

ADDRESS LENGTH
 0 251
 251

BINARY CONTROL CARDS.
IDENT DEBUG
END

BLOCKS TYPE ADDRESS LENGTH
PROGRAM* LOCAL 0 245
JUMPS LOCAL 245 4

ENTRY POINTS.

DEBUG - 65 SYSERR0 - 1

EXTERNAL SYMBOLS.

EF.CODE	D.TBUF	D.BKBUF	SYSERR	OPERC	EC:WRIT	EC:SAVE
D.ENTRY	D.BKADR	D.BKCAL	CL.OPS	CL.DROT	EC:RTRN	OP.BEAD
D.REGS	D.BKIND	D.NBKPT	IPLIST	CF.DIR	EC:RSTR	

```

IDENT  DEBUG
EXT    FF.CODE . CODE FILE FOR DIRECTORY SYSTEM
ENTRY  DEBUG,SYSERRQ

```

```

EXT    D.ENTRY,D.REGS,D.TBUF,D.BKADR,D.BKIND,D.BKBUF
EXT    D.BKCAL,D.NBKPT,SYSERR

```

```

EXT    CL.OPS

```

```

*
* DEBUGGING ROUTINE
*

```

0

```

SYSCALL XTEXT

```

```

C:      MACRO    P1,P2
        IFC      NE,/P2//
        VFD      1/1,29/=X,P2,30/=X,P1
        ELSE
        VFD      40/=X,P1
        ENDIF
        ENDM

```

```

D:      MACRO    P1,P2
        IFC      NE,/P2//
        VFD      30/P2,30/=X,P1
        ELSE
        VFD      40/P1
        ENDIF
        ENDM

```

```

EXT     IPLIST,OPERCL

```

```

*
* MACSET CL.OPS,IPLIST,ECS
*

```

```

BEAD    MACRO    FUNC
        SB6      BEAD.FUNC
        SYSCALL  READ
        ENDM

```

```

4      BEAD.STP EQU    4      . . . STOP
5      BEAD.LO  EQU    5      . LINE OUTPUT
6      BEAD.LIN EQU    6      . LINE INPUT
7      BEAD.CO  EQU    7      . CHARACTER OUTPUT

```

```

0 000000000000000000000000 x BEAD C: OP.BEAD

```

```

*
* TYPEX2 MACRO LOCAL OUT
        LX2    6

```

```

MX3      A0-6
BX1      X3-X2
ZR       X1,OUT
SX1      X1+40R
BEAD     CO
BSS      0
ENDM

OUT
*
*
1 0130000002 +      SYSERR0  SAVE      D. REGS
4 5110000000 X      SA1        SYSERR   . PICK UP LINK
      20136          LX1        30
      53210          SA2        X1       . FETCH ID
      000012         DUP        10.1
55 6110000167 +      TYPEX2
      6160000005     SB1        D.HELLO
57 0130000060 +      BEAD     LO       . FINISH LINE
62 0100000000 X      RESTORE  D. REGS
63 04112223312305222200  LOOP      RJ        D.ENTRY
64 0200000062 +      DATA   ALDIRSYSERR
      JP        LOOP      . KEEP OUT OF TROUBLE
*
*
65 0130000066 +      DEBUG    SAVE      D. REGS
70 5110000000 X      SA1        D.ENTRY  PICK UP RETURN
      20136          LX1        30
71 7120000001      SX2        1
      36672          IX6        X1+X2   INCR RETURN ADDR
      20636          LX6        30
72 5160000000 X      SA6        D.ENTRY  PICK UP I.D.
      53210          SA2        X1
      000012         DUP        10.1
142 6110000167 +      TYPEX2
      6160000005     SB1        D.HELLO
144 0200000207 +      BEAD     LO       FINISH LINE
      JP        D.DEBUG  GO DIRECTLY TO BEAD. DO NOT PASS GO.
*
* TYPE MESSAGE AND AWAIT COMMAND
*
145 6160000005      D.TYPE   BEAD     LO
147 13666           D.CMD    BX6      X6-X6
      5160000000 X   SA6      D.TBUF
150 7110000035      SX1      35R      (ASCII FOR +=)
      6160000007     BEAD     CO       TYPE HERALD CHARACTER
152 6110000000 X      SB1      D.TBUF
      6160000006     BEAD     LIN
154 5150000000 X      SA5      D.TBUF
      66100          SB1      B0
155 6120000004      SB2      D.NCMDS
156 5141000163 +      D.CMD1  SA4      R1+D.CMDS
      13445          BX4      X4-X5
157 0304000162 +      ZR       X4.D.CMD2
      6111000001     SB1      R1+1

```

160	0712000156 +		LT	R1,B2,D.CMD1
		6110000172 +	SB1	D.P00 ILLEGAL COMMAND
161	0200000145 +		JP	D.TYPE
162	0210000245 +	D.CMD2	JP	R1+D.RTNS JUMP TO PROPER ROUTINE

*
* COMMAND AND JUMP TABLES
*

MACRO CMND,RTN,C1,C2,C3,C4,C5,C6,C7
USE JUMPS
*
JP D,RTN
*
USE
*
VFD 4/0
CODE A SWITCH TO ASCII
CHAR C1,C2,C3,C4,C5,C6,C7
CODE D BACK TO DISPLAY CODE
ENDM

245

D,RTNS USE JUMPS
BSS
USE *

CHAR MACRO C1,C2,C3,C4,C5,C6,C7
IFC NE,/C1//
VFD Z/1R,C1
CHAR C2,C3,C4,C5,C6,C7
ELSE
T SET S+1-7
VFD Z/155B,T/0
ENDIF
ENDM

163

D,CMDS BSS 0

245 0200000203 +
163 00
33200000000000000000
246 0200000207 +
164 00
110
045
210
152
047
4640000

EXIT LIST 0
CMND 0
VFD 4/0
VFD Z/155B,T/0
DEBUG CMND D,E,B,U,G
* VFD 4/0
VFD Z/1RD
VFD Z/1RE
VFD Z/1RB
VFD Z/1RU
VFD Z/1RG
VFD Z/155B,T/0

41B (= 1001 BASE 2)

247 0200000215 +
250 0200000217 +

FIN CMND
BKPT CMND
*
D,NCMDS EQU *-D,CMDS

DRT0DF CMND D,R,T,0,D,F

CMND
CHAR
CMND
CHAR
CHAR
CHAR
CHAR
CHAR
CHAR

1
2
3
4
5
6
7


```

203 0130000204 +
206 0200000000 x

207 0130000210 +
212 6160000004
214 6110000167 +
      0200000145 +
215 0130000216 +

217 5150000000 x
      5140000000 x
220 7160000000 x
      37646
221 0326000243 +
      7264000001
222 54640
      53350
      73240
      20402
223 36442
      5224000003 x
224 0312000243 +
      10693
      54620
225 7264000000 x
      7176000100
226 20722
      12667
      20696
227 5160000000 x
      7160000000 x
242 6110000175 +
      0200000145 +
243 6110000200 +
      0200000145 +

244 5170777776
251

```

```

*
* COMMAND ROUTINES
*
D.EXIT RESTORE D.REGS
JP D.ENTRY

*
*
D.DEBUG RESTORE D.REGS
BEAD STP
SB1 D.HELLO
JP D.HELLO
RETURN D.TYPE

*
*
EXT CL.DRCT,CF.DIR

*
*
SET BREAKPOINT

*
*
D.BKPT SA5 D.BKADR ADDRESS FOR BREAKPOINT
SA4 D.BKIND INDEX OF BREAKPOINT
SX6 D.NBKPT
IX6 X4+X6
PL X6,D.BKPTI JP IF ALL BKPTS USED UP
SX6 X4+1 INCR BKPT INDEX
SA6 A4
SA3 X5 WORD TO BE SAVED
SX2 X4
LX4 ?
IX4 X4+X2
SA2 X4+D.BKBUF+3 SAVE WORD BUFFER
NZ X2,D.BKPTI JP IF BKPT SET ALREADY
BX6 X3
SA6 A2
SX6 X4+D.BKBUF CONSTRUCT RJ INSTR
SX7 0100B
LX7 18
BX6 X6+X7
LX6 30
SA6 D.BKCAL WRITE RJ TO CODE FILE
WRITE (CL.DRCT,CF.DIR),A3,D.BKCAL,I,BKPTERR
SB1 D.OK
JP D.TYPE
D.BKPTI SB1 D.NOPE
JP D.TYPE

BKPTERR SA7 -1 UNEXPECTED RETURN
END

```

```

**
** D.DRTDF DISPCAP 0 DISPLAY ZERO-TH CAP
SD1 =XCA.DRCT
SA1 TYPES+B1 FETCH DIRECTORY OF TYPE
BX1 X6 X4
HX6 60 11 BX1 -X1+X6
BX1 X6+X1
NZ X1, D.BKPTI NOT A DISK FILE
BRZ X7 UNIQUE Name, disk address
CRCAP 0, (=XCL.DRCT, =XCA.DRKF), (XZ)
SD1 D.OK
JP D.TYPE

```

```

42100 STORAGE USED 704 STATEMENTS 74 SYMBOLS 000020 INVENTED SYMBOLS
6600 ASSEMBLY 7.072 SECONDS 159 REFERENCES

```

DEBUG
SYMBOLIC REFERENCE TABLE.

COMPASS - VER 2.

09/06/71 14.40.44.

PAGE 8

BEAD	0	PROGRAM*	2/47 L	3/16	3/16	3/34	3/34	3/34	3/45	
			3/16	3/16	3/16	3/34	3/34	3/34	3/47	
			3/16	3/16	3/16	3/34	3/34	3/36	7/10	
			3/16	3/16	3/18	3/34	3/34	3/41		
BEAD.CO	7		2/45 D	3/16	3/16	3/16	3/34	3/34	3/34	3/44
			3/16	3/16	3/16	3/16	3/34	3/34	3/34	
			3/16	3/16	3/16	3/34	3/34	3/34	3/34	
BEAD.LIN	6		2/44 D	3/46						
BEAD.LO	5		2/43 D	3/17	3/35	3/40				
BEAD.STP	4		2/42 D	7/09						
BKPTERR	244	PROGRAM*	7/40	7/45 L						
CF.DIR	0	EXTERNAL*	7/40							
CL.DRCT	0	EXTERNAL*	7/40							
CL.OPS	0	EXTERNAL*	2/34							
DEBUG	65	PROGRAM*	2/03 E	3/24 L						
D.BKADR	0	EXTERNAL*	7/18							
D.BKBUF	0	EXTERNAL*	7/29	7/33						
D.BKCAL	0	EXTERNAL*	7/28 S	7/40						
D.BKIND	0	EXTERNAL*	7/19							
D.BKPT	217	PROGRAM*	5/44	7/18 L						
D.BKPT1	243	PROGRAM*	7/22	7/30	7/42 L					
D.CMD	147	PROGRAM*	3/41 L							
D.CMDS	163	PROGRAM*	3/50	5/28 L	5/46					
D.CMD1	156	PROGRAM*	3/50 L	4/01						
D.CMD2	162	PROGRAM*	3/52	4/04 L						
D.DEBUG	207	PROGRAM*	3/36	5/34	7/08 L					
D.ENTRY	0	EXTERNAL*	3/19	3/25	3/30 S	7/05				
D.EXIT	203	PROGRAM*	5/31	7/04 L						
D.FIN	215	PROGRAM*	5/43	7/12 L						
D.HELLO	167	PROGRAM*	3/16	3/34	6/04 L	7/10				
D.NBKPT	0	EXTERNAL*	7/20							
D.NCMDS	4		3/49	5/46 D						
D.NOPE	200	PROGRAM*	6/16 L	7/42						
D.OK	175	PROGRAM*	6/12 L	7/40						
D.POO	172	PROGRAM*	4/02	6/08 L						
D.REGS	0	EXTERNAL*	3/11	3/19	3/25	7/05	7/09			
D.RTNS	245	PROGRAM*	4/04	5/15 L						
D.TBUF	0	EXTERNAL*	3/42 S	3/45	3/47					
D.TYPE	145	PROGRAM*	3/40 L	4/03	7/11	7/41	7/43			
EC:RSTR	0	EXTERNAL*	3/19	7/05	7/09					
EC:RTRN	0	EXTERNAL*	7/13							
EC:SAVE	0	EXTERNAL*	3/11	3/25						
EC:WRIT	0	EXTERNAL*	7/40							
EF.CODE	0	EXTERNAL*								
IPLIST	0	EXTERNAL*	2/34							
IP::LIST	0	EXTERNAL*	2/34 D	7/40 S	7/40 S	7/40 S	7/40 S	7/40 S	7/40	
LOOP	62	PROGRAM*	3/19 L	3/21						
OPERCL	0	EXTERNAL*								
OP.BEAD	0	EXTERNAL*	2/47							
OP:::CL	0	EXTERNAL*	2/34 D	3/11	3/19	3/25	7/05	7/09	7/13	7/39
SYSERR	0	EXTERNAL*	3/11							
SYSERRQ	1	PROGRAM*	2/03 E	3/10 L						
T	25		5/33 D	5/33	5/41 D	5/41	5/44 D	5/44	5/45 D	5/45