TYMSHARE, INC.

BRS REFERENCE MANUAL

September 21, 1970

CONTENTS

DATE: 70/09/21

BRS REFERENCE MANUAL SEPTEMBER 21, 1970

TABLE OF CONTENTS

SECTION 0.0 SYSPOP INDEX
SECTION 0.1 INDEX OF SYSPOPS BY TYPE

FILE INPUT/OUTPUT

CIT(134)	CHARACTER INPUT AND TEST
CIO(161)	CHARACTERINPUT/OUTPUT
WIO(160)	WORD INPUT/OUTPUT
BIO(176)	BLOCK INPUT/OUTPUT

RANDOM FILE OPERATORS

RSP(125)	READ SIZE PARAMETERS
SSP(126)	SET SIZE PARAMETERS
RCP(131)	READ CURSOR POSITION
SCP(132)	SET CURSOR POSITION
PCE(133)	POSITION CURSOR AND ERASE

TELETYPE INPUT/OUTPUT

TCI(174)	TELETYPE CHARACTER INPUT
TCO(175)	TELETYPE CHARACTER OUTPUT

CHARACTER STRING MANIPULATION

LDP(166)	LOAD STRING POINTER
STP(167)	STORE STRING POINTER
ISC(140)	INTERNAL TO STRING CONVERSION
SIC(141)	STRING TO INTERNAL CONVERSION
WCD(135)	WRITE CHARACTER AND DECREMENT
GCD(137)	GET CHARACTER AND DECREMENT
WCI(157)	WRITE CHARACTER AND INCREMENT
GCI(165)	GET CHARACTER AND INCREMENT
SKSG(162)	SKIP IF STRING GREATER
SKSE(163)	SKIP IF STRING EQUAL
WCH(164)	WRITE CHARACTER TO MEMORY BY TABLE

FLOATING POINT OPERATIONS

FAD(156)	FLOATING ADD
FSB(155)	FLOATING SUBTRACT
FMP(154)	FLOATING MULTIPLY
FDV(153)	FLOATING DIVIDE

HARDWARE FLOATING POINT OPERATIONS

FFMP(172)	FLOATING MULTIPLY
FFAD(152)	FLOATING ADD
FFDI(147)	FLOATING DIVIDE INVERTED
FFDV(146)	FLOATING DIVIDE
FFSI(143)	FLOATING SUBTRACT INVERTED
FFSB(142)	FLOATING SUBTRACT
STFM(130)	STORE FLOATING ACCUMULATOR
LDFM(127)	LOAD FLOATING ACCUMULATOR
FFSID(124)	FORTRAN II FLOATING SUBTRACT INVERTED
FFSBD(123)	FORTRAN II FLOATING SUBTRACT

FFDVD(122) FORTRAN II FLOATING DIVIDE
FFMPD(121) FORTRAN II FLOATING MULTIPLY
FFADD(120) FORTRAN II FLOATING ADD
STFMD(117) FORTRAN II STORE FLOATING ACCUMULATORS
LDFMD(116) FORTRAN II LOAD FLOATING ACCUMULATORS
FFDID(115) FORTRAN II FLOATING DIVIDE INVERTED

MISCELLANEOUS

SBRM(170) SYSTEM BRM FOR INDIRECT LINKAGE

SECTION 0.2 SEQUENTIAL INDEX OF SYSTEM OPERATORS - SYSPOPS

115 FFDID FORTRAN II FLOATING DIVIDE INVERTED
116 LDFMD FORTRAN II LOAD FLOATING ACCUMULATORS
117 STFMD FORTRAN II STORE FLOATING ACCUMULATORS
120 FFADD FORTRAN II FLOATING ADD
121 FFMPD FORTRAN II FLOATING MULTPILY
122 FFDVD FORTRAN II FLOATING DIVIDE
123 FFSBD FORTRAN II FLOATING SUBTRACT
124 FFSID FORTRAN II FLOATING SUBTRACT INVERTED
125 RSP READ FILE SIZE PARAMETERS
126 SSP SET FILE SIZE PARAMETERS
127 LDFM LOAD FLOATING ACCUMULATOR
130 STFM STORE FLOATING ACCUMULATOR
131 RCP READ CURSOR POSITION
132 SCP SET CURSOR POSITION
133 PCE POSITION CURSOR AND ERASE
134 CIT CHARACTER INPUT AND TEST
135 WCD WRITE CHARACTER AND DECREMENT
137 GCD GET CHARACTER AND DECREMENT
140 ISC INTERNAL TO STRING CONVERSION
141 SIC STRING TO INTERNAL CONVERSION
142 FFSB FLOATING SUBTRACT
143 FFSI FLOATING SUBTRACT INVERTED
146 FFDV FLOATING DIVIDE
147 FFDI FLOATING DIVIDE INVERTED
152 FFAD FLOATING ADD
153 FDV FLOATING POINT DIVIDE
154 FMP FLOATING POINT MULTIPLY
155 FSB FLOATING POINT SUBTRACT
156 FAD FLOATING POINT ADD
157 WCI WRITE CHARACTER AND INCREMENT
160 WIO WORD INPUT/OUTPUT
161 CIO CHARACTER INPUT/OUTPUT
162 SKSG SKIP IF STRING GREATER
163 SKSE SKIP IF STRING EQUAL
164 WCH WRITE CHARACTER TO MEMORY BY TABLE
165 GCI GET CHARACTER AND INCREMENT
166 LDP LOAD STRING POINTER
167 STP STORE STRING POINTER
170 SBRM SYSTEM BRM FOR INDIRECT LINKAGE
172 FFMP FLOATING MULTIPLY
173 BRS BRANCH TO SYSTEM
174 TCI TELETYPE CHARACTER INPUT

```
175 TCO         TELETYPE CHARACTER OUTPUT
176 BIO         BLOCK INPUT/OUTPUT
```

SECTION 1.0 SEQUENTIAL ERS INDEX

NOTE: ERS'S MARKED WITH AN ASTERISK ARE EXECUTIVE ERS'S. ALL OTHERS ARE MONITOR ERS'S. ERS'S IN SECTION 5 ARE RESTRICTED TO SYSTEM OR SUBSYSTEM USE.

ERS.	SECT.	DESCRIPTION
1	5	OPEN A FILE
2	5	CLOSE A FILE
3	3	MAKE PMT POINTER INDIRECT
4	3	RELEASE A PAGE OF MEMORY
5	3	REPORT CALLING FORK STATUS
*6	3	SET FILE PARAMETERS
7	5	READ TABLE
8	5	CLOSE ALL FILES
9	3	START FORK
10	3	TERMINATE FORK
11	3	CLEAR INPUT BUFFER
12	3	DECLARE ECHO TABLE OR SET 8-LEVEL
13	3	TEST INPUT BUFFER FOR EMPTY
14	3	DISMISS UNTIL OUTPUT BUFFER EMPTY
*15	3	READ INPUT FILE NAME
*16	3	OPEN INPUT FILE
17	3	CLOSE ALL FILES
*18	3	READ OUTPUT FILE NAME
*19	3	OPEN OUTPUT FILE
20	3	CLOSE A FILE
21	3	FLOATING POINT NEGATE
22	5	PREVENT TERMINATION
23	5	ALLOW TERMINATION
24	3	CHANGE TERMINAL CHARACTERISTICS
25	5	GRAB BIT MAP BIT
26	3	SKIP IF ESCAPE WAITING
27	5	START STATISTICS
28	5	STOP STATISTICS
29	3	CLEAR OUTPUT BUFFER
30	5	GIVE BIT TO BIT MAP
31	3	WAIT FOR SPECIFIED FORK TO CAUSE A PANIC
33	3	READ STRING
34	3	OUTPUT MESSAGE
35	3	OUTPUT STRING
36	3	OUTPUT NUMBER IN SPECIFIED RADIX
*37	3	RENAME A FILE
38	3	INPUT NUMBER IN SPECIFIED RADIX
39	3	READ CPARW AND AUNN
40	3	READ ECHO TABLE
41	5	RETURN DISC ADDRESS OF CURRENT DATA BLOCK
42	3	READ REAL TIME CLOCK
43	3	READ PSEUDO-RELABELING
44	3	SET PSEUDO-RELABELING
45	3	DISMISS ON QUANTUM OVERFLOW
46	5	TURN ESCAPE OFF
47	5	TURN ESCAPE ON
*48	3	LOOK UP FILE NAME
49	3	READ INTERRUPTS ARMED

50	3	FLOATING TO FIXED CONVERSION
51	3	FIXED TO FLOATING CONVERSION
*52	3	FORMATTED FLOATING POINT INPUT
*53	3	FORMATTED FLOATING POINT OUTPUT
54	5	GRAB BIT FROM MAP AND RETURN DISC ADDRESS
55	5	DISMISS IF JOB IS USING DISC
56	5	RECOVER PMT BYTE
57	5	MAKE INTO USER PAGE
*60	3	LOOK UP FILE NAME AND INSERT IF NECESSARY
61	5	CHANGE TELETYPE WORKING SET
*62	3	OPEN FILE FOR INPUT
*63	3	OPEN FILE FOR OUTPUT
*64	3	OPEN FILE FOR INPUT WITH STRING POINTERS
*65	3	OPEN FILE FOR OUTPUT WITH STRING POINTERS
66	5	DELETE DISK FILE
*67	3	READ USER TS PAGE
*68	3	READS FILE NAME FROM FILE DIRECTORY
*69	3	DELETE A FILE
70	3	COUNT FREE USER PAGES
71	3	SKIP IF SYSTEM STATUS SET
72	5	EXEC DISMISS
73	3	READ AND RESET ERCODE
74	3	SET 1/2 DUPLEX MODE
76	3	SKIP ON 1/2 DUPLEX MODE
78	3	ARM/DISARM SOFTWARE INTERRUPTS
80	3	MAKE PAGE READ ONLY
81	3	DISMISS FOR SPECIFIED AMOUNT OF TIME
82	3	SKIP IF FLOATING AC NEGATIVE
83	3	SKIP IF FLOATING AC ZERO
84	3	SKIP IF FLOATING AC NON-ZERO
85	3	SET 8-LEVEL OUTPUT
86	3	CLEAR 8-LEVEL OUTPUT
88	3	READ EXECUTION TIME
89	3	READ RESOURCE METERING
90	3	DECLARE A FORK FOR TERMINATION ON "ESCAPE"
*91	3	READ DATE AND TIME TO STRING
93	5	RESET RESOURCE METERING
*95	5	ACQUIRE AND RELEASE OVERFLOW GROUPS
*96	3	REPORT FILE DIRECTORY DATA
97	5	RESET SUBSYSTEM COUNTER
98	5	INCREMENT SUBSYSTEM COUNTER
99	5	READ SUBSYSTEM COUNTER
100	5	ASSIGN DEVICE
101	5	UNASSIGN DEVICE
102	3	READ TAPE
103	3	WRITE TAPE
104	3	WHO HAS DEVICE
105	3	CONTROLS FOR TAPE
106	3	PRINT
107	3	SET TAPE PARITY
108	3	TEST TAPE DENSITY
109	5	DISMISS
110	3	TEST TAPE READY
111	5	TERMINATE CLASS 3 BRS FORK
112	5	TURN OFF TELETYPE STATION
113	3	TURN ESCAPES OFF IN USER MODE

114	3	TURN ESCAPES ON IN USER MODE
115	5	TERMINATE CLASS 3 BRS FORK WITH RUBOUT
116	3	READ PROGRAM RELABELING
117	3	SET PROGRAM RELABELING
118	3	LOAD FLOATING ACCUMULATORS
119	3	STORE FLOATING ACCUMULATORS
120	5	ASSIGN PMT ENTRY
121	3	RELEASE PAGE
122	5	READ DISC WITHOUT DISMISS
123	5	WRITE DISC WITHOUT DISMISS
124	5	READ DISK
125	5	WRITE DISK
126	5	TEST FOR CARRIER PRESENCE
127	5	LOOK AT MEMORY
128	5	SET DISK BIT MAP
129	5	TURN CHANNEL ON OR OFF
130	5	TEST BREAKPOINT SWITCH
131	5	CRASH SYSTEM
134	3	SET TO IGNORE LINE FEED OR CARRIAGE RETURN
135	3	CAUSE PROGRAM INTERRUPT AFTER SPECIFIED PERIOD OF TIME
136	5	SET EXEC SWITCHES
*141	5	GET EXEC SUBROUTINES
143	5	SKIP IF BIT MAP SET
144	5	GET A BUFFER
145	5	RETURN A BUFFER
147	3	CLOSE ALL EXCEPT COMMANDS FROM FILE
148	3	NEGATE FLOATING ACCUMULATOR
149	3	FIX FLOATING ACCUMULATOR TO A
150	3	FLOAT A TO FLOATING AC
*151	3	CHANGE A COMMANDS FROM FILE
152	5	IGNORE OFF INTERRUPTS

SECTION 2.0 BRS AND SYSPOP INDEX BY TYPE

FILE INPUT/OUTPUT OPERATIONS

OPEN FILES

62 OPEN FILE FOR INPUT
63 OPEN FILE FOR OUTPUT
64 OPEN FILE FOR INPUT WITH STRING POINTERS
65 OPEN FILE FOR OUTPUT WITH STRING POINTERS
151 CHANGE A "COMMANDS FROM" FILE

CLOSE FILES

20 CLOSE A FILE
17 CLOSE ALL FILES
147 CLOSE ALL EXCEPT COMMANDS FROM FILE

FILE INPUT/OUTPUT OPERATIONS

CIO (161) CHARACTER INPUT/OUTPUT
WIO (160) WORK INPUT/OUTPUT
BIO (176) BLOCK INPUT/OUTPUT
CIT (134) CHARACTER INPUT AND TEST

FILE NAME MANIPULATION

37 RENAME A FILE
68 READ FILE NAME FROM FILE DIRECTORY
48 LOOK UP FILE NAME

FORK MANAGEMENT

5 READ CALLING FORK STATUS
9 START FORK
10 TERMINATE FORK
90 DECLARE FORK FOR TERMINATION ON "ESCAPE"

DEVICE INPUT/OUTPUT

102 READ TAPE
103 WRITE TAPE
104 WHO HAS DEVICE
105 CONTROLS FOR TAPE
106 PRINT
107 SET TAPE PARITY
108 TEST TAPE DENSITY
110 TEST TAPE READY

RANDOM FILE OPERATIONS

RSP (125) READ FILE SIZE PARAMETERS
SSP (126) SET FILE SIZE PARAMETERS
RCP (131) READ CURSOR POSITION
SCP (132) SET CURSOR POSITION
PCE (133) POSITION CURSOR AND ERASE

MISCELLANEOUS FILE OPERATIONS

69	DELETE A FILE
96	REPORT FILE DIRECTORY DATA
6	SET FILE PARAMETERS

TELETYPE INPUT/OUTPUT OPERATIONS

TCI	TELETYPE CHARACTER INPUT
TCO	TELETYPE CHARACTER OUTPUT
13	TEST INPUT BUFFER FOR EMPTY
11	CLEAR INPUT BUFFER
14	DISMISS UNTIL OUTPUT BUFFER EMPTY
29	CLEAR OUTPUT BUFFER
12	DECLARE ECHO TABLE OR SET 8-LEVEL INPUT
40	READ ECHO TABLE
85	SET 8-LEVEL OUTPUT
86	CLEAR 8-LEVEL OUTPUT
134	SET LINE FEED OR CARRIAGE RETURN IGNORE
74	SET 1/2 DUPLEX MODE
76	SKIP ON 1/2 DUPLEX MODE
24	CHANGE TERMINAL CHARACTERISTICS
113	TURN ESCAPE OFF IN USER MODE
114	TURN ESCAPE ON IN USER MODE

MEMORY OPERATIONS

3	MAKE PMT POINTER INDIRECT
4	RELEASE A PAGE OF MEMORY
121	RELEASE A PAGE OF MEMORY
43	READ PSEUDO-RELABELING
44	SET PSEUDO-RELABELING
116	READ PROGRAM RELABELING
117	SET PROGRAM RELABELING
80	MAKE PAGE READ ONLY
70	COUNT FREE USER PAGES

STRING PROCESSING OPERATIONS

STRING INPUT/OUTPUT

33	READ STRING
34	OUTPUT MESSAGE
35	OUTPUT STRING

STRING MANIPULATION

STP	STORE STRING POINTER
LDP	LOAD STRING POINTER
SKSE	SKIP IF STRING EQUAL
SKSG	SKIP IF STRING GREATER

CHARACTER MANIPULATION

GCI	GET CHARACTER FROM BEGINNING OF STRING AND INCREMENT BEGINNING POINTER.

WCI	PUT CHARACTER ON END OF STRING AND INCREMENT END POINTER.
GCD	GET CHARACTER FROM END OF STRING AND DECREMENT END POINTER
WCD	PUT CHARACTER ON BEGINNING OF STRING AND DECREMENT BEGINNING POINTER

NUMBER OPERATION

NUMBER INPUT/OUTPUT

36	OUTPUT NUMBER TO SPECIFIED RADIX
38	INPUT NUMBER TO SPECIFIED RADIX
52	FORMATTED FLOATING POINT INPUT
53	FORMATTED FLOATING POINT OUTPUT
SIC	STRING TO INTERNAL CONVERSION
ISC	INTERNAL TO STRING CONVERSION

ARITHEMTIC OPERATIONS

50	CONVERSION FROM FLOATING POINT TO FIXED POINT
51	CONVERSION FROM FIXED POINT TO FLOATING POINT
21	FLOATING POINT NEGATE
FAD	FLOATING POINT ADDITION
FSB	FLOATING POINT SUBTRACT
FMP	FLOATING POINT MULTIPLICATION
FDV	FLOATING POINT DIVISION

HARDWARE FLOATING ARITHMETIC

FFMP	FLOATING MULTIPLY
FFAD	FLOATING ADD
FFDI	FLOATING DIVIDE INVERTED
FFDV	FLOATING DIVIDE
FFSI	FLOATING SUBTRACT INVERTED
FFSB	FLOATING SUBTRACT
STFM	STORE FLOATING ACCUMULATOR
LDFM	LOAD FLOATING ACCUMULATOR
FFSID	FLOATING SUBTRACT INVERTED
FFSBD	FLOATING SUBTRACT
FFDVD	FLOATING DIVIDE
FFMPD	FLOATING MULTIPLY
FFADD	FLOATING ADD
STFMD	STORE FLOATING ACCUMULATORS
LDFMD	LOAD FLOATING ACCUMULATORS
FFDID	FLOATING DIVIDE INVERTED
82	SKIP IF FLOATING ACCUMULATOR NEGATIVE
83	SKIP IF FLOATING ACCUMULATOR ZERO
84	SKIP IF FLOATING ACCUMULATOR NON-ZERO
118	LOAD FLOATING ACCUMULATOR
119	STORE FLOATING ACCUMULATOR
148	NEGATE FLOATING ACCUMULATOR
149	FIX FLOATING ACCUMULATOR TO A

150	FLOAT A TO FLOATING ACCUMULATOR

MISCELLANEOUS

42	READ REAL TIME CLOCK
91	READ DATE AND TIME INTO A STRING
39	READ CPARW AND AUNN
SERM	PROVIDES INDIRECT SUBROUTINE LINKAGE
71	SKIP IF SYSTEM STATUS SET
67	READ USERS TS PAGE
73	READ AND RESET ERCODE
88	READ EXECUTION TIME
89	READ RESOURCE METERING
49	READ INTERRUPTS ARMED
78	ARM/DISARM SOFTWARE INTERRUPTS
45	DISMISS ON QUANTUM OVERFLOW
81	DISMISS FOR SPECIFIED AMOUNT OF TIME

SYSTEM AND SUBSYSTEM RESTRICTED BRS'S

ESCAPE CONTROL

46	TURN ESCAPE OFF
47	TURN ESCAPE OFF
26	SKIP IS ESCAPE WAITING

FORK MANAGEMENT

72	EXEC DISMISS
22	PREVENT TERMINATION
23	ALLOW TERMINATION
109	DISMISS
111	TERMINATE CLASS 3 BRS FORK
115	TERMINATE CLASS 3 BRS FORK WITH RUBOUT

DEVICE INPUT/OUTPUT

100	ASSIGN DEVICE
101	DEASSIGN DEVICE

INPUT/OUTPUT

1	OPEN A FILE
2	CLOSE A FILE
8	CLOSE ALL FILES
41	RETURN DISC ADDRESS OF CURRENT DATA BLOCK
66	DELETE DISC FILE
122	READ DISC WITHOUT DISMISS
123	WRITE DISC WITHOUT DISMISS
124	READ DISC
125	WRITE DISC
130	TEST A BREAK POINT SWITCH

TELETYPE CONTROL

126	TEST FOR CARRIER PRESENCE

129	TURN CHANNEL ON OR OFF
112	TURN OFF TELETYPE STATION
152	IGNORE OFF INTERRUPTS

MEMORY CONTROL

56	RECOVER PMT BYTE
120	ASSIGN PMT ENTRY
57	MAKE INTO USER PAGE

EXEC COMMAND ERS'S

127	LOOK AT MEMORY

BIT MAP CONTROL

25	GRAB BIT MAP BIT
30	GIVE BIT TO BIT MAP
54	GRAB BIT FROM MAP AND RETURN DISC ADDRESS
128	SET BIT MAP
143	SKIP IF BIT MAP SET

STATISTICS

27	START STATISTICS
28	STOP STATISTICS

FILE DIRECTORY CONTROL

95	ACQUIRE AND RELEASE OVERFLOW GROUPS

MISCELLANEOUS

7	READ TABLES
131	CRASH SYSTEM
136	SET EXEC SWITCHES
141	GET EXEC SUBROUTINES
144	GET A BUFFER
145	RETURN A BUFFER
97	RESET SUBSYSTEM COUNTER
98	INCREMENT SUBSYSTEM COUNTER
99	READ SUBSYSTEM COUNTER
55	DISMISS IF JOB USING DISC
61	CHANGE TELETYPE WORKING SET
93	RESET RESOURCE METERING

SECTION 3.0 USER BRS'S IN NUMERICAL SEQUENCE

BRS 3

DATE: 70/08/26
FUNCTION: MAKE AN INDIRECT POINTER
STATUS: USER
INPUT:
A = PMT BYTE NUMBER OF PMT OR SMT TO BE POINTED AT.
    IF BIT 0 OF A = 1, MAKE INDIRECT POINTER READ ONLY
X = CHANNEL NUMBER FOR SECOND BYTE (AS TYPED BY THE EXEC COMMAND 'WHO')
    THIS IS USED ONLY WHEN THE BRS 3 IS USED TO MAKE AN INDIRECT
    POINTER TO ANOTHER USER'S PMT PAGE.
OUTPUT: A = NEW PMT BYTE NO.
DESCRIPTION: THIS BRS BUILDS AN INDIRECT PMT POINTING TO THE
PMT OR SMT OR EXSMT DESCRIBED IN THE A AND X REGISTERS.
THAT INDIRECT POINTER IS PLACED IN THE CALLER'S PMT LIST AND ITS
POSITION IN THAT LIST IS RETURNED IN THE A REGISTER. THIS 6 BIT
NUMBER CAN BE USED IN A BRS 44 TO ACCESS THE PAGE. IF THE
ORIGINAL OWNER OF THE PAGE DELETES THE PAGE IN SOME MANNER THE
INDIRECT POINTER DISAPPEARS AND IF THAT POINTER IS IN THE CURRENT
RELABELING OF SOME FORK IT WILL BE REMOVED.
NOTE: THE BRS 3 DOES NOT CHANGE THE CURRENT RELABELING.
BIT 0 OF A MUST BE SET IF THE USER IS TO POINT TO ANY SUBSYSTEM
PAGES.

	OLD BYTE NUMBERS							NEW BYTE NUMBERS						
SBASIC	17	22	23	31	32	33	34	101	102	103	104	105	106	107
EDITOR	41	42	—	—	—	—	—	27	30	—	—	—	—	—
CAL	24	25	26	27	30	—	—	112	113	114	115	116	—	—
CCS	35	36	37	40	43	44	50	117	120	121	122	123	124	125
	51	52	—	—	—	—	—	126	127	—	—	—	—	—
FTC	20	21	—	—	—	—	—	130	131	—	—	—	—	—
F2C	—	—	—	—	—	—	—	163	164	—	—	—	—	—
SFOR	—	—	—	—	—	—	—	135	136	137	140	141	142	143
	—	—	—	—	—	—	—	144	—	—	—	—	—	—
BFOR(C)	—	—	—	—	—	—	—	201	202	203	204	205	206	207
	—	—	—	—	—	—	—	210	211	212	213	214	—	—
BFOR(R)	—	—	—	—	—	—	—	31	32	33	34	35	—	—
COMMON	45	46	47	—	—	—	—	132	133	134	—	—	—	—
FOS	53	54	55	—	—	—	—	150	151	152	—	—	—	—
F2OS	—	—	—	—	—	—	—	165	166	167	—	—	—	—
MUSE	—	—	—	—	—	—	—	147	153	154	155	175	176	177
	—	—	—	—	—	—	—	170	—	—	—	—	—	—

NOTE: DDT AND XDDT PAGES ARE NOT INDIRECT SMTS. THEY ARE SMT NUMBERS
41,42 AND 36,37 RESPECTIVELY. THE TS PAGE IS 43. FOS AND F2O BYTES
DO NOT REQUIRE SUBSYSTEM STATUS TO RELABEL IN. (INDIRECT BYTES 150-151
 AND 165-167 RESPECTIVELY).
REGISTERS AFFECTED: A,X

BRS 4

DATE: 69/05/13

FUNCTION: RELEASE A PAGE OF MEMORY
STATUS: USER
INPUT: A=ANY ADDRESS IN THE PAGE TO BE RELEASED
DESCRIPTION: THE PMT ENTRY FOR THE BLOCK IS CLEARED AND IN ANY OTHER FORK WHICH HAS THIS PMT BYTE IN ITS RELABELING, THE BYTE IS CLEARED TO 0.
REGISTERS AFFECTED: NONE

BRS 5

DATE: 69/05/13
FUNCTION: RETURN STATUS OF CALLING FORK
STATUS: USER
OUTPUT: A=0 FOR NO STATUS
A=1 FOR SUBSYSTEM STATUS
A=3 FOR SYSTEM STATUS
A=7 FOR EXEC STATUS
REGISTERS AFFECTED: A

BRS 6

DATE: 69/05/13
FUNCTION: SET [FILE ATTRIBUTES] IN [FILE DIRECTORY]
STATUS: USER
INPUT: A = FILE DIRECTORY POINTER ADDRESS (FROM BRS 15 OR 48)
X = 0-11=ATTRIBUTES TO CHANGE, 12-23=NEW ATTRIBUTES
RETURNS: NO SKIP = ERRORS
SKIP = NORMAL
DESCRIPTION: PLACES IN THE FILE DIRECTORY FOR THE FILE SPECIFIED THE STATUS SELECTED; THE STATUS WILL BE USED TO START THE FORK IF THE FILE IS CALLED WITH THE GOTO COMMAND. THE ERROR RETURN IS TAKEN IF THE FILE CANNOT BE LOCATED IN THE FILE DIRECTORY OR IF THE FILE IS NOT VALID FOR PRIVATE WRITE ACCESS.
REGISTERS AFFECTED: ALL.

SEE BRS 96

BRS 9

DATE: 70/01/30
FUNCTION: START FORK
STATUS: USER
INPUT: A=ADDRESS OF A "PANIC TABLE" (SEE APPENDIX A, GLOSSARY).
BITS 0 THROUGH 7 OF REGISTER A HAVE THE FOLLOWING SIGNIFICANCE:

0=GIVE [FORK] EXEC STATUS IF CURRENT FORK HAS EXEC STATUS
1=SET FORK RELABELING FROM PANIC TABLE. OTHERWISE USE CURRENT RELABELING.
2=PROPOGATE [ESCAPE ASSIGNMENT] TO FORK IF ISSUING FORK HAS IT. (SEE BRS 90).
3=MAKE FORK [FIXED MEMORY]. IT IS NOT ALLOWED MORE MEMORY THAN IT STARTED WITH.
4=MAKE FORK [LOCAL MEMORY]. NEW MEMORY WILL BE ASSIGNED TO IT INDEPENDENT OF THE CONTROLLING FORK.

5=GIVE FORK SUBSYSTEM STATUS IF CURRENT FORK HAS
SUBSYSTEM STATUS.
6=GIVE FORK SYSTEM STATUS IF CURRENT FORK HAS
SYSTEM STATUS.

DESCRIPTION: BRS 9 IS USED TO CREATE DEPENDENT ENTRIES IN THE PAC TABLE. THE [PANIC TABLE] INDICATED BY REGISTER A MUST NOT BE THE SAME FOR TWO FORKS OF THE SAME JOB OR OVERLAP A PAGE BOUNDARY; IF IT IS BRS 9 IS ILLEGAL. BRS 9 CREATES A NEW FORK AS A FORK OF THE FORK CREATING IT, WHICH IS CALLED THE CONTROLLING FORK. THE FORK IS LOWER IN THE HIERARCHY OF FORKS THAN THE CONTROLLING FORK. THE CONTROLLING FORK MAY ITSELF BE A FORK OF SOME STILL HIGHER FORK.
WHEN BRS 9 IS EXECUTED, THE CONTROLLING FORK IS DISMISSED UNTIL THE LOWER FORK TERMINATES. A USER MAY NOT HAVE MORE THAN EIGHT FORKS IN HIS FORK STRUCTURE. THIS INCLUDES THE EXEC FORK AND ONE FORK FOR EACH EXEC BRS THAT IS ACTIVE. ONLY ONE EXEC BRS CAN BE ACTIVE AT A TIME.
REGISTERS AFFECTED: NONE

BRS 10

DATE: 69/05/13
FUNCTION: PROGRAMMED PANIC. TERMINATES A FORK.
STATUS: USER
DESCRIPTION: TERMINATES A FORK. THIS CONDITION CAN BE DISTINGUISHED FROM A PANIC CAUSED BY THE ESCAPE KEY ONLY BY THE FACT THAT IN THE FORMER CASE THE PROGRAM COUNTER IN THE PANIC TABLE POINTS TO A WORD CONTAINING BRS 10. THIS BRS WOULD NORMALLY BE USED TO TERMINATE A FORK WHEN IT IS FINISHED.
REGISTERS AFFECTED: NONE

BRS 11

DATE: 69/05/13
FUNCTION: CLEAR THE TELETYPE INPUT BUFFER
STATUS: USER
INPUT: X=TELETYPE NUMBER (-1 INDICATES THE CONTROLLING TELETYPE)
DESCRIPTION: SETS THE BUFFER POINTERS TO INDICATE THERE ARE NO CHARACTERS IN THE [TELETYPE] [INPUT BUFFER].
REGISTERS AFFECTED: NONE

BRS 12

DATE: 69/05/13
FUNCTION: DECLARE ECHO TABLE OR SET [8-LEVEL INPUT] MODE
STATUS: USER
INPUT: X=TELETYPE NUMBER (-1 INDICATES THE CONTROLLING TELETYPE)
A=0,1,2, OR 3 TO INDICATE THE PROPER ECHO TABLE.
A MAY ALSO CONTAIN ANY EIGHT-BIT CHARACTER IF THE SIGN BIT IS ON. IN THIS CASE, EACH EIGHT-BIT CHARACTER READ FROM THE [TELETYPE] IS TRANSMITTED UNCHANGED TO THE USERS PROGRAM. NO ECHOES ARE GENERATED WHILE IN THIS SPECIAL EIGHT-LEVEL MODE. THE EIGHT BIT CHARACTER IS THE CHARACTER ON WHICH EIGHT LEVEL MODE WILL TERMINATE. IF THE SIGN BIT IS ON AND BIT 15 IS ON, THERE WILL BE NO TERMINATING CHARACTER. THE PROGRAM MUST STOP THE READING ITSELF. IF IT FAILS TO DO THIS, THE USER MAY HANG UP HIS PHONE. NEITHER THE ESCAPE NOR HIGH SPEED ESCAPE WILL

TERMINATE THE PROGRAM. OTHERWISE, THIS IS LIKE REGULAR EIGHT LEVEL MODE.
DESCRIPTION: BRS 12 SETS THE [ECHO TABLE] FOR THE TELETYPE INDICATED BY REGISTER X. ECHO TABLES ARE AS FOLLOWS:
0=ECHO EACH CHARACTER JUST AS IT WAS RECEIVED AND BREAK ON ALL CHARACTERS.
1=SAME ECHO AS 0 BUT ALL CHARACTERS EXCEPT LETTERS, DIGITS AND SPACES ARE BREAK CHARACTERS.
2=SAME ECHO AS 0, BUT THE ONLY [BREAK CHARACTERS] ARE CONTROL CHARACTERS (INCLUDING CARRIAGE RETURN AND LINE FEED.)
NOTE: THE EXEC SETS THIS FOR THE USER.
3=NO [ECHO] FOR ANY CHARACTER AND BREAK ON ALL CHARACTERS.
REGISTERS AFFECTED: NONE

BRS 13

DATE: 69/05/13
FUNCTION TEST INPUT BUFFER FOR EMPTY.
STATUS: USER
INPUT:
X=[TELETYPE] NUMBER (-1 INDICATES THE CONTROLLING TELETYPE)
RETURNS: NO SKIP=CHARACTERS IN THE INPUT BUFFER
SKIP=NO CHARACTERS IN THE INPUT BUFFER
DESCRIPTION: THIS BRS TESTS FOR THE PRESENCE OF INPUT CHARACTERS IN THE BUFFER. IF THE BUFFER IS EMPTY, THERE IS A SKIP RETURN. IF THERE ARE ANY CHARACTERS IN THE [INPUT BUFFER], CONTROL IS TRANSFERED TO THE "NORMAL" RETURN.
REGISTERS AFFECTED: NONE

BRS 14

DATE: 70/08/26
FUNCTION: DISMISS UNTIL THE TELETYPE OUTPUT BUFFER IS EMPTY
STATUS: USER
INPUT: X= TELETYPE NUMBER (-1 INDICATES THE CONTROLLING TELETYPE)
DESCRIPTION: DISMISSES UNTIL THE 940 OUTPUT BUFFER IS EMPTY. THE BRS 85 AND 86 NO LONGER REQUIRE IT BEFORE TERMINATING. FURTHERMORE, IT IS INEFFICIENT TO USE THIS BRS IN CONJUNCTION WITH THE BRS 85 AND 86.
REGISTERS AFFECTED: NONE

BRS 15

DATE: 69/11/11
ATTENTION: THIS BRS IS OBSOLETE AND NOT RECOMMENDED.
FUNCTION: READS INPUT FILE NAME FROM A COMMAND FILE AND LOOKS UP THE FILE NAME IN THE USER'S FILE DIRECTORY
STATUS: USER
INPUT: A=COMMAND FILE NUMBER - 0 FOR TELETYPE INPUT
RETURNS: NO SKIP = FILE CANNOT BE LOCATED IN DIRECTORY
SKIP = NORMAL RETURN
DESCRIPTION: THE ROUTINE IGNORES LEADING SPACES, LEADING MULTI-BLANKS, AND LEADING COMMA'S, LINE FEEDS AND CARRIAGE RETURNS. THE EXCEPTION RETURN IS TAKEN IF THE FILE NAME CANNOT BE LOCATED IN THE [FILE DIRECTORY].

EXCEPTION RETURN:	X:	EXEC ERCODE
	A & B:	DESTROYED.
NORMAL RETURN:	A:	FILE DIRECTORY POINTER ADDRESS

B: DESTROYED
X: FILE DIRECTORY POINTER ADDRESS

NOTE: THE INFORMATION CONTAINED IN THE REGISTERS CANNOT BE USED DIRECTLY BY THE USER SINCE THE ADDRESSES ARE IN THE T.S. BLOCK; THIS BRS IS NORMALLY FOLLOWED BY THE BRS 16.
IF THE INPUT FILE NAME STRING BEGINS WITH A LEFT PAREN, OR WITH THE FULL QUOTE, THE FILE NAME WILL BE LOCATED IN ANOTHER USER'S FILE DIRECTORY OR IN THE PUBLIC FILE DIRECTORY, RESPECTIVELY.
REGISTERS AFFECTED: ALL

BRS 16

DATE: 69/05/13
ATTENTION: THIS BRS IS OBSOLETE AND NOT RECOMMENDED.
FUNCTION: [OPEN] [INPUT FILE]
STATUS: USER
INPUT: A= FILE DIRECTORY POINTER ADDRESS
RETURNS: NO SKIP = FILE CANNOT BE OPENED
SKIP = NORMAL RETURN
DESCRIPTION: OPENS AN INPUT FILE. THE BRS REQUIRES IN A THE VALUE RETURNED IN A BY A BRS 15, 48, OR 60. THE EXCEPTION RETURN IS TAKEN IF THE POINTER IN A IS NOT POINTING TO A PROPER LOCATION OR IF THE FILE CANNOT BE OPENED FOR ANY REASON.
EXCEPTION RETURN: X: EXEC ERCODE
A & B: DESTROYED.
NORMAL RETURN: A: FILE NUMBER
B: FILE TYPE (0-4)
X: FILE SIZE
REGISTERS AFFECTED: ALL

BRS 17

DATE: 69/05/13
FUNCTION: [CLOSE] ALL FILES
STATUS: USER
REGISTERS AFFECTED: ALL

BRS 18

DATE: 70/07/02
ATTENTION: THIS BRS IS OBSOLETE AND NOT RECOMMENDED.
FUNCTION: READS FILE NAME FROM A COMMAND FILE AND LOOKS UP THE FILE NAME IN THE USER'S FILE DIRECTORY. THE COMMAND FILE MUST BE AN INPUT FILE.
STATUS: USER
INPUT: A = COMMAND FILE NUMBER = 0 FOR TELETYPE INPUT.
IF BIT 1 = 1 IN THE A REGISTER, THE BRS ASSUMES A FILE NAME IS CORRECT AND DOES NOT TYPE "OLD FILE" OR "NEW FILE".
RETURNS: NO SKIP: ERROR RETURN
SKIP: NORMAL RETURN
DESCRIPTION: THIS BRS IGNORES LEADING SPACES, LEADING MULTI-BLANKS AND LEADING COMMA'S, LINE FEEDS AND CARRIAGE RETURNS. IF THE STRING BEGINS WITH A SINGLE QUOTE OR SLASH, IT MUST BE TERMINATED BY THE SAME CHARACTER WHICH MUST THEN BE FOLLOWED BY A CONFIRMING CARRIAGE RETURN. THE EXCEPTION EXIT IS TAKEN IF THESE REQUIREMENTS ARE NOT MET. IF THE STRING IS FOUND IN THE FILE DIRECTORY,

THE MESSAGE OLD FILE IS TYPED, OTHERWISE, THE MESSAGE NEW FILE IS
TYPED. IF THE NEXT CHARACTER IN THE INPUT STRING IS A LINE FEED,
CARRIAGE RETURN, THE NORMAL RETURN WILL BE TAKEN;
OTHERWISE, THE EXCEPTION RETURN IS TAKEN. IN THE CASE OF A NEW FILE,
THE FILE NAME IS INSERTED CONDITIONALLY INTO THE FILE DIRECTORY.
IF THE FILE IS PROTECTED, THE EXCEPTION RETURN IS TAKEN.

```
     EXCEPTION RETURN:  X:  EXEC ERCODE
                      A & B:  DESTROYED.
     NORMAL RETURN: A:  FILE DIRECTORY POINTER ADDRESS
                    B:  CONFIRMING CHARACTER.
                    X:  DESTROYED.
REGISTERS AFFECTED:  ALL
```

BRS 19

```
DATE: 70/07/02
ATTENTION: THIS BRS IS OBSOLETE AND NOT RECOMMENDED.
FUNCTION:  OPENS AN [OUTPUT FILE]
STATUS:  USER
CALLING SEQUENCE:
INPUT:  A = FILE DIRECTORY POINTER ADDRESS (SUPPLIED BY BRS 18,48 OR 60)
        X = FILE TYPE. (SEE APPENDIX A)
RETURNS:  NO SKIP:  ERROR
          SKIP:  NORMAL RETURN
DESCRIPTION:  OPENS AN OUTPUT FILE. ON A NORMAL RETURN, THE REGISTERS
 CONTAIN THE SAME INFORMATION AS THE BRS 63. THE EXCEPTION RETURN IS
TAKEN IF THE FILE CANNOT BE OPENED. (SEE APPENDIX D)
REGISTERS AFFECTED:
                     EXCEPTION RETURN: A & B DESTROYED
                                       X = EXEC ERCODE
                     NORMAL RETURN:    A = FILE NUMBER
                                       B AND X ARE DESTROYED.
```

BRS 20

```
DATE: 69/05/13
FUNCTION:  [CLOSE] A [FILE]
STATUS:  USER
INPUT:  A = FILE NUMBER
DESCRIPTION:  THE "CLOSE FILE" BRS IS USED TO INDICATE TO THE
SYSTEM ALL PROCESSING IS COMPLETED ON THIS FILE.  ALL REGISTERS
ARE DESTROYED.
REGISTERS AFFECTED:  ALL
```

BRS 21

```
DATE: 69/05/13
NAME:  FNA
FUNCTION:  USER
DESCRIPTION:  THE DOUBLE WORD [FLOATING POINT] VALUE IN THE A
AND B REGISTERS IS NEGATED.
REGISTERS AFFECTED:  A, B
```

BRS 24

```
DATE : 70/08/26
```

FUNCTION: CHANGE [TERMINAL CHARACTERISTICS]
STATUS: USER
INPUT: A = TTYTBL MASK
X = TTY NUMBER OR -1
TTYTBL MASK: BIT 2 = 1 FOR LOWER CASE MODE FOR MODEL 37 OR [IBM 2741]
BIT 7 = 1 FOR HALF DUPLEX MODE
BIT 8 = 1 FOR [MODEL 37] OUTPUT MODE (MULTIBLANKS)
ALL OTHER BITS MUST BE 0
REGISTERS AFFECTED: NONE

BRS 26

DATE: 70/01/30
FUNCTION: SKIP IF ESCAPE WAITING
STATUS: USER
RETURNS: NO SKIP = NO ESCAPE WAITING
SKIP = ESCAPE WAITING
DESCRIPTION: SIGNIFICANT ONLY AFTER A BRS 46 OR BRS 113 IS USED.

REGISTERS AFFECTED: NONE

BRS 29

DATE: 69/05/13
FUNCTION: CLEAR THE [OUTPUT BUFFER]
STATUS: USER
INPUT: X = TELETYPE NUMBER (-1 INDICATES THE CONTROLLING TELETYPE)
REGISTERS AFFECTED: NONE

BRS 31

DATE: 69/05/13
ATTENTION: THIS BRS IS OBSOLETE, AND NOT RECOMMENDED.
FUNCTION: PUTS THE STATUS WORD INTO THE X REGISTER.
STATUS: USER
INPUT: A = PANIC TABLE ADDRESS
DESCRIPTION: PUTS THE STATUS WORD FROM THE PANIC TABLE INTO THE X REGISTER. THIS COULD BE DONE MORE EASILY BY THE USER.
REGISTERS AFFECTED: X,A

BRS 33

DATE: 69/05/13
FUNCTION: READ [STRING]
STATUS: USER
INPUT: A = ADDRESS OF STRING POINTER
B = TERMINAL CHARACTER
X = FILE NUMBER
BIT 0 OF A ON = THE STRING IS TAKEN AS NULL WITH THE SECOND POINTER EQUAL TO THE FIRST.
DESCRIPTION: THIS BRS READS CHARACTERS FROM THE FILE AND APPENDS THEM TO THE STRING UNTIL THE TERMINAL CHARACTER IS REACHED. THE TERMINAL CHARACTER IS NOT APPENDED TO THE STRING. IT RETURNS THE UPDATED STRING POINTERS IN THE A AND B REGISTERS AND UPDATES THE END STRING POINTER IN MEMORY.

```
REGISTERS AFFECTED:  A, B

*BRS 34*

DATE: 69/05/13
FUNCTION:  OUTPUT MESSAGE
STATUS:  USER
INPUT:  X = FILE NUMBER
        A = BEGINNING WORD ADDRESS
        B = CHARACTER COUNT OR -1

DESCRIPTION:  THIS BRS OUTPUTS N CONSECUTIVE CHARACTERS START-
ING WITH THE FIRST CHARACTER OF THE SPECIFIED WORD.  IF B = -1,
CHARACTERS ARE OUTPUT UNTIL A / IS ENCOUNTERED; THE CHARACTER $
IS INTERPRETED AS A CARRIAGE RETURN AND LINE FEED.
REGISTERS AFFECTED:  NONE

*BRS 35*

DATE: 69/05/13
FUNCTION:  OUTPUT STRING
STATUS:  USER
INPUT :  X = FILE NUMBER
      A,B = A STRING POINTER PAIR
DESCRIPTION:  OUTPUTS THE [STRING] INDICATED BY THE STRING POINT-
ERS IN REGISTERS A AND B TO THE SPECIFIED FILE.
REGISTERS AFFECTED:  NONE

*BRS 36*

DATE: 69/05/13
FUNCTION:  OUTPUT NUMBER
STATUS:  USER
INPUT:  X = FILE NUMBER
        A = NUMBER TO BE OUTPUT
        B = RADIX
DESCRIPTION:  OUTPUTS A NUMBER IN THE RADIX R.  THE NUMBER WILL
BE OUTPUT AS AN UNSIGNED 24 BIT INTEGER.  IF THE RADIX IS LESS
THAN 2, AN INSTRUCTION TRAP WILL BE GIVEN.
REGISTERS AFFECTED:  NONE

*BRS 37*

DATE: 70/09/20
FUNCTION: [RENAME] A [FILE]
STATUS:  USER
CALLING SEQUENCE:  LDP PTRS (OLD FILE NAME)
                   BRS 48
                   BRU ERROR
                   LDP NPTRS (NEW FILE NAME)
                   BRS 37
                   BRU ERROR2
INPUT:  A, B = NEW STRING POINTERS
        X = OUTPUT OF BRS 48
OUTPUT: IF ERROR RETURN TAKEN, X = EXEC ERCODE
DESCRIPTION:  REPLACES OLD FILE NAME WITH NEW FILE NAME.
```

NEW NAME MUST HAVE SAME NUMBER OF CHARACTERS AS OLD NAME.
RETURNS: SKIP = NORMAL RETURN
NO SKIP = NEW NAME INVALID (SAME AS OLD, ILLEGAL CHAR., ETC.)
WARNING: IF THIS BRS IS USED WHEN THE OLD FILE NAME HAS A COMMENT, DISASTEROUS RESULTS MAY OCCUR. THE NEW FILE NAME MUST BE THE SAME LENGTH AS THE OLD ONE (INCLUDING COMMENTS).
REGISTERS AFFECTED: ALL

BRS 38

DATE: 69/05/13
FUNCTION: READ NUMBER
STATUS: USER
INPUT: X = FILE NUMBER (0 FOR TELETYPE)
B = RADIX
OUTPUT: A = NUMBER
B = TERMINATING CHARACTER
DESCRIPTION: INPUTS AN INTEGER TO ANY RADIX. THE NUMBER MAY BE PRECEDED BY A PLUS OR MINUS SIGN. LEADING CARRIAGE RETURNS AND BLANKS ARE IGNORED. ON EXIT THE NUMBER WILL BE IN THE A REGISTER. THE CONVERSION IS TERMINATED BY ANY NON-NUMERIC CHARACTER WHICH WILL BE IN THE B REGISTER ON EXIT. THE NUMBER IS COMPUTED BY MULTIPLYING THE NUMBER OBTAINED AT EACH STAGE BY THE RADIX AND ADDING THE NEW DIGIT.
REGISTERS AFFECTED: A, B

BRS 39

DATE: 70/07/02
FUNCTION: READS [CONTROL PARAMETER WORD] AND AUNN
STATUS: USER
OUTPUT: A = CONTROL PARAMETER WORD
B = AUNN
CONTROL PARAMETER WORD:

ACCOUNT SUPERVISOR:	2B6
SYSTEM:	4B6
OPERATOR:	1B7
PREMIUM CHARGE:	2B7
PROPRIETARY:	4B7

REGISTERS AFFECTED: A,B

BRS 40

DATE: 69/05/13
FUNCTION: READ [ECHO TABLE]
STATUS: USER
INPUT: X = TELETYPE NUMBER OR -1
OUTPUT: A = ECHO TABLE NUMBER OR TERMINATING CHARACTER AND SIGN BIT.
DESCRIPTION: READS THE ECHO TABLE NUMBER (0,1,2,3) INTO THE A REGISTER.
IF THE [TELETYPE] IS NOT IN EIGHT-LEVEL INPUT MODE, READS THE ECHO TABLE NUMBER (0,1,2,3) INTO THE A REGISTER. IF THE TELETYPE IS IN EIGHT-LEVEL MODE, THE SIGN BIT OF A IS SET, THE ADDRESS FIELD CONTAINS THE TERMINAL CHARACTER.

REGISTERS AFFECTED: A

BRS 42

DATE: 69/10/31
FUNCTION: READ REAL [TIME] CLOCK
STATUS: USER
OUTPUT: A = REAL
B = DMIN
X = YEAR-1964
DESCRIPTION: SETS THE CONTENTS OF THE A REGISTER EQUAL TO THE VALUE OF THE REAL TIME CLOCK. TIME IS GIVEN AS A 24 BIT BINARY NUMBER REPRESENTING 60THS OF A SECOND. THE CLOCK IS SET TO ZERO WHEN THE SYSTEM IS STARTED AND IT IS INCREMENTED BY ONE AT EVERY 1/60TH SECOND. A BINARY FORM OF THE START-UP TIME IS PUT IN B. THE FIRST SIX BITS OF B ARE THE MONTH NUMBER. THE REST OF THE BITS ARE THE MINUTE OF THE MONTH. FROM A AND B THE USER CAN CALCULATE THE MONTH, DATE AND TIME.
REGISTERS AFFECTED: ALL

BRS 43

DATE: 69/05/13
FUNCTION: READ PSEUDO-RELABELING
STATUS: USER
OUTPUT: A,B = PSEUDO-RELABELING REGISTERS.
DESCRIPTION: READS THE CURRENT PSEUDO-[RELABELING] REGISTERS INTO REGISTERS A AND B.
REGISTERS AFFECTED: A, B

BRS 44

DATE: 69/05/13
FUNCTION: SET PSEUDO-RELABELING
STATUS: USER
A & B = RELABELING REGISTERS
DESCRIPTION: THIS BRS TAKES THE CONTENTS OF REGISTERS A AND B AND STORES THEM INTO THE CURRENT PSEUDO-[RELABELING] REGISTERS. IT ALSO CAUSES THE REAL RELABELING TO BE RESET TO CORRESPOND TO THE NEW PSEUDO-RELABELING.
THIS BRS WILL RESULT IN AN INSTRUCTION TRAP FOR ANY OF THE FOLLOWING REASONS:
1) SWAPPING IN THE NEW PAGES WAS NOT COMPLETED. (USUALLY BECAUSE OF A RAD FAILURE.)
2) THE USER TRIED TO RELABEL OVER A SYSTEM PAGE.
3) THE USER TRIED TO RELABEL OVER A PAGE HE DID NOT HAVE. (THIS IS NOT THE WAY TO OBTAIN MORE MEMORY.)
REGISTERS AFFECTED: NONE

BRS 45

DATE: 69/05/13
FUNCTION: DISMISS ON QUANTUM OVERFLOW
STATUS: USER
DESCRIPTION: THIS BRS CAUSES THE USER TO BE DISMISSED AS THOUGH HE HAD OVERFLOWED HIS QUANTUM. IT GUARANTEES THAT

THE NEXT TIME HE IS STARTED HE WILL HAVE A COMPLETE SHORT
TIME QUANTUM.
REGISTERS AFFECTED: NONE

BRS 48

DATE: 69/05/13
FUNCTION : LOOK UP INPUT/OUTPUT [FILE] NAME
STATUS: USER
INPUT: A, B = STRING POINTERS FOR THE FILE NAME.
RETURNS: NO SKIP = ERROR. COULDN'T FIND FILE NAME IN DIRECTORY.
SKIP = NORMAL RETURN
DESCRIPTION: THE FILE NAME IS LOOKED UP IN THE [FILE DIRECTORY].
IF IT IS NOT THERE, THE EXCEPTION RETURN IS TAKEN.
EXCEPTION RETURN: A & B : NO CHANGE.
X : EXEC ERCODE
NORMAL RETURN: A & B : FILE DIRECTORY POINTER ADDRESS. CAN
BE USED BY BRS 16 OR BRS 19.
X : DESTROYED.
REGISTER AFFCTED: ALL

BRS 49

DATE: 70/08/26
FUNCTION: READ INTERRUPTS ARMED
STATUS: USER
OUTPUT: A = INTERRUPT MASK
DESCRIPTION: READS THE [INTERRUPT MASK] INTO THE A REGISTER. BIT
4 CORRESPONDS TO [INTERRUPT] NUMBER 1, 5 TO NUMBER 2 AND ETC.
THERE ARE 11 PROGRAMMABLE INTERRUPTS. SEE ALSO BRS 78.
ASSIGNED INTERRUPTS: 1 = (2B6) = BRS 10 OR ESCAPE
2 = (1B6) = MEMORY PANIC
3 = (4B5) = LOWER FORK TERMINATES
4 = (2B5) = I/O EXCEPTION CONDITIONS
6 = (4B4) = FLOATING POINT OVERFLOW
11 = (1B3) = DISK ERROR
REGISTERS AFFECTED: A

BRS 50

DATE: 69/05/13
FUNCTION: [CONVERSION] FROM [FLOATING POINT] TO FIXED POINT
STATUS: USER
DESCRIPTION: FIXES THE DOUBLE WORD FLOATING POINT VALUE IN
(A,B). THE INTEGER PART IS LEFT IN A. THE FRACTIONAL PART
IS LEFT ADJUSTED IN B.
REGISTERS AFFECTED: A, B

BRS 51

DATE: 69/05/13
FUNCTION: [CONVERSION] FROM FIXED POINT TO [FLOATING POINT]
STATUS: USER
DESCRIPTION: THE INTEGER IN A IS CONVERTED TO A NORMALIZED
FLOATING POINT VALUE IN A,B.
REGISTERS AFFECTED: A,B

BRS 52

DATE: 69/05/13
FUNCTION: FORMATTED INPUT
STATUS: USER
CALLING SEQUENCE: LDX FORMAT
BRS 52
BRU NFLOAT NO FLOATING POINT AND FREE FORM INPUT
BRU FREE FLOATING POINT AND FREE FORM INPUT
DESCRIPTION: THIS ROUTINE READS CHARACTERS FROM A FILE SPECIFIED IN THE FORMAT WORD, FORMAT. (APPENDIX E) FORMAT ALSO SPECIFIES THE FORMAT OF THE INPUT. FREE FORM INPUT FROM THE TELETYPE RESULTS WHEN FORMAT = 0. A SKIP RETURN IS GIVEN IF AND ONLY IF (1) THE INPUT IS FREE FORM, AND (2) THE INPUT IS FLOATING POINT. THE INTERNAL TRANSLATION OF THE INPUT FILE IS STORED IN A, B.
REGISTERS AFFECTED: A, B, X

BRS 53

DATE: 69/05/13
FUNCTION: FORMATTED OUTPUT
STATUS: USER
CALLING SEQUENCE: LDX FORMAT
BRS 53
DESCRIPTION: THE INTEGER IN A OR THE DOUBLE WORD FLOATING POINT VALUE IN A, B IS OUTPUT TO THE FILE ACCORDING TO THE FILE NUMBER AND FORMAT SPECIFIED IN FORMAT. (APPENDIX E)
REGISTERS AFFECTED: NONE

BRS 60

DATE: 70/07/02
ATTENTION: THIS BRS IS OBSOLETE AND IS NOT RECOMMENDED.
FUNCTION: LOOKS UP A FILE NAME IN THE FILE DIRECTORY AND INSERTS IT IF IT IS NOT THERE
STATUS: USER
INPUT: A, B = STRING POINTERS FOR THE FILE NAME
RETURNS: NO SKIP = ERROR ON FILE NAME
SKIP = NORMAL RETURN
DESCRIPTION: THE FILE NAME IS LOOKED UP IN THE FILE DIRECTORY. IF IT IS NOT THERE, THE NAME IS INSERTED. THE EXCEPTION RETURN IS TAKEN IF THE FILE NAME IS NOT PROPERLY CONSTRUCTED.
EXCEPTION RETURN: A & B= DESTROYED
X= EXEC ERCODE (APPENDIX D)
NORMAL RETURN: A= FILE DIRECTORY POINTER ADDRESS
B & X= DESTROYED.
REGISTERS AFFECTED: ALL

BRS 62

DATE: 70/07/06
FUNCTION: [OPEN] A [FILE] FOR [INPUT]
STATUS: USER
INPUT: A = COMMAND FILE NUMBER OR 0 FOR TELETYPE

SKIP RETURN OUTPUT: A= FILE NUMBER
B= FILE TYPE
X= FILE SIZE
NO SKIP RETURN OUTPUT: A,B ARE DESTROYED
X=EXEC ERCODE (APPENDIX D)
DESCRIPTION: READS THE INPUT FILE NAME FROM THE SPECIFIED COMMAND FILE AND THEN OPENS THE FILE. THE BRS IGNORES LEADING SPACES, LEADING MULTIBLANKS, AND LEADING COMMA'S, LINE FEEDS AND CARRIAGE RETURN. IF THE INPUT FILE NAME BEGINS WITH A LEFT PAREN, ASTERISK OR A CROSSHATCH THE FILE NAME WILL BE LOCATED IN ANOTHER USER'S DIRECTORY OR IN THE PUBLIC FILE DIRECTORY, RESPECTIVELY.
REGISTERS AFFECTED: ALL

BRS 63

DATE: 70/06/09
FUNCTION: [OPEN] A [FILE] FOR [OUTPUT]
STATUS: USER
INPUT: A: 0-7=0 OR RANDOM FILE OPTIONS (SEE APPENDIX B)
8-23= COMMAND FILE NUMBER OR 0 FOR TELETYPE
X = FILE TYPE IF BITS 0-7 OF A=0 (SEE APPENDIX)
OUTPUT: A = FILE NUMBER
B = FILE TYPE
RETURNS: SKIP = NORMAL RETURN
NO SKIP = ERROR. ERROR MESSAGE IS TYPED OR THE ERCODE IS RETURNED IN X. (APPENDIX D)
DESCRIPTION: THE BRS IGNORES LEADING SPACES, LEADING MULTIBLANKS, AND LEADING CARRIAGE RETURNS. IF A NAME BEGINS WITH A SLASH OR SINGLE QUOTE, IT MUST TERMINATE WITH THE SAME CHARACTER. NAMES SURROUNDED BY SLASHES OR SINGLE QUOTES MAY CONTAIN ANY CHARACTER EXCEPT A LINE FEED OR CARRIAGE RETURN. OTHER NAMES ARE RESTRICTED TO ALPHANUMERICS AND @.
ANY NAME MAY BE FOLLOWED BY A DASH AND ANOTHER STRING. THE CHARACTERS FOLLOWING A DASH ARE CONSIDERED A COMMENT AND ARE NOT USED WHEN LOOKING UP A NAME IN A FILE DIRECTORY. COMMENTS SURROUNDED BY SLASHES OR SINGLE QUOTES MAY CONTAIN ANY CHARACTER EXCEPT LINE FEED AND CARRIAGE RETURN. OTHER COMMENTS ARE RESTRICTED TO ALPHANUMERICS, @ AND DASH.
REGISTERS AFFECTED: ALL

BRS 64

DATE: 70/07/05
FUNCTION: [OPEN] A [FILE] FOR [INPUT] USING STRING POINTERS
STATUS: USER
INPUT: A: 0-7=RANDOM FILE OPTIONS (SEE APPENDIX B)
A,B= STRING POINTERS TO FILE NAME
OUTPUT: A= FILE NUMBER
B= FILE TYPE
X= FILE SIZE
RETURNS: SKIP = NORMAL
NO SKIP = ERROR. FILE COULD NOT BE OPENED. AN ERROR MESSAGE IS TYPED AND/OR THE ERCODE RETURNED IN X.
REGISTERS AFFECTED: ALL

BRS 65

DATE: 70/09/20
FUNCTION: OPEN A FILE FOR OUTPUT USING STRING POINTERS.
STATUS: USER
INPUT: A: 0-7=RANDOM FILE OPTIONS (SEE APPENDIX B)
A,B= STRING POINTERS TO [FILE NAME]
NOTE: IF THE 'OLD FILE' OR 'NEW FILE' MESSAGE IS NOT TO BE TYPED, BITS 0-7 OF X MUST BE ZERO AND BITS 10-23 = FILE TYPE. IF THE 'OLD FILE' OR 'NEW FILE' MESSAGE IS TO BE TYPED BY THE EXEC, BITS 0-11 OF X MUST EQUAL THE FILE TYPE AND BITS 12-23 = COMMANDS FILE.
OUTPUT: A= FILE NUMBER
B= FILE TYPE
RETURNS: SKIP= NORMAL RETURN
NO SKIP = ERROR. ERROR MESSAGE IS TYPED OR THE ERCODE IS RETURNED IN X.
DESCRIPTION: IF A NAME BEGINS WITH A SLASH OR SINGLE QUOTE, IT MUST TERMINATE WITH THE SAME CHARACTER.
STRINGS SURROUNDED BY SLASHES OR SINGLE QUOTES ARE CALLED PROTECTED STRINGS. THEY MAY CONTAIN ANY CHARACTER EXCEPT A LINE FEED OR CARRIAGE RETURN. OTHER STRINGS ARE RESTRICTED TO ALPHANUMERICS AND @.
ANY NAME MAY BE FOLLOWED BY A DASH AND ANOTHER STRING. THE STRING FOLLOWING THE DASH IS TREATED AS A COMMENT AND IS NOT CONSIDERED WHEN LOOKING UP THE NAME. A COMMENT MAY BE A PROTECTED OR UNPROTECTED STRING. DASHES MAY BE USED IN UNPROTECTED STRINGS IN COMMENTS.
REGISTERS AFFECTED: ALL

BRS 67

DATE: 69/11/21
FUNCTION: READ A USER'S TS PAGE
STATUS: USER
INPUT: A=KEY
B=BUFFER LOCATION
X=NUMBER OF WORDS TO BE READ INTO CORE
DESCRIPTION: THE BRS WILL READ INTO CORE A SECTION OF THE USER'S TS PAGE. THE KEY WILL ALLOW THE USER TO LOOK AT A SELECTED PIECE OF THE BLOCK.

EXAMPLE: TO GET THE USER'S PROJECT CODE INTO LOCATION 1000B

```
PROJ   LDA  =59
       LDB  =1000B
       LDX  =4
       BRS  67
```

LIST OF KEYS:

A REG.	DESC.
0-5	EXEC BRS PANIC TABLE, WORDS 2-6
6	COMMANDS FROM FILE NUMBER
7	COMMANDS TO FILE NUMBER
8	USER NUMBER
9	STATUS FLAG WORD
17,18	PROGRAM RELABELING WORDS

```
19,20   SUBSYSTEM RELABELING WORDS
21      CLOCK TICKS AT LOGIN
29      ERROR CODE WORD (USED BY 'WHY')
32      FORCED LOGOUT SWITCH
37      LAST EXEC COMMAND I.D.
43      PROPRIETARY PROGRAM SWITCH
45      FILE DIRECTORY ACCOUNT NUMBER (SET BY GFD)
46      INIT SWITCH
59-62   PROJECT CODE
63      FILE POSITION IN DIRECTORY
64      FILE INDEX
65      CURRENT FILE DIRECTORY GROUP NUMBER
66      ACCOUNT PARAMETERS

REGISTERS AFFECTED: ALL

*BRS 68*

DATE: 70/07/05
FUNTION:  READS [FILE] NAME FROM [FILE DIRECTORY] INTO USERS MEMORY
 AND RETURNS FILE PARAMETER FOR OTHER EXEC FILE BRS'S.
STATUS:  USER
INPUT:  A,B = NULL STRING POINTERS
        X = INDEX TO FILE IN FILE DIRECTORY
RETURNS:  SKIP RETURN OUTPUT:
            A= FILE DIRECTORY POINTER ADDRESS
            B= ENDING STRING POINTER
       FILE NAME IS IN USERS MEMORY.
                    OR
            A=0 IF INDEX IS INVALID
            X= EXEC ERCODE (APPENDIX D)
       NO SKIP = INDEX IS TOO LARGE FOR FILE DIRECTORY.
REGISTERS AFFECTED:  A,B
SAMPLE PROGRAM:  (TYPES ALL FILE NAMES)

START  LDX =1
       LDP P   NULL POINTERS FOR FILE NAME STRING
       BRS 68
       BRS 10   END OF FILE DIRECTORY
       SKE =0
       BRU *+3
S1     EAX 1,2
       BRU START+1
       STX SV  CURRENT FILE INDEX
       LDX =1
       LDA P
       BRS 35
       LDX SV
       TCO =155B
       BRU S1

NOTE: THE BRS WILL TRAP IF THE FILE DIRECTORY IS NOT DECLARED "LISTABLE"

*BRS 69*

DATE: 69/11/11
```

FUNCTION: DELETE A FILE
STATUS: USER
INPUT: A = FILE DIRECTORY POINTER ADDRESS (FROM BRS 15 OR 48)
RETURNS: NO SKIP = ERROR OR WRITE PROTECTED
SKIP = FILE DELETED
DESCRIPTION: DELETES THE FILE WHOSE INDEX POINTER IS IN A. IF THE FILE IS WRITE PROTECTED, THE MESSAGE 'WRITE PROTECTED' IS PRINTED AND THE ERROR RETURN TAKEN. ALL REGISTERS ARE DESTROYED.
REGISTERS AFFECTED: ALL

BRS 70

DATE: 69/05/13
FUNCTION: COUNTS NUMBER OF FREE USER PAGES
STATUS: USER
OUTPUT: A= NUMBER OF FREE PAGES.
DESCRIPTION: RETURNS THE NUMBER OF FREE USER PAGES IN THE A REGISTER. THIS IS THE NUMBER OF PAGES THAT ARE AVAILABLE TO ONE USER.
REGISTERS AFFECTED: A

BRS 71

DATE: 69/05/13
FUNCTION: SKIP IF SYSTEM STATUS SET
STATUS: USER
OUTPUT: THE B REGISTER IS SET TO THE VALUE OF THE USE CODE WHICH THE USER HAS SET FOR THE JOB. THESE VALUES ARE:

VALUE	
2B7	SUBSYSTEM
4B7	SYSTEM
6B7	EXEC

RETURNS: NO SKIP = B IS POSITIVE
SKIP = B IS NEGATIVE
REGISTERS AFFECTED: B

BRS 73

DATE: 70/07/05
FUNCTION: READ ERCODE
STATUS: USER
OUTPUT: THE A REGISTER WILL CONTAIN THE LAST EXEC ERCODE NUMBER (APPENDIX D). IN CASE OF A MONITOR ERROR, A WILL CONTAIN THE MONITOR ADDRESS THAT DISCOVERED THE ERROR.
REGISTERS AFFECTED: A

BRS 74

DATE: 70/07/05
FUNCTION: PUTS USERS [TELETYPE] INTO [HALF DUPLEX] MODE
STATUS: USER
NOTE: THIS BRS CANNOT BE RESET BY THE BRS 75. THE CONDITION WILL REMAIN UNTIL THE PHONE IS DISCONNECTED.
REGISTERS AFFECTED: NONE

BRS 76

```
DATE: 69/05/13
FUNCTION: TEST [TELETYPE] FOR [HALF DUPLEX] MODE.
STATUS:  USER
RETURNS:  NO SKIP:  FULL DUPLEX MODE
          SKIP:  1/2 DUPLEX MODE
REGISTERS AFFECTED:  NONE

*BRS 78*

DATE: 70/09/20
FUNCTION:  ARM/DISARM SOFTWARE INTERRUPTS
STATUS:  USER
INPUT:  A= THE COMPLETE NEW INTERRUPT MASK.
DESCRIPTION:  THE NEW [INTERRUPT] MASK IS SUBSTITUTED FOR THE OLD
ONE.  A USER MAY ARM INTERRUPTS 1-10.  A SYSTEM STATUS FORK MAY ARM
INTERRUPT 11 ALSO.  INTERRUPT 1 IS IN BIT 4 OF THE MASK WORD.
THE INTERRUPTS ARE AS FOLLOWS:
     1  INTERRUPT IF PROGRAM PANIC (BRS 10 OR ESCAPE)
     2  INTERRUPT IF MEMORY PANIC
     3  INTERRUPT IF LOWER FORK TERMINATES
     4  INTERRUPT ON UNUSUAL I/O CONDITION.
          A REGISTER CONTENTS:
               BITS     MEANING
                0          1
                5          FILE SIZE QUANTUM OVERFLOW
                6          I/O ERROR
                7          END OF FILE
                18-23      FILE NUMBER
     5  INTERRUPT ON TIME OUT.  BRS 135
     6  INTERRUPT ON FLOATING POINT OVERFLOW.
     7  INTERRUPT ON FLOATING POINT UNDERFLOW (NOT IMPLEMENTED)
     8  INTERRUPT ON ZERO DIVIDE. (NOT IMPLEMENTED)
    11  INTERRUPT IF DISK ERROR
LOCATION 200 OCTAL PLUS THE INTERRUPT NUMBER MUST BE SET TO
POINT TO A ROUTINE TO PROCESS THE INTERRUPT.  WHEN THE INTERRUPT
OCCURS A N SERM* IS EXECUTED TO THE LOCATION POINTED TO.  IF IT
IS DESIRED TO RETURN TO THE POINT IN THE PROGRAM INTERRUPTED,
THE USER  MUST BRR TO THE LOCATION WHERE THE RETURN WAS SAVED.
EXAMPLE:
      SET     INTERRUPT ROUTINE       RETURN
 LDA=ESCAPE  ESCAPE ZRO ESCRTN  BRR ESCRTN
 STA 201B              .
   .                   .
   .                   .
REGISTERS AFFECTED:  NONE

SEE BRS 49

*BRS 80*

DATE: 70/07/05
FUNCTION:  MAKE PAGE [READ ONLY]
STATUS:  USER
INPUT:  A = PMT/SMT NUMBER
        IF BIT 0 OF A = 1, MAKE PAGE READ ONLY.
```

IF BIT 0 OF A = 0, MAKE PAGE READ-WRITE.
DESCRIPTION: SETS THE READ-WRITE STATUS OF THE ENTRY ACCORDING TO THE VALUE OF A. AN SMT ENTRY CAN ONLY BE CHANGED BY A SYSTEM STATUS FORK. THE FORMER STATUS OF THE ENTRY IS RETURNED IN A. AN INSTRUCTION TRAP IS CAUSED IF THE SPECIFIED ENTRY IS NOT IN USE. AN EXPANDED SMT MAY NOT BE MADE READ-WRITE VIA THE BRS 80.
REGISTERS AFFECTED: A

BRS 81

DATE: 69/05/13
FUNCTION: DISMISS FOR SPECIFIED AMOUNT OF [TIME]
STATUS: USER
INPUT: A = DISMISSAL TIME IN MILLISECONDS.
DESCRIPTION: THE FORK IS DISMISSED FOR THE NUMBER OF MILLISECONDS SPECIFIED IN A. THE FORK IS NEVER ACTIVATED SOONER THAN THE DELAY REQUESTED, BUT IT WILL GENERALLY NOT BE ACTIVATED AT EXACTLY THE TIME REQUESTED. THE MINIMUM DISMISAL TIME IS 2 SECONDS.
REGISTERS AFFECTED: A

BRS 82

DATE: 70/07/06
FUNCTION: SKIP IF FLOATING ACCUMULATOR NEGATIVE
STATUS: USER
DESCRIPTION: THIS BRS WILL SKIP IF THE FLOATING ACCUMULATOR ARE NEGATIVE. IF FLOATING POINT HARDWARE IS NOT IMPLEMENTED, THE SIGN BIT OF THE SIMULATED ACCUMULATOR WILL BE TESTED.
REGISTERS AFFECTED: NONE

BRS 83

DATE: 70/07/06
FUNCTION: SKIP IF FLOATING ACCUMULATOR ZERO
STATUS: USER
DESCRIPTION: SKIP IF THE FLOATING ACCUMULATOR ARE EQUAL TO ZERO. IT ALSO PLACES THE CONTENTS OF THE FLOATING ACCUMULATOR IN A AND B. IF FLOATING POINT HARDWARE IS NOT IMPLEMENTED, A SKIP WILL TAKEN IF THE SIMULATED ACCUMULATOR IS ZERO.

REGISTERS AFFECTED: A,B

BRS 84

DATE: 70/07/06
FUNCTION: SKIP IF FLOATING ACCUMULATOR NOT EQUAL TO ZERO
STATUS: USER
DESCRIPTION: SKIP IF THE FLOATING ACCUMULATOR ARE NON ZERO. THE CONTENTS OF THE FLOATING ACCUMULATOR ARE PLACED IN A AND B. IF FLOATING POINT HARDWARE IS NOT IMPLEMENTED, A SKIP WILL RESULT IF THE SIMULATED ACCUMULATOR IS NON-ZERO.

REGISTERS AFFECTED: A,B

BRS 85

DATE: 70/07/05
FUNCTION: SET 8-LEVEL TELETYPE OUTPUT
STATUS: USER
INPUT: X = TELETYPE NUMBER OR -1 FOR CONTROLLING TELETYPE.
DESCRIPTION: SETS [TELETYPE] TO [EIGHT-LEVEL OUTPUT] MODE. THE TELETYPE SPECIFIED MUST BE THE CONTROLLING TELETYPE. EIGHT-LEVEL IS TRANSMITTED TO THE TELETYPE EXACTLY AS IT IS RECEIVED FROM THE USER PROGRAM.
REGISTERS AFFECTED: NONE

BRS 86

DATE: 69/05/13
FUNCTION: CLEAR [8-LEVEL] [TELETYPE] OUTPUT MODE
STATUS: USER
INPUT: X = TELETYPE NUMBER OR -1 FOR CONTROLLING TELETYPE.
DESCRIPTION: PUTS THE [TELETYPE] OUTPUT BACK INTO NORMAL MODE. THE TELETYPE SPECIFIED MUST BE THE CONTROLLING TELETYPE.
REGISTERS AFFECTED: NONE

BRS 88

DATE: 69/11/11
FUNCTION: READ EXECUTION TIME
STATUS: USER
DESCRIPTION: RETURNS THE EXECUTION TIME FOR THE JOB IN A.
REGISTERS AFFECTED: A

BRS 89

DATE: 69/11/23
FUNCTION: READ USER METERING
STATUS: USER
INPUT: A=BUFFER ADDRESS

DESCRIPTION: THE BRS WILL READ INTO CORE SIX WORDS AT THE LOCATION SPECIFIED BY THE A REGISTER.

EXAMPLE:
TO READ IN THE USER'S RESOURCE METERING

```
METER  LDA  =1000B
       BRS  89
```

WORDS IN CORE:

1ST WORD: DISC USE
2ND WORD: SWAP COUNT
3RD WORD: TOTAL NUMBER OF CHARACTERS TO AND FROM TERMINAL
4TH WORD: PAGE COUNT
5TH WORD: CPU TIME (CLOCK TICKS)
6TH WORD: CLOCK TICKS SINCE LOGIN

REGISTERS AFFECTED: NONE

BRS 90

```
DATE: 69/05/13
FUNCTION:  DECLARE A FORK FOR "ESCAPE"
STATUS:  USER
DESCRIPTION:  IN CASE THE USER TYPES [ESCAPE], THIS IS THE HIGHEST
FORK TO TERMINATE.  IF THIS FORK HAS ARMED INTERRUPT 1, THAT
INTERRUPT WILL BE TAKEN INSTEAD OF TERMINATING THE FORK.
REGISTERS AFFECTED:  NONE

*BRS 91*

DATE: 69/05/13
FUNCTION:  READ [DATE] AND [TIME] INTO A STRING
STATUS:  USER
INPUT:  A = BEGINNING STRING POINTER
        B = ENDING STRING POINTER
DESCRIPTION:  THE CURRENT DATE AND TIME ARE APPENDED TO THE
STRING PROVIDED IN A AND B REGISTERS AND THE RESULTING STRING
POINTERS ARE RETURNED IN THE A AND B REGISTERS.  THE CHARACTERS
APPENDED TO THE STRING HAVE THE FORM:
     MM/DD HH:MM
         MM = MONTH
         DD = DAY
         HH = HOURS COUNTED FROM 0 TO 24
         MM = MINUTES
REGISTERS AFFECTED:  B

*BRS 96*

DATE: 70/07/05
FUNCTION:  REPORTS [FILE DIRECTORY] DATA AND [FILE ATTRIBUTES]
STATUS:  USER
INPUT:  A = FILE DIRECTORY POINTER ADDRESS (FROM BRS 15 OR 48)
        B = BUFFER ADDRESS
        X = WORD COUNT
OUTPUT:  PLACES THE FOLLOWING IN THE BUFFER:
       WORD 1:  GROUP USER NUMBER IN BITS 0-11
                GROUP NUMBER IN BITS 12-23
       WORDS 2-5: FILE DIRECTORY DATA WORDS
       WORDS 6-N: FILE NAME WITH SIGN BIT ON IN LAST WORD OF NAME.
FILE DIRECTORY DATA WORDS:
 WORD 2: 0AA AAA AAA AAY YYY EEE EDD DDD
 WORD 3: BC0 HHH HHH HHH FFF FFF FFF FFF
 WORD 4: GGG TTT 000 0IZ XWV USR QNM LKJ
 WORD 5: PPP PPP PPP PPP PPP PPP PPP PPP
A= ACCESS COUNT
B= CHANGED FILE
C= EXTRA CHANGED FILE
D= CREATION DATE, DAY-1
E= CREATION DATE, MONTH-1
F= SIZE WHERE 1=256 WORDS
G= GOOD DISC FILE IF 010, BAD IF 100, INIT FILE DUMMY 000
H= MAPPING CONTROL
I= INIT. LOCK FLAG              2B4
J= INIT. FLAG                   1
K= EXEC STATUS                  2
```

L= SYSTEM STATUS 4
M= SUBSYSTEM STATUS 10B
N= PROPRIETARY 20B
P= INDEX BLOCK POINTER
Q= ACCOUNT PUBLIC 40B
R= APPEND ONLY 1B2
S= NOT PRIVATE WRITE 2B2
T= FILE TYPE (1 TO 4)
U= NOT PRIVATE READ 4B2
V= RESERVED 1B3
W= PUBLIC WRITE 2B3
X= PUBLIC REMOTE 4B3
Y= CREATION DATE, YEAR-1964
Z= PREMIUM CHARGE 1B4

SEE BRS 6

BRS 102

DATE: 70/09/20
FUNCTION: READ [MAG TAPE]
STATUS: USER
INPUT: A= CORE BUFFER ADDRESS, B= CORE BUFFER SIZE
X= NUMBER OF RECORDS (MAX 64)
THIS BRS READS MANY RECORDS INTO CORE. IT ASSUMES THAT THE RECORD SIZE IS UNKNOWN. IT READS SUCESSIVE RECORDS INTO THE BUFFER AND PRECEEDS EACH RECORD WITH A CODE WORD THAT EXPLAINS ABOUT THAT RECORD. IN THE NORMAL CASE THE ADDRESS FIELD OF THIS WORD HOLDS THE NUMBER OF 940 WORDS IN THE RECORD. FOR INTERPRETATION OF THE OPCODE FIELDS SEE APPENDIX C. THE BUFFER MUST BE ENTIRELY IN ONE PAGE.

BRS 103

DATE: 69/05/31
FUNCTION: WRITE [MAG TAPE]
STATUS: USER
INPUT: A= CORE ADDRESS OF DATA IN THE FOLLOWING FORMAT.
(A) COMMUNICATION FROM SYSTEM TO USER.
(A)+1 1ST RECORD WORD COUNT
(A)+2 THROUGH (A)+N+1 RECORD DATA.
(A)+N+2 NEXT RECORD WORD COUNT.
ETC. COUNT =0 AFTER LAST RECORD.
OUTPUT: (A) CONTAINS ADDRESS OF "WORD COUNT" WORD FOR LAST RECORD WRITTEN. THE OP CODE OF (A) CONTAINS ONE OF THE FLAGS LISTED UNDER BRS 102.
DESCRIPTION: ALL THE DATA AND COMMUNICATIONS WORDS MUST BE IN ONE PAGE. USER MUST ERASE TAPE AT LOAD POINT AND MAY NOT WRITE BEYOND THE REFLECTIVE SPOT EXCEPT FOR END OF FILE MARKS.
REGISTERS AFFECTED: NONE

BRS 104

DATE: 69/05/13
FUNCTION: REPORTS WHO HAS DEVICE
STATUS: USER
OUTPUT: A= DEVICE

X= CHANNEL
DESCRIPTION: CAN BE USED TO DETERMINE WHAT W-BUFFER DEVICE IS ASSIGNED AND WHAT CHANNEL THE USER IS ON WHO IS USING THE DEVICE.
DEVICE NUMBERS ARE 0=TAPE 0, 1=TAPE 1, 2=PRINTER.
A -1 IN THE A REGISTER MEANS NO DEVICE IS ASSIGNED.
REGISTERS AFFECTED: A,X.

BRS 105

DATE: 69/05/31
FUNCTION: [MAG TAPE] CONTROLS
STATUS: USER
INPUT: A= CONTROL NUMBER.
1= WAIT UNTIL TAPE IS READY
2= BACKSPACE RECORD
3= FORWARD SPACE FILE
4= BACKSPACE FILE
5= WRITE 3 INCHES OF BLANK TAPE
6= REWIND
7= WRITE END OF FILE.
OUTPUT: THE OP CODE OF A HAS ONE OF THE FLAGS LISTED UNDER APPENDIX C. THE ADDRESS OF A IS DESTROYED.
REGISTERS AFFECTED: A

BRS 106

DATE: 69/05/31
FUNCTION: PRINT ON [PRINTER]
STATUS: USER
INPUT: A= CORE ADDRESS OF DATA IN THE FOLLOWING FORMAT, X= WORD COUNT
(A) COMMUNICATION WORD FROM SYSTEM TO USER. SEE APPENDIX C
(A)+1 PAPER CONTROL. NEG FOR SKIP, POSITIVE FOR UPSPACE.
(A)+2-(A)+34 ONE LINE OF DATA
(A)+35 PAPER CONTROL
ETC.
OUTPUT: (A) CONTAINS ONE OF THE OP CODE FLAGS LISTED UNDER BRS 102.
DESCRIPTION: ALL DATA AND COMMUNICATIONS WORDS MUST BE IN ONE PAGE.
ALL LINES MUST BE COMPLETE.
REGISTERS AFFECTED: NONE

BRS 107

DATE: 69/05/13
FUNCTION: SET [MAG TAPE] [PARITY]
STATUS: USER
INPUT: A IS NEG. FOR [BCD] (EVEN PARITY).
A IS POSITIVE FOR BINARY (ODD PARITY).
DESCRIPTION: IF THIS BRS IS NOT USED, TAPE WILL BE READ IN BINARY.
REGISTERS AFFECTED: NONE

BRS 108

DATE: 69/05/13
FUNCTION: TEST [MAG TAPE] [DENSITY]
STATUS: USER
OUTPUT: A=0 FOR 200

A=1 FOR 556
A=2 FOR 800
REGISTERS AFFECTED: A

BRS 110

DATE: 69/05/13
FUNCTION: TEST [MAG TAPE] READY
STATUS: USER
RETURNS: NO SKIP = NOT READY
SKIP = READY
DESCRIPTION: TESTS THE TAPE THAT IS ASSIGNED.

BRS 113

DATE: 70/01/30
FUNCTION: DISABLE ESCAPES
STATUS: USER
DESCRIPTION: ALLOWS USER TO PREVENT TERMINATION FROM AN ALTMODE OR A SHIFT-CONTROL O. IT IS RESET BY A BRS 114
REGISTERS AFFECTED: NONE

BRS 114

DATE: 70/01/30
FUNCTION: ENABLE ESCAPES
STATUS: USER
DESCRIPTION: RESETS THE CONDITION SET BY A BRS 113.
REGISTERS AFFECTED: NONE

BRS 116

DATE: 69/05/13
FUNCTION: READ PROGRAM RELABELING
STATUS: USER
OUTPUT: A,B = PROGRAM PSEUDO-RELABELING.
DESCRIPTION: PUTS THE PROGRAM RELABELING INTO A AND B. THIS IS WHAT THE SYSTEM EXECUTIVE USES AS PROGRAM RELABELING. IT IS KEPT IN THE TS BLOCK.
REGISTERS AFFECTED: A, B

BRS 117

DATE: 69/05/13
FUNCTION: SET PROGRAM RELABELING
STATUS: USER
INPUT: A,B= THE NEW VALUES FOR THE PROGRAM RELABELING
DESCRIPTION: SETS THE PROGRAM RELABELING IN THE TS BLOCK AS SPECIFIED. USER PROGRAMS SHOULD USE BRS 44 TO SET RELABELING FOR A FORK.
INSTRUCTION TRAP:
1) A SPECIFIED RELABELING BYTE WAS NOT ASSIGNED.
2) A USER FORK TRIED TO RELABEL A SYSTEM BYTE.
THIS IS THE PROGRAM RELABELING TYPED BY THE STATUS COMMAND. IT SHOULD CORRESPOND TO THE RELABELING OF THE FIRST NON-SUBSYSTEM FORK BELOW THE EXECUTIVE. IF THE FORK IS RUNNING UNDER DDT,

DDT WILL UPDATE THIS RELABELING. OTHERWISE, IT IS THE RESPONSIBILITY OF THE USER. IT IS PARTICULARLY IMPORTANT THAT THIS RELABELING BE SET CORRECTLY BEFORE ISSUING A DUMP COMMAND.

REGISTERS AFFECTED: NONE

BRS 118

DATE: 70/07/05
FUNCTION: LOAD FLOATING ACCUMULATOR FROM A & B
STATUS: USER
DESCRIPTION: LOADS THE FLOATING ACCUMULATOR FROM THE A AND B REGISTERS. IF FLOATING POINT HARDWARE IS NOT IMPLEMENTED, THE SIMULATED ACCUMULATORS WILL BE SET.
REGISTERS AFFECTED: NONE

BRS 119

DATE: 70/07/05
FUNCTION: STORE FLOATING ACCUMULATOR INTO A & B
STATUS: USER
DESCRIPTION: STORES THE CONTENTS OF THE FLOATING ACCUMALTORS INTO REGISTERS A AND B. IF FLOATING POINT HARDWARE IS NOT IMPLEMENTED, THE SIMULATED ACCUMULATORS WILL BE READ INTO A AND B.
REGISTERS AFFECTED: A,B

BRS 121

DATE: 69/05/13
FUNCTION: RELEASE SPECIFIED [PMT] ENTRY
STATUS: USER
INPUT: A= RELABELING BYTE OF THE PAGE TO BE RELEASED
DESCRIPTION: RELEASES THE SPECIFIED PAGE FROM THE PMT. IT IS EXACTLY LIKE A BRS 4 EXCEPT THAT IT TAKES A BYTE NUMBER INSTEAD OF AN ADDRESS.
INSTRUCTION TRAP:
1) BYTE NOT IN PMT.
2) A USER FORK TRIED TO RELEASE A SYSTEM PAGE.
REGISTERS AFFECTED: NONE

BRS 134

DATE: 69/05/13
FUNCTION: TO ALLOW THE USER TO IGNORE LINE FEED OR CARRIAGE RETURN WHEN IT FOLLOWS A CARRIAGE RETURN OR LINE FEED
STATUS: USER
DESCRIPTION: THE CONTENTS OF THE A REGISTER WILL GIVE THE FOLLOWING RESULTS. IF A IS NEGATIVE, ALL LINE FEEDS AND CARRIAGE RETURNS RECEIVED FROM THE TELETYPE WILL BE SENT TO THE PROGRAM AND ECHOED. IF A IS POSITIVE, A LINE FEED AFTER A CARRIAGE RETURN RECEIVED FROM THE [TELETYPE] WILL BE IGNORED (NOT SENT TO THE PROGRAM AND NOT ECHOED) AND A CARRIAGE RETURN AFTER A LINE FEED WILL BE IGNORED (NOT SENT TO THE PROGRAM AND NOT ECHOED). IN ALL CASES THE FIRST LINE FEED OR CARRIAGE RETURN RECEIVED WILL BE SENT TO THE PROGRAM AND ECHOED PLUS ECHO ITS COMPLI-

MENT. USED TO READ PAPER TAPE WHICH HAS BEEN PUNCHED OFF LINE.
USED TO READ PAPER TAPE WHICH HAS BEEN PUNCHED OFF LINE.
REGISTERS AFFECTED: NONE

BRS 135

DATE: 69/05/13
FUNCTION: INTERRUPTS A FORK AFTER A SPECIFIED PERIOD OF [TIME]
STATUS: USER
A= THE NEW [INTERRUPT] MASK.
B= THE TIME IN MILLISECONDS AFTER WHICH THE FORK WILL BE INTERRUPTED.
X= 5
DESCRIPTION: THE FORK ISSUING THIS BRS WILL BE INTERRUPTED
AFTER THE DELAY IF INTERRUPT NUMBER 5 IS ARMED AT THAT TIME.
IF A FORK GIVES THIS BRS AGAIN BEFORE THE TIME HAS PASSED, THE
NEW TIME WILL BE SET. ALL FORKS BELOW THE ONE RECEIVING THE
INTERRUPT WILL BE TERMINATED. SEE ALSO BRS 81.
REGISTERS AFFECTED: NONE

BRS 147

DATE: 69/05/13
FUNCTION: [CLOSE]S ALL EXCEPT COMMANDS-FROM [FILE]
STATUS: USER
REGISTERS AFFECTED: NONE

BRS 148

DATE: 70/07/06
FUNCTION: NEGATE FLOATING ACCUMULATOR
STATUS: USER
DESCRIPTION: THE CURRENT CONTENTS OF THE FLOATING ACCUMULATOR ARE
NEGATED. OVERFLOW WILL CAUSE THE OVERFLOW INDICATOR TO BE SET.
IF FLOATING POINT HARDWARE IS NOT IMPLEMENTED, THE SIMULATED ACC-
UMULATORS WILL BE NEGATED.
REGISTERS AFFECTED: NONE

BRS 149

DATE: 70/07/06
FUNCTION: FIX FLOATING ACCUMULATOR AND STORE IN A & B
STATUS: USER
DESCRIPTION: FIX THE FLOATING ACCUMULAORS AND PLACE IN A AND B.
THE NUMBER IN THE FLOATING ACCUMULATOR IS CONVERTED TO A INTEGER
AND STORED IN THE A REGISTER.
REGISTERS AFFECTED: A

BRS 150

DATE: 70/07/06
FUNCTION: FLOAT A & B AND PLACE IN THE FLOATING ACCUMULATOR
STATUS: USER
DESCRIPTION: THE NUMBER IN A AND B IS CONVERTED TO A FLOATING POINT
NUMBER AND STORED IN THE FLOATING ACCUMULATOR.
REGISTERS AFFECTED: B

BRS 151

DATE: 69/05/13
FUNCTION: CHANGE COMMANDS-FROM FILE
STATUS: USER
INPUT: A = FILE NUMBER OF COMMANDS-FROM FILE.
DESCRIPTION: CLOSES THE COMMANDS-FROM FILE IF ONE IS OPEN AND SETS THE COMMANDS-FROM FILE TO THE FILE SPECIFIED IN A.
REGISTERS AFFECTED: NONE

FFDID (115)

DATE: 70/07/07
FUNCTION: FORTRAN II FLOATING DIVIDE INVERTED
STATUS: USER
CALLING SEQUENCE: FFDID M
DESCRIPTION: THIS SYSPOP IS IDENTICAL TO FFDVD EXCEPT THAT THE OPERAND (CONTENTS OF MEMORY LOCATIONS M AND M+1) IS DIVIDED BY THE FLOATING POINT ACCUMULATORS. IF OVERFLOW OCCURS, THE OVERFLOW INDICATOR WILL BE SET. THE RESULT IS PUT IN THE FLOATING ACCUMULATOR AND A & B.
REGISTERS AFFECTED: A,B

LDFMD (116)

DATE: 70/07/07
FUNCTION: FORTRAN II LOAD FLOATING ACCUMULATOR
STATUS: USER
CALLING SEQUENCE: LDFMD M
M = LEAST SIGNIFICANT FRACTIONAL PART OF NUMBER AND EXPONENT
M+1 = MOST SIGNIFICANT FRACTIONAL PART OF NUMBER
DESCRIPTION: THE CONTENTS OF THE EFFECTIVE ADDRESS ARE NORMALIZED AND LOADED INTO THE FLOATING ACCUMUALORS AND THE A & B REGISTERS. FOR EASE IN ADDRESSING FORTRAN ARRAY VARIABLES, THE CONTENTS OF X ARE DOUBLED BEFORE CALCULATING THE EFFECTIVE ADDRESS.
REGISTERS AFFECTED: A,B

STFMD (117)

DATE: 70/07/07
FUNCTION: FORTRAN II STORE FLOATING
STATUS: USER
CALLING SEQUENCE: STFMD M
M = LEAST SIGNIFICANT FRACTIONAL PART OF NUMBER AND EXPONENT
M+1 = MOST SIGNIFICANT FRACTIONAL PART OF NUMBER
DESCRIPTION: THE CONTENTS OF THE FLOATING ACCUMULATOR ARE STOREED INTO THE EFFECTIVE ADDRESS REPRESENTED BY M AND M+1, AND ALSO COPIED INTO THE A & B REGISTERS. FOR EASE IN CALCULATING FORTRAN ARRAY VARIABLES, THE CONTENTS OF THE X REGISTER IS DOUBLED BEFORE CALCULATING THE EFFECTIVE ADDRESS.EXPONENTIAL OVERFLOW WILL SET THE OVERFLOW INDICATOR. A AND B ARE DESTROYED.
REGISTERS AFFECTED: A,B

FFADD (120)

DATE: 70/07/07
FUNCTION: FORTRAN II FLOATING ADD
STATUS: USER

CALLING SEQUENCE: FFADD M
M = LEAST SIGNIFICANT FRACTIONAL PART OF NUMBER AND EXPONENT
M+1 = MOST SIGNIFICANT FRACTIONAL PART OF NUMBER
DESCRIPTION: THE CONTENTS OF THE EFFECTIVE ADDRESS REPRESENTED BY M AND M+1 IS ADDED TO THE FLOATING ACCUMULATOR. THE RESULT IS PLACED IN THE FLOATING ACCUMULATOR. A AND B ARE DESTROYED. IF OVERFLOW OCCURS, THE OVERFLOW INDICATOR WILL BE SET. FOR EASE IN CALCULATING FORTRAN ARRAY VARIABLES, THE CONTENTS OF THE X REGISTER ARE DOUBLED BEFORE CALCULATING THE EFFECTIVE ADDRESS.
REGISTERS AFFECTED: A,B

FFMPD (121)

DATE: 70/07/07
FUNCTION: FORTRAN II FLOATING MULTIPLY
STATUS: USER
CALLING SEQUENCE: FFMPD M
M = LEAST SIGNIFICANT FRACTIONAL PART OF NUMBER AND EXPONENT
M+1 = MOST SIGNIFICANT FRACTIONAL PART OF NUMBER
DESCRIPTION: THE CONTENTS OF THE EFFECTIVE ADDRESS REPRESENTED BY M AND M+1 IS ADDED TO THE FLOATING ACCUMULATOR. THE RESULT IS LEFT IN THE FLOATING ACCUMULATOR. A AND B ARE DESTROYED. FOR EASE IN CALCULATING FORTRAN ARRAY VARIABLES, THE CONTENTS OF THE X REGISTER ARE DOUBLED BEFORE CALCULATING THE EFFECTIVE ADDRESS. IF OVERFLOW OCCURS, THE OVERFLOW INDICATOR WILL BE SET.
REGISTERS AFFECTED: A,B

FFDVD (122)

DATE: 70/07/07
FUNCTION: FORTRAN II FLOATING DIVIDE
STATUS: USER
CALLING SEQUENCE: FFDVD M
M = LEAST SIGNIFICANT FRACTIONAL PART OF NUMBER AND EXPONENT
M+1 = MOST SIGNIFICANT FRACTIONAL PART OF NUMBER
DESCRIPTION: THE CURRENT CONTENTS OF THE FLOATING ACCUMULATOR ARE DIVIDED BY THE CONTENTS OF THE EFFECTIVE ADDRESS. THE RESULT IS LEFT IN THE FLOATING ACCUMULATOR. FOR EASE OF ADDRESSING FORTRAN ARRAY VARIABLES, THE CONTENTS OF THE X REGISTER ARE DOUBLED BEFORE CALCULATING THE EFFECTIVE ADDRESS. A AND B ARE DESTROYED. IF OVERFLOW OCCURS, THE OVERFLOW INDICATOR WILL BE SET.
REGISTERS AFFECTED: A,B

FFSBD (123)

DATE: 70/07/07
FUNCTION: FORTRAN II FLOATING SUBTRACT
STATUS: USER
CALLING SEQUENCE: FFSBD M
M = LEAST SIGNIFICANT FRACTIONAL PART OF NUMBER AND EXPONENT
M+1 = MOST SIGNIFICANT FRACTIONAL PART OF NUMBER
DESCRIPTION: THE CONTENTS REPRESENTED BY M AND M+1 ARE SUBTRACTED FROM THE FLOATING ACCUMULATOR. THE RESULT IS LEFT IN THE FLOATING ACCUMULATORS. THE A AND B REGISTERS ARE DESTROYED. FOR EASE IN ADDRESSING FORTRAN ARRAY VARIABLES, THE CONTENTS OF X ARE DOUBLED BEFORE CALCULATING THE EFFECTIVE ADDRESS. IF OVERFLOW OCCURS, THE OVERFLOW

INDICATOR WILL BE SET.
REGISTERS AFFECTED: A,B

FFSID (124)

DATE: 70/07/07
FUNCTION: FORTRAN II FLOATING SUBTRACT INVERTED
STATUS: USER
CALLING SEQUENCE: FFSID M
M = LEAST SIGNIFICANT FRACTIONAL PART OF NUMBER AND EXPONENT
M+1 = MOST SIGNIFICANT FRACTIONAL PART OF NUMBER
DESCRIPTION: THE CURRENT CONTENTS OF THE FLOATING ACCUMULATOR ARE SUBTRACTED FROM THE CONTENTS OF M AND M+1. THE RESULT IS LEFT IN THE FLOATING ACCUMULATOR. A AND B ARE DESTROYED. FOR EASE IN ADDRESSING FORTRAN ARRAY VARIABLES, THE CONTENTS OF THE X REGISTER ARE DOUBLED BEFORE CALCULATING THE EFFECTIVE ADDRESS. IF OVERFLOW OCCURS, THE OVERFLOW INDICATOR WILL BE SET.
REGISTERS AFFECTED: A,B

RSP (125)

DATE: 69/05/13
FUNCTION: READ SIZE PARAMETERS: ADDRESS OF HIGHEST LOCATION WRITTEN, PHYSICAL SIZE, REMAINING FILE SIZE QUANTUM.
STATUS: USER
CALLING SEQUENCE: RSP =FILE NUMBER
OUTPUT: A= ADDRESS OF HIGHEST LOCATION WRITTEN.
B= TOTAL CURRENT PHYSICAL SIZE.
X= REMAINING FILE SIZE QUANTUM.
REGISTERS AFFECTED: ALL

SSP (126)

DATE: 70/09/20
FUNCTION: SET SIZE PARAMETERS
STATUS: USER
INPUT: A= SIZE QUANTUM IN CHARACTERS
CALLING SEQUENCE: SSP =FILE NUMBER
DESCRIPTION: BITS 0 AND 1 MUST BE ZERO. THE MAXIMUM ALLOWABLE CURSOR POSITION IS 1486-1.
REGISTERS AFFECTED: NONE

LDFM (127)

DATE: 70/07/07
FUNCTION: LOAD FLOATING ACCUMULATOR
CALLING SEQUENCE: LDFM M
M = MOST SIGNIFICANT FRACTIONAL PART OF MANTISSA
M+1 = LEAST SIGNIFICANT PART OF MANTISSA AND EXPONENT
DESCRIPTION: THE CONTENTS OF MEMORY LOCATIONS M AND M+1 ARE LOADED INTO THE FLOATING ACCUMULATOR AND INTO THE A AND B REGISTERS.
REGISTERS AFFECTED: A,B

STFM (130)

DATE: 70/07/07

FUNCTION: STORE FLOATING ACCUMULATOR
CALLING SEQUENCE: STFM M
M = MOST SIGNIFICANT FRACTIONAL PART OF MANTISSA
M+1 = LEAST SIGNIFICANT FRACTIONAL PART OF MANTISSA AND EXPONENT
DESCRIPTION: THE CONTENTS OF THE FLOATING POINT ACCUMULATOR IS COPIED INTO A & B AND MEMORY LOCATIONS M AND M+1.
REGISTERS AFFECTED: A,B

RCP (131)

DATE: 69/05/13
FUNCTION: READ CURSOR POSITION
STATUS: USER
CALLING SEQUENCE: RCP =FILE NUMBER
OUTPUT: A: BIT 0=0 IF FILE IS IN READ MODE
BIT 0=1 IF FILE IS IN WRITE MODE
BITS 1-23=CP
X: BITS 0,9-23 ARE UNCHANGED
BITS 1-8=FILE OPTION MASK OR 0.
REGISTERS AFFECTED: A,X

SCP (132)

DATE: 70/08/26
FUNCTION: SET CURSOR POSITION
STATUS: USER
INPUT: A=NEW CURSOR POSITION
SETS FILE TO READ MODE IF SIGN BIT OF A=0
SETS FILE TO WRITE MODE IF SIGN BIT OF A=1.
CALLING SEQUENCE: SCP =FILE NUMBER
RETURNS: NO SKIP = ERROR
A,B ARE UNCHANGED
X = ERROR NUMBER.
X = 1 = CANNOT SET MODE SPECIFIED BY SIGN BIT OF A.
X = 2 = ARGUMENT OUTSIDE OF FILE RANGE.
SKIP = NORMAL RETURN
A,B,X ARE UNCHANGED.
NOTE: WIO AND BIO WILL NOT WORK (TRAP) IF THE CURSOR DOES NOT POINT TO A WORD. E.G. IF 3 MOD CP IS NOT EQUAL TO ZERO, A TRAP WILL RESULT.
REGISTERS AFFECTED: X

PCE (133)

DATE: 69/05/13
FUNCTION: POSITIONS CURSOR AND ERASES.
STATUS: USER
INPUT: A=NEW CURSOR POSITION
CALLING SEQUENCE: PCE =FILE NUMBER
RETURNS: NO SKIP = ERROR
A,B ARE UNCHANGED
X = ERROR NUMBER
X = 1 FILE NOT IN OUTPUT MODE
X = 2 ERASE PRIVELEGE IS DISABLED
X = 3 A WAS LESS THAN CURRENT CP.
X = 4 A GREATER THAN END OF FILE
SKIP = NORMAL RETURN

DESCRIPTION: A,B,X ARE UNCHANGED
DEFINITIONS: CP1 = CURRENT CP. CP2 = FINAL CP.
FILE CHANGES: ALL CHARACTERS FROM CP1 TO CP2-1 ARE SET TO ZERO.
IF A < CPTOP, THEN THE NEW CP = CP2.
IF A GE CPTOP, THE ERASE IS FROM CP1 TO CPTOP-1, THE CP IS POSITIONED TO CP1, CPTOP IS SET TO CP1. THIS IS THE ONLY WAY TO DECREASE CPTOP.
REGISTERS AFFECTED: X

CIT (134)

DATE: 69/05/13
FUNCTION: CHARACTER INPUT AND TEST
STATUS: USER
INPUT: A = CHARACTER TO BE TESTED
CALLING SEQUENCE: CIT =FILE NUMBER
DESCRIPTION: THE CHARACTER IN THE A REGISTER IS COMPARED AGAINST THE NEXT CHARACTER IN THE INPUT FILE. IF IT COMPARES, THE NORMAL RETURN IS TAKEN AND THE CHARACTER IS REMOVED FROM THE INPUT BUFFER. IF IT DOES NOT COMPARE, THE CHARACTER IS LEFT IN THE INPUT BUFFER AND IS RETURNED IN A.

EXCEPTION RETURN:	A	- THE NEXT CHARACTER IN THE INPUT BUFFER.
	B & X	- NO CHANGE.
NORMAL RETURN:	A	- THE CHARACTER SUPPLIED REMAINS IN A (THE CHARACTER IS REMOVED FROM THE INPUT BUFFER).

REGISTERS AFFECTED: A

WCD (135)

DATE: 69/05/13
FUNCTION: WRITE CHARACTER AND DECREMENT
STATUS: USER
CALLING SEQUENCE: WCD P
P=ADDRESS OF A STRING POINTER PAIR
DESCRIPTION: THIS SYSPOP WRITES THE CHARACTER IN THE A REGISTER ON THE BEGINNING OF THE STRING AND DECREMENTS THE BEGINNING STRING POINTER.
REGISTERS AFFECTED: B

GCD (137)

DATE: 69/05/13
FUNCTION: GET CHARACTER AND DECREMENT
STATUS: USER
CALLING SEQUENCE: GCD P
EXCEPTION RETURN
NORMAL RETURN
P = ADDRESS OF A STRING POINTER PAIR.
DESCRIPTION: A GCD IS, IN EVERY WAY, SIMILAR TO GCI EXCEPT THAT THAT THE CHARACTER IS TAKEN FROM THE END OF THE SPECIFIED STRING.
THE LAST CHARACTER ON THE STRING IS LOADED IN THE A REGISTER, THE END STRING POINTER IS DECREMENTED SO THAT IT POINTS TO THE PREVIOUS CHARACTER IN THE STRING. CONTROL IS TRANSFERRED TO THE EXCEPTION RETURN IF THE END POINTER IS NOT GREATER THAN

THE BEGINNING POINTER BEFORE IT IS DECREMENTED.
REGISTERS AFFECTED: A,B

ISC (140)

DATE: 69/05/13
FUNCTION: CONVERTS INTERNAL NUMBERS TO FORMATTED OUTPUT STRINGS
STATUS: USER
CALLING SEQUENCE:
```
LDP  M
LDX  FORMAT
ISC  POINTER
```
DESCRIPTION: FORMAT DESCIBES THE TYPE OF CONVERSION TO BE DONE. (APPENDIX E). THE CONTENTS OF THE POINTER POINT TO THE CHARACTER IMMEDIATELY PRECEDING THE CHARACTER STRING. POINTER+1 POINTER+1 CONTAINS THE CHARACTER ADDRESS OF THE CHARACTER IMMEDIATELY PRECEDING THE POSITION WHERE THE FIRST CHARACTER OF OUTPUT IS TO GO. M,M+1 CONTAIN THE FLOATING POINT WORD TO BE CONVERTED. POINTER+1 IS INCREMENTED ONCE FOR EACH CHARACTER ADDED TO THE STRING.
REGISTERS AFFECTED: A, B, X

SIC (141)

DATE: 69/05/13
FUNCTION: STRING TO INTERNAL CONVERSION
STATUS: USER
CALLING SEQUENCE:
```
LDX  FORMAT
SIC  POINTER
BRU  INTEGER
BRU  FLOATING
```
DESCRIPTION: FORMAT DESCRIBES THE TYPE OF CONVERSION TO BE DONE. (SEE APPENDIX E FOR DESCRIPTION OF FORMAT WORD)
THE CONTENTS OF POINTER POINT TO THE CHARACTER IMMEDIATELY PRECEDING THE CHARACTER STRING. POINTER+1 CONTAINS THE CHARACTER ADDRESS OF THE LAST CHARACTER OF THE STRING.
INTEGER AND FLOATING ARE ROUTINES THAT HANDLE THE CONVERTED INPUT. ERROR FLAGS, IF APPLICABLE, ARE IN THE INDEX REGISTER. A DOUBLE WORD VALUE CORRESPONDING TO THE STRING IS IN A,B UPON RETURN.
REGISTERS AFFECTED: A, B, X

FFSB (142)

DATE: 70/07/07
FUNCTION: FLOATING POINT SUBTRACT
CALLING SEQUENCE: FFSB M
```
      M = MOST SIGNIFICANT PART OF MANTISSA
    M+1 = LEAST SIGNIFICANT PART OF MANTISSA AND EXPONENT
```
DESCRIPTION: THE CONTENTS OF MEMORY LOCATIONS M AND M+1 ARE SUBTRACTED FROM THE FLOATING ACCUMULATOR. THE RESULT IS LEFT IN THE FLOATING ACCUMULATORS. EXPONENTIAL OVERFLOW WILL SET THE OVERFLOW INDICATOR.
REGISTERS AFFECTED: A

FFSI (143)

DATE: 70/07/07

FUNCTION: FLOATING POINT SUBTRACT INVERTED
CALLING SEQUENCE: FFSI M
M = MOST SIGNIFICANT PART OF MANTISSA
M+1 = LEAST SIGNIFICANT PART OF MANTISSA AND EXPONENT
DESCRIPTION: THE CURRENT CONTENTS OF THE FLOATING ACCUMULATOR ARE SUBTRACTED FROM MEMORY LOCATIONS M AND M+1. THE RESULT IS LEFT IN THE FLOATING ACCUMULATOR. IF OVERFLOW OCCURS, THE OVERFLOW INDICATOR WILL BE SET.
REGISTERS AFFECTED: A

FFDV (146)

DATE: 70/07/07
FUNCTION: FLOATING POINT DIVIDE
CALLING SEQUENCE: FFDV M
M = MOST SIGNIFICANT FRACTIONAL PART
M+1 = LEAST SIGNIFICANT FRACTIONAL PART OF MANTISSA AND EXPONENT
DESCRIPTION: THE CONTENTS OF THE FLOATING ACCUMULATOR ARE DIVIDED BY THE OPERAND (CONTENTS OF MEMORY LOCATIONS M AND M+1). THE RESULT IS PLACED IN THE FLOATING ACCUMULATOR. IF EXPONENTIAL OVERFLOW OCCURS, THE OVERFLOW INDICATOR WILL BE SET. AN ATTEMPT TO DIVIDE BY ZERO ALWAYS SETS THE OVERFLOW INDICATOR.
REGISTERS AFFECTED: A

FFDI (147)

DATE: 70/07/07
FUNCTION: FLOATING POINT DIVIDE INVERTED
CALLING SEQUENCE: FFDI M
M = MOST SIGNIFICANT FRACTIONAL PART
M+1 = LEAST SIGNIFICANT FRACTIONAL PART OF MANTISSA AND EXPONENT
DESCRIPTION: THIS IS IDENTICAL TO FFDV EXCEPT THAT THE OPERAND (CONTENTS OF MEMORY LOCATIONS M AND M+1) IS DIVIDED BY THE FLOATING ACCUMULATORS. THE RESULT IS LEFT IN THE FLOATING ACCULATORS. EXPONENTIAL OVERFLOW WILL SET THE OVERFLOW INDICATOR.
REGISTERS AFFECTED: A

FFAD (152)

DATE: 70/07/07
FUNCTION: FLOATING POINT ADD
CALLING SEQUENCE: FFAD M
M = MOST SIGNIFICANT FRACTIONAL PART
M+1 = LEAST SIGNIFICANT FRACTIONAL PART OF MANTISSA AND EXPONENT
DESCRIPTION: A FLOATING ADDITION IS PREFORM BETWEEN MEMORY LOCATIONS M AND M+1 AND THE FLOATING ACCUMULATOR. THE RESULT IS PLACED IN THE FLOATING ACCUMULATOR. IF OVERFLOW OCCURS, THE OVERFLOW INDICATOR WILL BE SET.
REGISTERS AFFECTED: A

FDV (153)

DATE: 69/05/13
FUNCTION: FLOATING POINT DIVIDE
STATUS: USER
CALLING SEQUENCE: FDV M

DESCRIPTION: (A,B)/(M,M+1)
THE CONTENTS OF THE A AND B REGISTERS ARE DIVIDED (FLOATING DIVIDE) BY THE CONTENTS OF MEMORY LOCATIONS M AND M+1 WITH THE QUOTIENT LEFT IN THE A AND B REGISTERS.
REGISTERS AFFECTED: A, B

FMP (154)

DATE: 69/05/13
FUNCTION: FLOATING POINT MULTIPLICATION
STATUS: USER
CALLING SEQUENCE: FMP M
DESCRIPTION: (A,B)*(M,M+1)
THE CONTENTS OF MEMORY LOCATIONS M AND M+1 ARE MULTIPLIED (FLOATING MULTIPLICATION) BY THE A AND B REGISTERS AND THE RESULTS LEFT IN THE A AND B REGISTERS.
REGISTERS AFFECTED: A, B

FSB (155)

DATE: 69/05/13
FUNCTION: FLOATING POINT SUBTRACTION
STATUS: USER
CALLING SEQUENCE: FSB M
DESCRIPTION: (A,B) - (M,M+1)
THE CONTENTS OF MEMORY LOCATIONS M AND M+1 ARE SUBTRACTED (FLOATING SUBTRACTION) FROM THE CONTENTS OF THE A AND B REGISTERS. THE RESULTS ARE LEFT IN THE A AND B REGISTERS.
REGISTERS AFFECTED: A, B

FAD (156)

DATE: 69/05/13
FUNCTION: FLOATING POINT ADDITION
STATUS: USER
CALLING SEQUENCE: FAD M
DESCRIPTION: (A,B)+(M,M+1)
A FLOATING ADDITION IS PERFORMED TO THE CONTENTS OF MEMORY LOCATION M AND M+1 AND THE A AND B REGISTERS. THE RESULTS ARE LEFT IN THE A AND B REGISTERS.
REGISTERS AFFECTED: A, B

WCI (157)

DATE: 69/05/13
FUNCTION: WRITE CHARACTER AND INCREMENT
STATUS: USER
CALLING SEQUENCE: WCI P
P = ADDRESS OF STRING POINTER PAIR
DESCRIPTION: WCI WRITES THE CHARACTER IN THE A REGISTER ON THE END OF THE STRING ADDRESSED BY THE END STRING POINTER. THE END STRING POINTER IS INCREMENTED BY ONE.
REGISTERS AFFECTED: B

WIO (160)

DATE: 69/05/13
FUNCTION: WORD INPUT/OUTPUT
STATUS: USER
INPUT: A = WORD TO OUTPUT
CALLING SEQUENCE: WIO = FILE NUMBER
DESCRIPTION: WIO IS USED TO INPUT OR OUTPUT A WORD OF DATA TO OR FROM THE A REGISTER. ON INPUT AN END OF FILE CONDITION RETURNS A WORD OF THREE 137 OCTAL CHARACTERS AND SETS BITS 0 AND 7 IN THE FILE NUMBER WORD. IF INTERRUPT 4 IS ARMED, IT WILL OCCUR. IF AN END OF FILE CONDITION OCCURS WITH A PARTIALLY FILLED OUT WORD, THE WORD IS COMPLETED WITH 137 OCTAL CHARACTERS. IF AN ERROR OCCURS, BITS 0 AND 6 ARE SET IN N. IF INTERRUPT 4 IS ARMED IT WILL OCCUR.
CIO AND WIO SHOULD NOT BE MIXED TO READ OR WRITE A GIVEN FILE.
REGISTERS AFFECTED: A.

CIO (161)

DATE: 69/05/13
FUNCTION: CHARACTER INPUT/OUTPUT
STATUS: USER
INPUT: A=8 BIT CHARACTER RIGHT JUSTIFIED. (OUTPUT ONLY)
CALLING SEQUENCE: CIO =FILE NUMBER
DESCRIPTION: CIO IS USED TO INPUT OR OUTPUT A SINGLE CHARACTER FROM, OR TO, A FILE FROM THE A REGISTER. ON INPUT AN END OF FILE CONDITION WILL SET BITS 0 AND 7 IN THE FILE NUMBER AND RETURN A 137 OCTAL CHARACTER. IF INTERRUPT 4 IS ARMED (SEE BRS 78), IT WILL OCCUR. THE END OF FILE CONDITION OCCURS ON THE NEXT INPUT OPERATION AFTER THE LAST CHARACTER OF THE FILE. IF AN ERROR OCCURS, BITS 0 AND 6 WILL BE SET IN THE FILE NUMBER AND INTERRUPT 4 WILL OCCUR IF IT IS ARMED.
WIO AND BIO SHOULD NOT BE MIXED WITH CIO TO READ OR WRITE A GIVEN FILE.
REGISTERS AFFECTED: A

SKSG (162)

DATE: 69/05/13
FUNCTION: SKIP ON STRING GREATER
STATUS: USER
CALLING SEQUENCE:
```
LDA   B
LDB   E
SKSG  A
EXCEPTION RETURN
NORMAL RETURN
```
B = BEGINNING STRING POINTER
E = END STRING POINTER
A = ADDRESS OF A STRING POINTER PAIR
DESCRIPTION: THIS SYSPOP COMPARES THE STRING INDICATED BY A AND B REGISTERS WITH THE STRING INDICATED BY A OF THE CALLING SEQUENCE, CHARACTER BY CHARACTER AND TERMINATES WITH THE FIRST UNEQUAL CHARACTER. THE NUMERICAL INTERNAL CODE REPRESENTATION OF CHARACTERS IS USED TO DETERMINE INEQUALITY. IF THE STRINGS ARE EQUAL FOR THE ENTIRE LENGTH OF THE SHORTER ONE, THE LONGER ONE IS INDICATED AS GREATER. IF THE CONTENTS OF THE STRING ADDRESSED BY THE A AND B REGISTERS IS GREATER THAN THE CONTENTS

OF THE STRING ADDRESSED BY A, CONTROL WILL BE TRANSFERRED TO THE NORMAL RETURN. OTHERWISE, CONTROL IS TRANSFERRED TO THE EXCEPTION RETURN.
REGISTERS AFFECTED: NONE

SKSE (163)

DATE: 69/05/13
FUNCTION: SKIP ON STRING EQUAL
STATUS: USER
CALLING SEQUENCE:
```
LDA   B
LDB   E
SKSE  A
EXCEPTION RETURN
NORMAL RETURN
```
A = ADDRESS OF A STRING POINTER PAIR
B = BEGINNING STRING POINTER
E = END STRING POINTER

DESCRIPTION: IF THE STRING ADDRESSED BY THE POINTERS IN THE A AND B REGISTERS IS IDENTICAL WITH THE STRING ADDRESSED BY A OF THE CALLING SEQUENCE, CONTROL WILL BE TRANSFERRED TO THE NORMAL RETURN. OTHERWISE, CONTROL WILL BE TRANSFERRED TO THE EXCEPTION RETURN. IF THE STRINGS ARE OF DIFFERENT LENGTHS OR HAVE DIFFERENT CONTENTS, CONTROL WILL BE TRANSFERRED TO THE EXCEPTION RETURN.
REGISTERS AFFECTED: NONE

WCH (164)

DATE: 69/11/17
FUNCTION: WRITE CHARACTER
STATUS: USER
CALLING SEQUENCE:
```
LDA  C
WCH  T
```
C = A CHARACTER RIGHT-JUSTIFIED IN THE A REGISTER.
T = THE ADDRESS OF A THREE WORD TABLE. THE TABLE IS AS FOLLOWS:
- WORD 0 = A CHARACTER ADDRESS
- WORD 1 = A CHARACTER ADDRESS
- WORD 2 = A TRANSFER ADDRESS

DESCRIPTION: THIS SYSPOP TRIES TO WRITE A CHARACTER INTO THE AREA DEFINED BY THE CHARACTER ADDRESSES IN THE TABLE. PROVIDED THAT THE FIRST ADDRESS IS NOT ONE LESS THAN THE SECOND ADDRESS, WCH WILL WRITE THE CHARACTER IN THE A REGISTER INTO THE CHARACTER POSITION INDICATED BY THE FIRST CHARACTER ADDRESS PLUS ONE AND WILL INCREMENT THE FIRST CHARACTER ADDRESS IN THE TABLE. OTHERWISE THE CHARACTER
IS NOT WRITTEN AND CONTROL IS TRANSFERRED TO THE TRANSFER ADDRESS SPECIFIED IN THE TABLE.
OF THE WCH IN THE B REGISTER. THE ADDRESS IN THE THIRD WORD OF THE TABLE CAN BE AN EXIT TO A ROUTINE WHICH ALLOCATES MORE MEMORY OR GARBAGE COLLECTS THE REMAINING CHARACTERS.
IN EITHER CASE THE LEFT 16 BITS OF A ARE SET TO ZERO.
REGISTERS AFFECTED: A,B

GCI (165)

DATE: 69/05/13
FUNCTION: GET CHARACTER AND INCREMENT
STATUS: USER
CALLING SEQUENCE: GCI A
EXCEPTION RETURN
NORMAL RETURN
A = ADDRESS OF A STRING POINTER PAIR
DESCRIPTION: THIS SYSPOP READS INTO THE A REGISTER THE FIRST CHARACTER FROM THE STRING INDICATED BY THE BEGINNING STRING POINTER GIVEN IN THE CALLING SEQUENCE. IF THE STRING IS NULL OR EMPTY, NOTHING IS DONE AND CONTROL IS TRANSFERRED TO THE EXCEPTION RETURN. IF THE STRING IS NOT NULL ITS FIRST CHARACTER IS LOADED INTO THE A REGISTER RIGHT-JUSTIFIED, AND THE BEGINNING STRING POINTER IS INCREMENTED BY ONE SO THAT THE BEGINNING STRING POINTER NOW POINTS TO THE STRING WITH THE FIRST CHARACTER DELETED. CONTROL IS TRANSFERRED TO THE NORMAL RETURN. UNLESS A COPY OF THE ORIGINAL POINTER IS SAVED, THE CONTENTS OF THE STRING ARE EFFECTIVELY DESTROYED.
REGISTERS AFFECTED: A

LDP (166)

DATE: 69/05/13
FUNCTION: LOAD POINTERS
STATUS: USER
CALLING SEQUENCE: LDP A
A = ADDRESS OF A STRING POINTER PAIR
DESCRIPTION: THIS SYSPOP LOADS THE STRING POINTERS INDICATED IN THE CALLING SEQUENCE INTO THE A AND B REGISTERS.
REGISTERS AFFECTED: NONE

S P (167)

DATE: 69/05/13
FUNCTION: STORE POINTERS
STATUS: USER
CALLING SEQUENCE: STP A
A = ADDRESS OF A STRING POINTER PAIR
DESCRIPTION: THIS SYSPOP IS GENERALLY USED IN CONJUNCTION WITH LDP. IT STORES THE CONTENTS OF THE A AND B REGISTERS INTO THE STRING POINTERS INDICATED IN THE CALLING SEQUENCE.
REGISTERS AFFECTED: NONE

SBRM (170)

DATE: 69/05/13
FUNCTION: EXECUTES A BRM INDIRECT
STATUS: USER
CALLING SEQUENCE: SBRM A
DESCRIPTION:

LOC.	INSTR.	ADDRESS
A	ZRO	B

THE LOCATION OF THE SBRM INSTRUCTION IS STORED IN B AND CONTROL IS TRANSFERRED TO LOCATION A+1.
REGISTERS AFFECTED: NONE

FFMP (172)

DATE: 70/07/07
FUNCTION: FLOATING POINT MULTIPLY
CALLING SEQUENCE: FFMP M
M = MOST SIGNIFICANT FRACTIONAL PART
M+1 = LEAST SIGNIFICANT FRACTIONAL PART OF MANTISSA AND EXPONENT
DESCRIPTION: THE CURRENT CONTENTS OF THE FLOATING ACCUMULATOR ARE MULTIPLIED BY THE CONTENTS OF MEMORY LOCATIONS M AND M+1. THE RESULT IS PLACED IN THE FLOATING ACCUMULATOR. IF OVERFLOW OCCURS, THE OVERFLOW INDICATOR WILL BE SET.
REGISTERS AFFECTED: A

TCI (174)

DATE: 69/05/13
FUNCTION: TELETYPE CHARACTER INPUT
STATUS: USER
CALLING SEQUENCE: TCI M
M = MEMORY LOCATION
DESCRIPTION: THIS SYSPOP READS THE CHARACTER FROM THE TELETYPE INPUT BUFFER AND PLACES IT INTO THE LOCATION M RIGHT JUSTIFIED. THE REMAINDER OF LOCATION M IS CLEARED. THE CHARACTER IS ALSO PLACED IN THE A REGISTER RIGHT JUSTIFIED.
REGISTERS AFFECTED: A

TCO (175)

DATE: 69/05/13
FUNCTION: TELETYPE CHARACTER OUTPUT
STATUS: USER
CALLING SEQUENCE: TCO M
M = MEMORY ADDRESS
DESCRIPTION: THIS SYSPOP OUTPUTS THE CHARACTER FROM THE RIGHT-MOST EIGHT BITS OF LOCATION M TO THE CONTROLLING TELETYPE. IN ADDITION TO THE ORDINARY ASCII CHARACTERS, ALL TELETYPE OUTPUT OPERATIONS WILL ACCEPT 135 OCTAL AS A MULTIPLE BLANK CHARACTER. THE NEXT CHARACTER WILL BE TAKEN AS A BLANK COUNT, AND THE INDICATED NUMBER OF BLANKS WILL BE TYPED.
REGISTERS AFFECTED: NONE

BIO (176)

DATE: 69/05/13
FUNCTION: BLOCKED INPUT/OUTPUT
STATUS: USER
INPUT: A = NUMBER OF WORDS TO BE READ OR WRITTEN.
X = STARTING MEMORY ADDRESS.
CALLING SEQUENCE: BIO = FILE NUMBER
EXCEPTION RETURN
NORMAL RETURN
OUTPUT: A = FIRST MEMORY LOCATION NOT READ INTO OR OUT OF AT END OF OPERATION.
DESCRIPTION: BIO IS USED TO INPUT A BLOCK OF WORDS TO MEMORY

OR OUTPUT A BLOCK OF WORDS FROM MEMORY. THE A REGISTER WILL CONTAIN THE FIRST MEMORY LOCATION NOT READ INTO OR OUT OF AT THE END OF THE OPERATION. IF THE OPERATION IS COMPLETED SUCCESSFULLY, CONTROL WILL BE TRANSFERRED TO THE NORMAL RETURN; OTHERWISE, CONTROL WILL BE TRANSFERRED TO THE EXCEPTION RETURN. ON INPUT AN END OF FILE CONDITION WILL SET BITS 0 AND 7 IN THE FILE NUMBER. AN ERROR WILL SET BITS 0 AND 6. INTERRUPT 4 WILL OCCUR IF ARMED WHEN ANY OF THESE BITS ARE SET.
EXCEPTION CONDITIONS ARE:

1. END OF FILE
2. BAD DATA

REGISTERS AFFECTED: A

SECTION 5.0 SYSTEM BRS'S IN NUMERICAL SEQUENCE

BRS 1

DATE: 70/08/26
FUNCTION: OPEN A FILE
STATUS: EXEC
INPUT: A = INDEX BLOCK ADDRESS DIVIDED BY 4
B = PRIVELEGE BITS FOR RANDOM FILES.
BIT 18= USER MAY EFFECTIVELY EXECUTE SCP SYSPOP
BIT 19= 0
BIT 20= 0
BIT 21= USER MAY ERASE INFORMATION (MAY EXECUTE PCE).
BIT 22= USER MAY SET A FILE TO WRITE MODE.
BIT 23= USER MAY SET A FILE TO READ MODE.
OUTPUT: A= FILE NUMBER
X= INDEX BLOCK ADDRESS DIVIDED BY 4 OR ERROR NUMBER.
RETURNS: SKIP = NORMAL RETURN
NO SKIP = ERROR RETURN.
ERROR NUMBERS ARE 1= FILE BUSY
2= TOO MANY FILES OPEN
3= BIT MAP NOT SET
4= FILE ERROR
5= DISK FULL
DESCRIPTION: A FILE MAY BE OPENED FOR INPUT ANY NUMBER OF TIMES. A FILE THAT IS OPEN CANNOT BE OPENED FOR OUTPUT AND A FILE THAT IS OPEN FOR OUTPUT CANNOT BE OPENED AGAIN.
REGISTERS AFFECTED: A,X

BRS 2

DATE: 69/05/13
FUNCTION: CLOSE A FILE
STATUS: EXEC
INPUT: A= FILE NUMBER
DESCRIPTION: THE "CLOSE FILE" BRS ISUSED TO INDICATE TO THE SYSTEM ALL PROCESSING IS COMPLETED ON THIS FILE. ALL NECESSARY TERMINATION PROCESSING WILL BE COMPLETED AND CONTROL WILL BE TRANSFERRED TO THE NORMAL RETURN. SEE ALSO BRS'S 1, 8, 17, 20 AND 147
REGISTERS AFFECTED: NONE

BRS 7

DATE: 70/09/20
FUNCTION: READ MONITOR TABLES
STATUS: SUBSYSTEM
INPUT: A= BUFFER ADDRESS
X= TABLE NUMBER
BIT 0 OF A = 1 TO WRITE INTO MONITOR, 0 TO READ FROM MONITOR
OUTPUT: A= ADDRESS OF FIRST WORD BEYOND TABLE IN USER'S BUFFER

TABLE NO.	READ STATUS	WRITE STATUS	TABLE SIZE	DESCRIPTION
0	SUB	EXEC	43	MISCELLANEOUS COUNTERS (MISC)
1	SUB	EXEC	20	RAD ERROR LIST (RAERL)

2	SUB	EXEC	10	DISC ERROR LIST (IDERL)
3	SUB	EXEC	32	ACTIVATION SWAP COUNTERS (QTIGO)
4	SUB	EXEC	6	MULTIPLEXER COMMUNICATION (M210)
5	SUB	EXEC	4	940 ANSWERED LINES (WORK)
6	SYS	EXEC	40	GLOBAL FILE FLAGS (GFLG)
7	SYS	EXEC	42	JOB TO TELETYPE TABLE (TTNO)
8	SYS	EXEC	1	940 WARNING (ALARM)
9	SYS	EXEC	40	GLOBAL INDEX BLOCK POINTERS (XBP)

REGISTERS AFFECTED: A

BRS 8

DATE: 69/05/13
FUNCTION: CLOSE ALL FILES
STATUS: EXEC
REGISTERS AFFECTED: NONE

BRS 22

DATE: 69/05/13
FUNCTION: PREVENTS FORK FROM TERMINATING ON QUANTUM OVERFLOW
STATUS: EXEC
REGISTERS AFFECTED: NONE

BRS 23

DATE: 69/05/13
FUNCTION: ALLOWS FORK TO TERMINATE ON QUANTUM OVERFLOW
STATUS: EXEC
DESCRIPTION: ALLOWS THE MONITOR TO TERMINATE THE CALLING FORK
ON QUANTUM OVERFLOW. IT IS USED TO RESET BRS 22.
REGISTERS AFFECTED: NONE

BRS 25

DATE: 69/05/13
FUNCTION: GRAB BIT MAP BIT
STATUS: EXEC
INPUT: A= DISC ADDRESS
RETURNS: NO SKIP-BIT USED OR OUT OF BOUNDS. SKIP-NORMAL RETURN
DESCRIPTION: TURNS OFF ONE BIT IN THE BIT MAP.
REGISTERS AFFECTED: NONE

BRS 27

DATE: 69/05/13
FUNCTION: START STATISTICS
STATUS: EXEC
OUTPUT: A= BUFFER NUMBER AT WHICH STATISTICS ARE STARTING.
REGISTERS AFFECTED: A

BRS 28

DATE: 69/05/13
FUNCTION: STOPS STATISTICS

STATUS: EXEC
REGISTERS AFFECTED: NONE

BRS 30

DATE: 69/05/13
FUNCTION: GIVE BITS TO BIT MAP
STATUS: EXEC
INPUT: A= DISC ADDRESS
RETURNS: NO SKIP-INPUT ERROR
SKIP- NORMAL RETURN
REGISTERS AFFECTED: NONE

BRS 41

DATE: 69/05/13
FUNCTION: RETURNS DISC ADDRESS OF CURRENT DATA BLOCK
STATUS: SYSTEM
OUTPUT: A= DISC ADDRESS OF CURRENT DATA BLOCK.
REGISTERS AFFECTED: NONE

BRS 46

DATE: 69/05/13
FUNCTION: TURN ESCAPE OFF
STATUS: EXEC
DESCRIPTION: THIS BRS WILL SET UP TO REMEMBER AN ESCAPE INTERRUPT, BUT NOT ALLOW THE PROGRAM TO BE INTERRUPTED. IT WILL STACK THE FIRST ESCAPE OCCURRING AN IGNORE ANY SUBSEQUENT ONES. IT WILL NOT ALLOW TERMINATION FOLLOWING OFF INTERRUPTS.
ALSO SEE BRS 26 AND BRS 47.
REGISTERS AFFECTED: NONE

BRS 47

DATE: 69/05/13
FUNCTION: TURN ESCAPE ON
STATUS: EXEC
DESCRIPTION: THIS BRS REVERSES BRS 46; THAT IS, REACTIVATES THE ESCAPE INTERRUPT. IF AN ESCAPE INTERRUPT WAS STACKED (REMEMBERED) WHILE IN AN OFF CONDITION, THE INTERRUPT WILL OCCUR.
REGISTERS AFFECTED: NONE

BRS 54

DATE: 69/05/13
FUNCTION: GRAB BIT FROM MAP AND RETURN DISC ADDRESS.
STATUS: EXEC
OUTPUT: A= DISC ADDRESS
RETURN: ALWAYS SKIPS
REGISTERS AFFECTED: A

BRS 55

DATE: 70/07/06
FUNCTION: DISMISS IF JOB USING DISC

STATUS: USER
DESCRIPTION: JOB IS DISMISSED UNTIL THE DISC USE IS COMPLETED.
USED FOR BRS 122 AND 123.
REGISTERS AFFECTED: NONE

BRS 56

DATE: 69/11/11
FUNCTION: MAKE POINTER INDIRECT FOR RECOVER
STATUS: EXEC
INPUT: A = PMT BYTE NUMBER FOR PMT OR SMT BYTE POINTED AT.
BIT 0 OF A=1 TO MAKE PAGE READ ONLY.
B = PMT NO. IN BITS 18-23
X = CHANNEL NO. FOR SECOND BYTE IN BITS 18-23
OUTPUT: A = NEW PMT NO.
DESCRIPTION: RECOVERS THE PAGE POINTED AT IN A AND PLACES IT
IN THE PMT NO. SPECIFIED BY B. USED BY THE EXEC IN "RECOVER"
REGISTERS AFFECTED: A

BRS 57

DATE: 70/01/30
FUNCTION: MAKE PAGE VISIBLE TO USER
STATUS: EXEC
INPUT: A = SMT BYTE
DESCRIPTION: MAKES BYTE A USER BYTE, ALLOWING ALL USERS TO POINT
TO THE BYTE WITH A BRS 3. USED IN WSD FOR FOS AND F2OS
REGISTERS AFFECTED: NONE

BRS 61

DATE: 69/11/11
FUNCTION: CHANGE TELETYPE WORKING SET
STATUS: SYSTEM
INPUT: A = WORKING TELETYPE BITS
B = WORKING TELETYPE BITS
DESCRIPTION: USED TO HANG OR ANSWER DATA LINES IN PHASE II (TYMNET)
MULTIPLEXING. EACH BIT IN A AND B REPRESENTS A TELETYPE
CHANNEL. BIT 0 OF A = CHANNEL 42, BIT 7 OF B = CHANNEL 0.

EXAMPLE: TO HANG ALL THE TELETYPE LINES:

```
HANG   CLA
       LDB =77B
       BRS 61
```

REGISTERS AFFECTED: NONE

BRS 66

DATE: 69/05/13
FUNCTION: DELETE DISC FILE
STATUS: EXEC
INPUT: A= FILE NUMBER
RETURN: NO SKIP: ERROR - NO BIT MAP OR I/O ERROR.
SKIP: NORMAL RETURN

REGISTERS AFFECTED: NONE

BRS 72

DATE: 69/05/13
FUNCTION: SYSTEM FORK DISMISSAL
STATUS: EXEC
INPUT: X = THE NUMBER OF THE QUEUE THAT THE FORK IS TO BE PUT ON
B = DISMISS CONDITION
DESCRIPTION: DISMISSES A SYSTEM FORK AND PUTS IT ON THE SPECIFIED QUEUE. RETURNS TO CALL +1 WHEN REACTIVATED.
0 = TELETYPE INPUT QUEUE
1 = INPUT/OUTPUT QUEUE
2 = TELETYPE OUTPUT QUEUE
3 = SHORT TIME QUANTUM QUEUE
4 = LONG TIME QUANTUM QUEUE
REGISTERS AFFECTED: NONE

BRS 93

DATE: 69/10/31
FUNCTION: RESET RESOURCE METERING
STATUS: EXEC
DESCRIPTION: RESETS THE RESOURCE COUNTERS READ BY BRS 89.
REGISTERS AFFECTED: NONE

BRS 95

DATE: 69/05/13
FUNCTION: ACQUIRE AND RELEASE OVERFLOW GROUPS FOR FILE DIRECTORY.
STATUS: EXEC
INPUT: A=0 - RETURNS NEXT AVAILABLE OVERFLOW POINTER IN A AND TURNS ON BIT IN FILE DIRECTORY BIT MAP.
A=OVERFLOW POINTER - RELEASES GROUP. TURNS OFF BIT IN BIT MAP.
A = OVERFLOW POINTER AND BIT 0=1 - TURNS BIT ON IN BIT MAP.
REGISTERS AFFECTED: ALL

BRS 97

DATE: 69/05/13
FUNCTION: SETS SUBSYSTEM COUNTER TO 0
STATUS: SUBSYSTEM
INPUT: A = COUNTER NUMBER (0-31)
DESCRIPTION: SETS THE COUNTER SPECIFIED BY A TO 0.
REGISTERS AFFECTED: NONE

BRS 98

DATE: 69/05/13
FUNCTION: INCREMENT SUBSYSTEM COUNTER
STATUS: SUBSYSTEM
INPUT: A = COUNTER NUMBER (0-31)
DESCRIPTION: INCREMENTS THE COUNTER SPECIFIED BY A.
REGISTERS AFFECTED: NONE

BRS 99

DATE: 69/05/13
FUNCTION: READS THE SUBSYSTEM COUNTER
STATUS: SUBSYSTEM
INPUT: A = COUNTER NUMBER (0-31)
DESCRIPTION: RETURNS THE VALUE OF THE COUNTER SPECIFIED BY A IN A.
REGISTERS AFFECTED: A

BRS 100

DATE: 69/05/13
FUNCTION: ASSIGNS A DEVICE TO A USER
STATUS: OPERATOR
INPUT: A= DEVICE NUMBER
X= CHANNEL NUMBER OR -1
DEVICE NUMBERS: 0=TAPE0, 1=TAPE1, 2=PRINTER
RETURNS: NO SKIP=ERROR, DEVICE ALREADY ASSIGNED.
SKIP=NORMAL RETURN
DESCRIPTION: THE DEVICE IS ASSIGNED TO THE USER. AFTER THAT THE USER CAN DRIVE THE DEVICE DIRECTLY USING THE OTHER BRS'S. MAG TAPE IS SET TO ODD PARITY.
ONLY ONE DEVICE CAN BE ASSIGNED AT A TIME.

BRS 101

DATE: 69/05/13
FUNCTION: UNASSIGN DEVICE
STATUS: OPERATOR
DESCRIPTIONS: RESETS DEVICE ASSIGNMENT. USER CAN NO LONGER ACCESS DEVICE WITH BRS'S.
REGISTERS AFFECTED: NONE

BRS 109

DATE: 69/05/13
FUNCTION: DISMISS
STATUS: USER
CALLING SEQUENCE: BRS 109
DESCRIPTION: THE FORK IS DISMISSED. IT CAN ONLY BE ACTIVATED AGAIN BY A PROGRAM INTERRUPT WHICH HAS BEEN ARMED BY THIS FORK OR THE TERMINATION OF A LOWER FORK.
REGISTERS AFFECTED: NONE

BRS 111

DATE: 69/05/13
FUNCTION: RETURN FROM CLASS 3 BRS
STATUS: EXEC
DESCRIPTION: THIS BRS IS USED ONLY BY THE AUTHOR OF CLASS 3 BRS'S. IT IS THE ONLY NORMAL TERMINATION OF A CLASS 3 BRS. IT CORRESPONDS TO A BRS 10 FOR OTHER FORKS.
INSTRUCTION TRAP:
BRS ISSUED BY A FORK WHICH WAS NOT A CLASS 3 BRS.
REGISTERS AFFECTED: NONE

BRS 112

DATE: 69/05/13
FUNCTION: REMOVE A JOB FROM THE SYSTEM
STATUS: EXEC
INPUT: A= JOB NUMBER
NO RETURNS
REGISTERS AFFECTED: ALL

BRS 115

DATE: 69/05/13
FUNCTION: TERMINATE CLASS 3 BRS FORK WITH RUBOUT
STATUS: EXEC BRS
DESCRIPTION: TERMINATES THE EXEC BRS AND CAUSES A RUBOUT FOR THE JOB.
REGISTERS AFFECTED: NONE

BRS 120

DATE: 69/05/13
FUNCTION: ASSIGN PMT ENTRY
STATUS: EXEC
INPUT: A = RELABELING BYTE
DESCRIPTION: OBTAINS A NEW PAGE FOR THE RELABELING BYTE SPECIFIED. THIS BRS IS USED ONLY IN THE RECOVER ROUTINE IN THE EXEC.
INSTRUCTION TRAP:
1) PMT ENTRY IS ALREADY ASSIGNED.
2) THE RELABELING BYTE NUMBER WAS NOT IN THE PMT.
REGISTERS AFFECTED: NONE

BRS 122

DATE: 70/07/06
FUNCTION: READ DISC WITHOUT DISMISS
STATUS: EXEC
DESCRIPTION: WORKS EXACTLY LIKE BRS 124 EXCEPT THAT CONTROL IS RETURNED TO THE CALLING FORK IMMEDIATELY INSTEAD OF WAITING UNTIL THE READ IS COMPLETED.
REGISTERS AFFECTED: NONE

BRS 123

DATE: 69/05/13
FUNCTION: WRITE DISC WITHOUT DISMISS
STATUS: EXEC
DESCRIPTION: WORKS EXACTLY LIKE A BRS 125 EXCEPT THAT CONTROL IS RETURNED TO THE CALLING FORK IMMEDIATELY INSTEAD OF WAITING UNTIL THE WRITE IS COMPLETED.
REGISTERS AFFECTED: NONE

BRS 124

DATE: 69/07/06
FUNCTION: READ DISC
STATUS: SYSTEM

```
CALLING SEQUENCE:  LDA   =CORE ADDRESS
                   LDB   =DISK ADDRESS
                   LDX   =NUMBER OF WORDS
                   BRS    124
                   NORMAL RETURN
DESCRIPTION:  READS FROM THE DISK AS SPECIFIED.  ERRORS RESULT
IN AN INSTRUCTION TRAP, OR PROGRAMMED INTERRUPT 11 IF IT IS
ARMED. TWO FORKS THAT ARE TO RUN SIMULTANEOUSLY SHOULD NOT
BOTH USE THIS BRS.  THE NUMBER OF WORDS MUST BE A MULTIPLE OF
64 AND GREATER THAN 0.  THE BRS WILL NOT READ OVER PAGE BOUND-
ARIES.
REGISTERS AFFECTED:  NONE

*BRS 125*

DATE: 69/05/13
FUNCTION:  WRITE DISC
STATUS:  EXEC
CALLING SEQUENCE:     A = CORE ADDRESS
                      B = DISK ADDRESS
                      X = NUMBER OF WORDS
DESCRIPTION:  LIKE BRS 124.  THE NUMBER OF WORDS MUST BE A MUL-
TIPLE OF 64 AND GREATER THAN 0.
REGISTERS AFFECTED:  NONE

*BRS 126*

DATE: 69/05/13
FUNCTION:  TEST FOR CARRIER PRESENCE
STATUS:  SYSTEM
INPUT: A=LINE NUMBER
RETURNS:  NO SKIP = NO CARRIER
          SKIP = CARRIER
NOTE: IN PHASE II (TYMNET) SYSTEMS, THIS BRS ALWAYS SKIPS.
REGISTERS AFFECTED:  NONE

*BRS 127*

DATE: 69/05/13
FUNCTION:  READS ONE WORD IN CORE
STATUS:  SYSTEM
INPUT:  X = 16 BIT CORE ADDRESS
DESCRIPTION:  ALLOWS A SYSTEM PROGRAM TO READ THE CONTENTS OF ANY
LOCATION IN THE MEMORY.
THE CONTENTS OF THE LOCATION ARE ALWAYS RETURNED IN THE A
REGISTER.
REGISTERS AFFECTED:  A

*BRS 128*

DATE: 70/08/26
FUNCTION:  SET BIT MAP
STATUS:  EXEC
CALLING SEQUENCE:   LDA =DATA
                    LDX =SWITCH
                    BRS 128
```

```
                    EXCEPTION RETURN
                    NORMAL RETURN

DESCRIPTION:  THE SWITCH IN X DETERMINES THE ACTION TO BE TAKEN.

X = 1     A REGISTER = MAP NUMBER. INITALIZE BIT MAP AND SET COUNTERS TO
          ZERO.
X = 2     A = ADDRESS OF INDEX BLOCK DIVIDED BY 4. THIS SWITCH TURNS OFF
          BITS IN THE DISK BIT MAP FOR THE INDEX BLOCK POINTER AND EACH
          DATA BLOCK REFERENCED BY THE INDEX BLOCK. IF ANY CONFLICTS OCCUR
          (THE BIT IS ALREADY OFF), THE ADDRESS IS LEFT IN A AND THE EXCEPTION
           RETURN TAKEN. A CONFLICT ALSO INCREMENTS XBERR AND FDERR FOR
          ERRORS IN THE INDEX BLOCK AND FILE DIRECTORY RESPECTIVELY.
X = 3     SET MAP TO DONE (SDBM8 = 0). AT THIS TIME FILES CAN BE OPENED.
X = 4     SETS BIT MAP SWITCH TO UNMAPPED STATE (SDBM8 = -1). ALWAYS SKIPS.

REGISTERS AFFECTED:  A

*BRS 129*

DATE: 70/08/26
FUNCTION:  TURNS A TELETYPE LINE OFF
STATUS:  SYSTEM
INPUT:  A =TELETYPE #
        B =0
REGISTERS AFFECTED:  NONE

*BRS 130*

DATE: 69/05/13
FUNCTION:  TEST A BREAKPOINT SWITCH
STATUS:  SUBSYSTEM
CALLING SEQUENCE:  LDX   =SWITCH NUMBER
                   BRS   130
                   SWITCH UP RETURN
                   SWITCH DOWN RETURN
DESCRIPTION:  TESTS THE BREAKPOINT SWITCH (1,2,3,4) INDICATED
IN X.  IF THE SWITCH IS DOWN, THE BRS SKIPS ON RETURN.
REGISTERS AFFECTED:  NONE

*BRS 131*

DATE: 69/05/13
FUNCTION:  TO CRASH THE SYSTEM
STATUS:  EXEC
NO RETURN
DESCRIPTION:  SAVES THE REGISTERS IN SS01, SS02, SS03.  SAVES
0 IN MCRO.  TURNS OFF THE CLOCK AND DISABLES THE INTERRUPTS.
MOVES THE TS BLOCK INTO REAL PAGE 14.
REGISTERS AFFECTED:  NONE

*BRS 136*

DATE: 69/05/13
FUNCTION:  SETS SYSTEM EXEC SWITCHES IN SYMS
STATUS:  EXEC
```

```
CALLING SEQUENCE:  LDA   V
                   LDX   N
                   BRS 136
                   NORMAL RETURN
     V = NEW SWITCH VALUE
     N = SWITCH NUMBER
DESCRIPTION:  THE SWITCH IS SET TO THE NEW VALUE AND THE OLD
VALUE IS RETURNED IN A.
REGISTERS AFFECTED:  A

*BRS 141*

DATE: 69/05/13
FUNCTION:  GETS EXEC SUBROUTINES
STATUS:  EXEC
DESCRIPTION:  CHECKS THAT THE ISSUING FORK HAS EXEC STATUS.
IF IT DOES, AN EXEC BRS IS ISSUED.  THIS BRS IS USED TO ALLOW
EXEC STATUS FORKS TO ACCESS SUBROUTINES IN THE EXEC.
REGISTERS AFFECTED:  NONE

*BRS 143*

DATE: 70/07/06
FUNCTION:  SKIP IF BIT MAP SET
STATUS:  SYSTEM
DESCRIPTION:  SKIPS IF SDBM8 IS ZERO (BIT MAP SET).
RETURNS:      SKIP RETURN = BIT MAP SET
              NO SKIP = BIT MAP NOT SET
REGISTERS AFFECTED:  NONE

*BRS 144*

DATE: 69/05/13
FUNCTION:  GETS A BUFFER
STATUS:  EXEC
OUTPUT:  A = ADDRESS OF DATA AREA IN BUFFER.
RETURNS:  NO SKIP:  NO FREE BUFFERS
          SKIP:  NORMAL RETURN

*BRS 145*

DATE: 69/05/13
FUNCTION:  RETURNS A BUFFER
STATUS:  EXEC
INPUT:  A = ADDRESS OF DATA AREA IN BUFFER TO BE RETURNED
DESCRIPTION:  RETURNS THE BUFFER TO THE MONITOR.
REGISTERS AFFECTED:  NONE

*BRS 152*

DATE: 69/05/13
FUNCTION:  IGNORE OFF-INTERRUPTS
STATUS:  SUBSYSTEM
CALLING SEQUENCE:  LDB  N
                   BRS  152
     N = -1 TO TURN INTERRUPTS OFF
```

N = 0 TO TURN INTERRUPTS ON
DESCRIPTION: IGNORES THE OFF INTERRUPTS FROM THE USER'S CHANNEL UNTIL IT IS RESET.
REGISTERS AFFECTED: NONE