6  6          . UNPACK NEXT CHAR
2264 20606          ITOS3  BX7  -X2*X6         . LOOP IF NOT ZERO
                                ZR   X7,ITOS4       . OR ELEVENTH DIGIT
                                NE   B1,B6,ITOS2
2265 0516002263    0307002266  ITOS4  SX1  A1-B1        . -(BYPASS LENGTH-1) TO X1
2266 75111          SB6   B1          . STACK TOP
                                SX1  X1-1
                                SX7  STY
                                LX7  55
                                BX1  -X1
2267 7170000001    7211777776  SA7   B6          . S TYPE HEADING
                                EQ   ITOS
                                SA7  B6
                                EQ   ITOS
2270 12717          56760
                                EQ   ITOS
                                EQ   ITOS
*          THIS ROUTINE BREAKS DOWN A STRING OF LENGTH B5 INTO
*          CHARACTERS. THE LAST CHARACTER, IF ANY, WILL BE STORED AT B6-1
*          XT IS THE ADDRESS OF THE FIRST WORD ON ENTRY.
*          X0,X1,X2,X3,X7,B5
*
2271 53210          SSTOS1 SA2   X1          .NO,THIS IS NOT THE ENTRY
                                SX1  X2          . LINK TO NEXT WORD
                                BX2  X0*X2        . MASK LINK OFF, THIS WILL PRODUCE
                                LX2  6          . A ZERO CHARACTER AT THE
2272 20206          SSTOS2  BX7  -X3*X2        . END OF THE WORD
                                ZR   X7,SSTOS1
                                SA7  B6-B5
2273 57765          SB5   B5-1          . DECREASE LENGTH
                                NE   B5,B0,SSTOS2  . GO BACK IF NOT ZERO
2274 0550002272    0307002271  SSTOS3
*
2275 46000          SSTOS  NO          .ENTER HERE
2276 43052          +      MX0   42          . SET UP MASKS
                                MX3  54
                                NE   B5,B0,SSTOS1
2277 0400002275    0550002271  EQ   SSTOS
*          THE FOLLOWING SUBROUTINE ASSIGNS A STRING TO A LIST
*          STRUCTURE. B2 POINTS TO THE FIRST, B3 TO THE LAST CHARACTER
*          UPON ENTRY. THE SVD OF THE CREATED STRUCTURE WILL BE PUT
*          INTO XG
*          X0,X1,X2,X6,B2,B3,B1
*
2300 46000          STOSFX6 NO

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2301	612277776	+	SB2	B2-1	
	76170		SX1	B7	. FIRST IN LIST
	20130		LX1	24	
2302	77632		SX6	B3-B2	. STRING LENGTH
	12016		BX0	X1+X6	
	0400002311		EQ	STOSF3	
2303	716000000	STOSF1	SX6	B0+0	
	6110000052		SB1	42	
2304	0423002314	STOSF2	EQ	B2,B3,STOSF5	. ASSEMBLE SEVEN CHARACTERS
	6122000001		SB2	B2+1	. LEFT JUSTIFIED ZERO FILL
2305	20606		LX6	6	
	56220		SA2	B2	
	12662		BX6	X6+X2	
2306	6111777771		SB1	B1-6	
	0510002304		NE	B1,B0,STOSF2	
2307	0423002314		EQ	B2,B3,STOSF5	
	20622		LX6	18	
	12616		BX6	X1+X6	. ADD A POINTER TO THE WORD
2310	56670		SA6	B7	. AND STORE IT
	63710		SB7	X1	
2311	5117000000	STOSF3	SA1	B7+0	. GET NEXT FREE WORD
	0311002313		NZ	X1,STOSF4	
2312	0100002057		RJ	MORFREE	. END OF FREE CHAIN HAS BEEN MET
2313	73110	STOSF4	SX1	X1	
	0400002303		EQ	STOSF1	
2314	20622	STOSF5	LX6	18	
	22616		LX6	B1,X6	. LEFT JUSTIFY LAST WORD
	56670		SA6	B7	
	63710		SB7	X1	
2315	20044		LX0	36	
	74660		SX6	A6	
	20622		LX6	18	
	12606		BX6	X0+X6	. FORM SVD IN X6
2316	0400002300		EQ	STOSFX6	. AND RETURN
		*			WHEN CALLING THIS SUBROUTINE, X4 MUST POINT TO A CELL WHERE
		*			A P TYPE SVD CAN BE FOUND. THE PATTERN WILL BE LOADED TO THE
		*			STACK FROM B6 TOWARD THE HIGH CORE. B6 WILL BE INCREASED
		*			TO POINT TO THE END WHILE THE ORIGINAL VALUE IS SAVED IN B3
		*			X1,X2,X4,X7,B3,B2,A0
		*			
2317	46000	PTOPX4	NO		
2320	53140	PTOP1	SA1	X4	. TAKE SVD AFRESH
	66360		SB3	B6	
	5120000206		SA2	MAXSTAK	
2321	63220		SB2	X2	
	43014		MX0	12	
2322	53210	PTOP2	SA2	X1	. NEXT WORD IN LIST
	73120		SX1	X2	
	6166000001		SB6	B6+1	
2323	0726002326		LT	B2,B6,PTOP3	. OUT OF SPACE, WE ARE IN TROUBLE
	10722		BX7	X2	
	21222		AX2	18	
2324	11770		BX7	X7*X0	
	73220		SX2	X2	. CONVERT PATTERN WORD INTO
	12772		BX7	X7+X2	. PM OPERATION FORMAT (UNPACKABLE)
	56760		SA7	B6	
2325	0311002322		NZ	X1,PTOP2	. LOOP IF NOT END OF LIST

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                0400002317
2326 6166000024      PTOP3   EQ    PTOPX4
                57063      SB6    B6+BUFF3      . WE DO NOT HAVE ANY INFORMATION
                0100002112      SA0    B6-B3
2327 0100002112      RJ    GETSTAK      . HOW LONG THE PATTERN WILL BE, SO
2330 66630           SB6    B3          . WE REQUEST A REASONABLE AMOUNT
                0400002320      EQ    PTOP1      . AND TRY AGAIN. NOTE THAT THE LIST
                                . STRUCTURE MIGHT HAVE CHANGED.
*
*
*
*
*          ROUTINE TO CONVERT AN INTEGER IN X1 INTO A DISPLAY CODED
*          STRING IN X6. THE RESULT IS THE ABS VALUE LEFT JUSTIFIED
*          WITH ZERO FILL.
*          X1,X2,X3,X6,X7,B1
*
2331 46000          ICX1X6  NO
2332 10711          +       BX7   X1          . SAVE OLD SIGN
                0321002333      PL    X1,IC1      .
                14111          BX1   -X1          . ABS VALUE
2333 13666          IC1     BX6   X6-X6      . INITIALIZE RESULT
                5120002341      SA2   TEN
                27101          PX1   X1
2334 44312          IC2     FX3   X1/X2      . LOOP, X3 IS THE NUMBER
                26333          UX3   B3,X3      . LESS THE LAST DIGIT
                22333          LX3   B3,X3
                27403          PX4   X3
2335 24404          NX4   X4
                40442          FX4   X4*X2
                31414          FX4   X1-X4
                26434          UX4   B3,X4
2336 22434          LX4   B3,X4
                7244000033      SX4   X4+1R0
                12664          BX6   X6+X4
2337 20666          LX6   54
                27103          PX1   X3
                7200000001      SX0   X0+1      . COUNT NUMBER OF DIGITS
2340 0313002334      NZ    X3,IC2      . LOOP IF THERE ARE MORE DIGITS
                0400002331      EQ    ICX1X6
2341 172350000000000000000000 TEN   DATA 10.0
*
*
*          X1,X2
2342 46000          ZROX7  NO
2343 56170          +       SA1   B7
                13777          BX7   X7-X7
                0311002345      NZ    X1,ZROX7A
2344 0100002057      RJ    MORFREE
2345 54710          ZROX7A SA7   A1          . CREATE A NULL STRING VALUE
                63710          SB7   X1          . AND RETURN ITS SVD IN X7
                74110          SX1   A1
                74710          SX7   A1
2346 20122          LX1   18
                12117          BX1   X1+X7
                7170000002      SX7   SSTY
2347 20767          LX7   55
                12717          BX7   X1+X7
                0400002342      EQ    ZROX7
*          X0,X1,X2,X6,X7
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*
2350 46000          SSTOSF  NO
2351 43022          +       MX0  18
      76670          SX6   B7
      20066          LX0   54
      11020          BX0   X2*X0      . LENGTH AND FIRST TO X6
2352 12606          BX6   X0+X6
      43052          MX0   42
      0400002355    EQ    SSTOSF2
2353 53220          SSTOSF1 SA2   X2      . NEXT WORD IN SS
      11702          BX7   X0*X2
      73220          SX2   X2
      63710          SB7   X1
2354 0302002357    ZR    X2,SSTOSF3      . BRANCH IF END LIST
      12771          BX7   X7+X1
      54710          SA7   A1
2355 56170          SSTOSF2 SA1   B7      . NEXT FREE WORD TO X1
      0301002361    ZR    X1,SSTOSF4      . BRANCH IF
      73110          SX1   X1
2356 0400002353    EQ    SSTOSF1
2357 74110          SSTOSF3 SX1   A1
      54710          SA7   A1
      20122          LX1   18
      12661          BX6   X6+X1
2360 0400002350    EQ    SSTOSF
2361 0100002057    SSTOSF4 RJ    MORFREE
2362 73110          SX1   X1
      0400002353    EQ    SSTOSF1
*
2363 74410          ITOSF4  SX4   A1
      54610          SA6   A1      . STORE LAST WORD
      20422          LX4   18
      12674          BX6   X7+X4      . ADD LWA TO THE SVD
2364 00000000000000000000 ITOSF  DATA  0      . ENTRY POINT
2365 13000          BX0   X0-X0      . INITIALIZE CHARACTER COUNT
      0100002331    RJ    ICX1X6      . CONVERT INTEGER INTO DISPLAY
2366 13333          BX3   X3-X3      . INITIALIZE SIGN TO POSITIVE
      43266          MX2   54
      7117000000    SX1   B7+0      . FIRST FOR SVD
2367 0327002372    PL    X7,ITOSF1      . BRANCH IF POSITIVE
      7140000046    SX4   1R-
2370 15362          BX3   -X2*X6      . 10TH DIGIT MAY OVERFLOW TO X3
      11662          BX6   X6*X2
      20466          LX4   54
      20666          LX6   54
2371 20344          LX3   36
      12664          BX6   X6+X4      . INSERT - SIGN
      7200000001    SX0   X0+1      . BUMP CHARACTER COUNT
2372 6230777770    ITOSF1  SB3   X0-7
      20044          LX0   36      . ADD NUMBER OF CHARACTERS TO SVD
      12710          BX7   X1+X0
2373 5117000000    ITOSF2  SA1   B7+0      . GET A FREE WORD
      0311002375    NZ    X1,ITOSF3
2374 0100002057    RJ    MORFREE
2375 63710          ITOSF3  SB7   X1
      73110          SX1   X1
      0603002363    GE    B0,B3,ITOSF4      . BRANCH IF THE NUMBER FITS INTO A

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2376	43052		MX0	42	. SINGLE WORD
	15260		BX2	-X0*X6	. OTHERWISE STORE THE FIRST SEVEN
	11606		BX6	X0*X6	. CHARACTERS
	12661		BX6	X6+X1	. AND REPEAT THE LOOP WITH THE
2377	54610		SA6	A1	. REMAINING ONES
	20252		LX2	42	
	12623		BX6	X2+X3	
	67303		SB3	B0-B3	. MAKE B3 NEGATIVE (ZERO IS OK)
2400	0400002373		EQ	ITOSF2	
2401	5116777776	ITOSFTP	SA1	B6-1	. CONVERT TOP ENTRY IN
	0100002364		RJ	ITOSF	. STACK FROM I TO SF
2402	7170000002		SX7	2	
	5166777776		SA6	B6-1	
2403	56760		SA7	B6	
	0211000000		JP	B1	
		*			
2404	17174000000000000000	HALF	DATA	0.5	
2405	17204000000000000000	ONE	DATA	1.0	
2406	17734430234712400000	TENTO13	DATA	1.0E13	
		*			
2407	0450002412	RTOSF0	ZR	B5,RTOSF02	. STORE WORD
	6155777771		SB5	B5-6	
2410	20606	RTOSF01	LX6	6	
	12606		BX6	X0+X6	
	5000000001		SA0	A0+1	. CHARACTER COUNT
2411	0244000000		JP	B4	
2412	20622	RTOSF02	LX6	18	
	6150000044		SB5	36	
	56170		SA1	B7	
2413	0311002414		NZ	X1,RTOSF03	
	0100002057		RJ	MORFREE	
2414	73110	RTOSF03	SX1	X1	
	63710		SB7	X1	
	12616		BX6	X1+X6	
	54610		SA6	A1	
2415	13666		BX6	X6-X6	
	0400002410		EQ	RTOSF01	
2416	00000000000000000000	RTOSF	DATA	0	. REAL IN X1 TO SVD IN X6
2417	76770		SX7	B7	. START OF FREE CHAIN
	5120000205		SA2	MINSTAT	
	13666		BX6	X6-X6	. X6 WILL BE CHARACTER BUFFER
2420	5272000000		SA7	X2+XWDREL	
	6150000052		SB5	42	. BIT COUNT FOR XCHARACTER BUFFER
2421	56000		SA0	B0	. CHARACTER COUNT
	66200		SB2	B0	. SCALE FACTOR
	24401		NX4	X1	
2422	6130000015		SB3	13	. SIGNIFICANT DIGIT COUNT
	0304002447		ZR	X4,RTOSF6	. ZERO IS ALREADY NORMALIZED.
2423	0321002426		PL	X1,RTOSF1	
	7100000046		SX0	1R-	
2424	14444		BX4	-X4	
	6140002426		SB4	RTOSF1	
2425	0400002407		EQ	RTOSF0	. OUTPUT MINUS SIGN
2426	5120002405	RTOSF1	SA2	ONE	
	5110005531		SA1	ONETENTH	
2427	5130002341		SA3	TEN	
2430	31042	RTOSF2	FX0	X4-X2	

	0330002432		NG	X0,RTOSF3	. R < 1.0
	45443		RX4	X4/X3	
2431	6122000001		SB2	B2+1	
	0400002430		EQ	RTOSF2	
2432	31041	RTOSF3	FX0	X4-X1	
	0320002434		PL	X0,RTOSF4	
	41434		RX4	X3*X4	
2433	6122777776		SB2	B2-1	
	0400002432		EQ	RTOSF3	
2434	5110002406	RTOSF4	SA1	TENTO13	
	41541		RX5	X4*X1	
2435	5140002404		SA4	HALF	
	30445		FX4	X4+X5	
	26414		UX4	B1,X4	
2436	22414		LX4	B1,X4	
	27404		PX4	X4	
	24404		NX4	X4	
	45441		RX4	X4/X1	
2437	31142		FX1	X4-X2	
	0331002441		NG	X1,RTOSF45	
	45443		RX4	X4/X3	
2440	6122000001		SB2	B2+1	
2441	0602002447	RTOSF45	LE	B2,B0,RTOSF6	. R WAS < 1.0
	6140002442		SB4	RTOSF5	
2442	0420002451	RTOSF5	ZR	B2,RTOSF8	. INTEGER PART CONVERTED
	6122777776		SB2	B2-1	
2443	6133777776		SB3	B3-1	
	0730002450		NG	B3,RTOSF7	. OUTPUT A ZERO
2444	40543		FX5	X4*X3	. R*10.0
	26015		UX0	X5,B1	
	22010		LX0	X0,B1	
	27700		PX7	X0	
2445	7200000033		SX0	X0+1R0	
	24707		NX7	X7	
	31457		FX4	X5-X7	
2446	24404		NX4	X4	
	0400002407		EQ	RTOSF0	. OUTPUT DIGIT
2447	6140002451	RTOSF6	SB4	RTOSF8	
2450	7100000033	RTOSF7	SX0	1R0	
	0400002407		EQ	RTOSF0	
2451	7100000057	RTOSF8	SX0	1R.	
	6140002453		SB4	RTOSF9	
2452	0400002407		EQ	RTOSF0	
2453	6122000001	RTOSF9	SB2	B2+1	
	0602002450		LE	B2,B0,RTOSF7	. OUTPUT A ZERO
2454	0603002461		LE	B3,B0,RTOSF10	. FINISHED
	6133777776		SB3	B3-1	
2455	40543		FX5	X4*X3	. R*10.0
	26015		UX0	X5,B1	
	22010		LX0	X0,B1	
	27700		PX7	X0	
2456	7200000033		SX0	X0+1R0	
	24707		NX7	X7	
	31457		FX4	X5-X7	
2457	24404		NX4	X4	
	0314002407		NZ	X4,RTOSF0	. FINISHED
2460	6140002461		SB4	RTOSF10	

		0400002407		EQ	RTOSF0	
2461	5120000205		RTOSF10	SA2	MINSTAT	
		0306002465		ZR	X6,RTOSF12	. NO CHARS TO STORE
2462	6155000022			SB5	B5+18	
		22656		LX6	B5,X6	
		56170		SA1	B7	
2463	0311002464			NZ	X1,RTOSF11	
		0100002057		RJ	MORFREE	
2464	5061000000		RTOSF11	SA6	A1+0	
		6271000000		SB7	X1+0	
2465	5212000000		RTOSF12	SA1	X2+XWDREL	. FWA
		74660		SX6	A6	. LWA
		20622		LX6	18	
2466	12616			BX6	X1+X6	
		74500		SX5	A0	. CHAR COUNT
		20544		LX5	36	
		12656		BX6	X5+X6	
2467	13777			BX7	X7-X7	
		54710		SA7	A1	. ZERO XWDREL
		0400002416		EQ	RTOSF	. RETURN

2470	7241000000	X1VALUE	SX4	X1+0	
	7261000000		SX6	X1+0	
2471	6110000455		SB1	SNDMIC	
	5160000250		SA6	UA	. SAVE ADDRESS FOR PMCHEK
		*		RETURN IS IN B1	
2472	53140	SOPERND	SA1	X4	. SVD OF OPERAND TO X1
	5120002476		SA2	OPRNDWD	. SWITCH ON TYPE (CF. CHEK)
	10311		BX3	X1	
2473	21167		AX1	55	
	20102		LX1	2	
	63410		SB4	X1	
	43070		MX0	56	
2474	23242		AX2	B4,X2	
	15220		BX2	-X0*X2	
	6232000000		SB3	X2+0	
2475	0233002477		JP	B3+OPRNDSW	
		*			
2476	31200000344	OPRNDWD	SWITCH	OPRNDSW,0,0,1,1,4,4,4,2,7,0,0,0,0,5,6	
		*			
2477	43005	+	MX0	5	. 0, A,D,N,C
	10633		BX6	X3	
	0400002507		EQ	OPRNDR1	
2500	43005	+	MX0	5	. 1, SS,SI
	10644		BX6	X4	
	0400002507		EQ	OPRNDR1	
2501	43005	+	MX0	5	. 2, I
	10633		BX6	X3	
	20606		LX6	6	. EXTEND THE SIGN
	21606		AX6	6	
2502	0400002507		EQ	OPRNDR1	
2503	43005	+	MX0	5	. 4, PS,PE,PA
	11603		BX6	X0*X3	
	0400002512		EQ	OPRNDP	
2504	56010	+	SA0	B1	. 5, IN
	10544		BX5	X4	
	0400002516		EQ	OPRNDIN	
2505	0400002521	+	EQ	OPRNDOT	. 6, OUT
2506	5213000000	+	SA1	X3+0	. 7, R
	43005		MX0	5	
	10611		BX6	X1	
2507	5100000002	OPRNDR1	SA0	2	. RESERVE 2 LOCATIONS IN THE STACK
	0100002052		RJ	RESERVE	
2510	74200	OPRNDR2	SX2	A0	
	11703		BX7	X0*X3	. HEADING TO X7
	5166777776		SA6	B6-1	. STORE SECONDARY WORD FROM X6
2511	12772		BX7	X7+X2	
	56760		SA7	B6	
	0211000000		JP	B1+0	. RETURN
		*			
2512	21344	OPRNDP	AX3	36	. PATTERN TYPE OPERAND
	73330		SX3	X3	. PARAMETER TO X3
	0100002317		RJ	PTOPX4	. LOAD PATTERN TO THE STACK
2513	20322		LX3	18	
	5100000001		SA0	1	. RESERVE ONE WORD FOR HEADING
	12663		BX6	X6+X3	. FORM HEADING IN X6 AND X3
2514	65303		SB3	A0-B3	. B3 GOT ITS VALUE IN PTOX4
	76363		SX3	B6+B3	

2515	12663	0100002052	RJ	RESERVE		
		56660	BX6	X6+X3		
		0211000000	SA6	B6	. STORE HEADING	
			JP	B1+0	. RETURN	
			*			
2516	0100002524		OPRNDIN	RJ	FREESVD	. OPERAND INPUT ASSOCIATED
2517	63350			SB3	X5	
		0100004364		RJ	INPUT	. CALL INPUT
2520	7245000000			SX4	X5+0	
		6010000000		SB1	A0+0	. RESTORE REGISTERS
2521	5100000002		OPRNDOT	SA0	2	. ALSO FOR OUTPUT
		0100002052		RJ	RESERVE	
2522	53140			SA1	X4	. MAKE A COPY OF THE RESULTING
		53210		SA2	X1	. STRING AND USE ITS SF TYPE
		0100002350		RJ	SSTOSF	. DESCRIPTION INSTEAD
2523	13333			BX3	X3-X3	
		0400002510		EQ	OPRNR2	

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*          X0,X1,X2,X3,X4,X7,B3,B4,X6 IF IO
*
2524 46000      FREESVD NO
2525 53130      +      SA1  X3          . SVD TO BE FREED TO X1
                    5120002531      SA2  FSVDWD
                    43070          MX0  56
2526 0301002524  +      ZR   X1,FREESVD      . RETURN IF EMPTY
                    10411          BX4  X1          . SWITCH ON TYPE (CF. CHEK)
                    21167          AX1  55
2527 20102      +      LX1  2
                    63410          SB4  X1
                    23242          AX2  B4,X2
                    15220          BX2  -X0*X2
2530 63320      +      SB3  X2
                    0233002532      JP   B3+FSVDSW
*
2531 10410421002  +      FSVDWD SWITCH FSVDSW,0,0,3,0,3,3,3,1,0,1,1,1,1,2,2
*
2532 76770      +      SX7  B7          . 0, R
                    63740          SB7  X4
                    5274000000      SA7  X4+0
2533 0400002524  +      EQ   FREESVD      . 1, N,A,D,C
2534 67404      +      SB4  B0-B4        . 2, IN,OUT
                    5244000000      SA4  X4+0
2535 76770      +      SX7  B7          . 3, SS,PS,PE,PA
                    63740          SB7  X4
                    21422          AX4  18
                    53740          SA7  X4
2536 0400002524  +      EQ   FREESVD
*
*
2537 46000      SASSIGN NO
2540 43070      +      MX0   56
                    56120          SA1   B2          . FETCH HEADING OF THE VALUE
                    5120002544      SA2  SASGNWD      . TO BE ASSIGNED
2541 10411      +      BX4  X1          . SWITCH ON ITS TYPE
                    21167          AX1  55
                    20102          LX1  2
                    63310          SB3  X1
2542 23232      +      AX2  B3,X2
                    15220          BX2  -X0*X2
                    63320          SB3  X2
2543 0233002545  +      JP   B3+SASGNSW
*
2544 00114631714  +      SASGNWD SWITCH SASGNSW,4,0,1,12,11,11,11,6,14,9,9,9,9,0,0
*
2545 63340      +      SB3  X4          . 0, S
                    67323          SB3  B2-B3
                    0400002604      EQ   SASGNS
2546 5142777776  +      SA4  B2-1        . 1, SS
                    5224000000      SA2  X4+0
2547 0100002350  +      RJ   SSTOSF
2550 5110000216  +      SA1  MXLNGTH
                    0400002606      EQ   SASGNSF
2551 5122777776  +      SA2  B2-1        . 4, SF
                    5110000216      SA1  MXLNGTH
2552 10622      +      BX6  X2

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    0400002606      EQ  SASGNSF
2553  7120000007    +   SX2  ITY          . 6, I
                    5112777776    SA1  B2-1
2554  20267        SASGNI1 LX2  55
                    43006         MX0  6
                    15110         BX1  -X0*X1
                    12612         BX6  X1+X2
2555  0400002567    EQ  SASGN2
2556  5112777776    +   SA1  B2-1          . 9, A,D,N,C
                    10611         BX6  X1
2557  0400002567    EQ  SASGN2
2560  0400002611    +   EQ  SASGNP          . 11, P
2561  5142777776    +   SA4  B2-1          . 12, SI
                    5214000001    SA1  X4+1
2562  7120000007    SX2  ITY
                    0400002554    EQ  SASGNI1
2563  5122777776    +   SA2  B2-1          . 14, R
                    56170         SA1  B7
                    10622         BX6  X2
2564  0311002565    NZ  X1,SASGNR1      . GET A FREE WORD AND STORE
                    0100002057    RJ  MORFREE        . THE REAL VALUE THERE
2565  6271000000    SASGNR1 SB7  X1+0
                    5061000000    SA6  A1+0
2566  7071777775    SX7  A1-2
                    36674         IX6  X7+X4
2567  0100002524    SASGN2 RJ  FREESVD      . COMMON PART, NEW DESCR. IS IN X6
2570  0740002572    LT  B4,B0,SASGNIO  . BRANCH IF IO ASSOCIATED
*
*   TRACER CODE MAY BE INSERTED HERE
*
                    5263000000    SA6  X3+0          . PERFORM ACTUAL ASSIGNMENT
2571  0400002537    EQ  SASSIGN        . AND RETURN
*
2572  53130        SASGNIO SA1  X3          . I/O ASSOCIATED
                    6144000064    SB4  B4+INTY*4
                    53610        SA6  X1          . PERFORM ASSIGNMENT
*
*   TRACER CODE HERE TOO
*
2573  0404002537    TRACER2 EQ  B0,B4,SASSIGN . READY IF INPUT
                    10166         BX1  X6          . TEST TYPE TO BE OUTPUT
                    21667         AX6  55
2574  7266777775    SX6  X6-SSTY        . CHECK FOR STRING TYPE
                    0316002577    NZ  X6,SASGNO1
2575  63330        SASGNO2 SB3  X3
                    0100004512    RJ  OUTPUT        . CALL OUTPUT
2576  0400002537    EQ  SASSIGN        . AND RETURN
*
2577  63430        SASGNO1 SB4  X3          . TEST TYPE TO BE OUTPUT
                    20106         LX1  6          . MASK VALUE PART OFF
                    7276777772    SX7  X6-ITY+SSTY
2600  0317000350    NZ  X7,ERR52       . ERROR IF NOT INTEGER
                    64260         SB2  A6          . SAVE X3,A6
                    21106         AX1  6          . EXTEND THE SIGN
2601  0100002364    RJ  ITOSF          . CONVERT IT INTO STRING
2602  7100000002    SX0  SSTY
                    20067         LX0  55

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2603	12660	76340	SX3	B4	
	56620		BX6	X6+X0	. STORE SS TYPE RESULT
	0400002575		SA6	B2	
			EQ	SASGNO2	. GO AND OUTPUT IT
			*		
2604	6122777776		SASGNS	SB2 B2-1	. PROCESS S TYPE
	6133000001		SB3	B3+1	. BY CONVERTING IT INTO SF FORM
2605	0100002300		RJ	STOSFX6	
2606	10766		SASGNSF	BX7 X6	. PROCESS SF TYPE
	21644		AX6	36	. LENGTH OF STRING TO X6
	7100000002		SX0	SSTY	
2607	37116		IX1	X1-X6	
	20067		LX0	55	
	12607		BX6	X0+X7	. ADD SS TYPE TO DESCRIPTION
2610	0321002567		PL	X1,SASGN2	. GO TO ASSIGN IT
	0400001247		EQ	ERR18	. ERROR IF STRING IS TOO LONG
			*		
2611	43005		SASGNP	MX0 5	. PROCESS P TYPE
	63340		SB3	X4	
	76170		SX1	B7	. FIRST
	11704		BX7	X0*X4	
2612	43052		MX0	42	
	21422		AX4	18	. PARAMETER OF PA
	67323		SB3	B2-B3	
	12771		BX7	X7+X1	. PACK FIRST AND TYPE TO X7
2613	15440		BX4	-X0*X4	
	6133000001		SB3	B3+1	
	20444		LX4	36	
2614	5117000000		SASGNP1	SA1 B7+0	. GET NEXT FREE WORD
	0311002616		NZ	X1,SASGNP2	
2615	0100002057		RJ	MORFREE	
2616	56230		SASGNP2	SA2 B3	. FETCH PATTERN WORD
	10622		BX6	X2	
	20222		LX2	18	
	12662		BX6	X6+X2	. SHIFT ADDRESS 18 BITS TO THE LEFT
2617	11660		BX6	X6*X0	. TO MAKE SPACE FOR LINK
	6133000001		SB3	B3+1	
2620	0423002622		EQ	B2,B3,SASGNP3	. END LOOP
	73110		SX1	X1	
	63710		SB7	X1	
2621	12661		BX6	X6+X1	. ADD LINK TO THE WORD
	54610		SA6	A1	. AND STORE
	0400002614		EQ	SASGNP1	
2622	54610		SASGNP3	SA6 A1	. STORE LAST WORD WITH 0 LINK
	63710		SB7	X1	
	74110		SX1	A1	
	12774		BX7	X7+X4	
2623	20122		LX1	18	. PACK PA PARAMETER AND LAST
	12671		BX6	X7+X1	. INTO THE DESCRIPTOR
	0400002567		EQ	SASGN2	. GO TO ASSIGN IT
			*		


```

*
2624 46000 INDRCT NO
2625 5120002627 + SA2 INDCWD . SWITCH ON THE TYPE OF TOPOPERAND
        6130002630 SB3 INDCSW
2626 0400000526 EQ CHEK
*
2627 00000400006 INDCWD SWITCH INDCSW,5,4,6,6,0,0,0,3,0,0,0,1,0,0,0
*
2630 6150000041 + ERROR 33 . 0, P,A,D,C,R
2631 5116777776 + SA1 B6-1 . 1, N
        6166777775 SB6 B6-2 . RETURN NAME AND REMOVE TOPOPERAND
2632 73110 SX1 X1
        0400002624 EQ INDRCT
2633 0100002255 + RJ ITOS . 3, I
2634 0100000540 + RJ SCATS . 4, S
2635 5146777776 + SA4 B6-1 . 5, SF
        0400002637 EQ INDR1
2636 5146777776 + SA4 B6-1 . 6, SS,SI
        5244000000 SA4 X4+0
2637 7100000036 INDR1 SX0 VARTYP . SET UP SEARCH CALL FOR A VARIABLE
        0100002645 RJ INDRX
2640 0530002642 NE B3,B0,INDR8
        0100002342 RJ ZROX7 . ASSIGN NULL VALUE
2641 7213000001 SX1 X3+1 . IF NEW VARIABLE
        5273000001 SA7 X3+1
2642 6166777775 INDR8 SB6 B6-2
        0540002624 NE B4,B0,INDRCT . END IF NOT SF
2643 76770 SX7 B7
        63740 SB7 X4
        21422 AX4 18
        53740 SA7 X4
2644 0400002624 EQ INDRCT
*
*
2645 46000 INDRX NO
2646 10144 + BX1 X4
        63540 SB5 X4
        21144 AX1 36
        20067 LX0 55
2647 6231000000 SB3 X1+0 . LENGTH TO B3
        0430000326 EQ B3,B0,ERR27 . ERROR IF NULL STRING
2650 0100002675 RJ SEARCH
2651 0311002645 NZ X1,INDRX . BRANCH IF FOUND
        5130002674 SA3 FLSIX . (NO. OF CHARACTERS/WORD) - 1, =6.0
2652 76530 SX5 B3
        27105 PX1 X5
        30113 FX1 X1+X3
2653 5130002673 SA3 SEVEN . =7.0
        44113 FX1 X1/X3
        26621 UX6 X1,B2
2654 5130000204 SA3 MAXSTAT
        22626 LX6 X6,B2
        12732 BX7 X3+X2 . NUMBER OF TEXT WORDS+MAXSTAT TO X7
2655 54720 SA7 A2
        36763 IX7 X6+X3
2656 5140000207 INDR2 SA4 MINSTAK
        7277000002 SX7 X7+2 . ALLOW FOR BYPASS WORD AND SVD

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2657	37474		IX4	X7-X4	
	54730		SA7	A3	. STORE NEW MAXSTAT
		0334002661	NG	X4, INDR3	. BRANCH IF THERE IS ENOUGH ROOM
2660	6234000050		SB3	X4+BUFF4	. ROUND UP APPETITE
		0100002042	RJ	PUSHSTK	. MAKE ROOM IN STATIC
2661	5146777776		SA4	B6-1	. FETCH OPERAND AFRESH
		0440002663	EQ	B4, B0, INDR5	. BYPASS IF SF
2662	53440		SA4	X4	
2663	7213000003		SX1	X3+3	
		73640	SX6	X4	
		20544	LX5	36	. SHIFT STRING LENGT8 FOR HEADING
2664	53260		SA2	X6	. NEXT WORD
		7262000000	SX6	X2+0	
		13726	BX7	X2-X6	
2665	0306002670		ZR	X6, INDR7	. END OF LIST
		12771	BX7	X7+X1	
2666	5271777776		SA7	X1-1	. STORE WORD IN STATIC
		7211000001	SX1	X1+1	
2667	0400002664		EQ	INDR6	
2670	12605		BX6	X0+X5	. HEADING FOR VARIABLE-TYPE RECORD
		5271777776	SA7	X1-1	. STORE LAST WORD
		37713	IX7	X1-X3	
2671	20722		LX7	18	
		12667	BX6	X6+X7	
		7213000001	SX1	X3+1	
2672	53630		SA6	X3	. STORE HEADING
		66300	SB3	B0	. INDICATE NEW RECORD IN B3
		0400002645	EQ	INDRX	
			*		
2673	17227000000000000000	SEVEN	DATA	7.0	. NUMBER OF CHARACTERS IN A WORD
2674	17226000000000000000	FLSIX	DATA	6.0	

```

*          X0,X1,X2,X3,X6,X7,B2,B3,B5
*
2675 46000          SEARCH NO
2676 43752          +      MX7  42          . X7 IS A MASK AND A FLAG
                               BX2  X2-X2
                               SB2  B5
                               MX6  2
2677 20672          LX6  58
                               BX6  X0*X6          . BYPASS IF TYPE IS NOT INTEGER
                               NZ   X6,SEARCH1        . OR REAL CONSTANT
2700 56250          SA2  B5
                               MX7  12
                               BX2  -X7*X2          . MASK 48 BITS OFF
                               BX7  X7-X7          . SET FLAG
2701 0400002704    EQ   SEARCH2
2702 56120          SEARCH1 SA1  B2          . OTHERWISE EXOR THE WORDS IN
                               SB2  X1+0          . THE NAME TOGETHER
                               BX2  X2-X1
2703 0520002702    NE   B2,B0,SEARCH1
                               BX2  X2*X7          . AND MASK 42 BITS OFF
                               LX2  42
2704 5130000110    SEARCH2 SA3  HASHLWD        . THE HASH FUNCTION IS A SIMPLE
                               PX2  X2          . INTEGER DIVISION
                               FX1  X2/X3
2705 26121          UX1  X1,B2
                               LX1  X1,B2
                               PX1  X1
2706 40313          NX1  X1
                               FX3  X1*X3
                               FX2  X2-X3
                               UX2  X2,B2
2707 43605          LX2  X2,B2          . HASHTABLE INDEX IS IN X2
                               MX6  5          . START OF THE CHAIN OF NAMES WITH
                               SA2  X2+HASHTBL        . THIS HASHCODE TO X1
2710 73120          SEARCH3 SX1  X2          . SEARCH LOOP
                               ZR   X1,SEARCH          . END OF THE CHAIN RETURN NOT FOUND
                               SA2  X1
2711 10322          BX3  X2
                               AX3  36
                               SB2  X3          . CHECK LENGTH OF NAME
2712 0523002710    NE   B2,B3,SEARCH3
                               BX3  X0-X2
                               BX3  X3*X6          . CHECK TYPE
2713 0313002710    NZ   X3,SEARCH3
                               SB2  A2+2
2714 0327002722    PL   X7,SEARCH5          . BYPASS IF INTEGER OR REAL CONST.
                               SX1  B5
2715 73110          SEARCH4 SX1  X1
                               ZR   X1,SEARCH3        . END OF THE NAME
                               SA3  B2
2716 53110          SA1  X1          . NEXT WORD IN NAME
                               SB2  X3
                               BX3  X1-X3
                               BX3  X3*X7          . COMPARE THE CHARACTERS ONLY
2717 0313002710    NZ   X3,SEARCH3
                               NE   B0,B2,SEARCH4        . THERE ARE MORE WORDS
2720 73110          SX1  X1

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	0311002710		NZ	X1,SEARCH3	
2721	7012000001	SEARCH6	SX1	A2+1	. RETURN FOUND
	0400002675		EQ	SEARCH	
2722	56150	SEARCH5	SA1	B5	. FOR CONSTANTS COMPARE VALUES
	56320		SA3	B2	
	13313		BX3	X1-X3	
2723	0313002710		NZ	X3,SEARCH3	
	0400002721		EQ	SEARCH6	

2724	46000	ENTERA	NO		
2725	7205000000	+	SX0	X5+0	. THE NEXT ELEMENT IS THE ELEMENT
	5120002724		SA2	ENTERA	. AFTER THE ALTERNATIVE
2726	0330002732		NG	X0,ENTER1	
	6240000000		SB4	X0+0	
2727	0400002732		EQ	ENTER1	
		*			
2730	46000	ENTER	NO		. RECURSIVE CALL
2731	46000	+	NO		
	5120002730		SA2	ENTER	
2732	6166000004	ENTER1	SB6	B6+4	
	0756002743		LT	B5,B6,PMBUMP	. BRANCH IF THERE IS NO SPACE
2733	10622	PMBUMPR	BX6	X2	. STORE X5,X4,THE RETURN JUMP
	5176777776		SA7	B6-1	. AND X7 IN THE STACK
	56660		SA6	B6	
2734	10644		BX6	X4	
	10755		BX7	X5	
	5166777774		SA6	B6-3	
2735	5176777775		SA7	B6-2	
	5150000224		SA5	PIB	
2736	7121000000		SX2	B1+0	
	20522		LX5	18	
	12525		BX5	X2+X5	
2737	43001		MX0	1	
	20522		LX5	18	
	12550		BX5	X5+X0	
		*			
2740	7100000001	NEXT	SX0	1	. SET NO ALTERNATIVE
	20021		LX0	17	
	12505		BX5	X0+X5	
2741	56140	NEXT1	SA1	B4	. NEXT PM OPERATION TO X1
	0371003024		ID	X1,YDOL	. IGNORE DOLPM OR PRDPM
	26121		UX1	X1,B2	
2742	0222003157	JP		B2+YSTAR	
		*			
2743	7100000002	PMBUMP	SX0	SSTY	. STORE AN S TYPE DESCRIPTION OF
	5110000205		SA1	MINSTAT	. STACKS S AND P IN STATIC SUCH
2744	20067		LX0	55	. THAT THE GARBAGE COLLECTION
	12630		BX6	X3+X0	. WILL BE ABLE TO CHANGE THEM.
	5261000001		SA6	X1+SIXREL	
2745	10655		BX6	X5	
	5160002760		SA6	SKMRAR5	
2746	5150000245		SA5	PMA5	. RESTORE A5 FOR ERRORMESSAGE
	5255000000		SA5	X5+0	
2747	5130000222		SA3	PIX	
	12630		BX6	X3+X0	
	74300		SX3	A0	
2750	5261000000		SA6	X1+PIXREL	
	6123000001		SB2	B3+1	. DESCRIBE IN A0 WHERE THE LAST
2751	57062		SA0	B6-B2	. NORMAL STACK ENTRY CAN BE FOUND
	0100002112		RJ	GETSTAK	
2752	5110000206		SA1	MAXSTAK	
	53030		SA0	X3	
	63510		SB5	X1	
2753	5110000205		SA1	MINSTAT	
	5231000000		SA3	X1+PIXREL	. CLEAR USED LOCATIONS
2754	73630		SX6	X3	

2755	5211000001 5160000222 73310 13666		SA1 X1+SIXREL SA6 PIX SX3 X1 BX6 X6-X6 SA6 A3 SA6 A1	. RESTORE STACK POINTERS
2756	54630 54610 5150002760		SA5 SKMRAR5 EQ PMBUMPR	
2757	0400002733	1	SKMRAR5 * BSSZ 1	
2761	5110000225 15551		ALTLFM SA1 LENFAIL BX5 -X1*X5 EQ ALTLF	
2762	0400002764		EQ ALTLF	
2763	43001 15550		ALT MX0 1 BX5 -X0*X5	. ALTERNATE WITHOUT LENGTH FAILURE
2764	7170002740 73150		ALTLF SX7 NEXT SX1 X5	. SIGN BIT IN X5 IS ONE IFF ALL . ALTERNATIVES LENGTH FAILED
2765	0321002767 43001 15605		PL X1,SETSIPI MX0 1 BX6 -X5*X0 SA6 LENFAIL EQ EXIT	
2766	5160000225 0400003273		* SETSIPI SA1 PIB ZR X1,ALTLF5	. OPEN SUBROUTINE TO RESET S AND P
2767	5110000224 0301002777		SA2 PIX SB2 X1+0 LX5 24 SX1 X5+0 LX5 36	. STACK POINTERS . THESE STACKS CONSTITUTE TWO LIST . STRUCTURES
2770	5120000222 6221000000		ALTLF1 SX0 B0-B2 IX0 X0+X1 ZR X0,ALTLF2	. RESET STACK P
2771	20530 7215000000 20544		SA2 X2 SX6 B7 SB7 A2 SA6 A2 SB2 B2-1 EQ ALTLF1	. LINK FREED WORD TO THE FREE CHAIN . B2 IS THE NUMBER OF WORDS IN . STACK P
2772	77002 36001 0300002775		ALTLF2 SX6 X1+0 SA6 A1+0 SX6 X2 SA6 PIX LX5 42 SX1 X5+0 LX5 18	. STORE B2 IN PIB
2773	53220 76670 64720 54620		ALTLF5 SB2 B0-B1 SB2 X1+B2 EQ B0,B2,ALTLF4	. RESET STACKS
2774	6122777776 0400002772		SA3 X3 SX6 B7 SB7 A3 SA6 A3 SB1 B1-1 EQ ALTLF3	. AS ABOVE . B1 IS RESERVED FOR THE NUMBER OF . WORDS IN STACK S
2775	7261000000 5061000000		ALTLF3 SB2 X3 SB2 X7	
2776	73620 5160000222		ALTLF4 SX3 X3 SB2 X7	
2777	20552 7215000000 20522			
3000	67201 63212 0402003003			
3001	53330 76670 64730 54630			
3002	6111777776 0400003000			
3003	73330 63270			

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0222000000      JP      B2
*
3004 0311001431  YENDEX NZ      X1,PMFOUND      . FOUND IF OUERMOST END
      6144000001      SB4      B4+1
3005 53230      SA2      X3
      10622      BX6      X2
      21244      AX2      36
      63220      SB2      X2
3006 0302003010  ZR      X2,YENDEX1      . UNLESS ARBNO CALLED
      56140      SA1      B4
      74200      SX2      A0
3007 0361003010  DF      X1,YENDEX1      . PERFORM ASSIGNMENTS
      0100003300      RJ      ASSIGNS
3010 76770      YENDEX1 SX7      B7      . REMOVE TOP ELEMENT FROM
      63730      SB7      X3      . STACK S
      73360      SX3      X6
      56770      SA7      B7
3011 21622      AX6      18
      6111777776      SB1      B1-1
3012 5216777776  SA1      X6-1
      26121      UX1      X1,B2
      63460      SB4      X6
3013 0520003015  NE      B2,B0,YENDEX2      . IF STAR CALLED
      10266      BX2      X6
      21222      AX2      18
3014 63220      SB2      X2
      74200      SX2      A0
      0100003300      RJ      ASSIGNS
3015 76740      YENDEX2 SX7      B4      . SAVE WORD FROM STACK S IN X4
      10466      BX4      X6      .
      74000      SX0      A0
      20722      LX7      18
3016 12707      BX7      X0+X7
      63460      SB4      X6
      0100002730      RJ      ENTER      . RECURSIVE CALL
3017 10644      BX6      X4
      20622      LX6      18
      56170      SA1      B7
      12663      BX6      X6+X3      . RESTORE X4 INTO STACK S
3020 0311003021  NZ      X1,YENDEX3
      0100002057      RJ      MORFREE
3021 56670      YENDEX3 SA6      B7
      63710      SB7      X1
      6111000001      SB1      B1+1
3022 74360      SX3      A6
      0400003273      EQ      EXIT
3023 73114      YALTER SX1      X1+B4      . PACK ADDRESS OF ALTERNATIVE
      43052      MX0      42      . INTO X5
      11550      BX5      X5*X0
      12551      BX5      X5+X1
3024 6144000001  YDOL   SB4      B4+1      . NEXT OPERATION
      0400002741      EQ      NEXT1
*
3025 7164000001  YEXP   SX6      B4+1      . BEGIN EXPRESSION
      63414      SB4      X1+B4
3026 6111000001  SB1      B1+1
      6120003034  SB2      YEXPR

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3027	56170	POPS	SA1	B7	. STACK INDEX AND POS IN STACK S
	74700		SX7	A0	. (OPEN SUBROUTINE IS USED BY
	73250		SX2	X5	. YSTAR AS WELL)
	20722		LX7	18	
3030	0311003031		NZ	X1,POPS1	
	0100002057		RJ	MORFREE	
3031	0322003032	POPS1	PL	X2,POPS2	
	7124000000		SX2	B4+0	
3032	12772	POPS2	BX7	X7+X2	
	63710		SB7	X1	
	20722		LX7	18	
	12773		BX7	X7+X3	
3033	54710		SA7	A1	
	0222000000		JP	B2	
3034	74310	YEXPR	SX3	A1	
	76740		SX7	B4	
	74000		SX0	A0	. SET UP CALL TO MATCH THE
	20722		LX7	18	. EXPRESSION
3035	63460		SB4	X6	
	12770		BX7	X7+X0	
	0100002730		RJ	ENTER	
3036	0400002761		EQ	ALTLFM	
		*			
3037	6144000001	YARB	SB4	B4+1	. ARB PATTERN ELEMENT
	74400		SX4	A0	
3040	56140	YARB1	SA1	B4	
	0361003042		DF	X1,YARB2	
	73240		SX2	X4	
3041	64200		SB2	A0	
	0100003300		RJ	ASSIGNS	
3042	76740	YARB2	SX7	B4	
	74000		SX0	A0	
	20722		LX7	18	
	53040		SA0	X4	
3043	12770		BX7	X7+X0	
	0100002724		RJ	ENTERA	. TRY TO MATCH THE REST OF THE
3044	5110000225		SA1	LENFAIL	. PATTERN
	6224000000		SB2	X4+0	. EXTEND THE STRING MACHED
3045	7244000001		SX4	X4+1	
	0732002763		LT	B3,B2,ALT	. TOO LONG
3046	0301002763		ZR	X1,ALT	
	7170003040		SX7	YARB1	. RESET STACKS AND TRY AGAIN
3047	0400002767		EQ	SETSIPI	
		*			
3050	6020777776	YLEN	SB2	A0-1	. LEN PATTERN ELEMENT
	6144000001		SB4	B4+1	
3051	63212		SB2	X1+B2	
	0732002764		LT	B3,B2,ALTLF	. TOO LONG
3052	5114000000		SA1	B4+0	
	7162000001		SX6	B2+1	
3053	0361003073		DF	X1,ENTERX6	
	73260		SX2	X6	
	64200		SB2	A0	
3054	0400003072		EQ	YTAB1	. GO TRY TO MATCH THE REST
		*			
3055	5120000226	YPOS	SA2	SBASE	. POS PATTERN ELEMENT
	6144000001		SB4	B4+1	

3056	707077776	YPOS1	SX7	A0-1	
	36112		IX1	X1+X2	. CORE ADDRESS OF POSITION TO X1
	37117		IX1	X1-X7	
3057	0331002764		NG	X1,ALTLF	. POS ALREADY LEFT BEHIND
	0311002763		NZ	X1,ALT	. POS NOT REACHED YET
3060	56140		SA1	B4	
	74600		SX6	A0	
	0361003073		DF	X1,ENTERX6	
3061	64200		SB2	A0	
	74200		SX2	A0	
	0400003072		EQ	YTAB1	. GO TRY TO MATCH THE REST
		*			
3062	14111	YRPOS	BX1	-X1	. RPOS PATTERN ELEMENT
	6144000001		SB4	B4+1	
	76230		SX2	B3	. TRANSFORM INTO POS
3063	0400003056		EQ	YPOS1	
		*			
3064	5120000226	YTAB	SA2	SBASE	. TAB PATTERN ELEMENT
	6144000001		SB4	B4+1	
3065	36112	YTAB2	IX1	X1+X2	
	64200		SB2	A0	
	7261000001		SX6	X1+1	
3066	67202		SB2	B0-B2	
	63262		SB2	X6+B2	
	0720002764		LT	B2,B0,ALTLF	. TAB-STOP IS LEFT ALREADY
3067	63210		SB2	X1	
	5114000000		SA1	B4+0	
3070	0732002764		LT	B3,B2,ALTLF	
	0361003073		DF	X1,ENTERX6	
3071	64200		SB2	A0	
	10266		BX2	X6	
3072	0100003300	YTAB1	RJ	ASSIGNS	.
3073	76740	ENTERX6	SX7	B4	. TRY TO MATCH THE REST
	74100		SX1	A0	
	20722		LX7	18	
	53060		SA0	X6	
3074	12771		BX7	X7+X1	
	0100002724		RJ	ENTERA	
3075	0400002761		EQ	ALTLFM	. SEEK ALTERNATE IF MATCH FAILS
		*			
3076	14111	YRTAB	BX1	-X1	. RTAB PATTERN ELEMENT
	76230		SX2	B3	. TRANSFORM INTO TAB
	6144000001		SB4	B4+1	
3077	0400003065		EQ	YTAB2	
		*			
3100	5114000001	YREM	SA1	B4+1	. REM PATTERN ELEMENT
	6144000001		SB4	B4+1	
3101	7163000001		SX6	B3+1	
	0361003073		DF	X1,ENTERX6	. REST OF THE PATTERN WILL HAVE
3102	64200		SB2	A0	. TO MACH THE NULL STRING
	10266		BX2	X6	
	0400003072		EQ	YTAB1	
		*			
3103	6144000001	YBAL	SB4	B4+1	. BAL PATTERN ELEMENT
	7140000000		SX4	0	
3104	7160000052	YBAL1	SX6	1R)	
	7170000051		SX7	1R(

3105	64200		SB2	A0	. NOTE THAT BAL NEVER SIGNALS LENGTH
	63242		SB2	X4+B2	. FAILURE
		0732002763	LT	B3,B2,ALT	. SEEK ALTERNATIVE IF END OF STRING
3106	56120		SA1	B2	
	13016		BX0	X1-X6	
		0300002763	ZR	X0,ALT	. MISMATCH IF NEXT CHARACTER IS)
3107	7100000000		SX0	0	. X0 IS THE LEVEL COUNTER
3110	56120	YBAL2	SA1	B2	
	13217		BX2	X1-X7	
		0312003112	NZ	X2,YBAL3	
3111	7200000001		SX0	X0+1	. IF (ADD ONE
		0400003114	EQ	YBAL4	
3112	13216	YBAL3	BX2	X1-X6	
	0312003114		NZ	X2,YBAL4	
3113	7200777776		SX0	X0-1	. IF) SUBTRACT ONE
3114	6122000001	YBAL4	SB2	B2+1	
		0300003116	ZR	X0,YBAL5	. LOOP UNTIL IT IS ZERO
3115	0732002763		LT	B3,B2,ALT	
		0400003110	EQ	YBAL2	
3116	74400	YBAL5	SX4	A0	
	56140		SA1	B4	
	14444		BX4	-X4	. NUMBER OF CHARACTERS SCANNED
		73442	SX4	X4+B2	. TO X4
3117	76620		SX6	B2	
	0361003121		DF	X1,YBAL6	
		10266	BX2	X6	
3120	64200		SB2	A0	
	0100003300		RJ	ASSIGNS	
3121	76140	YBAL6	SX1	B4	. SET UP RECURSIVE CALL
	74700		SX7	A0	
	53060		SA0	X6	
		20122	LX1	18	
3122	12717		BX7	X1+X7	
	0100002724		RJ	ENTERA	. TRY TO MATCH THE REST OF THE
3123	7170003104		SX7	YBAL1	. PATTERN
		0400002767	EQ	SETSIPI	. IF FAILS GO TO EXTEND BAL
			*		
3124	6144000001	YFAIL	SB4	B4+1	. FAIL PATTERN ELEMENT
		0400002763	EQ	ALT	. SEEK ALTERNATIVE
			*		
3125	6144000001	YFENCE	SB4	B4+1	. FENCE PATTERN ELEMENT
	64200		SB2	A0	
		74200	SX2	A0	
3126	0100003300		RJ	ASSIGNS	. IF THE REST OF THE PATTERN DOES
3127	0100002724		RJ	ENTERA	. NOT MACH THEN
			*		
3130	0400001425	YABORT	EQ	PMABT	. ABORT THE WHOLE PATTERN MATCH
			*		
3131	76440	YARBNO	SX4	B4	. ARBNO PATTERN ELEMENT
	63414		SB4	X1+B4	
		5224000001	SA2	X4+1	
3132	74700		SX7	A0	
	73620		SX6	X2	
		0306002763	ZR	X6,ALT	. ALTERNATIVE IF NO HOPE TO MATCH
3133	7216400000		SX1	X6-MARK	
		0311003135	NZ	X1,YARBNO1	
3134	20722		LX7	18	. HAS NOT BEEN CALLED YET RECURSI-

	12727		BX7	X2+X7	. VELY - INITIALIZE
	10277		BX2	X7	
	54720		SA7	A2	
3135	56140	YARBNO1	SA1	B4	. MATCH A NULL STRING FIRST
	0361003137		DF	X1,YARBNO2	
	21222		AX2	18	
3136	63220		SB2	X2	
	74200		SX2	A0	
	0100003300		RJ	ASSIGNS	
3137	6020777776	YARBNO2	SB2	A0-1	
	7216777776		SX1	X6-1	
3140	77032		SX0	B3-B2	
	37710		IX7	X1-X0	. SET HOPE TO THE NUMBER OF CHARAC-
	5224000001		SA2	X4+1	. TERS IN THE REST OF THE STRING
3141	20452		LX4	42	. OR HOPE - 1 WHICHEVER IS SMALLER
	0337003142		NG	X7,YARBNO3	
	10100		BX1	X0	
3142	43052	YARBNO3	MX0	42	
	12446		BX4	X4+X6	
	11702		BX7	X0*X2	
	20422		LX4	18	
3143	12671		BX6	X7+X1	. SET UP RECURSIVE CALL
	54620		SA6	A2	
	76740		SX7	B4	
	74000		SX0	A0	
3144	20722		LX7	18	
	12770		BX7	X7+X0	
	0100002724		RJ	ENTERA	. TRY TO MATCH THE REST OF THE
					. STRING
3145	7170003146		SX7	YARBNO4	
	0400002767		EQ	SETSIPI	
3146	56170	YARBNO4	SA1	B7	
	73640		SX6	X4	. IF IT FAILS WE STACK A RETURN
	20622		LX6	18	. TO THIS ARBNO ELEMENT AND TRY
	12663		BX6	X6+X3	. TO MATCH THE ARGUMENT OF ARBNO
3147	0311003150		NZ	X1,YARBNO5	. IF IT MATCHES WE RETURN TO A
	0100002057		RJ	MORFREE	. NEW INCARNATION OF ARBNO WHICH
3150	63710	YARBNO5	SB7	X1	. WILL MATCH A NULL STRING FIRST
	74310		SX3	A1	. ETC.
	54610		SA6	A1	
	76740		SX7	B4	
3151	6111000001		SB1	B1+1	
	7000000000		SX0	A0+0	
3152	20722		LX7	18	
	6244000002		SB4	X4+2	
	12707		BX7	X0+X7	
3153	0100002730		RJ	ENTER	
3154	5214000001	YARBNO6	SA1	X4+1	. IF ALL THIS FAILS WE RESTORE
	43052		MX0	42	. THE HOPE AND GO TO SEEK AN
	21422		AX4	18	. ALTERNATIVE
3155	11170		BX1	X7*X0	
	12714		BX7	X1+X4	
	5071000000		SA7	A1+0	
3156	0400002763		EQ	ALT	
		*			
3157	5221000000	YSTAR	SA2	X1+0	. DEFERRED EVALUATION (*) OPERATOR
	6144000001		SB4	B4+1	

3160	10722	YSTAR1	BX7	X2	. SVD OF ARGUMENT TO X7,X2
	21267		AX2	55	
	7202777775		SX0	X2-SSTY	. STRING
3161	0300003166		ZR	X0,YSTARS	
	7202777770		SX0	X2-PETY-1	. PATTERN PS,PA OR PE
3162	0330003210		NG	X0,YSTARP	
	7202777762		SX0	X2-INTY	. INPUT ASSOCIATED
3163	0300003177		ZR	X0,YSTARIN	
	7202777761		SX0	X2-OUTTY	. TYPE ERROR IF NOT OUTPUT
3164	0310000323		NZ	X0,ERR24	
	5227000000		SA2	X7+0	WILL THE REAL DESCRIPTOR PLEASE STAND UP
3165	0400003160		EQ	YSTAR1	
3166	6020777776	YSTARS	SB2	A0-1	. TREATMENT OF A STRING IS
	73670		SX6	X7	. SIMILAR TO THE TREATMENT OF LIT
	43066		MX0	54	
3167	0306003175	YSTARS1	ZR	X6,YSTARS3	. MATCHES IF END OF STRING
	5216000000		SA1	X6+0	
3170	7261000000		SX6	X1+0	. NEXT WORD TO X1
	13116		BX1	X1-X6	
3171	20106	YSTAR2	LX1	6	
	15410		BX4	-X0*X1	
	6122000001		SB2	B2+1	
3172	0304003167		ZR	X4,YSTARS1	. NEXT CHARACTER TO X4
	0732002764		LT	B3,B2,ALTLF	. SEEK ALTERNATIVE IF NOT EQUAL
3173	56220		SA2	B2	. TO CORRESPONDING CHARACTER IN
	13242		BX2	X4-X2	. THE STRING
	0302003171		ZR	X2,YSTAR2	
3174	0400002763		EQ	ALT	
3175	56140	YSTARS3	SA1	B4	
	76620		SX6	B2	
	0361003073		DF	X1,ENTERX6	
3176	10266		BX2	X6	. TRY TO MACH THE REST OF THE STRING
	64200		SB2	A0	
	0400003072		EQ	YTAB1	
3177	10633	YSTARIN	BX6	X3	. IF INPUT ASSOCIATED
	76710		SX7	B1	
	5160000235		SA6	PMSTX3	
3200	5170000240		SA7	PMSTB1	
	76640		SX6	B4	. SAVE REGISTERS
	74720		SX7	A2	
3201	5160000242		SA6	PMSTB4	
	5170000241		SA7	PMSTB3	
3202	64320		SB3	A2	
	0100004364		RJ	INPUT	. CALL INPUT
3203	5110000240		SA1	PMSTB1	
	5120000241		SA2	PMSTB3	
3204	5130000235		SA3	PMSTX3	
	5140000242		SA4	PMSTB4	. RESTORE REGISTERS
3205	63110		SB1	X1	
	63440		SB4	X4	
	5110000206		SA1	MAXSTAK	
3206	5140000231		SA4	SLENGTH	
	63510		SB5	X1	
	63340		SB3	X4	
3207	53120		SA1	X2	
	0400003166		EQ	YSTARS	. TREAT THE STRING JUST INPUT

*

3210	5140000232	YSTARP	SA4	PCHAIN	. THE ARGUMENT IS A PATTERN
	6020777776		SB2	A0-1	
3211	53240	YSTARP1	SA2	X4	
	73420		SX4	X2	
	21222		AX2	18	
	13221		BX2	X2-X1	. FIND IT
3212	0312003211		NZ	X2,YSTARP1	
	7042000001		SX4	A2+1	
3213	7062000002		SX6	A2+2	
	53140		SA1	X4	
	20422		LX4	18	
3214	0301002763		ZR	X1,ALT	. SEEK ALTERNATIVE IF NO HOPE TO
	12441		BX4	X4+X1	. MATCH
	67223		SB2	B2-B3	
3215	7271777776		SX7	X1-1	
	6111000001		SB1	B1+1	. SET HOPE TO THE NUMBER OF CHARAC-
3216	73072		SX0	X7+B2	. TERS IN THE REST OF THE STRING
	0330003217		NG	X0,YSTARP2	. OR TO HOPE - 1 WHICHEVER IS
	77702		SX7	B0-B2	. SMALLER
3217	6120003221	YSTARP2	SB2	YSTARPR	
	5071000000		SA7	A1+0	
3220	0400003027		EQ	POPS	. STACK RETURN
3221	74310	YSTARPR	SX3	A1	. (LIKE IN CASE OF EXP)
	76740		SX7	B4	
	74000		SX0	A0	
	20722		LX7	18	
3222	63460		SB4	X6	
	12770		BX7	X7+X0	
	0100002730		RJ	ENTER	. TRY TO MATCH THE PATTERN IN TH
3223	73740		SX7	X4	. VARIABLE AND THE REST OF THIS
	21422		AX4	18	. PATTERN
	5274000000		SA7	X4+0	
3224	0400002761		EQ	ALTLFM	. SEEK ALTERNATIVE IF IT FAILS
		*			
3225	6020777775	YLIT	SB2	A0-2	. MATCH A LITERAL
	7174000001		SX7	B4+1	
3226	63212		SB2	X1+B2	
	63414		SB4	X1+B4	
	0732002764		LT	B3,B2,ALTLF	. LITERAL TOO LONG
3227	6221777775		SB2	X1-2	
	74602		SX6	A0+B2	
	56440		SA4	B4	. LIT MAY USE X4
3230	7266000001		SX6	X6+1	
	0720003234		LT	B2,B0,YLIT2	
3231	54102	YLIT1	SA1	A0+B2	
	53272		SA2	X7+B2	
	6122777776		SB2	B2-1	
3232	13112		BX1	X1-X2	
	0311002763		NZ	X1,ALT	. TRY ALTERNATIVE IF MISMATCH
3233	0620003231		GE	B2,B0,YLIT1	
3234	0364003073	YLIT2	DF	X4,ENTERX6	
	73260		SX2	X6	
	64200		SB2	A0	
3235	0100003300		RJ	ASSIGNS	
3236	0400003073		EQ	ENTERX6	
		*			
3237	64200	YANY	SB2	A0	. ANY -PATTERN ELEMENT

	54200		SA2	A0	
	63414		SB4	B4+X1	
3240	0732002764		LT	B3,B2,ALTLF	. TOO SHORT
	63210		SB2	X1	
	56440		SA4	B4	
3241	6122777776	YANY1	SB2	B2-1	. FAIL IF NONE OF THE CHARACTERS
	0420002763		EQ	B2,B0,ALT	
3242	57142		SA1	B4-B2	. MATCHED
	13012		BX0	X1-X2	
	0310003241		NZ	X0,YANY1	
3243	7060000001	YANY2	SX6	A0+1	
	0364003073		DF	X4,ENTERX6	
3244	64200		SB2	A0	
	10266		BX2	X6	
	0400003072		EQ	YTAB1	
		*			
3245	64200	YNOTANY	SB2	A0	. NOTANY-PATTERN ELEMENT
	54200		SA2	A0	
	63414		SB4	B4+X1	
3246	0732002764		LT	B3,B2,ALTLF	
	63210		SB2	X1	
	56440		SA4	B4	
3247	6122777776	YNOTAN1	SB2	B2-1	
	0420003243		EQ	B2,B0,YANY2	
3250	57142		SA1	B4-B2	
	13012		BX0	X1-X2	. FAIL IF ANY OF THE CHARACTERS
	0310003247		NZ	X0,YNOTAN1	
3251	0400002763		EQ	ALT	
		*			
3252	63414	YSPAN	SB4	B4+X1	. SPAN PATTERN ELEMENT
	13777		BX7	X7-X7	
	10611		BX6	X1	
	56440		SA4	B4	
3253	63260	YSPAN1	SB2	X6	. COUNT IN X7 HOW MANY CONSECUTIVE
	74100		SX1	A0	. ANY -ELEMENT WOULD MATCH
	76030		SX0	B3	
	36117		IX1	X1+X7	
3254	53210		SA2	X1	
	37101		IX1	X0-X1	
	0321003256		PL	X1,YSPAN2	. END OF STRING IS REACHED
3255	0307002764		ZR	X7,ALTLF	
	0400003262		EQ	YSPAN4	
3256	6122777776	YSPAN2	SB2	B2-1	
	0420003261		EQ	B2,B0,YSPAN3	
3257	57142		SA1	B4-B2	
	13012		BX0	X1-X2	
	0310003256		NZ	X0,YSPAN2	
3260	7277000001		SX7	X7+1	
	0400003253		EQ	YSPAN1	
3261	0307002763	YSPAN3	ZR	X7,ALT	. FAIL IF NONE
3262	74600	YSPAN4	SX6	A0	. MATCH X7 CHARACTERS
	36667		IX6	X6+X7	
	0364003073		DF	X4,ENTERX6	
3263	64200		SB2	A0	
	10266		BX2	X6	
	0400003072		EQ	YTAB1	
		*			

3264	63414	YBREAK	SB4	B4+X1	. BREAK PATTERN ELEMENT
	13777		BX7	X7-X7	
	10611		BX6	X1	
	56440		SA4	B4	
3265	63260	YBREAK1	SB2	X6	. COUNT IN X7 HOW MANY CONSECUTIVE
	74100		SX1	A0	. NOT ANY ELEMENTS WOULD MATCH
	76030		SX0	B3	
	36117		IX1	X1+X7	
3266	53210		SA2	X1	
	37101		IX1	X0-X1	
	0331002764		NG	X1,ALTLF	. END OF STRING IS REACHED
3267	6122777776	YBREAK2	SB2	B2-1	
	0420003272		EQ	B2,B0,YBREAK3	
3270	57142		SA1	B4-B2	
	13012		BX0	X1-X2	
	0310003267		NZ	X0,YBREAK2	
3271	0400003262		EQ	YSPAN4	. MATCH X7 CHARACTERS
3272	7277000001	YBREAK3	SX7	X7+1	
	0400003265		EQ	YBREAK1	
		*			
3273	7170003274	EXIT	SX7	EXIT1	. EXIT FROM THE RECURSIVE
	0400002767		EQ	SETSIPI	. PROCEDURE
3274	6166777773	EXIT1	SB6	B6-4	. DECREASE STACK
	5116000003		SA1	B6+3	
3275	5146000001		SA4	B6+1	. RESTORE X4,X5,A0,B4
	53010		SA0	X1	
	21122		AX1	18	
3276	5156000002		SA5	B6+2	
	6241000000		SB4	X1+0	
3277	0266000004		JP	B6+4	. AND RETURN (THE ADDRESSES CELL
					. CONTAINS AN EQ JUMP)
		*		X0,X1,X2,X7,B2	
		*			
3300	46000	ASSIGNS	NO		
3301	7100777776	+	SX0	-1	
	7222777776		SX2	X2-1	. LAST IN STRING TO X2
3302	7200000001	ASGNS1	SX0	X0+1	
	53104		SA1	X0+B4	. NEXT ASSIGNMENT
3303	0361003300		DF	X1,ASSIGNS	. RETURN IF NO MORE ASSIGNMENTS
	76720		SX7	B2	
3304	0331003320		NG	X1,ASGNS2	. BRANCH IN INSTANT (\$) ASSIGNMENT
	73710		SX7	X1	. VARIABLE ADDRESS TO P STACK
3305	5110000222		SA1	PIX	
	20722		LX7	18	
	12771		BX7	X7+X1	
3306	56170		SA1	B7	
	0311003310		NZ	X1,ASGNS3	
3307	0100002057		RJ	MORFREE	
3310	54710	ASGNS3	SA7	A1	
	63710		SB7	X1	
	10722		BX7	X2	. PACK LAST AND FIRST IN STRING
	76120		SX1	B2	. INTO X7
3311	20722		LX7	18	
	12717		BX7	X1+X7	
	74110		SX1	A1	
	20722		LX7	18	
3312	12771		BX7	X7+X1	. X7 TO P STACK

	56170		SA1	B7	
	0311003314		NZ	X1,ASGNS4	
3313	0100002057		RJ	MORFREE	
3314	54710	ASGNS4	SA7	A1	
	6271000000		SB7	X1+0	
	74710		SX7	A1	. CODE TO BUMP P STACK POINTER (PIX)
3315	5110000224		SA1	PIB	. AND WORD COUNT (PIB)
	5170000222		SA7	PIX	
3316	7271000002		SX7	X1+2	
	54710		SA7	A1	
3317	0400003302		EQ	ASGNS1	
3320	5160000233	ASGNS2	SA6	PMASX6	. \$ TYPE ASSIGNMENT
	5170000241		SA7	PMASB2	
3321	10700		BX7	X0	
	10633		BX6	X3	
	5170000234		SA7	PMASX0	. SAVE REGISTERS
3322	73310		SX3	X1	
	10722		BX7	X2	
	5160000235		SA6	PMASX3	
3323	5170000236		SA7	PMASX2	
	10744		BX7	X4	
	76610		SX6	B1	
3324	5170000237		SA7	PMASX4	
	5160000240		SA6	PMASB1	
3325	63320		SB3	X2	
	76740		SX7	B4	
	5170000242		SA7	PMASB4	. CONVERT PART OF THE STRING FROM
3326	0100002300		RJ	STOSFX6	. FIRST TO LAST INTO SF FORMAT
3327	5160000227		SA6	TEMPDOL	
	6120000230		SB2	TEMPDOL+1	
3330	56620		SA6	B2	. MAKE SURE SF TYPE
	0100002537		RJ	SASSIGN	
3331	5110000231		SA1	SLENGTH	
	5120000206		SA2	MAXSTAK	
3332	5130000234		SA3	PMASX0	
	5140000233		SA4	PMASX6	. RESTORE REGISTERS
3333	63310		SB3	X1	
	63520		SB5	X2	
	10033		BX0	X3	
	10644		BX6	X4	
3334	5110000240		SA1	PMASB1	
	5120000242		SA2	PMASB4	
3335	5130000235		SA3	PMASX3	
	5140000237		SA4	PMASX4	
3336	63110		SB1	X1	
	63420		SB4	X2	
	5110000241		SA1	PMASB2	
3337	5120000236		SA2	PMASX2	
	6221000000		SB2	X1+0	
3340	0400003302		EQ	ASGNS1	

*

	*				
1777	PRDPM	EQU	1777B	.	NOTE. POSITIVE INDEFINITE
6000	DOLPM	EQU	6000B	.	NEGATIVE INDEFINITE
	*				
	*				
1624	ENDEXPM	EQU	YENDEX-YSTAR+1777B	.	NOTE NEGATIVE VALUES
1643	ALTPM	EQU	YALTER-YSTAR+1777B		
1645	EXPPM	EQU	YEXP-YSTAR+1777B		
1657	ARBPM	EQU	YARB-YSTAR+1777B		
1670	LENPM	EQU	YLEN-YSTAR+1777B		
1675	POSPM	EQU	YPOS-YSTAR+1777B		
1702	RPOSEPM	EQU	YRPOS-YSTAR+1777B		
1704	TABPM	EQU	YTAB-YSTAR+1777B		
1716	RTABPM	EQU	YRTAB-YSTAR+1777B		
1720	REMPM	EQU	YREM-YSTAR+1777B		
1723	BALPM	EQU	YBAL-YSTAR+1777B		
1744	FAILPM	EQU	YFAIL-YSTAR+1777B		
1745	FENCEPM	EQU	YFENCE-YSTAR+1777B		
1750	ABORTPM	EQU	YABORT-YSTAR+1777B		
1751	ARBNOPM	EQU	YARBNO-YSTAR+1777B		
	*				
2000	STARPM	EQU	YSTAR-YSTAR+2000B	.	NOTE ZERO VALUE
	*				
2046	LITPM	EQU	YLIT-YSTAR+2000B	.	NOTE POSITIVE VALUES
2060	ANYPM	EQU	YANY-YSTAR+2000B	.	THE ELEMENTS ARE FOLLOWED
2066	NTANYPM	EQU	YNOTANY-YSTAR+2000B	.	BY A CHARACTER STRING
2073	SPANPM	EQU	YSPAN-YSTAR+2000B		
2105	BREAKPM	EQU	YBREAK-YSTAR+2000B		

CAL-6000 S N O B O L
ERROR OVERLAY LOADER

COMPASS 3.7-803.
SNOJOB

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USE SNOJOB

4234	37113		IX1	X1-X3	
	0301004246		ZR	X1,GETB07	
	53230		SA2	X3	PICK UP BUFFER WORDS
4235	5110004263		SA1	MASKM	
	37012		IX0	X1-X2	
	13002		BX0	X0-X2	
4236	11001		BX0	X0*X1	
	0310004256		NZ	X0,GETB56	
4237	7273000001	GETB03	SX7	X3+1	. INCREMENT THE OUT POINTER
	5112000004		SA1	B2+4	LIMIT
4240	73110		SX1	X1	
	37117		IX1	X1-X7	
	0301004253		ZR	X1,GETB09	OUT=LIMIT
4241	5073000000	GETB04	SA7	A3+0	STORE NEW OUT
	10322		BX3	X2	FOR COMPILER LISTING ROUTINE
4242	6133777765	GETB05	SB3	B3-10	DECREMENT UNIT RECORD LENGTH
	0703004226		LT	B0,B3,GETB	RETURN
4243	6155000002		SB5	B5+2	
	67303		SB3	-B3	
	43066		MX0	54	
4244	0430004226	GETB06	ZR	B3,GETB	
	11202		BX2	X0*X2	
	20006		LX0	6	
4245	6133777776		SB3	B3-1	
	0400004244		EQ	GETB06	
4246	56120	GETB07	SA1	B2	FET FWA
	20173		LX1	59	
	0321004232		PL	X1,GETB08	. FILE IS BUSY
4247	20170		LX1	60-4	. =RCY 4 (LEFT-JUSTIFY THE EOR BIT)
	0331004255		NG	X1,GETB12	
4250	7100000001		READ	RECALL	
4252	0400004233		EQ	GETB02	
4253	5112000001	GETB09	SA1	B2+1	FIRST
	7271000000		SX7	X1+0	
4254	0400004241		EQ	GETB04	
4255	6155000001	GETB12	SB5	B5+1	
	0400004231		EQ	GETB01	
4256	43160	GETB56	MX1	48	
	15121		BX1	-X1*X2	
	0311004260		NZ	X1,GETB57	
4257	6155000001		SB5	B5+1	
4260	20066	GETB57	LX0	54	
	15002		BX0	-X2*X0	
	10700		BX7	X0	
	20702		LX7	2	
4261	12707		BX7	X0+X7	
	12227		BX2	X2+X7	
	20703		LX7	3	
	12227		BX2	X2+X7	
4262	0400004237		EQ	GETB03	
4263	01010101010101010101	MASKM	DATA	10HAAAAAAAAA	

* CZB MOVES THE (INPUT) FILE WHOSE FET ADDRESS IS CONTAINED IN B2 TO THE
 * NEXT ZERO BYTE OR EOR, WHICHEVER COMES FIRST. HOWEVER, IF THE LINE
 * STATUS IN B5 IS 1 OR 3, INDICATING A ZERO BYTE HAS ALREADY BEEN FOUND,
 * CZB DOES NOTHING AND IMMEDIATELY EXITS.

* REGISTERS SAVED] B1, B2, B6, B7, A0, A5-X5, AND A6-X6.

4264	00000000000000000000	CZB	DATA	0	. ENTRY/EXIT
4265	6155777775	CZB1	SB5	B5-2	. B5 = ;1 IF ZERO BYTE ENCOUNTERED!
		*			+&2 IF RECORD LENGTH REACHED]
	0550004264		NZ	B5,CZB	. WAS 1 OR 3, SO ZERO BYTE SEEN
4266	6130377777		SB3	377777B	. =2!17-1, A LONG RECORD
	0100004226		RJ	GETB	. GET BUFFER WORD AND POSSIBLY SET B5
4267	0550004265	CZB2	NZ	B5,CZB1	. MOST LIKELY B5 = 1 NOW
	0100004226		RJ	GETB	
4270	0200004267		JP	CZB2	

* PB USES X0,X2,X3,X4,X7. IT PUTS THE WORD IN X6 INTO THE BUFFER WHOSE
* FET FWA IS IN B2. X6 AND B2 ARE NOT CHANGED.

		*			
4271	53620	PB3	SA6	X2	. PUT WORD INTO BUFFER
	73740		SX7	X4	
	5072000000		SA7	A2+0	. UPDATE IN POINTER
4272	00000000000000000000	PB	DATA	0	
4273	5122000002		SA2	B2+2	FET IN POINTER
	5132000004		SA3	B2+4	LIMIT POINTER
4274	7242000001		SX4	X2+1	
	73330		SX3	X3	
	37343		IX3	X4-X3	
4275	0313004276		NZ	X3,PB1	
	5142000001		SA4	B2+1	FIRST
4276	73440	PB1	SX4	X4	
	5132000003		SA3	B2+3	. OUT
	37334		IX3	X3-X4	
4277	0313004271		NZ	X3,PB3	
	56320		SA3	B2	FET FWA
	20373		LX3	59	CHECK COMPLETION BIT
4300	0323004303		PL	X3,PB2	
	7100000001		WRITE	RECALL	
4302	0400004273		EQ	PB+1	
4303	7100000001	PB2	RECALL	B2	
4304	0400004273		EQ	PB+1	

*
* CBO USES X2,X3,X4, AND X7(IF CIO IS CALLED)
* IT RETURNS X2 .NE. 0 IF ZERO BYTE IS NOT IN X6
*

4305	00000000000000000000	CBO	DATA	0	
4306	43060		MX0	48	
	15660		BX6	-X0*X6	
	0316004305		NZ	X6,CBO	
4307	5122000002		SA2	B2+2	IN
	5132000003		SA3	B2+3	OUT
4310	37232		IX2	X3-X2	
	5132000001		SA3	B2+1	FIRST
4311	5142000004		SA4	B2+4	LIMIT
	37343		IX3	X4-X3	
	73330		SX3	X3	
4312	21301		AX3	1	BUFFER LENGTH / 2
	0332004313		NG	X2,CBO1	
	14333		BX3	-X3	
4313	36223	CBO1	IX2	X2+X3	
	0322004305		PL	X2,CBO	

		56220	SA2	B2	
4314	20273		LX2	59	
		0322004305	PL	X2,CBO	
		76000	WRITE		
4316	0400004305		EQ	CBO	
			*		
4317	20405		CBI2	LX4	5
		5122777776	SA2	B2-1	. LINK WORD
		43701	MX7	1	
4320	20745		LX7	37	
		12727	BX7	X2+X7	. SET EOI FLAG
		54720	SA7	A2	
4321	00000000000000000000		CBI		. CHECK FOR EOR ON INPUT FILE
4322	5112777776		SA1	B2-1	
		20127	LX1	59-36	
4323	0331000352		NG	X1,ERR55	. EOI FLAG WAS SET
4324	5112000002		CBI0	SA1	B2+2
		5122000003	SA2	B2+3	. IN POINTER
			IX1	B2+3	. OUT POINTER
4325	37112		NZ	X1-X2	
		0311004321	SA4	X1,CBI	. BUFFER IS NOT EMPTY
		56420	SA4	B2	. FET FIRST WORD
4326	20473		LX4	59	
		0324004334	PL	X4,CBI1	. BUSY
		20463	LX4	51	
4327	0334004317		NG	X4,CBI2	. EOI ENCOUNTERED
		54110	SA1	A1	. IN AGAIN
		37112	IX1	X1-X2	
4330	0311004321		NZ	X1,CBI	. A PRU WAS JUST MOVED
		20405	LX4	5	. EXAMINE EOR BIT
4331	0334004321		NG	X4,CBI	. EOR WAS ENCOUNTERED
		7100000001	READ	RECALL	
4333	0400004324		EQ	CBI0	. TRY AGAIN
4334	7100000001		CBI1	RECALL	B2
4335	0400004324		EQ	CBI0	. LIKEWISE
4336	0100004341		ABT	RJ	CLOSEOUT
4337	7170010224		.ABT.	SX7	3LABT
		20752	LX7	42	. MONITOR REQUEST TO ABORT
4340	5170000001		SA7	1	
		0400004340	EQ	*	
4341	00000000000000000000		CLOSEOUT		. ROUTINE TO TERMINATE OUTPUT FILES
4342	6110000260		SB1	FETHEAD	. HEAD OF FILE LIST
4343	56110		CO1	SA1	B1
		6121000001	SB2	B1+1	. BUFFER BLOCK HEADER WORD
		63110	SB1	X1	. FET ADDRESS
4344	0100004346		RJ	TERMIN	. LINK
4345	0510004343		NZ	B1,CO1	. TO WRITER OR NOT TO WRITER...
		0400004341	EQ	CLOSEOUT	
4346	00000000000000000000		TERMIN	DATA	0
4347	56120		WAIT		. ISSUE WRITER ON OUTPUT FILE
4351	5112000002		SA1	B2+2	. IN POINTER
		5122000003	SA2	B2+3	. OUT
4352	37112		IX1	X1-X2	
		56220	SA2	B2	
		0301004361	ZR	X1,TERMIN3	. SEE IF BUFFERED WRITE WAS LAST OP
4353	7100000044		SX0	44B	. EXAMINE MOTION, R/W BITS
		7110000030	SX1	30B	. EXAMINE EOR/EOF BITS
4354	11002		BX0	X0*X2	

	11112		BX1	X1*X2	
		0310004356	NZ	X0,TERMIN2	. LAST OP WRITE OR REWIND
4355	0311004346		NZ	X1,TERMIN	. LAST OP OPEN
4356	7100000001	TERMIN2	WRITER	RECALL	
4360	0400004346		EQ	TERMIN	
4361	7100000024	TERMIN3	SX0	24B	
		11202	BX2	X0*X2	. EXAMINE EOR, R/W BITS
4362	7222777773		SX2	X2-4B	. COMPARE TO BUFFERED WRITE
		0312004346	NZ	X2,TERMIN	. LAST OP WAS NOT BUFFERED WRITE
4363	0400004356		EQ	TERMIN2	

		GETL	MACRO		
			LOCAL	NEXT	
			SA1	B7	. NEXT FREE WORD
			NZ	X1,NEXT	. NOT THE LAST ONE
			RJ	MORFREE	. GET MORE
		NEXT	SB7	X1	. UPDATE FREE POINTER
			SX1	X1	. CLEAR UPPER 42 BITS
			ENDM		
		*			
4364	00000000000000000000	INPUT	DATA	0	
4365	66130		SB1	B3	
	56210		SA2	B1	INPUT ASSOCIATED VARIABLE DESCRIPTOR
	21222		AX2	18	
4366	6222000001		SB2	X2+1	FWA OF FET
	0100004321		RJ	CBI	
4367	5132777776		SA3	B2-1	. FILE HEADER WORD
	43601		MX6	1	
	20646		LX6	1+18+18+1	. EOR FLAG POSITION
4370	0311004374		NZ	X1,READ	. BUFFER CONTAINS DATA
	12663		BX6	X6+X3	. SET EOR FLAG
	54630		SA6	A3	
4371	43701		MX7	1	
	15747		BX7	-X7*X4	. CBI LEFT FET FIRST WORD IN X4
	20705		LX7	5	
	54740		SA7	A4	
4372	0100002342		RJ	ZROX7	
4373	56210		SA2	B1	
	53720		SA7	X2	. NULL VALUE
	0400000465		EQ	FAIL	
4374	15636	READ	BX6	-X6*X3	. CLEAR EOR FLAG
	54630		SA6	A3	
	66500		SB5	B0	. CLEAR END FLAG
	56410		SA4	B1	. INPUT ASSOCIATED SVD
4375	20430		LX4	60-36	. RIGHT JUSTIFY UNIT RECORD LENGTH
	63340		SB3	X4	
	5110000216		SA1	MXLNTH	. MAXIMUM STRING LENGTH KEYWORD
4376	73240		SX2	X4	
	37212		IX2	X1-X2	
	0332001247		NG	X2,ERR18	. ERROR - TOO LONG
4377	0100004226		RJ	GETB	. GET DATA WORD IN X2
4400	56170		GETL		GET LIST WORD
	74610		SX6	A1	
4403	7130000002		SX3	SSTY	
	20367		LX3	55	
	12636		BX6	X3+X6	NEW ISD
4404	43022		MX0	18	
	20066		LX0	54	
	20444		LX4	36	
	11004		BX0	X0*X4	
4405	12606		BX6	X0+X6	
	53640		SA6	X4	
	43052		MX0	42	
	11602		BX6	X0*X2	
4406	0400004414		EQ	LOOPA	
4407	0100004226	LPLP	RJ	GETB	. GET BUFFER WORD ONE
4410	43052		MX0	42	
	11602		BX6	X0*X2	

		0306004475	ZR	X6,ENDL	
4411	56170		GETL		REACHED END-OF-UNIT-RECORD
4414	12616		BX6	X1+X6	
		5061000000	SA6	A1+0	STORE LIST WORD 1
		15620	BX6	-X0*X2	
4415	0306004475		ZR	X6,ENDL	
		0100004226	RJ	GETB	GET BW2
4416	43030		MX0	24	
		20652	LX6	42	
		11302	BX3	X0*X2	
		20352	LX3	42	
4417	12636		BX6	X3+X6	
		56170	GETL		
		12616	BX6	X1+X6	
		54610	SA6	A1	STORE LW2
4422	15620		BX6	-X0*X2	
		0306004475	ZR	X6,ENDL	
4423	0100004226		RJ	GETB	GET BW3
4424	43006		MX0	6	
		20630	LX6	24	
		11302	BX3	X0*X2	
		20330	LX3	24	
4425	12636		BX6	X3+X6	
		56170	GETL		
		12616	BX6	X1+X6	
		54610	SA6	A1	STORE LW3
4430	15220		BX2	-X0*X2	
		0302004475	ZR	X2,ENDL	
		43052	MX0	42	
4431	20206		LX2	6	
		11602	BX6	X0*X2	
		56170	GETL		
		12616	BX6	X1+X6	
		54610	SA6	A1	STORE LW4
4434	15620		BX6	-X0*X2	
		0306004475	ZR	X6,ENDL	
4435	0100004226		RJ	GETB	GET BW4
4436	43036		MX0	30	
		20652	LX6	42	
		11302	BX3	X0*X2	
		20360	LX3	48	
4437	12636		BX6	X3+X6	
		56170	GETL		
		12616	BX6	X1+X6	
		54610	SA6	A1	STORE LW5
4442	15620		BX6	-X0*X2	
		0306004475	ZR	X6,ENDL	
4443	0100004226		RJ	GETB	GET BW5
4444	43014		MX0	12	
		20636	LX6	30	
		11302	BX3	X0*X2	
		20336	LX3	30	
4445	12636		BX6	X3+X6	
		56170	GETL		
		12616	BX6	X1+X6	
		54610	SA6	A1	STORE LW6
4450	15220		BX2	-X0*X2	

		0302004475	ZR	X2,ENDL	
		20214	LX2	12	
4451	43052		MX0	42	
		11602	BX6	X0*X2	
		56170	GETL		
		12616	BX6	X1+X6	
		54610	SA6	A1	STORE LW7
4454	15620		BX6	-X0*X2	
		0306004475	ZR	X6,ENDL	
4455	0100004226		RJ	GETB	GET BW6
4456	43044		MX0	36	
		20652	LX6	42	
		11302	BX3	X0*X2	
		20366	LX3	54	
4457	12636		BX6	X3+X6	
		56170	GETL		
		12616	BX6	X1+X6	
		54610	SA6	A1	STORE LW8
4462	15620		BX6	-X0*X2	
		0306004475	ZR	X6,ENDL	
4463	0100004226		RJ	GETB	GET BW7
4464	43022		MX0	18	
		20644	LX6	36	
		11302	BX3	X0*X2	
		20344	LX3	36	
4465	12636		BX6	X3+X6	
		56170	GETL		
		12616	BX6	X1+X6	
		54610	SA6	A1	STORE LW9
4470	15620		BX6	-X0*X2	
		0306004475	ZR	X6,ENDL	
		20622	LX6	18	
4471	56170		GETL		
		12616	BX6	X1+X6	
		54610	SA6	A1	STORE LW10
4474	0400004407		EQ	LPLP	
4475	54160	ENDL	SA1	A6	
		43052	MX0	42	
		11601	BX6	X0*X1	
		54660	SA6	A6	
4476	56210		SA2	B1	IAVD
		53220	SA2	X2	ISD
		74360	SX3	A6	LWA OF NEW STRING
		20322	LX3	18	IS INSERTED
4477	12623		BX6	X2+X3	INTO ISD
		54620	SA6	A2	
		0100004264	RJ	CZB	SKIP UP TO ZERO BYTE
4500	5112000002	CHECK1	SA1	B2+2	IN
		5122000003	SA2	B2+3	OUT
4501	37112		IX1	X1-X2	
		5122000001	SA2	B2+1	FIRST
4502	5132000004		SA3	B2+4	LIMIT
		37232	IX2	X3-X2	
		73220	SX2	X2	
4503	21201		AX2	1	BUFFER LENGTH / 2
		0331004504	NG	X1,CHECK2	
		14222	BX2	-X2	

CAL-6000 S N O B O L
INPUT ROUTINE

COMPASS 3.7-803.
SNOJOB

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4504	36112	CHECK2	IX1	X1+X2
	0321004364		PL	X1, INPUT
	56120		SA1	B2
4505	20167		LX1	55
	0331004364		NG	X1, INPUT
4506	7100000001		READ	B2
4510	0400004364		EQ	INPUT
4511	55555555555555555555	BLANKS	DATA	10H

4512	00000000000000000000	OUTPUT	DATA	0	
4513	56230		SA2	B3	OUTPUT ASSOCIATED VARIABLE DESCRIPTOR
	53120		SA1	X2	SIMPLE VARIABLE DESCRIPTOR
	63410		SB4	X1	B4 = NEXT LIST WORD
	21222		AX2	18	
4514	6222000001		SB2	X2+1	FET FWA
	21222		AX2	18	
	43066		MX0	54	
4515	15620		BX6	-X0*X2	CARRIAGE CONTROL CHARACTER
	20666		LX6	54	LEFT JUSTIFY CCC
	0316004530		NZ	X6,HAV1	IF CCC IS NONNULL, ENTER SEQ AT HAV1
4516	0440004522	HAV0	ZR	B4,H01	
	56140		SA1	B4	GET LIST WORD 1
	63410		SB4	X1	
4517	43052		MX0	42	
	11601		BX6	X0*X1	
	7110000000		SX1	0	
4520	0440004522		ZR	B4,H01	
	56140		SA1	B4	
	63410		SB4	X1	
4521	43022		MX0	18	
	11301		BX3	X0*X1	
	20322		LX3	18	
	12636		BX6	X3+X6	
4522	0100004562	H01	RJ	PUTB	STORE BUFFER WORD 1
4523	20122		LX1	18	
	43030		MX0	24	
	11601		BX6	X0*X1	REMAINDER TO X6
	76100		SX1	B0	
4524	0440004526	HAV4	ZR	B4,H41	
	56140		SA1	B4	
	63410		SB4	X1	
4525	43044		MX0	36	
	11301		BX3	X0*X1	
	20344		LX3	36	
	12636		BX6	X3+X6	
4526	0100004562	H41	RJ	PUTB	STORE BW2
4527	20144		LX1	36	
	43006		MX0	6	
	11601		BX6	X0*X1	
	76100		SX1	B0	
4530	0440004535	HAV1	ZR	B4,H11	
	5114000000		SA1	B4+0	
4531	6241000000		SB4	X1+0	
	43052		MX0	42	
	11301		BX3	X0*X1	
4532	20366		LX3	54	
	12636		BX6	X3+X6	
	7110000000		SX1	0	
4533	0440004535	HAV8	ZR	B4,H11	
	56140		SA1	B4	
	63410		SB4	X1	
4534	43014		MX0	12	
	11301		BX3	X0*X1	
	20314		LX3	12	
	12636		BX6	X3+X6	
4535	0100004562	H11	RJ	PUTB	STORE BW3

4536	20114		LX1	12	
	43036		MX0	30	
	11601		BX6	X0*X1	
	76100		SX1	B0	
4537	0440004541	HAV5	ZR	B4,H51	
	56140		SA1	B4	
	63410		SB4	X1	
4540	43036		MX0	30	
	11301		BX3	X0*X1	
	20336		LX3	30	
	12636		BX6	X3+X6	
4541	0100004562	H51	RJ	PUTB	STORE BW4
4542	20136		LX1	30	
	43014		MX0	12	
	11601		BX6	X0*X1	
	76100		SX1	B0	
4543	0440004550	HAV2	ZR	B4,H21	
	5114000000		SA1	B4+0	
4544	6241000000		SB4	X1+0	
	43052		MX0	42	
	11301		BX3	X0*X1	
4545	20360		LX3	48	
	12636		BX6	X3+X6	
	7110000000		SX1	0	
4546	0440004550	HAV9	ZR	B4,H21	
	56140		SA1	B4	
	63410		SB4	X1	
4547	43006		MX0	6	
	11301		BX3	X0*X1	
	20306		LX3	6	
	12636		BX6	X3+X6	
4550	0100004562	H21	RJ	PUTB	STORE BW5
4551	20106		LX1	6	
	43044		MX0	36	
	11601		BX6	X0*X1	
	76100		SX1	B0	
4552	0440004554	HAV6	ZR	B4,H61	
	56140		SA1	B4	
	63410		SB4	X1	
4553	43030		MX0	24	
	11301		BX3	X0*X1	
	20330		LX3	24	
	12636		BX6	X3+X6	
4554	0100004562	H61	RJ	PUTB	STORE BW6
4555	20130		LX1	24	
	43022		MX0	18	
	11601		BX6	X0*X1	
	76100		SX1	B0	
4556	0440004560	HAV3	ZR	B4,H31	
	56140		SA1	B4	
	63410		SB4	X1	
4557	43052		MX0	42	
	11301		BX3	X0*X1	
	20352		LX3	42	
	12663		BX6	X6+X3	
4560	0100004562	H31	RJ	PUTB	
4561	7160000000		SX6	0	

CAL-6000 S N O B O L
OUTPUT ROUTINE

COMPASS 3.7-803.
SNOJOB

81/01/01. 01.09.46.

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	0400004516		EQ	HAV0
4562	00000000000000000000	PUTB	DATA	0
4563	0100004272		RJ	PB
4564	0100004305		RJ	CBO
4565	0316004562		NZ	X6,PUTB
	0400004512		EQ	OUTPUT

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4566 55232503030523230625 SMESS DIS ,* SUCCESSFUL COMPILATION*
4571 5110000205 POST0 SA1 MINSTAT
      5221000044 SA2 X1+STNPRL+1
4572 20201 POST1 LX2 1 . LOOP TO FIND FIRST STANDARD
      21223 AX2 19 . PROCEDURE IN THE CHAIN WHICH HAS
      0322004574 PL X2,POST2 . BEEN USED
4573 63520 SB5 X2
      53215 SA2 X1+B5
      0400004572 EQ POST1
4574 6110000001 POST2 SB1 1 . B1 IS THE CONSTANT ONE
      21222 AX2 18 . NEW STATIC BASE
      37021 IX0 X2-X1 . STATIC DISPLACEMENT TO X0 AND B7
4575 10722 BX7 X2 . RELOCATE MINSTAT
      54710 SA7 A1
      5120000204 SA2 MAXSTAT
4576 63700 SB7 X0
      63320 SB3 X2
      6120000032 SB2 SPCTYP
4577 5221777776 SA2 X1-1
      0470004631 EQ B7,B0,POST11A . BYPASS IF NO DISPLACEMENT
4600 54221 POST3 SA2 A2+B1 . NEXT RECORD HEADING
      65423 SB4 A2-B3
      63520 SB5 X2
      10722 BX7 X2
4601 0440004620 POST4 EQ B4,B0,POST9 . END OF STATIC
      0302004615 ZR X2,POST7 . EMPTY WORD
4602 0450004603 EQ B5,B0,POST5
      36720 IX7 X2+X0 . RELOCATE THE HASH-LINK
4603 21267 POST5 AX2 55 . TYPE OF RECORD TO B5
      54727 SA7 A2+B7
      6252000037 SB5 X2+37B
4604 66421 SB4 B2+B1 . LITERAL TYPE
      77154 SX1 B5-B4 . REMEMBER IF LITERAL
      0745004611 LT B4,B5,POST5B . BRANCH IF VAR,CALL OR LABEL
4605 0452004616 EQ B5,B2,POST8 . BRANCH IF I/O BUFFER
      5022000001 SA2 A2+1
4606 67421 SB4 B2-B1 . INTEGER TYPE
      36720 IX7 X2+X0 . RELOCATE FIRST
      20752 LX7 42
4607 0754004610 LT B5,B4,POST5A . BRANCH IF REAL
      36770 IX7 X7+X0 . RELOCATE LAST
4610 20722 POST5A LX7 18
      54727 SA7 A2+B7
      0301004613 ZR X1,POST6 . BRANCH IF LITERAL
4611 5022000001 POST5B SA2 A2+1 . COPY ONE WORD
      10622 BX6 X2
      54627 SA6 A2+B7
4612 0754004600 LT B5,B4,POST3 . BRANCH IF REAL
4613 54221 POST6 SA2 A2+B1 . COPY BCD WITH LINKS RELOCATED
      63520 SB5 X2
      0450004615 EQ B5,B0,POST7
4614 36720 IX7 X2+X0
      54727 SA7 A2+B7
      0400004613 EQ POST6
4615 10622 POST7 BX6 X2 . LAST WORD WITH ZERO LINK
      54627 SA6 A2+B7
      0400004600 EQ POST3

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4616	21722		POST8	AX7	18	
	63570			SB5	X7	. BYPASS TO B5
		54225		SA2	A2+B5	
		65423		SB4	A2-B3	
4617	63520			SB5	X2	
	10722			BX7	X2	
	0400004601			EQ	POST4	
			*			
4620	6150000071		POST9	SB5	HASHLN	. LOOP TO RELOCATE NONZERO ENTRIES
4621	6155777776		POST10	SB5	B5-1	. IN THE HASH - TABLE
		5115000111		SA1	B5+HASHTBL	
4622	36710			IX7	X1+X0	
	0301004623			ZR	X1,POST11	
		54710		SA7	A1	
4623	0550004621		POST11	NE	B5,B0,POST10	
		5150000262		SA5	INFET+1	. UPDATE INPUT AND OUTPUT FET - S
4624	36750			IX7	X5+X0	
	73670			SX6	X7	
		54750		SA7	A5	. FIRST
		54651		SA6	A5+B1	. IN
4625	54661			SA6	A6+B1	. OUT
	54561			SA5	A6+B1	
		36750		IX7	X5+X0	
		54750		SA7	A5	. LIMIT
4626	5150000270			SA5	OUTFET+1	
		36750		IX7	X5+X0	
		73670		SX6	X7	
4627	54750			SA7	A5	. FIRST
	54651			SA6	A5+B1	. IN
		54661		SA6	A6+B1	. OUT
		54561		SA5	A6+B1	
4630	36750			IX7	X5+X0	
	54750			SA7	A5	. LIMIT
4631	5150000227		POST11A	SA5	PRGBASE	
		76470		SX4	B7	
		63550		SB5	X5	
4632	67606			SB6	B0-B6	
	66661			SB6	B6+B1	. ADDRESS OF LAST MICRO-OPERATION
		76220		SX2	B2	. SPCTYP FOR THE HEADING
		77156		SX1	B5-B6	. PROGRAM LENGTH TO X1
4633	20267			LX2	55	
	63411			SB4	X1+B1	
		20122		LX1	18	
		12712		BX7	X1+X2	. STATIC RECORD READING FOR THE CODE
4634	43052			MX0	42	
	56737			SA7	B3+B7	
		5110000214		SA1	CODELINK	
4635	76637			SX6	B3+B7	
	0311004636			NZ	X1,POST11B	
		76137		SX1	B3+B7	
4636	20622		POST11B	LX6	18	
	73510			SX5	X1	
		12656		BX6	X5+X6	
		54610		SA6	A1	
4637	21122			AX1	18	
	0301004641			ZR	X1,POST11C	
		53110		SA1	X1	

4640	21622		AX6	18	
	12661		BX6	X6+X1	
4641	54610	POST11C	SA6	A1	
	64474		SB4	A7+B4	. NEW PROGRAM BASE TO B4
	76570		SX5	B7	
	43652		MX6	42	
4642	20422		LX4	18	. RELOCATION CONST. FOR LOW ORDER
	20544		LX5	36	. RELOCATION CONST. FOR HIGH ORDER
	20622		LX6	18	. MICOP-S
	14000		BX0	-X0	
4643	56160	POST12	SA1	B6	. NEXT WORD OF MICOP-S
	0301004657		ZR	X1,POST17	. FINISHED IF ZERO
	15710		BX7	-X0*X1	
4644	5221000357		SA2	X1+MCOPTBL	
	73320		SX3	X2	. ABS ADDRESS OF LOW ORDER MICOP
	12773		BX7	X7+X3	. TO X3
4645	0332004652		NG	X2,POST15	. GO TO OR CALL
	0470004651		EQ	B7,B0,POST14	. BYPASS IF NO RELOCATION
4646	21122		AX1	18	
	63210		SB2	X1	. LOW ORDER ADDRESS
	21122		AX1	18	
	63310		SB3	X1	. HIGH ORDER ADDRESS
4647	0420004650		EQ	B2,B0,POST13	
	36774		IX7	X7+X4	. NONZERO ADDRESSES HAS TO BE
4650	0430004651	POST13	EQ	B3,B0,POST14	. RELOCATED
	36775		IX7	X7+X5	
4651	54771	POST14	SA7	A7+B1	. STORE WORD
	66661		SB6	B6+B1	
	0400004643		EQ	POST12	
		*			
4652	20246	POST15	LX2	38	
	0332004656		NG	X2,POST16	. BRANCH IF CALL
	21122		AX1	18	. ADDRES OF GO TO
4653	73110		SX1	X1	
	0331004651		NG	X1,POST14	
	11767		BX7	X6*X7	
4654	14111		BX1	-X1	
	73114		SX1	X1+B4	
	20122		LX1	18	. IF DEFINED, REPLACE IT BY THE ABS
	12771		BX7	X7+X1	. ADDRESS
4655	0400004651		EQ	POST14	
4656	36774	POST16	IX7	X7+X4	. RELOCATE ADDRESS OF CALL
	0400004651		EQ	POST14	
		*			
4657	5110000223	POST17	SA1	LBLINK	. WE SHALL PROCESS ALL LABELS
	5140000206		SA4	MAXSTAK	. REFERENCED OR DEFINED DURING THE
4660	63210	POST18	SB2	X1	. RECENT COMPILATION
	0421004703		EQ	B2,B1,POST24	. END OF THE CHAIN OF LABELS
	53117		SA1	X1+B7	
4661	63210		SB2	X1	
	20130		LX1	24	
	63310		SB3	X1	
	20122		LX1	18	
4662	0720004670		LT	B2,B0,POST21	. BRANCH IF LABEL IS NOT DEFINED
	77542		SX5	B4-B2	. ABS ADDRESS TO X5
	10355		BX3	X5	
4663	0430004667	POST18A	EQ	B3,B0,POST20	. BRANCH IF LABEL HAS NOT BEEN USED

	20322		LX3	18	. IN PREVIOUSLY COMPILED CODE
	67201		SB2	B0-B1	. IF NOT SO, SPREAD DEFINED VALUE
4664	0423004667		EQ	B2,B3,POST20	
4665	57203	POST19	SA2	B0-B3	
	11726		BX7	X2*X6	
	21222		AX2	18	
	12773		BX7	X7+X3	
4666	63320		SB3	X2	
	54720		SA7	A2	
	0532004665		NE	B3,B2,POST19	
4667	10755	POST20	BX7	X5	. STORE NEW LABEL DESCRIPTION
	54710		SA7	A1	
	0400004660		EQ	POST18	
4670	0703004675	POST21	LT	B0,B3,POST22A	. LABEL DEFINED IN EARLIER COMPLTN.
	76542		SX5	B4+B2	. IF THE LABEL HAS NOT BEEN DEFINED
	15505		BX5	-X5*X0	. THEN IN THE CHAIN OF
4671	56242	POST22	SA2	B4+B2	. REFERENCES, THE RELATIVE LINKS
	11762		BX7	X6*X2	. HAVE TO BE REPLACED BY ABSOLUTE
	21222		AX2	18	. ONES
	63220		SB2	X2	
4672	73221		SX2	X2+B1	
	0302004701		ZR	X2,POST23	
	76242		SX2	B4+B2	
4673	15202		BX2	-X2*X0	
	20222		LX2	18	
	12772		BX7	X7+X2	
	54720		SA7	A2	
4674	0400004671		EQ	POST22	
4675	76530	POST22A	SX5	B3	. ABS ADDRESS TO X5
	76330		SX3	B3	
	20322		LX3	18	
4676	56242	POST22B	SA2	B4+B2	. SPREAD VALUE TO JUMPS THROUGH
	11762		BX7	X6*X2	. NEGATIVE RELATIVE CHAIN TERMINATED
	21222		AX2	18	. BY -1 LINK
	63220		SB2	X2	
4677	73221		SX2	X2+B1	
	12773		BX7	X7+X3	
	54720		SA7	A2	
4700	0312004676		NZ	X2,POST22B	
	0400004667		EQ	POST20	
		*			
4701	0430004667	POST23	EQ	B3,B0,POST20	
	76230		SX2	B3	
	20222		LX2	18	
4702	12772		BX7	X7+X2	
	54720		SA7	A2	
	0400004667		EQ	POST20	
		*			
4703	77641	POST24	SX6	B4-B1	. BEGINNING OF THE STACK TO X6
	63340		SB3	X4	
	5130000244		SA3	COMPB7	. RESTORE B7 (IT POINTS TO THE FREE
4704	56150	POST25	SA1	B5	. LIST)
	66551		SB5	B5+B1	. SHIFT THE STACK TO ITS PLACE
	10711		BX7	X1	
	57741		SA7	B4-B1	
4705	66441		SB4	B4+B1	
	0635004704		GE	B3,B5,POST25	

		76070	SX0	B7	
4706	63730		SB7	X3	
	64670		SB6	A7	. B7 IS THE STACK TOP POINTER
		5160000204	SA6	MAXSTAT	
4707	5130000213		SA3	STAKTOP	. SET STACKTOP TO ITS ABS VALUE
		5160000207	SA6	MINSTAK	
4710	5120000224		SA2	VARLINK	
		36663	IX6	X6+X3	
		54630	SA6	A3	
4711	0302004714	POST26	ZR	X2,POST27	. ASSIGN A NULL VALUE TO ALL VARI-
		36220	IX2	X2+X0	. ABLES DEFINED IN THE RECENT
		53320	SA3	X2	. COMPILATION
4712	0100002342		RJ	ZROX7	
4713	53720		SA7	X2	
		73230	SX2	X3	
		0400004711	EQ	POST26	
			*		NOW THE CODE IS READY TO RUN. IT BEGINS AT X6-1
4714	5110000210	POST27	SA1	NXTWRD	
		5256000000	SA5	X6+0	. BEGIN EXECUTION OF THE PROGRAM
4715	0331000441		NG	X1,NEXTMIC	. IF FIRST COMPILATION
		7170000014	SX7	CTY	. IF RESULT OF COMPILE, PUT
4716	7266777776		SX6	X6-1	. REFERENCE TO THE COMPILED
		5146777776	SA4	B6-1	. CODE TO THE TOP OF THE STACK
4717	53540		SA5	X4	. HEADER HAS BEEN FIXED AT QCMP
		20767	LX7	55	
		12776	BX7	X7+X6	
		54740	SA7	A4	
4720	5110000211		SA1	FRSTWRD	
		0301000441	ZR	X1,NEXTMIC	. FREE THE REMAINDER OF THE
4721	76770		SX7	B7	. ARGUMENT STRING
		63710	SB7	X1	
4722	53110	POST28	SA1	X1	
		73110	SX1	X1	
		0311004722	NZ	X1,POST28	
4723	54710		SA7	A1	
		0400000441	EQ	NEXTMIC	

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*
*
4724 56160          QIF      SA1      B6          . STANDARD PROCEDURE IF
      63110          SB1      X1          . SKIP PARAM AND
      65611          SB6      A1-B1       . RETURN A NULL VALUE
      21167          AX1      55
4725 43006          MX0      6
      0311004730     NZ       X1,QIF3     . FREE IF SF
4726 5116000001    SA1      B6+1
      76770          SX7      B7
      63710          SB7      X1
4727 21122          AX1      18
      53710          SA7      X1
4730 7255777776    QIF3      SX5      X5-1
      0315004724     NZ       X5,QIF
      SB6      B6+2
4731 6166000002    RJ       ZROX7
4732 0100002342    QIF2      SX6      2
4733 7160000002    BX7      -X0*X7     . REMOVE SS TYPE
      15770          SA6      B6
      56660          SA7      B6-1
4734 5176777776    EQ       NEXTMIC
      0400000441
*
4735              IFQ      BSS      0
*
*
4735 7255777776    QSIZE     SX5      X5-1
      0315000317     NZ       X5,ERR20   . TOO MANY PARAMETERS
4736 56260          SA2      B6
      21267          AX2      55
      5116777776    SA1      B6-1
4737 10611          BX6      X1
      0302004742     ZR       X2,QSIZE1   . PARAM IS SF TYPE
4740 7222777770    SX2      X2-ITY
      0312000330     NZ       X2,ERR29   . NOT STRING TYPE
4741 0100002364    RJ       ITOSF
4742 76770          QSIZE1    SX7      B7
      63760          SB7      X6
      21622          AX6      18
      53760          SA7      X6          . LINK PARAM TO FREE CHAIN
4743 5120001667    SA2      ITYWD
      10722          BX7      X2
      21622          AX6      18
4744 5166777776    SA6      B6-1     . LENGTH
      56760          SA7      B6
4745 0400000441    EQ       NEXTMIC
4746              SIZEQ     BSS      0
4746 6110001670    QLEN     SB1      LENPM
      0400004753     EQ       QPAT
4747 6110001675    QPOS     SB1      POSPM
      0400004753     EQ       QPAT
4750 6110001702    QRPOS    SB1      RPOSPM
      0400004753     EQ       QPAT
4751 6110001704    QTAB     SB1      TABPM
      0400004753     EQ       QPAT
4752 6110001716    QRTAB    SB1      RTABPM
4753 7255777776    QPAT     SX5      X5-1
  
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4754	5100000012		NZ	X5,ERR20	. TOO MANY PARAMETERS
		0315000317	SA0	10	
		5110001033	SA1	TENTO10	
4755	10011		BX0	X1	
		76510	SX5	B1	. SAVE PATTERN TYPE
		0100000660	RJ	SACHEK	
4756	20703		LX7	3	
		0327000342	PL	X7,ERR42	. NOT ITY
		43053	MX0	43	
4757	5116777776		SA1	B6-1	
		0331000342	NG	X1,ERR42	. NEGATIVE NOT LEGAL
4760	11001		BX0	X0*X1	
		0310000342	NZ	X0,ERR42	. TOO LARGE
		20560	LX5	48	
4761	12615		BX6	X1+X5	
		7170000004	SX7	PSTY	
		54610	SA6	A1	
4762	20767		LX7	55	
		7160000002	SX6	2	
		12667	BX6	X6+X7	
4763	56660		SA6	B6	
		0400000441	EQ	NEXTMIC	
4764			BSS	0	
			PATQ		
			*		
			*		. - + 0
4764	6110000006		QEQ	SB1 6B	. 1 1 0
		0400004772	EQ	QEQ1	
4765	6110000001		QNE	SB1 1	. 0 0 1
		0400004772	EQ	QEQ1	
4766	6110000005		QGT	SB1 5	. 1 0 1
		0400004772	EQ	QEQ1	
4767	6110000004		QGE	SB1 4	. 1 0 0
		0400004772	EQ	QEQ1	
4770	6110000003		QLT	SB1 3	. 0 1 1
		0400004772	EQ	QEQ1	
4771	6110000002		QLE	SB1 2	. 0 1 0
4772	7255777776		QEQ1	SX5 X5-1	
		0305005041	ZR	X5,QEQ8	. BRANCH IF SINGLE PARAM
4773	7255777776		SX5	X5-1	
		0315000317	NZ	X5,ERR20	. ERROR IF MORE THAN TWO PARAMS
4774	56160		SA1	B6	
		76510	SX5	B1	
		63110	SB1	X1	
		57261	SA2	B6-B1	
4775	21167		AX1	55	. RIGHT PARAM TYPE
		21267	AX2	55	. LEFT PARAM TYPE
		7231777770	SX3	X1-ITY	
4776	7242777770		SX4	X2-ITY	
		0313005010	NZ	X3,QEQ5	. BRANCH IF NOT BOTH ARE
4777	0314005010		NZ	X4,QEQ5	. INTEGERS
5000	5116777776		QEQ2	SA1 B6-1	. COMPARE INTEGERS
		5126777774	SA2	B6-3	
5001	6166777775		SB6	B6-2	
		37121	IX1	X2-X1	
5002	7140000001		QEQ3	SX4 1	. TEST ON X1 - + 0
		0301005004	ZR	X1,QEQ4	
5003	20401		LX4	1	

	0321005004		PL	X1, QEQ4	
	20401		LX4	1	
5004	11545	QEQ4	BX5	X4*X5	. MASK BY BIT PATTERN OF THE
	0315000465		NZ	X5, FAIL	. RELATION
	43005		MX0	5	
5005	0100002342		RJ	ZROX7	. NULL STRING IS RETURNED IF
5006	7160000002		SX6	2	. SUCCESS
	15770		BX7	-X0*X7	
	56660		SA6	B6	. CLEAR SS TYPE
5007	5176777776		SA7	B6-1	
	0400000441		EQ	NEXTMIC	
5010	7261777767	QEQ5	SX6	X1-RTY	. IF ONE PARAM IS REAL THEN
	7242777767		SX4	X2-RTY	. BOTH HAVE TO BE REAL
5011	0306005036		ZR	X6, QEQ7	
	0304000665		ZR	X4, ERR47	
5012	5146777776		SA4	B6-1	
	0303005016		ZR	X3, QEQ5A	. BRANCH IF RIGHT OP IS INTEGER
5013	0311000665		NZ	X1, ERR47	. ERROR IF NOT SF
	5120000205		SA2	MINSTAT	
5014	7100000002		SX0	SSTY	
	20067		LX0	55	
	12640		BX6	X4+X0	. ADD SS TYPE BITS
5015	53620		SA6	X2	. IF SF STORE IN XWRD
	0400005017		EQ	QEQ5B	
5016	10644	QEQ5A	BX6	X4	. ELSE IN SAVE LOCATION
	5160000235		SA6	QEQSV	
5017	6166777775	QEQ5B	SB6	B6-2	
	5110001033		SA1	TENTO10	
5020	10011		BX0	X1	
	5100000012		SA0	10	
5021	0100000660		RJ	SACHEK	. CHECK LEFT PARAM
5022	5100000002		SA0	2	
	0100002052		RJ	RESERVE	
5023	5120000205		SA2	MINSTAT	
	53220		SA2	X2	
	10622		BX6	X2	
5024	0312005027		NZ	X2, QEQ5C	. RESTORE RIGHT PARAM
	5120001667		SA2	ITYWD	
5025	5110000235		SA1	QEQSV	. CUT IT SHORT IF INTEGER
	10722		BX7	X2	
	10611		BX6	X1	
5026	5166777776		SA6	B6-1	
	0400005033		EQ	QEQ5D	
5027	74700	QEQ5C	SX7	A0	. SACHEK DOES NOT CARE IF THE
	5166777776		SA6	B6-1	. SS BITS ARE ON
	56760		SA7	B6	
5030	13777		BX7	X7-X7	. CLEAR XWRD
	54720		SA7	A2	
	5110001033		SA1	TENTO10	
5031	10011		BX0	X1	
	5100000012		SA0	10	
5032	0100000660		RJ	SACHEK	. CHECK RIGHT PARAM
5033	63170	QEQ5D	SB1	X7	
	57161		SA1	B6-B1	
	20703		LX7	3	
	20103		LX1	3	
5034	0327005035		PL	X7, QEQ6	

5035	6150000040	0331005000	NG	X1, QEQ2	. BRANCH IF BOTH ARE INTEGERS
			QEQ6	ERROR 32	
			*		
			*		
5036	0314000665	6166777775	QEQ7	NZ X4, ERR47	
			SB6	B6-2	
5037	5116000001	5126777776	SA1	B6+1	
			SA2	B6-1	
5040	31121	24101	FX1	X2-X1	. COMPARE REAL VALUES
			NX1	X1	. TAKE CARE OF ZERO RESULT
		0400005002	EQ	QEQ3	
			*		
5041	5110001033	5100000012	QEQ8	SA1 TENTO10	. CHECK SIMGLE PARAM
			SA0	10	
5042	10011	76510	BX0	X1	
			SX5	B1	
		0100000660	RJ	SACHEK	
5043	20703	5116777776	LX7	3	
			SA1	B6-1	
5044	0337005002	6150000040	NG	X7, QEQ3	. BRANCH IF INTEGER TYPE
			ERROR	32	
			*		
5046			EQQ	BSS 0	
			*		
			*		
5046	6140002073	0400005052	QSPAN	SB4 SPANPM	
			EQ	QANY1	
5047	6140002105	0400005052	QBREAK	SB4 BREAKPM	
			EQ	QANY1	
5050	6140002066	0400005052	QNOTANY	SB4 NTANYPM	
			EQ	QANY1	
5051	6140002060		QANY	SB4 ANYPM	
5052	7255777776	0315000317	QANY1	SX5 X5-1	. NO OF PARAMETERS
			NZ	X5, ERR20	
5053	56160	21167	SA1	B6	
			AX1	55	. TYPE OF PARAMETER
		0311005064	NZ	X1, QANY3	. BRANCH IF NOT SF
5054	5126777776	21244	QANY2	SA2 B6-1	. SVD TO X2
			AX2	36	
		63520	SB5	X2	. LENGTH TO B5
5055	53020	64320	SA0	X2	
			SB3	A2	
		0100002052	RJ	RESERVE	. RESERVE B5 WORDS
5056	76640	7145000002	SX6	B4	. PM OPERATION TO X6
			SX4	B5+2	. BYPASS TO X4
		20660	LX6	48	
5057	77263	56130	SX2	B6-B3	. PM OPERATION BYPASS PART
			SA1	B3	
		12662	BX6	X6+X2	
		56630	SA6	B3	. STIRE PM OPERATION
5060	7130000004	20367	SX3	PSTY	
			LX3	55	
		12734	BX7	X3+X4	
5061	10411	56760	BX4	X1	
			SA7	B6	. STORE HEADING (PS TYPE)
		0100002275	RJ	SSTOS	. BREAK THE STRING DOWN INTO
5062	76670		SX6	B7	. FREE SF PARAMETER

	63740		SB7	X4	
	21422		AX4	18	
	53640		SA6	X4	
5063	0400000441		EQ	NEXTMIC	. CHARACTERS AND EXIT
5064	7211777770	QANY3	SX1	X1-ITY	
	0311000330		NZ	X1,ERR29	. ERROR IF NOT INTEGER
5065	5116777776		SA1	B6-1	
	0100002364		RJ	ITOSF	. CONVERT I TO SF
5066	5166777776		SA6	B6-1	
	0400005054		EQ	QANY2	
		*			
5067		ANYQ	BSS	0	
		*			
5067	7255777776	QTRIM	SX5	X5-1	
	0315000317		NZ	X5,ERR20	. ERROR IF MORE THAN ONE PARAMETER
5070	56160		SA1	B6	
	21167		AX1	55	
	0301005073		ZR	X1,QTRIM1	. BRANCH IF STRING PARAM
5071	7211777770		SX1	X1-ITY	
	0311000330		NZ	X1,ERR29	. ERROR IF NOT INTEGER
5072	0400000441		EQ	NEXTMIC	. INTEGERS ARE TRIMMED ANYWAY
5073	5126777776	QTRIM1	SA2	B6-1	. SVD OF OPERAND
	13666		BX6	X6-X6	. CHARACTER COUNT
	10522		BX5	X2	
5074	5212000000		SA1	X2+0	. TO INITIALIZE X3
	43066		MX0	54	
5075	7140000055		SX4	1R	. BLANK TO X4
	6110000000		SB1	0	. NO SKIP MODE
5076	0302005107	QTRIM2	ZR	X2,QTRIM5	. FINIS IF LINK IS ZERO
	74310		SX3	A1	. LAST REFERENCE
	53120		SA1	X2	. NEXT WORD
5077	73210		SX2	X1	
	13112		BX1	X1-X2	. REMOVE LINK
	6120777771		SB2	-6	. INITIALIZE POSITION COUNT
5100	20106	QTRIM3	LX1	6	. NEXT CHAR TO X7
	6122000006		SB2	B2+6	
	15710		BX7	-X0*X1	
5101	0307005076		ZR	X7,QTRIM2	. NEXT WORD IF IT IS ZERO
	7266000001		SX6	X6+1	. BUMP CHARACTER COUNT
5102	13774		BX7	X7-X4	. COMPARE IT WITH A BLANK
	0410005105		EQ	B1,B0,QTRIM4	. BRANCH IF NO SKIP
5103	0307005100		ZR	X7,QTRIM3	. NEXTCHAR IF BLANK
	66100		SB1	B0	. END SKIP MODE IF NOT BLANK
5104	0400005100		EQ	QTRIM3	
5105	0317005100	QTRIM4	NZ	X7,QTRIM3	. NOT BLANK IN NO SKIP
	64110		SB1	A1	. BLANK IN NO SKIP
	53060		SA0	X6	
5106	66320		SB3	B2	
	63530		SB5	X3	
	0400005100		EQ	QTRIM3	
5107	0410000441	QTRIM5	EQ	B1,B0,NEXTMIC	. RETURN IF NO SKIP
	0530005113		NE	B3,B0,QTRIM6	
5110	5131000000		SA3	B1+0	. CASE OF ALL BLANKS
	73630		SX6	X3	
	54630		SA6	A3	
5111	56250		SA2	B5	. FIRST BLANK WAS THE FIRST
	76110		SX1	B1	. CHARACTER IN A WORD

	73720		SX7	X2	
	13727		BX7	X2-X7	
5112	54720		SA7	A2	
	0400005115		EQ	QTRIM7	
5113	56110	QTRIM6	SA1	B1	. FIRST BLANK WAS NOT THE FIRST
	43006		MX0	6	. CHARACTER IN A WORD
	6133777771		SB3	B3-6	
5114	23030		AX0	X0,B3	. MASK THE BLANKS OFF
	11701		BX7	X0*X1	
	54710		SA7	A1	
	64510		SB5	A1	
5115	73750	QTRIM7	SX7	X5	. FIRST
	76650		SX6	B5	. LAST
	73350		SX3	X5	
	21522		AX5	18	
5116	20622		LX6	18	
	7000777776		SX0	A0-1	. LENGTH IN CHARACTERS
	20044		LX0	36	
5117	12767		BX7	X6+X7	
	12770		BX7	X7+X0	. FORM SVD IN X7
	5176777776		SA7	B6-1	. RESULT
5120	73110		SX1	X1	. RETURN IF NOTHING IS THERE
	13331		BX3	X3-X1	. TO BE FREED
	0301000441		ZR	X1,NEXTMIC	
5121	0303000441		ZR	X3,NEXTMIC	
	76770		SX7	B7	. FREE WORDS CONTAINING TRAILING
	63710		SB7	X1	. BLANKS
5122	53750		SA7	X5	
	0400000441		EQ	NEXTMIC	
		*			
5123		TRIMQ	BSS	0	
		*			
5123	6110000221	QANCHOR	SB1	ANCHOR	. STANDARD PROCEDURE ANCHOR
5124	56160	QANCHOR1	SA1	B6	
	21167		AX1	55	
	0311005126		NZ	X1,QANCHOR2	. BRANCH IF PARAM IS NOT A STRING
5125	5126777776		SA2	B6-1	
	53120		SA1	X2	. FETCH FIRST WORD OF STRING
5126	10711	QANCHOR2	BX7	X1	. SET KEYWORD TO ZERO IF PARAM
	56710		SA7	B1	. IS A NULL STRING ELSE
		*			. SET IT TO NOT ZERO
	7245777776		SX4	X5-1	
5127	0304004724		ZR	X4,QIF	
	0400000317		EQ	ERR20	. ONLY ONE PARAMETER ALLOWED
		*			
5130		ANCHORQ	BSS	0	
		*			
		*			
5130	7255777776	QARBNO	SX5	X5-1	
	0315000317		NZ	X5,ERR20	. ERROR IF MORE THAN ONE PARAM
5131	56160		SA1	B6	
	21167		AX1	55	
	0301005135		ZR	X1,QARBNO	. BRANCH IF STRING
5132	7211777770		SX1	X1-ITY	
	0331005137		NG	X1,QARBNO	. BRANCH IF PATTERN
5133	0311000326		NZ	X1,ERR27	. ERROR IF NOT INTEGER
	6110005135		SB1	QARBNO	

5134	0400002401		EQ	ITOSFTP	. CONVERT INTEGER TO STRING
5135	6110005137		QARB1	SB1 QARB2	. CONVERT STRING TO PATTERN
		7146777776		SX4 B6-1	
5136	66400		SB4	B0	. SIGNAL SF TYPE
		0400001344		EQ PMSF	
5137	56460		QARB2	SA4 B6	
		63240		SB2 X4	
		5100000003		SA0 3	
5140	66360		SB3	B6	
		74602		SX6 A0+B2	. NEW BYPASS
		0100002052		RJ RESERVE	. RESERVE THREE LOCATIONS
5141	5113777776		QARB3	SA1 B3-1	. PUSH PATTERN TOWARD HIGH CORE
		6122777776		SB2 B2-1	. TO MAKE ROOM FOR ARBNO HEADING
5142	10711			BX7 X1	
		64310		SB3 A1	
		5071000002		SA7 A1+2	
5143	0520005141		NE	B2,B0,QARB3	
		7100001751		SX0 ARBNOPM	
5144	7110000006			SX1 PETY	
		7120001624		SX2 ENDEXPM	
5145	6110777776		SB1	-1	
		20060		LX0 48	. PREPARE ARBNOPM OPERATION
		20167		LX1 55	. PREPARE PS TYPE HEADING
5146	20260			LX2 48	. PREPARE END EXPRESSION
		73761		SX7 X6+B1	. BYPASS FOR ARBNOPM
		12661		BX6 X6+X1	. FORM HEADING IN X6
		12770		BX7 X7+X0	
5147	57731		SA7	B3-B1	
		56660		SA6 B6	
		10722		BX7 X2	
5150	7160377777		SX6	MARK	. PART OF THE ARBNO OPERATION
		55671		SA6 A7-B1	
		56761		SA7 B6+B1	
5151	0400000441		EQ	NEXTMIC	
5152			*		
			ARBNOQ	BSS 0	
			*		
			*		
			*		
5152	20514		QNXID6	LX5 12	. LEFT JUSTIFY LAST WORD
		22735		LX7 X5,B3	
		56170		SA1 B7	
5153	0420005161		EQ	B2,B0,QNXID	. RETURN IF NO RESULT
		0311005155		NZ X1,QNXID7	
5154	0100002057		RJ	MORFREE	
5155	54710		QNXID7	SA7 A1	. STORE LAST WORD
		63710		SB7 X1	
		0336005157		NG X6,QNXID8	. BYPASS IF NOTHING TO BE FREED
5156	76770		SX7	B7	
		66740		SB7 B4	. FREE USED INPUT WORDS
		53760		SA7 X6	
5157	74610		QNXID8	SX6 A1	. LAST
		76720		SX7 B2	. LENGTH
		20622		LX6 18	
		20744		LX7 36	
5160	76150		SX1	B5	. FIRST
		12676		BX6 X7+X6	. FORM SVD IN X6 AND RETURN

	12616		BX6	X1+X6		
5161	46000		QNXID	NO	. ENTRY POINT	
5162	63440		+	SB4	X4	. FIRST TO BE FREED
	66570			SB5	B7	. FIRST
	66200			SB2	B0	. FIRST SYMBOL = TRUE
	13555			BX5	X5-X5	. CLEAR OUTPUT WORD
5163	6130000060			SB3	48	. OUTPUT POSITION
	0400005166			EQ	QNXID2	
5164	0304005152		QNXID1	ZR	X4,QNXID6	. END OF INPUT
	53240			SA2	X4	. TAKE NEXT WORD
	73420			SX4	X2	
5165	74620			SX6	A2	. LAST TO BE FREED
	13224			BX2	X2-X4	
5166	20206		QNXID2	LX2	6	
	15320			BX3	-X0*X2	. NEXT INPUT CHARACTER TO X3
	0303005164			ZR	X3,QNXID1	. END OF WORD
5167	7273777744			SX7	X3-1RZ-1	
	0337005173			NG	X7,QNXID3	. BRANCH IF ALPHABETIC
5170	7273777732			SX7	X3-1R9-1	
	0420005161			EQ	B2,B0,QNXID	
5171	0337005173			NG	X7,QNXID3	. BRANCH IF DIGIT
	7273777720			SX7	X3-1R.	
5172	0317005152			NZ	X7,QNXID6	. BRANCH IF TERMINATOR
5173	6122000001		QNXID3	SB2	B2+1	. FIRST SYMBOL = FALSE
	6133777771			SB3	B3-6	
5174	0530005200			NE	B3,B0,QNXID5	. BYPASS IF OUTPUT WORD NOT FULL
	20522			LX5	18	
	56170			SA1	B7	
5175	0311005176			NZ	X1,QNXID4	. GET FREE WORD
	0100002057			RJ	MORFREE	
5176	73110		QNXID4	SX1	X1	
	63710			SB7	X1	. ADD LINK
	12751			BX7	X5+X1	
	13555			BX5	X5-X5	
5177	5071000000			SA7	A1+0	. STORE OUTPUT WORD
	6130000052			SB3	42	
5200	20506		QNXID5	LX5	6	. PACK NEXT OUTPU0 CHARACTER
	12553			BX5	X5+X3	
	0400005166			EQ	QNXID2	
			*			
5201	46000		SRCHCLL	NO		
5202	7100000035		+	SX0	CALLTYP	. SEARCH FOR A CALL TYPE ENTRY
	0100002645			RJ	INDRX	. IN STATIC
5203	0430005201			EQ	B3,B0,SRCHCLL	. RETURN IF NEW ENTRY
	53210			SA2	X1	
	10322			BX3	X2	
5204	21367			AX3	55	
	76770			SX7	B7	
	0313005201			NZ	X3,SRCHCLL	. RETURN IF NOT PROCEDURE
5205	63720			SB7	X2	. RELEASE PARAMETERLIST
5206	53220		SRCHC1	SA2	X2	
	73220			SX2	X2	
	0312005206			NZ	X2,SRCHC1	
5207	54720			SA7	A2	
	0400005201			EQ	SRCHCLL	

*
 *

5210	56160	QDEFINE	SA1	B6	. STANDARD PROCEDURE DEFINE
	5146777776		SA4	B6-1	
	43701		MX7	1	
5211	6110000001		SB1	1	
	7255777776		SX5	X5-1	. BYPASS IF ONE PARAMETER
5212	0305005224		ZR	X5,QDEF1	
	7265777776		SX6	X5-1	
5213	0316000317		NZ	X6,ERR20	. MORE THAN TWO PARAMETERS
	20766		LX7	54	
	12771		BX7	X7+X1	
5214	54710		SA7	A1	. SET BIT A ON TOP STACK ENTRY
	21167		AX1	55	
	0311000330		NZ	X1,ERR29	. ERROR IF NOT SF
5215	53240		SA2	X4	. FIRST WORD OF STRING
	0312005220		NZ	X2,QDEF0	. SECOND ARGUMENT NOT NULL
	76770		SX7	B7	. FREE THE
5216	54720		SA7	A2	. NULL SECOND
	64770		SB7	A7	. PARAMETER AND
	6166777775		SB6	B6-2	. POP THE STACK
5217	0200005210		JP	QDEFINE	. TRY AGAIN
5220	43066	QDEF0	MX0	54	. =HOLE 6
	13222		BX2	X2-X2	
	0100005161		RJ	QNXID	. GET IDENTIFIER
5221	0314000344		NZ	X4,ERR44	. ERROR IF TERMINATOR IS NOT END
	5166777776		SA6	B6-1	
5222	6110000000		SB1	0	. SET A FLAG, TWO PARAMS
	5116777775		SA1	B6-2	
5223	5146777774		SA4	B6-3	
5224	21167	QDEF1	AX1	55	
	43066		MX0	54	
	0311000330		NZ	X1,ERR29	. ERROR, FIRST PARAM NOT SF
5225	13222		BX2	X2-X2	
	0100005161		RJ	QNXID	. GET FIRST IDENTIFIER
5226	0420000344		EQ	B2,B0,ERR44	. ERROR, PROC NAME MISSING
	7273777726		SX7	X3-1R(
5227	0317000344		NZ	X7,ERR44	. TERMINATOR IS NOT (
	0510005231		NE	B1,B0,QDEF2	
5230	5166777774		SA6	B6-3	
	0400005233		EQ	QDEF3	
5231	5166777776	QDEF2	SA6	B6-1	. IF IT IS THE ENTRY LABEL ALSO.
	56160		SA1	B6	. SET BIT B ON TOP STACK ENTRY
	43702		MX7	2	
5232	20766		LX7	54	
	12771		BX7	X7+X1	
	54710		SA7	A1	
5233	13666	QDEF3	BX6	X6-X6	
	66100		SB1	B0	
	5160000240		SA6	QDEF3V2	. NO OF PARAMS = 0
5234	10600	QDEF4	BX6	X0	
	0100005161		RJ	QNXID	. GET NEXT IDENTIFIER
5235	0313005236		NZ	X3,QDEF5	
	0420005246		EQ	B2,B0,QDEF6	
5236	6111000001	QDEF5	SB1	B1+1	. BUMP NUMBER OF PARAMS
	5100000002		SA0	2	
5237	0420000344		EQ	B2,B0,ERR44	
	0100002052		RJ	RESERVE	. STORE NAME AS A SF TYPE STACK
5240	5166777776		SA6	B6-1	. ENTRY

	74700		SX7	A0	
	56760		SA7	B6	
5241	0303005246		ZR	X3,QDEF6	
	7273777721		SX7	X3-1R,	
5242	0307005234		ZR	X7,QDEF4	
	7273777725		SX7	X3-1R)	.) DELIMITS FORMALS AND LOCALS
5243	0317000344		NZ	X7,ERR44	
	5110000240		SA1	QDEF5V2	
5244	76710		SX7	B1	
	0311000344		NZ	X1,ERR44	. TWO)-S IN PROTOTYPE
	54710		SA7	A1	
5245	0400005234		EQ	QDEF4	
5246	5110000240	QDEF6	SA1	QDEF5V2	
	0301000344		ZR	X1,ERR44	. ERROR , NO) IN PROTOTYPE
5247	7171000002		SX7	B1+2	
	20745		LX7	37	. APPETITE = 2 * (LOCALS + FORMALS)
	20122		LX1	18	
5250	12771		BX7	X7+X1	. NO OF FORMALS IS IN X1
	54710		SA7	A1	
5251	0100002624	QDEF7	RJ	INDRCT	. FIND ADDRESS OF NEXT FORMAL
5252	5120000205		SA2	MINSTAT	. PARAM OR LOCAL VARIABLE
	0400005254		EQ	QDEF9	
5253	5121000000	QDEF8	SA2	B1+0	
5254	63120	QDEF9	SB1	X2	
	0510005253		NE	B1,B0,QDEF8	
	76770		SX7	B7	
5255	12727		BX7	X2+X7	. PUT THE ADDRESS ON A LIST
	54720		SA7	A2	
	73610		SX6	X1	
	56170		SA1	B7	
5256	0311005257		NZ	X1,QDEF10	
	0100002057		RJ	MORFREE	
5257	63710	QDEF10	SB7	X1	
	20622		LX6	18	
	56360		SA3	B6	
	54610		SA6	A1	
5260	20306		LX3	6	
	0323005251		PL	X3,QDEF7	. JUMP BACK IF BIT A IS NOT SET
	66400		SB4	B0	. SIGNAL SF TYPE FOR INDRX
5261	5146777776		SA4	B6-1	
	7100000034		SX0	LBLTYP	. FIND STATIC ADDRESS OF THE
5262	0100002645		RJ	INDRX	. ENTRY LABEL
5263	73610		SX6	X1	
	5160000235		SA6	QDEF5V1	
	43721		MX7	17	
5264	0530005265		NE	B3,B0,QDEF11	
	20722		LX7	18	. INITIALIZE LABEL IF NEW RECORD
	53710		SA7	X1	
5265	56160	QDEF11	SA1	B6	
	20107		LX1	7	
	0331005270		NG	X1,QDEF12	
5266	5116777776		SA1	B6-1	. RELEASE THE STRING CONTAINING
	76770		SX7	B7	. THE ENTRY NAME IF BIT B IS NOT
	63710		SB7	X1	. SET
5267	21122		AX1	18	
	53710		SA7	X1	
	6166777775		SB6	B6-2	

5270	514677776		QDEF12	SA4	B6-1	. FIND STATIC ADDRESS OF THE
	0100005201			RJ	SRCHCLL	. PROCEDURE
5271	7271000000			SX7	X1+0	
	5170000241			SA7	QDEFSV3	
5272	0100002624			RJ	INDRCT	. LOOK UP VARIABLE HAVING
5273	76670			SX6	B7	. THE SAME NAME AS THE PROCEDURE
	6166000002			SB6	B6+2	. RESET STACK POINTER
	20122			LX1	18	. FORM PARAMETER LIST BY CONCATENATING
5274	5120000241			SA2	QDEFSV3	. THE REVERSED LIST OF
	12661			BX6	X6+X1	. STATIC ADDRESSES AND THE
	63220			SB2	X2	. ADDRESS OF THE ENTRY LABEL
5275	56170			SA1	B7	
	5120000235			SA2	QDEFSV1	
	43001			MX0	1	. THIS BIT SIGNALS THE END OF LIST
5276	0311005277			NZ	X1,QDEF13A	
	0100002057			RJ	MORFREE	
5277	63710		QDEF13A	SB7	X1	
	20222			LX2	18	
	12720			BX7	X2+X0	
	54710			SA7	A1	
5300	56170			SA1	B7	
	5140000205			SA4	MINSTAT	
	66170			SB1	B7	
5301	0311005302			NZ	X1,QDEF13B	
	0100002057			RJ	MORFREE	
5302	63710		QDEF13B	SB7	X1	
	5061000000			SA6	A1+0	
	53240			SA2	X4	
5303	13666			BX6	X6-X6	
	53640			SA6	X4	. CLEAR XWRD
	63320			SB3	X2	
5304	53320		QDEF14	SA3	X2	. NEXT WORD FROM ADDRESS LIST
	73230			SX2	X3	
	13332			BX3	X3-X2	
	64430			SB4	A3	
5305	56170			SA1	B7	
	0311005307			NZ	X1,QDEF15	
5306	0100002057			RJ	MORFREE	
5307	63710		QDEF15	SB7	X1	
	73110			SX1	X1	
	76710			SX7	B1	
	64110			SB1	A1	
5310	12737			BX7	X3+X7	
	54710			SA7	A1	. NEXT WORD TO PARAM LIST
	0312005304			NZ	X2,QDEF14	
5311	5120000240			SA2	QDEFSV2	
	76110			SX1	B1	
	12712			BX7	X1+X2	
5312	56720			SA7	B2	. ASSIGN THE PARAM LIST IS THE
	76670			SX6	B7	. STATIC ENTRY
	66730			SB7	B3	
	56640			SA6	B4	
5313	43005			MX0	5	
	0100002342			RJ	ZROX7	. RESULT OF DEFINE IS A NULL STRING
5314	7160000002			SX6	2	
	15770			BX7	-X0*X7	. CLEAR SS TYPE
	56660			SA6	B6	

5315	5176777776		SA7	B6-1	
	0400000441		EQ	NEXTMIC	
5316		DEFINEQ	BSS	0	
		*			
		*			
5316	66500	QDIFFER	SB5	B0	. DIFFER FLAG
	0400005320		EQ	QCOMP	
5317	6150000001	QIDENT	SB5	1	. IDENT FLAG
5320	6215777775	QCOMP	SB1	X5-2	
	0701000317		GT	B1,B0,ERR20	. TOO MANY PARAMETERS
5321	6140000001		SB4	1	. SET IDENT FLAG
	0710005345		LT	B1,B0,QCOMP6	. NULL SECOND PARAMETER
5322	56160		SA1	B6	
	10011		BX0	X1	. SAVE HEADER WORD
	21167		AX1	55	
5323	0311005352		NZ	X1,QCOMP8	. SECOND PARAMETER IS NOT SF
5324	5116777775	QCOMP1	SA1	B6-2	
	10011		BX0	X1	. SAVE HEADER WORD
	21167		AX1	55	
5325	0311005366		NZ	X1,QCOMP14	. FIRST PARAMETER NOT SF
	5116777774		SA1	B6-3	. FIRST SVD
5326	10011	QCOMP2	BX0	X1	
	76770		SX7	B7	. PREPARE TO FREE SF
	63700		SB7	X0	
	21022		AX0	18	
5327	53200		SA2	X0	
	12727		BX7	X2+X7	
	53700		SA7	X0	
	21022		AX0	18	. SAVE LENGTH OF STRING
5330	5126777776		SA2	B6-1	. SECOND SVD
	10522		BX5	X2	
	76670		SX6	B7	
5331	63750		SB7	X5	
	21522		AX5	18	
	53350		SA3	X5	
	12736		BX7	X3+X6	
5332	53750		SA7	X5	
	21522		AX5	18	. LENGTH OF STRING
	6166777773		SB6	B6-4	. POP DESCRIPTORS FROM STACK
5333	37505		IX5	X0-X5	. COMPARE LENGTH
	0315005344		NZ	X5,QCOMP5	. DIFFER
5334	53310	QCOMP3	SA3	X1	
	73130		SX1	X3	. LINK OF STRING ONE
	53420		SA4	X2	
	13313		BX3	X1-X3	
5335	73240		SX2	X4	. LINK TO STRING TWO
	13424		BX4	X2-X4	
	13334		BX3	X3-X4	. COMPARE STRING WORDS
	13426		BX4	X2-X6	. SEE IF END OF STRING
5336	0313005344		NZ	X3,QCOMP5	. DIFFER
	0314005334		NZ	X4,QCOMP3	. TRY NEXT PAIR
5337	0545000465	QCOMP4	NE	B4,B5,FAIL	
5340	0100002342	MKNULL	RJ	ZROX7	
5341	43005		MX0	5	
	15770		BX7	-X0*X7	. CLEAR SS TYPE
	5176000001		SA7	B6+1	
5342	7160000002		SX6	2	

		6166000002		SB6	B6+2	
5343	56660			SA6	B6	
		0400000441		EQ	NEXTMIC	
5344	66400		QCOMP5	SB4	B0	. SET DIFFER FLAG
		0400005337		EQ	QCOMP4	
5345	56160		QCOMP6	SA1	B6	. HEADER WORD
		10011		BX0	X1	
		5126777776		SA2	B6-1	
5346	21167			AX1	55	
		0311005362		NZ	X1,QCOMP12	. GO POP STACK, REPORT DIFFER
		53120		SA1	X2	. FIRST STRING WORD
5347	0301005350			ZR	X1,QCOMP7	. IDENT
		66400		SB4	B0	. SET DIFFER F-AG
5350	76770		QCOMP7	SX7	B7	. PREPARE TO FREE SF
		63720		SB7	X2	
		21222		AX2	18	
		53720		SA7	X2	
5351	6166777775			SB6	B6-2	
		0400005337		EQ	QCOMP4	
5352	7211777770		QCOMP8	SX1	X1-ITY	
		0311005355		NZ	X1,QCOMP9	
5353	5116777776			SA1	B6-1	
		0100002364		RJ	ITOSF	
5354	5166777776			SA6	B6-1	
		0400005324		EQ	QCOMP1	
5355	63300		QCOMP9	SB3	X0	. BYPASS OF SECOND PARAM
		57263		SA2	B6-B3	
		13302		BX3	X0-X2	
		67663		SB6	B6-B3	. POP SECOND PARAMETER
5356	0313005363			NZ	X3,QCOMP13	. DIFFER
		6133777776		SB3	B3-1	. GET WORD COUNT
5357	55114		QCOMP10	SA1	A1-B4	
		55224		SA2	A2-B4	
		37112		IX1	X1-X2	
		67334		SB3	B3-B4	. DECREMENT WORD COUNT
5360	0311005362			NZ	X1,QCOMP12	. DIFFER
		0530005357		NZ	B3,QCOMP10	
5361	63300		QCOMP11	SB3	X0	
		67663		SB6	B6-B3	. POP FIRST PARAM
		0400005337		EQ	QCOMP4	
5362	66400		QCOMP12	SB4	B0	. SET DIFFER FLAG
		0400005361		EQ	QCOMP11	
5363	10022		QCOMP13	BX0	X2	. SAVE SVD
		21267		AX2	55	
		66400		SB4	B0	. SET DIFFER FLAG
5364	0312005361			NZ	X2,QCOMP11	. POP FIRST PARAMETER, EXIT
		5126777776		SA2	B6-1	
5365	0400005350			EQ	QCOMP7	. FREE FIRST PARAMETER, EXIT
5366	7211777770		QCOMP14	SX1	X1-ITY	
		0311005371		NZ	X1,QCOMP15	
5367	5116777774			SA1	B6-3	
		0100002364		RJ	ITOSF	
5370	10166			BX1	X6	
		0400005326		EQ	QCOMP2	
5371	57164		QCOMP15	SA1	B6-B4	. PREPARE TO FREE SECOND PARAMETER
		76770		SX7	B7	
		63710		SB7	X1	

		21122	AX1	18	
5372	53710		SA7	X1	
	65614		SB6	A1-B4	
	0400005362		EQ	QCOMP12	. SET DIFFER FLAG AND POP FIRST PARAM
			*		
5373			COMPQ	BSS	0
			*		
5373	7255777776		QSTAR	SX5	X5-1
	0315000317		NZ	X5,ERR20	ONLY ONE ARGUMENT IF YOU PLEASE
5374	56160		SA1	B6	PICK UP THE DESCRIPTOR
	21167		AX1	55	SHIFT THE DESCRIPTOR TO THE TYPE FIELD
	0301005424		ZR	X1,HEXTERN	STRING TO INTEGER CONVERSION DESIRED
5375	7211777770		SX1	X1-ITY	IS IT AN INTEGER
	0311000330		NZ	X1,ERR29	WHAT DO YOU WANT, MAGIC.....
5376	5116777776		SA1	B6-1	PICK UP THE INTEGER
5377	43201		HEXUDE	MX2	1 PREPARE TO PICK OFF THE TOP BIT
	11221		BX2	X2*X1	PICK OFF THE SIGN BIT
	43414		MX4	12	
	15114		BX1	-X4*X1	
5400	20201		LX2	1	SHIFT THE SIGN BIT TO ADD POSITION
	36121		IX1	X2+X1	MAKE THE NUMBER TWOS COMPLEMENT
	43070		MX0	56	THE COMPLEMENT OF THE FOUR BIT MASK
5401	7140001777		SX4	1777B	THIS IS THE NUMBER OF TIMES AROUND THE LOOP
	43600		MX6	0	CLEAR THE FIRST WORD RESULT REGISTER
5402	15310		HEXED	BX3	-X0*X1 PICK OFF A CHARACTER
	21104		AX1	4	SHIFT THE SOURCE WORD ONE CHARACTER
	7223777765		SX2	X3-12B	IS IT 0-9 OR A-F
5403	0322005404		PL	X2,HEXALL	GO WASH YOUR MOUTH OUT
	7233000044		SX3	X3+44B	IT IS A DIGIT 0-9 ADD IN 33B
5404	7233777766		HEXALL	SX3	X3-11B
	21401		AX4	1	DECREMENT THE COUNTER (NOTE PALINDROMIC SHIFTS)
	12663		BX6	X6+X3	OR THE CHARACTER INTO THE RESULT REGISTER
5405	20666		LX6	60-6	SHIFT THE RESULT ONE PARCEL RIGHT
	0314005402		NZ	X4,HEXED	SHOULD WE DO IT AGAIN
	43436		MX4	30	PICK UP THE LOW FIVE CHARACTERS
5406	15764		BX7	-X4*X6	LOAD THEM INTO THE SECOND WORD
	11646		BX6	X4*X6	KILL OFF THE OLD BITS IN X6
	7140000003		SX4	3	WE GO AROUND THIS LOOP TWICE
5407	15310		HEXAGON	BX3	-X0*X1 PICJ UP YE OLDE CHARACTER
	21104		AX1	4	END OFF THE DATA WORD
	7223777765		SX2	X3-12B	AGAIN, ARE WE FISH OR FOWL
5410	0322005411		PL	X2,NOHEX	
	7233000044		SX3	X3+44B	CLEARLY IT IS A FOWL
5411	7233777766		NOHEX	SX3	X3-11B BIRDS AND FISH ARE RELATED
	21401		AX4	1	DECREMENT THE LOOP COUNTER IN TIME FOR CHRISTMAS
	12663		BX6	X6+X3	OR THE CHARACTER INTO THE DESTINATION REG
5412	20666		LX6	60-6	SHIFT THE DESTINATION REGISTER RIGHT
	0314005407		NZ	X4,HEXAGON	SIX SIDES TIME TWO MAKE TWELVE CHARS.
	76170		SX1	B7	PICK UP THE NEXT FREE WORD ADDRESS
5413	43002		MX0	2	THIS IS AN 12B BELIEVE IT OR NOT
	20050		LX0	36+4	ONE FOR ME AND ONE FOR YOU
	12410		BX4	X1+X0	OR IN THE LINK ADDRESS
	56170		SA1	B7	PCIK UP THE POINTER TO THE NEXT FREE WORD
5414	0311005415		NZ	X1,HEXSTAR	IF THERE IS ONE OKAY, IF NOT THEN
	0100002057		RJ	MORFREE	REQUEST MORE GARBAGE FROM THE FSL
5415	63710		HEXSTAR	SB7	X1 PICK UP THE CHAIN ADDRESS
	73110		SX1	X1	ONLY 18 BITS SURVIVE

		12661		BX6	X6+X1	OR THE DATA INTO THE CHAIN LINK ADDRESS
		54610		SA6	A1	STORE THE DATA AND CHAIN IN THE INDICATED ADDRESS
5416	20736			LX7	30	JUSTIFY THE SECOND WORD PROPERLY
		56170		SA1	B7	AND GET THE NEXT FREE WORD POINTER
		0311005420		NZ	X1,STARHEX	IF NONE IS AVAILABLE GET SOME
5417	0100002057			RJ	MORFREE	SOME IS GOTTEN
5420	63710		STARHEX	SB7	X1	GET THE CHAIN POINTER BACK INTO B7
		73110		SX1	X1	TRUNCATE ALL BUT THE BOTTOM 18 BITS
		74510		SX5	A1	GET THE CHAIN ADDRESS
		54710		SA7	A1	STUFF THE WORD AWAY
5421	20522			LX5	18	SHIFT FOR THE DESCRIPTOR
		12645		BX6	X4+X5	LOAD THE DESCRIPTOR WITH THE END
		5166777776		SA6	B6-1	LOAD THE DESCRIPTOR ADDRESS
5422	7170000002			SX7	2	ALMOST DONE
		56760		SA7	B6	ALL DONE NOW
5423	0400000441			EQ	NEXTMIC	GO TO THE NEXT MICROP
5424	5116777776		HEXTERN	SA1	B6-1	GET THE ACTUAL PARAMETER
		43052		MX0	42	
		13666		BX6	X6-X6	IDLE UNITS ARE THE DEVIL PLAYTHINGS
5425	43306			MX3	6	
		13777		BX7	X7-X7	
5426	15210		HEXCITE	BX2	-X0*X1	YANK OFF THE LINK ADDRESS
		11101		BX1	X0*X1	TRIM THE DATA OFF THE WORD
5427	11431		HEXAM	BX4	X3*X1	MUNCH OFF A CHARACTER
		15113		BX1	-X3*X1	DELETE THE CHARACTER FROM THE WORD
		20406		LX4	6	ROUND THE ROSY ONE CHARACTER
		20106		LX1	6	LIKEWISE IM SURE
5430	0304005437			ZR	X4,HEXCISE	IF CHARACTER IS NULL,CHECK LINK
		7254777731		SX5	X4-1R-	MINUS SIGN PERCHANCE
5431	0305005441			ZR	X5,HEXCELL	WHY YES IT IS A MINUS SIGN
		7254777732		SX5	X4-1R+	WHAT ABOUT A UNARY PLUS SIGN
5432	0305005427			ZR	X5,HEXAM	IF IT IS IGNORE IT THOROUGHLY
		7254777732		SX5	X4-45B	ARE WE IN THE BOUNDS OF AN INTEGER
5433	0325000465			PL	X5,FAIL	THOUGHT YOUWOULD SLIP ONE OVER ON ME DID YOU
		7254777744		SX5	X4-33B	CHECK LOWER BOUND
5434	0335000465			NG	X5,FAIL	NAUGHTY,NAUGHTY TO FOOL MOTHER NATURE
		10466		BX4	X6	LOOK HOW I MULTIPLY BY TEN
		20401		LX4	1	TIMES TWO
5435	20603			LX6	3	TIMES EIGHT
		36664		IX6	X6+X4	AND WE GET TIMES TEN
		36665		IX6	X6+X5	ADD IN THE NEW CHARACTER
5436	0400005427			EQ	HEXAM	OFF WE GO INTO THE WIDE BLUE YONDER
5437	0302005442		HEXCISE	ZR	X2,HEXTANT	NOW CUT THAT OUT(PUN)
		53120		SA1	X2	PICK UP THE WORD POINTED TO BY THE LINK
5440	0400005426			EQ	HEXCITE	TURN ON THE PROCESS AGAIN
5441	14777		HEXCELL	BX7	-X7	GEN UP A WORD OF ALL ONES
		0400005427		EQ	HEXAM	SHAZZAN
5442	13167		HEXTANT	BX1	X6-X7	COMPLEMENT IF NECESSARY
		0400005377		EQ	HEXUDE	EXUDE CONFIDENCE THAT WE ARE DONE
5443			STARQ	BSS	0	
5443	7255777776		QUNSTAR	SX5	X5-1	
		0315000317		NZ	X5,ERR20	TWO MANY ARGUMENTS(PUN)
5444	56160			SA1	B6	PCIK UP THE DESCRIPTOR
		21167		AX1	55	OFF WITH HIS HEAD
		0301005447		ZR	X1,HEXTINT	STRING IN
5445	7211777770			SX1	X1-ITY	IS IT AN INTEGER
		0311000330		NZ	X1,ERR29	NO ITS NOT, ZAPPPPP....

5446	0400000465		EQ	FAIL	DONT CALL ME ILL CALL YOU
5447	5116777776		HEXTINT	SA1 B6-1	PICK UP THE VARIABLE FIRST WORD
		43052		MX0	42
		13666		BX6	X6-X6
5450	43306			MX3	6
5451	15210		HEXNEXT	BX2 -X0*X1	PICK UP THE LINK ADDRESS (IF ANY)
		11101		BX1 X0*X1	MASK THE DATA REGISTER
5452	11431		HEXIT	BX4 X3*X1	PCIK UP ONE CHARACTER
		15113		BX1 -X3*X1	CLEAN OUT THAT CHARACTER
		20406		LX4 6	SHIFT THE CHARACTER TO THE LOW BYTE
		20106		LX1 6	SHIFT THE HOLE IN THE DATA WORD TO THE LOW BYTE
5453	0304005460			ZR X4,HEXOUT	IF NO CHARACTER CHECK FOR NEXT LINKAGE
		7254777732		SX5 X4-45B	DID WE OVERSHOOT
5454	0325000465			PL X5,FAIL	
		7254777744		SX5 X4-33B	IS THIS A DECIMAL NUMBER
5455	0325005457			PL X5,PUREHEX	YES IT IS, JUMP TO STORAGE ROUTINE
		7254777770		SX5 X4-7B	IS IT A VALID HEXADECIMAL DIGIT
5456	0325000465			PL X5,FAIL	
		7254000011		SX5 X4+11B	CONVERT IT TO BINARY
5457	20604		PUREHEX	LX6 4	SHIFT THE DESTINATION REGISTER TO ACCEPT THE OR
		12665		BX6 X6+X5	OR IN THE CHARACTER
		0400005452		EQ HEXIT	GO BACK AND TRY IT AGAIN
5460	0302005462		HEXOUT	ZR X2,HEXDONE	
		53120		SA1 X2	PICK UP THE NEXT WORD IN THE CHAIN
5461	0400005451			EQ HEXNEXT	
5462	43014		HEXDONE	MX0 12	
		15660		BX6 -X0*X6	CLEAR THE HIGH BITS JUST IN CASE
		43315		MX3 13	
		11336		BX3 X3*X6	PICK OFF THE HEXADECIMAL SIGN BIT
5463	20315			LX3 13	
		37663		IX6 X6-X3	SUBTRACT OFF THE ADDITIONAL COMPLEMENT
		20614		LX6 12	POSITION THE HEX SIGN BIT TO THE TOP
		21614		AX6 12	SHIFT THE BIT INTO ALL 12 POSITIONS
5464	5166777776			SA6 B6-1	
		7170000007		SX7 ITY	
5465	20767			LX7 55	
		7110000002		SX1 2	
		12717		BX7 X1+X7	
5466	56760			SA7 B6	
		0400000441		EQ NEXTMIC	
5467			UNSTARQ	BSS 0	
5467	7255777776		QCNVT	SX5 X5-1	
		0315000317		NZ X5,ERR20	. TOO MANY PARAMETERS
5470	56160			SA1 B6	
		21167		AX1 55	. EXAMINE TYPE
		0301005502		ZR X1,QCNVT3	. SFTY
5471	7211777767			SX1 X1-RTY	
		0311005475		NZ X1,QCNVT1	. INTEGER OR WHAT
5472	5116777776			SA1 B6-1	
		0100002416		RJ RTOSF	
5473	5166777776			SA6 B6-1	
		7170000002		SX7 SSTY	STRING TYPE AS RESULT
5474	56760			SA7 B6	
		0400000441		EQ NEXTMIC	
5475	7211000001		QCNVT1	SX1 X1+RTY-ITY	
		0311000330		NZ X1,ERR29	. PARAMETER TYPE ERROR
5476	5116777776			SA1 B6-1	

	27601		PX6	X1	
	24606		NX6	X6	
5477	5166777776	QCNTV2	SA6	B6-1	
	7170000010		SX7	RTY	
5500	20767		LX7	55	
	7110000002		SX1	2	
	12717		BX7	X1+X7	
5501	56760		SA7	B6	
	0400000441		EQ	NEXTMIC	
5502	13777	QCNTV3	BX7	X7-X7	. SIGN ASSUMED POSITIVE
	43600		MX6	0	
	6140000000		SB4	0	
5503	5116777776		SA1	B6-1	. SVD
	7100000077		SX0	77B	
5504	43500		MX5	0	
	66500		SB5	B0	
	66400		SB4	B0	
5505	5140002341		SA4	TEN	
5506	0301005526	QCNTV4	ZR	X1,QCNTV9	. END OF STRING
	5221000000		SA2	X1+0	. NEXT STRING WORD
5507	7212000000		SX1	X2+0	. LINK
	13221		BX2	X2-X1	. CLEAR LOWER 18 BITS
5510	20206	QCNTV5	LX2	6	
	11302		BX3	X0*X2	
	0303005506		ZR	X3,QCNTV4	
5511	7233777744		SX3	X3-1R0	
	0333000351		NG	X3,ERR53	. ILLEGAL CHARACTER IN REAL NUMBER
5512	6223777765		SB2	X3-1R++1R0	
	0620005520		GE	B2,B0,QCNTV7	. NOT DIGIT
5513	27303		PX3	X3	
	24303		NX3	X3	
	0540005516		NZ	B4,QCNTV6	. STATE IS AFTER POINT
5514	40664		FX6	X6*X4	. NUMBER := NUMBER * 10
	30636		FX6	X3+X6	. NUMBER := NUMBER + NEW DIGIT
	6150777775		SB5	1R9-1R-	. STATE]= AFTER SIGN
5515	0400005510		EQ	QCNTV5	
5516	40335	QCNTV6	FX3	X3*X5	. SCALE NEW DIGIT
	40554		FX5	X5*X4	
	30636		FX6	X3+X6	
5517	0400005510		EQ	QCNTV5	
5520	6223777753	QCNTV7	SB2	X3-1R.+1R0	
	0424005524		EQ	B2,B4,QCNTV8	. POINT, IN -BEFORE POINT- STATE
5521	6223777764		SB2	X3-1R-+1R0	
	0752000351		GT	B2,B5,ERR53	. ILLEGAL CHARACTER (INCLUDING POINT OR SIGN IN WRONG STATE)
		*			
5522	6150777775		SB5	1R9-1R-	. STATE]=AFTER SIGN
	0720005510		NG	B2,QCNTV5	. SIGN WAS +
5523	43774		MX7	60	. NEGATIVE
	0400005510		EQ	QCNTV5	
5524	5140005531	QCNTV8	SA4	ONETENTH	
	6140000021		SB4	77B-1R.+1	. STATE]= AFTER POINT (77B IS CODE FOR SEMICOLON - SEE TEST AT QCNTV7)
		*			
5525	10544		BX5	X4	
	0400005510		EQ	QCNTV5	
5526	5116777776	QCNTV9	SA1	B6-1	
	13667		BX6	X6-X7	. GIVE RESULT PROPER SIGN
	76770		SX7	B7	

5527	63710		SB7	X1	
	21122		AX1	18	
	5271000000		SA7	X1+0	. FREE SF STRING
5530	0400005477		EQ	QCNVT2	
5531	17146314631463146315	ONETENTH	DATA	0.1E0	
5532		CNVTQ	BSS	0	
		*			
5532	7255777776	QARRAY	SX5	X5-1	. X5 CONTAINS NO. OF PARAMETERS
	0315000317		NZ	X5,ERR20	. TOO MANY PARAMETERS
5533	56160		SA1	B6	. DESCRIPTOR FROM TOP OF STACK
	21167		AX1	55	
	0311005627		NZ	X1,QAR18	. IF NOT SF, MUST BE INTEGER
5534	5110000205	QAR0	SA1	MINSTAT	
	6251000000		SB5	X1+XWDREL	. XWDREL IS KNOWN BY GARBCOLL.
5535	5116777776		SA1	B6-1	. SVD
	73610		SX6	X1	
	56650		SA6	B5	. INITIALIZE XWDREL = NEXT STRING WRD
5536	7140000001		SX4	1	
	5110000204		SA1	MAXSTAT	
5537	73610		SX6	X1	
	27404		PX4	X4	. X4 WILL CONTAIN ARRAYSIZE
	5160000235		SA6	QARSV	. SAVE OLD MAXSTAT
5540	7266000001		SX6	X6+1	
	6166777775		SB6	B6-2	. POP PARAMETER FROM STACK
5541	54610		SA6	A1	. LET MAXSTAT POINT AFTER HEADER WORD
	13222		BX2	X2-X2	. X2 WILL CONTAIN CURRENT STRING WORD
	7100000077		SX0	77B	. ONE CHARACTER MASK
5542	7130000000	QAR1	SX3	0	. INTEGER := 0
	66400		SB4	B0	. INSIDENUMBER := -FALSE-
	43574		MX5	60	. BEFORECOLON := -TRUE-
5543	20206	QAR2	LX2	6	
	11102		BX1	X0*X2	. EXAMINE NEXT CHARACTER
	0311005547		NZ	X1,QAR3	
5544	56150		SA1	B5	. ADDRESS OF NEXT WORD
	0301005571		ZR	X1,QAR10	. END OF STRING
	53210		SA2	X1	. PICK UP NEW WORD
5545	76770		SX7	B7	. PUT SF
	53710		SA7	X1	. WORD ONTO
	63710		SB7	X1	. FREE CHAIN
	73720		SX7	X2	. LINK
5546	56750		SA7	B5	
	13227		BX2	X2-X7	. CLEAR LOWER 18 BITS
	0400005543		EQ	QAR2	. TRY AGAIN
5547	7261777744	QAR3	SX6	X1-1R0	
	0336000337		NG	X6,ERR39	. MALFORMED PROTOTYPE (ILLEGAL CHAR)
5550	7276777765		SX7	X6-10	
	0337005556		NG	X7,QAR4	. DIGIT
5551	7267777775		SX6	X7-2	
	0336005562		NG	X6,QAR6	. SIGN
5552	7261777721		SX6	X1-1R,	
	0306005564		ZR	X6,QAR7	. COMMA
5553	7261777777		SX6	X1-1R:	
	0306005565		ZR	X6,QAR8	. COLON
5554	7261777727		SX6	X1-1R/	
	0306005565		ZR	X6,QAR8	. COLON
5555	0400000337		EQ	ERR39	. MFP (ILLEGAL CHAR, AGAIN)
5556	0540005560	QAR4	NZ	B4,QAR5	. -IF- INSIDENUMBER -THEN- -JUMP-

	6140000001		SB4	1	. INSIDENUMBER := -TRUE-
5557	73360		SX3	X6	. INTEGER := DIGIT
	0400005543		EQ	QAR2	
5560	20301	QAR5	LX3	1	
	10733		BX7	X3	
	20302		LX3	2	
	36337		IX3	X3+X7	
5561	36336		IX3	X3+X6	. INTEGER := INTEGER * 10 + DIGIT
	0400005543		EQ	QAR2	
5562	0540000343	QAR6	NZ	B4,ERR43	. SYNTAX ERROR (TWO SIGNS)
	14777		BX7	-X7	
	36777		IX7	X7+X7	
5563	6247000001		SB4	X7+1	. SIGN := +1 OR -1
	0400005543		EQ	QAR2	
5564	7160005542	QAR7	SX6	QAR1	. RETURN ADDRESS
	0400005610		EQ	QAR13	. PROCESS COMMA
5565	0325000343	QAR8	PL	X5,ERR43	. SYNTAX ERROR (TWO COLONS)
	0315000343		NZ	X5,ERR43	. SYNTAX ERROR (TWO COLONS)
5566	43153		MX1	43	
	11113		BX1	X1*X3	
	0311000346		NZ	X1,ERR49	. LOWER BOUND TOO LARGE
5567	10533		BX5	X3	
	0640005570		GE	B4,B0,QAR9	. -IF- SIGN = + -THEN- -JUMP-
	14533		BX5	-X3	
5570	13333	QAR9	BX3	X3-X3	. INTEGER := 0
	66400		SB4	B0	. INSIDENUMBER := -FALSE-
	0400005543		EQ	QAR2	
5571	7160005572	QAR10	SX6	QAR11	. RETURN ADDRESS
	0400005610		EQ	QAR13	. PROCESS IMPLIED COMMA
5572	43701	QAR11	MX7	1	. FLAG TO MARK LAST DESCRIPTOR
	12767		BX7	X6+X7	. X6 CONTAINS LAST DESCRIPTOR
	54760		SA7	A6	
	26404		UX4	X4	
5573	36734		IX7	X3+X4	. X3 CONTAINS C (MAXSTAT)
	5120000207		SA2	MINSTAK	
	54730		SA7	A3	. NEW MAXSTAT
5574	20522		LX5	18	. X5 ALSO CONTAINS OLD MAXSTAT
	5110000235		SA1	QARSV	
	37631		IX6	X3-X1	. CALCULATE BYPASS
5575	7100000032		SX0	SPCTYP	. STATIC RECORD TYPE
	20622		LX6	18	
	20067		LX0	55	
5576	12606		BX6	X0+X6	
	53610		SA6	X1	
	7201000000		SX0	X1+0	. DOPE ADDRESS
5577	12505		BX5	X0+X5	. COMBINE WITH BASE ADDRESS
	37272		IX2	X7-X2	
	0332005601		NG	X2,QAR12	. ROOM EXISTS FOR ARRAY
5600	6232000050		SB3	X2+BUFF4	
	0100002042		RJ	PUSHSTK	. MAKE ROOM
5601	7244777776	QAR12	SX4	X4-1	. DECREMENT ARRAY LENGTH
	0100002342		RJ	ZROX7	. MAKE NULL VALUE
5602	5273000000		SA7	X3+0	
	7233000001		SX3	X3+1	
5603	0314005601		NZ	X4,QAR12	
	7160000011		SX6	ATY	. ARRAY TYPE
5604	5100000002		SA0	2	

		0100002052	RJ	RESERVE	. GET TWO STACK WORDS
5605	20667		LX6	55	
		12756	BX7	X5+X6	
		5176777776	SA7	B6-1	
5606	7170000002		SX7	2	
		12767	BX7	X6+X7	
		56760	SA7	B6	
5607	0400000441		EQ	NEXTMIC	
5610	43701	QAR13	MX7	1	
		20771	LX7	57	
		20636	LX6	30	
		12667	BX6	X6+X7	
5611	5160005626		SA6	QAR17	. RETURN INSTRUACION
		43153	MX1	43	
		11713	BX7	X1*X3	
5612	0317000346		NZ	X7,ERR49	. UPPPER BOUND TOO LARGE
		0325005614	PL	X5,QAR14	. -IF- ^BEFORECOLON -THEN- -JUMP-
5613	0315005614		NZ	X5,QAR14	. -IF- ^BEFORECOLON -THEN- -JUMP-
		7150000001	SX5	1	. LOWERBOUND := 1 BY DEFAULT
5614	0640005615	QAR14	PL	B4,QAR15	. UPPER IS POSITIVE
		14333	BX3	-X3	. UPPER IS NEGATIVE
5615	37735	QAR15	IX7	X3-X5	. UPPER - LOWER
		7267000001	SX6	X7+1	. U - L + 1
		11116	BX1	X1*X6	
5616	73770		SX7	X7	. BANISH MINUS ZERO
		0337000345	NG	X7,ERR48	. NON-POSITIVE DIMENSION
		27706	PX7	X6	
5617	42447		DX4	X4*X7	. ARRAYSIZE := ARRAYSIZE * DIMENSION
		43752	MX7	42	
		15557	BX5	-X7*X5	. MAKE 60 BITS FIT INTO 18
		15337	BX3	-X7*X3	
5620	20522		LX5	18	. LOWER BOUND
		12535	BX5	X3+X5	. UPPERBOUND
		20644	LX6	36	. U-L+1
		12656	BX6	X5+X6	
5621	0311000347		NZ	X1,ERR50	. DIMENSION TOO LARGE
		5130000204	SA3	MAXSTAT	
5622	7273000001		SX7	X3+1	
		5110000207	SA1	MINSTAK	
5623	54730		SA7	A3	. UPDATE MAXSTAT
		37171	IX1	X7-X1	
		0331005625	NG	X1,QAR16	. STATIC AND STACK HAVE NOT COLLIDED
5624	6231000050		SB3	X1+BUFF4	
		0100002042	RJ	PUSHSTK	. MAKE ROOM
5625	54330	QAR16	SA3	A3	. MAXSTAT AGAIN
		5263777776	SA6	X3-1	. STORE DESCRIPTOR
		10533	BX5	X3	. LEAVE MAXSTAT IN X3, X5
5626	0400005626	QAR17	EQ	*	. RETURN WORD
5627	7211777770	QAR18	SX1	X1-ITY	
		0311000330	NZ	X1,ERR29	. WRONG PARAMETER TYPE
5630	5116777776		SA1	B6-1	
		0100002364	RJ	ITOSF	
5631	5166777776		SA6	B6-1	
		0400005534	EQ	QAR0	
5632		ARRAYQ	BSS	0	
		*			
		*			


```

5656          REMARKQ  BSS      0
*
IN            IFNE      TSS,0
IN            ENDIF
*
  
```

* TIME IS A SNOBOL PRIMITIVE FUNCTION WHICH RETURNS AN 8 CHARACTER
 * PARAMETER(S) (IGNORED) ARE ARBITRARY IN TYPE AND NUMBER.

```

5656 6110005714          QTIME  SB1      QTD          . RETURN
          7140000010      SX4      8              . LENGTH OF VALUE STRING
5657 43306              MX3      6              . 1 CHARACTER MASK
  
```

* LEFT-JUSTIFIED, BLANK FILLED. TOD USES A1-X1,X2,A6-X6, AND RETURNS TO
 * THE ADDRESS PASSED TO IT IN B1.

```

5660 5110005665          TOD      SA1      TODCALL      . SCOPE RA+1 REQUEST WORD
          10611          BX6      X1
          13777          BX7      X7-X7
5661 5170000235          SA7      TODWD          . THE LOW ORDER BIT OF THE RESPONSE
*                                     WORD IS NON-ZERO WHEN THE REQUEST
*                                     PROCESSING IS COMPLETE
          5160000001          SA6      1              . ISSUE REQUEST
5662 5110000001          TOD1     SA1      1
          0311005662          NZ      X1,TOD1      . WAIT FOR COMPLETION
5663 5110000235          SA1      TODWD          . TIME, IN BHH.MM.SS. FORMAT
          5120005666          SA2      TODMASK
5664 13612              BX6      X1-X2          . CHANGE DOTS TO COLONS AND BLANK
          20606              LX6      6              . LEFT JUSTIFY
          0211000000          JP      B1              . RETURN
5665 241115              TODCALL  VFD      18/3LTIM     . PP ROUTINE
          2                  VFD      2/1          . RECALL DESIRED
          000002              VFD      16/2         . TIM FUNCTION FOR T-O-D
          00000235           VFD      24/TODWD     . ADDRESS FOR RESPONSE
          235                TODWD     EQU      PMSX3
5666 0000003400003400002 TODMASK  VFD      24/34B,18/34B,18/2
  
```

* DATE IS LIKE TIME, EXCEPT IT RETURNS A 9 CHARACTER STRING, AS
 * 10 JUL 70.

```

5667 6110005714          QDATE   SB1      QTD
          7140000011      SX4      9
5670 43314              MX3      2*6
  
```

* CALENDR RETURNS THE CURRENT DATE IN X6, FORMATTED AS 10 JUL 70, LEFT
 * JUSTIFIED, BLANK FILLED. CALENDR USES X0,A1-X1,X2,A6-X6. IT RETURNS TO
 * THE ADDRESS PASSED TO IT IN B1.

```

5671 5110005705          CALENDR SA1      DATCALL
          10611          BX6      X1
          13777          BX7      X7-X7
5672 5170000235          SA7      DATWD          . CLEAR RESPONSE WORD
          5160000001          SA6      1              . ISSUE REQUEST
5673 54160              CAL1     SA1      A6
  
```

	0311005673		NZ	X1,CAL1	. WAIT FOR COMPLETION
	43052		MX0	60-18	. =HOLE 18
5674	5110000235		SA1	DATWD	. DATE, IN BMM/DD/YYB FORMAT
	15610		BX6	-X0*X1	. YYB
	20130		LX1	4*6	. LEFT JUSTIFY DD...
5675	43014		MX0	6+6	
	11001		BX0	X0*X1	
	12606		BX6	X0*X6	. DD00000YYB
	21106		AX1	6	. RIGHT JUSTIFY ONES DIGIT OF MONTH
5676	43066		MX0	60-6	
	15210		BX2	-X0*X1	
	7222777743		SX2	X2-1R0-1	. CONVERT TO BINARY (AND SUBTRACT 1)
5677	21106		AX1	6	
	15110		BX1	-X0*X1	. TENS DIGIT OF MONTH
	7211777744		SX1	X1-1R0	. CONVERT TO BINARY
5700	20101		LX1	1	. 2 * TENS
	36212		IX2	X1+X2	. 2 * TENS + ONES - 1
	20102		LX1	2	. 8 * TENS
	36212		IX2	X1+X2	. 10 * TENS + ONES - 1
5701	20273		LX2	59	. DIVIDE BY 2
	5212005706		SA1	MONTHS+X2	
	43036		MX0	30	
5702	0332005703		NG	X2,CAL2	. ODD
	20136		LX1	30	. EVEN
5703	15110	CAL2	BX1	-X0*X1	
	20122		LX1	18	
	12661		BX6	X6+X1	. ADD ABBREVIATION FOR MONTH
5704	0211000000		JP	B1	. RETURN
5705	241115	DATCALL	VFD	18/3LTIM	. PP ROUTINE
	2		VFD	2/1	. RECALL DESIRED
	000001		VFD	16/1	. TIM FUNCTION FOR DATE
	00000235		VFD	24/DATWD	. RESPONSE ADDRESS
	235	DATWD	EQU	PMASX3	
		M	MACRO	E,O	
			VFD	6/1R ,18/3R_E,12/2R ,18/3R_O,6/1R	
			ENDM		
5706	55120116555506050255	MONTHS	M	JAN,FEB	
5707	55150122555501202255		M	MAR,APR	
5710	55150131555512251655		M	MAY,JUN	
5711	55122514555501250755		M	JUL,AUG	
5712	55230520555517032455		M	SEP,OCT	
5713	55161726555504050355		M	NOV,DEC	
5714	43052	QTD	MX0	7*6	
	11706		BX7	X0*X6	. FIRST 7 CHARACTERS
	20652		LX6	7*6	
	56170		GETL		. GET A (CLEARED) FREELIST WORD IN X1
	74210		SX2	A1	. SAVE ADDRESS OF THIS FREE WORD
	12771		BX7	X7+X1	
5717	54710		SA7	A1	
	11636		BX6	X3*X6	
	20444		LX4	18+18	. POSITION FUTURE SVD LENGTH FIELD
	56170		GETL		
	54610		SA6	A1	

		74660	SX6	A6	. LWA FOR SVD TO BE CONSTRUCTED
5722	20622		LX6	18	
	12646		BX6	X4+X6	
		12662	BX6	X6+X2	
5723	7120000002		SX2	2	. STACK BYPASS WORD (TYPE = SF = 0)
5724	56160	QTDC	SA1	B6	. STACK BYPASS OF PARAMETER
	63110		SB1	X1	
	67661		SB6	B6-B1	. POP PARAMETER
		21167	AX1	55	
5725	0311005727		NZ	X1,QTDC1	. NOT SF, SO NOTHING TO FREE
		5011777776	SA1	A1-1	. SF SVD
5726	76770		SX7	B7	
	63710		SB7	X1	
		21122	AX1	18	
		53710	SA7	X1	. LET LAST STRING WORD LINK TO FREE
5727	7255777776	QTDC1	SX5	X5-1	. DECREMENT ACTUAL PARAMETER COUNT
		0315005724	NZ	X5,QTDC	. POP ANOTHER
5730	6166000002		SB6	B6+2	. STACK-SPACE FOR VALUE
		10722	BX7	X2	
		56760	SA7	B6	. BYPASS WORD
5731	5166777776		SA6	B6-1	. VALUE WORD
		0200000441	JP	NEXTMIC	. FINISHED

* CLOCK IS SIMILAR TO DATE AND TIME, BUT IT RETURNS AN INTEGER
 * REPRESENTING THE NUMBER OF MILLISECONDS OF CPU TIME THE JOB HAS
 * CONSUMED SO FAR.

5732	5110005742	QCLOCK	SA1	CLKCALL	
	10611		BX6	X1	
			BX7	X7-X7	
5733	5170000235		SA7	CLKWD	. CLEAR RESPONSE WORD
			SA6	1	. ISSUE REQUEST
5734	54160	QCLK1	SA1	A6	
	0311005734		NZ	X1,QCLK1	. WAIT FOR COMPLETION
			MX0	48	
5735	5110000235		SA1	CLKWD	. 48/SECONDS,12/MILLISECONDS
			BX6	-X0*X1	
			MX0	15	
5736	20033		LX0	15+12	
	11110		BX1	X1*X0	
			LX1	60-12+3	
			BX2	X1	
5737	20101		LX1	1	. 16 * SECONDS
	36221		IX2	X2+X1	. 24 * SECONDS
			LX1	6	. 1024 * SECONDS
			IX1	X1-X2	. 1000 * SECONDS
5740	5120001667		SA2	ITYWD	
			IX6	X1+X6	
5741	0200005724		JP	QTDC	
5742	241115	CLKCALL	VFD	18/3LTIM	. PP ROUTINE
	2		VFD	2/1	. RECALL DESIRED
	000000		VFD	16/0	. TIM FUNCTION FOR ELAPSED TIME
			VFD	24/CLKWD	. RESPONSE ADDRESS
			EQU	PMASX3	
			EQ	PMASX3	
5743		TDCQ	BSS	0	. END OF TIME, DATE, CLOCK

```

*
5743 7255777776          QEOI   SX5     X5-1
      0315000317          NZ      X5,ERR20      . TOO MANY PARAMETERS
5744 6110005745          SB1     QEOI1     . RETURN LINK
      0400005747          EQ      FETLOOK
5745 0314000333          QEOI1   NZ      X4,ERR35     . UNDEFINED FILENAME
      20327              LX3     59-36       . LOOK AT EOI FLAG
5746 0323000465          PL      X3,FAIL    . NOT EOI
      0400005340          EQ      MKNNULL   . MAKE NULL STRING AND RETURN
*
      453
5747 56160              JPB1     EQU      SSKIP1    . ADDRESS OF A -JP B1- INSTRUCTION
      21167              FETLOOK  SA1      B6
      0311000340          AX1      55
5750 5116777776          NZ      X1,ERR40    . ILLEGAL FILENAME
      53110              SA1      B6-1
      10611              SA1      X1          . PICK UP BCD
      10611              BX6     X1
5751 76770              SX7     B7
      54710              SA7     A1
      64770              SB7     A7          . PUT SF WORD BACK ON LIST
      43052              MX0     42
5752 6166777775          SB6     B6-2      . POP STACK
      5130000260          SA3     FETHEAD   . HEAD OF FILE-LIST
5753 5043000001          FETLOOK1 SA4     A3+1     . FIRST WORD OF FET
      11404              BX4     X0*X4     . CLEAR LAST CODE AND STATUS
      13446              BX4     X4-X6     . COMPARE FILENAME TO X6
5754 0304000453          ZR      X4,JPB1   . A4 = ADDRESS OF FET
      7233000000          SX3     X3+0     . GET RID OF DESCRIPTION
5755 0303000453          ZR      X3,JPB1   . A3 = ADDRESS OF LAST LINK
      5233000000          SA3     X3+0
5756 0400005753          EQ      FETLOOK1
*
5757          EOIQ     BSS      0          . EOI NEEDS FETLOOK
*
*
* VALID CHECKS THE FILENAME IN X6. IF IT IS INVALID, X6 IS SET TO ZERO.
* X2, X3, X4, X5, AND X7 ARE USED.
*
5757 00000000000000000000 VALID
5760 5120005765          SA2     MASK
      5130005766          SA3     MAX
5761 15432              BX4     -X2*X3     . MAX(2,4,6,8-10)
      11323              BX3     X2*X3     . MAX(1,3,5,7)
      11526              BX5     X2*X6     . LFN(1,3,5,7)
      15762              BX7     -X2*X6     . LFN(2,4,6,8-10)
5762 37335              IX3     X3-X5
      37447              IX4     X4-X7
      15332              BX3     -X2*X3
      11424              BX4     X2*X4
5763 12334              BX3     X3+X4
      0303005757          ZR      X3,VALID . FILENAME OK
      13666              BX6     X6-X6
5764 0400005757          EQ      VALID
5765 77007700770077000000 MASK  VFD     12/7700B,12/7700B,12/7700B,12/7700B,12/0000B
5766 32444444444444400000 MAX   DATA  7LZ999999 . MAXIMUM ALLOWABLE FILENAME
*
5767 00000000000000000000 OPEN          . OPEN ALTERNR
  
```

5770	56120		SA1	B2	
	7170000120		SX7	120B	. FUNCTION CODE
		12717	BX7	X1+X7	
5771	54710		SA7	A1	
	5110005777		SA1	OPECALL	
		76720	SX7	B2	
5772	12717		BX7	X1+X7	
	43252		MX2	42	
		5170000001	SA7	1	
5773	54170	+	SA1	A7	
	0311005773		NZ	X1,*	
		56120	SA1	B2	
5774	11712		BX7	X1*X2	. CLEAR CODE AND STATUS
	74170		SX1	A7	. ONE BIT
		12717	BX7	X1+X7	
		54710	SA7	A1	
5775	5112000003		SA1	B2+3	
		7271000000	SX7	X1+0	
5776	5172000002		SA7	B2+2	. IN := OUT
	0400005767		EQ	OPEN	
5777	17200520000000000000	OPECALL	VFD	18/3LOPE,2/1,40/0	
6000	6225777775	QOUTPUT	SB2	X5-2	. ATTACH VARIABLE IN OUTPUT SENSE
		0702006003	GT	B2,B0,QOUT1	. CARRIAGE CONTROL CHAR SPECIFIED
6001	0720000340		NG	B2,ERR40	. ILLEGAL FILENAME
		7160000000	SX6	0	. NULL CARRIAGE CONTROL CHARACTER
6002	0400006013		EQ	QOUT3	
6003	56160	QOUT1	SA1	B6	
	5126777776		SA2	B6-1	
		21167	AX1	55	. EXAMINE TYPE
6004	6166777775		SB6	B6-2	. POP PARAMETER
		0311006010	NZ	X1,QOUT2	. CCC NOT A STRING
6005	53120		SA1	X2	. PICK UP STRING
	76770		SX7	B7	. PUT SF
		53720	SA7	X2	. WORD ONTO
		63720	SB7	X2	. FREE CHAIN
6006	43006		MX0	6	
	15210		BX2	-X0*X1	
		0312000330	NZ	X2,ERR29	. TYPE ERROR (CC NOT SINGLE CHAR)
6007	10611		BX6	X1	
	20606		LX6	6	
	0400006013		EQ	QOUT3	
6010	7211777770	QOUT2	SX1	X1-ITY	
		0311000330	NZ	X1,ERR29	
6011	0332000330		NG	X2,ERR29	. TYPE ERROR (MUST BE SINGLE POS DIG)
		7212777765	SX1	X2-10	
6012	0321000330		PL	X1,ERR29	
		7262000033	SX6	X2+1R0	
6013	7150000016	QOUT3	SX5	OUTTY	
	20523		LX5	19	
		12656	BX6	X5+X6	
6014	5160000235		SA6	QIOSV	
	0400006027		EQ	QIO	
6015	6225777775	QINPUT	SB2	X5-2	. ATTACH VARIABLE IN INPUT SENSE
		0702006020	GT	B2,B0,QIN1	. UNIT RECORD LENGTH WAS SPECIFIED
6016	0720000340		NG	B2,ERR40	. ILLEGAL FILENAME
		7160000000	SX6	0	. NULL URL
6017	0400006025		EQ	QIN2	

6020	5100000012		QIN1	SA0	10	
	5110001033			SA1	TENTO10	
6021	10011			BX0	X1	
	0100000660			RJ	SACHEK	. GUARANTEE INTEGER ON TOP OF STACK
6022	20703			LX7	3	. X7 CONTAINS TYPE
	0327000330			PL	X7,ERR29	. TYPE ERROR (URL TOO LARGE)
	43053			MX0	43	
6023	5116777776			SA1	B6-1	
	10611			BX6	X1	
	11001			BX0	X0*X1	
6024	0310000330			NZ	X0,ERR29	. TYPE ERROR (URL TOO LARGE)
	6166777775			SB6	B6-2	. POP STACK
6025	7150000015		QIN2	SX5	INTY	. STATIC RECORD TYPE
	20523			LX5	19	
	12656			BX6	X5+X6	
6026	5160000235			SA6	QIOSV	
6027	6110006030		QIO	SB1	*+1	
	0400005747			EQ	FETLOOK	. SEARCH FOR FET
6030	7003000000			SX0	A3+0	. SAVE BUFFER BLOCK ADDRESS
	0304006046			ZR	X4,QIO2	. BUFFER BLOCK ALREADY EXISTS
6031	5110000204			SA1	MAXSTAT	
	0100005757			RJ	VALID	. CHECK FOR GOOD FILENAME
6032	0306000340			ZR	X6,ERR40	. X6 = 0 OR FILENAME
	5140000202			SA4	BUFFSIZE	
6033	6244000006			SB4	X4+6	. BB LENGTH (FET + HEADER = 6)
	73714			SX7	X1+B4	
	54710			SA7	A1	. UPDATE MAXSTAT
6034	5120000207			SA2	MINSTAK	
	37272			IX2	X7-X2	
	10511			BX5	X1	. SAVE OLD MAXSTAT
6035	0332006037			NG	X2,QIO1	. STATIC AND STACK HAVE NOT COLLIDED
	6232000050			SB3	X2+BUFF4	
6036	0100002042			RJ	PUSHSTK	. X0,X4,X5,X6,B4 MUST BE SAVED
6037	53300		QIO1	SA3	X0	. LAST BB HEADER
	12735			BX7	X3+X5	. ADD LINK
	54730			SA7	A3	
	76140			SX1	B4	. BB LENGTH
6040	7170000032			SX7	SPCTYP	. CATCH-ALL TYPE
	20745			LX7	37	
	12717			BX7	X1+X7	
6041	20722			LX7	18	
	53750			SA7	X5	. STATIC RECORD TYPE
	6150000001			SB5	1	
6042	7275000006			SX7	X5+6	. FWA OF CIRCULAR BUFFER
	53655			SA6	X5+B5	. STORE FILENAME IN FET
	76150			SX1	B5	
6043	20122			LX1	18	. FET LENGTH FIELD
	12617			BX6	X1+X7	
	54665			SA6	A6+B5	. FIRST
	54765			SA7	A6+B5	. IN
6044	54775			SA7	A7+B5	. OUT
	36747			IX7	X4+X7	
	54775			SA7	A7+B5	. LIMIT
	63255			SB2	X5+B5	. FET ADDRESS FOR OPEN ROUTINE
6045	73050			SX0	X5	. ADDRESS OF BUFFER BLOCK
	0100005767			RJ	OPEN	
6046	5110000235		QIO2	SA1	QIOSV	

	20122		LX1	18	
	12610		BX6	X1+X0	. ADD BB POINTER TO FUTURE SVD
6047	20622		LX6	18	
	54610		SA6	A1	
	0100002624		RJ	INDRCT	. GET ADDRESS OF SVD IN X1
6050	10511		BX5	X1	
	56170		SA1	B7	
	0311006052		NZ	X1,QIO3	
6051	0100002057		RJ	MORFREE	
6052	63710	QIO3	SB7	X1	
	5120000235		SA2	QIOSV	
	53350		SA3	X5	. OLD VALUE
6053	10633		BX6	X3	
	10433		BX4	X3	
	21467		AX4	55	
6054	7274777762		SX7	X4-INTY	
	0307000341		ZR	X7,ERR41	. ALREADY ATTACHED
6055	7274777761		SX7	X4-OUTTY	
	0307000341		ZR	X7,ERR41	. ALREADY ATTACHED
6056	54610	QIO4	SA6	A1	. PUT OLD VALUE INTO FREEWORD
	74310		SX3	A1	
	0100002342		RJ	ZROX7	
6057	43005		MX0	5	
	15770		BX7	-X0*X7	. CLEAR SS TYPE
	12623		BX6	X2+X3	. NEW SVD POINTS TO OLD
	53650		SA6	X5	
6060	0400006070		EQ	QIORET	
6061	7255777776	QDETACH	SX5	X5-1	. DETACH A VARIABLE FROM FILE
	0315000317		NZ	X5,ERR20	. TOO MANY PARAMETERS
6062	0100002624		RJ	INDRCT	. RETURN ADDRESS OF SVD IN X1
6063	53210		SA2	X1	
	53320		SA3	X2	. VALUE SVD
	10633		BX6	X3	
	21267		AX2	55	. EXAMINE TYPE
6064	7242777762		SX4	X2-INTY	
	0304006066		ZR	X4,QDTCH1	. INPUT ASSOCIATED
6065	7242777761		SX4	X2-OUTTY	
	0314000334		NZ	X4,ERR36	. NOT ATTACHED
6066	53610	QDTCH1	SA6	X1	. RESTORE VALUE
	7170000000		SX7	0	
	54730		SA7	A3	. MAKE NULL IN LEFT-OVER FREE WORD
6067	74770		SX7	A7	
	10677		BX6	X7	
	20722		LX7	18	
	12767		BX7	X6+X7	. FUNCTION VALUE
6070	5100000002	QIORET	SA0	2	
	0100002052		RJ	RESERVE	. RESERVE TWO STACK WORDS
6071	5176777776		SA7	B6-1	. VALUE
	7170000002		SX7	2	
6072	56760		SA7	B6	. BYPASS
	0400000441		EQ	NEXTMIC	
6073		IOQ	BSS	0	
6073	7255777776	QREWIND	SX5	X5-1	. ROUTINE TO REWIND FILE
	0315000317		NZ	X5,ERR20	. TOO MANY PARAMETERS
6074	6110006075		SB1	QRW0	
	0400005747		EQ	FETLOOK	. SEARCH FOR FET
6075	0314000333	QRW0	NZ	X4,ERR35	. UNDEFINED FILENAME

6076	0100004346		SB2	A4	
6077	5122777776		RJ	TERMIN	. PERFORM WRITER IF OUTPUT FILE
		43602	SA2	B2-1	
		20646	MX6	2	
6100	15626		LX6	2+18+18	
		54620	BX6	-X6*X2	. CLEAR EOR,EOI FLAGS
		5112000002	SA6	A2	
6101	10611		SA1	B2+2	
		5162000003	BX6	X1	
6102	7100000001		SA6	B2+3	. SET OUT := IN
6104	56120		REWIND	RECALL	
		20173	SA1	B2	PICK UP THE FIRST WORD OF THE FET
		0331006106	LX1	59	SHIFT THE COMPLETION BIT TO THE TOP
6105	7100000001		NG	X1,QRW3	IF WE ARE COMPLETE SKIP THE RECALL
6106	56120		RECALL	B2	WE ARE NOT DONE SKIP THE RECALL
		43601	SA1	B2	OH WELL, LETS BE COMPLETELY SAFE
		20612	MX6	1	GENERATE THE ONE BIT SIEVE
		15616	LX6	10	SHIFT THE HOLE TO THE EOI POSITION
6107	54610		BX6	-X6*X1	KNOCK OUT THE ACCURSED EOI BOI BIT
		0400006145	SA6	A1	AND BACK GOES THE BOWDLERIZED EDITION
6110	7255777776		EQ	QEFRW	
		0315000317	QUNLOAD	SX5	X5-1
6111	6110006112		NZ	X5,ERR20	
		0400005747	SB1	QUNL0	CF. CLOSE
6112	0314000333		EQ	FETLOOK	
		64240	QUNL0	NZ	X4,ERR35
		56120	SB2	A4	
6115	7100000001		WAIT		
6117	0400006145		UNLOAD	RECALL	
6120	7255777776		EQ	QEFRW	
		0315000317	QCLOSE	SX5	X5-1
		0400005747	NZ	X5,ERR20	STANDARD PROCEDURE CLOSE(FILE)
6121	6110006122		SB1	QCL0	TOO MANY ARGUMENTS
		0400005747	EQ	FETLOOK	HOME IS WHERE YOUR B1 IS...HA.
6122	0314000333		QCL0	NZ	X4,ERR35
		64240	SB2	A4	CHECK FILE VALIDITY
		56120	WAIT		SHAME ON YOU, YOU DIDNT HAVE THAT FILE
6125	7100000001		CLOSE	RECALL	
6127	0400006145		EQ	QEFRW	
6130	6215777775		QENDFILE	SB1	X5-2
		0701000317	GT	B1,B0,ERR20	. STANDARD PROCEDURE ENDGROUP
6131	13555		BX5	X5-X5	. MORE THAN TWO PARAMETERS
		0710006137	NG	B1,QEOR1	. =0, THE DEFAULT LEVEL NUMBER
6132	5100000012		SA0	10	. USE THE DEFAULT SECOND PARAMETER
		5110001033	SA1	TENTO10	
6133	10011		BX0	X1	
		0100000660	RJ	SACHEK	. GET INTEGER ON TOP OF STACK
6134	20703		LX7	3	. X7 CONTAINS TYPE OF STACK TOP
		0327000330	PL	X7,ERR29	. TYPE ERROR (TOO LARGE)
		43070	MX0	60-4	
6135	5116777776		SA1	B6-1	
		11001	BX0	X0*X1	
		10511	BX5	X1	
6136	0310000330		NZ	X0,ERR29	. LEVEL NUMBER MUST BE BETWEEN ;0,15!
		6166777775	SB6	B6-2	. POP STACK
6137	6110006140		QEOR1	SB1	QEOR2
		0200005747	JP	FP	FETLOOK

6140	0314000333	QEOR2	NZ	X4,ERR35	. NO SUCH FILE
	64240		SB2	A4	
	56120		WAIT		. RECALL IF BUSY
6143	7100000001		SX0	1	. RECALL FLAG FOR CIO CALL
	7170000024		SX7	24B	. =WRITER FUNCTION
6144	20516		LX5	18-4	. POSITION LEVEL NUMBER
	12757		BX7	X5+X7	
	0100004213		RJ	CIO	. ISSUE REQUEST
6145	5100000002	QEFRW	SA0	2	
	0100002052		RJ	RESERVE	
6146	7160000002		SX6	2	
	0100002342		RJ	ZROX7	
6147	43005		MX0	5	
	15770		BX7	-X0*X7	. CLEAR SS TYPE
	5176777776		SA7	B6-1	. MAKE A NULL VALUE
6150	56660		SA6	B6	
	0400000441		EQ	NEXTMIC	
6151		EFRWQ	BSS	0	
		*			
6151	7255777776	QEORL	SX5	X5-1	. STANDARD PROCEDURE EORLEVEL
	0315000317		NZ	X5,ERR20	. TOO MAY PARAMETERS
6152	6110006153		SB1	QEORL1	
	0200005747		JP	FETLOOK	
6153	0314000333	QEORL1	NZ	X4,ERR35	. NO SUCH FILE
	20327		LX3	60-37	. FILE HEADER WORD WAS RETURNED IN X3
6154	0323006160		PL	X3,QEORL3	. EOI FLAG WAS NOT SET
	43673		MX6	59	. =-1, PSEUDO-LEVEL FOR EOI
6155	6166000002	QEORL2	SB6	B6+2	
	5110001667		SA1	ITYWD	
6156	5166777776		SA6	B6-1	. RETURN-VALUE
	10611		BX6	X1	
	56660		SA6	B6	. STACK BYPASS
6157	0200000441		JP	NEXTMIC	. FINISHED
6160	20373	QEORL3	LX3	60-1	. LEFT JUSTIFY EOR FLAG
	0323000465		PL	X3,FAIL	. THE FILE IS NOT AT AN ENDGROUP
	54440		SA4	A4	. LFN AND CODE AND STATUS
6161	21416		AX4	18-4	. RIGHT JUSTIFY LEVEL NUMBER
	7160000017		SX6	17B	
	11664		BX6	X6*X4	
6162	0200006155		JP	QEORL2	
6163		EORLQ	BSS	0	. END OF EORLEVEL
		*			
		*			
6163	7255777776	QDT	SX5	X5-1	
	0315000317		NZ	X5,ERR20	. TOO MANY PARAMETERS
6164	56160		SA1	B6	
	63110		SB1	X1	
	67661		SB6	B6-B1	
	21167		AX1	55	
6165	0311006205		NZ	X1,QDT7	. FOR SURE NOT STRING
	5126000001		SA2	B6+1	
6166	10022		BX0	X2	. SAVE SVD
	66100		SB1	B0	. SET STATE TO BEFORE SIGN
	7170000077		SX7	77B	
6167	6120006216		SB2	QDTS	. INNOCENT UNTIL PROVEN GUILTY
6170	20106	QDT1	LX1	6	

	11371		BX3	X7*X1	. NEXT CHARACTER
	0313006173		NZ	X3,QDT2	. NOT END OF WORD
6171	0302006200		ZR	X2,QDT4	. GUILTY OF INTEGERISM
	53120		SA1	X2	. NEXT STRING WORD
	73210		SX2	X1	. LINK
6172	13112		BX1	X1-X2	. CLEAR LOWER 18 BITS
	0400006170		EQ	QDT1	. TRY AGAIN
6173	7233777744	QDT2	SX3	X3-1R0	
	0333006201		NG	X3,QDT5	. NOT AN INTEGER
6174	7233777765		SX3	X3-1R++1R0	
	0333006177		NG	X3,QDT3	. DIGIT
6175	7233777775		SX3	X3-1R++1R+	
	0323006201		PL	X3,QDT5	. STRING
6176	0510006201		NZ	B1,QDT5	. STRING (TWO SIGNS)
6177	6110000001	QDT3	SB1	1	
	0400006170		EQ	QDT1	
6200	6120006220	QDT4	SB2	QDTI	
6201	76670	QDT5	SX6	B7	
	63700		SB7	X0	
	21022		AX0	18	
	53600		SA6	X0	. RELEASE SF STRING
6202	6166000002	QDT6	SB6	B6+2	
	5110001666		SA1	SSTYWD	
6203	10711		BX7	X1	
	56760		SA7	B6	
	7162000000		SX6	B2+0	
6204	5166777776		SA6	B6-1	
	0400000441		EQ	NEXTMIC	
6205	7211777770	QDT7	SX1	X1-ITY	
	6120006226		SB2	QDTP	
6206	0331006202		NG	X1,QDT6	
	7221777774		SX2	X1-DTY+ITY	
6207	0302006211		ZR	X2,QDT8	
	20101		LX1	1	
6210	6221006220		SB2	X1+QDTI	
	0400006202		EQ	QDT6	
6211	5116000001	QDT8	SA1	B6+1	
	21122		AX1	18	
	53110		SA1	X1	
6212	43022		MX0	18	
	20066		LX0	54	
	7120000002		SX2	SSTY	
6213	11601		BX6	X0*X1	
	20267		LX2	55	
	7031000002		SX3	A1+2	
6214	12626		BX6	X2+X6	
	12636		BX6	X3+X6	
	5160000247		SA6	DTYPWD	
6215	64260		SB2	A6	
	0400006202		EQ	QDT6	
6216	04000006006217006217	QDTS	VFD	5/SSTY,19/6,18/**+1,18/**+1	
6217	23242211160700000000		DATA	6LSTRING	
6220	04000007006221006221	QDTI	VFD	5/SSTY,19/7,18/**+1,18/**+1	
6221	11162405070522000000		DATA	7LINTEGER	
6222	04000004006223006223	QDTR	VFD	5/SSTY,19/4,18/**+1,18/**+1	
6223	22050114000000000000		DATA	4LREAL	
6224	04000005006225006225	QDTA	VFD	5/SSTY,19/5,18/**+1,18/**+1	

6225	01222201310000000000		DATA	5LARRAY	
6226	04000007006227006227	QDTP	VFD	5/SSTY,19/7,18/*+1,18/*+1	
6227	20012424052216000000		DATA	7LPATTERN	
6230	04000004006231006231	QDTN	VFD	5/SSTY,19/4,18/*+1,18/*+1	
6231	16011505000000000000		DATA	4LNAME	
6232	04000004006233006233	QDTC	VFD	5/SSTY,19/4,18/*+1,18/*+1	
6233	03170405000000000000		DATA	4LCODE	
6234		DTQ	BSS	0	
		*			
		*			
6234	7255777776	QFLV	SX5	X5-1	
	0315000317		NZ	X5,ERR20	
6235	56160		SA1	B6	
	63110		SB1	X1	
	67661		SB6	B6-B1	
	21167		AX1	55	
6236	0311006240		NZ	X1,QFLV1	. NO STRING TO RELEASE
	5116000001		SA1	B6+1	
6237	76670		SX6	B7	
	63710		SB7	X1	
	21122		AX1	18	
	53610		SA6	X1	
6240	5110000213	QFLV1	SA1	STAKTOP	
	7160000000		SX6	0	
6241	53210	QFLV2	SA2	X1	. NEXT STACK HEADER
	63120		SB1	X2	. BYPASS
	0302006244		ZR	X2,QFLV4	. DONE
6242	0322006243		PL	X2,QFLV3	. NOT FUNCTION CALL
	7266000001		SX6	X6+1	
6243	67101	QFLV3	SB1	-B1	
	73111		SX1	X1+B1	
	0400006241		EQ	QFLV2	
6244	6166000002	QFLV4	SB6	B6+2	
	5110001667		SA1	ITYWD	
6245	10711		BX7	X1	
	56760		SA7	B6	
	5166777776		SA6	B6-1	
6246	0400000441		EQ	NEXTMIC	
6247		FLVQ	BSS	0	
		*			
		*			
6247	6215777775	QLGT	SB1	X5-2	
	0701000317		GT	B1,B0,ERR20	. TOO MANY PARAMS
6250	0710006271		LT	B1,B0,QLGT6	. SECOND PARAM NULL
	56160		SA1	B6	
	21167		AX1	55	
6251	0311006275		NZ	X1,QLGT7	. SECOND PARAM NOT SF TYPE
6252	5116777775	QLGT1	SA1	B6-2	
	21167		AX1	55	
6253	0311006300		NZ	X1,QLGT8	. FIRST PARM NOT SF
6254	46000	QLGT2	NO		
	5116777774		SA1	B6-3	. FIRST SVD
	10011		BX0	X1	. SAVE
6255	13777	QLGT22	BX7	X7-X7	. PRESET S/F FLAG TO FAILURE
	5126777776		SA2	B6-1	. SECOND SVD
	10522		BX5	X2	. SAVE ALSO
6256	53310	QLGT3	SA3	X1	. WORD OF FIRST STRING

	53420		SA4	X2	
	73130		SX1	X3	. LINK
	73240		SX2	X4	
6257	13313		BX3	X1-X3	. CLEAR LOWER 18 BITS OF STRING WORD
	13424		BX4	X2-X4	
	37343		IX3	X4-X3	
	20373		LX3	59	. LOOK AT BIT 0
6260	0333006262		NG	X3,QLGT4	. FIRST > SECOND
	0313006263		NZ	X3,QLGT5	. FIRST < SECOND
6261	0301006263		ZR	X1,QLGT5	. FIRST @ SECOND
	0312006256		NZ	X2,QLGT3	
6262	0100002342	QLGT4	RJ	ZROX7	. SUCCESS - MAKE NULL VALUE
6263	76670	QLGT5	SX6	B7	
	63700		SB7	X0	
	21022		AX0	18	
	53600		SA6	X0	. FREE FIRST STRING
6264	76670		SX6	B7	
	63750		SB7	X5	
	21522		AX5	18	
	53650		SA6	X5	. FREE SECOND STRING
6265	6166777773		SB6	B6-4	. POP STACK
	0307000465		ZR	X7,FAIL	
6266	6166000002		SB6	B6+2	
	43005		MX0	5	
	15770		BX7	-X0*X7	
6267	5176777776		SA7	B6-1	
	7170000002		SX7	2	
6270	5176000000		SA7	B6+0	
	0400000441		EQ	NEXTMIC	
6271	5100000002	QLGT6	SA0	2	
	0100002052		RJ	RESERVE	. RESERVE STACK SPACE FOR NULL
6272	7160000002		SX6	2	
	0100002342		RJ	ZROX7	
6273	5176777776		SA7	B6-1	. NULL SECOND PARAM
	56660		SA6	B6	
6274	0400006252		EQ	QLGT1	. GO CHECK FIRST PARAM
6275	7211777770	QLGT7	SX1	X1-ITY	
	0311000330		NZ	X1,ERR29	. TYPE ERROR
6276	5116777776		SA1	B6-1	
	0100002364		RJ	ITOSF	
6277	5166777776		SA6	B6-1	
	0400006252		EQ	QLGT1	. GO CHECK FIRST PARAM
6300	7211777770	QLGT8	SX1	X1-ITY	
	0311000330		NZ	X1,ERR29	. TYPE ERROR
6301	5116777774		SA1	B6-3	
	0100002364		RJ	ITOSF	
6302	10166		BX1	X6	
	10011		BX0	X1	. SAVE SVD
	0400006255		EQ	QLGT22	. GO COMPARE STRINGS
6303		LGTQ	BSS	0	
		*			
		*			
6303	7255777776	QDATA	SX5	X5-1	
	0315000317		NZ	X5,ERR20	. ERROR IF MORE THAN ONE PARAMETER
6304	56160		SA1	B6	
	43301		MX3	1	
	10611		BX6	X1	

		21167	AX1	55	
6305	0311000323		NZ	X1,ERR24	. PARAM HAS TO BE A STRING
		5146777776	SA4	B6-1	
6306	66100		SB1	B0	. INITIALIZE FIELD COUNT
	43066		MX0	54	. PREPARE QNXTID
		13222	BX2	X2-X2	
		20366	LX3	54	
6307	12663		BX6	X6+X3	
	56660		SA6	B6	. MARK TOP OPERAND IN STACK
6310	10600	QDAT1	BX6	X0	
	0100005161		RJ	QNXTID	. NEXT IDENTIFIER IN PROTOTYPE
6311	0303006323		ZR	X3,QDAT5	. BRANCH IF END OF PROTOTYPE
	0420000331		EQ	B2,B0,ERR30	. SYNTAX ERROR E. G. A(,
6312	7273777726		SX7	X3-1R(
	0317006316		NZ	X7,QDAT2	
6313	0510000331		NE	B1,B0,ERR30	. SYNTAX ERROR E. G. A(B(
6314	6111777776	QDAT3	SB1	B1-1	. BUMP FIALD COUNT
6315	5166777776	QDAT4	SA6	B6-1	. STORE SVD OF THE IDENTIFIER
	0400006310		EQ	QDAT1	
6316	5100000002	QDAT2	SA0	2	
	0100002052		RJ	RESERVE	
6317	0610000331		GE	B1,B0,ERR30	. SYNTAX ERROR E. G. A,
	74700		SX7	A0	
	56760		SA7	B6	
6320	7213777721		SX1	X3-1R,	
	0301006314		ZR	X1,QDAT3	
6321	7213777725		SX1	X3-1R)	
	0311000331		NZ	X1,ERR30	. SYNTAX ERROR E. G. A(B.
6322	67101		SB1	B0-B1	. B1 IS THE TRUE FIELD COUNT NOW
	0400006315		EQ	QDAT4	
6323	0601000331	QDAT5	GE	B0,B1,ERR30	. SYNTAX ERROR E. G. A
	0520000331		NE	B2,B0,ERR30	. OR A(B
6324	76710		SX7	B1	. SAVE NUMBER OF FIELDS
	5170000235		SA7	QDATSV1	
	66400		SB4	B0	. SIGNAL SF FOR INDRX
6325	5146777776	QDAT6	SA4	B6-1	
	0100005201		RJ	SRCHCLL	. LOOK UP NEXT FUNCTION
6326	5126777776		SA2	B6-1	
	76770		SX7	B7	. FREE THE IDENTIFIER
	63720		SB7	X2	
6327	21222		AX2	18	
	56360		SA3	B6	
	53720		SA7	X2	
	20306		LX3	6	. END LOOP IF TOOPERAND IS MARKED
6330	0333006343		NG	X3,QDAT10	
	6166777775		SB6	B6-2	
6331	7160000002		SX6	FLDTYP	
	7130000001		SX3	1	
6332	20667		LX6	55	. IT IS A FIELD FUNCTION
	20322		LX3	18	. WITH ONE PARAMETER
	12663		BX6	X6+X3	
	10711		BX7	X1	
6333	56170		SA1	B7	
	53670		SA6	X7	
	0311006335		NZ	X1,QDAT7	. PUT ADDRESS ON A LIST
6334	0100002057		RJ	MORFREE	
6335	63710	QDAT7	SB7	X1	

	20722		LX7	18	
	5120000205		SA2	MINSTAT	. BEGINNING OF THE LIST IS IN XWRD
6336	53320		SA3	X2	. CHECK IF ADDRESS IN NOT
	12737		BX7	X3+X7	. REPEATED IN THE LIST
	74610		SX6	A1	
	54710		SA7	A1	
6337	0303006342	QDAT8	ZR	X3,QDAT9	
	53330		SA3	X3	
	13173		BX1	X7-X3	
6340	73330		SX3	X3	
	21122		AX1	18	
	0311006337		NZ	X1,QDAT8	
6341	0400000332		EQ	ERR31	
6342	53620	QDAT9	SA6	X2	
	0400006325		EQ	QDAT6	
6343	5130000235	QDAT10	SA3	QDATSV1	
	5120000204		SA2	MAXSTAT	
6344	6243000001		SB4	X3+1	. NO OF FIELDS + 1
	7100000001		SX0	DATATYP	
6345	20322		LX3	18	. NO OF FIELDS TO X3
	20067		LX0	55	
	12623		BX6	X2+X3	
	12660		BX6	X6+X0	. FUNCTION DESCRIPTOR
6346	73510		SX5	X1	
	5140000207		SA4	MINSTAK	
	73724		SX7	X2+B4	. RESERVE B4 WORDS IN STATIC
6347	37474		IX4	X7-X4	
	54720		SA7	A2	
	0334006351		NG	X4,QDAT11	
6350	6234000050		SB3	X4+BUFF4	
	0100002042		RJ	PUSHSTK	. PUSH THE STACK IF NECESSARY
6351	7100000032	QDAT11	SX0	SPCTYP	. CREATE A STATIC RECORD
	63160		SB1	X6	. CONSISTING OF THE ADDRESSES
	53650		SA6	X5	. OF THE FIELD FUNCTIONS OF
6352	5120000205		SA2	MINSTAT	
	76640		SX6	B4	. THIS DATATYPE.
	53220		SA2	X2	
6353	20622		LX6	18	
	13777		BX7	X7-X7	
	54720		SA7	A2	. CLEAR XWRD
	63220		SB2	X2	
6354	20067		LX0	55	
	12660		BX6	X6+X0	
	56610		SA6	B1	. HEADER
6355	6111000001	QDAT12	SB1	B1+1	
	53320		SA3	X2	. NEXT WORD FROM LIST
	10733		BX7	X3	
6356	21722		AX7	18	
	13157		BX1	X5-X7	. CHECK IF NOT THE SAME NAME AS
	0301000332		ZR	X1,ERR31	. THE DATATYPE
6357	73230		SX2	X3	
	56710		SA7	B1	
	43001		MX0	1	
	12607		BX6	X0+X7	
6360	0312006355		NZ	X2,QDAT12	
	76770		SX7	B7	. FREE THE LIST
	66720		SB7	B2	

6361	54730		SA7	A3	
	56610		SA6	B1	
	0400004732		EQ	QIF2	. NULL VALUE IS RETURNED
			*		
6362		DATAQ	BSS	0	
6362	6110000220	QSTLIMIT	SB1	STLIM	. STANDARD PROCEDURE STLIMIT
	0400006365		EQ	QMAXLN1	
6363	6110000217	QSTCOUNT	SB1	STCOUNT	. STANDARD PROCEDURE STCOUNT
	0400006365		EQ	QMAXLN1	
6364	6110000216	QMAXLN	SB1	MXLNGTH	. STANDARD PROCEDURE MAXLNGTH
6365	7255777776	QMAXLN1	SX5	X5-1	. ERROR IF MORE THAN ONE PARAM
	0315000317		NZ	X5,ERR20	
6366	56160		SA1	B6	
	21167		AX1	55	
	0311006371		NZ	X1,QMAXLN2	. BRANCH IF NOT STRING PARAM
6367	5116777776		SA1	B6-1	
	53110		SA1	X1	
	76770		SX7	B7	
6370	0301006376		ZR	X1,QMAXLN3	. BRANCH IF NULL STRING
6371	5110001033	QMAXLN2	SA1	TENTO10	
	5100000012		SA0	10	
6372	76510		SX5	B1	
	10011		BX0	X1	
	010000660		RJ	SACHEK	. CONVERT PARAM INTO INTEGER FORM
6373	20704		LX7	4	
	0327000330		PL	X7,ERR29	. VALUE TOO BIG
6374	5116777776		SA1	B6-1	
	10711		BX7	X1	
	53750		SA7	X5	. ASSIGN VALUE TO KEYWORD
6375	7150000001		SX5	1	
	0400004724		EQ	QIF	. RETURN NULL
6376	64710	QMAXLN3	SB7	A1	. RETURN THE VALUE OF THE KEYWORD
	54710		SA7	A1	. FREE THE NULL STRING
	56110		SA1	B1	
	10611		BX6	X1	
6377	5166777776		SA6	B6-1	
	5110001667		SA1	ITYWD	
6400	10611		BX6	X1	
	56660		SA6	B6	
	0400000441		EQ	NEXTMIC	
			*		
6401		MAXLNQ	BSS	0	
			*		
6401	7255777776	QALPHA	SX5	X5-1	. STANDARD PROCEDURE ALPHABET
	0315000317		NZ	X5,ERR20	. ERROR IF MORE THAN ONE PARAMETER
6402	56160		SA1	B6	
	63110		SB1	X1	. REMOVE THE PARAMETER
	21167		AX1	55	
	65611		SB6	A1-B1	
6403	0311006405		NZ	X1,QALPHA1	
	5116000001		SA1	B6+1	
6404	76770		SX7	B7	
	63710		SB7	X1	
	21122		AX1	18	
	53710		SA7	X1	
6405	7140006407	QALPHA1	SX4	ABC	. THE RESULT IS THE DISPLAY CODE
	6110000441		SB1	NEXTMIC	. ALPHABET

6406	0400002472		EQ	SOPERND	
		*			
6407	04000077006420006410	ABC	VFD	5/SSTY,19/63,18/ABC2,18/ABC1	
		*			
6410	01020304050607006411	ABC1	VFD	42/01020304050607B,18/*+1	
6411	10111213141516006412		VFD	42/10111213141516B,18/*+1	
6412	17202122232425006413		VFD	42/17202122232425B,18/*+1	
6413	26273031323334006414		VFD	42/26273031323334B,18/*+1	
6414	35363740414243006415		VFD	42/35363740414243B,18/*+1	
6415	44454647505152006416		VFD	42/44454647505152B,18/*+1	
6416	53545556576061006417		VFD	42/53545556576061B,18/*+1	
6417	62636465666770006420		VFD	42/62636465666770B,18/*+1	
6420	71727374757677000000	ABC2	VFD	42/71727374757677B,18/0	
		*			
6421		ALPHAQ	BSS	0	
		*			
6421	7255777776	QFREEZE	SX5	X5-1	
	0315000317		NZ	X5,ERR20	. TOO MANY PARAMETERS
6422	56160		SA1	B6	. SVD
	21167		AX1	55	
	0311000330		NZ	X1,ERR29	. MUST BE STRING
6423	5116777776		SA1	B6-1	. SVD
	53110		SA1	X1	. FIRST (AND HOPEFULLY LAST) WORD
	10611		BX6	X1	
6424	0100005757		RJ	VALID	. CHECK FOR GOOD FILENAME
6425	0306000340		ZR	X6,ERR40	. NO
	5160006452		SA6	QFRZFET	
6426	5110000203		SA1	FIELDLN	
	64260		SB2	A6	. FET ADDRESS FOR OPEN CALL
	10611		BX6	X1	
6427	5066000004		SA6	A6+4	. LIMIT POINTER OF FET
	0100005767		RJ	OPEN	
6430	5110006453		SA1	QFRZFET+1	. FIRST
	73610		SX6	X1	
6431	5061000001		SA6	A1+1	. IN
	7266000001		SX6	X6+1	
6432	5066000001		SA6	A6+1	. OUT
	5110006457		SA1	QFRZWRD	. LOADER TABLE HEADER WORD
6433	10611		BX6	X1	
	76770		SX7	B7	
	5160000107		SA6	BGP2STK-1	. STORE JUST BEFORE REAL SNOBOL
6434	20722		LX7	18	
	76560		SX5	B6	
	12757		BX7	X5+X7	
	20722		LX7	18	
6435	74550		SX5	A5	
	12757		BX7	X5+X7	
	5170000235		SA7	QFRZSV	
6436	0100004341		RJ	CLOSEOUT	. TERMINATE FILE(S)
6437	6120006452		SB2	QFRZFET	. RESTORE B2
	7100000001		BWRITER	RECALL	
6441	0200000522		JP	.END.	. JUST ISSUE END REQUEST
6442	5110000235	QFREEZE1	SA1	QFRZSV	
	53510		SA5	X1	
	21122		AX1	18	
6443	63610		SB6	X1	
	21122		AX1	18	

6444	14222	5120000203		SA2	FIELDLN	
		63710		BX2	-X2	
		64100		SB7	X1	
		73321		SB1	A0	
6445	74700			SX3	X2+B1	
		54720		SX7	A0	
		0303000441		SA7	A2	
6446	6111777776		QFREEZE2	ZR	X3,NEXTMIC	. NEW FL = OLD FL
		7161777776		SB1	B1-1	
6447	63221			SX6	B1-1	
		56610		SB2	X2+B1	
		0520006446		SA6	B1	
6450	76670			NE	B2,B0,QFREEZE2	
		6277777776		SX6	B7	
		56610		SB7	X7-1	
6451	0400000441			SA6	B1	
				EQ	NEXTMIC	
			*			
6452	00000000000000000000		QFRZFET	DATA	0	
6453	00000000000000000106			VFD	60/BGP2STK-2	. FIRST
6454	00000000000000000106			VFD	60/BGP2STK-2	. IN
6455	00000000000000000107			VFD	60/BGP2STK-1	. OUT
6456	00000000000000000000			DATA	0	. LIMIT
6457	50000000000107006442		QFRZWRD	VFD	6/50B,18/0,18/BGP2STK-1,18/QFREEZE1	
			*			
6460			FREEZEQ	BSS	0	
			*			

P1TBL MACRO VAL,ALTVAL,SLB,BUO, IDC,NC, SPACT, SPADD, LITTERM
 VFD 1/SLB,1/BUO,1/SPACT,1/IDC,1/NC,1/LITTERM,18/SPADD,18/
 ,ALTVAL,18/VAL
 ENDM

*
 * PASS 1 TABLE FLAG BITS
 *

1	SLB	EQU	1	. SUPPRESS LEADING BLANKS
1	BUO	EQU	1	. BINARY OR UNARY OPERATOR
1	SPACT	EQU	1	. SPAECIAL ACTION
1	IDC	EQU	1	. IDENTIFIER CHARACTER
1	NC	EQU	1	. NUMBER CHARACTER
1	LITTERM	EQU	1	. LITERAL TERMINATOR

6460	40000000000000000157	P1TAB	P1TBL	P2END,, SLB	ENDPRG
6461	04000000000000770634		P1TBL	-ID,,,, IDC	A
6462	04000000000000770634		P1TBL	-ID,,,, IDC	B
6463	04000000000000770634		P1TBL	-ID,,,, IDC	C
6464	04000000000000770634		P1TBL	-ID,,,, IDC	D
6465	04000000000000770634		P1TBL	-ID,,,, IDC	E
6466	04000000000000770634		P1TBL	-ID,,,, IDC	F
6467	04000000000000770634		P1TBL	-ID,,,, IDC	G
6470	04000000000000770634		P1TBL	-ID,,,, IDC	H
6471	04000000000000770634		P1TBL	-ID,,,, IDC	I
6472	04000000000000770634		P1TBL	-ID,,,, IDC	J
6473	04000000000000770634		P1TBL	-ID,,,, IDC	K
6474	04000000000000770634		P1TBL	-ID,,,, IDC	L
6475	04000000000000770634		P1TBL	-ID,,,, IDC	M
6476	04000000000000770634		P1TBL	-ID,,,, IDC	N
6477	04000000000000770634		P1TBL	-ID,,,, IDC	O
6500	04000000000000770634		P1TBL	-ID,,,, IDC	P
6501	04000000000000770634		P1TBL	-ID,,,, IDC	Q
6502	04000000000000770634		P1TBL	-ID,,,, IDC	R
6503	04000000000000770634		P1TBL	-ID,,,, IDC	S
6504	04000000000000770634		P1TBL	-ID,,,, IDC	T
6505	04000000000000770634		P1TBL	-ID,,,, IDC	U
6506	04000000000000770634		P1TBL	-ID,,,, IDC	V
6507	04000000000000770634		P1TBL	-ID,,,, IDC	W
6510	04000000000000770634		P1TBL	-ID,,,, IDC	X
6511	04000000000000770634		P1TBL	-ID,,,, IDC	Y
6512	04000000000000770634		P1TBL	-ID,,,, IDC	Z
6513	06000000000000770563		P1TBL	-INT,,,, IDC,NC	0
6514	06000000000000770563		P1TBL	-INT,,,, IDC,NC	1
6515	06000000000000770563		P1TBL	-INT,,,, IDC,NC	2
6516	06000000000000770563		P1TBL	-INT,,,, IDC,NC	3
6517	06000000000000770563		P1TBL	-INT,,,, IDC,NC	4
6520	06000000000000770563		P1TBL	-INT,,,, IDC,NC	5
6521	06000000000000770563		P1TBL	-INT,,,, IDC,NC	6
6522	06000000000000770563		P1TBL	-INT,,,, IDC,NC	7
6523	06000000000000770563		P1TBL	-INT,,,, IDC,NC	8
6524	06000000000000770563		P1TBL	-INT,,,, IDC,NC	9
6525	2000000000021000041		P1TBL	P2UNPL,P2PLUS,,BUO +	
6526	2000000000024000044		P1TBL	P2UNMIN,P2MINUS,,BUO	
6527	30000045000027770675		P1TBL	-ASTER1,P2MULT,,BUO,,, SPACT,ASTER-PASS1 *	
6530	30000057000032770664		P1TBL	-SLASH1,P2DIV,,BUO,,, SPACT,SLASH-PASS1 /	
6531	00000000000104770640		P1TBL	-LPAREN,P2LFTPR (
6532	40000000000000000120		P1TBL	P2RGTPR,,SLB)	

6533	20000000000056000076	P1TBL	P2UNDOL,P2DOL,,BUO	\$
6534	40000000000131770735	P1TBL	-SUPPRESS,P2EQUAL,SLB	
6535	0000000000000770721	P1TBL	-BLANK	BLANK
6536	40000000000124770735	P1TBL	-SUPPRESS,P2COMMA,SLB	
6537	24000000000054000071	P1TBL	P2UNPRD,P2PRD,,BUO,IDC	.
6540	00000000000000000167	P1TBL	P2ERR1	#
6541	00000000000112770735	P1TBL	-SUPPRESS,P2LFTBR	[
6542	40000000000000000127	P1TBL	P2RGTR,,SLB]
6543	40000000000134770735	P1TBL	-SUPPRESS,P2CLN,SLB	
6544	00000000000000770613	P1TBL	-LIT	QUOTE
6545	00000000000000000167	P1TBL	P2ERR1	_
6546	20000000000060000165	P1TBL	P2ERR2,P2ALT,,BUO	!
6547	20000000000001000167	P1AND	P1TBL P2ERR1,P2AND,,BUO	&&&&&&&&&&&&&&&&&&&&&
6550	00000000000000770613	P1TBL	-LIT	'
6551	20000000000007000167	P1OR	P1TBL P2ERR1,P2OR,,BUO	????????
6552	20000000000012000167	P1LEFT	P1TBL P2ERR1,P2LEFT,,BUO	<<<<<<<<
6553	20000000000015000167	P1RITE	P1TBL P2ERR1,P2RITE,,BUO	>>>>>>>>
6554	00000000000000000167	P1TBL	P2ERR1	@
6555	00000000000000000167	P1TBL	P2ERR1	\
6556	20000000000004000047	P1NOT	P1TBL P2NOT,P2EOR,,BUO	^^^^^^^^
6557	40000000000144770725	P1TBL	-SEMI,P2SMCLN,SLB	SEMICOLON
6560	41000000000144770725	P1EOS	P1TBL -SEMI,P2SMCLN,SLB,,,,,LITTERM	EOS
6561	20000000000035000165	P1EXP	P1TBL P2ERR2,P2EXP,,BUO	**

*

	6561	P2TBL	EQU	*-1
6562	10001041040	P2AND	HEAD	0,0,13,13,0,0,0,0,1,1,2,2,0,0,2
6563	37400020000044007353		TAIL	176B,0,P3AND,ST10,OUTP2
6564	37400020000054007353		TAIL	176B,0,P3AND,ST12,OUTP2
6565	10001041040	P2EOR	HEAD	0,0,10,10,0,0,0,0,1,1,2,2,0,0,2
6566	37400022000044007353		TAIL	176B,0,P3EOR,ST10,OUTP2
6567	37400022000054007353		TAIL	176B,0,P3EOR,ST12,OUTP2
6570	10001041040	P2OR	HEAD	0,0,07,07,0,0,0,0,1,1,2,2,0,0,2
6571	37400023000044007353		TAIL	176B,0,P3OR,ST10,OUTP2
6572	37400023000054007353		TAIL	176B,0,P3OR,ST12,OUTP2
6573	10001041040	P2LEFT	HEAD	0,0,04,04,0,0,0,0,1,1,2,2,0,0,2
6574	37400024000044007353		TAIL	176B,0,P3LEFT,ST10,OUTP2
6575	37400024000054007353		TAIL	176B,0,P3LEFT,ST12,OUTP2
6576	10001041040	P2RITE	HEAD	0,0,01,01,0,0,0,0,1,1,2,2,0,0,2
6577	37400000000000007356		TAIL	176B,0,0,0,ACT2
6600	37400025000044007353		TAIL	176B,0,P3RITE,ST10,OUTP2
6601	37400025000054007353		TAIL	176B,0,P3RITE,ST12,OUTP2
6602	10001041040	P2PLUS	HEAD	0,0,13,13,0,0,0,0,1,1,2,2,0,0,2
6603	37400026000044007353		TAIL	176B,0,P3PLUS,ST10,OUTP2
6604	37400026000054007353		TAIL	176B,0,P3PLUS,ST12,OUTP2
6605	10001041040	P2MINUS	HEAD	0,0,10,10,0,0,0,0,1,1,2,2,0,0,2
6606	37400027000044007353		TAIL	176B,0,P3MIN,ST10,OUTP2
6607	37400027000054007353		TAIL	176B,0,P3MIN,ST12,OUTP2
6610	10001041040	P2MULT	HEAD	0,0,7,7,0,0,0,0,1,1,2,2,0,0,2
6611	37400030000044007353		TAIL	176B,0,P3MULT,ST10,OUTP2
6612	37400030000054007353		TAIL	176B,0,P3MULT,ST12,OUTP2
6613	10001041040	P2DIV	HEAD	0,0,4,4,0,0,0,0,1,1,2,2,0,0,2
6614	37400031000044007353		TAIL	176B,0,P3DIV,ST10,OUTP2
6615	37400031000054007353		TAIL	176B,0,P3DIV,ST12,OUTP2
6616	10001462100	P2EXP	HEAD	0,0,1,1,0,0,0,0,2,2,3,3,0,0,2
6617	37400000000000007356		TAIL	176B,0,0,0,ACT2
6620	37400032000044007353		TAIL	176B,0,P3EXP,ST10,OUTP2
6621	37400032000054007353		TAIL	176B,0,P3EXP,ST12,OUTP2
6622	10000040040	P2UNPL	HEAD	0,0,0,0,0,0,0,0,1,0,2,0,0,0,2
6623	40000016000044007353		TAIL	200B,0,P3UNPL,ST10,OUTP2
6624	40000016000054007353		TAIL	200B,0,P3UNPL,ST12,OUTP2
6625	10000040040	P2UNMIN	HEAD	0,0,0,0,0,0,0,0,1,0,2,0,0,0,2
6626	40000017000044007353		TAIL	200B,0,P3UNMIN,ST10,OUTP2
6627	40000017000054007353		TAIL	200B,0,P3UNMIN,ST12,OUTP2
6630	10000040040	P2NOT	HEAD	0,0,0,0,0,0,0,0,1,0,2,0,0,0,2
6631	40000021000044007353		TAIL	200B,0,P3NOT,ST10,OUTP2
6632	40000021000054007353		TAIL	200B,0,P3NOT,ST12,OUTP2
6633	04000420000	P2USTAR	HEAD	0,0,0,0,0,0,0,0,0,0,1,1,0,0,1
6634	40026033000014007361		TAIL	200B,ST12,P3STAR,ST4,ACT3
6635	04000420000	P2PRD	HEAD	0,0,7,7,0,0,0,0,0,0,1,1,0,0,1
6636	37426037000014007361		TAIL	176B,ST12,P3PRD,ST4,ACT3
6637	04000420000	P2DOL	HEAD	0,0,5,5,0,0,0,0,0,0,1,1,0,0,1
6640	37426036000014007361		TAIL	176B,ST12,P3DOL,ST4,ACT3
6641	04000420000	P2ALT	HEAD	0,0,3,3,0,0,0,0,0,0,1,1,0,0,1
6642	37400035000050007353		TAIL	176B,0,P3ALT,ST11,OUTP2
6643	30003145240	P2BLANK	HEAD	2,3,1,1,0,0,4,0,5,5,6,6,0,0,6
6644	37400000000000007356		TAIL	176B,0,0,0,ACT2
6645	60000055000004007367		TAIL	300B,0,P3LABEL,ST2,ACT4
6646	37410011000050007370		TAIL	176B,ST5,P3PM,ST11,ACT5
6647	40000000000030007340		TAIL	200B,0,0,ST7,PASS2
6650	37400034000040007353		TAIL	176B,0,P3CAT,ST9,OUTP2
6651	37400034000050007353		TAIL	176B,0,P3CAT,ST11,OUTP2

6652	20002103140	P2UNPRD	HEAD	0,1,2,0,0,0,0,3,3,4,4,0,0,4
6653	40002010000014007433		TAIL	200B,ST2,P3NAME,ST4,ACT20
6654	40000010000014007353		TAIL	200B,0,P3NAME,ST4,OUTP2
6655	40022010000014007361		TAIL	200B,ST10,P3NAME,ST4,ACT3
6656	40026010000014007361		TAIL	200B,ST12,P3NAME,ST4,ACT3
6657	20002103144	P2UNDOL	HEAD	0,5,1,1,0,0,0,2,3,3,4,4,0,0,4
6660	40000007000010007353		TAIL	200B,0,P3INDR,ST3,OUTP2
6661	40014051000010007372		TAIL	200B,ST7,P3BGT,ST3,ACT6
6662	40022007000010007361		TAIL	200B,ST10,P3INDR,ST3,ACT3
6663	40026007000010007361		TAIL	200B,ST12,P3INDR,ST3,ACT3
6664	40002007000010007440		TAIL	200B,ST2,P3INDR,ST3,ACT21
6665	20002103140	P2LFTPR	HEAD	0,7,1,5,0,0,2,0,3,3,4,4,0,0,4
6666	60004045000040007377		TAIL	300B,ST3,P3LFTPR,ST9,ACT9
6667	60000050000034007353		TAIL	300B,0,P3COND,ST8,OUTP2
6670	60022045000040007377		TAIL	300B,ST10,P3LFTPR,ST9,ACT9
6671	60026045000050007377		TAIL	300B,ST12,P3LFTPR,ST11,ACT9
6672	20004045000040007377		TAIL	100B,ST3,P3LFTPR,ST9,ACT9
6673	24002524200	P2LFTBR	HEAD	0,1,2,2,0,0,3,0,4,4,5,5,0,0,5
6674	77002000000010007375		TAIL	374B,ST2,0,ST3,ACT8
6675	20004000000000007412		TAIL	100B,ST3,0,0,ACT13
6676	60014051000014007414		TAIL	300B,ST7,P3BGT,ST4,ACT14
6677	20022000000000007412		TAIL	100B,ST10,0,0,ACT13
6700	20026000000000007412		TAIL	100B,ST12,0,0,ACT13
6701	74031042102	P2RGTPR	HEAD	0,0,14,14,0,0,0,1,2,2,2,2,3,0,15
6702	20000052000030007353		TAIL	100B,0,P3GT,ST7,OUTP2
6703	37400000000000007357		TAIL	176B,0,0,0,ACT11
6704	37400043000000007421		TAIL	176B,0,P3CALL,0,ACT17
6705	54416314600	P2COMMA	HEAD	0,0,10,10,0,0,0,0,12,12,12,1,2,11
6706	37430041000070007361		TAIL	176B,ST13,P3PARAM,ST15,ACT3
6707	37432042000040007361		TAIL	176B,ST14,P3SUBCM,ST9,ACT3
6710	44204631440	P2RGTBR	HEAD	0,0,7,7,0,0,0,0,9,9,9,9,0,1,9
6711	37400044000000007421		TAIL	176B,0,P3RGTBR,0,ACT17
6712	34003567340	P2EQUAL	HEAD	0,1,5,5,2,0,0,0,7,7,7,7,0,0,7
6713	20412012000070007361		TAIL	102B,ST6,P3ASGN,ST15,ACT3
6714	37412013000070007425		TAIL	176B,ST6,P3PMA,ST15,ACT18
6715	14002104200	P2CLN	HEAD	1,7,2,2,5,6,0,0,4,4,4,4,0,0,3
6716	60200055000030007367		TAIL	301B,0,P3LABEL,ST7,ACT4
6717	37600000000000007356		TAIL	177B,0,0,0,ACT2
6720	77400000000000007406		TAIL	376B,0,0,0,ACT12
6721	37400000000000007357		TAIL	176B,0,0,0,ACT16
6722	37400015000030007353		TAIL	176B,0,P3CLN2,ST7,OUTP2
6723	37400014000030007353		TAIL	176B,0,P3CLN1,ST7,OUTP2
6724	60400015000030007353		TAIL	302B,0,P3CLN2,ST7,OUTP2
6725	40003567340	P2SMCLN	HEAD	2,3,4,4,1,5,6,0,7,7,7,7,0,0,8
6726	37600002000000007353		TAIL	177B,0,P3RULE2,ST1,OUTP2
6727	60200000000000007430		TAIL	301B,0,0,0,ACT19
6730	60400002000000007353		TAIL	302B,0,P3RULE2,ST1,OUTP2
6731	37400000000000007356		TAIL	176B,0,0,0,ACT2
6732	37400001000000007353		TAIL	176B,0,P3RULE1,ST1,OUTP2
6733	40000003000000007353		TAIL	200B,0,P3RULE3,ST1,OUTP2
6734	37400000000000007357		TAIL	176B,0,0,0,ACT16
6735	77400000000000007406		TAIL	376B,0,0,0,ACT12
6736	20030005000070007361	AUXPR	TAIL	100B,ST13,P3BCALL,ST15,ACT3
6737	20032006000040007361	AUXBR	TAIL	100B,ST14,P3LFTBR,ST9,ACT3
6740	04210421042	P2END	HEAD	1,1,1,1,1,1,1,1,1,1,1,1,1,1,1
6741	77600047000000007353		TAIL	377B,0,P3END,0,OUTP2
	161	AUXERR	EQU	*-P2TBL

6742	04210421042	P2ERR4	HEAD	1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1
6743	774000000000000007757		TAIL	376B,0,0,0,ERRACT3
6744	04210421042	P2ERR3	HEAD	1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1
6745	774000000000000007755		TAIL	376B,0,0,0,ERRACT2
6746	04210421042	P2ERR2	HEAD	1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1
6747	774000000000000007754		TAIL	376B,0,0,0,ERRACT1
6750	04210421042	P2ERR1	HEAD	1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1
6751	774000000000000007756		TAIL	376B,0,0,0,ERRACT

*

	6751	P3TBL	EQU	*-1
6752	20000002000000007565	P3RULE1	TABLE	20B,0,PRIORI,0,ARULE1
6753	20000002000037007565	P3RULE2	TABLE	20B,0,PRIORI,XSKIP,ARULE1
6754	40000000000000007565	P3RULE3	TABLE	40B,0,0,0,ARULE1
6755	40000000000000007564	P3RULE4	TABLE	40B,0,0,0,ARULE4
6756	40000004000000007607	P3BCALL	TABLE	40B,0,PRIORG,0,ABCALL
6757	42000004000046007572	P3LFTBR	TABLE	42B,0,PRIORG,XARRAY,ALFTBR
6760	40004112000000007460	P3INDR	TABLE	40B,XINDRCV,PRIORA,0,STACKX4
6761	50000012000000007460	P3NAME	TABLE	50B,0,PRIORA,0,STACKX4
6762	20002704000003007575	P3PM	TABLE	20B,XPM,PRIORG,XPMCHK,APM
6763	44003303000000007601	P3ASGN	TABLE	44B,XASGN,PRIORH,0,AASGN
6764	22003403000000000000	P3PMA	TABLE	22B,XASGNPM,PRIORH,0,0
6765	20000002000000007451	P3CLN1	TABLE	20B,0,PRIORI,0,PASS3
6766	20000002000037007451	P3CLN2	TABLE	20B,0,PRIORI,XSKIP,PASS3
6767	02002207000044000000	P3UNPL	TABLE	2B,XUNADD,PRIORD,XZERO,0
6770	02002307000044000000	P3UNMIN	TABLE	2B,XUNSUB,PRIORD,XZERO,0
6771	22001211000004000000	P3AND	TABLE	22B,XAND,PRIORB,XASCHK,0
6772	02001311000044000000	P3NOT	TABLE	2B,XNOT,PRIORB,XZERO,0
6773	22001411000004000000	P3EOR	TABLE	22B,XEOR,PRIORB,XASCHK,0
6774	22001511000004000000	P3OR	TABLE	22B,XOR,PRIORB,XASCHK,0
6775	22001611000004000000	P3LEFT	TABLE	22B,XLEFT,PRIORB,XASCHK,0
6776	22001711000004000000	P3RITE	TABLE	22B,XRITE,PRIORB,XASCHK,0
6777	22002007000004000000	P3PLUS	TABLE	22B,XADD,PRIORD,XASCHK,0
7000	22002107000004000000	P3MIN	TABLE	22B,XSUBTR,PRIORD,XASCHK,0
7001	22002410000005000000	P3MULT	TABLE	22B,XMULT,PRIORC,XMCHK,0
7002	22002510000006000000	P3DIV	TABLE	22B,XDIV,PRIORC,XDCHEK,0
7003	22002611000007000000	P3EXP	TABLE	22B,XEXP,PRIORB,XEXPCHK,0
7004	16003212000000000000	P3STAR	TABLE	16B,XSTAR,PRIORA,0,0
7005	22001006000001000000	P3CAT	TABLE	22B,XCONCAT,PRIORE,XCATCHK,0
7006	22001105000002000000	P3ALT	TABLE	22B,XALT,PRIORF,XALTCHK,0
7007	36003112000000000000	P3DOL	TABLE	36B,XDOL,PRIORA,0,0
7010	36003012000000000000	P3PRD	TABLE	36B,XPRD,PRIORA,0,0
7011	00000000000045007451	P3NULL	TABLE	0B,0,0,XNULL,PASS3
7012	20000005000036007621	P3PARAM	TABLE	20B,0,PRIORF,XPARAM,APARAM
7013	20000005000035007451	P3SUBCM	TABLE	20B,0,PRIORF,XSUBCM,PASS3
7014	20000005000000007623	P3CALL	TABLE	20B,0,PRIORF,0,ACALL
7015	20000005000000007630	P3RGTBR	TABLE	20B,0,PRIORF,0,ARGTBR
7016	02000004000000000000	P3LFTPR	TABLE	2B,0,PRIORG,0,0
7017	20000005000000007571	P3RGTPR	TABLE	20B,0,PRIORF,0,ARGTPR
7020	4000000000000010000	P3END	TABLE	40B,0,0,0,AEND
7021	40000000000000007654	P3COND	TABLE	40B,0,0,0,ACOND
7022	40000003000000007674	P3BGT	TABLE	40B,0,PRIORH,0,ABGT
	51	P3BGT	EQU	P3BGT
7023	40000000000000007667	P3GT	TABLE	40B,0,0,0,AGT
7024	20000004000057007710	P3GTT	TABLE	20B,0,PRIORG,XGOTOT,AGTT
7025	20000004000060007710	P3GTC	TABLE	20B,0,PRIORG,XGOTOC,AGTT
7026	40000000000000007634	P3LABEL	TABLE	40B,0,0,0,ALABEL
		*		
	14	P3ENDUN	EQU	P3CLN1
		*		

7027	0100010274	PRE5	RJ	HEADING	
7030	0100010072	PRE4	RJ	UNPACK	
7031	5124000230	PASS1	SA2	B4+CHAR	NEXT SOURCE CHARACTER
	0332007030		NG	X2,PRE4	
7032	6144000001		SB4	B4+1	
	5232006460		SA3	P1TAB+X2	
7033	73130	NOINPUT1	SX1	X3	VALUE FIELD OF P1TAB ENTRY
	0331007036		NG	X1,BRANCH	
7034	0100007340	NOINPUT2	RJ	PASS2	OUTPUT VALUE FROM P1TAB
7035	0400007031		EQ	PASS1	
7036	14111	BRANCH	BX1	-X1	
	63510		SB5	X1	
	0255000000		JP	B5	JUMP TO COMPL. OF ADDRESS IN TABL
7037	10633	SUPSAVE	BX6	X3	
	5160000254		SA6	P1SVX3	
7040	0100010072		RJ	UNPACK	
7041	5130000254		SA3	P1SVX3	
7042	5124000230	SUPPRESS	SA2	B4+CHAR	SUPPRESS TRAILING BLANKS
	0332007037		NG	X2,SUPSAVE	
7043	6144000001		SB4	B4+1	
7044	7212777722	SUP0	SX1	X2-1R	
	0301007042		ZR	X1,SUPPRESS	
7045	6144777776		SB4	B4-1	BACK UP CHAR POINTER
	20352		LX3	42	GET ALTVAL FIELD OF P1TAB ENTRY
	73130		SX1	X3	
7046	0400007034		EQ	NOINPUT2	
7047	10633	CLX	BX6	X3	
	5160000254		SA6	P1SVX3	SAVE X3
7050	0100010072		RJ	UNPACK	
7051	5130000254		SA3	P1SVX3	
	0400007063		EQ	BLANK1	
7052	5110000256	SEMI	SA1	RULENO	
	7261000001		SX6	X1+1	
7053	5160000256		SA6	RULENO	
	7110000144		SX1	P2SMCLN	
7054	0400007034		EQ	NOINPUT2	
7055	0100010072		RJ	UNPACK	
7056	5124000230	BLANK	SA2	B4+CHAR	PROCESS A BLANK
	0332007055		NG	X2,*-1	
7057	6144000001		SB4	B4+1	
	7212777722		SX1	X2-1R	
7060	0301007056		ZR	X1,BLANK	A STRING OF BLANKS # ONE BLANK
	5232006460		SA3	X2+P1TAB	
7061	0333007033		NG	X3,NOINPUT1	OP REQUIRING LEADING BLNK SUPPRES
7062	20301	BLANK0	LX3	1	LOOK AT BUO FLAG
	0323007073		PL	X3,NOT.UB	NOT AN EITHER/OR OPERATOR
7063	5124000230	BLANK1	SA2	B4+CHAR	
	0332007047		NG	X2,CLX	
7064	6144000001		SB4	B4+1	
	7212777722		SX1	X2-1R	
7065	20373		LX3	59	. CANCEL PREVIOUS LEFT SHIFT
	0301007042		ZR	X1,SUPPRESS	. SUPPRESS BLANKS, OUTPUT CHAR
	20302		LX3	2	. LOOK AT SPECIAL FLAG
7066	0333007075		NG	X3,SPECIAL	GO PROCESS SPECIAL CASE
	20372		LX3	58	
7067	7263000000	NOT.B.1	SX6	X3+0	UNARY VALUE TO OUTPUT LATER
	5160000257		SA6	P1SVTAB	

7070	6144777776		SB4	B4-1	BACK UP CHAR POINTER
	7110000062		SX1	P2BLANK	
7071	0100007340		RJ	PASS2	
7072	5110000257		SA1	P1SVTAB	UNARY VALUE TO OUTPUT NOW
	0400007034		EQ	NOINPUT2	
7073	7110000062	NOT.UB	SX1	P2BLANK	
	6144777776		SB4	B4-1	BACK UP CHAR POINTER
7074	0400007034		EQ	NOINPUT2	
7075	20326	SPECIAL	LX3	22	GET SPECIAL JUMP FIELD
	63530		SB5	X3	
	0255007031		JP	B5+PASS1	
7076	7212777730	ASTER	SX1	X2-1R*	
	0311007100		NZ	X1,NOT.EXP	
7077	5130006561		SA3	P1EXP	
	0400007062		EQ	BLANK0	
7100	7130000052	NOT.EXP	SX3	P2USTAR	
	0400007067		EQ	NOT.B.1	OUTPUT BLANK, THEN USTAR
7101	0100010072		RJ	UNPACK	
7102	5124000230	ASTER1	SA2	B4+CHAR	
	0332007101		NG	X2,*-1	
7103	6144000001		SB4	B4+1	
	7212777730		SX1	X2-1R*	
7104	0311007106		NZ	X1,NOT.EXP1	
	7110000161		SX1	P2ERR4	
7105	0400007034		EQ	NOINPUT2	
7106	7110000052	NOT.EXP1	SX1	P2USTAR	
	6144777776		SB4	B4-1	BACK UP CHAR POINTER
7107	0400007034		EQ	NOINPUT2	
7110	7212777727	SLASH	SX1	X2-1R/	
	0311007120		NZ	X1,NOT.ALT	NOT //, WHICH IS ALTERNATION
7111	5130006546		SA3	P1TAB+1R!	
	0400007062		EQ	BLANK0	
7112	0100010072		RJ	UNPACK	
7113	5124000230	SLASH1	SA2	B4+CHAR	PICK UP CHAR AFTER /
	0332007112		NG	X2,*-1	
7114	6144000001		SB4	B4+1	
	0301007117		ZR	X1,SLASH2	
7115	7212777731		SX1	X2-1R-	
	0311007120		NZ	X1,NOT.ALT	
7116	5130006556		SA3	P1NOT	
	0400007062		EQ	BLANK0	
7117	7110000161	SLASH2	SX1	P2ERR4	
	0400007034		EQ	NOINPUT2	UNARY //, SINCE NO PRECEDING BLAN
7120	7212777725	NOT.ALT	SX1	X2-1R)	
	0311007122		NZ	X1,NOT.RBR	NOT /), WHICH IS RIGHT BRACKET
7121	7110000127		SX1	P2RGTBR	
	0400007034		EQ	NOINPUT2	
7122	7212777730	NOT.RBR	SX1	X2-1R*	
	0311007124		NZ	X1,NOT.AND	
7123	5130006547		SA3	P1AND	
	0400007062		EQ	BLANK0	
7124	7212777732	NOT.AND	SX1	X2-1R+	
	0311007126		NZ	X1,NOT.OR	
7125	5130006551		SA3	P1OR	
	0400007062		EQ	BLANK0	
7126	7212777731	NOT.OR	SX1	X2-1R-	
	0311007130		NZ	X1,NOT.XOR	

7127	5130006556		SA3	P1NOT	
	0400007062		EQ	BLANK0	
7130	7212777755	NOT.XOR	SX1	X2-1RR	
	0311007132		NZ	X1,NOT.RYT	
7131	5130006553		SA3	P1RITE	
	0400007062		EQ	BLANK0	
7132	7212777763	NOT.RYT	SX1	X2-1RL	
	0311007134		NZ	X1,NOT.LFT	
7133	5130006552		SA3	PILEFT	
	0400007062		EQ	BLANK0	
7134	7110000134	NOT.LFT	SX1	P2CLN	
	6144777776		SB4	B4-1	BACK UP CHAR POINTER
7135	0400007034		EQ	NOINPUT2	
7136	0100010072		RJ	UNPACK	
7137	5124000230	LPAREN	SA2	B4+CHAR	
	0332007136		NG	X2,*-1	
7140	6144000001		SB4	B4+1	
	7212777727		SX1	X2-1R/	
7141	5130006531		SA3	P1TAB+1R(
	0311007044		NZ	X1,SUP0	
7142	5130006541		SA3	P1TAB+1R[
	0400007042		EQ	SUPPRESS	

7143	5110000204	ID	SA1	MAXSTAT	TOP OF STATIC
	7261000002		SX6	X1+2	FIRST ADDRESS FOR BCD OF ID
7144	5160000253		SA6	P1MAX	
	7160000052		SX6	42	
7145	5160000250		SA6	CPERW	INITIALIZE CHAR/WORD COUNT
	13555		BX5	X5-X5	X5 WILL HOL UP TO 7 CHARS
	13666		BX6	X6-X6	
7146	5160000246		SA6	CHARLEN	LENGTH OF IDENTIFIER
	0400007155		EQ	ID3	JUMP INTO MAIN LOOP
7147	10655	ID1	BX6	X5	SAVE X5 WHEN CALLING UNPACK
	5160000255		SA6	P1SVX5	
7150	0100010072		RJ	UNPACK	GET MORE CHARACTERS
7151	5110000255		SA1	P1SVX5	
	10511		BX5	X1	RESTORE X5 (MUST SAVE A5)
7152	5124000230	ID2	SA2	B4+CHAR	
	0332007147		NG	X2,ID1	GET MORE CHARACTERS
7153	6144000001		SB4	B4+1	
	5232006460		SA3	P1TAB+X2	LOOK AT IDC FLAG
7154	20303		LX3	3	
	0323007157		PL	X3,ID4	TERMINATOR FOUND
7155	0100007315	ID3	RJ	PUTCHAR	
7156	0400007152		EQ	ID2	
7157	6144777776	ID4	SB4	B4-1	BACK UP CHAR POINTER
	0100007326		RJ	LASTCHAR	STORE LAST WORD WITH ZERO LINK
7160	7160000036		SX6	VARTYP	
	20623		LX6	19	
	12646		BX6	X4+X6	ADD IN LENGTH IN CHARS (LASTCHAR LEAVES LENGTH IN X4)
		*			
7161	20622		LX6	18	
	5130000204		SA3	MAXSTAT	
	37113		IX1	X1-X3	CALCULATE BYPASS, X1 = LWA + 1
7162	12616		BX6	X1+X6	
	20622		LX6	18	
	5263000000		SA6	X3+0	
7163	7110777776		SX1	P2VAR	
	0400007034		EQ	NOINPUT2	

7164	5110000204	LIT	SA1	MAXSTAT	TOP OF STATIC
	7261000002		SX6	X1+2	FWA OF BCD
7165	5160000253		SA6	P1MAX	INITIALIZE P1MAX FOR PUTCHAR
	7160000052		SX6	42	INITIALIZE BITS AVAILABLE/WORD
7166	5160000250		SA6	CPERW	
	13666		BX6	X6-X6	
	13555		BX5	X5-X5	X5 WILL HOLD UP TO 7 CHARS OF LIT
7167	5160000246		SA6	CHARLEN	NUMBER OF CHARS IN LIT
	7232000000		SX3	X2+0	SAVE TERMINATING QUOTE MARK
7170	0400007175		EQ	LIT2	JUMP INTO MAIN LOOP
7171	10633	LIT1	BX6	X3	
	10755		BX7	X5	
	5170000255		SA7	P1SVX5	SAVE X5
7172	5160000254		SA6	P1SVX3	SAVE X3 WHEN GETTING CHARS
	0100010072		RJ	UNPACK	
7173	5130000255		SA3	P1SVX5	
	10533		BX5	X3	
7174	5130000254		SA3	P1SVX3	
7175	5124000230	LIT2	SA2	B4+CHAR	
	0332007171		NG	X2,LIT1	GO GET MORE
7176	6144000001		SB4	B4+1	
	5242006460		SA4	X2+P1TAB	
7177	37632		IX6	X3-X2	SEE IF END OF LITERAL
	0306007202		ZR	X6,LIT3	YES
	20405		LX4	5	
7200	0334007212		NG	X4,LIT4	ERROR - NO LITERAL TERMINATOR
	0100007315		RJ	PUTCHAR	
7201	0400007175		EQ	LIT2	
7202	0100007326	LIT3	RJ	LASTCHAR	
7203	7170000033		SX7	LITTYP	
	20723		LX7	19	
	12747		BX7	X4+X7	X4 = NO OF CHARS (LASTCHAR SETS)
7204	20722		LX7	18	
	5130000204		SA3	MAXSTAT	
	37113		IX1	X1-X3	ITEM LENGTH
7205	12717		BX7	X1+X7	
	20722		LX7	18	
	7110000002		SX1	SSTY	
7206	53730		SA7	X3	LITERAL DESCRIPTOR
	20123		LX1	19	
	12714		BX7	X1+X4	
	20722		LX7	18	
7207	74160		SX1	A6	LWA OF BCD CHARACTERS
	12717		BX7	X1+X7	
	7213000002		SX1	X3+2	FWA OF BCD CHARACTERS
7210	20722		LX7	18	
	12717		BX7	X1+X7	
	5077000001		SA7	A7+1	SIMPLE VARIABLE DESCRIPTOR
7211	7110777775		SX1	P2LIT	
	0400007034		EQ	NOINPUT2	
7212	7110000163	LIT4	SX1	P2ERR3	ERR3 = EOS BEFORE END OF LITERAL
	6144777776		SB4	B4-1	BACK UP CHAR POINTER
7213	0400007034		EQ	NOINPUT2	

7214	5110000204		INT	SA1	MAXSTAT	TOP OF STATIC
	7261000003			SX6	X1+3	
7215	5160000253			SA6	P1MAX	SET UP P1MAX FOR PUTCHAR ROUTINE
	7160000052			SX6	42	BITS AVAILABLE/WORD
7216	5160000250			SA6	CPERW	
	7160000000			SX6	0	
7217	5160000246			SA6	CHARLEN	LENGTH OF INTEGER
	0400007223			EQ	INT1	JUMP INTO MAIN LOOP
7220	0100010072			RJ	UNPACK	GET MORE CHARS
7221	5124000230			SA2	B4+CHAR	
	0332007220			NG	X2,*-1	
7222	6144000001			SB4	B4+1	
7223	7212777744		INT1	SX1	X2-1R0	
	0301007221			ZR	X1,*-2	SKIP LEADING ZEROES
7224	13555			BX5	X5-X5	X5 WILL HOLD UP TO 7 CHARS
	13333			BX3	X3-X3	X3 WILL HOLD BINARY FORM
	5140002341			SA4	TEN	
7225	0400007234			EQ	INT4	GO BEGIN ACTUAL CONVERSION
7226	10633		INT2	BX6	X3	
	5160000254			SA6	P1SVX3	SAVE X3 WHILE GETTING CHARS
	10655			BX6	X5	
7227	5160000255			SA6	P1SVX5	
	0100010072			RJ	UNPACK	
7230	5130000254			SA3	P1SVX3	
	5140000255			SA4	P1SVX5	
7231	10544			BX5	X4	
	5140002341			SA4	TEN	
7232	5124000230		INT3	SA2	B4+CHAR	
	0332007226			NG	X2,INT2	
7233	6144000001			SB4	B4+1	
7234	5212006460		INT4	SA1	X2+P1TAB	
	20104			LX1	4	
7235	0321007246			PL	X1,INT7	TERM FOUND
	5110000246			SA1	CHARLEN	
7236	7211777764			SX1	X1-11	
	0321007242			PL	X1,INT6	TOO LONG, TREAT AS LIT
7237	7262777744		INT5	SX6	X2-1R0	CONVERT DIGIT TO BINARY
	27606			PX6	X6	AND
	24606			NX6	X6	FLOAT
7240	40334			FX3	X3*X4	OLD TOTAL * 10.0
	30336			FX3	X3*X6	+ NEW DIGIT
	0100007315			RJ	PUTCHAR	STORE BCD DIGIT
7241	0400007232			EQ	INT3	
7242	5110000204		INT6	SA1	MAXSTAT	
	5211000003			SA1	X1+3	FIRST WORD OF BCD
7243	43052			MX0	42	
	11601			BX6	X0*X1	CLEAR OLD LINK
	74110			SX1	A1	AND ADD
	12616			BX6	X1+X6	NEW ONE
7244	5061777776			SA6	A1-1	
	7061000000			SX6	A1+0	
7245	5160000253			SA6	P1MAX	P1MAX = C(MAXSTAT)+3
	0400007237			EQ	INT5	GO ON
7246	7262777720		INT7	SX6	X2-1R.	TEST FOR REAL NO.
	0306007265			ZR	X6,REAL	GO PROCESS REAL NUMBER
7247	6144777776			SB4	B4-1	BACK UP CHAR POINTER
	5120000246			SA2	CHARLEN	

7250	7242777764		SX4	X2-11	
	0324007202		PL	X4,LIT3	IF> 10 CHARS, TREAT AS LITERAL
7251	0313007254		NZ	X3,INT8	
	7150000033		SX5	1R0	ALL ZEROES GIVES ONE ZERO DIGIT
7252	7160000044		SX6	36	
	5160000250		SA6	CPERW	SET BITS/WORD TO BE CONSISTENT
7253	7170000001		SX7	1	. CHARACTER COUNT = 1 FOR INTEGER 0
	5170000246		SA7	CHARLEN	
7254	0100007326	INT8	RJ	LASTCHAR	
7255	7160000003		SX6	SITY	
	20623		LX6	19	
	12646		BX6	X4+X6	X4 = CHAR COUNT, FROM LASTCHAR
7256	20622		LX6	18	
	74260		SX2	A6	LWA OF BCD
	12626		BX6	X2+X6	
	20622		LX6	18	
7257	5120000204		SA2	MAXSTAT	
	7242000003		SX4	X2+3	FWA OF BCD
7260	7170000031		SX7	INTTYP	
	20745		LX7	37	
	12646		BX6	X4+X6	
7261	5262000001		SA6	X2+1	SIMPLE VARIABLE DESCRIPTOR
	26653		UX6	B5,X3	
	22656		LX6	B5,X6	
7262	5262000002		SA6	X2+2	
	37112		IX1	X1-X2	
	12617		BX6	X1+X7	ITEM LENGTH
7263	20622		LX6	18	
	53620		SA6	X2	STRING-INTGER DESCRIPTOR
	7110777774		SX1	P2INT	OUTPUT VALUE
7264	0400007034		EQ	NOINPUT2	OUTPUT P2INT AND GO ON

7265	5110005531	REAL	SA1	ONETENTH	=0.1E0
	10511		BX5	X1	X5 WILL HOLD SCALE FACTOR FOR ND
7266	5124000230	REAL1	SA2	B4+CHAR	
	0332007302		NG	X2,CLZ	
7267	6144000001		SB4	B4+1	
	5242006460		SA4	X2+P1TAB	
7270	7222777744		SX2	X2-1R0	
	27202		PX2	X2	
	20404		LX4	4	NUMBER CHARACTER FLAG
7271	0324007273		PL	X4,REAL2	TERMINATOR FOUND
	24202		NX2	X2	
	40225		FX2	X2*X5	SCALE DIGIT
7272	30323		FX3	X2+X3	ADD TO TOTAL
	40515		FX5	X1*X5	NEXT POWER TO SCALE BY
	0400007266		EQ	REAL1	
7273	5110000204	REAL2	SA1	MAXSTAT	
	6144777776		SB4	B4-1	BACK UP CHAR POINTER
7274	10733		BX7	X3	
	5271000002		SA7	X1+2	
	74270		SX2	A7	ADDRESS OF BINARY
7275	7170000010		SX7	RTY	
	20767		LX7	55	
	12727		BX7	X2+X7	
7276	5271000001		SA7	X1+1	
	7170000030		SX7	REALTYP	
7277	20745		LX7	37	
	7120000003		SX2	3	
	12727		BX7	X2+X7	ADD IN ITEM BYPASS
7300	20722		LX7	18	
	53710		SA7	X1	REAL NUMBER DESCRIPTOR
	7110777773		SX1	P2REAL	
7301	0400007034		EQ	NOINPUT2	
7302	10633	CLZ	BX6	X3	
	5160000254		SA6	P1SVX3	SAVE BINARY
	10655		BX6	X5	
7303	5160000255		SA6	P1SVX5	SAVE SCALE FACTOR
	0100010072		RJ	UNPACK	
7304	5130000255		SA3	P1SVX5	
	10533		BX5	X3	(MUST NO TOUCH A5)
7305	5130000254		SA3	P1SVX3	
	5110005531		SA1	ONETENTH	
7306	0400007266		EQ	REAL1	

7307	00000000000000000000	TBUMP	DATA	0	
7310	66560		SB5	B6	
	0760007311		NG	B6,*+1	
	67506		SB5	-B6	
7311	5110000253		SA1	P1MAX	
	7211000001		SX1	X1+1	
7312	63515		SB5	X1+B5	
	0750007307		NG	B5,TBUMP	
7313	0100010037		RJ	BUMP	
7314	0400007310		EQ	TBUMP+1	
7315	00000000000000000000	PUTCHAR	DATA	0	ADD CHAR IN XI TO THOSE IN X5
7316	20506		LX5	6	
	12525		BX5	X2+X5	
	5120000246		SA2	CHARLEN	
7317	7262000001		SX6	X2+1	
	5160000246		SA6	CHARLEN	
7320	5120000250		SA2	CPERW	
	7262777771		SX6	X2-6	
7321	0316007325		NZ	X6,PUTCHAR1	
	0100007307		RJ	TBUMP	RETURN WITH C(P1MAX)+1 IN X1
7322	20522		LX5	18	
	12615		BX6	X1+X5	LINK
	5261777776		SA6	X1-1	
7323	7150000000		SX5	0	
	7261000000		SX6	X1+0	
7324	5061000000		SA6	A1+0	UPDATE P1MAX (= * + 1)
	7160000052		SX6	42	RESET BITS REMAINING/WORD
7325	5160000250	PUTCHAR1	SA6	CPERW	
	0400007315		EQ	PUTCHAR	
7326	00000000000000000000	LASTCHAR	DATA	0	
7327	5140000246		SA4	CHARLEN	
	0305007334		ZR	X5,LC1	
7330	0100007307	LC0	RJ	TBUMP	GET C(P1MAX) + 1 IN X1
7331	5120000250		SA2	CPERW	
	6232000022		SB3	X2+18	
7332	22635		LX6	B3,X5	
	5261777776		SA6	X1-1	
7333	0400007326		EQ	LASTCHAR	
7334	0304007330	LC1	ZR	X4,LC0	
	5110000253		SA1	P1MAX	
7335	5221777776		SA2	X1-1	
	43052		MX0	42	
	11602		BX6	X0*X2	ZERO LINK FOR LAST WORD
7336	5062000000		SA6	A2+0	
	0400007326		EQ	LASTCHAR	

7337	6170000000	ZEND	SB7	0	. SET OPERAND SITUATION TO ZERO
		*			
7340	46000	PASS2	NO		. ENTRY TO PASS2
7341	0331007351	P2TRCT	NG	X1,OPRACT	. CHANGED IF TESTOUTPUT TO EQ P2TRC
	0710007751		LT	B1,B0,INSKIP	. BRANCH IF AFTER ERROR
7342	5221006561	ACT1	SA2	X1+P2TBL	. FETCH TABLEWORD
	43070		MX0	56	
	23212		AX2	B1,X2	. SECONDARY WORD INDEX DEPENDS ON
7343	15220		BX2	-X0*X2	. THE STATE (B1)
	63220		SB2	X2	
	0402007760		EQ	B0,B2,SYXERR	. SYNTAX ERROR IF IT IS ZERO
7344	54222		SA2	A2+B2	
	23472		AX4	B7,X2	. BRANCH IF OPERAND SITUATION IS
	0334007347		NG	X4,ACT1A	.ALLOWABLE
7345	7271777715		SX7	X1-P2BLANK	
	0307007765		ZR	X7,OPRERR4	BLANK AFTER AN UNARY
7346	0400007762		EQ	OPRERR1	NONE OF THE ABOVE
7347	63320	ACT1A	SB3	X2	. ACTION TO B3
	21222		AX2	18	
	6212000000		SB1	X2+0	. NEW STATE TO B1
7350	0233000000		JP	B3+0	. SWITCH TO ACTION
		*			
7351	0507007763	OPRACT	NE	B0,B7,OPRERR2	. ERROR, DELIMITER IS MISSING
	63710		SB7	X1	
7352	0400007340		EQ	PASS2	. NEW OPERAND SITUATION TO B7
7353	20242	OUTP2	LX2	34	. OUTPUT OUTPART AND RETURN
	21264		AX2	52	
	73120		SX1	X2	
7354	0301007337	OUTX1	ZR	X1,ZEND	
	0100007451		RJ	PASS3	
7355	0400007337		EQ	ZEND	
		*			
7356	6120777772	ACT2	SB2	OPSEXP	
	0427007424		EQ	B2,B7,ACT17A	
7357	54300	DESTACK	SA3	A0	. RESTORE STATE AND ACTION FROM
		*			. THE STACK
	5000000001		SA0	A0+1	
	63330		SB3	X3	
7360	21322		AX3	18	
	63130		SB1	X3	
	0233000000		JP	B3+0	. SWITCH TO ACTION
		*			
7361	7170007342	ACT3	SX7	ACT1	
7362	6120007353	STAKOUT	SB2	OUTP2	
7363	10622	STACKX7	BX6	X2	. SET X6 TO STACKPART OF THE
	20632		LX6	26	. SECONDARY TABLEWORD
	21664		AX6	52	
7364	20622	STACKP2	LX6	18	. STACK X6 AND X7, RETURN TO B2
	5000777776		SA0	A0-1	
	12667		BX6	X6+X7	
7365	64300		SB3	A0	. CHECK BUMPING AGAINST PASS3
	65353		SB3	A5-B3	. STACK
	5060000000		SA6	A0+0	
7366	0630000354		GE	B3,B0,FATBUMP	
	0222000000		JP	B2+0	
		*			
7367	0507007353	ACT4	NE	B0,B7,OUTP2	. BLANK IN STATE 1

	0400007340		EQ	PASS2	
		*			
7370	7177000000	ACT5	SX7	B7+0	. BLANK IN STATE 2
	5170000226		SA7	TSTPMOP	
7371	0400007361		EQ	ACT3	
		*			
7372	7170007373	ACT6	SX7	ACT7	. \$ IN CONDITION
	0400007362		EQ	STAKOUT	
7373	7201777657	ACT7	SX0	X1-P2RGTPR	
	0310007761		NZ	X0,SYXERR1	
7374	7110000053		SX1	P3GTT	
	0400007354		EQ	OUTX1	
		*			
7375	6120007342	ACT8	SB2	ACT1	. WEIRD CHARACTER IN STATE2
	7170007342		SX7	ACT1	
7376	0400007363		EQ	STACKX7	
		*			
7377	7170007403	ACT9	SX7	ACT10	. LEFT PARANTHESES ACTION
	0407007362		EQ	B0,B7,STAKOUT	. NO OPERAND
7400	6120007402		SB2	ACT9A	. IDENTIFIER OPERAND
7401	7170007340	ACT9B	SX7	PASS2	
	0400007363		EQ	STACKX7	
7402	5120006736	ACT9A	SA2	AUXPR	
	0400007347		EQ	ACT1A	
7403	7201777657	ACT10	SX0	X1-P2RGTPR	. CHECK MATCHING RIGHT
	0310007767		NZ	X0,SYXERR2	
7404	7110000046		SX1	P3RGTPR	
	0100007451		RJ	PASS3	
7405	6170777772		SB7	OPSEXP	
	0400007340		EQ	PASS2	
		*			
	7357	ACT11	EQU	DESTACK	. RIGHT PARANTHESES ACTION
		*			
7406	0507007357	ACT12	NE	B0,B7,ACT11	. TERMINATOR IN STATE 15
	6211000000		SB1	X1+0	. WITHOUT OPERAND
7407	7110000040		SX1	P3NULL	. SAVE X1 IN B1
	0100007451		RJ	PASS3	. OUTPUT P3NULL
7410	76110		SX1	B1	. RESTORE X1 (LAST INPUT BYTE)
	6170777771		SB7	OPSSPEC	
7411	0400007357		EQ	DESTACK	
		*			
7412	6120007413	ACT13	SB2	ACT13A	. LEFT BRACKET ACTION
	0400007401		EQ	ACT9B	
7413	5120006737	ACT13A	SA2	AUXBR	
	0400007347		EQ	ACT1A	
		*			
7414	7150007417	ACT14	SX5	ACT15	. LEFT BRACKET AMONG CONDITIONS
	7110000050		SX1	P3COND	
7415	10022		BX0	X2	
	0100007451		RJ	PASS3	. OUTPUT P3COND
7416	10755		BX7	X5	. PASS 3 SAVES X5,X0 IN THIS
	10200		BX2	X0	. PARTICULAR CASE
	0400007362		EQ	STAKOUT	
7417	7201777650	ACT15	SX0	X1-P2RGTB	
	0310007770		NZ	X0,SYXERR3	
7420	7110000054		SX1	P3GTC	
	0400007354		EQ	OUTX1	

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*
7357 ACT16 EQU DESTACK .
*
7421 20242 ACT17 LX2 34 . END OF PARAMETER OR SUBSCRIPT
      21264 AX2 52 . LIST
      63110 SB1 X1 . SAVE X1
      73120 SX1 X2
7422 0100007451 RJ PASS3 . OUTPUT OUTPART
7423 7111000000 SX1 B1+0 . RESTORE X1
7424 6170777771 ACT17A SB7 OPSSPEC .
      0400007357 EQ DESTACK
*
7425 5130000226 ACT18 SA3 TSTPMOP . EQUAL SIGN IN STATE 5
      7203000001 SX0 X3-OPSVAR . LEFT OPERAND OF PM
7426 0300007361 ZR X0,ACT3 . CAN BE VARIABLE OR SPEC
      7203000006 SX0 X3-OPSSPEC
7427 0300007361 ZR X0,ACT3
      0400007764 EQ OPRERR3
*
7430 0407007432 ACT19 EQ B0,B7,ACT19A . SEMICOLON IN STATE 1
      7110000055 SX1 P3LABEL
7431 0100007451 RJ PASS3
7432 7110000004 ACT19A SX1 P3RULE4
      0400007354 EQ OUTX1
*
7433 7170007434 ACT20 SX7 ACT20A . NAME OPERATOR IN STATE 2
      0400007362 EQ STAKOUT
7434 6211000000 ACT20A SB1 X1+0 . SAVE X1
      7110000014 SX1 P3ENDUN
7435 0100007451 RJ PASS3 . OUTPUT END UNARY OPERATOR
7436 6170777772 SB7 OPSEXP
      7111000000 SX1 B1+0
7437 6110000004 SB1 ST2
      0400007342 EQ ACT1
7440 7170007441 ACT21 SX7 ACT21A . INDIRECT OPERATOR IN STATE 2
      0400007362 EQ STAKOUT
7441 6211000000 ACT21A SB1 X1+0
      7110000014 SX1 P3ENDUN
7442 0100007451 RJ PASS3 . OUTPUT END UNARY OPERATOR
7443 7111000000 SX1 B1+0 . RESTORE X1
      6170777771 SB7 OPSSPEC
7444 6110000004 SB1 ST2
      0400007342 EQ ACT1
*
7445 0400007446 P2TRCS EQ P2TRC
7446 7170000002 P2TRC SX7 2 . TEST OUTPUT
      0100010220 RJ TRC
7447 0331007351 NG X1,OPRACT . INSTRUCTIONS DISPLACED BY
      0710007751 LT B1,B0,INSKIP . TEST OUTPUT CALL
7450 0400007342 EQ ACT1

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7451	46000	PASS3	NO		. ENTRY TO PASS 3
7452	5241006751	P3TRCT	SA4	X1+P3TBL	. FETCH TABLEWORD
	0334007466		NG	X4,PASS3A	. BRANCH IF ACTION FIRST
7453	10144	P3TRC1	BX1	X4	. (CHANGED IF TESTOUTPUT.
	20101		LX1	1	
	0321007455		PL	X1,P3OUT	
7454	0100007532		RJ	OUTST	. OUTST IF BIT IS SET
7455	10544	P3OUT	BX5	X4	
	21522		AX5	18	
	73650		SX6	X5	
7456	0306007457	P3OUTA	ZR	X6,PASS3B	. OUTPUT OUTPART UNLESS IT IS ZERO
	0100007717		RJ	PASS4	
7457	10544	PASS3B	BX5	X4	
	20504		LX5	4	
	0325007466		PL	X5,PASS3A	. BRANCH IF BIT IS SET
7460	10644	STACKX4	BX6	X4	
	5065000001		SA6	A5+1	. STACK TABLEWORD
	64200		SB2	A0	
7461	65252		SB2	A5-B2	. CHECK BUMPING AGAINST PASS 2
	54560		SA5	A6	. STACK
	0720007451		LT	B2,B0,PASS3	. AND RETURN
7462	0400000354		EQ	FATBUMP	
7463	0400007464	P3TRCS	EQ	P3TRC	
7464	7170000003	P3TRC	SX7	3	. TEST OUTPUT
	0100010220		RJ	TRC	
7465	5241006751		SA4	X1+P3TBL	
	0324007453		PL	X4,P3TRC1	
7466	63240	PASS3A	SB2	X4	
	0222000000		JP	B2+0	

*

7467	46000	GETVAR	NO		
7470	5120000204	+	SA2	MAXSTAT	. SET UP SEARCH CALL
	6252000002		SB5	X2+2	
7471	53320		SA3	X2	
	10522		BX5	X2	
	10033		BX0	X3	
	21344		AX3	36	
7472	63330		SB3	X3	
	0100002675		RJ	SEARCH	
7473	0311007467		NZ	X1,GETVAR	. LOOK UP OPERAND
	0100007477		RJ	SCHLINK	
7474	6120777776		SB2	OPSVAR	
	0527007467		NE	B2,B7,GETVAR	
7475	5120000224		SA2	VARLINK	. IF VARIABLE LINK IT TO A CHAIN
	10722		BX7	X2	. SO AT THE END IT WILL BE
	73610		SX6	X1	. INITIALIZED TO A NULL VALUE
7476	53710		SA7	X1	
	54620		SA6	A2	
	0400007467		EQ	GETVAR	
		*			
7477	46000	SCHLINK	NO		
7500	53150	+	SA1	X5	. SET UP LINKAGE IF OPERAND
	21122		AX1	18	. WAS NOT FOUND
	63210		SB2	X1	
	73652		SX6	X5+B2	
7501	12725		BX7	X2+X5	
	5160000204		SA6	MAXSTAT	
	54720		SA7	A2	
7502	7215000001		SX1	X5+1	
	0400007477		EQ	SCHLINK	
		*			
7503	46000	SCHLBL	NO		
7504	5120000204	+	SA2	MAXSTAT	. SET UP SEARCH CALL
	53320		SA3	X2	
	10522		BX5	X2	
7505	6252000002		SB5	X2+2	
	7100000034		SX0	LBLTYP	
7506	21344		AX3	36	
	20067		LX0	55	. LABEL TYPE TO X0
	63330		SB3	X3	
7507	0100002675		RJ	SEARCH	
7510	0311007503		NZ	X1,SCHLBL	. RETURN IF FOUND
	0100007477		RJ	SCHLINK	
7511	53250		SA2	X5	
	43305		MX3	5	
	15623		BX6	-X3*X2	
	12606		BX6	X0+X6	
7512	5062000000		SA6	A2+0	
	7130000000		SX3	0	. DIRTY TRICK WITH X3
7513	43721	SCHLBL1	MX7	17	
	5120000223		SA2	LBLLINK	. LINK IT TO LABEL CHAIN
	20722		LX7	18	
7514	73610		SX6	X1	
	20222		LX2	18	
	54620		SA6	A2	
	12727		BX7	X2+X7	
7515	12737		BX7	X3+X7	. SEE ALSO GETLBL3

	53710		SA7	X1	
	0400007503		EQ	SCHLBL	
		*			
7516	43052	GETLBL1	MX0	42	. THIS IS NOT THE ENTRY
	15130		BX1	-X0*X3	
7517	46000	GETLBL	NO		
7520	0100007503	+	RJ	SCHLBL	. LOOK UP LABEL
7521	53210		SA2	X1	. LABEL DESCRIPTION TO X2
	73320		SX3	X2	
	0332007516		NG	X2,GETLBL1	. STANDARD LABEL (RETURN, ETC.)
7522	10622		BX6	X2	
	21622		AX6	18	
	43052		MX0	42	
	73660		SX6	X6	
7523	0306007531		ZR	X6,GETLBL3	. BRANCH IF NOT ON THE CHAIN
	0323007516		PL	X3,GETLBL1	. DEFINED LABEL ON THE CHAIN
7524	5110000227		SA1	PRGBASE	
	73616		SX6	X1+B6	
7525	0760007526		LT	B6,B0,GETLBL2	. RELATIVE MICOP ADDRESS
	77606		SX6	B0-B6	. TO X6
	36616		IX6	X1+X6	
7526	14666	GETLBL2	BX6	-X6	
	7266777776		SX6	X6-1	. MAKE IT NEGATIVE
	11202		BX2	X0*X2	
7527	15660		BX6	-X0*X6	
	12626		BX6	X2+X6	
	54620		SA6	A2	
	15130		BX1	-X0*X3	
7530	0400007517		EQ	GETLBL	
7531	15320	GETLBL3	BX3	-X0*X2	. NOTE HOW WE JUMP INSIDE OF SCHLBL
	20344		LX3	36	. WHICH HAS JUST BEEN CALLED
	0400007513		EQ	SCHLBL1	
		*			
7532	46000	OUTST	NO		
7533	6120777773	+	SB2	OPREAL	. BYPASS IF OPERAND IS EXPRESSION
	0772007537		LT	B7,B2,OUTST3	. OR SPEC
7534	0100007467		RJ	GETVAR	
7535	7160000053	OUTST2	SX6	XOPRND	. OUTPUT OPERAND
	20122		LX1	18	
	12616		BX6	X1+X6	
7536	0100007717		RJ	PASS4	
7537	10144	OUTST3	BX1	X4	
	43066		MX0	54	
	21144		AX1	36	
	15210		BX2	-X0*X1	. THE PRIORITY OF THE OPERATOR
7540	6252000000		SB5	X2+0	. TO B5
	5055000000		SA5	A5+0	. TOP ELEMENT IN THE STACK TO X5
7541	20530	OUTST4	LX5	24	
	43066		MX0	54	
	15250		BX2	-X0*X5	
	63320		SB3	X2	. PRIORITY OF TOP OPERATOR
7542	0735007532		LT	B3,B5,OUTST	. IF SMALLER , EXIT
	13666		BX6	X6-X6	
	20546		LX5	38	. IF NOT NAME, STAR ETC.
7543	0325007553		PL	X5,OUTST7	. THEN BYPASS
	0100007555		RJ	GIVENM	
7544	20501		LX5	1	. BRANCH IF LAST MICOP IS

	13666		BX6	X6-X6	
	0322007550		PL	X2,OUTST5	. NOT AN OPERAND
7545	0325007550		PL	X5,OUTST5	
	56160		SA1	B6	. ONLY FOR STAR, PRD OR DOL
	21122		AX1	18	
7546	73610		SX6	X1	
	6166000001		SB6	B6+1	
	67606		SB6	B0-B6	
7547	20622	OUTST8	LX6	18	
7550	43060	OUTST5	MX0	48	
	21555		AX5	45	. OUTPUT TOP OPERATOR
	15050		BX0	-X0*X5	
	12606		BX6	X0+X6	
7551	0306007552		ZR	X6,OUTST6	. UNLESS ZERO
	0100007717		RJ	PASS4	
7552	5055777776	OUTST6	SA5	A5-1	
	0400007541		EQ	OUTST4	
7553	20501	OUTST7	LX5	1	. JUMP BACK IF NOT ASSIGN
	0325007550		PL	X5,OUTST5	
	10655		BX6	X5	
7554	20625		LX6	21	. ADDRESS OF ASSIGN TO X6
	21652		AX6	42	
	0400007547		EQ	OUTST8	
		*			
7555	46000	GIVENM	NO		
7556	0760007562	+	LT	B6,B0,GIVENM1	. BYPASS IF LAST MICOP WAS A XCALL
	56160		SA1	B6	
	43065		MX0	53	
7557	5221000357		SA2	X1+MCOPTBL	
	20245		LX2	37	. EXCHANGE LAST MICOP BY ITS
	43652		MX6	42	. NAME ALTERNATIVE
7560	15720		BX7	-X0*X2	
	11661		BX6	X6*X1	
	12767		BX7	X6+X7	
	56760		SA7	B6	
7561	13666		BX6	X6-X6	. X6 MUST BE STILL ZERO
	0400007555		EQ	GIVENM	
7562	43201	GIVENM1	MX2	1	. IF XCALL, SET CHECK NAME BIT
	57106		SA1	B0-B6	
	20273		LX2	59	
	12612		BX6	X1+X2	
7563	54610		SA6	A1	
	0400007555		EQ	GIVENM	

7564	7160000000	ARULE4	SX6	XNOOP	. EMPTY RULE
	0100007717		RJ	PASS4	
7565	0660007566	ARULE1	GE	B6,B0,ARULEA	. SET NEW RULE BIT ON LAST MICOP
	67606		SB6	B0-B6	
7566	56160	ARULEA	SA1	B6	
	43001		MX0	1	
	12601		BX6	X0+X1	
	13777		BX7	X7-X7	
7567	54610		SA6	A1	
	67606		SB6	B0-B6	. NEXT MICOP INTO NEW WORD
	5170000225		SA7	TESTCND	
7570	0400007451		EQ	PASS3	
		*			
7571	5055777776	ARGTPR	SA5	A5-1	. RIGHT PARANTHESES, REMOVE TOP
	0400007451		EQ	PASS3	. OPERATOR
		*			
7572	0100007467	ALFTBR	RJ	GETVAR	. LEFT BRACKET
7573	10544		BX5	X4	
	21522		AX5	18	
	20122		LX1	18	
	73650		SX6	X5	
7574	12616		BX6	X1+X6	
	0400007456		EQ	P3OUTA	
		*			
7575	6120777773	APM	SB2	OPREAL	. PATTERN MATCH
	0772007460		LT	B7,B2,STACKX4	. BRANCH IF LEFT OP NOT SIMPLE
7576	57106		SA1	-B6	
	10611		BX6	X1	. SET ADDRESS PART OF PMCHECK TO
	21122		AX1	18	. OPERAND ADDRESS
	73110		SX1	X1	
7577	20144		LX1	36	
	12616		BX6	X1+X6	
	54610		SA6	A1	
7600	0400007460		EQ	STACKX4	
		*			
7601	7107000001	AASGN	SX0	B7-OPSVAR	
	0300007605		ZR	X0,AASGN1	
7602	0100007532		RJ	OUTST	
7603	0100007555		RJ	GIVENM	
7604	0400007460		EQ	STACKX4	
7605	0100007467	AASGN1	RJ	GETVAR	
7606	20122		LX1	18	
	12414		BX4	X1+X4	
	0400007460		EQ	STACKX4	
		*			
7607	5120000204	ABCALL	SA2	MAXSTAT	. BEGIN CALL ACTION
	7100000003		SX0	3	. CALLTYP EQORED WITH VARTYPE
7610	6252000002		SB5	X2+2	
	20067		LX0	55	
	53320		SA3	X2	. LOOK UP FUNCTION
7611	13730		BX7	X3-X0	
	10522		BX5	X2	
	10077		BX0	X7	
	21344		AX3	36	
7612	54730		SA7	A3	
	63330		SB3	X3	
	0100002675		RJ	SEARCH	

7613	0311007616		NZ	X1,ABCALL1	
	0100007477		RJ	SCHLINK	. IF NEW, INITIALIZE TO UNDEFINED
7614	7120377777		SX2	MARK	
	7170000003		SX7	UNDF TYP	
7615	20767		LX7	55	
	20222		LX2	18	. AS MANY PARAMS AS YUO WISH
	12772		BX7	X7+X2	
	53710		SA7	X1	
7616	53210	ABCALL1	SA2	X1	. CLEAR NOT USED BIT
	20202		LX2	2	
	21201		AX2	1	
	20273		LX2	59	
7617	10722		BX7	X2	. STACK AN ENTRY WITH X1
	20122		LX1	18	. AND 0 COUNTING PART
	54720		SA7	A2	
	43052		MX0	42	
7620	12441		BX4	X4+X1	
	11404		BX4	X0*X4	
	0400007460		EQ	STACKX4	
		*			
7621	54550	APARAM	SA5	A5	. PARAMETER COMMA
	7100000001		SX0	1	. INCREASE NUMBER OF PARAMETERS
	36650		IX6	X5+X0	. BY ONE
7622	54650		SA6	A5	
	0400007451		EQ	PASS3	
		*			
7623	54150	ACALL	SA1	A5	. END CALL
	5055777776		SA5	A5-1	
	43252		MX2	42	
7624	7201000001		SX0	X1+1	. NO OF PARAMS TO X0
	20222		LX2	18	
	15112		BX1	-X2*X1	. FUNCTION NAME TO X1
7625	20044		LX0	36	
	7120000051		SX2	XCALL	
	12601		BX6	X0+X1	
7626	12626		BX6	X2+X6	
	0100007717		RJ	PASS4	. OUTPUT MICOP
7627	67606		SB6	B0-B6	. NEXT MICOP INTO NEW WORD
	0400007451		EQ	PASS3	
		*			
7630	54150	ARGTBR	SA1	A5	. RIGHT BRACKET
	5055777776		SA5	A5-1	. REMOVE TOP OPERAND
	73010		SX0	X1	
7631	7160000050		SX6	XARRAYV	
	20022		LX0	18	
	12660		BX6	X6+X0	
7632	0100007717		RJ	PASS4	
7633	0400007451		EQ	PASS3	
		*			
7634	0100007503	ALABEL	RJ	SCHLBL	. LOOK UP LABEL
7635	53210		SA2	X1	. LABEL DESCRIPTION TO X2
	43052		MX0	42	
	0332007773		NG	X2,ERRLBL	
7636	63220		SB2	X2	
	11702		BX7	X0*X2	
	0702007771		LT	B0,B2,ERRLBL2	
7637	10322		BX3	X2	. TEST IF IT WAS USED OR DEFINED

21222		AX2	18	.	IN EARLIER COMPILATION	
20344		LX3	36	.		
7640	0302007513	ZR	X2,SCHLBL1	.	BEWARE OF DIRTY TRICKS	
	76120	SX1	B2			
	21222	AX2	18			
7641	7222777776	SX2	X2-1			
	0322007772	PL	X2,ERRLBL3			
7642	5130000227	SA3	PRGBASE			
	73636	SX6	X3+B6	.	NOTE THAT B6 IS NEGATIVE	
	20022	LX0	18			
7643	6120000001	SB2	1			
	73662	SX6	X6+B2			
	12767	BX7	X6+X7			
7644	20622	LX6	18			
	54720	SA7	A2	.	NEW LABEL DESCRIPTION	
7645	73212	ALABEL1	SX2	X1+B2	.	GO BACK IN THE CHAIN
	0302007650	ZR	X2,ALABEL2	.	AND ASSIGN DEFINED LABEL VALUE	
	36713	IX7	X1+X3	.	THE CHAIN ENDS WITH A -1 LINK	
7646	53170	SA1	X7			
	11701	BX7	X0*X1			
	12776	BX7	X7+X6			
	54710	SA7	A1			
7647	21122	AX1	18			
	73110	SX1	X1			
	0400007645	EQ	ALABEL1			
7650	5130007653	ALABEL2	SA3	ENDBCD	.	TEST FOR END LABEL
	54222	SA2	A2+B2			
	13223	BX2	X2-X3			
7651	0312007451	NZ	X2,PASS3	.	RETURN IF NOT END	
	6110777775	SB1	-2			
7652	0400007451	EQ	PASS3			
		*				
7653	05160400000000000000	ENDBCD	DATA	3LEND		
		*				
		*			NOTE THAT THE FOLLOWING CODE SAVES X0 AND X5. THIS FEATURE IS	
		*			USED ELSEWHERE IN THE CODE (ACT14).	
		*				
7654	5120000225	ACOND	SA2	TESTCND	.	AFTER A CONDITION
	7130000003	SX3	3B	.	SET MASK TO NEITHER S NOR F	
7655	73430	SX4	X3			
	0470007662	EQ	B7,B0,ACOND1			
	21301	AX3	1	.	SET MASK TO NO S	
7656	5110000204	SA1	MAXSTAT			
	7170000006	SX7	1RF			
7657	5211000002	SA1	X1+2			
	7160000023	SX6	1RS			
7660	20106	LX1	6			
	13661	BX6	X6-X1			
	0306007662	ZR	X6,ACOND1	.	BRANCH IF S	
7661	20301	LX3	1	.	SET MASK TO NO F	
	13771	BX7	X7-X1			
	0317007666	NZ	X7,ACOND2	.	ERROR IF NOT F	
7662	73220	ACOND1	SX2	X2	.	CHECK PREVIOUS CONDITION (IF ANY)
	12723	BX7	X2+X3	.	AGAINST MASK	
	73620	SX6	X2			
	11223	BX2	X2*X3			
7663	0306007664	ZR	X6,ACOND3	.	SECOND GO TO IS UNCONDITIONAL	

7664	20322	73340	ACOND3	SX3	X4	
	12737			LX3	18	
	54720			BX7	X3+X7	. PRESENT CONDITION TO X7
7665	0302007451			SA7	A2	
7666	7110000120		ACOND2	ZR	X2, PASS3	
	0400007766			SX1	P2RGTPR	. PREPARE FOR ERROR
				EQ	ERRCND2	. ERRORNEOUS CONDITION
			*			
7667	0100007517		AGT	RJ	GETLBL	
7670	5120000225			SA2	TESTCND	
	20122			LX1	18	. OUTPUT A GOF, GOS OR GO TO
7671	7160000053			SX6	XGOX	. MICOP DEPENDING THE CONDITION
	21222			AX2	18	
	36662			IX6	X6+X2	
7672	12661			BX6	X6+X1	
	0100007717			RJ	PASS4	
7673	67606			SB6	B0-B6	
	0400007451			EQ	PASS3	
			*			
7674	5120000225		ABGTT	SA2	TESTCND	
	21222			AX2	18	
	14222			BX2	-X2	
7675	7252000003			SX5	X2+3B	
	5130000227			SA3	PRGBASE	
7676	76260			SX2	B6	
	0322007677			PL	X2, ABGTT3	
	14222			BX2	-X2	
7677	37332		ABGTT3	IX3	X3-X2	
	0305007704			ZR	X5, ABGTT2	. BRANCH IF UNCONDITIONAL
7700	7160000056			SX6	XGOTO	. A BYPASS JUMP WILL BE STORED
	0100007717			RJ	PASS4	. INSTEAD OF THIS MICOP BY AGTT
7701	5130000227			SA3	PRGBASE	
	76260			SX2	B6	
	43052			MX0	42	
7702	37332			IX3	X3-X2	. RELATIVE MICOP ADDRESS TO X3
	11404			BX4	X0*X4	
	20522			LX5	18	. FORM STACK ENTRY USING NEGATED
	12443			BX4	X4+X3	. CONDITION CODE AND ADDRESS IN X4
7703	12445			BX4	X4+X5	
	20551			LX5	41	
	0325007706			PL	X5, ABGTT1	. BYPASS IF S
7704	7263000002		ABGTT2	SX6	X3+2	
	7170000055			SX7	XGOF	. OUTPUT GOF *+1
7705	20622			LX6	18	
	12667			BX6	X6+X7	
	0100007717			RJ	PASS4	
7706	7160000061		ABGTT1	SX6	XNOFAIL	. OUTPUT MICOP TO CHECK
	0100007717			RJ	PASS4	. AN EVENTUAL FAILURE IN THE
7707	0400007460			EQ	STACKX4	. FOLLOWING EXPRESSION
			*			
7710	54150		AGTT	SA1	A5	
	5055777776			SA5	A5-1	. REMOVE TOP OPERATOR
	63310			SB3	X1	
7711	21122			AX1	18	
	63210			SB2	X1	
	0402007451			EQ	B0, B2, PASS3	. READY IF UNCONDITIONAL
7712	5120000227			SA2	PRGBASE	

7713	67206	7162000053		SX6	B2+XGOX	. BYPASS JUMP TO X6
		73322		SB2	B0-B6	
				SX3	X2+B2	
		0660007715		GE	B6,B0,AGTT1	
7714	73326			SX3	X2+B6	. REL ADDRESS TO X3
7715	7233000001		AGTT1	SX3	X3+1	
		20322		LX3	18	
		12663		BX6	X6+X3	
7716	67303			SB3	B0-B3	
		53623		SA6	X2+B3	. STORE BYPASS JUMP
		0400007451		EQ	PASS3	

*

7717	46000	PASS4	NO		
7720	5216000357	P4TRCT	SA1	X6+MCOPTBL	. FETCH TABLE ENTRY
	46000		NO		
	20150		LX1	40	
7721	0331007731	P4TRC1	NG	X1,PASS4B	. BRANCH IF LOW ORDER ONLY
	0660007726		GE	B6,B0,PASS4C	
7722	5120000205		SA2	MINSTAT	
	6166000001		SB6	B6+1	. B6 IS NEGATIVE
7723	63226		SB2	X2+B6	. STORE MICOP IN LOW ORDER BITS
	57606		SA6	B0-B6	
	0720007717		LT	B2,B0,PASS4	. CHECK BUMPING AGAINST STATIC
7724	0100010037	PASS4A	RJ	BUMP	
7725	0400007717		EQ	PASS4	
7726	56160	PASS4C	SA1	B6	. STORE MICOP IN HIGH ORDER BITS
	73260		SX2	X6	
	21622		AX6	18	
	20266		LX2	54	. OPERATION TO X2
7727	20644		LX6	36	. ADDRESS TO X6
	12662		BX6	X6+X2	
	67606		SB6	B0-B6	. NEXT MICOP INTO NEW WORD
	12661		BX6	X6+X1	
7730	57606		SA6	B0-B6	
	0400007717		EQ	PASS4	
7731	0660007732	PASS4B	GE	B6,B0,PASS4D	. STORE MICOP IN LOW ORDER BITS
	67606		SB6	B0-B6	
7732	5120000204	PASS4D	SA2	MAXSTAT	
	6166777776		SB6	B6-1	
7733	63220		SB2	X2	
	56660		SA6	B6	
	67226		SB2	B2-B6	
7734	0720007717		LT	B2,B0,PASS4	
	0400007724		EQ	PASS4A	
		*			
7735	0400007736	P4TRCS	EQ	P4TRC	
7736	7170000004	P4TRC	SX7	4	
	10166		BX1	X6	
	10644		BX6	X4	
7737	5160000254		SA6	P4SVX4	
	7165000000		SX6	B5+0	
7740	5160000253		SA6	P4SVB5	
	0100010220		RJ	TRC	
7741	5120000253		SA2	P4SVB5	
	10611		BX6	X1	
	63520		SB5	X2	
7742	5211000357		SA1	X1+MCOPTBL	
	20150		LX1	40	
7743	5140000254		SA4	P4SVX4	
	0400007721		EQ	P4TRC1	
		*			
7744	5221006562	INSKIP1	SA2	X1+P2TBL+1	
	7231777616		SX3	X1-AUXERR	
7745	20207		LX2	7	
	66700		SB7	B0	
	0323007340		PL	X3,PASS2	
7746	0322007340		PL	X2,PASS2	
	6110000000		SB1	ST1	
7747	5150000002		SA5	BGP3STK	

	5100000110		SA0	BGP2STK	
7750	0400007342		EQ	ACT1	
7751	7121000001	INSKIP	SX2	B1+1	
	0302007744		ZR	X2, INSKIP1	
7752	7221777620		SX2	X1-P2END	
	0302010001		ZR	X2, AEND3	
7753	0400007340		EQ	PASS2	
7754	7170010317	ERRACT1	SX7	KE1	
	0400007774		EQ	KSKM	
7755	7170010324	ERRACT2	SX7	KE2	
	0400007774		EQ	KSKM	
7756	7170010312	ERRACT	SX7	KE	
	0400007774		EQ	KSKM	
7757	7170010331	ERRACT3	SX7	KE3	
	0400007774		EQ	KSKM	
7760	7170010336	SYXERR	SX7	KS	
	0400007774		EQ	KSKM	
7761	7170010343	SYXERR1	SX7	KS1	
	0400007774		EQ	KSKM	
7762	7170010367	OPRERR1	SX7	KO1	
	0400007774		EQ	KSKM	
7763	7170010374	OPRERR2	SX7	KO2	
	0400007774		EQ	KSKM	
7764	7170010401	OPRERR3	SX7	KO3	
	0400007774		EQ	KSKM	
7765	7170010406	OPRERR4	SX7	KO4	
	0400007774		EQ	KSKM	
7766	7170010362	ERRCND2	SX7	KC2	
	0400007774		EQ	KSKM	
7767	7170010355	SYXERR2	SX7	KS2	
	0400007774		EQ	KSKM	
7770	7170010350	SYXERR3	SX7	KS3	
	0400007774		EQ	KSKM	
7771	7170010420	ERRLBL2	SX7	KL2	
	0400007774		EQ	KSKM	
7772	7170010425	ERRLBL3	SX7	KL3	
	0400007774		EQ	KSKM	
7773	7110000120	ERRLBL	SX1	P2RGTPR	FAKE FAKE FAKE
	7170010413		SX7	KL	
7774	20722	KSKM	LX7	18	UP THE ERR ADDR AND PUT IN OFFSET
	76240		SX2	B4	PUT THE OFFSET IN AN X REGISTER
	12772		BX7	X7+X2	OR IN THE OFFSET
	20722		LX7	18	UP THE WHOLE WORD ONE BYTE
7775	5120010434		SA2	HCOLS	PICK UP THE NUMBER OF TEN CHAR WORDS
	12772		BX7	X7+X2	OR IN THE WORD COUNT
7776	5170000222		SA7	ARROWD	STORE THE TOTAL IN THE ERROR INDICATR
	6110777776		SB1	-1	SET UP THE ERROR INDICATOR
7777	0400007751		EQ	INSKIP	
		*			
10000	7160000043	AEND	SX6	XNOEND	
	0400010002		EQ	AEND2	
10001	7160000042	AEND3	SX6	XEND	
10002	0100007717	AEND2	RJ	PASS4	
10003	7160000042		SX6	XEND	
	0100007717		RJ	PASS4	. THE WORD FOR THIS EXTRA END WILL BE USED FOR THE CODE HEADING
		*			. BRANCH IF NOT COMPILATION
10004	5110000210		SA1	NXTWRD	

10005	5150000245	0321010025	PL	X1,AEND6	. FROM CARDS
		0305010021	SA5	P1ERFLG	
10006	13666	63450	ZR	X5,AEND5	
		0100010210	BX6	X6-X6	
			SB4	X5	. REMEMBER THE ERRORFLAG
10007	0325010014	5120004566	RJ	P1PB	
		5150004570	PL	X5,AEND1	. BRANCH IF COMPILATION UNSUCCESSFUL
10010	5110004567		SA2	SMESS	
			SA1	SMESS+1	
10011	10622		SA5	SMESS+2	. ISSUE MESSAGE INTO OUTPUT
		0100004272	BX6	X2	
10012	10611		RJ	PB	
		0100004272	BX6	X1	
10013	10655		RJ	PB	
		0100004272	BX6	X5	
			RJ	PB	
10014	56120		AEND1	WAIT	. MAKE SURE OUTPUT FILE IS NOT BUSY
10016	7100000001		WRITER	RECALL	. WRITE END OF RECORD (LEVEL 0)
10020	0640004336		PL	B4,ABT	. FLUSH BUFFERS AND ABORT
10021	5110010451		AEND5	SA1 SCALL	
		10611	BX6	X1	
10022	5160000001		SA6	1	
10023	5110000001		SA1	1	
		0311010023	NZ	X1,*	
10024	0400004571		EQ	POST0	. NOW RELOCATE THE CODE
10025	5150000222		AEND6	SA5 ARROWD	
		0305004571	ZR	X5,POST0	. NO COMPILATION ERRORS
10026	6150777714		SB5	-51	
		0400003341	EQ	RTERROR	

```
*
* GETNEXT IS USED WHEN THE COMPILER IS CALLED VIA THE CONVERT FUNCTION.
* IT EXPECTS THE NEXT STRING WORD TO UNPACK TO BE AT THE LOCATION
* SPECIFIED BY THE LOWER 18 BITS OF NXTWRD. WHEN GETNEXT REACHES THE END
* OF THE STRING, IT OUTPUTS AN ENDPRG CHARACTER. GETNEXT USES X1, X2,
* X6, AND X7. IT RESETS B4 TO ZERO, SINCE IT EXITS BY JUMPING TO "EXIT"
* IN UNPACK.
*
10027 53210          GETNEXT  SA2      X1          . X2 = LIST WORD TO PROCESS
      73620          SX6      X2          X6 = ADDRESS OF NEXT WORD, BETTER NOT
      54610          SA6      A1          BE NEGATIVE.
      13226          BX2      X2-X6      UPDATE NXTWRD
10030 66400          SB4      B0          CLEAR LOWER 18 BITS OF X2
      43106          MX1      6
10031 11712          GETNEXT1  BX7      X1*X2
      0307010034     ZR        X7,GETNEXT2 STOP ON ZERO CHARACTER
      20706          LX7      6
10032 5174000230    SA7      B4+CHAR     OUTPUT THIS CHAR
      6144000001    SB4      B4+1
10033 20206          LX2      6
      0400010031    EQ        GETNEXT1
10034 0316010166    GETNEXT2  NZ        X6,LEAVE
      7170000100    SX7      P1EOS-P1TAB . END OF STATEMENT
10035 5174000230    SA7      B4+CHAR
      5164000231    SA6      B4+CHAR+1 . P1END-P1TBL = 0
10036 0400010166    EQ        LEAVE      EXIT TO UNPACK, WHERE -1 WILL BE STOR
*                                     AT END OF CHAR, THEN FINAL RETURN IS
*                                     MADE.
```



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* BUMP IS CALLED WHENEVER THE COMPILER RUNS OUT OF STORAGE
*
10037 46000          NO
10040 76660          +      SX6  B6          . GET ADDRESS OF LAST MICOP
                                PL  X6,BUMP1
                                BX6  -X6
10041 5160000207    BUMP1  SA6  MINSTAK      . CONSIDER THE CODE AS THE BOTTOM
                                SA1  COMPB7
10042 76070          SX0  B7
                                SB7  X1          . START OF FREE CHAIN
                                SA1  FRSTWRD      . ENTRY IN THE STACK
10043 5120000210    SA2  NXTWRD
                                NG   X2,BUMP3
10044 76670          SX6  B7
                                SB7  X1
10045 53110          BUMP2  SA1  X1          . FREE THE TRANSLATED SOURCE
                                SX1  X1+0        . STRING
                                BX7  X1-X2
10046 0317010045    NZ   X7,BUMP2
                                SA6  A1
10047 7120000002    SX2  SSTY
                                LX2  55
                                BX7  X1+X2      . SS TYPE FOR SOURCE STRING
10050 5110000205    SA1  MINSTAT
                                SA7  X1+XWDREL
10051 76660          BUMP3  SX6  B6          . SAVE LAST MICOP ADDRESS
                                SX7  A0          . SAVE STACK POINTER
                                SA2  MAXSTAK
10052 63620          SB6  X2          . STACK TOP
                                SA0  FLDINCR-1
10053 0100002052    RJ   RESERVE      . PROVOKE FIELDLENGTH REQUEST
10054 5110000206    SA1  MAXSTAK
                                SA0  X7          . RESTORE STACK POINTER
                                SX7  B7
10055 5170000244    SA7  COMPB7
                                SA2  MINSTAK
10056 67706          SB7  B0-B6
                                SB7  X1+B7
                                BX7  -X2
10057 6166777000    SB6  B6-FLDINCR+1
                                SB6  B6+X7
10060 6177000777    SB7  B7+FLDINCR-1
10061 53126          BUMP4  SA1  X2+B6      . PUSH THE STACK AND MICOPS
                                SB6  B6-1      . INTO THE NEW AREA
                                BX7  X1
10062 54717          SA7  A1+B7
                                GE   B6,B0,BUMP4
10063 5110000227    SA1  PRGBASE
                                SX7  X1+B7
                                SA7  A1
10064 63660          SB6  X6
                                GE   B6,B0,BUMP5
                                SB7  B0-B7
10065 66667          BUMP5  SB6  B6+B7      . RESTORE MICOP ADDRESS
                                SB7  X0          . RESTORE OPSIT
                                SA1  NXTWRD
10066 0331010037    NG   X1,BUMP

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CAL-6000 S N O B O L
COMPILATION TIME FIELDLENGTH REQUEST

COMPASS 3.7-803. 81/01/01. 01.09.46. PAGE 169
SNOJOB

5120000205
10067 5222000000
13666
10722
10070 54620
54710
5170000211
10071 0400010037

SA2 MINSTAT
SA2 X2+XWDREL
BX6 X6-X6
BX7 X2
SA6 A2
SA7 A1
SA7 FRSTWRD
EQ BUMP

. RESTORE SOURCE STRING POINTER

10072	00000000000000000000	UNPACK	DATA	0	
10073	5110000210		SA1	NXTWRD	
	0321010027		PL	X1,GETNEXT	BRANCH IF COMPILATION FROM A STRING
10074	5110010434		SA1	HCOLS	PICK UP THE WORD COUNTER
	7261000001		SX6	X1+1	INCREMENT IT
10075	54610		SA6	A1	STORE IT BACK
	5110000247		SA1	COLS	SEE IF IN END OF LINE STATE
10076	0311010140		NZ	X1,UP3	NO
	76600		SX6	B0	CLEAR OUT THE WORD COUNTER
10077	5160010434		SA6	HCOLS	
	7160000110		SX6	72	
10100	5160000247		SA6	COLS	RESET REMAINING COLUMNS INDICATOR
	5110000222		SA1	ARROWD	SEE IF ERRORS TO INDICATE
10101	0301010123		ZR	X1,UP2	NO
	76600		SX6	B0	FINISH THIS LINE
10102	0100010210		RJ	P1PB	OUT WE GO
10103	7160000001		SX6	1	
	5160000245		SA6	P1ERFLG	IN CASE NO LIST WAS ON
10104	5120010433		SA2	HERRMES	PICK UP THE WORD **ERROR**
	5110000222		SA1	ARROWD	NOW GET THE ERROR DESCRIPTOR
10105	10622		BX6	X2	AFTER A RESPECTFUL WAIT PRINT ERROR
	0100004272		RJ	PB	DOWN THE CHUTE
10106	5120010432		SA2	HYPHEN	PICK UP THE WORD OF RIGHT ARROWS
	63510		SB5	X1	TRIM OFF THE DESCRIPTOR BYTE COUNT
10107	0450010112		EQ	B5,B0,HFORGET	ERROR IN FIRST BYTE FORGET ARROWS
	10622		BX6	X2	COPY THE ARROWS TO AN OUTPUT REGISTER
10110	0100004272	HLOOP	RJ	PB	EMPTY THE QUIVVER OF ARROWS
10111	615577776		SB5	B5-1	DECREMENT THE WORD COUNT
	0705010110		LT	B0,B5,HLOOP	ARE WE DONE YET (IF NOT JUMP)
10112	21122	HFORGET	AX1	18	GET THE OFFSET IN THE DESCRIPTOR
	5221010435		SA2	X1+HARO-1	CHOOSE YOUR WEAPON CAREFULLY
	10622		BX6	X2	ONCE AGAIN WE MUST STORE FROM X6
10113	0100004272		RJ	PB	THREE,TWO,ONE, FIRE.....
10114	21122		AX1	18	RETRIEVE THE ERROR MESS ADDRESS
	6251000004		SB5	X1+4	PICKUP THE OFFSET ERR MESS ADDRESS
10115	614077773		SB4	-4	THIS IS THE COMPLEMENT OF THE MESS LE
10116	56154	HSTOP	SA1	B5+B4	GET THE ERROR WORD FROM THE TABLE
	10611		BX6	X1	ACROSS WE GO TO X6
	0100004272		RJ	PB	OUT,OUT, DAMN WORD
10117	6144000001		SB4	B4+1	INCREMENT THE COUNTER
	0740010116		LT	B4,B0,HSTOP	IF WE REACHED 4 QUIT,IF NOT JUMP
10120	13666		BX6	X6-X6	EXOTIC ARENT WE
	5160000222		SA6	ARROWD	CLEAN ARROWS NOSE
10121	0100010210		RJ	P1PB	P1PB CHECKS LINE COUNT
10122	13666		BX6	X6-X6	
	0100010210		RJ	P1PB	. PRINT BLANK LINE
10123	7160000001	UP2	SX6	1	CONTINUED STATEMENT LEGAL FLAG
10124	6120000261	UP2.5	SB2	INFET	
	0100004321		RJ	CBI	RETURN WITH X1.NE.0 IF NOT EOR
10125	0301010170		ZR	X1,UP7	YES, EOR
	53120		SA1	X2	CBI LEFT X2 = FET.OUT
	43006		MX0	6	
10126	11301		BX3	X0*X1	LOOK AT FIRST CHAR
	20306		LX3	6	
	7243777730		SX4	X3-1R*	SEE IF THIS IS A COMMENT LINE
10127	0304010173		ZR	X4,UP8	YES
	7243777720		SX4	X3-1R.	SEE IF IS CONTINUATION LINE

10130	0304010202		ZR	X4,UP10	YES
	7243777731		SX4	X3-1R-	IS IT A CONTROL CARD
10131	0304010234		ZR	X4,CONCRD	YES IT IS
10132	5110000256	UP2.7	SA1	RULENO	
	0100002331		RJ	ICX1X6	CONVERT TO BCD
10133	7110000055		SX1	1R	
	7140000077		SX4	77B	
10134	11746	UP2.8	BX7	X4*X6	
	0317010136		NZ	X7,UP2.9	
	12616		BX6	X1+X6	
10135	20106		LX1	6	
	20406		LX4	6	
	0400010134		EQ	UP2.8	
10136	20666	UP2.9	LX6	54	
	0100010210		RJ	P1PB	PUT RULENO INTO BUFFER
10137	5110000247		SA1	COLS	
10140	63310	UP3	SB3	X1	COLS REMAINING TO PROCESS
	66500		SB5	B0	
	6120000261		SB2	INFET	
10141	0100004226		RJ	GETB	GET NEXT WORD IN X2,X3
10142	7163000000	UP3.5	SX6	B3+0	
	5160000247		SA6	COLS	
10143	10522		BX5	X2	SAVE WORD TO UNPACK
	10633		BX6	X3	WORD TO LIST
	0100010210		RJ	P1PB	
10144	7100000077		SX0	77B	
	6140000000		SB4	0	
10145	20506	UP4	LX5	6	
	11605		BX6	X0*X5	NEXT CHZR
	0306010150		ZR	X6,UP5	DO NOT PUT ZEROES IN BUFF
10146	5164000230		SA6	CHAR+B4	
	6144000001		SB4	B4+1	
10147	15550		BX5	-X0*X5	ZERO CHAR JUST STORED
	0400010145		EQ	UP4	
10150	0450010166	UP5	ZR	B5,LEAVE	IF NO EOL, EXIT
	76540		SX5	B4	SAVE POS
	13666		BX6	X6-X6	
10151	5160000247		SA6	COLS	FLAG END OF LINE
	6155777775		SB5	B5-2	SEE IF ZERO BYTE HAS BEEN REACHED
10152	0550010157		NZ	B5,UP6	YES
	6130000012		SB3	10	
10153	6150000000		SB5	0	
	6120000261		SB2	INFET	
10154	0100004226		RJ	GETB	GET LAST WORD
10155	10633		BX6	X3	
	0100004264		RJ	CZB	. SKIP TO ZERO BYTE
10156	0100010210		RJ	P1PB	LIST COLS 81 - 90
10157	13666	UP6	BX6	X6-X6	
	0100010210		RJ	P1PB	ZERO BYTE
10160	6120000261		SB2	INFET	
	0100004321		RJ	CBI	CHECK IF BUFF NOT EMPTY
10161	63450		SB4	X5	
	0301010164		ZR	X1,UP6.5	
	53120		SA1	X2	X2 = FET.OUT
10162	20106		LX1	6	
	7100000077		SX0	77B	
	11101		BX1	X0*X1	

10163	7211777720		SX1	X1-1R.	
	0301010166		ZR	X1,LEAVE	NO EOS, EXIT
10164	7160000100	UP6.5	SX6	100B	EOS CHARACTER
	5164000230		SA6	B4+CHAR	
10165	6144000001		SB4	B4+1	
10166	7160777776	LEAVE	SX6	-1	TERMINATOR
	5164000230		SA6	B4+CHAR	
10167	6140000000		SB4	0	
	0400010072		EQ	UNPACK	
10170	76600	UP7	SX6	B0	ENDPRG CHARACTER
	5160000230		SA6	CHAR	
	43701		MX7	1	
10171	15747		BX7	-X7*X4	CLEAR EOR BIT
	20705		LX7	5	
	5074000000		SA7	A4+0	
10172	6140000001		SB4	1	
	0400010166		EQ	LEAVE	
10173	6130000132	UP8	SB3	90	
	5110004511		SA1	BLANKS	
10174	10611		BX6	X1	
	66500		SB5	B0	
	0100010210		RJ	P1PB	
10175	6120000261	UP9	SB2	INFET	
	0100004226		RJ	GETB	
10176	10633		BX6	X3	
	0100010210		RJ	P1PB	
10177	0450010175		ZR	B5,UP9	
	7160000000		SX6	0	
10200	0100010210		RJ	P1PB	
10201	7160000000		SX6	0	
	0400010124		EQ	UP2.5	LOOK FOR MORE COMMENTS, X6 = 0
		*			MEANS CONTINUE NTO RECOGNIZED
10202	0306010132	UP10	ZR	X6,UP2.7	CONTINUE LEGAL FLAG NOT SET
	5110004511		SA1	BLANKS	
10203	10611		BX6	X1	
	0100010210		RJ	P1PB	
10204	6120000261		SB2	INFET	
	6130000110		SB3	72	
10205	66500		SB5	B0	
	0100004226		RJ	GETB	
10206	43006		MX0	6	
	15220		BX2	-X0*X2	
	20206		LX2	6	PERIOD SHOUL NOT BE PUT IN BUFF
10207	0400010142		EQ	UP3.5	
10210	00000000000000000000	P1PB	DATA	0	
10211	5110000245		SA1	P1ERFLG	
	6120000267		SB2	OUTFET	
10212	0301010210		ZR	X1,P1PB	
	0100004272		RJ	PB	
10213	0100004305		RJ	CBO	
10214	0316010210		NZ	X6,P1PB	
	5110000251		SA1	LC	
10215	7261000001		SX6	X1+1	
	5160000251		SA6	LC	
10216	0336010210		NG	X6,P1PB	
	0100010274		RJ	HEADING	
10217	0400010210		EQ	P1PB	

10220	00000000000000000000	TRC	DATA	0	
10221	5170000255		SA7	TRCSVX7	
	10511		BX5	X1	
	13666		BX6	X6-X6	
10222	0100010210		RJ	P1PB	GUARANTEE ZERO BYTE
10223	5120004511		SA2	BLANKS	
	5110000255		SA1	TRCSVX7	
10224	10622		BX6	X2	
	63310		SB3	X1	
	7215000000		SX1	X5+0	
10225	6133777776	TRC1	SB3	B3-1	
	0100004272		RJ	PB	
10226	0530010225		NZ	B3,TRC1	
	43071		MX0	57	
	43466		MX4	54	
10227	7120000076		SX2	1R^	
	0331010231		NG	X1,TRC3	
10230	15210	TRC2	BX2	-X0*X1	
	21103		AX1	3	
	7222000033		SX2	X2+1R0	
10231	11646	TRC3	BX6	X4*X6	
	12626		BX6	X2+X6	
	20666		LX6	54	
10232	0311010230		NZ	X1,TRC2	
	0100010210		RJ	P1PB	
10233	10155		BX1	X5	
	0400010220		EQ	TRC	
10234	43022	CONCRD	MX0	18	
	11301		BX3	X0*X1	PICK OFF THREE CHARACTERS
	20322		LX3	18	
10235	7243317265		SX4	X3-3R-EJ	
	0314010244		NZ	X4,NOTEJCT	
10236	76600	CONHEAD	SX6	B0	
	5160000251		SA6	LC	
10237	0100010210		RJ	P1PB	
10240	66500	CONTIX	SB5	B0	
	6130000132		SB3	90	
10241	6120000261	TITLOOX	SB2	INFET	
	0100004226		RJ	GETB	
10242	0450010241		ZR	B5,TITLOOX	
10243	7160000000	CONFIX	SX6	0	
	0400010124		EQ	UP2.5	
10244	7243315457	NOTEJCT	SX4	X3-3R-SP	IS IT A -SPACE CONTROL CARD
	0314010262		NZ	X4,NOTSPCE	TOO BAD NOT THIS EITHER
10245	76600		SX6	B0	
	43044		MX0	36	
	15110		BX1	-X0*X1	
	43006		MX0	6	
10246	20006		LX0	6	
	20152		LX1	42	
10247	11410	SPCLOOP	BX4	X1*X0	
	15110		BX1	-X0*X1	
	20106		LX1	6	
10250	7234777722		SX3	X4-1R	
	0303010247		ZR	X3,SPCLOOP	ALLOW FREE FORMATTING OF THE SPACE NUM
10251	0304010254		ZR	X4,REPTFAC	
	7234777744		SX3	X4-1R0	

10252	20601		LX6	1	
	10466		BX4	X6	
	20602		LX6	2	
	36664		IX6	X6+X4	
10253	36663		IX6	X6+X3	
	0400010247		EQ	SPCLOOP	
10254	5160010261	REPTFAC	SA6	REPLSP	
	0306010240		ZR	X6,CONTIX	
10255	76600		SX6	B0	
	0100010210		RJ	P1PB	
10256	7266000066		SX6	X6+LINES-2	
	0306010240		ZR	X6,CONTIX	
10257	5110010261		SA1	REPLSP	
	7261777776		SX6	X1-1	
10260	0400010254		EQ	REPTFAC	
10261		1	REPLSP	BSSZ	1
10262	7243315366	NOTSPCE	SX4	X3-3R-TI	IS IT A -TITLE CARD
	0314010240		NZ	X4,CONTIX	IM NO SWAMI FORGET THIS CARD
10263	66500		SB5	B0	
	6130000132		SB3	90	
10264	7160010461		SX6	PAGE+1	
	5160010474		SA6	SPORTIT	
10265	6120000261		SB2	INFET	
	0100004226		RJ	GETB	
10266	6120000261	TITLOOP	SB2	INFET	
	0100004226		RJ	GETB	
10267	10633		BX6	X3	
	5130010474		SA3	SPORTIT	
	53630		SA6	X3	
10270	7263000001		SX6	X3+1	
	5160010474		SA6	SPORTIT	
10271	0450010266		ZR	B5,TITLOOP	
	76600		SX6	B0	
10272	5160000251		SA6	LC	MAKE P1PB THINK WE ARE AT THE BOTTOM OF THE PAGE
	0100010210		RJ	P1PB	EJECT A PAGE AND CLEAR THE BUFFER
10273	0400010243		EQ	CONFIX	CALL FOR THE NEXT STATEMENT TO BE READ
		*			
		* HEADING DESTROYS X0,X1,X2,X3,X4,X6,X7,B3.			
		*			
10274	00000000000000000000	HEADING	DATA	0	
10275	5110000252		SA1	PAGENO	
	7261000001		SX6	X1+1	
10276	54610		SA6	A1	
	0100002331		RJ	ICX1X6	
10277	5110004263		SA1	MASKM	
	37216		IX2	X1-X6	
	13226		BX2	X2-X6	
10300	11221		BX2	X2*X1	
	20266		LX2	54	
	15226		BX2	-X6*X2	
	10122		BX1	X2	
10301	20102		LX1	2	
	12121		BX1	X2+X1	
	12661		BX6	X6+X1	
	20103		LX1	3	
10302	12661		BX6	X6+X1	
	5160010460		SA6	PAGE	

10303	6150777762		SB5	TITLE-TITB-1	
10304	5125010467	HD1	SA2	TITB+1+B5	
	6120000267		SB2	OUTFET	
10305	10622		BX6	X2	
	0100004272		RJ	PB	
10306	6155000001		SB5	B5+1	
	0550010304		NZ	B5,HD1	
10307	13666		BX6	X6-X6	
	0100004272		RJ	PB	SKIP LINE AFETER TITILE
10310	7160777711		SX6	-LINES+2	
	5160000251		SA6	LC	
10311	0400010274		EQ	HEADING	
10312	55241011235503100122	KE	DIS	, \$ THIS CHARACTER ALLOWED ONLY IN LITERALS	\$
10317	55241011235517200522	KE1	DIS	, \$ THIS OPERATOR CANNOT BE UNARY	\$
10324	55251603141723050455	KE2	DIS	, \$ UNCLOSED LITERAL (ODD NUMBER OF QUOTES)	\$
10331	55111626011411045503	KE3	DIS	, \$ INVALID CHARACTER AFTER * OR /	\$
10336	55021116012231551720	KS	DIS	, \$ BINARY OP WITH MISSING ARGUMENT	\$
10343	55200122051624100523	KS1	DIS	, \$ PARENTHESIS OR GROUPING ERROR	\$
10350	55251602011401160305	KS3	DIS	, \$ UNBALANCED BRACKETS	\$
10355	55251602011401160305	KS2	DIS	, \$ UNBALANCED PARENTHESSES	\$
10362	55052222172255111655	KC2	DIS	, \$ ERROR IN GO TO FIELD OF STATEMENT	\$
10367	55052222171605172523	KO1	DIS	, \$ ERRONEOUS OPERATOR FOUND	\$
10374	55151123231116075502	KO2	DIS	, \$ MISSING BLANK OR DELIMITER	\$
10401	55052222171605172523	KO3	DIS	, \$ ERRONEOUS USE OF EQUALITY	\$
10406	55021401161355061714	KO4	DIS	, \$ BLANK FOLLOWS UNARY OPERATOR	\$
10413	55220523052226050455	KL	DIS	, \$ RESERVED WORD USED AS LABEL	\$
10420	55241011235514010205	KL2	DIS	, \$ THIS LABEL IS MULTIPLY DEFINED	\$
10425	55140102051455040506	KL3	DIS	, \$ LABEL DEFINED IN PREVIOUS COMPILATION	\$
10432	65656565656565656565	HYPHEN	DATA	65656565656565656565B	
10433	55474705222217224747	HERRMES	DATA	10H **ERROR**	
10434	00000000000000000000	HCOLS	DATA	0 THIS IS THE COLUMN POINTER	
10435	70555555555555555555		DATA	70555555555555555555B	
10436	70555555555555555555	HARO	DATA	70555555555555555555B	
10437	65705555555555555555		DATA	65705555555555555555B	
10440	65657055555555555555		DATA	65657055555555555555B	
10441	65656570555555555555		DATA	65656570555555555555B	
10442	65656565705555555555		DATA	65656565705555555555B	
10443	65656565657055555555		DATA	65656565657055555555B	
10444	65656565656570555555		DATA	65656565656570555555B	
10445	65656565656565705555		DATA	65656565656565705555B	
10446	65656565656565657055		DATA	65656565656565657055B	
10447	65656565656565656570		DATA	65656565656565656570B	
10450	65705555555555555555		DATA	65705555555555555555B	
10451	152307000000000004566	SCALL	VFD	18/3LMSG,42/SMESS	
10452	34030114555523551655	TITLE	DATA	10H1CAL S N	
10453	17550255175514555555		DATA	10HO B O L	
10454	00000000000000000000	DATE	DATA	0	
10455	55555555555555555555		DATA	10H	
10456	00000000000000000000	TIME	DATA	0	
10457	55555555552001070555		DATA	10H PAGE	
10460	00000000000000000000	PAGE	DATA	0	
10461	55555555555555555555		DATA	10H	
10462	55555555555555555555		DATA	10H	
10463	55555555555555555555		DATA	10H	
10464	55555555555555555555		DATA	10H	
10465	55555555555555555555		DATA	10H	
10466	55555555555555555555	TITB	DATA	10H	

CAL-6000 S N O B O L
TRACE ROUTINE

COMPASS 3.7-803.
SNOJOB

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10467	00000000000000000000	DATA	0
10470	00000000000000000000	DATA	0
10471	00000000000000000000	DATA	0
10472	00000000000000000000	DATA	0
10473	00000000000000000000	DATA	0
10474	00000000000000000000	SPORTIT	DATA 0

CAL-6000 S N O B O L
TEMPORARY TRACE R3UTINE

COMPASS 3.7-803.
SNOJOB

81/01/01. 01.09.46.

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TRACE IFNE TRCFLG,0
TRACE ENDIF

10475	7255777776	QCMLP	SX5	X5-1	. STANDARD PROCEDURE COMPILE
	0315000317		NZ	X5,ERR20	
10476	5100000002		SA0	2	. MAKE SURE THERE IS ENOUGH CORE
	0100002052		RJ	RESERVE	
10477	6166777775		SB6	B6-2	
	56160		SA1	B6	
	21167		AX1	55	. ERROR IF PARAMETER
10500	0311000330		NZ	X1,ERR29	. IS NOT A STRING
	0100002147		RJ	GRBCOLL	. GARBAGE COLLECT
10501	6110000001		SB1	1	
	7170000014		SX7	CTY	
10502	57161		SA1	B6-B1	. SVD OF STRING PARAMETER
	20767		LX7	55	
	74650		SX6	A5	. SAVE MICROINSTR COUNTER
	76211		SX2	B1+B1	
10503	12772		BX7	X7+X2	. PREPARE CODE TYPE
	56760		SA7	B6	. ENTRY IN THE STACK
	57661		SA6	B6-B1	
	73710		SX7	X1	
10504	5170000211		SA7	FRSTWRD	
	5170000210		SA7	NXTWRD	
10505	5120000213		SA2	STAKTOP	
	5130000206		SA3	MAXSTAK	
10506	5140000207		SA4	MINSTAK	
	37624		IX6	X2-X4	. PUSH STACK TO HIGH CORE
	54620		SA6	A2	. AS FAR AS IT GOES
10507	67306		SB3	B0-B6	. TO MAKE ROOM FOR THE
	63333		SB3	X3+B3	. COMPILATION
	63240		SB2	X4	
10510	56120	QCMLP1	SA1	B2	
	10711		BX7	X1	
	54713		SA7	A1+B3	
	66221		SB2	B2+B1	
10511	0662010510		GE	B6,B2,QCMLP1	
	73643		SX6	X4+B3	. INITIALIZE PRGBASE
	13777		BX7	X7-X7	
10512	5160000227		SA6	PRGBASE	
	5276777776		SA7	X6-1	
10513	64670		SB6	A7	
	76670		SX6	B7	. SAVE B7
	5170000222		SA7	ARROWD	. CLEAR ERROR FLAG
10514	5160000244		SA6	COMPB7	
	76610		SX6	B1	
	67606		SB6	B0-B6	. INITIALIZE B6 OF COMPILER
10515	5170000224		SA7	VARLINK	. ZERO TO VARLINK
	5160000223		SA6	LBLINK	. END OF LIST TO LBLINK
10516	7170000001		SX7	PRIORJ	
	20744		LX7	36	
10517	5150000002		SA5	BGP3STK	. PASS3 STACK POINTER
	5100000110		SA0	BGP2STK	. PASS 2 TACK POINTER
10520	54750		SA7	A5	
	66700		SB7	B0	. NO OPERAND TO OPSIT
	6110000000		SB1	ST1	. INITIAL STATE
10521	0400007030		EQ	PRE4	. START COMPILATION
		*			
10522		CMPLQ	BSS	0	

```

COUNT  MACRO  STRING      . SET COUNT := NO. OF CHARS IN STRING
COUNT  SET    0
COUNT  DUP    9999
COUNT  SET    COUNT+1
MIC      MICRO  COUNT+1,1,$STRING$
          IFC   EQ,$"MIC"$$,1
          STOPDUP
          ENDD
          ENDM
WDCNT    MACRO  LENGTH      . SET WDCNT = LENGTH // 7
WDCNT    SET    LENGTH/7
          IFNE  LENGTH-WDCNT*7,0,1
WDCNT    SET    WDCNT+1
          ENDM
BCD      MACRO  STRING      . PUT STRING INTO LINKED FORMAT
ST        MICRO  1,,,$STRING$
          DUP    9999
TEMPMIC  MICRO  1,7,$"ST"$
ST        MICRO  8,,,$"ST"$
LOC      SET    *+1
          IFC   EQ,$"ST"$$,2
LOC      SET    0
          STOPDUP
          VFD   42/0L"TEMPMIC",18/LOC
          ENDD
          ENDM
PATTERN  MACRO  NAME        . STANDARD PATTERN VALUE DESCRIPTION
          NAME  . COUNT := NO. OF CHARS
          COUNT . WDCNT := NO. OF WORDS
          VFD   5/VARTYP,19/COUNT,18/WDCNT+2,18/0
          VFD   1/1,59/NAME_PM
          BCD   NAME
FREELEN$ SET    FREELEN$+1 . RESERVE FSL SPACE
          ENDM
PROC     MACRO  NAME,ENDQ,ENTRY,LAST . STANDARD PROCEDURE DESCRIPTION
          NAME  . COUNT := NO. OF CHARS IN NAME
          COUNT . WDCNT := NO. OF WORDS IN NAME
          VFD   5/CALLTYP,19/COUNT,18/WDCNT+2,18/0
          IFC   NE,$ENTRY$$,2
QNAME    MICRO  1,,,$ENTRY$
          IFNE  ,,1
QNAME    MICRO  1,,,$Q_NAME$
          IFC   EQ,$LAST$$,2
          VFD   1/1,1/1,22/ENDQ,18/*-STTBASE+WDCNT+2,18/"QNAME"
          IFNE  ,,1
          VFD   1/1,1/0,22/ENDQ,18/*-STTBASE+WDCNT+2,18/"QNAME"
          BCD   NAME
          ENDM

```

10522	00000000000000000000	DATA	0		
	10522	STTBASE	EQU	*-1	
10523	00000000000000000000	DATA	0		
	0	PIXREL	EQU	0	
	1	SIXREL	EQU	1	
	2	STNDREL	EQU	2	
	0	XWDREL	EQU	0	
		*			
	5	FREELEN\$	SET	5	. SPACE FOR START OF FSL, STACK, AND . CODE AREA
		*			
10524	74000005000003000000	VFD	5/VARTYP,19/5,18/3,18/0	INPUT	
10525	32000120000260000000	VFD	5/INTY,19/80,18/INFET-1,18/0	STANDARD ASSOCIATION	
10526	11162025240000000000	DATA	5LINPUT		
	6	FREELEN\$	SET	FREELEN\$+1	. NULL FOR INPUT
10527	74000006000003000000	VFD	5/VARTYP,19/6,18/3,18/0	OUTPUT	
10530	34000055000266000000	VFD	5/OUTTY,19/1R,18/OUTFET-1,18/0	STANDARD ASSOCIATION	
10531	17252420252400000000	DATA	6LOUTPUT		
	7	FREELEN\$	SET	FREELEN\$+1	. NULL FOR OUTPUT
10532	70000006000003000000	VFD	5/LBLTYP,19/6,18/3,18/0		
10533	40000000000000400002	VFD	1/1,41/0,18/-MARK+2		
10534	22052425221600000000	DATA	6LRETURN		
10535	70000007000003000000	VFD	5/LBLTYP,19/7,18/3,18/0		
10536	40000000000000400001	VFD	1/1,41/0,18/-MARK+1		
10537	06220524252216000000	DATA	7LFRETURN		
10540	70000007000003000000	VFD	5/LBLTYP,19/7,18/3,18/0		
10541	40000000000000400000	VFD	1/1,41/0,18/-MARK		
10542	16220524252216000000	DATA	7LNRETURN		
10543	74000005000003000000	PATTERN	ABORT		
10546	74000003000003000000	PATTERN	ARB		
10551	74000003000003000000	PATTERN	BAL		
10554	74000004000003000000	PATTERN	FAIL		
10557	74000005000003000000	PATTERN	FENCE		
10562	74000003000003000000	PATTERN	REM		
	43	STNPRL	EQU	*-STTBASE	
10565	72000007000003000000	PROC	COMPILE, CmplQ, QcMpl		
		IFNE	TRCFLG, 0, 1		
10570	72000006000003000000	PROC	FREEZE, FREEZEQ		
10573	72000010000004000000	PROC	ALPHABET, ALPHAQ, QALPHA		
10577	72000007000003000000	PROC	STLIMIT, MAXLNQ		
10602	72000007000003000000	PROC	STCOUNT, MAXLNQ		
10605	72000010000004000000	PROC	MAXLNQTH, MAXLNQ, QMAXLN		
10611	72000004000003000000	PROC	DATA, DATAQ		
10614	72000003000003000000	PROC	LGT, LGTQ		
10617	72000010000004000000	PROC	FNCLEVEL, FLVQ, QFLV		
10623	72000010000004000000	PROC	DATATYPE, DTQ, QDT		
10627	72000010000004000000	PROC	EORLEVEL, EORLQ, QEORL		
10633	72000010000004000000	PROC	ENDGROUP, EFRWQ, QENDFILE		
10637	72000005000003000000	PROC	CLOSE, EFRWQ		
10642	72000006000003000000	PROC	UNLOAD, EFRWQ		
10645	72000006000003000000	PROC	REWIND, EFRWQ		
10650	72000006000003000000	PROC	DETACH, IOQ		
10653	72000005000003000000	PROC	INPUT, IOQ		
10656	72000006000003000000	PROC	OUTPUT, IOQ		
10661	72000003000003000000	PROC	EOI, EOIQ		
10664	72000005000003000000	PROC	CLOCK, TDCQ		
10667	72000004000003000000	PROC	DATE, TDCQ		

10672	72000004000003000000	PROC	TIME, TDCQ
		IFNE	TSS, 0, 1
		IFNE	TSS, 0, 2
10675	72000006000003000000	PROC	REMARK, REMARKQ
10700	72000005000003000000	PROC	ARRAY, ARRAYQ
10703	72000007000003000000	PROC	CONVERT, CNVTQ, QCNVT
10706	72000006000003000000	PROC	UNSTAR, UNSTARQ, QUNSTAR
10711	72000004000003000000	PROC	STAR, STARQ, QSTAR
10714	72000005000003000000	PROC	IDENT, COMPQ
10717	72000006000003000000	PROC	DIFFER, COMPQ
10722	72000006000003000000	PROC	DEFINE, DEFINEQ
10725	72000005000003000000	PROC	ARBNO, ARBNOQ
10730	72000006000003000000	PROC	ANCHOR, ANCHORQ
10733	72000004000003000000	PROC	TRIM, TRIMQ
10736	72000003000003000000	PROC	ANY, ANYQ
10741	72000006000003000000	PROC	NOTANY, ANYQ
10744	72000002000003000000	PROC	EQ, EQQ
10747	72000002000003000000	PROC	NE, EQQ
10752	72000002000003000000	PROC	GT, EQQ
10755	72000002000003000000	PROC	GE, EQQ
10760	72000002000003000000	PROC	LT, EQQ
10763	72000002000003000000	PROC	LE, EQQ
10766	72000005000003000000	PROC	BREAK, ANYQ
10771	72000004000003000000	PROC	SPAN, ANYQ
10774	72000004000003000000	PROC	RTAB, PATQ
10777	72000003000003000000	PROC	TAB, PATQ
11002	72000004000003000000	PROC	RPOS, PATQ
11005	72000003000003000000	PROC	POS, PATQ
11010	72000003000003000000	PROC	LEN, PATQ
11013	72000004000003000000	PROC	SIZE, SIZEQ
11016	72000002000003000000	PROC	IF, IFQ, , LAST
	11021	BUFFBASE	EQU *

11021	66700		SNOBOL	SB7	B0	TERMINATOR FLAG FOR CONTROL CARD SCAN
	13666			BX6	X6-X6	
		5160000100		SA6	100B	
11022	74600			SX6	A0	
		5160000203		SA6	FIELDLN	
11023	5110000070			SA1	70B	START OF IMAGE
		43006		MX0	6	ONE CHAR MASK
11024	0100011066			RJ	GN	IGNORE PROGRAM NAME
11025	0100011066		CC1	RJ	GN GET PARAM IN X6	
11026	10366			BX3	X6	
	13666			BX6	X6-X6	
		7242777723		SX4	X2-1R=	SEE IF SEPERATOR IS =
11027	0314011030			NZ	X4,CC2	NO
		0100011066		RJ	GN	
11030	11203		CC2	BX2	X0*X3	FIRST CHAR
		20206		LX2	6	
		7242777766		SX4	X2-1RI	
11031	0304011042			ZR	X4,CC3	INPUT FILE
		7242777763		SX4	X2-1RL	
11032	0304011043			ZR	X4,CC4	OUTPUT FILE/LIST FLAG
		7242777730		SX4	X2-1R*	
11033	0304011052			ZR	X4,CC7	SPECIAL PARAM
		7242777756		SX4	X2-1RQ	
11034	0304011025			ZR	X4,CC12	
		7242777753		SX4	X2-1RT	
11035	0314011025			NZ	X4,CC1	UNKNOWN OPTION, IGNORE
		5120007445		SA2	P2TRCS	TURN ON TRACE
11036	5130007463			SA3	P3TRCS	
		10622		BX6	X2	
		10733		BX7	X3	
11037	5160007341			SA6	P2TRCT	
		5170007452		SA7	P3TRCT	
11040	5120007735			SA2	P4TRCS	
		10622		BX6	X2	
11041	5160007720			SA6	P4TRCT	
		0400011025		EQ	CC1	
11042	6130000261		CC3	SB3	INFET	
		0400011045		EQ	CC5	
11043	11406		CC4	BX4	X0*X6	
		20406		LX4	6	
		7244777744		SX4	X4-1R0	
11044	0304011050			ZR	X4,CC6	L=0, TURN OFF LIST
		6130000267		SB3	OUTFET	
11045	0306011025		CC5	ZR	X6,CC1	NULL FILENAME IMPLIES DEFAULT
		0100005757		RJ	VALID	X6 RETURNED 0 IF INVALID FILENAME
11046	0306011105			ZR	X6,CCERROR	
		56630		SA6	B3	STORE INTO CORRECT FET
11047	0400011025			EQ	CC1	
11050	7160000000		CC6	SX6	0	
		5160000245		SA6	P1ERFLG	
11051	0400011025			EQ	CC1	
11052	20306		CC7	LX3	6	
		11203		BX2	X0*X3	
		20206		LX2	6	
		13777		BX7	X7-X7	BINARY FORM OF PARAM
11053	11506		CC8	BX5	X0*X6	
		0305011060		ZR	X5,CC9	FINISHED CONVERTING

		20506	LX5	6	
11054	15660		BX6	-X0*X6	
	20606		LX6	6	
	20703		LX7	3	OLD TOTAL * 8
11055	7255777744		SX5	X5-1R0	
	0335011105		NG	X5,CCERROR	ALPHABETIC CHAR
11056	7245777767		SX4	X5-1R8+1R0	
	0324011105		PL	X4,CCERROR	SPECIAL CHAR
11057	36757		IX7	X5+X7	
	0400011053		EQ	CC8	
11060	7242777775	CC9	SX4	X2-1RB	
	0314011063		NZ	X4,CC11	. NOT BUFFER SIZE
11061	7267777676		SX6	X7-65	BUFFER SIZE .LT. 65 IGNORED
	0336011025		NG	X6,CC1	
11062	5170000202		SA7	BUFFSIZE	
	0400011025		EQ	CC1	
11063	7242777771	CC11	SX4	X2-1RF	
	0314011025		NZ	X4,CC1	
11064	5170000215		SA7	FLDLM	
	0400011025		EQ	CC1	
	11025	CC12	IFEQ	TRCFLG,0,2	
		TRC	EQU	CC1	
		TRC	IFNE	,,	
		TRC	ENDIF		
11065	01000040000000000000	FILEWD	VFD	6/1,6/0,6/0,1/1,41/0	
11066	00000000000000000000	GN	DATA	0	
11067	0570011115		NZ	B7,PRE1	
	7160000000		SX6	0	
11070	6120000074		SB2	60	60-CHAR.COUNT*6
11071	11201	GN1	BX2	X0*X1	NEXT CHAR
	0312011073		NZ	X2,GN2	
11072	5011000001		SA1	A1+1	
	11201		BX2	X0*X1	
11073	15110	GN2	BX1	-X0*X1	
	20106		LX1	6	
	20206		LX2	6	
11074	6212777732		SB1	X2-1R+	
	0610011077		GE	B1,B0,GN4	
11075	20606	GN3	LX6	6	
	12626		BX6	X2+X6	
	6122777771		SB2	B2-6	
11076	0400011071		EQ	GN1	
11077	6212777722	GN4	SB1	X2-1R	IS THERE AN IMBEDDED BLANK
	0410011071		ZR	B1,GN1	ZOUNDS, THERE IS.....
11100	6212777730		SB1	X2-1R*	HOW ABOUT AN ASTERISK(*B,*F,...)
	0410011075		ZR	B1,GN3	* IS LEGAL PARAM CHAR
11101	22626		LX6	B2,X6	LEFT JUSTIFY
	6212777720		SB1	X2-1R.	
11102	0410011104		ZR	B1,GN5	
	6212777725		SB1	X2-1R)	
11103	0410011104		ZR	B1,GN5	
	0400011066		EQ	GN	
11104	6170000001	GN5	SB7	1	
	0400011066		EQ	GN	
11105	5110000001	CCERROR	SA1	1	
	0311011105		NZ	X1,*	
11106	5120011111		SA2	ECALL	

	10622		BX6	X2	
	54610		SA6	A1	
11107	5110000001	+	SA1	1	
	0311011107		NZ	X1,*	. WAIT FOR RA+1 TO LCEAR
11110	0200004337		JP	.ABT.	. JSUT ISSUE ABT REQUEST
11111	15230700000000011112	ECALL	VFD	18/3LMSG,42/CCERRM	
11112	23161702171455031716	CCERRM	DATA	10HSNOBOL CON	
11113	24221714550301220455		DATA	10HTROL CARD	
11114	05222217225700000000		DATA	6LERROR.	
11115	6110011116	PRE1	SB1	PRE2	
	0200005671		JP	CALENDR	. GET DATE IN X6
11116	5160010454	PRE2	SA6	DATE	. SET UP COMPILER TITLE
	6110011120		SB1	PRE2.1	
11117	0200005660		JP	TOD	
11120	5160010456	PRE2.1	SA6	TIME	. TIME-OF-DAY FOR COMPILER TITLE
	5110000202		SA1	BUFFSIZE	LENGTH OF ONE BUFFER
11121	36211		IX2	X1+X1	
	6170000001		SB7	1	. CONSTANT 1
	76570		SX5	B7	LOAD X5 WITH A 1
11122	73227		SX2	X2+B7	BUFFER LENGTH * 2 + 1
	7160000032		SX6	SPCTYP	
	20645		LX6	37	
11123	12626		BX6	X2+X6	
	20622		LX6	18	
	5160011021		SA6	BUFFBASE	BYPASS WORD
11124	7160011022		SX6	BUFFBASE+1	STARTING ADDERSS FOR BUFFERS
	20522		LX5	18	
	12756		BX7	X5+X6	
11125	5170000262		SA7	INFET+1	
	54677		SA6	A7+B7	
	54667		SA6	A6+B7	OUT
11126	36616		IX6	X1+X6	FIRST+LENGTH=LIMIT
	54667		SA6	A6+B7	
	12756		BX7	X5+X6	
11127	5170000270		SA7	OUTFET+1	
	54677		SA6	A7+B7	IN
	54667		SA6	A6+B7	OUT
11130	36616		IX6	X1+X6	
	54667		SA6	A6+B7	LIMIT
	7266000014		SX6	X6+FREELEN\$-1	. FL NEEDED
11131	63160		SB1	X6	
	65101		SB1	A0-B1	
	0610011137		GE	B1,B0,PRE2.5	
11132	5110000215		SA1	FLDLM	
	37116		IX1	X1-X6	
11133	0331011105		NG	X1,CCERROR	. MAX FIELD LENGTH HAS BEEN EXCEEDED
	5160000203		SA6	FIELDLN	
11134	20636		LX6	30	
	5160002106		IFNE	TRCFLG,0,1	
	5120002105		SA6	FLDSTAT	
11135	5120002105		SA2	FLDCALL	. REQUEST LARGER FIELD LENGTH
	10722		BX7	X2	
	56770		SA7	B7	. RA+1
11136	5110000001	+	SA1	1	
	0311011136		NZ	X1,*	
11137	6120000261	PRE2.5	SB2	INFET	
	0100005767		RJ	OPEN	

CAL-6000 S N O B O L
INITIALIZATION

COMPASS 3.7-803.
SNOJOB

81/01/01. 01.09.46.

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11140 6120000267
0100005767

SB2 OUTFET
RJ OPEN

11141	5120000203		PRE3	SA2	FIELDLN	
	6110777776			SB1	-1	
11142	63720			SB7	X2	
	5140000205			SA4	MINSTAT	
11143	6244000002			SB4	X4+STNDREL	
11144	56140		INIT1	SA1	B4	. LOOP TO FIND HASH CODES FOR
	10011			BX0	X1	. STANDARD VARIABLES AND PROCEDURES
	21122			AX1	18	
	74510			SX5	A1	
11145	63414			SB4	X1+B4	
	21122			AX1	18	
	6051000002			SB5	A1+2	. FWA OF THE NAME
11146	63310			SB3	X1	
	0430011164			EQ	B3,B0,INIT4	
11147	0100002675			RJ	SEARCH	
11150	12752			BX7	X5+X2	
	54720			SA7	A2	
	21067			AX0	55	
11151	7200000001			SX0	X0+1	. BRANCH IF FUNCTION OR LABEL
	0310011144			NZ	X0,INIT1	
11152	5215000001			SA1	X5+1	
	0331011160			NG	X1,INIT3	. BRANCH IF ARB, BAL, REM ETC.
11153	13777			BX7	X7-X7	
	66771			SB7	B7+B1	
	56770			SA7	B7	
11154	7100000002			SX0	SSTY	
	76670			SX6	B7	
	20067			LX0	55	. INPUT OR OUTPUT INITIALIZED TO
11155	20622			LX6	18	. A NULL STRING VALUE
	76770			SX7	B7	
	12776			BX7	X7+X6	
	66771			SB7	B7+B1	
11156	12770			BX7	X7+X0	
	76670			SX6	B7	
	56770			SA7	B7	
	12661			BX6	X6+X1	
11157	54610		INIT2	SA6	A1	
	0400011144			EQ	INIT1	
11160	6177777776		INIT3	SB7	B7-1	
	43014			MX0	12	
	20160			LX1	48	
11161	11701			BX7	X0*X1	
	56770			SA7	B7	
	76670			SX6	B7	
	76770			SX7	B7	
11162	20622			LX6	18	
	7100000004			SX0	PSTY	
	20067			LX0	55	
11163	12676			BX6	X7+X6	
	12606			BX6	X0+X6	
	0400011157			EQ	INIT2	
11164	76740		INIT4	SX7	B4	
	5170000204			SA7	MAXSTAT	
	76771			SX7	B7+B1	
11165	13666			BX6	X6-X6	
	5170000244			SA7	COMPB7	
	53670			SA6	X7	. END OF THE FREE WORD CHAIN

11166	73771		SX7	X7+B1	
	5170000206		SA7	MAXSTAK	
		53670	SA6	X7	. FIRST WORD IN THE STACK
11167	5170000227		SA7	PRGBASE	. BASE FOR THE OBJECT PROGRAM
	73771		SX7	X7+B1	
		53670	SA6	X7	. FIRST WORD OF THE OBJECT PROGRAM
			*		
11170	63670		SB6	X7	
	7170000001		SX7	PRIORJ	
		20744	LX7	36	
11171	67606		SB6	B0-B6	
	5150000002		SA5	BGP3STK	
11172	5100000110		SA0	BGP2STK	
	54750		SA7	A5	
		66700	SB7	B0	. INITIALIZE PASS 2 OPSIT
11173	6110000000		SB1	ST1	
	7170000001		SX7	1	
11174	5170000223		SA7	LBLINK	
	5110000245		SA1	PLERFLG	
11175	0301007030		ZR	X1,PRE4	
	0400007027		EQ	PRE5	
			USE	*	
3341	64350	RTERROR	SB3	A5	
	0750003403		NG	B5,ERROR40	. COMPILATION ERROR
3342	5110000214		SA1	CODELINK	
	6140000001		SB4	1	
3343	53210	ERROR01	SA2	X1	. PICK UP CODE HEADER
	7212000000		SX1	X2+0	. LINK TO NEXT
		21222	AX2	18	
3344	622277776		SB2	X2-1	. WORDCOUNT = BYPASS - 1
	64122		SB1	A2+B2	. ADDRESS OF FIRST MICRO INSTRUCTION
3345	0413003351	ERROR02	EQ	B1,B3,ERROR10	
	5131000000		SA3	B1+0	
3346	0323003347		PL	X3,ERROR03	. NOT END OF RULE
	6144000001		SB4	B4+1	
3347	612277776	ERROR03	SB2	B2-1	
	611177776		SB1	B1-1	
3350	0702003345		GT	B2,B0,ERROR02	
	0311003343		NZ	X1,ERROR01	
3351	6120000000	ERROR10	SB2	0	
	5110000213		SA1	STAKTOP	
3352	53210	ERROR11	SA2	X1	. NEXT STACK HEADER
	63120		SB1	X2	. BYPASS
	0302003355		ZR	X2,ERROR20	. BOTTOM OF STACK
3353	0322003354		PL	X2,ERROR12	
	6122000001		SB2	B2+1	
3354	67101	ERROR12	SB1	-B1	
	73111		SX1	X1+B1	
	0400003352		EQ	ERROR11	
3355	76140	ERROR20	SX1	B4	. RULE NUMBER
	43506		MX5	6	
	0100002331		RJ	ICX1X6	
3356	7170000055		SX7	1R	
	20744		LX7	36	
	20552		LX5	42	
3357	11156	ERROR205	BX1	X5*X6	
	0311003361		NZ	X1,ERROR206	

				12667		BX6	X6+X7	
3360	20506					LX5	6	
		20706				LX7	6	
			0400003357			EQ	ERROR205	
3361	43052				ERROR206	MX0	42	
		20622				LX6	18	
			5110003410			SA1	TERMESS+2	
3362	15760					BX7	-X0*X6	
		12717				BX7	X1+X7	
			54710			SA7	A1	
				43006		MX0	6	
3363	11706					BX7	X0*X6	
			5011000001			SA1	A1+1	
				12717		BX7	X1+X7	
3364	54710					SA7	A1	
		76120				SX1	B2	. RECURSION LEVEL
			0100002331			RJ	ICX1X6	
3365	7170000055					SX7	1R	
			12667			BX6	X6+X7	
				20666		LX6	54	
3366	5160003412					SA6	TERMESS+4	
			6120000267			SB2	OUTFET	
3367	6110777772					SB1	TERMESS-MESSTER . WORD COUNT	
3370	5111003413				ERROR21	SA1	MESSTER+B1	
			6111000001			SB1	B1+1	
3371	10611					BX6	X1	
			0100004272			RJ	PB	
3372	0710003370					NG	B1,ERROR21	
			5110003406			SA1	TERMESS	
3373	7100000061					SX0	61B	
			20066			LX0	54	
				13601		BX6	X0-X1	
3374	54610					SA6	A1	
			5120003405			SA2	MCALL	
				10722		BX7	X2	
3375	5170000001					SA7	1	
3376	54270				+	SA2	A7	
			0312003376			NZ	X2,*	
3377	5115003413				ERROR30	SA1	ERRORD+B5	. DIRECTORY ENTRY
			63110			SB1	X1	. FWA ERROR MESSAGE
				43560		MX5	48	
3400	56210				ERROR31	SA2	B1	
			10622			BX6	X2	
				0100004272		RJ	PB	
3401	15665					BX6	-X5*X6	
			6111000001			SB1	B1+1	
3402	0316003400					NZ	X6,ERROR31	
				0200004336		JP	ABT	. FLUSH BUFFERS AND ABORT
3403	67505				ERROR40	SB5	-B5	
			6120000267			SB2	OUTFET	
3404	0400003377					EQ	ERROR30	
3405	15230700000000003406				MCALL	VFD	18/3LMSG,42/TERMESS	
3406	34052222172255240522				TERMESS	DATA	10H1ERROR TER	
3407	15111601241117165511					DATA	10HMINATION I	
3410	16552225140555000000					DATA	7LN RULE	
3411	00550124551405260514					DATA	9R AT LEVEL	
3412	00000000000000000000					DATA	0	


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3477 000000000000000004153      VFD      60/E52
3500 000000000000000004156      VFD      60/E53
3501 000000000000000004164      VFD      60/E54
3502 000000000000000004177      VFD      60/E55
3503 000000000000000004205      VFD      60/E56
3504 55140530110317072201      E0      DIS      ,$ LEXICOGRAPHICAL END OF PROGRAM ENCOUNTERED DURING
,EXECUTION.$
3513 55111414050701145517      E1      DIS      ,$ ILLEGAL OPERAND TYPE IN AN ARITHMETIC OPERATION (+
,, -, *, /, **).$
3522 55232422111607552523      E2      DIS      ,$ STRING USED IN ARITHMETIC OPERATION DOES NOT CONFO
,RM TO NUMBER SYNTAX.$
3532 55041126112311171655      E3      DIS      ,$ DIVISION BY ZERO WAS ATTEMPTED.$
3536 55260122110102140555      E4      DIS      ,$ VARIABLE TO THE LEFT OF A [ DOES NOT CONTAIN AN AR
,RAY VALUE.$
3545 55241005220555270522      E6      DIS      ,$ THERE WERE TOO MANY SUBSCRIPTS IN AN ARRAY REFEREN
,CE.$
3553 55241717550605275523      E7      DIS      ,$ TOO FEW SUBSCRIPTS APPEARED IN AN ARRAY REFERENCE.
,$
3561 55241005552601142505      E5      DIS      ,$ THE VALUE OF AN ARRAY INDEX MUST BE OF INTEGER TYP
,E.$
3567 55015506011114252205      E9      DIS      ,$ A FAILURE OCCURRED IN THE EVALUATION OF THE GO-TO
,PART.$
3575 55011655012424051520      E10     DIS      ,$ AN ATTEMPT WAS MADE TO JUMP TO AN UNDEFINED LABEL.
,$
3603 55111414050701145503      E11     DIS      ,$ ILLEGAL COMBINATION OF OPERAND TYPES FOR CONCATENA
,TION.$
3611 55061722021104040516      E12     DIS      ,$ FORBIDDEN OPERAND TYPE FOR ALTERNATION.$
3616 55241005550401240155      E13     DIS      ,$ THE DATA TYPE USED MAY ONLY BE CONCATENATED WITH T
,HE NULL STRING.$
3625 55241005550317162324      E14     DIS      ,$ THE CONSTRUCTION IMPLIED A CALL OF A FUNCTION WHIC
,H HAS NOT BEEN DEFINED.$
3635 55241005551405062455      E15     DIS      ,$ THE LEFT OPERAND FOR A PATTERN MATCH MUST BE A STR
,ING.$
3643 55241005552211071024      E16     DIS      ,$ THE RIGHT OPERAND FOR A PATTERN MATCH MUST BE A PA
,TTERN.$
3651 55241005551501301115      E17     DIS      ,$ THE MAXIMUM FIELD LENGTH HAS BEEN EXCEEDED.$
3656 55241005551501301115      E18     DIS      ,$ THE MAXIMUM STRING LENGTH HAS BEEN EXCEEDED.$
3663 55241005552324012405      E19     DIS      ,$ THE STATEMENT LIMIT HAS BEEN EXCEEDED.$
3670 55241717551501163155      E20     DIS      ,$ TOO MANY ACTUAL PARAMETERS WERE GIVEN IN A STANDAR
,D PROCEDURE CALL.$
3677 55241717551501163155      E8      DIS      ,$ TOO MANY ACTUAL PARAMETERS WERE GIVEN IN A FUNCTIO
,N CALL.$
3705 55241005552001220115      E21     DIS      ,$ THE PARAMETER FOR A FIELD FUNCTION WAS NOT A DATA
,REFERENCE.$
3714 55161755232503105506      E22     DIS      ,$ NO SUCH FIELD IN THE REFERENCED DATA STRUCTURE.$
3721 55015522052425221655      E23     DIS      ,$ A RETURN WAS ATTEMPTED FROM THIS LOW LEVEL.$
3726 55011655461622052425      E25     DIS      ,$ AN -NRETURN- WAS EXPECTED FROM THE PROCEDURE CALLE
,D.$
3734 55015520221703050425      E26     DIS      ,$ A PROCEDURE RETURNING BY -NRETURN- MUST SUPPLY A N
,AME AS ITS VALUE.$
3743 55111604112205032455      E27     DIS      ,$ INDIRECT REFERENCE TO THE NULL STRING.$
3750 55243120055505222217      E28     DIS      ,$ TYPE ERROR, DATA FUNCTION CANNOT SUPPLY A NAME.$
3755 55200122011505240522      E29     DIS      ,$ PARAMETER TYPE ERROR IN STANDARD PROCEDURE CALL.$
3763 55233116240130550522      E30     DIS      ,$ SYNTAX ERROR IN DATA DEFINITION.$
3767 55042520141103012405      E31     DIS      ,$ DUPLICATE NAMES IN DATA DEFINITION.$
3773 55232422111607550122      E32 * (STRING ARITHMETIC NOT YET IMPLEMENTED.)

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4000 55015523240116040122 E35 * (A STANDARD I/O PROCEDURE REFERENCED A NONEXISTENT FILE.)
, FILE.$
4006 55011655012424051520 E36 DIS , $ AN ATTEMPT WAS MADE TO DETACH A VARIABLE WHICH WAS
, NOT ASSOCIATED WITH ANY FILE.$
4017 55220501145501221124 E37 * (REAL ARITHMETIC OVERFLOW.)
4022 55243120055515112315 E38 * (TYPE MISMATCH IN ARITHMETIC OPERATION.)
4027 55111414050701145503 E39 DIS , $ ILLEGAL CHARACTER APPEARED IN ARRAY PROTOTYPE.$
4034 55011655111414050701 E40 DIS , $ AN ILLEGAL FILENAME WAS SPECIFIED TO AN I/O ASSOCI
, ATION PROCEDURE.$
4043 55011655012424051520 E41 DIS , $ AN ATTEMPT WAS MADE TO I/O ASSOCIATE A VARIABLE WH
, ICH WAS ALREADY ATTACHED.$
4053 55233116240130550522 E43 DIS , $ SYNTAX ERROR IN ARRAY PROTOTYPE.$
4057 55011655012222013155 E48 DIS , $ AN ARRAY LOWER BOUND MUST BE LESS THAN THE CORRESP
, ONDING UPPER BOUND.$
4067 55015502172516045511 E49 DIS , $ A BOUND IN AN ARRAY PROTOTYPE WAS TOO LARGE.$
4074 55015504111505162311 E50 DIS , $ A DIMENSION IN AN ARRAY PROTOTYPE WAS TOO LARGE.$
4102 55172005220116045506 E24 * (OPERAND FOR UNARY * IS NOT STRING OR PATTERN.)
4107 55243120055505222217 E33 * (TYPE ERROR, INDIRECT IMPOSSIBLE.)
4113 55243120055505222217 E34 * (TYPE ERROR IN GO TO PART.)
4116 55052222171605172523 E42 * (ERRONEOUS PARAMETER FOR PATTERN FUNCTION (LEN, POS, RPOS, TAB, RT
, AB).)
4126 55233116240130550522 E44 * (SYNTAX ERROR IN PROCEDURE HEADING.)
4132 55243120055505222217 E45 * (TYPE ERROR IN THE PATTERN REFERENCE.)
4136 55171614315501552324 E46 * (ONLY A STRING MAY BE ASSIGNED HERE.)
4142 55243120055505222217 E47 * (TYPE ERROR IN ARITHMETIC CONTEXT.)
4146 55233116240130550522 E51 * (SYNTAX ERROR IN STRING TO BE COMPILED.)
4153 55171614315523242211 E52 * (ONLY STRINGS MAY BE OUTPUT.)
4156 55111603172222050324 E53 * (INCORRECT SYNTAX FOR STRING TO BE CONVERTED TO REAL.)
4164 55031716072201242514 E54 * (CONGRATULATIONS, YOU HAVE DISCOVERED THE ONLY LIMITATION IN SNOBO
, L, PLEASE SIMPLIFY THE ABOVE CONSTRUCTION.)
4177 55011655012424051520 E55 * (AN ATTEMPT WAS MADE TO READ PAST AN END-OF-INFORMATION.)
4205 55015523242211160755 E56 * (A STRING TO BE DISPLAYED WAS TOO LONG.)
11176 END SNOBOL

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54700B CM STORAGE USED 13817 STATEMENTS 1716 SYMBOLS 000018 INVENTED SYMBOLS
PARALLEL CPU ASSEMBLY 23.688 SECONDS 7203 REFERENCES

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ERROR DIRECTORY.

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3 TYPE ERROR DUPLICATE MACRO DEFINITION. NEW ONE OVERRIDES.
OCCURRED ON PAGES 6

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SYMBOLIC REFERENCE TABLE.

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AASGN 7601 142/11 159/36 L
AASGN1 7605 159/37 159/41 L
ABC 6407 134/56 135/03 L
ABCALL 7607 142/06 159/46 L
ABCALL1 7616 160/01 160/09 L
ABC1 6410 135/03 135/05 L
ABC2 6420 135/03 135/13 L
ABGTT 7674 142/42 162/20 L
ABGTT1 7706 162/41 162/47 L

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ABGTT2	7704	162/29	162/42 L						
ABGTT3	7677	162/26	162/28 L						
ABORTPM	1750	80/19 D	180/29						
ABT	4336	85/35 L	166/19	188/48					
ACALL	7623	142/36	160/27 L						
ACHEKI1	675	19/25	19/27 L						
ACHEKS	711	19/23	19/55 L						
ACHEKSF	715	19/16	19/18	20/08 L					
ACHEKSI	700	19/20	19/33 L						
ACHEKSR	713	20/02	20/03 L						
ACHEKS1	744	20/04	20/34	20/39	21/07 L				
ACHEKS2	750	21/11	21/15 L						
ACHEKS3	751	21/08	21/17 L						
ACHEKS4	753	21/16	21/21 L						
ACHEKS5	754	19/53	21/22 L						
ACHEK1	1030	23/17 L							
ACHKSFR	725	20/22	20/29 L						
ACHKSF2	723	20/25 L	20/33						
ACHKSF3	727	20/25	20/34 L						
ACHKSI1	702	19/39 L	21/20						
ACOND	7654	142/41	161/38 L						
ACOND1	7662	161/41	161/49	161/53 L					
ACOND2	7666	161/52	162/06 L						
ACOND3	7664	161/57	162/02 L						
ACSI1	705	19/36	19/45 L						
ACT1	7342	152/06 L	152/43	153/14	153/15	154/34	154/43	154/50	165/02
ACT1A	7347	152/14	152/18 L	153/24	153/45				
ACT10	7403	153/18	153/25 L						
ACT11	7357	140/26	153/32 D	153/34					
ACT12	7406	140/39	140/52	153/34 L					
ACT13	7412	140/20	140/22	140/23	153/42 L				
ACT13A	7413	153/42	153/44 L						
ACT14	7414	140/21	153/47 L						
ACT15	7417	153/47	153/54 L						
ACT16	7357	140/40	140/51	154/02 D					
ACT17	7421	140/27	140/32	154/04 L					
ACT17A	7424	152/34	154/10 L						
ACT18	7425	140/35	154/13 L						
ACT19	7430	140/46	154/20 L						
ACT19A	7432	154/20	154/23 L						
ACT2	7356	139/15	139/31	139/52	140/38	140/48	152/33 L		
ACT20	7433	140/02	154/26 L						
ACT20A	7434	154/26	154/28 L						
ACT21	7440	140/11	154/35 L						
ACT21A	7441	154/35	154/37 L						
ACT3	7361	139/44	139/48	140/05	140/10	140/30	140/53	152/43 L	154/15
		139/46	140/04	140/09	140/29	140/34	140/54	153/05	154/17
ACT4	7367	139/53	140/37	152/57 L					
ACT5	7370	139/54	153/03 L						
ACT6	7372	140/08	153/07 L						
ACT7	7373	153/07	153/09 L						
ACT8	7375	140/19	153/14 L						
ACT9	7377	140/13	140/15	140/16	140/17	153/18 L			
ACT9A	7402	153/20	153/23 L						
ACT9B	7401	153/21 L	153/43						
ADD	1071	11/19	23/33	24/29 L					

ADDEXIT	1077	24/41 L	25/28	26/19	26/23	26/54			
		24/57	25/47	26/21	26/25				
ADDSR1	1160	24/36	24/37	26/45 L					
ADDS1	274	9/04 D	26/46						
ADDS2	274	9/05 D							
AEND	10000	142/40	165/50 L						
AEND1	10014	166/07	166/17 L						
AEND2	10002	165/51	165/53 L						
AEND3	10001	165/06	165/52 L						
AEND5	10021	166/03	166/20 L						
AEND6	10025	166/01	166/26 L						
AGT	7667	142/44	162/09 L						
AGTT	7710	142/45	142/46	162/51 L					
AGTT1	7715	163/04	163/06 L						
ALABEL	7634	142/47	160/50 L						
ALABEL1	7645	161/16 L	161/25						
ALABEL2	7650	161/17	161/26 L						
ALFTBR	7572	142/07	159/17 L						
ALPHAQ	6421	135/15 L	180/39						
ALT	2763	69/14 L	71/41	73/03	73/18	73/54	75/28	76/49	77/28
		71/40	72/05	73/06	73/39	74/54	76/12	77/07	77/50
ALTCHEK	547	11/05	15/46 L						
ALTCPA	615	16/01	17/20 L						
ALTCPA1	616	17/24 L	17/28						
ALTCPA2	624	17/40 L	17/44	17/51	18/01				
ALTCPA3	625	17/41 L	17/47						
ALTCPA4	627	17/46 L	17/48	17/49					
ALTCPA5	630	17/45	17/48 L						
ALTCPA6	634	17/41	18/02 L						
ALTCPE1	574	16/28	16/31 L						
ALTCSF	602	15/55	16/46 L						
ALTCSS	602	15/53	16/45 L						
ALTCSS2	610	16/25	16/57	17/05 L					
ALTCSS3	613	16/30	16/43	17/13 L	18/06				
ALTCSW	552	15/46	15/50 D						
ALTC1	563	16/03	16/11 L						
ALTC2	564	16/08	16/14 L						
ALTC3	566	16/19 L	16/24						
ALTC4	571	16/20	16/25 L						
ALTCWD	551	15/47	15/50 L						
ALTER	757	11/12	21/29 L						
ALTLF	2764	69/13	71/48	72/25	75/24	77/03	77/41		
		69/16 L	72/04	72/28	76/39	77/20	78/11		
ALTLFM	2761	69/11 L	71/22	72/39	76/33				
ALTLF1	2772	69/31 L	69/39						
ALTLF2	2775	69/33	69/40 L						
ALTLF3	3000	69/47 L	69/55						
ALTLF4	3003	69/49	69/56 L						
ALTLF5	2777	69/25	69/44 L						
ALTPA1	1012	21/37	22/39 L						
ALTPA2	1014	22/44 L	22/48						
ALTPE1	1021	21/40	22/56 L						
ALTPM	1643	16/26	17/05	17/29	17/50	80/07 D			
ALTSS1	773	21/49	21/52 L						
ALTSW	762	21/29	21/33 D						
ALTS2	1001	21/47	22/07	22/12 L					
ALTS3	1003	22/17 L	22/49	23/13					

ALTS4	1004	22/20 L	22/54				
ALTS5	1007	22/29 L	22/36				
ALTWD	761	21/30	21/33 L				
ANCHOR	221	4/26 L	33/51	104/33			
ANCHORQ	5130	104/46 L	181/13				
ANYPM	2060	80/25 D	102/32				
ANYQ	5067	103/12 L	181/15	181/16	181/23	181/24	
APARAM	7621	142/34	160/21 L				
APM	7575	142/10	159/25 L				
ARBNOPM	1751	17/35	80/20 D	105/18			
ARBNOQ	5152	105/36 L	181/12				
ARBPM	1657	80/09 D	180/30				
ARGTBR	7630	142/37	160/41 L				
ARGTPR	7571	142/39	159/14 L				
ARITH	1150	24/52	25/08	25/36	25/54	26/28 L	
ARITH1	1154	26/31	26/32	26/36 L			
ARITH3	1157	26/37	26/42 L				
ARITH4	1163	24/55	25/11	25/39	26/51 L		
ARITSW	665	19/09	19/11 D				
ARITWD	664	19/01	19/11 L				
ARRAY	1525	11/41	37/01 L				
ARRAYN	1541	11/42	37/31 L				
ARRAYQ	5632	118/55 L	181/05				
ARRAYV	1542	11/43	37/34 L				
ARRAYV1	1543	37/32	37/35 L				
ARROWD	222	4/31 L	165/46 S	166/26	170/13	170/20	170/43 S 178/41 S
ARULEA	7566	159/03	159/05 L				
ARULE1	7565	142/02	142/03	142/04	159/03 L		
ARULE4	7564	142/05	159/01 L				
ASCHEK	1027	11/07	23/15 L	23/22	23/23	23/24	
ASGN	1566	11/30	38/27 L				
ASGNPM	1577	11/31	38/49 L				
ASGNS1	3302	78/37 L	79/11	79/50			
ASGNS2	3320	78/41	79/12 L				
ASGNS3	3310	78/47	78/49 L				
ASGNS4	3314	79/02	79/04 L				
ASGN1	1573	38/28	38/36 L				
ASPMR	1631	39/43	39/51 L				
ASPM5W	1602	38/49	38/53 D				
ASPMWD	1601	38/50	38/53 L				
ASPM0	1607	39/03	39/05 L				
ASPM1	1612	39/14 L	40/11				
ASPM2	1613	39/15 L	39/32				
ASPM3	1617	39/21	39/23 L				
ASPM4	1621	39/19	39/30 L				
ASPM5	1622	39/16	39/33 L				
ASPM6	1624	39/36	39/38 L				
ASPM7	1636	40/10 L	40/14				
ASPM8	1640	39/39	40/15 L				
ASSIGNS	3300	70/13	71/30	73/28	74/09	78/34 L	
		70/28	72/32	73/44	76/54	78/39	
ASTER	7076	137/54	144/12 L				
ASTER1	7102	137/54	144/19 L				
ATY	11	3/37 D	37/07	117/56			
AUXBR	6737	140/54 L	153/44				
AUXERR	161	140/57 D	164/51				
AUXPR	6736	140/53 L	153/23				

CATPS1	1266	29/52 L	30/25	30/57					
CATSF	1224	28/13 L	39/50						
CATSFP	1301	27/28	30/26 L						
CATSFP1	1305	30/35 L	30/39						
CATSFP2	1316	30/30	31/02 L						
CATSFR	1250	27/39	29/11 L						
CATSFR1	1252	27/41	29/18 L						
CATSFR2	1254	27/45	29/20	29/25 L					
CATSFR3	1255	29/25	29/27 L						
CATSF4	1226	28/19 L	28/37						
CATSF5	1227	28/20	28/22 L						
CATSF6	1232	28/32 L	28/39						
CATSF7	1234	28/31	28/38 L						
CATSF8	1236	28/27	28/40 L						
CATSW1	1174	27/12	27/19 D						
CATSW2	1177	27/17	27/22 D						
CATWD	1173	27/08	27/19 L						
CBI	4321	85/13 L	85/20	85/28	85/30	87/15	170/49	171/51	
CBI0	4324	85/17 L	85/32	85/34					
CBI1	4334	85/23	85/33 L						
CBI2	4317	85/07 L	85/25						
CBO	4305	84/42 L	84/45	84/57	85/03	85/05	93/04	172/50	
CBO1	4313	84/54	84/56 L						
CCERM	11112	184/06	184/07 L						
CCERROR	11105	182/46	183/06	183/08	183/55 L	184/46			
CCXXCC	26	8/02 D	8/04	8/07	8/10	8/13	8/16	8/19	8/22
		8/02	8/05	8/08	8/11	8/14	8/17	8/20	8/23
		8/02 D	8/05 D	8/08 D	8/11 D	8/14 D	8/17 D	8/20 D	8/23 D
		8/02	8/05	8/08	8/11	8/14	8/17	8/20	8/23
		8/03	8/06	8/09	8/12	8/15	8/18	8/21	8/24
		8/03 D	8/06 D	8/09 D	8/12 D	8/15 D	8/18 D	8/21 D	8/24 D
		8/03	8/06	8/09	8/12	8/15	8/18	8/21	8/24
		8/04	8/07	8/10	8/13	8/16	8/19	8/22	
		8/04 D	8/07 D	8/10 D	8/13 D	8/16 D	8/19 D	8/22 D	
CC1	11025	182/09 L	182/36	182/48	183/14	183/18	183/22		
		182/26	182/44	182/51	183/16	183/20			
CC11	11063	183/12	183/17 L						
CC12	11025	182/24	183/22 D						
CC2	11030	182/13	182/15 L						
CC3	11042	182/18	182/37 L						
CC4	11043	182/20	182/39 L						
CC5	11045	182/38	182/44 L						
CC6	11050	182/42	182/49 L						
CC7	11052	182/22	182/52 L						
CC8	11053	182/56 L	183/10						
CC9	11060	182/57	183/11 L						
CHAR	230	4/37 L	143/38	144/34	147/19	150/03	167/26 S	172/07 S	
		143/03	143/47	145/15	148/10	167/19 S	171/31 S	172/11 S	
		143/18	144/19	146/15	148/28	167/25 S	172/04 S		
CHARLEN	246	4/40 L	147/08 S	148/34	149/08 S	151/16 S			
		146/08 S	148/07 S	148/57	151/14	151/31			
CHECK1	4500	89/48 L							
CHECK2	4504	89/56	90/01 L						
CHEK	526	13/32	15/48	21/31	35/25	40/39			
		15/06 L	18/10	31/17	38/51	64/05			
CIO	4213	82/06 L	84/34	85/31	90/06	127/29	128/08	166/18	
		83/31	85/04	86/04	127/11	127/38	135/51		

CIOWAIT	4212	82/04 L	82/19					
CLKCALL	5742	122/28	122/51 L					
CLKWD	235	122/31 S	122/36	122/54	122/55 D			
CLOSEOUT	4341	14/01	85/35	85/40 L	85/47	135/49		
CLX	7047	143/27 L	143/48					
CLZ	7302	150/04	150/33 L					
CMPLQ	10522	178/56 L	180/36					
CNVTQ	5532	116/06 L	181/06					
CODELINK	214	4/18 L	95/47	187/25				
COLS	247	4/41 L	170/07	170/12 S	171/16	171/22 S	171/38 S	
COMPB7	244	4/38 L	97/51	168/08	168/35 S	178/42 S	186/56 S	
COMPQ	5373	112/06 L	181/09	181/10				
CONCAT	1165	11/11	26/57 L					
CONCRD	10234	171/03	173/28 L					
CONFIX	10243	173/41 L	174/36					
CONHEAD	10236	173/33 L						
CONTIX	10240	173/36 L	174/08	174/12	174/18			

		180/34	180/42 D	180/47	180/53 D	181/05	181/11 D	181/19	181/29 D
		180/36 D	180/42	180/47 D	180/53	181/05 D	181/11	181/19 D	181/29
		180/36	180/42 D	180/47	180/53 D	181/05	181/11 D	181/19	181/29 D
		180/36 D	180/42	180/47 D	180/53	181/05 D	181/11	181/19 D	181/29
		180/36	180/42 D	180/47	180/53 D	181/05	181/11 D	181/19	181/29 D
		180/36 D	180/42	180/47 D	180/53	181/05 D	181/11	181/20 D	181/29
		180/36	180/42 D	180/47	180/53 D	181/05	181/11 D	181/20	181/29 D
		180/36 D	180/42	180/47 D	180/53	181/05 D	181/11	181/20 D	181/29
		180/36	180/42 D	180/47	180/53 D	181/05	181/11 D	181/20	181/30 D
		180/36 D	180/42	180/48 D	180/53	181/05 D	181/11	181/20 D	181/30
		180/36	180/42 D	180/48	180/53 D	181/05	181/12 D	181/20	181/30 D
		180/36 D	180/42	180/48 D	180/53	181/06 D	181/12	181/21 D	181/30
		180/36	180/42 D	180/48	180/54 D	181/06	181/12 D	181/21	181/30 D
		180/36 D	180/42	180/48 D	180/54	181/06 D	181/12	181/21 D	181/30
		180/36	180/42 D	180/48	180/54 D	181/06	181/12 D	181/21	181/30 D
		180/36 D	180/42	180/48 D	180/54	181/06 D	181/12	181/21 D	181/30
		180/36	180/42 D	180/48	180/54 D	181/06	181/12 D	181/21	181/30 D
		180/38 D	180/42	180/48 D	180/54	181/06 D	181/12	181/22 D	181/30
		180/38	180/43 D	180/48	180/54 D	181/06	181/12 D	181/22	181/31 D
		180/38 D	180/43	180/48 D	180/54	181/06 D	181/12	181/22 D	181/31
		180/38	180/43 D	180/48	180/54 D	181/06	181/12 D	181/22	181/31 D
		180/38 D	180/43	180/48 D	180/54	181/06 D	181/12	181/22 D	181/31
		180/38	180/43 D	180/48	180/54 D	181/06	181/13 D	181/22	181/31 D
		180/38 D	180/43	180/48 D	180/54	181/06 D	181/13	181/23 D	181/31
		85/42 L	85/46						
CO1	4343								
CPERW	250	4/42 L	146/05 S	147/05 S	148/05 S	149/06 S	151/17	151/28 S	151/34
CTSFSSR	1237	28/11	28/42 L						
CTSFSS1	1217	28/01 L	28/05						
CTSFSS2	1221	28/02	28/06 L						
CTSFSS3	1223	28/09	28/11 L						
CTSFSS9	1242	28/45	28/51 L						
CTY	14	3/40 D	13/22	98/21	178/11				
CZB	4264	84/03 L	84/06	89/47	171/46				
CZB1	4265	84/04 L	84/09						
CZB2	4267	84/09 L	84/11						
DATAQ	6362	134/05 L	180/43						
DATATYP	1	4/02 D	133/19						
DATAWD	244	8/20 D	43/21 S	43/43					
DATA2	1742	43/08	43/13 L						
DATA3	1745	43/22 L	43/32						
DATA4	1752	43/34 L	43/38						
DATA5	1755	43/33	43/39 L						
DATCALL	5705	120/52	121/30 L						
DATE	10454	175/47 L	184/12 S						
DATWD	235	120/55 S	121/03	121/33	121/34 D				
DCHEK	1027	11/09	23/23 D						
DEFINEQ	5316	110/03 L	181/11						
DESTACK	7357	152/35 L	153/32	153/40	154/02	154/11			
DIGIT	731	20/06	20/32	20/41 L					
DIGIT1	737	20/54 L	21/04						
DIGIT2	741	20/43	20/57 L						
DIGIT3	742	20/47	21/02 L						
DIGIT4	735	20/46	20/48 L						
DIGIT6	740	20/56 L	21/03						
DIV	1120	11/24	25/31 L						
DIVS	274	9/08 D	25/37						
DIV1	1125	25/35	25/40 L						

DOL	1453	11/28	35/09	L						
DOLPM	6000	35/09	80/03	D						
DORF	1733	41/34	42/52	L						
DTQ	6234	130/08	L	180/46						
DTY	12	3/38	D	43/39	43/55	129/32				
DTYPWD	247	8/23	D	129/48	S					
DUMMY1	1175	27/20	D							
DUMMY2	1176	27/21	D							
ECALL	11111	183/57	184/06	L						
EFRWQ	6151	128/18	L	180/48	180/49	180/50	180/51			
END	521	11/37	14/01	L						
ENDBCD	7653	161/26	161/33	L						
ENDEXPM	1624	16/37	23/08		32/31	35/52	80/06	D	105/20	
ENDL	4475	88/01	88/17	88/36	89/01	89/20	89/37	L		
		88/06	88/28	88/47	89/09	89/31				
ENTER	2730	34/02	68/08	L	68/10	70/35	71/21	74/47	76/29	
ENTERA	2724	68/01	L	68/03	71/36	72/38	73/34	73/45	74/28	
ENTERX6	3073	71/51	72/29	72/49	76/51	77/12				
		72/08	72/33	L	75/31	76/55	77/53			
ENTER1	2732	68/04	68/06	68/11	L					
EOIQ	5757	123/33	L	180/55						
EORLQ	6163	128/42	L	180/47						
EQQ	5046	102/23	L	181/17	181/18	181/19	181/20	181/21	181/22	
ERRACT	7756	141/08	165/12	L						
ERRACT1	7754	141/06	165/08	L						
ERRACT2	7755	141/04	165/10	L						
ERRACT3	7757	141/02	165/14	L						
ERRCND2	7766	162/07	165/28	L						
ERRLBL	7773	160/53	165/38	L						
ERRLBL2	7771	160/56	165/34	L						
ERRLBL3	7772	161/07	165/36	L						
ERRORD	3413	188/39	189/05	L						
ERRORG	275	10/03	L							
ERROR01	3343	187/27	L	187/39						
ERROR02	3345	187/32	L	187/38						
ERROR03	3347	187/34	187/36	L						
ERROR10	3351	187/32	187/40	L						
ERROR11	3352	187/42	L	187/49						
ERROR12	3354	187/45	187/47	L						
ERROR20	3355	187/44	187/50	L						
ERROR205	3357	187/56	L	188/04						
ERROR206	3361	187/57	188/05	L						
ERROR21	3370	188/24	L	188/28						
ERROR30	3377	188/39	L	188/51						
ERROR31	3400	188/42	L	188/47						
ERROR40	3403	187/24	188/49	L						
ERR1	276	10/06	L							
ERR10	307	10/15	L	13/48	44/21					
ERR11	310	10/16	L							
ERR13	311	10/17	L	29/28						
ERR14	312	10/18	L	43/51						
ERR15	313	10/19	L							
ERR16	314	10/20	L							
ERR17	315	10/21	L	47/16						
ERR18	1247	29/09	L	63/16	87/39					
ERR19	316	10/22	L	12/16						
ERR2	277	10/07	L	20/45	20/57	21/05				

ERR20	317	10/23 L	102/34	107/08	114/43	126/29	127/41	130/43	135/18
		99/28	103/15	110/10	116/09	126/54	128/21	131/54	178/02
		100/01	104/44	112/09	119/07	127/23	128/46	134/12	
		100/40	104/50	113/52	123/03	127/32	130/12	134/45	
ERR21	320	10/24 L	43/57						
ERR22	321	10/25 L	44/10						
ERR23	322	10/26 L	44/24						
ERR24	323	10/27 L	75/10	132/02					
ERR25	324	10/28 L	40/28	45/21					
ERR26	325	10/29 L	45/19						
ERR27	326	10/30 L	64/41	104/56					
ERR28	327	10/31 L	42/55						
ERR29	330	10/32 L	103/20	112/14	118/50	124/43	125/06	127/54	134/26
		99/35	107/13	113/57	119/14	124/44	125/11	131/38	135/21
		103/06	107/31	114/56	124/38	124/46	127/49	131/44	178/08
ERR3	300	10/08 L	25/40						
ERR30	331	10/33 L	132/13	132/16	132/22	132/28	132/31	132/32	
ERR31	332	10/34 L	133/13	133/50					
ERR32	274	9/03 L	9/05	9/07	9/09	25/26	26/15		
		9/04	9/06	9/08	25/25	26/14			
ERR34	507	13/23	13/35 L						
ERR35	333	10/35 L	123/06	126/57	127/26	127/35	128/01	128/24	
ERR36	334	10/36 L	126/38						
ERR37	335	10/37 L	26/51	26/52					
ERR38	336	10/38 L	26/38	26/47					
ERR39	337	10/39 L	116/45	116/56					
ERR4	301	10/09 L	37/08						
ERR40	340	10/40 L	123/14	124/24	124/55	125/23	135/26		
ERR41	341	10/41 L	126/17	126/19					
ERR42	342	10/42 L	100/08	100/11	100/13				
ERR43	343	10/43 L	117/10	117/17	117/18				
ERR44	344	10/44 L	107/24	107/34	107/36	107/55	108/07	108/10	108/14
ERR47	665	19/12 L	101/15	101/18	102/05				
ERR48	345	10/45 L	118/26						
ERR49	346	10/46 L	117/21	118/16					
ERR5	302	10/10 L							
ERR50	347	10/47 L	118/36						
ERR52	350	10/48 L	62/52						
ERR53	351	10/49 L	115/27	115/44					
ERR55	352	10/50 L	85/16						
ERR56	353	10/51 L	119/26						
ERR6	303	10/11 L	37/19						
ERR7	304	10/12 L	37/36						
ERR8	305	10/13 L	41/16						
ERR9	306	10/14 L	12/57						
EXIT	3273	69/22	70/46	78/21 L					
EXIT1	3274	78/21	78/23 L						
EXP	1130	11/25	25/49 L						
EXPCHK	1027	11/10	23/24 D						
EXPPM	1645	16/31	17/34	23/04	35/45	80/08 D			
EXPS	274	9/09 D	25/55	25/56					
EXP1	1135	25/53	25/57 L						
EXP2	1146	26/02	26/22 L						
EXP3	1140	26/07 L	26/18						
EXP4	1145	25/57	26/20 L						
EXP8	1147	26/03	26/24 L						
E0	3504	189/06	190/06 L						

E1	3513	189/07	190/08 L
E10	3575	189/16	190/23 L
E11	3603	189/17	190/25 L
E12	3611	189/18	190/27 L
E13	3616	189/19	190/28 L
E14	3625	189/20	190/30 L
E15	3635	189/21	190/32 L
E16	3643	189/22	190/34 L
E17	3651	189/23	190/36 L
E18	3656	189/24	190/37 L
E19	3663	189/25	190/38 L
E2	3522	189/08	190/10 L
E20	3670	189/26	190/39 L
E21	3705	189/27	190/43 L
E22	3714	189/28	190/45 L
E23	3721	189/29	190/46 L
E24	4102	189/30	191/17 L
E25	3726	189/31	190/47 L
E26	3734	189/32	190/49 L
E27	3743	189/33	190/51 L
E28	3750	189/34	190/52 L
E29	3755	189/35	190/53 L
E3	3532	189/09	190/12 L
E30	3763	189/36	190/54 L
E31	3767	189/37	190/55 L
E32	3773	189/38	190/56 L
E33	4107	189/39	191/18 L
E34	4113	189/40	191/19 L
E35	4000	189/41	190/57 L
E36	4006	189/42	191/03 L
E37	4017	189/43	191/05 L
E38	4022	189/44	191/06 L
E39	4027	189/45	191/07 L
E4	3536	189/10	190/13 L
E40	4034	189/46	191/08 L
E41	4043	189/47	191/10 L
E42	4116	189/48	191/20 L
E43	4053	189/49	191/12 L
E44	4126	189/50	191/22 L
E45	4132	189/51	191/23 L
E46	4136	189/52	191/24 L
E47	4142	189/53	191/25 L
E48	4057	189/54	191/13 L
E49	4067	189/55	191/15 L
E5	3561	189/11	190/19 L
E50	4074	189/56	191/16 L
E51	4146	189/57	191/26 L
E52	4153	190/01	191/27 L
E53	4156	190/02	191/28 L
E54	4164	190/03	191/29 L
E55	4177	190/04	191/31 L
E56	4205	190/05	191/32 L
E6	3545	189/12	190/15 L
E7	3553	189/13	190/17 L
E8	3677	189/14	190/41 L
E9	3567	189/15	190/21 L

FAIL	465	12/56 L	38/11	87/29	113/34	114/14	128/35			
		34/17	38/13	101/04	113/36	114/18	131/22			
		37/52	45/08	110/52	114/01	123/08				
FAILPM	1744	80/17 D	180/32							
FAIL1	467	13/01	13/03 L							
FAIL2	471	13/06 L	13/10							
FAIL3	475	13/08	13/09	13/12 L						
FATBUMP	354	10/52 L	152/54	155/22						
FENCEPM	1745	80/18 D	180/33							
FETHEAD	260	4/53 L	85/41	123/23						
FETLOOK	5747	123/05	123/12 L	125/18	126/56	127/25	127/34	127/57	128/23	
FETLOOK1	5753	123/24 L	123/31							
FIELD	1762	42/53	43/50 L							
FIELDLN	203	4/08 L	47/12	135/28	136/01	182/05 S	184/47 S	186/01		
FIELD1	1767	44/04 L	44/09							
FIELD2	1772	44/07	44/11 L							
FILEWD	11065	183/25 L								
FLDCALL	2105	47/21	47/31 L	184/51						
FLDINCR	1000	2/17 D	47/11	168/30	168/40	168/42				
FLDLM	215	4/22 L	47/14	183/19 S	184/44					
FLDSTAT	2106	47/20 S	47/31	47/32 L	184/50 S					
FLDTYP	2	4/03 D	132/47							
FLSIX	2674	64/44	65/31 L							
FLVQ	6247	130/39 L	180/45							
FREELENS\$	15	180/09 D	180/19	180/29 D	180/31	180/32 D	180/34			
		180/15	180/19 D	180/30	180/31 D	180/33	180/34 D			
		180/15 D	180/29	180/30 D	180/32	180/33 D	184/40			
FREESVD	2524	44/31	45/36	60/06	61/03 L	61/07	61/22	61/29	62/26	
FREEZEQ	6460	136/26 L	180/38							
FRSTWRD	211	4/14 L	98/28	168/11	169/07 S	178/20 S				
FSVDSW	2532	61/15	61/17 D							
FSVDWD	2531	61/05	61/17 L							
GETB	4226	82/47 L	83/21	87/40	88/18	89/10	171/44	173/39		
		82/51	84/08	87/55	88/37	89/21	172/24	174/24		
		83/17	84/10	88/07	88/48	171/20	172/40	174/26		
GETB01	4231	82/52 L	83/37							
GETB02	4233	82/48	82/56 L	83/32						
GETB03	4237	83/09 L	83/50							
GETB04	4241	83/14 L	83/35							
GETB05	4242	82/53	83/16 L							
GETB06	4244	83/21 L	83/25							
GETB07	4246	83/02	83/26 L							
GETB08	4232	82/55 L	83/28							
GETB09	4253	83/13	83/33 L							
GETB12	4255	83/30	83/36 L							
GETB56	4256	83/08	83/38 L							
GETB57	4260	83/40	83/42 L							
GETLBL	7517	157/06 L	157/29	162/09						
GETLBL1	7516	157/04 L	157/10	157/16						
GETLBL2	7526	157/19	157/22 L							
GETLBL3	7531	157/15	157/30 L							
GETNEXT	10027	167/09 L	170/03							
GETNEXT1	10031	167/16 L	167/22							
GETNEXT2	10034	167/17	167/23 L							
GETSTAK	2112	46/29	47/44 L	48/42	54/04	68/51				
GETVAR	7467	156/01 L	156/10	156/13	156/19	157/37	159/17	159/41		
GIVENM	7555	157/56	158/25 L	158/37	158/43	159/39				

GIVENM1	7562	158/26	158/38 L						
GN	11066	182/08	182/09	182/14	183/26 L	183/52	183/54		
GN1	11071	183/30 L	183/42	183/44					
GN2	11073	183/31	183/34 L						
GN3	11075	183/39 L	183/46						
GN4	11077	183/38	183/43 L						
GN5	11104	183/49	183/51	183/53 L					
GOF	474	11/49	13/03	13/11 L					
GOS	454	11/48	12/30 L						
GOTO	447	11/50	12/19 L	12/30	13/04	13/28			
GOTOC	500	11/52	13/20 L						
GOTOC1	502	13/25 L	13/52	13/56					
GOTOT	504	11/51	13/30 L						
GOTOT1	513	13/38	13/41 L						
GOTO1	451	12/19	12/20	12/22 L	13/13	42/43			
GRBCOLL	2147	48/27	49/08 L	50/12	178/09				
GRBFW	2200	49/21	49/28	49/47	50/10 L	50/37	51/32	51/52	
GRBIO	2236	51/19 L							
GRBLINK	2204	49/37	50/20 L	50/22	50/36	51/01	51/22		
GRBL1	2205	50/21 L	50/40						
GRBL2	2206	50/23 L	50/38						
GRBL3	2213	50/34	50/37 L						
GRBL4	2215	50/23	50/39 L						
GRBR	2245	51/16	51/35 L						
GRBSCAN	2216	49/52	50/03	50/43 L	50/44				
GRBSNGL	2247	51/19	51/35	51/40 L	51/42	51/53			
GRBSS	2237	51/10	51/14	51/21 L					
GRBS1	2217	50/44 L	50/57	51/12	51/23	51/36			
		50/52	51/03	51/18	51/33				
GRBS2	2227	50/53	51/04 L						
GRBS3	2230	50/46	51/06 L						
GRBS4	2243	51/02	51/32 L						
GRB1	2151	49/12 L	49/15						
GRB2	2175	49/31	49/57 L						
GRB3	2160	49/23	49/29 L	49/35	49/38	49/48	49/56		
GRB4	2171	49/32	49/49 L						
GRB5	2177	50/09 L	50/13						
GRB6	2201	50/11 L	50/15						
GSB1	2143	48/22 S	48/33	48/47 L					
GSB2	2144	48/23 S	48/34	48/48 L					
GSB3	2145	47/49 S	48/37	48/49 L					
GSB4	2146	47/50 S	48/38	48/50 L					
GSRET	2131	48/15	48/19 L						
GSX2	2107	47/52 S	48/41	48/44 D					
GSX6	2110	47/45 S	48/29	48/45 D					
GSX7	2111	47/46 S	48/30	48/46 D					
GS1	2120	47/55 L	47/57						
GS2	2126	48/08	48/11 L						
GS3	2132	48/10	48/19	48/20 L					
GTTSW	507	13/31	13/34 D						
GTTWD	506	13/30	13/34 L						
HALF	2404	56/17 L	57/12						
HARO	10436	170/31	175/33 L						
HASHLN	71	2/26 D	2/28	95/09					
HASHLWD	110	2/25 L	66/22						
HASHTBL	111	2/27 D	66/34	95/11					
HAV0	4516	91/12 L	93/01						

INDCWD	2627	64/03	64/07 L						
INDRCN	1561	11/35	38/17 L						
INDRCT	2624	38/17	64/02 L	64/27	108/20	126/05			
		38/21	64/13	64/32	109/05	126/30			
INDRCV	1563	11/36	38/21 L						
INDRX	2645	64/21	64/35 L	64/43	65/28	106/43	108/42		
INDR1	2637	64/17	64/20 L						
INDR2	2656	64/56 L							
INDR3	2661	65/03	65/06 L						
INDR5	2663	65/07	65/09 L						
INDR6	2664	65/12 L	65/19						
INDR7	2670	65/15	65/20 L						
INDR8	2642	64/22	64/26 L						
INFAIL	212	4/15 L	12/56	13/17 S	13/27 S	42/21	42/26 S	45/02 S	
INFET	261	4/54 L	170/48	171/43	172/23	173/38	174/25	182/37	184/56
		95/16	171/19	171/50	172/37	174/23	180/13	184/29 S	
INIT1	11144	186/06 L	186/20	186/38					
INIT2	11157	186/37 L	186/51						
INIT3	11160	186/22	186/39 L						
INIT4	11164	186/14	186/52 L						
INPUT	4364	60/08	75/44	87/10 L	90/02	90/05	90/07		
INSKIP	7751	152/05	154/49	165/03 L	165/48				
INSKIP1	7744	164/50 L	165/04						
INT	7214	137/42	137/44	137/46	137/48	137/50	148/01 L		
		137/43	137/45	137/47	137/49	137/51			
INTTYP	31	3/53 D	149/19						
INTY	15	3/41 D	62/35	75/07	125/13	126/16	126/35	180/13	
INT1	7223	148/08	148/13 L						
INT2	7226	148/19 L	148/29						
INT3	7232	148/28 L	148/43						
INT4	7234	148/18	148/31 L						
INT5	7237	148/37 L	148/53						
INT6	7242	148/36	148/44 L						
INT7	7246	148/33	148/54 L						
INT8	7254	149/03	149/09 L						
IOQ	6073	126/52 L	180/52	180/53	180/54				
ITOS	2255	16/09	19/31	27/32	35/30	52/30			
		18/15	21/42	31/28	52/05 L	64/14			
ITOSF	2364	27/47	55/34 L	62/55	103/08	111/52	119/15	131/46	
		33/04	56/11	99/36	111/23	118/52	131/40		
ITOSFTP	2401	15/19	38/57	56/10 L	105/01				
ITOSF1	2372	55/40	55/49 L						
ITOSF2	2373	55/52 L	56/09						
ITOSF3	2375	55/53	55/55 L						
ITOSF4	2363	55/30 L	55/57						
ITOS1	2262	52/12	52/15 L						
ITOS2	2263	52/16 L	52/21						
ITOS3	2264	52/14	52/18 L						
ITOS4	2266	52/20	52/22 L						
ITY	7	3/35 D	41/05	99/34	103/19	112/13	118/49	129/32	
		19/28	62/02	100/47	104/54	113/56	119/13	131/37	
		19/39	62/15	100/48	111/20	114/35	124/42	131/43	
		36/41	62/51	103/05	111/49	114/55	129/29		
ITYWD	1667	40/47	41/05 L	99/41	101/38	122/47	128/29	130/34	134/37
JPB1	453	123/11 D	123/27	123/29					
KC2	10362	165/28	175/21 L						
KE	10312	165/12	175/13 L						

MASKM	4263	83/04	83/51 L	174/45						
MAX	5766	123/41	123/55 L							
MAXLNQ	6401	134/42 L	180/40	180/41	180/42					
MAXSTAK	206	4/11 L	46/24	48/05	53/44	75/51	96/46	168/32	187/02 S	
		33/49	46/44	49/11	68/52	79/34	168/28	178/23		
MAXSTAT	204	4/09 L	94/15	118/37	146/01	147/34	149/17	156/27 S	161/43	
		43/01	98/04 S	125/21	146/30	148/01	150/16	156/33	164/26	
		64/51	116/19	133/17	147/01	148/44	156/02	159/46	186/53 S	
MCALL	3405	188/34	188/52 L							
MCHEK	1027	11/08	23/22 D							
MCOPTBL	357	11/01 L	11/10	11/18	11/26	11/34	11/42	11/50	164/45	
		11/02	11/11	11/19	11/27	11/35	11/43	11/51		
		11/04	11/12	11/20	11/28	11/36	11/44	11/52		
		11/05	11/13	11/21	11/29	11/37	11/45	11/53		
		11/06	11/14	11/22	11/30	11/38	11/46	12/38		
		11/07	11/15	11/23	11/31	11/39	11/47	96/14		
		11/08	11/16	11/24	11/32	11/40	11/48	158/29		
		11/09	11/17	11/25	11/33	11/41	11/49	164/02		
MESSTER	3413	188/23	188/24	189/01 L						
MFCHN	2065	46/52 L	47/29							
MFCHN1	2066	46/54 L	47/01							
MFLN	2074	46/48	47/11 L							
MFLN1	2075	47/12 L	48/18							
MF2	2107	46/43 S	47/09	47/34 L	48/44					
MF6	2110	46/41 S	47/04	47/35 L	48/45					
MF7	2111	46/40 S	47/05	47/36 L	48/46					
MINSTAK	207	4/12 L	42/57	46/05	98/06 S	118/39	133/25	168/36		
		42/22	44/50	64/56	117/35	125/28	168/07 S	178/24		
MINSTAT	205	4/10 L	56/40	68/55	101/34	116/13	164/07	186/04		
		45/09	58/02	94/02	108/21	133/02	168/24			
		49/57	68/37	101/19	109/22	133/35	169/01			
MKNUL	5340	110/53 L	123/09							
MONTHS	5706	121/21	121/40 L							
MORFREE	2057	28/38	53/23	62/21	79/03	88/43	105/45	112/55		
		39/22	54/46	63/31	87/41	88/54	106/30	113/06		
		39/37	55/26	70/41	88/02	89/05	108/32	121/50		
		46/39 L	55/54	71/06	88/13	89/16	109/16	121/56		
		47/10	56/31	74/37	88/24	89/27	109/25	126/09		
		48/17 S	58/08	78/48	88/32	89/33	109/38	132/56		
MULT	1107	11/23	25/03 L							
MULTS	274	9/07 D	25/09							
MULT1	1114	25/07	25/12 L							
MXLNTH	216	4/23 L	29/05	61/53	61/56	87/36	134/10			
NAME	1522	11/45	36/47 L							
NC	1	137/12 D	137/43	137/45	137/47	137/49	137/51			
		137/42	137/44	137/46	137/48	137/50				
NEWRULE	443	12/05	12/10 L	12/21	12/27	42/44				
NEXT	2740	68/28 L	69/16							
NEXTMIC	441	12/02 L	18/47	29/56	44/15	99/22	104/25	115/09	131/29	
		12/08	22/37	35/03	45/31	99/46	104/29	118/08	134/40	
		12/40	23/19	37/16	45/39	100/22	105/34	122/22	134/57	
		13/11	23/52	37/29	45/44	101/11	110/02	126/51	136/08	
		15/18	24/45	38/34	45/46	103/04	111/03	128/17	136/17	
		15/21	29/08	38/47	98/20	103/21	113/16	128/33		
		15/28	29/27	40/34	98/29	103/51	114/40	129/28		
		17/18	29/43	43/48	98/36	104/24	114/54	130/38		
NEXT1	2741	68/31 L	70/52							

NOEND	275	10/05 L	11/38							
NOFAIL	476	11/53	13/16 L							
NOHEX	5411	112/42	112/44 L							
NOINPUT1	7033	143/07 L	143/44							
NOINPUT2	7034	143/09 L	143/36	144/08	144/28	144/47	146/36	147/53	150/32	
		143/26	144/05	144/25	144/43	145/13	147/50	149/31		
NOOP	441	11/02	12/08 D							
NOTEJCT	10244	173/32	173/43 L							
NOTSPCE	10262	173/44	174/17 L							
NOT.ALT	7120	144/30	144/39	144/44 L						
NOT.AND	7124	144/49	144/52 L							
NOT.B.1	7067	143/56 L	144/17							
NOT.EXP	7100	144/13	144/16 L							
NOT.EXP1	7106	144/23	144/26 L							
NOT.LFT	7134	145/08	145/11 L							
NOT.OR	7126	144/53	144/56 L							
NOT.RBR	7122	144/45	144/48 L							
NOT.RYT	7132	145/04	145/07 L							
NOT.UB	7073	143/46	144/06 L							
NOT.XOR	7130	144/57	145/03 L							
NTANYPM	2066	80/26 D	102/30							
NTY	13	3/39 D	36/51	45/18						
NULL	1513	11/40	36/28 L							
NULL1	1515	36/33 L	36/45	36/54						
NXTWRD	210	4/13 L	98/18	165/57	168/12	168/56	170/02	178/21 S		
ONE	2405	56/18 L	56/54							
ONETENTH	5531	56/55	115/50	116/05 L	150/01	150/41				
OPECALL	5777	124/05	124/21 L							
OPEN	5767	123/57 L	124/20	125/56	135/32	184/57	185/02			
OPRACT	7351	152/04	152/23 L	154/48						
OPRERR1	7762	152/17	165/20 L							
OPRERR2	7763	152/23	165/22 L							
OPRERR3	7764	154/18	165/24 L							
OPRERR4	7765	152/16	165/26 L							
OPRND	1565	11/46	38/24 L							
OPRNDIN	2516	59/36	60/06 L							
OPRNDOT	2521	59/37	60/11 L							
OPRNDP	2512	59/33	59/50 L							
OPRNDR1	2507	59/22	59/25	59/30	59/41 L					
OPRNDR2	2510	59/43 L	60/17							
OPRNSW	2477	59/16	59/18 D							
OPRNDWD	2476	59/07	59/18 L							
OPSEXP	7777772	3/03 D	152/33	153/29	154/31					
OPSINT	7777774	3/01 D	3/23							
OPSLIT	7777775	2/57 D	3/22							
OPSREAL	7777773	3/02 D	3/24	157/35	159/25					
OPSSPEC	7777771	3/04 D	153/39	154/10	154/16	154/41				
OPSVAR	7777776	2/56 D	3/21	154/14	156/12	159/36				
OUTFET	267	4/53	10/52	172/47	180/17	184/35 S	188/22			
		4/57 L	95/25	175/03	182/43	185/01	188/50			
OUTPUT	4512	62/46	91/01 L	93/06	119/36					
OUTP2	7353	139/03	139/12	139/22	139/32	139/41	140/07	140/45	152/44	
		139/04	139/13	139/23	139/33	139/42	140/14	140/47	152/57	
		139/06	139/16	139/25	139/35	139/50	140/25	140/49		
		139/07	139/17	139/26	139/36	139/56	140/41	140/50		
		139/09	139/19	139/28	139/38	139/57	140/42	140/56		
		139/10	139/20	139/29	139/39	140/03	140/43	152/26 L		

OUTST	7532	155/07	157/34 L	157/52	159/38				
OUTST2	7535	157/38	L						
OUTST3	7537	157/36	157/42 L						
OUTST4	7541	157/48	L	158/17					
OUTST5	7550	158/02	158/03	158/10 L	158/19				
OUTST6	7552	158/14	158/16 L						
OUTST7	7553	157/55	158/18 L						
OUTST8	7547	158/09	L	158/23					
OUTTY	16	3/42	D	75/09	124/48	126/18	126/37	180/17	
OUTX1	7354	152/29	L	153/12	153/57	154/24			
PAGE	10460	174/21	174/57 S	175/51 L					
PAGENO	252	4/44	L	174/41					
PARAM	1647	11/33	40/33 L						
PASS1	7031	137/54	137/55	143/03 L	143/10	144/11			
PASS2	7340	139/55	144/03	152/25	153/21	164/54	165/07		
		143/09	152/03 L	153/01	153/30	164/55			
PASS3	7451	142/13	152/30	154/08	155/01 L	160/25	161/31	163/11	
		142/14	153/28	154/22	155/21	160/39	162/05		
		142/33	153/37	154/30	159/12	160/48	162/18		
		142/35	153/50	154/39	159/15	161/29	162/56		
PASS3A	7466	155/03	155/15	155/28 L					
PASS3B	7457	155/11	155/13 L						
PASS4	7717	155/12	159/02	162/16	162/48	164/13	165/53		
		157/41	160/37	162/31	163/15 L	164/23	165/55		
		158/15	160/47	162/46	164/11	164/31			
PASS4A	7724	164/12	L	164/32					
PASS4B	7731	164/05	164/24 L						
PASS4C	7726	164/06	164/14 L						
PASS4D	7732	164/24	164/26 L						
PATQ	4764	100/23	L	181/25	181/26	181/27	181/28	181/29	
PATY	5	3/33	D	22/17	22/50				
PB	4272	10/55	84/37	166/14	170/27	172/49	175/09		
		84/19	L	93/03	166/16	170/33	173/12	188/27	
		84/35	166/12	170/22	170/39	175/05	188/44		
PB1	4276	84/25	84/27 L						
PB2	4303	84/33	84/36 L						
PB3	4271	84/16	L	84/30					
PCHAIN	232	8/10	D	32/28 S	33/10	76/01			
PETY	6	3/34	D	29/36	29/52	36/19	75/05	105/19	
PIB	224	8/04	D	33/47 S	68/20	69/24	79/07		
PIX	222	8/02	D	34/20	68/45	69/26	78/43		
		33/48	S	34/43	69/02 S	69/43 S	79/08 S		
PIXREL	0	68/48	S	68/56	180/04 D				
PM	1322	11/26	31/14 L						
PMABT	1425	34/03	34/07	34/08	34/11 L	73/47			
PMASB1	240	8/16	D	8/26	8/30	8/35	79/24 S	79/41	
PMASB2	241	8/17	D	8/27	8/31	8/36	79/13 S	79/47	
PMASB4	242	8/18	D	8/28	79/27 S	79/42			
PMASX0	234	8/12	D	79/16 S	79/35				
PMASX2	236	8/14	D	79/20 S	79/48				
PMASX3	235	8/13	D	8/29	8/33	8/37	8/39	79/43	119/51
		8/25	8/32	8/34	8/38	79/19 S	119/50	120/38	122/55
PMASX4	237	8/15	D	79/23 S	79/44				
PMASX6	233	8/11	D	79/12 S	79/36				
PMA5	245	8/21	D	33/35 S	34/15	34/55	68/43		
PMBUMP	2743	68/12	68/36 L						
PMBUMPR	2733	68/13	L	69/08					

PMCHEK	636	11/06	18/08 L						
PMCSF	646	18/20	18/22 L						
PMCSF1	653	18/31	18/36 L						
PMCSW	641	18/08	18/13 D						
PMCWD	640	18/09	18/13 L						
PMC1	654	18/18	18/39 L						
PMC2	656	18/43	18/45 L						
PMFA0	235	8/29 D	34/21 S	34/47					
PMFA4	241	8/31 D	34/32 S	34/44					
PMFHD	1451	34/50	35/05 L						
PMFOUND	1431	34/18 L	70/03						
PMFX4	240	8/30 D	34/31 S	34/39					
PMF1	1433	34/22 L	34/42						
PMF2	1444	34/22	34/47 L						
PMSF	1344	31/23	32/07 L	35/34	105/05				
PMSF1	1352	32/15	32/20 L						
PMSSSI	1344	31/25	32/05 L	35/36					
PMSTB1	240	8/26 D	75/38 S	75/45					
PMSTB3	241	8/27 D	75/42 S	75/46					
PMSTB4	242	8/28 D	75/41 S	75/48					
PMSTX3	235	8/25 D	75/37 S	75/47					
PMSW	1325	31/14	31/21 D						
PMWD	1324	31/15	31/21 L						
PM1	1353	31/16	31/27	31/29	32/23 L				
PM1A	1362	32/42 L	32/45	32/50	32/55	33/01	33/09	33/15	
PM1B	1363	32/43 L	32/49						
PM1C	1367	32/47	32/50 L						
PM1D	1376	32/57	33/10 L						
PM1E	1377	33/11 L	33/16						
PM1F	1356	32/31 L	33/31						
PM2	1407	32/43	33/34 L						
PM2A	1417	33/54 L	34/09						
PM2B	1427	34/12	34/14 L						
POPS	3027	71/01 L	76/22						
POPS1	3031	71/05	71/07 L						
POPS2	3032	71/07	71/09 L						
POSPM	1675	80/11 D	99/50						
POST0	4571	94/02 L	166/25	166/27					
POST1	4572	94/04 L	94/09						
POST10	4621	95/10 L	95/15						
POST11	4623	95/13	95/15 L						
POST11A	4631	94/20	95/34 L						
POST11B	4636	95/49	95/51 L						
POST11C	4641	95/56	96/03 L						
POST12	4643	96/11 L	96/29						
POST13	4650	96/23	96/25 L						
POST14	4651	96/18	96/25	96/27 L	96/35	96/41	96/43		
POST15	4652	96/17	96/31 L						
POST16	4656	96/32	96/42 L						
POST17	4657	96/12	96/45 L						
POST18	4660	96/47 L	97/13						
POST18A	4663	96/57 L							
POST19	4665	97/04 L	97/10						
POST2	4574	94/06	94/10 L						
POST20	4667	96/57	97/03	97/11 L	97/40	97/42	97/47		
POST21	4670	96/54	97/14 L						
POST22	4671	97/17 L	97/28						

POST22A	4675	97/14	97/29 L							
POST22B	4676	97/32 L	97/39							
POST23	4701	97/22	97/42 L							
POST24	4703	96/48	97/49 L							
POST25	4704	97/52 L	97/57							
POST26	4711	98/10 L	98/16							
POST27	4714	98/10	98/18 L							
POST28	4722	98/32 L	98/34							
POST3	4600	94/21 L	94/48	94/57						
POST4	4601	94/25 L	95/07							
POST5	4603	94/27	94/29 L							
POST5A	4610	94/40	94/42 L							
POST5B	4611	94/34	94/45 L							
POST6	4613	94/44	94/49 L	94/54						
POST7	4615	94/26	94/51	94/55 L						
POST8	4616	94/35	95/01 L							
POST9	4620	94/25	95/09 L							
PRD	1454	11/27	35/12 L							
PRDPM	1777	35/12	80/02 D							
PRDSW	1464	35/22	35/27 D							
PRDWD	1463	35/23	35/27 L							
PRD1	1455	35/07	35/10	35/13 L						
PRD2	1460	35/16	35/20 L							
PRD3	1475	35/46 L	35/51							
PRD4	1503	35/15	35/31	35/37	36/07 L					
PRD5	1477	35/48	35/52 L							
PRE1	11115	183/27	184/10 L							
PRE2	11116	184/10	184/12 L							
PRE2.1	11120	184/13	184/15 L							
PRE2.5	11137	184/43	184/56 L							
PRE3	11141	186/01 L								
PRE4	7030	143/02 L	143/04	178/54	187/20					
PRE5	7027	143/01 L	187/21							
PRGBASE	227	4/36 L	157/17	162/24	162/57	178/37 S				
		95/34	161/08	162/32	168/48	187/04 S				
PRIORA	12	3/08 D	142/08	142/09	142/28	142/31	142/32			
PRIORB	11	3/09 D	142/17	142/18	142/19	142/20	142/21	142/22	142/27	
PRIORC	10	3/10 D	142/25	142/26						
PRIORD	7	3/11 D	142/15	142/16	142/23	142/24				
PRIORE	6	3/12 D	142/29							
PRIORF	5	3/13 D	142/30	142/34	142/35	142/36	142/37	142/39		
PRIORG	4	3/14 D	142/06	142/07	142/10	142/38	142/45	142/46		
PRIORH	3	3/15 D	142/11	142/12	142/42					
PRIORI	2	3/16 D	142/02	142/03	142/13	142/14				
PRIORJ	1	3/17 D	178/47	187/09						
PRMSS	1663	40/45	40/54 L							
PRMSW	1655	40/38	40/41 D							
PRMWD	1654	40/37	40/41 L							
PROCTYP	0	4/01 D								
PSHSTK1	2046	46/10 L	46/14							
PSHSTK2	2050	46/15 L								
PSTY	4	3/32 D	31/50	32/35	35/53	100/16	102/51	186/47		
PTOPX4	2317	33/19	53/41 L	54/01	59/52					
PTOP1	2320	53/42 L	54/06							
PTOP2	2322	53/47 L	53/57							
PTOP3	2326	53/50	54/02 L							
PUREHEX	5457	114/16	114/20 L							

PUSHSTK	2042	43/12	46/02 L	46/18	65/05	117/50	118/44	125/33	133/31
PUTB	4562	91/25	91/57	92/32	92/56	93/05			
		91/37	92/12	92/44	93/02 L				
PUTCHAR	7315	146/21	147/27	148/42	151/11 L	151/29			
PUTCHAR1	7325	151/19	151/28 L						
P1AND	6547	138/13 L	144/50						
P1EOS	6560	138/22 L	167/24						
P1ERFLG	245	4/39 L	166/02	170/18 S	172/46	182/50 S	187/19		
P1EXP	6561	138/23 L	144/14						
P1LEFT	6552	138/16 L	145/09						
P1MAX	253	4/45 L	4/51	146/03 S	147/03 S	148/03 S	148/52 S	151/05	151/40
P1NOT	6556	138/20 L	144/40	145/01					
P1OR	6551	138/15 L	144/54						
P1PB	10210	166/06	170/46	171/47	172/26	172/45 L	172/55	173/25	174/35
		170/16	171/15	171/49	172/29	172/48	172/57	173/35	
		170/44	171/25	172/22	172/36	172/51	173/05	174/10	
P1RITE	6553	138/17 L	145/05						
P1SVTAB	257	4/49 L	143/57 S	144/04					
P1SVX3	254	4/46 L	143/15 S	143/28 S	147/14 S	148/20 S	150/34 S		
		4/50	143/17	143/30	147/18	148/24	150/40		
P1SVX5	255	4/47 L	146/11 S	147/13 S	148/22 S	150/36 S			
		4/52	146/13	147/16	148/25	150/38			
P1TAB	6460	137/15 L	143/43	145/19	146/18	148/31	167/24		
		143/06	144/31	145/21	147/22	150/06			
P2ALT	60	138/12	139/49 D						
P2AND	1	138/13	139/02 D						
P2BLANK	62	139/51 D	144/02	144/06	152/15				
P2CLN	134	138/09	140/36 D	145/11					
P2COMMA	124	138/04	140/28 D						
P2DIV	32	137/55	139/27 D						
P2DOL	56	138/01	139/47 D						
P2END	157	137/15	140/55 D	165/05					
P2EOR	4	138/20	139/05 D						
P2EQUAL	131	138/02	140/33 D						
P2ERR1	167	138/06	138/13	138/16	138/18	141/07 D			
		138/11	138/15	138/17	138/19				
P2ERR2	165	138/12	138/23	141/05 D					
P2ERR3	163	141/03 D	147/51						
P2ERR4	161	141/01 D	144/24	144/42					
P2EXP	35	138/23	139/30 D						
P2INT	7777774	3/23 D	149/30						
P2LEFT	12	138/16	139/11 D						
P2LFTBR	112	138/07	140/18 D						
P2LFTPR	104	137/56	140/12 D						
P2LIT	7777775	3/22 D	147/49						
P2MINUS	24	137/53	139/21 D						
P2MULT	27	137/54	139/24 D						
P2NOT	47	138/20	139/40 D						
P2OR	7	138/15	139/08 D						
P2PLUS	21	137/52	139/18 D						
P2PRD	54	138/05	139/45 D						
P2REAL	7777773	3/24 D	150/31						
P2RGTBR	127	138/08	140/31 D	144/46	153/54				
P2RGTPR	120	137/57	140/24 D	153/09	153/25	162/06	165/38		
P2RITE	15	138/17	139/14 D						
P2SMCLN	144	138/21	138/22	140/44 D	143/35				

P2TBL	6561	139/01 D	139/14	139/30	139/45	140/06	140/31	140/57	152/06
		139/02	139/18	139/34	139/47	140/12	140/33	141/01	164/50
		139/05	139/21	139/37	139/49	140/18	140/36	141/03	
		139/08	139/24	139/40	139/51	140/24	140/44	141/05	
		139/11	139/27	139/43	140/01	140/28	140/55	141/07	
P2TRC	7446	154/45	154/46 L						
P2TRCS	7445	154/45 L	182/27						
P2TRCT	7341	152/04 L	182/31 S						
P2UNDOL	76	138/01	140/06 D						
P2UNMIN	44	137/53	139/37 D						
P2UNPL	41	137/52	139/34 D						
P2UNPRD	71	138/05	140/01 D						
P2USTAR	52	139/43 D	144/16	144/26					
P2VAR	777776	3/21 D	146/35						
P3ALT	35	139/50	142/30 D						
P3AND	20	139/03	139/04	142/17 D					
P3ASGN	12	140/34	142/11 D						
P3BCALL	5	140/53	142/06 D						
P3BGTC	51	140/21	142/43 D						
P3BGTT	51	140/08	142/42 D	142/43					
P3CALL	43	140/27	142/36 D						
P3CAT	34	139/56	139/57	142/29 D					
P3CLN1	14	140/42	142/13 D	142/49					
P3CLN2	15	140/41	140/43	142/14 D					
P3COND	50	140/14	142/41 D	153/48					
P3DIV	31	139/28	139/29	142/26 D					
P3DOL	36	139/48	142/31 D						
P3END	47	140/56	142/40 D						
P3ENDUN	14	142/49 D	154/29	154/38					
P3EOR	22	139/06	139/07	142/19 D					
P3EXP	32	139/32	139/33	142/27 D					
P3GT	52	140/25	142/44 D						
P3GTC	54	142/46 D	153/56						
P3GTT	53	142/45 D	153/11						
P3INDR	7	140/07	140/09	140/10	140/11	142/08 D			
P3LABEL	55	139/53	140/37	142/47 D	154/21				
P3LEFT	24	139/12	139/13	142/21 D					
P3LFTBR	6	140/54	142/07 D						
P3LFTPR	45	140/13	140/15	140/16	140/17	142/38 D			
P3MIN	27	139/22	139/23	142/24 D					
P3MULT	30	139/25	139/26	142/25 D					
P3NAME	10	140/02	140/03	140/04	140/05	142/09 D			
P3NOT	21	139/41	139/42	142/18 D					
P3NULL	40	142/33 D	153/36						
P3OR	23	139/09	139/10	142/20 D					
P3OUT	7455	155/06	155/08 L						
P3OUTA	7456	155/11 L	159/23						
P3PARAM	41	140/29	142/34 D						
P3PLUS	26	139/19	139/20	142/23 D					
P3PM	11	139/54	142/10 D						
P3PMA	13	140/35	142/12 D						
P3PRD	37	139/46	142/32 D						
P3RGTBR	44	140/32	142/37 D						
P3RGTPR	46	142/39 D	153/27						
P3RITE	25	139/16	139/17	142/22 D					
P3RULE1	1	140/49	142/02 D						
P3RULE2	2	140/45	140/47	142/03 D					

P3RULE3	3	140/50	142/04	D						
P3RULE4	4	142/05	D	154/23						
P3STAR	33	139/44		142/28	D					
P3SUBCM	42	140/30		142/35	D					
P3TBL	6751	142/01	D	142/07	142/13	142/19	142/25	142/31	142/37	142/44
		142/02		142/08	142/14	142/20	142/26	142/32	142/38	142/45
		142/03		142/09	142/15	142/21	142/27	142/33	142/39	142/46
		142/04		142/10	142/16	142/22	142/28	142/34	142/40	142/47
		142/05		142/11	142/17	142/23	142/29	142/35	142/41	155/02
		142/06		142/12	142/18	142/24	142/30	142/36	142/42	155/26
P3TRC	7464	155/23		155/24	L					
P3TRCS	7463	155/23	L	182/28						
P3TRCT	7452	155/02	L	182/32	S					
P3TRC1	7453	155/04	L	155/27						
P3UNMIN	17	139/38		139/39	142/16	D				
P3UNPL	16	139/35		139/36	142/15	D				
P4SVB5	253	4/51	D	164/40	S	164/42				
P4SVX4	254	4/50	D	164/38	S	164/47				
P4TRC	7736	164/34		164/35	L					
P4TRCS	7735	164/34	L	182/33						
P4TRCT	7720	164/02	L	182/35	S					
P4TRC1	7721	164/05	L	164/48						
QALPHA	6401	134/44	L	180/39						
QALPHA1	6405	134/50		134/56	L					
QANCHOR	5123	104/33	L	181/13						
QANCHOR1	5124	104/34	L							
QANCHOR2	5126	104/36		104/39	L					
QANY	5051	102/32	L	181/15						
QANY1	5052	102/27		102/29	102/31	102/33	L			
QANY2	5054	102/38	L	103/10						
QANY3	5064	102/37		103/05	L					
QARBNO	5130	104/49	L	181/12						
QARBN1	5135	104/53		104/57	105/02	L				
QARBN2	5137	104/55		105/02	105/06	L				
QARBN3	5141	105/12	L	105/17						
QARRAY	5532	116/08	L	181/05						
QARSV	235	8/32	D	116/22	S	117/38				
QAR0	5534	116/13	L	118/54						
QAR1	5542	116/28	L	117/15						
QAR10	5571	116/35		117/28	L					
QAR11	5572	117/28		117/30	L					
QAR12	5601	117/48		117/51	L	117/55				
QAR13	5610	117/16		117/29	118/09	L				
QAR14	5614	118/17		118/18	118/20	L				
QAR15	5615	118/20		118/22	L					
QAR16	5625	118/42		118/45	L					
QAR17	5626	118/13	S	118/48	L					
QAR18	5627	116/12		118/49	L					
QAR2	5543	116/31	L	116/43	117/03	117/09	117/14	117/27		
QAR3	5547	116/33		116/44	L					
QAR4	5556	116/47		116/57	L					
QAR5	5560	116/57		117/04	L					
QAR6	5562	116/49		117/10	L					
QAR7	5564	116/51		117/15	L					
QAR8	5565	116/53		116/55	117/17	L				
QAR9	5570	117/23		117/25	L					
QBREAK	5047	102/28	L	181/23						

QCLK1	5734	122/33 L	122/34				
QCLOCK	5732	122/28 L	180/56				
QCLOSE	6120	127/31 L	180/49				
QCL0	6122	127/33	127/35 L				
QCMP1	10475	178/01 L	180/36				
QCMP11	10510	178/30 L	178/34				
QCNVT	5467	114/42 L	181/06				
QCNVT1	5475	114/48	114/55 L				
QCNVT2	5477	115/03 L	116/04				
QCNVT3	5502	114/46	115/10 L				
QCNVT4	5506	115/19 L	115/25				
QCNVT5	5510	115/23 L	115/36	115/40	115/47	115/49	115/54
QCNVT6	5516	115/32	115/37 L				
QCNVT7	5520	115/29	115/41 L				
QCNVT8	5524	115/42	115/50 L				
QCNVT9	5526	115/19	115/55 L				
QCOMP	5320	110/07	110/09 L				
QCOMP1	5324	110/17 L	111/25				
QCOMP10	5357	111/32 L	111/37				
QCOMP11	5361	111/38 L	111/42	111/46			
QCOMP12	5362	111/10	111/36	111/41 L	112/04		
QCOMP13	5363	111/30	111/43 L				
QCOMP14	5366	110/20	111/49 L				
QCOMP15	5371	111/50	111/55 L				
QCOMP2	5326	110/22 L	111/54				
QCOMP3	5334	110/42 L	110/51				
QCOMP4	5337	110/52 L	111/05	111/19	111/40		
QCOMP5	5344	110/41	110/50	111/04 L			
QCOMP6	5345	110/12	111/06 L				
QCOMP7	5350	111/12	111/14 L	111/48			
QCOMP8	5352	110/16	111/20 L				
QCOMP9	5355	111/21	111/26 L				
QDATA	6303	131/53 L	180/43				
QDATE	5667	120/44 L	180/57				
QDATSV1	235	8/39 D	132/34 S	133/16			
QDAT1	6310	132/10 L	132/19				
QDAT10	6343	132/45	133/16 L				
QDAT11	6351	133/29	133/32 L				
QDAT12	6355	133/45 L	133/55				
QDAT2	6316	132/15	132/20 L				
QDAT3	6314	132/17 L	132/26				
QDAT4	6315	132/18 L	132/30				
QDAT5	6323	132/12	132/31 L				
QDAT6	6325	132/36 L	133/15				
QDAT7	6335	132/55	132/57 L				
QDAT8	6337	133/07 L	133/12				
QDAT9	6342	133/07	133/14 L				
QDEFINE	5210	107/01 L	107/20	181/11			
QDEFSV1	235	8/34 D	108/44 S	109/13			
QDEFSV2	240	8/35 D	107/48 S	108/08	108/13	109/46	
QDEFSV3	241	8/36 D	109/04 S	109/09			
QDEF0	5220	107/15	107/21 L				
QDEF1	5224	107/06	107/29 L				
QDEF10	5257	108/31	108/33 L				
QDEF11	5265	108/46	108/49 L				
QDEF12	5270	108/51	109/01 L				
QDEF13A	5277	109/15	109/17 L				

QDEF13B	5302	109/24	109/26 L				
QDEF14	5304	109/32 L	109/45				
QDEF15	5307	109/37	109/39 L				
QDEF2	5231	107/37	107/40 L				
QDEF3	5233	107/39	107/46 L				
QDEF4	5234	107/49 L	108/05	108/12			
QDEF5	5236	107/51	107/53 L				
QDEF6	5246	107/52	108/03	108/13 L			
QDEF7	5251	108/20 L	108/38				
QDEF8	5253	108/23 L	108/25				
QDEF9	5254	108/22	108/24 L				
QDETACH	6061	126/28 L	180/52				
QDIFFER	5316	110/06 L	181/10				
QDT	6163	128/45 L	180/46				
QDTA	6224	129/57 L					
QDTC	6232	130/06 L					
QDTCH1	6066	126/36	126/39 L				
QDTI	6220	129/17	129/35	129/53 L			
QDTN	6230	130/04 L					
QDTP	6226	129/30	130/02 L				
QDTR	6222	129/55 L					
QDTS	6216	128/56	129/51 L				
QDT1	6170	128/57 L	129/07	129/16			
QDT2	6173	129/02	129/08 L				
QDT3	6177	129/11	129/15 L				
QDT4	6200	129/03	129/17 L				
QDT5	6201	129/09	129/13	129/14	129/18 L		
QDT6	6202	129/22 L	129/31	129/36	129/50		
QDT7	6205	128/51	129/29 L				
QDT8	6211	129/33	129/37 L				
QEFRW	6145	127/21	127/30	127/39	128/09 L		
QENDFILE	6130	127/40 L	180/48				
QEOI	5743	123/02 L	180/55				
QEOI1	5745	123/04	123/06 L				
QEORL	6151	128/20 L	180/47				
QEORL1	6153	128/22	128/24 L				
QEORL2	6155	128/28 L	128/40				
QEORL3	6160	128/26	128/34 L				
QEOR1	6137	127/43	127/56 L				
QEOR2	6140	127/56	128/01 L				
QEQ	4764	100/26 L	181/17				
QEQSV	235	8/38 D	101/26 S	101/39			
QEQ1	4772	100/27	100/29	100/31	100/33	100/35	100/37 L
QEQ2	5000	100/51 L	102/01				
QEQ3	5002	100/55 L	102/11	102/20			
QEQ4	5004	100/56	101/01	101/03 L			
QEQ5	5010	100/49	100/50	101/12 L			
QEQ5A	5016	101/17	101/25 L				
QEQ5B	5017	101/24	101/27 L				
QEQ5C	5027	101/37	101/44 L				
QEQ5D	5033	101/43	101/53 L				
QEQ6	5035	101/57	102/02 L				
QEQ7	5036	101/14	102/05 L				
QEQ8	5041	100/38	102/13 L				
QFLV	6234	130/11 L	180/45				
QFLV1	6240	130/17	130/23 L				
QFLV2	6241	130/25 L	130/32				

QFLV3	6243	130/28	130/30	L					
QFLV4	6244	130/27	130/33	L					
QFREEZE	6421	135/17	L	180/38					
QFREEZE1	6442	135/53	L	136/24					
QFREEZE2	6446	136/09	L	136/13					
QFRZFET	6452	135/27	S	135/33	135/50	136/19	L		
QFRZSV	235	8/37	D	135/48	S	135/53			
QFRZWRD	6457	135/38		136/24	L				
QGE	4767	100/32	L	181/20					
QGT	4766	100/30	L	181/19					
QIDENT	5317	110/08	L	181/09					
QIF	4724	99/03	L	99/15	104/43	119/46	134/31	181/31	
QIF2	4732	99/17	L	134/03					
QIF3	4730	99/08		99/14	L				
QINPUT	6015	124/53	L	180/53					
QIN1	6020	124/54		125/01	L				
QIN2	6025	124/57		125/13	L				
QIO	6027	124/52		125/17	L				
QIORET	6070	126/27		126/46	L				
QIOSV	235	8/33	D	124/51	S	125/57	126/11		
QIO1	6037	125/31		125/34	L				
QIO2	6046	125/20		125/57	L				
QIO3	6052	126/08		126/10	L				
QIO4	6056	126/20	L						
QLE	4771	100/36	L	181/22					
QLEN	4746	99/48	L	181/29					
QLGT	6247	130/42	L	180/44					
QLGT1	6252	130/48	L	131/36	131/42				
QLGT2	6254	130/51	L						
QLGT22	6255	130/54	L	131/49					
QLGT3	6256	130/57	L	131/11					
QLGT4	6262	131/08		131/12	L				
QLGT5	6263	131/09		131/10	131/13	L			
QLGT6	6271	130/44		131/30	L				
QLGT7	6275	130/47		131/37	L				
QLGT8	6300	130/50		131/43	L				
QLT	4770	100/34	L	181/21					
QMAXLN	6364	134/10	L	180/42					
QMAXLN1	6365	134/07		134/09	134/11	L			
QMAXLN2	6371	134/15		134/20	L				
QMAXLN3	6376	134/19		134/32	L				
QNE	4765	100/28	L	181/18					
QNOTANY	5050	102/30	L	181/16					
QNXID	5161	105/43		106/02	L	106/20	107/23	107/33	107/50
QNXID1	5164	106/09	L	106/16					132/11
QNXID2	5166	106/08		106/14	L	106/39			
QNXID3	5173	106/18		106/21	106/24	L			
QNXID4	5176	106/29		106/31	L				
QNXID5	5200	106/26		106/37	L				
QNXID6	5152	105/40	L	106/09	106/23				
QNXID7	5155	105/44		105/46	L				
QNXID8	5157	105/48		105/52	L				
QOUTPUT	6000	124/22	L	180/54					
QOUT1	6003	124/23		124/27	L				
QOUT2	6010	124/31		124/42	L				
QOUT3	6013	124/26		124/41	124/48	L			
QPAT	4753	99/49		99/51	99/53	99/55	99/57	L	

QPOS	4747	99/50 L	181/28					
QREMARK	5632	119/06 L	181/04					
QREMARK1	5641	119/12	119/21 L					
QREWIND	6073	126/53 L	180/51					
QRMKBUF	7	119/27	119/37	119/53 D				
QRMKBUFL	30	119/34	119/54 D					
QRMKCALL	5655	119/38	119/48 L					
QRMKFET	2	119/22	119/31 S	119/52 D				
QRMKSTAT	235	119/41 S	119/48	119/51 D				
QRMKSVD	235	119/29 S	119/50 D					
QRPOS	4750	99/52 L	181/27					
QRTAB	4752	99/56 L	181/25					
QRW0	6075	126/55	126/57 L					
QRW3	6106	127/14	127/16 L					
QSIZE	4735	99/27 L	181/30					
QSIZE1	4742	99/33	99/37 L					
QSPAN	5046	102/26 L	181/24					
QSTAR	5373	112/08 L	181/08					
QSTCOUNT	6363	134/08 L	180/41					
QSTLIMIT	6362	134/06 L	180/40					
QTAB	4751	99/54 L	181/26					
QTD	5714	120/12	120/44	121/47 L				
QTDC	5724	122/06 L	122/17	122/49				
QTDC1	5727	122/10	122/16 L					
QTIME	5656	120/12 L	181/01					
QTRIM	5067	103/14 L	181/14					
QTRIM1	5073	103/18	103/22 L					
QTRIM2	5076	103/29 L	103/38					
QTRIM3	5100	103/35 L	103/42	103/44	103/45	103/50		
QTRIM4	5105	103/41	103/45 L					
QTRIM5	5107	103/29	103/51 L					
QTRIM6	5113	103/52	104/05 L					
QTRIM7	5115	104/04	104/12 L					
QUNLOAD	6110	127/22 L	180/50					
QUNL0	6112	127/24	127/26 L					
QUNSTAR	5443	113/51 L	181/07					
RCL	4221	82/22 L	84/36	85/49	127/28	128/03		
		82/55	85/33	127/15	127/37	166/17		
RCLWAIT	4220	82/20 L	82/31					
RCL1	4225	82/27	82/30 L					
READ	4374	87/19	87/30 L					
REAL	7265	148/55	150/01 L					
REALTYP	30	3/54 D	150/25					
REAL1	7266	150/03 L	150/15	150/42				
REAL2	7273	150/10	150/16 L					
REMARKQ	5656	120/01 L	181/04					
REMPM	1720	80/15 D	180/34					
REPLSP	10261	174/07 S	174/13	174/16 L				
REPTFAC	10254	173/56	174/07 L	174/15				
RESERVE	2052	15/37	19/49	31/35	36/18	46/28	101/33	128/10
		16/16	20/12	32/10	36/34	46/30	102/43	131/31
		16/41	22/02	32/30	37/02	52/07	105/11	132/21
		16/51	23/03	33/24	41/38	59/42	107/56	168/31
		17/33	30/10	35/43	46/04	60/01	118/01	178/04
		18/26	30/34	36/08	46/23 L	60/12	126/47	
RETUN	1776	12/23	44/20 L					
RPOSPM	1702	80/12 D	99/52					

RTABPM	1716	80/14 D	99/56							
RTERROR	3341	9/03	10/12	10/20	10/28	10/36	10/44	10/56	31/26	
		10/05	10/13	10/21	10/29	10/37	10/45	13/35	35/29	
		10/06	10/14	10/22	10/30	10/38	10/46	15/51	38/55	
		10/07	10/15	10/23	10/31	10/39	10/47	18/14	64/09	
		10/08	10/16	10/24	10/32	10/40	10/48	19/12	102/02	
		10/09	10/17	10/25	10/33	10/41	10/49	21/41	102/21	
		10/10	10/18	10/26	10/34	10/42	10/50	27/26	166/29	
		10/11	10/19	10/27	10/35	10/43	10/51	29/09	187/23 L	
RTOSF	2416	56/38 L	58/20	114/50						
RTOSF0	2407	56/21 L	56/53	57/37	57/40	57/43	57/56	58/01		
RTOSF01	2410	56/23 L	56/37							
RTOSF02	2412	56/21	56/27 L							
RTOSF03	2414	56/30	56/32 L							
RTOSF1	2426	56/49	56/52	56/54 L						
RTOSF10	2461	57/46	57/57	58/02 L						
RTOSF11	2464	58/07	58/09 L							
RTOSF12	2465	58/03	58/11 L							
RTOSF2	2430	56/57 L	57/04							
RTOSF3	2432	57/01	57/05 L	57/09						
RTOSF4	2434	57/06	57/10 L							
RTOSF45	2441	57/20	57/23 L							
RTOSF5	2442	57/24	57/25 L							
RTOSF6	2447	56/48	57/23	57/38 L						
RTOSF7	2450	57/28	57/39 L	57/45						
RTOSF8	2451	57/25	57/38	57/41 L						
RTOSF9	2453	57/42	57/44 L							
RTY	10	3/36 D	23/37	101/12	101/13	114/47	114/55	115/04	150/21	
RULENO	256	4/48 L	143/32	143/34 S	171/04					
SACHEK	660	18/56 L	19/44	24/23	25/06	37/50	101/52	127/47		
		19/14	21/27	24/32	25/34	100/06	102/17	134/24		
		19/32	23/18	24/50	25/52	101/31	125/04			
SACHEK1	657	18/54 L	19/30							
SARRAY	1547	37/18	37/35	37/46 L	38/12					
SASGNIO	2572	62/27	62/34 L							
SASGNI1	2554	62/04 L	62/16							
SASGNO1	2577	62/44	62/49 L							
SASGNO2	2575	62/45 L	63/04							
SASGNP	2611	62/12	63/18 L							
SASGNP1	2614	63/29 L	63/43							
SASGNP2	2616	63/30	63/32 L							
SASGNP3	2622	63/38	63/44 L							
SASGNR1	2565	62/20	62/22 L							
SASGNS	2604	61/49	63/06 L							
SASGNSF	2606	61/54	62/01	63/09 L						
SASGNSW	2545	61/43	61/45 D							
SASGNWD	2544	61/35	61/45 L							
SASGN2	2567	62/08	62/11	62/26 L	63/15	63/50				
SASSIGN	2537	34/38	38/41	41/50	61/32 L	62/40	79/32			
		38/30	40/29	43/27	62/32	62/47				
SBASE	226	8/06 D	33/39 S	34/48	71/56	72/18				
SCALL	10451	166/20	175/44 L							
SCATS	540	13/36	15/20	15/30 L	15/44	27/50	39/01	40/42	64/15	
SCATS1	544	15/35	15/38 L							
SCHLBL	7503	156/32 L	156/42	157/02	157/07	160/50				
SCHLBL1	7513	156/50 L	157/32	161/03						
SCHLINK	7477	156/11	156/21 L	156/30	156/43	160/02				

SSTY	2	3/30 D	54/53	63/11	101/20	129/53	130/04	168/21	
		33/05	62/43	68/36	114/52	129/55	130/06	186/26	
		41/04	62/51	75/03	129/42	129/57	135/03		
		45/23	62/56	87/43	129/51	130/02	147/38		
SSTYWD	1666	41/04 L	129/23						
STACKP2	7364	152/48 L							
STACKX4	7460	142/08	155/16 L	159/34	159/44	162/49			
		142/09	159/26	159/40	160/19				
STACKX7	7363	152/45 L	153/16	153/22					
STAKOUT	7362	152/44 L	153/08	153/19	153/53	154/27	154/36		
STAKSP	106	2/20 D	2/22						
STAKTOP	213	4/16 L	42/20	46/15	130/23	187/41			
		12/41	45/07 S	98/05	178/22				
STAR	1452	11/29	35/06 L						
STARHEX	5420	113/05	113/07 L						
STARPM	2000	35/06	80/22 D						
STARQ	5443	113/50 L	181/08						
STAR1	1507	35/21	36/17 L						
STCOUNT	217	4/24 L	12/10	45/01	134/08				
STLIM	220	4/25 L	12/11	134/06					
STNDREL	2	180/06 D	186/05						
STNPRL	43	94/03	180/35 D						
STOP	1333	31/30 L	35/32						
STOP1	1336	31/41 L	31/45						
STOP2	1340	31/40	31/46 L	32/21					
STOSFX6	2300	15/39	34/33	52/57 L	53/34	63/08	79/28		
STOSF1	2303	53/07 L	53/25						
STOSF2	2304	53/09 L	53/15						
STOSF3	2311	53/06	53/21 L						
STOSF4	2313	53/22	53/24 L						
STOSF5	2314	53/09	53/16	53/26 L					
STTBASE	10522	4/10	180/41	180/48	180/55	181/07	181/14	181/21	181/28
		180/02 D	180/42	180/49	180/56	181/08	181/15	181/22	181/29
		180/35	180/43	180/50	180/57	181/09	181/16	181/23	181/30
		180/36	180/44	180/51	181/01	181/10	181/17	181/24	181/31
		180/38	180/45	180/52	181/04	181/11	181/18	181/25	
		180/39	180/46	180/53	181/05	181/12	181/19	181/26	
		180/40	180/47	180/54	181/06	181/13	181/20	181/27	
STY	1	3/29 D	18/36	21/22	52/25				
ST1	0	2/38 D	140/45	140/47	140/49	140/50	164/56	178/53	187/16
ST10	44	2/47 D	139/09	139/19	139/28	139/38	140/09		
		139/03	139/12	139/22	139/32	139/41	140/15		
		139/06	139/16	139/25	139/35	140/04	140/22		
ST11	50	2/48 D	139/50	139/54	139/57	140/16			
ST12	54	2/49 D	139/10	139/20	139/29	139/39	139/46	140/10	
		139/04	139/13	139/23	139/33	139/42	139/48	140/16	
		139/07	139/17	139/26	139/36	139/44	140/05	140/23	
ST13	60	2/50 D	140/29	140/53					
ST14	64	2/51 D	140/30	140/54					
ST15	70	2/52 D	140/29	140/34	140/35	140/53			
ST2	4	2/39 D	139/53	140/02	140/11	140/19	154/33	154/42	
ST3	10	2/40 D	140/08	140/10	140/13	140/19			
		140/07	140/09	140/11	140/17	140/20			
ST4	14	2/41 D	139/46	140/02	140/04	140/21			
		139/44	139/48	140/03	140/05				
ST5	20	2/42 D	139/54						
ST6	24	2/43 D	140/34	140/35					

ST7	30	2/44 D	140/08	140/25	140/41	140/43				
		139/55	140/21	140/37	140/42					
ST8	34	2/45 D	140/14							
ST9	40	2/46 D	139/56	140/13	140/15	140/17	140/30	140/54		
SUBCOM	1534	11/32	37/18 L							
SUBTR	1101	11/20	23/31	24/47 L						
SUBTRS	274	9/06 D	24/53							
SUBTR1	1106	24/51	24/56 L							
SUPPRESS	7042	138/02	138/04	138/07	138/09	143/18 L	143/22	143/52	145/22	
SUPSAVE	7037	143/14 L	143/19							
SUP0	7044	143/21 L	145/20							
SYXERR	7760	152/11	165/16 L							
SYXERR1	7761	153/10	165/18 L							
SYXERR2	7767	153/26	165/30 L							
SYXERR3	7770	153/55	165/32 L							
TABPM	1704	80/13 D	99/54							
TBUMP	7307	151/01 L	151/08	151/10	151/20	151/33				
TDCQ	5743	122/57 L	180/56	180/57	181/01					
TEMPBASE	222	4/30 D	8/04	8/07	8/10	8/13	8/16	8/19	8/22	
		8/02	8/05	8/08	8/11	8/14	8/17	8/20	8/23	
		8/03	8/06	8/09	8/12	8/15	8/18	8/21	8/24	
TEMPDOL	227	8/07 D	34/34 S	40/23 S	40/24	79/29 S	79/30			
TEMPDOL1	230	8/08 D								
TEN	2341	54/21	54/39 L	56/56	115/18	148/17	148/27			
TENTO10	1033	23/27 L	100/03	101/28	101/49	102/13	125/02	127/45	134/20	
TENTO13	2406	56/19 L	57/10							
TENTO15	1034	23/15	23/28 L	24/20	24/29	24/47	25/03	25/31	25/49	
TENTO9	1032	23/26 L	37/47							
TERMES	3406	188/07	188/21 S	188/23	188/29	188/52	188/53 L			
TERMIN	4346	85/45	85/48 L	86/03	86/05	86/09	127/02			
TERMIN2	4356	86/02	86/04 L	86/10						
TERMIN3	4361	85/54	86/06 L							
TESTCND	225	4/34 L	159/11 S	161/38	162/10	162/20				
TIME	10456	175/49 L	184/15 S							
TITB	10466	175/01	175/02	175/57 L						
TITLE	10452	175/01	175/45 L							
TITLOOP	10266	174/25 L	174/32							
TITLOOX	10241	173/38 L	173/40							
TOD	5660	120/19 L	184/14							
TODCALL	5665	120/19	120/34 L							
TODMASK	5666	120/29	120/39 L							
TODWD	235	120/22 S	120/28	120/37	120/38 D					
TOD1	5662	120/26 L	120/27							
TRACER2	2573	62/40 L								
TRACE1	274	9/01 L								
TRACE2	274	9/02 L								
TRC	10220	154/47	155/25	164/41	173/01 L	173/27				
TRCFLG	0	2/08 D								
TRCSVX7	255	4/52 D	173/02 S	173/07						
TRC1	10225	173/11 L	173/13							
TRC2	10230	173/18 L	173/24							
TRC3	10231	173/17	173/21 L							
TRIMQ	5123	104/31 L	181/14							
TSS	0	2/07 D								
TSTPMOP	226	4/35 L	153/04 S	154/13						
UA	250	8/24 D	18/40	44/16 S	44/57 S	45/47 S	59/04 S			
UNADD	1036	11/21	23/33 L							

UNDFYTP	3	4/04 D	160/04					
UNPACK	10072	143/02	143/29	144/18	145/14	147/15	148/23	170/01 L
		143/16	143/37	144/33	146/12	148/09	150/37	172/09
UNSTARQ	5467	114/41 L	181/07					
UNSUB	1035	11/22	23/31 L					
UNX	1037	23/32	23/34 L	24/03				
UP10	10202	171/01	172/33 L					
UP2	10123	170/14	170/47 L					
UP2.5	10124	170/48 L	172/31	173/42				
UP2.7	10132	171/04 L	172/33					
UP2.8	10134	171/08 L	171/13					
UP2.9	10136	171/09	171/14 L					
UP3	10140	170/08	171/17 L					
UP3.5	10142	171/21 L	172/44					
UP4	10145	171/28 L	171/34					
UP5	10150	171/30	171/35 L					
UP6	10157	171/40	171/48 L					
UP6.5	10164	171/53	172/03 L					
UP7	10170	170/50	172/10 L					
UP8	10173	170/56	172/18 L					
UP9	10175	172/23 L	172/27					
VALID	5757	123/39 L	123/51	123/53	125/22	135/25	182/45	
VARLINK	224	4/33 L	98/07	156/14	178/45 S			
VARTYP	36	3/48 D	146/25	180/16	180/30	180/32	180/34	
		64/20	180/12	180/29	180/31	180/33		

WDCNT	1	180/29 D	180/39 D	180/47 D	180/53	181/05	181/12	181/19	181/26 D
		180/29	180/39	180/47	180/54 D	181/05	181/13 D	181/19	181/26
		180/29 D	180/39	180/47 D	180/54	181/06 D	181/13	181/20 D	181/26
		180/29	180/40 D	180/47	180/54 D	181/06	181/13 D	181/20	181/27 D
		180/30 D	180/40	180/47	180/54	181/06	181/13	181/20 D	181/27
		180/30	180/40	180/48 D	180/54	181/07 D	181/13	181/20	181/27 D
		180/30 D	180/41 D	180/48	180/55 D	181/07	181/14 D	181/20	181/27
		180/30	180/41	180/48 D	180/55	181/07 D	181/14	181/21 D	181/27
		180/31 D	180/41	180/48	180/55 D	181/07	181/14 D	181/21	181/28 D
		180/31	180/42 D	180/48	180/55	181/07	181/14	181/21 D	181/28
		180/31 D	180/42	180/49 D	180/55	181/08 D	181/14	181/21	181/28 D
		180/31	180/42 D	180/49	180/56 D	181/08	181/15 D	181/21	181/28
		180/32 D	180/42	180/49 D	180/56	181/08 D	181/15	181/22 D	181/28
		180/32	180/42	180/49	180/56 D	181/08	181/15 D	181/22	181/29 D
		180/32 D	180/43 D	180/49	180/56	181/08	181/15	181/22 D	181/29
		180/32	180/43	180/50 D	180/56	181/09 D	181/15	181/22	181/29 D
		180/33 D	180/43 D	180/50	180/57 D	181/09	181/16 D	181/22	181/29
		180/33	180/43	180/50 D	180/57	181/09 D	181/16	181/23 D	181/29
		180/33 D	180/43	180/50	180/57 D	181/09	181/16 D	181/23	181/30 D
		180/33	180/44 D	180/50	180/57	181/09	181/16	181/23 D	181/30
		180/34 D	180/44	180/51 D	180/57	181/10 D	181/16	181/23	181/30 D
		180/34	180/44 D	180/51	181/01 D	181/10	181/17 D	181/23	181/30
		180/34 D	180/44	180/51 D	181/01	181/10 D	181/17	181/24 D	181/30
		180/34	180/44	180/51	181/01 D	181/10	181/17 D	181/24	181/31 D
		180/36 D	180/45 D	180/51	181/01	181/10	181/17	181/24 D	181/31
		180/36	180/45	180/52 D	181/01	181/11 D	181/17	181/24	181/31 D
		180/36	180/45 D	180/52	181/04 D	181/11	181/18 D	181/24	181/31
		180/38 D	180/45	180/52 D	181/04	181/11 D	181/18	181/25 D	181/31
		180/38	180/45	180/52	181/04 D	181/11	181/18 D	181/25	
		180/38 D	180/46 D	180/52	181/04	181/11	181/18	181/25 D	
		180/38	180/46	180/53 D	181/04	181/12 D	181/18	181/25	
		180/38	180/46 D	180/53	181/05 D	181/12	181/19 D	181/25	
		180/39 D	180/46	180/53 D	181/05	181/12 D	181/19	181/26 D	
		180/39	180/46	180/53	181/05 D	181/12	181/19 D	181/26	
XADD	20	11/19 D	142/23						
XALT	11	11/12 D	142/30						
XALTCHK	2	11/05 D	142/30						
XAND	12	11/13 D	142/17						
XARRAY	46	11/41 D	142/07						
XARRAYN	47	11/42 D	11/43						
XARRAYV	50	11/43 D	160/44						
XASCHK	4	11/07 D	142/17	142/19	142/20	142/21	142/22	142/23	142/24
XASGN	33	11/30 D	142/11						
XASGNPM	34	11/31 D	142/12						
XCALL	51	11/44 D	160/34						
XCATCHK	1	11/04 D	142/29						
XCONCAT	10	11/11 D	142/29						
XDCHEK	6	11/09 D	142/26						
XDIV	25	11/24 D	142/26						
XDOL	31	11/28 D	142/31						
XEND	42	11/37 D	165/52	165/54					
XEOR	14	11/15 D	142/19						
XEXP	26	11/25 D	142/27						
XEXPCHK	7	11/10 D	142/27						
XGOF	55	11/49 D	162/43						
XGOS	54	11/48 D							
XGOTO	56	11/50 D	162/30						

XGOTOC	60	11/52 D	142/46						
XGOTOT	57	11/51 D	142/45						
XGOX	53	11/47 D	162/12	163/01					
XINDRCN	40	11/35 D	11/36						
XINDRCV	41	11/36 D	142/08						
XLEFT	16	11/17 D	142/21						
XMCHK	5	11/08 D	142/25						
XMULT	24	11/23 D	142/25						
XNAME	52	11/45 D	11/46						
XNOEND	43	11/38 D	165/50						
XNOFAIL	61	11/53 D	162/47						
XNOOP	0	11/02 D	159/01						
XNOT	13	11/14 D	142/18						
XNULL	45	11/40 D	142/33						
XOPRND	53	11/46 D	157/38						
XOR	15	11/16 D	142/20						
XPARAM	36	11/33 D	142/34						
XPM	27	11/26 D	142/10						
XPMCHK	3	11/06 D	142/10						
XPRD	30	11/27 D	142/32						
XRETR	2034	45/33	45/35 L						
XRETURN	1777	44/22 L							
XRET1	2001	44/28 L	44/40						
XRET2	2005	44/32	44/37 L						
XRET3	2007	44/29	44/41 L						
XRET4	2002	44/30 L	44/44						
XRET5	2011	44/42	44/45 L						
XRET6	2025	45/15	45/21 L						
XRET8	2032	45/24	45/32 L						
XRET9	2040	45/20	45/45 L						
XRITE	17	11/18 D	142/22						
XSKIP	37	11/34 D	142/03	142/14					
XSTAR	32	11/29 D	142/28						
XSUBCM	35	11/32 D	142/35						
XSUBTR	21	11/20 D	142/24						
XUNADD	22	11/21 D	142/15						
XUNSUB	23	11/22 D	142/16						
XWDREL	0	45/12	56/42 S	58/11	116/14	168/25 S	169/02	180/07 D	
XZERO	44	11/39 D	142/15	142/16	142/18				
X1NAME	1523	36/50 L	37/31	38/19	44/18				
X1VALUE	2470	37/34	38/22	38/25	59/01 L				
YABORT	3130	73/47 L	80/19						
YALTER	3023	70/47 L	80/07						
YANY	3237	76/57 L	80/25						
YANY1	3241	77/06 L	77/10						
YANY2	3243	77/11 L	77/24						
YARB	3037	71/24 L	80/09						
YARBNO	3131	73/49 L	80/20						
YARBNO1	3135	73/56	74/04 L						
YARBNO2	3137	74/05	74/10 L						
YARBNO3	3142	74/16	74/18 L						
YARBNO4	3146	74/30	74/32 L						
YARBNO5	3150	74/36	74/38 L						
YARBNO6	3154	74/48 L							
YARB1	3040	71/26 L	71/42						
YARB2	3042	71/27	71/31 L						
YBAL	3103	72/54 L	80/16						

YBAL1	3104	72/56 L	73/35							
YBAL2	3110	73/08 L	73/19							
YBAL3	3112	73/10	73/13 L							
YBAL4	3114	73/12	73/14	73/16 L						
YBAL5	3116	73/17	73/20 L							
YBAL6	3121	73/25	73/29 L							
YBREAK	3264	78/01 L	80/28							
YBREAK1	3265	78/05 L	78/19							
YBREAK2	3267	78/12 L	78/16							
YBREAK3	3272	78/13	78/18 L							
YDOL	3024	68/32	70/51 L							
YENDEX	3004	70/03 L	80/06							
YENDEX1	3010	70/09	70/12	70/14 L						
YENDEX2	3015	70/23	70/29 L							
YENDEX3	3021	70/40	70/42 L							
YEXP	3025	70/54 L	80/08							
YEXPR	3034	70/57	71/15 L							
YFAIL	3124	73/38 L	80/17							
YFENCE	3125	73/41 L	80/18							
YLEN	3050	71/45 L	80/10							
YLIT	3225	76/35 L	80/24							
YLIT1	3231	76/45 L	76/50							
YLIT2	3234	76/44	76/51 L							
YNOTANY	3245	77/17 L	80/26							
YNOTAN1	3247	77/23 L	77/27							
YPOS	3055	71/56 L	80/11							
YPOS1	3056	72/01 L	72/16							
YREM	3100	72/46 L	80/15							
YRPOS	3062	72/13 L	80/12							
YRTAB	3076	72/41 L	80/14							
YSPAN	3252	77/30 L	80/27							
YSPAN1	3253	77/34 L	77/49							
YSPAN2	3256	77/40	77/43 L	77/47						
YSPAN3	3261	77/44	77/50 L							
YSPAN4	3262	77/42	77/51 L	78/17						
YSTAR	3157	68/34	80/07	80/10	80/13	80/16	80/19	80/24	80/27	
		74/56 L	80/08	80/11	80/14	80/17	80/20	80/25	80/28	
		80/06	80/09	80/12	80/15	80/18	80/22	80/26		
YSTARIN	3177	75/08	75/35 L							
YSTARP	3210	75/06	76/01 L							
YSTARPR	3221	76/20	76/23 L							
YSTARP1	3211	76/03 L	76/07							
YSTARP2	3217	76/18	76/20 L							
YSTARS	3166	75/04	75/13 L	75/56						
YSTARS1	3167	75/16 L	75/23							
YSTARS3	3175	75/16	75/29 L							
YSTAR1	3160	75/01 L	75/12							
YSTAR2	3171	75/20 L	75/27							
YTAB	3064	72/18 L	80/13							
YTAB1	3072	71/54	72/11	72/32 L	72/52	75/34	77/15	77/56		
YTAB2	3065	72/20 L	72/44							
ZAND	1042	11/13	23/43 L							
ZEND	7337	152/01 L	152/29	152/31						
ZEOR	1047	11/15	23/53 L							
ZERO	1520	11/39	36/41 L							
ZLEFT	1056	11/17	24/07 L							
ZNOT	1053	11/14	24/02 L							

ZOR	1051	11/16	23/56 L				
ZRITE	1061	11/18	24/13 L				
ZROX7	2342	36/29	54/42 L	87/26	101/06	117/52	131/12
		42/17	54/56	98/13	109/54	126/22	131/33
		43/35	64/23	99/17	110/53	128/12	
ZROX7A	2345	54/45	54/47 L				
ZXNOT	1054	24/02	24/04 L				
.ABT.	4337	85/36 L	184/05				
.END.	522	14/02 L	135/52				

```
CAL S N O B O L 01D:.$01. 01%10%15 PAGE 1
1 OUTPUT = 'HELLO WORLD!'
2 END
```

```
SUCCESSFUL COMPILATION
HELLO WORLD!
```

ERROR TERMINATION IN RULE 3 AT LEVEL 0
LEXICOGRAPHICAL END OF PROGRAM ENCOUNTERED DURING EXECUTION.

AAEV DESKTOP CYBER.

NOS 2.8.1 803/803. 81/01/01. 01.10.16.

01.09.44.JSNOBOL.
01.09.44.UCCR, AA, 021, 11.054KCDS.
01.09.44.USER, THUNTER, .
01.09.44.ABSC, B.
01.09.44.SETASL, *.
01.09.44. ASL = UNLIMITED, JSL = UNLIMITED.
01.09.44.SETJSL, *.
01.09.44. ASL = UNLIMITED, JSL = UNLIMITED.
01.09.44.SETTL, *.
01.09.45. TL = UNLIMITED.
01.09.45.COPYBR, INPUT, SNOBOL.
01.09.45. COPY COMPLETE.
01.09.45. END. 0 FILES; 1 RECORD; 43063 WORDS.
01.09.45.REWIND, SNOBOL.
01.09.45.REPLACE, SNOBOL.
01.09.46.COMPASS, I=SNOBOL.
01.10.14. 9 WARNING MESSAGES IN SNOBOL
01.10.15. ASSEMBLY COMPLETE. 54700B CM USED.
01.10.15. 24.822 CPU SECONDS ASSEMBLY TIME.
01.10.15.LGO.
01.10.15. SUCCESSFUL COMPILATION
01.10.15. ERROR TERMINATION IN RULE 3 AT LEVEL 0
01.10.15.UEAD, 0.001KUNS.
01.10.15.UEPF, 0.006KUNS.
01.10.15.UEMS, 29.739KUNS.
01.10.15.UECP, 24.958SECS.
01.10.15.AESR, 37.124UNTS.
01.10.15.\$OUT(* /OP=E)
01.10.15. NO FILES PROCESSED.
01.10.16.\$UNLOAD(* /OP=O)
01.10.16. NO FILES PROCESSED.
01.10.16.\$DAYFILE(OUTPUT, JT=D)
01.10.58.UCLP, AA, 020, 14.848KLNS.