

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
STORAGE ALLOCATION.

COMPASS - VER 2.

08/09/71 15.37.29.

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ADDRESS LENGTH

BINARY CONTROL CARDS.

ADDRESS	LENGTH	IDENT	FAKEG
0	0		
0		END	

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE

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IDENT FAKEG

TOP NAMES HERE

	OPNAME\$	XTEXT	LIST	X
0	C.SELFT	EQU 0		
1	C.ALLOC	EQU 1		
2	C.INTFIL	EQU 2		
3	C.RFILE	EQU 2+1		
4	C.WFILE	EQU 3+1		
5	C.SENDE	EQU 4+1		
6	C.GETE	EQU 5+1		
7	C.CCLIST	EQU 6+1		
10	C.CFILE	EQU 7+1		
11	C.CBLK	EQU 8+1		
12	C.CPROC	EQU 9+1		
13	C.CEVCH	EQU 10+1		
14	C.CSPROC	EQU 11+1		
15	C.CCC	EQU 12+1		
16	C.SAVE	EQU 13+1		
17	C.RESTOR	EQU 14+1		
20	C.DSCAP	EQU 15		
20	C.DSPC\$P	EQU C.DSCAP	.. DISPLAY A CAPABILITY	
21	C.FSON	EQU 16+1	.. OLD NAME FOR C.DSCAP	
22	C.MOVEC	EQU 18	.. MOVE A CAPABILITY WITHIN FULL CLIST	
22	C.MVEC\$P	EQU C.MOVEC	.. OLD NAME FOR C.MOVEC	
23	C.CAPIN	EQU 18+1		
24	C.CAPOU	EQU 20	.. COPY A CAPABILITY OUT OF FULL CLIST	
24	C.CAPOUT	EQU C.CAPOU	.. OLD NAME FOR C.CAPOU	
25	C.ESMGEN	EQU 21	SET ANY ESM IN PROCESS	
26	C.ESMLOC	EQU 22	SET LOCAL ESM	
27	C.MKOPR	EQU 23	CREATE OPERATION(SUBP CALL)	
30	C.RETURN	EQU 24	SURPROCESS RETURN	
31	C.FRETUR	EQU 25	F-BRETURN	
32	C.FIXC	EQU 26	FIX CAPABILITY PS	
33	C.FIXD	EQU 27	FIX DATUM PS	
34	C.UDAT	EQU 28	CHANGE ANY PS TO USER DATUM	
35	C.UCAP	EQU 29	CHANGE ANY PS TO USER CAPABILITY	
36	C.ACAP	EQU 30	CHANGE ANY PS TO ANY CAPABILITY	
37	C.ADDOPT	EQU 31	ADD OPTION BITS TO PS	
40	C.COPYOP	EQU 32	• MAKE A COPY OF AN OPERATION	
41	C.CHKBLK	EQU 33	• CHECK FOR MISSING FILE BLOCKS	
42	C.DELBLK	EQU 34	• DELETE A FILE BLOCK	
43	C.DELFIL	EQU 35	• DELETE A FILE	
44	C.REDSHP	EQU 36	• GET SHAPE NUMBERS OF A FILE	
45	C.MAPZRO	EQU 37	• ZERO A MAP ENTRY	
46	C.MPCHRO	EQU 38	• CHANGE A ZERO MAP ENTRY TO READ ONLY	
47	C.MPCHRW	EQU 39	• CHANGE A ZERO MAP ENTRY TO RW	
50	C.MOVBLK	EQU 40	• MOVE A FILE BLOCK	
51	C.DISMAP	EQU 41		
52	C.JUMP	EQU 42		

53	C.NEWUN	EQU	43	• CHANGE UNIQUE NAME	OPNAMES	1
54	C.DISPST	EQU	44	• DISPLAY ENTIRE STACK	OPNAMES	1
55	C.DISSEN	EQU	45	• DISPLAY STACK ENTRY	OPNAMES	1
56	C.DSFMAP	EQU	46	DISPLAY FULL MAP ENTRY	OPNAMES	1
57	C.DELCL	EQU	47	DELETE C-LIST	OPNAMES	1
60	C.PINT	EQU	48	SEND PROCESS INTERRUPT	OPNAMES	1
61	C.ADDORD	EQU	49	• ADD AN ORDER TO AN OPERATION	OPNAMES	1
62	C.CCCLDA	EQU	50	CREATE COMPLETE CAPABILITY	OPNAMES	1
63	C.DONATE	EQU	51	TRANSFER BETWEEN ALLOC BKS	OPNAMES	1
64	C.CRALBK	EQU	52	• CREATE ALLOC BLOCK	OPNAMES	1
65	C.MODPC	EQU	53	• MODIFY P-COUNTER	OPNAMES	1
66	C.DLPROG	EQU	54	• DESTROY A PROCESS	OPNAMES	1
67	C.DPROD	EQU	55	.. DISPLAY A PROCESS	OPNAMES	1
67	C.CHNGWD	EQU	C.DPROD	***NOW DEFUNCT OPERATION. SYMBOL DEFINITION	OPNAMES	1
	*			KEPT AROUND TO AVOID ASSEMBLY PROBLEMS	OPNAMES	1
	*			SHOULD EVENTUALLY BE DELETED.	OPNAMES	1
70	C.CLRDAE	EQU	56	• CLEAR THE DIRECT ACCESS ECS ENTRY	OPNAMES	1
71	C.SETDAE	EQU	57	• SET THE DIRECT ACCESS ECS ENTRY	OPNAMES	1
72	C.DELSUB	EQU	58	DELETE SUP PROC	OPNAMES	1
73	C.SETITB	EQU	56+4	• SET INTERRUPT INHIBIT BIT	OPNAMES	1
74	C.CLRITB	EQU	56+4	• CLEAR INTERRUPT-INHIBIT BIT	OPNAMES	1
75	C.GETEVF	EQU	57+4	• GET EVENT OR FRETURN	OPNAMES	1
76	C.DELAB	EQU	62	• DESTROY ALLOCATION BLOCK	OPNAMES	1
77	C.MGETH	EQU	63	GET EVENT FROM MULTIPLE CHANNELS OR	OPNAMES	1
	*			GET EVENT FROM MULTIPLE CHANNELS OR	OPNAMES	1
100	C.MGETF	EQU	64	GET EVENT FROM MULTIPLE CHANNELS OR	OPNAMES	1
	*			DESTROY EVENT CHANNEL	OPNAMES	1
101	C.DSECH	EQU	65	DISPLAY CLOCKS IN USER CORE	OPNAMES	1
102	C.DSPCLKX	EQU	66		OPNAMES	1
3	C.READ	EQU	C.RFILE		OPNAMES	1
4	C.WRITE	EQU	C.WFILE		OPNAMES	1
6	C.HANG	EQU	C.GETE		OPNAMES	1
41	C.PROBE	EQU	C.CKBLK		OPNAMES	1
103	C.NWTMB	EQU	67	SET TEMPORARY PART OF CLASS CODE	OPNAMES	1
104	C.DSPAB	EQU	68	DISPLAY ALLOCATION BLOCK	OPNAMES	1
105	C.BDAT	EQU	69	• CHANGE ANY TO BLOCK DATA PARAMETER	OPNAMES	1
106	C.BLKCAP	EQU	70	• CHANGE ANY TO BLOCK CAPABILITY PARAM	OPNAMES	1
107	C.DISPCP	EQU	71	• DISPLAY OPERATION	OPNAMES	1
110	C.USRER	EQU	72	• USER INITIATED ERROR	OPNAMES	1
111	C.RETPAR	EQU	73	• RETURN WITH PARAMETERS	OPNAMES	1
112	C.TIMDT	EQU	74	• RETURN DATE AND TIME	OPNAMES	1
113	C.CAGEN	EQU	75	• MAKE CAPABILITY CREATING AUTHORIZATION	OPNAMES	1
114	C.CGEN	EQU	76	• MAKE CAPABILITY OF AUTHORIZED TYPE	OPNAMES	1
115	C.DSPSB	EQU	77	• DISPLAY SUBPROCESS DESCRIPTOR	OPNAMES	1
116	C.TRDB	EQU	78	• TEST AND RESET DIRTY BIT	OPNAMES	1
117	C.INCHR	EQU	79	• INCREMENT AB CHARGE RATE	OPNAMES	1
120	C.DSPOB	EQU	80	• DISPLAY OBJECT	OPNAMES	1
121	C.DSPAIC	EQU	81	• DISPLAY ALLOCATOR CONSTANTS	OPNAMES	1
122	C.CHMPRW	EQU	82	• CHANGE A READ-WRITE MAP ENTRY	OPNAMES	1
123	C.CHMPRO	EQU	83	• CHANGE A READ ONLY MAP ENTRY	OPNAMES	1
47	C.MKMPRW	EQU	C.MPCHRW	• MORE REASONABLE NAME FOR C.MPCHRW	OPNAMES	1
46	C.MKMPRO	EQU	C.MPCHRO	• MORE REASONABLE NAME FOR C.MPCHRO	OPNAMES	1

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XTEXT STUFF

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124	C.DSCLX	EQU	84	. DISPLAY SYSTEM CLOCKS IN USER CORE	OPNAMES	1
125	C.SPRET	EQU	85	.. SPECIAL RETURN (DECREMENT P-COUNTER)	OPNAMES	1
126	C.CPZRO	EQU	86	.. ZERO A CAPABILITY	OPNAMES	1
127	C.MOVCB	EQU	87	.. TRANSFER CP TIME BETWEEN ABS	OPNAMES	1
130	C.HOVMT	EQU	88	.. TRANSFER MOT SLOTS BETWEEN ABS	OPNAMES	1
131	C.INMTR	EQU	89	.. INCREMENT AB CHARGE METER	OPNAMES	1
132	C.DLOPR	EQU	90	.. DESTROY AN OPERATION	OPNAMES	1
133	C.GRAB	EQU	91	.. STEAL ECS SPACE	OPNAMES	1
134	C.CPUIN	EQU	92	.. MOVE TIME INTO PROCESS TIMER	OPNAMES	1
135	C.CPOUT	EQU	93	.. MOVE TIME OUT OF PROCESS TIMER	OPNAMES	1
136	C.STMSG	EQU	94	.. SET MSG MECHANISM IN A PROCESS	OPNAMES	1
137	C.CLRMG	EQU	95	.. CLEAR MSG MECHANISM IN A PROCESS	OPNAMES	1
140	C.ARMIT	EQU	96	.. ARM INTERRUPTS FOR A PROCESS	OPNAMES	1
141	C.DISIT	EQU	97	.. DISARM INTERRUPTS FOR A PROCESS	OPNAMES	1

*
*
*
XJ MACRO LOC
* VFD 12/0130B,18/LOC+30/1
SB7 *
JP UNEXFRTN
ENDM

*
*
*
XJR MACRO LOC,RTNAUTH
* VFD 12/0130B,18/LOC+12/1,18/2
VFD 50/RTNAUTH
SB7 *
JP UNEXFRTN
ENDM

*
*
*
XJF MACRO LOC,F60
* VFD 12/0130B,18/LOC+30/1
JP F60
ENDM

*
*
*
CALL MACRO LOC
* SB7 *
JP LOC
ENDM

*
*
*
CALLR MACRO L,A,B,C,D,E
SETBS A,B,C,D,E
SB%
SX6 *
JP CALLR
ENDM

*
*
*
SETBS MACRO A,B,C,D,E
IFC NE,\$\$AS
SB1 A
IFC NE,\$\$BS
SB3 B
IFC NE,\$\$CS
SB3 C
IFC NE,\$\$DS
SB4 D
IFC NE,\$\$ES
SB5 E
ENDIF
ENDM

RTNR	MACRO	
	JP	RTNR
	ENDM	
*		
*		
MCAP	MACRO	NAME
	BSS	0
M.NAME	EQU	
	VFD	1/1,29/C,NAME,30/CX.MAST
	ENDM	
*		
*		
MXCAP	MACRO	NAME
*	VFD	1/1,29/C,NAME,30/CX.MAST
	ENDM	
*		
ITEMS	MACRO	A,B,C,D,E,F,G,H
	VFD	60/A
	IFC	NE,\$\$S\$
	VFD	60/B
	IFC	NE,\$\$C\$
	VFD	60/C
	IFC	NE,\$\$D\$
	VFD	60/D
	IFC	NE,\$\$E\$
	VFD	60/E
	IFC	NE,\$\$F\$
	VFD	60/F
	IFC	NE,\$\$G\$
	VFD	60/G
	IFC	NE,\$\$H\$
	VFD	60/H
	ENDIF	
	ENDM	
*		
*		
*		
MAP	MACRO	NAME,X,FLAD,CMAD,LASTPI,R0
*	VFD	60/0,NAME
	VFD	30/X,30/FLAD
	VFD	1/R0,29/CMAD,30/LASTPI
	ENDM	
*		
*		
*		
RTNCAP	MACRO	NAME
	DATA	0
	RMT	
	DATA	ALPNAME
	RMT	
	ENDM	

MACRO FOR CLIST INDEX OF OBJECT TO RETURN TO CALLER

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
MACROS

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MACRO FOR CLIST INDEX OF OBJECT TO BE OBTAINED
AT TIME OF THIS SUBPROCESS CONSTRUCTION

PARCAP MACRO NAME
DATA ALNAME
ENDM

L MACRO MICROX,L,NAME
MICRO T,,/PNAME//
ENDM

~~BASIC MACRO~~

XSETXJ	MACRO	A,B,C,D,E
LOCALPXJ	SET	
	IFC	NE,SSAS
	SXI	
LOCALPXJ	SET	
	IFC	NE,SSAS
	SX2	
LOCALPXJ	SEY	
	IFC	NE,SSCS
	SX3	
LOCALPXJ	SEY	
	IFC	NE,SSDS
	SX4	
LOCALPXJ	SEY	
	IFC	NE,SSES
	SX5	
LOCALPXJ	SET	
	ENDM	

~~FULLI TO PARAM VERSION~~

YSETXJ	MACRO	A,B,C,D,E,F,G,H,I,J
	XSETXJ	A,B,C,D,E
	SB2	
	CALL	SET
	XSETXJ	F,G,H,I,J
	ENDIF	
	SB2	LOCALPXJ
	CALL	SET
	ENDM	

~~STANDARD XJ CALL~~

DOXJ	MACRO	A,B,C,D,E,F,G,H,I,J
	SB1	XJLOC
	YSETXJ	A,B,C,D,E,F,G,H,I,J
	XJ	XJLOC
	ENDM	

~~MULTI LINE VERSIONS~~

~~INITIAL SET UP LINE~~

SETXJ	MACRO	A,B,C,D,E,F,G,H,I,J
	SB1	XJLOC
	YSETXJ	A,B,C,D,E,F,G,H,I,J

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
MACROS FOR XJ CALLS

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ENDM

*
* FINAL CALL (USE YSETXJ IN BETWEEN)
*

XDOXJ MACRO A,B,C,D,E,F,G,H,I,J
YSETXJ A,B,C,D,E,F,G,H,I,J
XJ XJLOC
ENDM

*
*
*
SAVE7 MACRO U
SX6 R7
SA6 I
ENDM

*
*
GET7 MACRO H
SA1 R1
SB7 I
ENDM

MICROS FOR SUBPROCESS DESCRIPTOR

0	CLASS	MICROX	CC.FAKEG
0	FATHER	MICROX	BOOT
0	ICALL	MICROX	CO.FAKEGI
0	CLIST	MICROX	CL.FAKEG
0	SCRFILE	MICROX	SF.FAKEG
0	CODEFILE	MICROX	CF.FAKEG

SUBPROCESS DESCRIPTOR

	ORG	DATA
0	00000000000000000000000000000001	DATA 1
1	00000000000000000000000000000000	DATA 0
2	03035706011305070000	DATA 0L#CLASS#
3	2217172400000000000000	DATA 0L#FATHER#
4	03175706011305071100	DATA 0L#ICALL#
5	03145706011305070000	DATA 0L#CLIST#
6	23065706011305070000	DATA 0L#SCRFILE#
7	00000000000000000000000000000005	DATA 5
10	00000000000000000000000000000024	DATA 20
11	00000000000000000000000000000024	ITEMS FL
12	00000000000000000000000000000024	ITEMS ENTRY
13	00000000000000000000000000000010	ITEMS CLSTSZ
14	00000000000000000000167	ITEMS SCRSZ
15	23065706011305070000	MAP #SCRFILE#,0,0,0,SCRSZ,0
20	03065706011305070000	MAP #CODEFILE#,1,SCRSZ,SCRSZ,FL,1
23	77777777777777777777	DATA 0

	LOC	DATA
0	11570114141705000000	CX.ALLOC PARCAP 1.ALLOC
1	03065706011305070000	CX.CODEF PARCAP #CODEFILE#
2	11571501232405220000	CX.MAST PARCAP TMASTER
3	03175703151504040000	CX.DEBUG PARCAP CO.CMMDD
4	03035706011305070000	CX.BDGCD PARCAP #CLASS#
5	03175714111605010000	CX.TLINE PARCAP CO.LINEA
6	0205010400000000000000	CX.BEAD PARCAP BEAD
7	00000000000000000000000000000000	CX.TEMP DATA 0

	RTNBASE	BSS	DATA
10	*	*	*
10	CLSTSZ	BSS	0

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LOW CORE

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*	10	7777777777777777777777	*	DATA	-0
35			*	LOC	40
35			*	BASE1	BSS
			*		8

PARAMETER LOCATION DEFINITIONS

6	CALLTYPE	EQU	6	(HIDDEN PARAM)
3	CALLRA	EQU	3	
4	CALLCERA	EQU	4	
6	ECLASS	EQU	5	
7	ENUM	EQU	7	

INTERRUPT RUNNING SYMBOL

5	INTRUN	EQU	5	
---	--------	-----	---	--

10 ORG 10B

THIS SET OF DATA AREA MUST BE ALL BSS

NO ACTUAL DATA OR ZEROS AT ASSEMBLY TIME

SOME XJ'S DONE HERE

10 XJLOC BSS 15

ASSORTED REGISTER STORAGE LOCATIONS

27	NREGS	BSS	208
47	EREGS	BSS	208
67	INTREGS	BSS	208

DATA ASSOCIATED WITH LINE COLLECTOR

17	TTYBFSZ	EQU	15
107	TTYBUF	BSS	TTYBFSZ

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
LOW CORE

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NO RESTRICTION ON DATA AREA FROM HERE ON

126 BASE2 BSS ?
* IFGT ?
ENDIF ?BASE1.BASE2

MORE DATA ASSOCIATED WITH LINE COLLECTOR

126 000000000000000005 Q.TLINE ITEMS ?X.TLINE
127 00000000170000000107 Q.TTYPE BSSZ ?1
130 00000000170000000107 VFD ?30/TTYBFSZ,30/TTYBUF

131 FAKESD BSSZ ?

MISC DATA

133 GHSTERR BSSZ ? FLAG THAT ERROR OCCURED IN GHOST
134 STK1PC BSSZ ? STACK DISPLAYS DONE HERE
135 STK1CLS BSSZ ?
136 BSSZ ?

137 GHSTCLS BSSZ ? CLASS CODE OF GHOST

ERROR EXIT HANDLING

140 40000091100000000002 ERETURN MXCAP ?ISRER
141 ECLSXST BSSZ ?
142 ENUMXT BSSZ ?

INITIAL CALL INFO				
143	00000000000000000003	DBGXJ	ITEMS	CX.DEBUG
144		DBGTYPE	BSSZ	1
145	000000001000000000147	VFD		30/DBGCNT,30/DBGBLK
146	0000000000000000000007	ITEMS		CX.TEMP
147		DBGBLK	BSS	0
147		USERRA	BSSZ	1
150		USERCLRA	BSSZ	1
151		USERMPRA	BSSZ	1
152		ERRCLS	BSSZ	1
153		ERRNUM	BSSZ	1
154	0000000000000000624	GHSTFL	VFD	60/FL
155	000000000000000000010	GHSTCL	VFD	60/CLSTSZ
156		GHSTMPSZ	BSSZ	1
157		INTDTM	EQU	ERRCLS
157	10	DBGCNT	BSS	0
		EQU		=DBGBLK
147		DBGVAL1	EQU	DBGBLK
150		DBGVAL2	EQU	DBGBLK+1
RETURN AUTHORIZATION				
157	0000000030000000161	DBGRA	VFD	30/DBGRCNT,30/DBGABLK
160	0000000010000000007	VFD		30/1,30/CX.TEMP
161		DBGABLK	BSS	0
161		DBGACT	BSSZ	1
162		DBGACT1	BSSZ	1
163		DBGACT2	BSSZ	1
164	3	DBGRCNT	BSS	0
		EQU		=DBGABLK
164		DBGRUN	BSSZ	1
165		DBGFLAG	BSSZ	1
166		GHSTPC	BSSZ	1
				FLAG THAT DEBUGGER RUNNING
				FLAG FOR SPECIAL RETURN
				GHOST P COUNTER ON GHOST ERROR OR RETURN

FAKE READ GHOST, USED BY DISK SYSTEM CODE
END OF SCRATCH AREA

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SCRSZ BSS

END OF SCRATCH AREA

167
170

**READY
MVECA**

MISC DATA

171 7777777777777777777777 MINUSÖ DATA 20

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
FIXED XJS ETC

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FIXED XJS ETC

172 40000000730000000002 SETII MXCAP SETIIB

173 40000000740000000002 CLRII MXCAP CLRIB

174 40000000160000000002 NSAVE MXCAP SAVE
175 000000000000000000027 ITEMS NREGS

176 40000000170000000002 NRESTORE MXCAP RESTOR
177 000000000000000000027 ITEMS NREGS

200 40000000160000000002 ESAVE MXCAP SAVE
201 000000000000000000047 ITEMS FREGS

202 40000000170000000002 ERESTORE MXCAP RESTOR
203 000000000000000000047 ITEMS FREGS

204 40000000160000000002 INTSAVE MXCAP SAVE
205 000000000000000000067 ITEMS INTREGS

206 40000000170000000002 INTRESTR MXCAP RESTOR
207 000000000000000000067 ITEMS INTREGS

210 40000000300000000002 RETURN MXCAP RETURN

211 40000000030000000002 READSELF MXCAP READ
212 0000000000000000000001 ITEMS CX.CODEF,0,0,SCRSZ

216 40000000200000000002 DSPGHST MXCAP DSCAP
217 0000000000000000000004 ITEMS CX.BDGCD

220 40000001250000000002 SRETURN MXCAP SPRET

221 40000000550000000002 RDSTK1 MXCAP DISSEN

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FIXED XJS ETC

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222	0000000000000000134	ITEMS	STK1PC
223	0000000000000000001	DATA	1
224	40000000260000000002	SETEMSK	MXCAP
225	0000000000000000226	ITEMS	FSMLOC
226	77777777777777777777	DATA	*+1
			-0

*

*

*

*

*

*

RETURN AUTHORIZATIONS

227	0000000170000000107	Q,TRTN	VFD	30/TTYBFSZ,30/TTYRUF
230	00000000000000000000		VFD	30/0,30/0

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ENTRY POINT AREA

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ENTRY POINT AREA					
231		BSSZ	PROCESS INITIAL CALL		
232	01300001720000000276	INTTRY	VFD	12/0130B,18/SETII,30/INTERRUPT--I	.. INTERRUPT
233	01300001720000000304	*	VFD	12/0130B,18/SETII,30/ERRORC--I	ERROR ENTRY POINT
234	01300001720000000001	ENTRY	XJ	SETII NORMAL ENTRY POINT	
236	01300001740000000001		XJ	NSAVE	
240	01300002240000000001		XJ	SETEMSK	
242	5140000006		SA4	CALLTYPE PICK UP HIDDEN PARAMETER	
	63260		SB2	X4	
243	0720000320		LT	B2,B0,ENTRYZ	BAD HIDDEN PARAM
	6135777774		SB3	B2-NENTVEC	
244	0703000320		GT	B3,B0,ENTRYZ	BAD HIDDEN PARAM
	0220000245		JP	ENTVEC+B2	
245	0200000311	ENTVEC	JP	INIT	INITIALIZER XALL
246	0200000320		JP	ENTRYZ	(UNUSED)
247	0200000250		JP	ENTRYU	USER CALL
250		BSS	INIT		
	3	NENTVEC	EOU	-ENTVEC	

				USER CALL	
				CALL TYPE IN B6	
250	5140000003	ENTRYU	SA4	CALLRA PICK UP CALLERS RA	
	5150000004		SA5	CALLCLR AND CLIST RA	
251	63240		SB2	X4	
	63350		SB3	X5	
	73660		SX6	X4	
	73750		SX7	X5	
252	5160000147		SA6	USERRA	
	5160000150		SA6	USERCLR	
253	0760000277		LT	B6,B0,ENTRYUXO	RAD CALL
	6146777762		SB4	B6-NENTRYUV	
254	0704000300		GT	R4,B0,ENTRYUXI	RAD CALL
	0260000255		JP	ENTRYUV+B6	
255	0200000277	ENTRYUV	JP	ENTRYUXO 0	
256	0200000277		JP	ENTRYUXO 1	
257	0200000277		JP	ENTRYUXO 2	
260	0200000277		JP	ENTRYUXO 3	
261	0200000507		JP	USERDBG 4	DEBUG CALL (OLD ..STOP)
262	0200000323		JP	TTYOUT 5	TTY LINE OUT
263	0200000331		JP	TTYIN 6	TTY LINE IN
264	0200000341		JP	TTYCHAR 7	TTY CHAR OUT
265	0200000277		JP	ENTRYUXO 10	
266	0200000277		JP	ENTRYUXO 11	
267	0200000277		JP	ENTRYUXO 12	
270	0200000347		JP	TTYEDIT 13	TTY LINE EDIT
271	0200000272		JP	STOP 14	PROGRAM STOP; PM DUMPS ONLYS
272			BSS		
	15	NENTRYUV	EQU	*=ENTRYUV	
				PROGRAM STOP: FOR POST MORTEM DUMPS ONLYS	
272	0000000000	STOP	PS	*	
				STANDARD EXIT FOR USER CALLS	
273	01300001760000000001	USEREXIT	XJ	RESTORE	
275	01300002100000000001		XJ	RETURN	
				RAD USER CALL	
277	7170000000	ENTRYUXO	SX7	*	
	0200000301		JP	PARAM TOO SMALL	
				ENTRYUX	

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
ENTRY POINT AREA

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STOP

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300 7170000001

ENTRYUX1 SX7

1

PARAM TOO BIG

301 7160000002

ENTRYUX SX6

2

ERROR EXIT CODE

CLASS IN X6

NUMBER IN X7

302 5160000141

ERRExit SA6

FCLSX7

ENUMXT

5170000142

NRESTORE

303 01300001760000000001

ERRETURN

305 01300001400000000001

307 5110000166

ERRExitP SA1

GHSTPC

43052

60-18

15110

X0

310 20122

X1

12717

-X0*X1

0200000302

T8

X1+X7

ERRExit

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
ENTRY POINT AREA

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22

311 01300002110000000001
313 01300002160000000001
315 5170000137
316 01300002100000000001

INIT XJ
XJ
SA7
XJ

READSELF SET UP SCRATCH AREA
RSPGHST
GHSTCLS
RETURN EXIT

320 01300001730000000001
322 0200000322

ENTRYZ XJ
* JP

RAD HIDDEN PARAMETER
CLRRII

SIMULATED BEAD TTY INTERFACE

OUTPUT A LINE

323	6170000324	TTYOUT	CALL	MVTOBF
324	7160000002		SX6	2 (OUTPUT A LINE)
	5160000127		SA6	Q.TTYPE
325	01300001260001000002		XJR	Q.TLINE,Q.TRTN
330	0200000273		JP	USEREXIT

INPUT A LINE

331	7160000001	TTYIN	SX6	I (INPUT A LINE)
	5160000127		SA6	Q.TTYPE
332	01300001260001000002		XJR	Q.TLINE,Q.TRTN
335	76612		SX6	B1+82
	5160000131		SA6	FAKESD SET UP FAKE STRING DESCRIPTOR
	64160		SB1	A6
336	66200		SB2	R0
337	6170000340		CALL	MVFMBF
340	0200000273		JP	USEREXIT

OUTPUT A CHARACTER

341	10611	TTYCHAR	BX6	X1
	5160000107		SA6	TTYBUF
342	7160000003		SX6	2 (CHARACTER OUT)
	5160000127		SA6	Q.TTYPE
343	01300001260001000002		XJR	Q.TLINE,Q.TRTN
346	0200000273		JP	USEREXIT

EDIT A LINE

347	6170000350	TTYEDIT	CALL	MVTOBF
350	7160000004		SX6	A (EDIT A LINE)
351	01300001260001000002		XJR	Q.TLINE,Q.TRTN
354	6170000355		CALL	MVFMBF
355	0200000273		JP	USEREXIT

				MOVES A LINE TO TTYBUFFER
				R1 ADDRESS OF OLD STYLE STRING DESCRIPTOR (B1) HAS ADDRESS OF SYSTEXT (B1+1) HAS PSEUDO CHARACTER COUNT
				R2 HAS RA
356	56112	MVT0BF	SA1 SB6 SA1	R1+B2 x1+B2 A1+1
	63612			RELOCATED ADDRESS OF SYSTEXT
	5011000001		SX6	X1
357	73610			INITIAL PSEUDO CHAR COUNT
		*		
360	0326000361	*	PL SX6	x6,*+1 B0
	76660			TF NEGATIVE, SET TO 0
361	7216777632	*	SX1	x6-MAXOUTCN-1
362	0331000363	*	NG	x1,*+1
	7166000144	*	SX6	MAXOUTCN
363	5160000107	*	SA6	TTYBUF
	20671	*	LX6	A0-3
	63460		SB4	x6
364	43103		MX1	3
	11616		BX6	x1*x6
	20663		LX4	3
365	0306000366	*	ZR	x6,*+1
	6144000001	*	SB4	B4+1
366	0440000372	*	EQ	R4,B0,MVT0BF2
	56140	*	SA1	R6
367	10611	MVT0BF1	BX6	X1
	5066000001		SA6	A6+1
370	614477776		SB4	B4-1
	0440000372		EQ	B4,B0,MVT0BF2
371	5011000001		SA1	A1+1
	0200000367		JP	MVT0BF1
372	0270000000	MVT0BF2	JP	R7
		*		
		*		
		*		
		*		
			144 MAXOUTCN EQU	100

				MOVES A LINE FROM TTY BUFFER
				B1 ADDRESS OF OLD STYLE STRING DESCRIPTOR
				B2 HAS RA
373	5110000107	MVFMBF	SA1	TTYBUF PICK UP COUNT
	73610		SX6	X1 MOVE COUNT AND REDUCE TO 18 BITS
	56112		SA1	B1+B2 PICK UP SYSTEXT ADDRESS
374	5061000001		SA6	A1+1 STORE THE COUNT
	63612		S86	X1+B2 RELOCATED SYSTEXT ADDRESS
375	0326000376	*	PL	X6,*+1 IF COUNT NEGATIVE, SET 0
	7160000000	*	SX6	(NEEDS TO BE HALF WORD)
376	20671		LX6	60-3 NOW COMPUT WORD COUNT
	63460		S84	X6 INTEGER PAR OF WORD COUNT
	43183		MX1	3
377	20603		BX6	X1*X6
400	0306000401	*	LX6	3
	6144000001	*	ZR	Y6,*+1
		*	S84	B4+1 INCREMENT IF FRACTIONAL WD COUNT
401	0440000406		EQ	B4,B0,MVFMBF2
	5110000110		SA1	TTYBUF+1 MOVE
402	10611		BX6	X1 FIRST
	56660		SA6	B6 WORD
403	614477776	MVFMBFI	SB4	B4+1
	0440000406		EQ	B4,B0,MVFMBF2
404	5011000001		SA1	A1+1 MOVE
	10611		BX6	X1 SUBSEQUENT
405	5066000001		SA6	A6+1 WORDS
	0200000403		JP	MVFMBFI
406	0270000000	MVFMBF	JP	R7

CALLS ON THE DEBUGGER HAVE THE FOLLOWING FORM

P1 D: TYPE OF CALL

POSITIVE FOR INITIAL CALL

- 0 USED BY REAL GHOST
- 1 USED BY REAL GHOST
- 2 USED BY REAL GHOST
- 3 DISK SYSTEM --STOP
- 4 DISK SYSTEM ERROR
- 5 FAKE GHOST (PROCESS INTERRUPT--KICK PROCNUM)

NEGATIVE FOR RESPONSE TO DEBUGGER REQUEST

- 1 OK RESPONSE
- 2 PARAM OUT OF LEGAL RANGE
- 3 BAD ACTION REQUEST
- 4 GOT ERROR ON REQUEST
- 5 GOT UNEXPECTED RETURN ON REQUEST

P2 BD: DATA ASSOCIATED WITH THE CALL

ON INITIAL CALL

- WD1 CM RA USER
- WD2 CLST RA USER
- WD3 MAP RA USER
- WD4 ERROR CLASS OR INTERRUPT DATUM
- WD5 ERROR NUMBER
- WD6 FL OF BEAD GHOST
- WD7 CLST SIZE OF BEAD GHOST
- WD8 MAP SIZE OF BEAD GHOST

ON OK RESPONSE

WD1 DATA WD, IF ANY

P3 C: OBJECT ASSOCIATED WITH THE CALL

(ONLY ON RESPONSE TO ACTION REQUEST)

RESPONSES FROM THE DEBUGGER HAVE A BLOCK DATUM AND
A SINGLE CAPABILITY

FOR THE BLOCK DATUM

WD1 ACTION REQUEST

WD2 MODIFIER (I. E. AN ADDRESS)

```

*          *
*          *
*          *      REGIN DEBUGGING
*          *
*          *      X6 CARRIES TYPE OF INITIAL CALL
*          *
*          *
407 5160000144      7160000001    DEBUG   SA6     DBGTYPE
410 5160000164      *           SA6     DBGRUN
411 01300001430001000002  DEBUGI   XJR     DBGXJ,DBGRA
414 5110000161      *           SA1     DBGACT
*           63110      SB1     X1
415 0710000506      *           LT      B1,B0,DBGBAD
*           6121777770   SB2     B1-NDBGVEC
416 0702000506      *           GT      B2,B0,DBGBAD
*           0210000417   JP      DBGVEC+B1
417 0200000433      DBGVEC   JP      DBGDONE  0
420 0200000450      *           JP      DBGRDC  1
421 0200000452      *           JP      DBGWRC  2
422 0200000455      *           JP      DBGRDX  3
423 0200000460      *           JP      DBGWRX  4
424 0200000463      *           JP      DBGGTCP 5
425 0200000473      *           JP      DBGPTCP 6
426
*           7       NDBGVEC  BSS     EQU      *--DBGVEC
*          *
*          *
*          *      REGIN DEBUGGING HERE
*          *
*          *
426 5160000144      5116000003    DEBUGS  SA6     DBGTYPE
427 5120000004      *           SA1     CALLRA
*           16611      SA2     CALLCLRA
430 5160000147      *           BX6     X1
*           16622      SA6     USERRA
431 5160000150      7160000001    BX6     X2
*           0200000411   SA6     USERCLRA
432 5160000164      0200000411    SX6     1
*           0200000411   JP      DBGRUN
*           0200000411   DEBUGI

```

RETURN TO USER				
* * * * *	DBGACT1 = 0 ORDINARY RETURN = 1 CHECK SPECIAL FLAG, DBGSFLAG IF SET, RETURN AND REDO OTHERWISE ORDINARY RETURN			
433 76600 5160000164	DBGDONE	SX6 SA6 SA1 ZR	DBGRUN DBGACT1 X1,USEREXIT	
434 5110000162 0301000273				
435 5110000165 0301000273		SA1 ZR	DBGSFLAG X1,USEREXIT	
436 7120000005 37221		SX2 IX2 ZR	INTRUN X2-X1 X2,INTDONE	
437 0202000444				
440 01300001760000000001		XJ	NRESTORE	
442 01300002200000000001		XJ	SRETURN	
444 01300002060000000001	INTDONE	XJ	INTRESTR	
446 01300002200000000001		XJ	SRETURN	
READ CORE				
450 5110000162 53110 10611	DBGRDC	SA1 SA1 BX6	DBGACT1 X1	
451 5160000147 0200000504		SA6 JP	DBGVAL1 DBGACTF	
WRITE CORE				
452 5110000162 7221777153	DBGWRD	SA1 SX2 NG	DBGACT1 X1-FL	
453 0332000505 5120000163		SA2	X2,DBGMODG	
454 10622 53610 0200000504		BX6 SA6 JP	DBGACT2 X2 X1 DBGACTF	
READ XJ				
455 5110000162 43670 15110	DBGRDX	SA1 MX0 BX1	DBGACT1 60-4 -X0*X1	
456 5211000027 10611		SA1 BX6	NREGS+X1 X1	
457 5160000147 0200000504		SA6 JP	DBGVAL1 DBGACTF	
WRITE XJ				

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
DEBUGGER CONTROL

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*				
460	5110000162 43070	DBGWRX	SA1 MX0 BX1 SA2 BX6 SA6 JP	DBGACTI 60-4 =X0*X1 DBGACT2 Y2 NREGS+X1 DBGACTF
461	5120000163 15110			GETCAP
462	5261000027 16622			
	0200000504			
463	5120000162 6110000010	DBGTCP	SA2 DOXJ JP	DBGACTI M,MVECAP,X2,CX,TEMP,-MINUS0 DBGACTF
472	0200000504			PUTCAP
473	5130000162 7223777767	DBGPTCP	SA3 SX2 NG DOXJ JP	DBGACTI X3-CLSTSZ X2,DBGMODG M,MVECAP,CX,TEMP,X3,-MINUS0 DBGACTF
474	0332000505 6110000010			
503	0200000504			

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
DEBUGGER CONTROL

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*
*
*
504 716077776 0200000407

DBGACTP SX6 JP

FINISH UP A DEBUG ACT

-1
DEBUG

*
*
*
505 716077775 0200000407

DBGMODG SX6 JP

ATTEMPT TO MODIFY GHOST, OR OTHER PARAM OUT OF RANGE

-2
DEBUG

*
*
*
506 716077774 0200000407

DBGBAD SX6 JP

RAD ACTION TYPE

-3
DEBUG

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
ENTRY POINTS TO DEBUGGER CONTROL

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507 7160000003
510 0200000426

USERDBG SX6
SA6 DBGSFLAG
JP DEBUGS

USER DEBUG CALL

GUARANTEE THAT AN ORDINARY RETURN WILL OCCUR

511 01300002020000000001
513 01300001740000000001
515 7160000004 5160000165
516 0200000426

ERRDBG	XJ	ERESTORE
	XJ	NSAVE
	SX6	4
	SA6	DBGSFLAG
	JP	DEBUGS

COMMAND ERROR CLASS NUMBER (TEMP)

37 E.CMMDF EQU \$1 (EMP)

ERROR WHILE GHOST RUNNING

E.GHSTER EQU

“RETURN WHILE GHOST RUNNING

2 E.GHSTR EQU

ERROR WHILE GHOST RUNNING

517 5110000164
0311000522

ERRGDBG SAI DEBUGRUN SEE IF DEBUGGER RUNNING
NZ x1,ERRGDBG1 YES

520 5110000152
521 10611 5120000153
10722 0200000302

SA1	ERRCLS
SAP	ERRNUM
BX6	X1
BX7	X2
JP	ERREXIT

522 716077773
0200000407

ERR6DBG1 SX6 JP -4 DEBUG

UNEXPECTED RETURN

523 76670
5160000166

UNEXFRTN SX6
SA6 B7
GHSTP

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
ENTRY POINTS TO DEBUGGER CONTROL

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524	5110000164	SA1	DBGRUN	SEE OF DEBUGGER RUNNING
	0311000527	NZ	X1,UNEXFR1	YES
*				
525	7160000037	SX6	E.CMMDO	
	7170000002	SX7	E.GHSTER	
526	0200000307	JP	ERRExitP	
*				
527	7160777772	UNEXFR1	SX6	-5
	0200000407		JP	DEBUG

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
INTERRUPT ENTRY--KICK PROC. NUMBR

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530 00000000000000000000
531 01300002040000000001
533 01300002240000000001
535 7160000005
536 5160000165
536 5160000144
537 0200000411

INTERRUPT

DATA
~~INTCODE~~
~~SAC~~
~~SAC~~
~~SAC~~
~~SAC~~
JP

CATCH A BAD JUMP

~~NSAVE~~

~~DBGFLAG~~, SPECIAL FLAG

~~DBGTYPE~~

~~DEBUGON~~

~~DEBUG1~~

~~INTSAVE~~
~~NSAVE~~
~~RSAVE~~

SAC INTREUIK
SAC DBGSFLAG
JP DRBUQS

540	01300002000000000001	ERRORC	XJ	FSAVE			
542	01300002240000000001		XJ	SETEMSK			
544	5110000006	*	SA1	FCLASS	SAVE TYPE OF ERROR		
	10611		BX6	X1			
545	5160000152		SA6	ERRCLS			
	5120000007		SA2	ENUM			
546	10622		BX6	X2			
	5160000153		SA6	ERRNUM			
547	6170000550	*	CALL	CHKGHST	SEE IF BEAD GHOST BELOW		
550	5160000133	*	SA6	GHSTERR			
551	5110000152	*	SA1	ERRCLS	PREPARE FOR SCAN OF ERROR TYPES		
	5120000153		SA2	ERRNUM			
	43052		MX0	60-18			
	15110		BX1	-X0*X1			
552	15220		BX2	-X0*X2			
	20122		LX1	-18			
	12612		BX6	X1+X2			
553	6110000000		SB1	ERRVECN			
	5110000561		SA1	ERRVEC			
554	0601000561	*	ERRORC1	LE	R1,B0,ERRORC3	SCAN SPECIAL ERROR LIST	
	37116			IX1	X1-X6		
555	0301000557			ZR	X1,ERRORC2	FOUND IN SPECIAL LIST	
	5610000001			SA1	A1+1		
556	611177775			SB1	R1-2		
	0200000554			JP	ERRORC1		
557	5011000001	*	ERRORC2	SA1	A1+1	JUMP FOR SPECIAL ERROR PROCESSING	
560	0210000000	*		SB1	X1		
	63110	*		JP	R1		
561		*	EVECITEM	MACRO	CLS+NUM,PNT		
		*	VFD		42/CLS>B,18/NUM>B,60/PNT		
		*	ENDM				
561		*	ERRVEC	BSS	0	SPECIAL ERROR LIST	
		*					
561		*	0	ERRVECN	BSS	0	
		*		EQU			
		*					
		*					
561	5110000133	*	ERRORC3	SA1	GHSTERR	CHECK IF GHOST ERROR	
	0301000511			ZR	X1,ERRDBG	NO, DO ORDINARY DEBUG	
562	0200000517			JP	ERRGDRG	YES, SPECIAL ERROR HANDLING	

THIS SUBROUTINE XFERS B2 ITEMS
(OR 5, WHICH EVER IS LESS)
FROM X1, X2, . . . X5 TO B1, B1+1, . . . B1+4

IF XN IS POSITIVE, CONTENTS OF XN IS XFERRED
IF XN IS NEGATIVE, CONTENTS OF CELL ADDRESS -XN

X1 WILL BE DESTROYED

B1 IS ADVANCED AND B2 DECREMENTED BY 1 FOR EACH XFER

563	43074		SET	MX0	60
	66570	10671		SB5	R7
564	6170000565			BX6	X1
565	10622			CALL	SETA
566	6170000567			BX6	X2
567	10266			CALL	SETA
	10633			BX5	X3
570	6170000571			CALL	SETA
571	10366			BX3	X4
	10644			BX6	X5
572	6170000573			CALL	SETA
573	10466			BX4	X6
	10655			BX6	X7
574	6170000575			CALL	SETA
575	10566			BX5	X8

576	66750	0270000000	SETB	SB7	R5
				JP	R7

577	0602000576	0326000601	SETA	GE	R0,B2,SETB
600	13660	53160		PL	x6,SETA1
		10671		BX6	x6-x0
601	56610			SA1	X6
	6111000001			BX6	X1
602	612277776	0270000000	SETA1	SA6	G1
				SB1	R1+1
				SB2	R2-1
				JP	R7

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
MISC SUBROUTINES

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*
*
*
*

DO NOT ASSEMBLE INTERNAL CALL STACK STUFF

IFEQ 1.0
ENDIF

```

*          *
*          *          CHECK TO SEE IF GHOST RUNNING BELOW IN STACK
*          *          RETURN WITH X6 = 1 IF YES, 0 IF NO
*          *          REDUCE STACK BY ONE IF YES
*          *
603 01300002210000000001  CHKGHST  XJ  RDSTK1  GET STACK ENTRY BELOW
605 5110000135      5120000137    SA1  STK1CLS  GET CLASS
606 37112      76600      IX1  GHSTCLS  GET GHOST CLASS TO COMPARE
607 0270000000      0301000610    SX6  X1-X2   COMPARE
608      *          ZR  X1,CHKGHST1
609 0270000000      JP  RT
610 01300006140000000001  CHKGHST1 XJ  FXGHSTPC SET P COUNTER OF PREVIOUS ENTRY
612 01300002100000000001      XJ  RT
613      *          *
614 40000000650000000002  FXGHSTPC MXCAP  MODPC
615 00000000000000000004      ITEMS  CX,BDCCD
616 00000000000000000001      DATA   I
617 000000000000000000620      ITEMS  CHKGHST2
618      *          *
619 5110000134      10611      CHKGHST2 SA1  STK1PC
620 5160000166      7166000001    BX6  X1
621 0270000000      7166000001    SA6  GHSTPC
622 0270000000      JP   I
623      *          RT

```

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
MISC SUBROUTINES

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623 0000000000000000000001 DATA
624 0000000000000000000001 FL DATA
*
0 END

35534 STORAGE USED 1764 STATEMENTS 254 SYMBOLS
6600 ASSEMBLY 7.487 SECONDS 598 REFERENCES

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
SYMBOLIC REFERENCE TABLE.

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BASE1	35	12/67 L						
BASE2	126	14/65 L						
CALLCLR	4	13/68 D	20/07	27/35				
CALLRA	3	13/67 D	20/06	27/34				
CALLTYPE	6	13/66 D	19/12					
CHKGHST	603	34/15	37/09 L					
CHKGHST1	610	37/14	37/17 L					
CHKGHST2	620	37/23	37/25 L					
CLRII	173	17/10 L	22/11					
CLSTSZ	10	11/31	11/53 L	15/21	29/19			
CX.ALLOC	0	11/41 L						
CX.BDGCD	4	11/45 L	17/47	37/21				
CX.BEAD	6	11/47 L						
CX.CODEF	1	11/42 L	17/43					
CX.DEBUG	3	11/44 L	15/06					
CX.MAST	2	11/43 L	16/15	17/13	17/25	17/39	17/50	37/20
		14/39	17/07	17/17	17/29	17/42	17/53	
		16/14	17/10	17/21	17/33	17/46	18/03	
CX.TEMP	7	11/48 L	15/09	15/37	29/14	29/22		
CX.TLINE	5	11/46 L	14/15					
C.ACAP	36	3/41 D						
C.ADDOPT	37	3/42 D						
C.ADDORD	61	4/07 D						
C.ALLOC	1	3/09 D						
C.ARMIT	140	5/13 D						
C.BDAT	105	4/37 D						
C.BLKCAP	106	4/38 D						
C.CAGEN	113	4/43 D						
C.CAPIN	23	3/29 D						
C.CAPOU	24	3/30 D	3/31					
C.CAPOUT	24	3/31 D						
C.CBLK	11	3/17 D						
C.CCC	15	3/21 D						
C.CCCLOA	62	4/08 D						
C.CCLIST	7	3/15 D						
C.CEVCH	13	3/19 D						
C.CFILE	10	3/16 D						
C.CGEN	114	4/44 D						
C.CHKBLK	41	3/44 D	4/34					
C.CHMPRO	123	4/51 D						
C.CHMPRW	122	4/50 D						
C.CHNGWD	67	4/14 D						
C.CLRDAE	70	4/18 D						
C.CLRIIB	74	4/22 D	17/10					
C.CLRMIG	137	5/12 D						
C.COPYOP	40	3/43 D						
C.CPOUT	135	5/10 D						
C.CPROC	12	3/18 D						
C.CPUIN	134	5/09 D						
C.CPZRO	126	5/03 D						
C.CRALBK	64	4/10 D						
C.CSPROC	14	3/20 D						
C.DELAB	76	4/24 D						

FAKE BEAD GHOST, USED BY DISK SYSTEM CODE
SYMBOLIC REFERENCE TABLE.

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C.DELBLK	42	3/45 D
C.DELCL	57	4/05 D
C.DELFIL	43	3/46 D
C.DELSUB	72	4/20 D
C.DESECH	101	4/29 D
C.DISIT	141	5/14 D
C.DISMAP	51	3/82 D
C.DISPOP	107	4/39 D
C.DISPT	54	4/02 D
C.DISSEN	55	4/03 D 17/53
C.DLOPR	132	5/07 D
C.DLPROC	66	4/12 D
C.DONATE	63	4/09 D
C.DPROD	67	4/13 D 4/14
C.DSCAP	20	3/24 D 3/25 17/46
C.DSCLX	124	5/01 D
C.DSFMAP	56	4/04 D
C.DSPAB	104	4/36 D
C.DSPALC	121	4/49 D
C.DSPCAP	20	3/25 D
C.DSPCLX	102	4/30 D
C.DSPOB	120	4/48 D
C.DSPSP	115	4/45 D
C.ESMGEN	25	3/32 D
C.ESMLOC	26	3/33 D 18/03
C.FIXC	32	3/37 D
C.FIXD	33	3/38 D
C.FRETUR	31	3/36 D
C.FSON	21	3/26 D
C.GETE	6	3/14 D 4/33
C.GETEVF	75	4/23 D
C.GRAB	133	5/08 D
C.HANG	6	4/33 D
C.INCHR	117	4/47 D
C.INMTR	131	5/06 D
C.INTFIL	2	3/10 D
C.JUMP	52	3/53 D
C.MAPZRO	45	3/48 D
C.MGETF	100	4/27 D
C.MGETH	77	4/25 D
C.MKMPRO	46	4/53 D
C.MKMPRW	47	4/52 D
C.MKOPR	27	3/24 D
C.MODPC	65	4/11 D 37/20
C.MOVBLK	50	3/51 D
C.MOVCP	127	5/04 D
C.MOVEC	22	3/27 D 3/28
C.MOVMT	130	5/05 D
C.MPCHRO	46	3/49 D 4/53
C.MPCHRW	47	3/50 D 4/52
C.MVECAP	22	3/28 D 16/15
C.NEWUN	53	4/01 D
C.NWTMP	103	4/35 D

FAKE READ GHOST, USED BY DISK SYSTEM CODE
SYMBOLIC REFERENCE TABLE.

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C.PINT	60	4/06 D						
C.PROBE	41	4/34 D						
C.READ	3	4/31 D	16/14	17/42				
C.REDSHP	44	3/47 D						
C.RESTOR	17	3/23 D	17/17	17/25	17/33			
C.RETPAR	111	4/41 D						
C.RETURN	30	3/35 D	17/39					
C.RFILE	3	3/11 D	4/31					
C.SAVE	16	3/22 D	17/13	17/21	17/29			
C.SELF	0	3/08 D						
C.SENDE	5	3/13 D						
C.SETDAE	71	4/19 D						
C.SETIIB	73	4/21 D	17/07					
C.SPRET	125	5/02 D	17/50					
C.STMSG	136	5/11 D						
C.TIMDT	112	4/42 D						
C.TRDB	116	4/46 D						
C.UCAP	35	3/40 D						
C.UDAT	34	3/39 D						
C.USRER	110	4/40 D	14/39					
C.WFILE	4	3/12 D	4/32					
C.WRITE	4	4/32 D						
DBGACT	161	15/41 L	27/12					
DBGACTF	504	28/31	28/41	28/51	29/08	29/14	29/22	30/04 L
DBGACT1	162	15/42 L	28/11	28/27	28/35	28/45	29/02	29/12 29/18
DBGACT2	163	15/43 L	28/38	29/05				
DBGBAD	506	27/14	27/16	30/14 L				
DBGBLK	147	15/08	15/11 L	15/27	15/30	15/31		
DBGCNT	10	15/08	15/27	D				
DBGDONE	433	27/19	28/09 L					
DBGGTCOP	463	27/24	29/12 L					
DSGMODG	505	28/37	29/20	30/09 L				
DBGPTCP	473	27/25	29/18 L					
DBGRA	157	15/36 L	27/12					
DBGRABLK	161	15/36	15/39 L	15/46				
DBGRACNT	3	15/36	15/46 D					
DBGRDC	450	27/20	28/27 L					
DBGRDX	455	27/22	28/45 L					
DBGRUN	164	15/50 L	27/09 S	27/41 S	28/10 S	31/37	32/01	33/12 S
DBGSFFLAG	165	15/51 L	28/14	31/08 S	31/16 S	33/10 S		
DBGTYPE	144	15/07 L	27/07 S	27/33 S	33/11 S			
DBGVAL1	147	15/30 D	28/30 S	28/50 S				
DBGVAL2	150	15/31 D						
DBGVEC	417	27/17	27/19 L	27/28				
DBGWRC	452	27/21	28/35 L					
DBGWRX	460	27/23	29/02 L					
DBGXJ	143	15/06 L	27/11					
DEBUG	407	27/07 L	30/05	30/10	30/15	31/47	32/09	
DEBUGS	426	27/33 L	31/09	31/17				
DEBUG1	411	27/11 L	27/42	33/13				
DSPGHST	216	17/46 L	22/05					
ECLASS	6	13/09 D	34/07					
ECLSX	141	14/40 L	21/10 S					

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ENTRY	234	11/30	19/09 L				
ENTRYU	250	19/21	20/06 L				
ENTRYUV	255	20/18	20/20 L	20/35			
ENTRYUX	301	20/52	21/03 L				
ENTRYUX0	277	20/15	20/21	20/23	20/29	20/51 L	
		20/20	20/22	20/28	20/30		
ENTRYUX1	300	20/17	21/01 L				
ENTRYZ	320	19/14	19/16	19/20	22/11 L		
ENTVEC	245	19/17	19/19 L	19/24			
ENUM	7	13/10 D	34/10				
ENUMXT	142	14/41 L	21/11 S				
EREGS	47	13/35 L	17/22	17/26			
ERESTORE	202	17/25 L	31/13				
ERRETURN	140	14/39 L	21/13				
ERRCLS	152	15/17 L	15/24	31/40	34/09 S	34/17	
ERRDBG	511	31/13 L	34/52				
ERREXIT	302	21/10 L	21/24	31/44			
ERREXITP	307	21/19 L	32/06				
ERRGDBG	517	31/37 L	34/53				
ERRGDBG1	522	31/38	31/46 L				
ERRNUM	153	15/18 L	31/41	34/12 S	34/16		
ERRORC	540	19/07	34/04 L				
ERRORC1	554	34/27 L	34/32				
ERRORC2	557	34/29	34/34 L				
ERRORC3	561	34/27	34/51 L				
ERRVEC	561	34/25	34/43 L	34/47			
ERRVECN	0	34/24	34/47 D				
ESAVE	200	17/21 L	34/04				
E.CMMD	37	31/23 D	32/04				
E.GHSTER	1	31/27 D					
E.GHSTFR	2	31/31 D	32/05				
FAKESD	131	14/20 L	23/20 S				
FL	624	11/29	11/36	15/20	28/36	38/04 L	
FXGHSTPC	614	37/17	37/20 L				
GHSTCL	155	15/21 L					
GHSTCLS	137	14/34 L	22/06 S	37/11			
GHSTERR	133	14/27 L	34/15 S	34/51			
GHSTFL	154	15/20 L					
GHSTMPSZ	156	15/22 L					
GHSTPC	166	15/52 L	21/19	31/53 S	37/27 S		
INIT	311	19/19	22/04 L				
INTDONE	444	28/18	28/22 L				
INTDTM	152	15/24 D					
INTERUPT	531	19/05	33/07 L				
INTREGS	67	13/36 L	17/30	17/34			
INTRESTR	206	17/33 L	28/22				
INTRUN	5	13/14 D	28/16	33/09			
INTSAVE	204	17/29 L	33/07				
INT.TRY	232	19/05 L					
LOCALPXJ	4	29/14 D	29/14 D	29/14 D	29/22 D	29/22 D	29/22
MAXOUTCN	144	24/19	24/21	24/48 D			
MINUS0	171	16/21 L	29/14	29/22			
MVFMBF	373	23/24	23/41	25/08 L			

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MVFMBF1	403	25/30 L	25/35					
MVFMBF2	406	25/25	25/31	25/37 L				
MVTOBE	356	23/09	23/38	24/11 L				
MVTOBF1	367	24/37 L	24/42					
MVTOBF2	372	24/33	24/40	24/44 L				
M.MVECAP7777607		16/15 D	29/14	29/22				
M.READ 7777610		16/14 D						
NDBGVEC	7	27/15	27/28 D					
NENTRYUV	15	20/16	20/35 D					
NENTVEC	3	19/15	19/24 D					
NREGS	27	13/34 L	17/14	17/18	28/48	29/07 S		
NRESTORE	176	17/17 L	20/45	21/12	28/26			
NSAVE	174	17/13 L	19/10	31/14				
Q.TLINE	126	14/15 L	23/11	23/18	23/32	23/39		
Q.TRTN	227	18/11 L	23/12	23/19	23/33	23/40		
Q.TTYPE	127	14/16 L	23/10 S	23/17 S	23/31 S			
RDSTKI	221	17/53 L	37/09					
READSELF	211	17/42 L	22/04					
RETURN	210	17/39 L	20/46	22/07	37/18			
RTNBASE	10	11/50 L						
SCRSZ	167	11/32	11/35	11/36	16/06 L	17/44		
SET	563	29/14	29/22	35/15 L				
SETA	577	35/19	35/21	35/24	35/27	35/30	35/36 L	
SETA1	601	35/37	35/41 L					
SETB	576	35/32 L	35/36					
SETEMSK	224	18/03 L	19/11	33/08	34/05			
SETII	172	17/07 L	19/05	19/07	19/09			
SRETURN	220	17/50 L	28/21	28/23				
STK1CLS	135	14/30 L	37/10					
STK1PC	134	14/29 L	18/01	37/25				
STOP	272	20/32	20/41 L					
TTYBFSZ	17	13/42 D	13/44	14/17	18/11			
TTYBUF	107	13/44 L	14/17	18/11	23/29 S	24/23 S	25/08	25/26
TTYCHAR	341	20/27	23/28 L					
TTYEDIT	347	20/31	23/37 L					
TTYIN	331	20/26	23/16 L					
TTYOUT	323	20/25	23/08 L					
UNEXFRTN	523	19/10	20/47	22/06	23/19	28/21	29/14	31/52 L
		19/11	21/13	22/08	23/33	28/22	29/22	33/08
		19/12	21/14	22/12	23/40	28/23	31/14	33/09
		20/46	22/05	23/12	27/12	28/24	31/15	34/05
UNEXFR1	527	32/02	32/08 L					37/19
USERCLRA	150	15/14 L	20/13 S	27/39 S				
USERDBG	507	20/24	31/07 L					
USEREXIT	273	20/45 L	23/12	23/24	23/33	23/41	28/12	28/15
USERMPRA	151	15/15 L						
USERRA	147	15/13 L	20/12 S	27/37 S				
XJLOC	10	13/28 L	29/13	29/14	29/21	29/22		