

**DataGeneral**

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**TECHNICAL  
STATEMENT**

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TEXT LISTING

068-000335-07

PROGRAM

ECLIPSE SPECIAL EXERCISER

TEXT TAPE

097-000335-07

ABSTRACT

'ESPCLEX' IS A SPECIAL EXERCISER PROGRAM DEVELOPED FOR EXERCISING ALL THE CENTRAL PROCESSOR INSTRUCTIONS OF ECLIPSE IN BOTH UNMAPPED AND MAPPED MODE WITH ERCC OPTION ENABLED IN MODE 03. IT IS ALSO DESIGNED TO HANDLE POWER FAIL/AUTO RESTART.

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0001 ESPCL      MACRO REV 06.30      10:45:16 03/29/79
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: NAME: ESPCLX.TX      PART NUMBER: 097-000335
:
: DESCRIPTION: ECLIPSE SPECIAL EXERCISER
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: REVISION HISTORY:
:
: REV.      DATE
: 00      11/07/75
: 01      02/20/76
: 02      08/06/76
: 03      12/31/76
: 04      09/09/77
: 05      09/15/78
: 06      11/17/78
: 07      03/28/79
:
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: ESPCLX
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: ESPCLX - SPECIAL EXERCISER FOR ECLIPSE
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:
: 0.0 REVISION HISTORY
:
: REV. 05 WAS CREATED TO
: IMPLEMENT THE STANDARDS PROVIDED
: BY DLIB.
: THIS HAS NOT CHANGED THE PHILOSOPHY
: OR TEST PROCEDURES IN THIS PROGRAM.
: ALL UNNECESSARY "TORST" HAVE BEEN
: DELETED FROM THIS FILE.
:
: REV. 06 WAS CREATED TO CLEAR THE MAP SIZE PROBLEM
: CREATED WITH MAPS > 256K (MMPU1).
:
: REV. 07 WAS CREATED TO CLEAR DTR 266. PROGRAM TESTED THE ELDA
: INSTRUCTION WITHOUT CHECKING TO SEE IF IT WOULD INDIRECT THRU
: LOCATION 0. IF CAT OR KITFNU WAS RUNNING, THE PROGRAM WOULD
: FAIL UPON RETURN FROM INTERRUPT.

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0005 ESPCL

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01 14.0 ADDRESS LOCATIONS 200 TO 216 IN PAGE 0 ARE FIXED
02 THE USE OF THESE LOCATIONS ARE AS FOLLOWS:
03
04 LOC 200 IS THE STARTING ADDRESS OF THIS PROGRAM.
05 LOC 201 KEEPS TRACK OF RELOCATED ADDR OF THE TEST
06 CURRENTLY RUNNING AND IS USEFUL FOR DEBUG WHEN
07 LOOPING OCCURS IN THE PROGRAM.
08 LOC 202 CONTAINS THE STARTING ADDR OF THE PROGRAM.
09 LOC 203 SHOWS NUMBER OF PASSES RUN THROUGH THIS
10 PROGRAM.
11 LOC 204 SHOWS INTERNAL PASS COUNT WHICH IS FIXED BY
12 LOCATION 205.
13 LOC 207 IS THE CURRENT PASS COUNT FOR INDIVIDUAL
14 TEST AND SHOWS THE PASSES REMAINING THRU THIS
15 TEST AT A PARTICULAR TIME.
16 LOC 214 IS THE BASE OFFSET USED TO CALCULATE THE
17 CURRENT RELOCATION OF THE PROGRAM.
18 LOC 215 KEEPS TRACK OF THE LISTING ADDR OF THE TEST
19 CURRENTLY RUNNING AND IS USEFUL FOR DEBUG WHEN
20 LOOPING OCCURS IN THE PROGRAM.
21 LOC 216 KEEPS TRACK OF THE CURRENT TEST# (TALLY)
22 RUNNING AND IS USEFUL FOR DEBUG WHEN RUNNING
23 UNDER A NORMAL PROGRAM EXECUTION.
24
25 14.0.1 NOTE:
26 -----
27 LOCATION 216 (TST#N) IS ADVANCED EACH TIME THAT THE
28 "SETUP" MACRO IS EXECUTED FOR STAND ALONE SURTEST
29 EXECUTION, THE SIGNIFICANCE OF THIS ENTRY IS ONLY
30 THAT OF A TALLY OF SURTESTS ENTERED.
31
32 14.1 THE FIRST PASS THRU THE PROGRAM WILL RUN VERY FAST
33 (I.E. WITHOUT SURTEST ITERATIONS). ADDITIONAL PASSES
34 WILL RUN SLOWER AS EACH SURTEST IS RUN ACCORDING TO IT'S
35 ITERATION VALUE SUPPLIED IN IT'S "SETUP" CALL, THIS WILL
36 ALLOW ALL RANDOM NUMBER COMBINATIONS OF ARGUMENTS AND OF
37 BUFFER ADDRESSES TO BE TESTED.
38
39 CAUTION !!! - AT LEAST 2 PASSES OF THE PROGRAM MUST
40 BE RUN WITH 'KITTEM' AND 'CAT' TO ASSURE THE USER OF
41 THE PROPER FUNCTIONING OF THE ECLIPSE SYSTEM.
42
43 .EJEC

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0006 ESPCL

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01 S?WPD 4.2
02
03 SWITCH SETTINGS
04
05 LOCATION "SWREG" IS USED TO SELECT THE PROGRAM OPTIONS
06 (NOT SYSTEM CONFIGURATION). WHILE RUNNING UNDER DTOS,
07 THIS LOCATION WILL BE LOADED BY THE MONITOR.
08 HOWEVER UNDER STAND ALONE AND PROGRAM LOAD MODES THIS
09 LOCATION WILL BE SET ACCORDING TO THE ANSWERS SUPPLIED
10 BY THE OPERATOR. IN ANY CASE THE OPTIONS CAN BE CHANGED
11 OR VERIFIED BY USING ONE OF THE COMMANDS GIVEN IN SEC.
12 4.2.2
13
14 SWITCH OPTIONS
15
16 DIFFERENT BITS AND THEIR INTERPRETATION AT LOCATION
17 "SWREG" IS AS FOLLOWS:
18
19 BIT OCTAL BINARY INTERPRETATION
20 VALUE VALUE
21
22 1 40000 1 LOOP ON ERROR
23 2 20000 1 SKIP LOOPING ON ERROR
24 3 10000 1 PRINT TO CONSOLE
25 4 04000 1 ARPT PRINT OUT TO CONSOLE
26 5 02000 1 DO NOT PRINT ON THE LINE PRINTER
27 6 01000 1 PRINT ON THE LINE PRINTER
28 7 0 00400 1 DO NOT PRINT % FAILURE
29 8 00200 1 PRINT % FAILURE
30
31 SWITCH COMMANDS
32
33 ONCE THE PROGRAM STARTS EXECUTING THE STATE OF ANY OF
34 THE BITS CAN BE CHANGED BY HITTING KEYS 1-9, A-F. THE
35 PROGRAM WILL CONTINUE RUNNING AFTER UPDATING THE OPTIONS.
36 EACH KEY WILL COMPLEMENT THE STATE OF THE BIT AFFILIAT-
37 ED WITH IT, THUS BIT 4 CAN BE ALTERED BY HITTING KEY 4.
38 SETTING OF ANY BIT OF LOCATION "SWREG" WILL SET BIT 0.
39 (DEFAULT MODE IS DEFINED AS ALL BITS OF SWREG SET TO 0)
40 THE PROGRAM CAN BE LOCKED INTO SWITCH MODIFICATION MODE
41 BY TYPING A 0. IN WHICH CASE MORE THAN ONE BIT CAN BE
42 CHANGED BEFORE CONTROL IS ALLOWED TO RETURN TO THE
43 MAIN PROGRAM.

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0007 ESPCL

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OTHER COMMANDS

4.2.2.1 "CR" A "RETURN" CAN BE TYPED TO CONTINUE THE PROGRAM AFTER ITS LOCKED IN A SWITCH MODIFICATION MODE

"D" THIS COMMAND GIVEN AT ANY TIME WILL RESET "SWREG" TO DEFAULT MODE AND RESTART THE PROGRAM.

"R" THIS COMMAND GIVEN AT ANY TIME WILL RESTART THE PROGRAM. SWITCHES ARE LEFT WITH THE VALUES THEY HAD BEFORE THE COMMAND WAS ISSUED.

"O" THIS COMMAND GIVEN AT ANY TIME WILL CAUSE THE PROGRAM CONTROL TO GO TO ODT (NOTE: THIS IS AN OPTIONAL COMMAND AND IS AVAILABLE ONLY IF ODTPK IS PRESENT)

M THIS COMMAND GIVEN AT ANY TIME WILL PRINT THE CURRENT OPERATING MODES.

BIT OCTAL BITARY INTERPRETATION  
VALUE VALUE

C 00010 0 DISABLE MMPU/MMPUI MAP DUMP  
1 ENABLE MMPU/MMPUI MAP DUMP

F 00001 0 DO NOT ENABLE QUICK VERIFY OPTION  
1 ENABLE QUICK VERIFY (QV) MODE  
EXECUTION

4.2.2 STARTING ADDRESS = 200 IN STAND ALONE MODE.  
IF 'CAT' OR 'KITTEN' WAS LOADED FROM DTOS AND RESTART WAS NEEDED, THEN USE AS FOLLOWS:  
STARTING ADDR = 170 (FOR START WITH NO 'CAT')  
STARTING ADDR = 171 (FOR START WITH 'CAT')

4.2.3 MONITOR LOCATION 203 TO CHECK THE CURRENT PASS COUNT.

4.2.4 MONITOR LOCATION X6000 TO MAKE SURE THAT 'CAT' OR 'KITTEN' IS RUNNING. IN CASES WHERE THE PROGRAM IS STARTED WITH 'CAT' OR 'KITTEN'. (X = THE NUMBER OF THE HIGHEST MEMORY MODULE IN THE SYSTEM AND IS 1 THRU 7) MODULO 8.K.

LOCATION X6000 MUST HAVE PATTERN CHANGING FROM ZEROS TO ALL ONES TO INC/SWAP PATTERN.

.EJEC

0008 ESPCL

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4.3 OPERATING PROCEDURE/OPERATOR INPUT

4.3.1 LOAD THE PROGRAM VIA THE BINARY LOADER OR INSERT A PRELOADED MEMORY MODULE.

4.3.2 SET SWITCHES TO 200.

4.3.3 PRESS START.

4.3.4 THE PROGRAM WILL RUN UNTIL MANUALLY STOPPED. IN CASE OF MALFUNCTIONING, THE PROGRAM WILL PRINT ERROR MESSAGE AND TAKE APPROPRIATE ACTION AS PER THE SW SETTINGS.

4.4 PROGRAM OUTPUT/ERROR DESCRIPTION

4.4.1 FOR ANY ERRORS DETECTED, THE PROGRAM WILL PRINT ERROR REPORT OR % FAILURES DEPENDING UPON THE SW SETTINGS.

4.4.2 FOR ALL ERRORS, APPROPRIATE PROGRAM INFORMATION WILL BE PRINTED WHICH CONSISTS OF TEST#, ALL ACCUMULATORS, CARRY, LISTING PC OF ERR, LOGICAL RELOCATED PC OF ERR, PHYSICAL PC (OCTAL) WHERE ERROR OCCURED AND THEN THE PROGRAM WILL GO INTO SCOPE LOOP. % FAILURE RATE MAY BE PRINTED AT THIS TIME BY USING THE PROPER SWITCHES.

IF THE ERROR IS DETECTED IN MAPPED ENVIRONMENT, ADDITIONAL DATA ABOUT CURRENT MAP WILL BE PRINTED SHOWING THE BEGIN AND END OF THE 32K MODULE THAT LOGICAL 32K IS MAPPED TO. IF THE PROGRAM IS LOADED FROM 'DTOS', IT WILL ALSO PRINT 'DTOSIK'. SHOWING THAT 'DTOSIK' IS NOT MAPPED AND MUST BE SKIPPED OVER TO DETERMINE THE PHYSICAL BLOCK OF FAILING ADDR IF IT HAPPENS TO BE ABOVE 'DTOSIK'. THE CONTENTS OF THE MMPU/MMPUI MAP WILL BE DUMPED TO THE SELECTED DISPLAY DEVICE IF SWT "C" IS = 1 AND SWT "O" IS = 1.

4.4.3 THE PROGRAM WILL LOOP IN THE TEST THAT IS FAILING IF SW"1" IS 0 AND SWT "15" OF SWREG = 0. SEE 4.8.1 BELOW !!!

4.4.4 THE PRINTING OF ERROR REPORT CAN BE ABORTED BY SETTING SW"2" TO 1 AND/OR SW"5" TO 0.

4.4.5 IF LOOPING OCCURS IN THE PROGRAM, SELECT MONITOR MODE AND CHECK LOCATION 216 TO FIND OUT THE TEST THAT WAS RUNNING BEFORE THE LOOPING OCCURRED.

LOCATION 215 WILL HAVE THE LISTING ADDRESS AND LOCATION 201 WILL HAVE THE RELOCATED ADDRESS OF THE FAILING TEST.

CAUTION

ERRORS AT "XFERR" AND "XFERM" SIGNIFY THAT AN ERROR WAS DETECTED IN BASIC "BAM" (XFERR) PROGRAM RELOCATION OR "BLM" MAP MODE (XFERM) PROGRAM RELOCATION. IF EITHER OCCUR, IT IS HIGHLY PROBABLE THAT THE PROGRAM SEGMENT THAT WAS TRANSFERRED IS NOT CORRECT, AND THE USER SHOULD RUN THE BASIC ECLIPSE DIAGNOSTICS!!!

.EJEC



01 NEW MMPU/MMPUI MAP DUMP UTILITY

0012 ESPCL  
01 -EJEC

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?4.5 NEW MMPU/MMPUI MAP DUMP UTILITY
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?4.5.1 AUTO MAP DUMP DISPLAY
? FOLLOWING ERROR DETECTION OR TRACE REQUEST EXECUTION
? I.E. SEE 4.9 BELOW. THE CURRPTN CONTENTS OF THE MMPUI/
? MMPUI WILL BE DISPLAYED IF EXECUTION IS DURING THE
? MAP MODE. AND SWITCH "C" = 1.
? ADDITIONAL MAP DUMP DISPLAYS WILL OCCUR ONLY WHEN THE
? CONTENTS OF THE MMPUI/MMPUI MAP HAVE BEEN MODIFIED.
?
?4.5.2 MANUAL MAP DUMP DISPLAY (USER) REQUESTED
? IF THE USER SHOULD NEED TO DISPLAY THE CONTENTS OF
? THE MMPUI/MMPUI. HE MAY DO SO BY HALTING THE PROGRAM
? AND START AGAIN AT LOC. 220 (OCIAL). THE PROGRAM HALTS
? FOLLOWING THE DISPLAY AWAITING THE USER. IF THE USER
? DEPRESSES CONTINUE THE PROGRAM WILL EXECUTE THE MMPUI/
? MMPUI MAP DUMP DISPLAY UTILITY AGAIN.
? NOTE:
? IT IS THE USERS RESPONSIBILITY TO RESTART THE PROG=
? RAM FOLLOWING MANUAL MODE MMPUI/MMPUI MAP DUMP DISPLAY
? EXECUTION REQUESTS.
? SWITCH "C" MUST = 1. I.E. BF SET TO ENABLE MAP MMPUI/MMPUI
? DUMP DISPLAY. ALSO SEE SW1"2" AND SW1"5" CONTROL ABOVE.
?
?4.6 PROGRAM DESCRIPTION/THEORY OF OPERATION
?
?4.6.1 MOST TESTS ARE MODULAR, SO THE PROGRAM CAN
? BE STARTED FROM ANY TEST WITHOUT CAUSING ANY
? INITIALIZATION ERRORS. SEE NOTE 4.0.1 ABOVE !!!
?
?4.6.2 WHEN THE PROGRAM IS STARTED FROM CONSOLE OR VIA 'DTOS',
? IT WILL SCAN THE SYSTEM AND WILL PRINT THE SIZE OF THE
? MEMORY. THE 1ST PASS WILL RUN VERY FAST AS EACH TEST
? IS RUN ONLY ONCE IN THE FIRST PASS. ALL OTHER PASSES
? WILL TAKE MORE TIME AS EACH TEST IS RUN ACCORDING TO THE
? TEST ITERATION COUNT SPECIFIED IN EACH SURTEST.
? AFTER THE 1ST PASS, 'ECOMI' IS RELOCATED IN AVAILABLE
? LOGICAL MEMORY AND THE AREAS BELOW (CALLED 'LBU?F') AND
? ABOVE (CALLED 'HBU?F') THE RELOCATED PROGRAM ARE USED
? AS SCRATCH BUFFER AREA. 1 RELOCATED CYCLE IS RUN
? FOR EACH LOGICAL 32K MODULE.
? ON MAPPED ECLIPSE, 2 CYCLES ARE RUN UNMAPPED AS DESCRIBED
? ABOVE. THEN THE FIRST 32K ARE MAPPED TO ITSELF AND 2 MORE
? CYCLES ARE RUN OUT OF WHICH THE 1ST ONE IS NON-RELOCATED.
? THEN THE PROGRAM, 1ST 16K IS MOVED TO NEXT 16K AND LOGICAL
? 32K ARE MAPPED TO 32K FROM THERE ONWARDS AND 2 CYCLES
? ARE RUN. THIS CONTINUES UNTIL THERE IS AT LEAST 32K LEFT
? ABOVE THE PROGRAM. THEN THE PROGRAM WILL PRINT 'PASS XX'.
? THE ORIGINAL COPY OF THE PROG IS ALWAYS LEFT UNTOUCHED
? IN THE 1ST 16K.
? WHEN THE PROGRAM IS LOADED FROM 'DTOS', 1K OCCUPIED BY
? 'DTOS' MONITOR, CAT OR KITTEN IS ALWAYS LEFT UNTOUCHED.
? THE NUMBER OF PASSES EACH TEST IS RUN IN MAPPED MODE
? IS ADJUSTED ACCORDING TO THE SIZE OF THE TOTAL MEMORY SO
? AS TO EQUALIZE THE RUN TIME FOR DIFFERENT SIZE SYSTEMS
?
? NOTE: DUE TO THE WAY THE PROGRAM IS RUN (AS DESCRIBED
? ABOVE) THE MAXIMUM PROGRAM SIZE ALLOWED IS 15K. THIS
? WILL LEAVE ROOM (1K) FOR THE CAT WITHIN THE FIRST
? 32K OF THE SYSTEM WHEN THE PROGRAM IS RELOCATED.

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0013 ESPCL

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01 : 4.7 DIAGNOSTIC SUPPORT FEATURES
02 :-----
03 :
04 : DIAGNOSTIC SUPPORT FEATURES HAVE BEEN ADDED
05 : TO ASSIST THE USER IN IDENTIFICATION OF THE IMPACT
06 : OF PROGRAM RELOCATION ON THE EXECUTION IN MAP MODE.
07 : THE USER MUST MODIFY THE ASSOCIATED CONTROL ENTRIES
08 : TO ENABLE THEM, BE ADVISED, THE USER MUST RESTORE
09 : THE PROGRAM TO THE ORIGINAL STATE AND VERIFY NORMAL
10 : EXECUTION BEFORE ASSUMING THAT THE SYSTEMS CONFIGURA-
11 : TION IS FUNCTIONALLY CORRECT".
12 :
13 : PROGRAM RELOCATION CHECKSUM
14 :-----
15 :
16 : PRIOR TO RELOCATION IN NONMAPPED MODE A NEW "COR" CHECK
17 : WORD IS GENERATED, WHICH, IS VERIFIED FOLLOWING THE RAM
18 : XFER EXECUTION. IF THE CHECK WORDS DO NOT COMPARE THE
19 : PROGRAM HALTS. DUE TO THE NATURE OF THE PROGRAM OVERLAP-
20 : PING ON RELOCATION AND MODIFYING THE SOURCE BUFFER FROM
21 : WHICH IT HAS TRANSFERRED THIS TYPE OF ERROR IS UNRECOVER-
22 : ABLE AND THE USER IS ADVISED TO RUN THE BASIC ECLIPSE
23 : DIAGNOSTICS.
24 :
25 : PROGRAM RELOCATION VERIFICATION
26 :-----
27 :
28 : DURING MAPPED MODE EXECUTION THE SOURCE BUFFER AREA
29 : IS VERIFIED WORD FOR WORD (EXCEPT LOC. 0 THRU 17 OCTAL)
30 : AND IF AN ERROR IS DETECTED THE PROGRAM HALTS. THIS
31 : IS A FATAL CONDITION IN THAT THE PROGRAM SEGMENT THAT IS
32 : TO BE EXECUTED NEXT MAY BE IN ERROR.
33 : WITH SLIGHT MODIFICATION (I.E. THE ADDITION OF A HALT) AT
34 : LOCATION "MAPHLT:" THE USER MAY RESTART THE FAILING
35 : PROGRAM FOLLOWING A "XFER:" HALT IN RAM ABOVE AT LOC.
36 : "RETRY". THE OMISSION OF THE HALT ENTRY WILL RESULT IN
37 : MAP MODE EXECUTION FOLLOWING THE VERIFICATION AND COULD
38 : MISLEAD THE USER IF FURTHER ERRORS RESULT.
39 :
40 : NOTE:
41 : ADDRESSES SPECIFIED ABOVE ARE IN RELOCATED MEMORY AREA
42 : I.E. THE PROGRAM LISTING ADDRESS PLUS THE CONTENTS OF
43 : "RELOC:" FOR "MAPHLT:" AND "RETRY:"
44 : ALSO NOTE THAT THE ABOVE PROCEDURE WILL VERIFY THE
45 : ABILITY OF THE 8LM TO MOVE THE SOURCE CODE CURRENTLY
46 : RESIDENT TO THE DESTINATION BUFFER SPECIFIED. IF THE
47 : ADDRESS RANGE SPECIFIED ALLOWED THE ORIGINAL SOURCE
48 : BUFFER TO OVERLAP THE DESTINATION BUFFER, THE PROGRAM
49 : WILL HAVE BEEN WIPE OUT ON THE ORIGINAL TRANSFER.
50 : CAUTION:
51 :-----
52 : ALWAYS RUN THE BASIC ECLIPSE DIAGNOSTICS FOLLOWING
53 : PROGRAM CHECKSUM OR VERIFICATION ERRORS.

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0014 ESPCL

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01 : 4.7.3 INHIBIT MAP EXECUTION
02 :-----
03 :
04 : LOCATION "DMAZP:" MAY BE ALTERED TO ANY NON-ZERO ENTRY
05 : AND THIS WILL INHIBIT MAP MODE PROGRAM EXECUTION FOR
06 : THE PURPOSE OF EVALUATING THE OPERATIONAL CAPABILITY OF
07 : THE PROGRAM WITHOUT THE MAP (MMPU/MMPU1) ENABLED.
08 :
09 : "DMAZP" IS LOCATION "376" OCTAL AND MUST BE SET IN NON-
10 : MAP MODE.
11 :
12 : CAUTION:
13 :-----
14 : IT IS THE USERS RESPONSIBILITY TO RESTORE THE PROGRAM
15 : TO IT'S ORIGINAL STATE AND VERIFY THE PROPER EXECUTION .
16 :
17 : 4.7.4 LOCK ON FIXED RELOCATION BASE ADDRESS
18 :-----
19 :
20 : LOCATION "RLW2D:" MAY BE ALTERED TO ANY VALUE IN THE
21 : RANGE OF GREATER THAN 16K (I.E. 40000 OCTAL) AND 16K LESS
22 : THAN THE CONTENTS OF "MAXLOC:". THIS WILL FIX THE LOGICAL
23 : ADDRESS OFFSET USED DURING RELOCATION AND EXECUTION OF
24 : THE PROGRAM, FOR THE PURPOSE OF EVALUATING THE OPERATION
25 : CAPABILITY OF THE PROGRAM WITHOUT RANDOM RELOCATION, NOTE
26 : HOWEVER THAT DURING MAP MODE EXECUTION THAT THE PHYSICAL
27 : ADDRESSES WILL THEN VARY ACCORDING TO AVAILABLE PHYSICAL
28 : STORAGE.
29 : CAUTION:
30 :-----
31 : DO NOT SELECT A VALUE THAT WILL OVERLAY THE "CAT"
32 : "WRITTEN" DTDS 1K.
33 :
34 : "RLW2D" IS LOCATION "377" OCTAL AND MUST BE SET IN NON
35 : -MAP MODE.
36 :
37 : 4.7.5 FIXED RELOCATION ADDRESS = 0
38 :-----
39 :
40 : LOCATION "RLW2D:" MAY BE SET EQUAL TO "100000" OCTAL,
41 : I.E. BIT <0> = 1. THIS ENABLES RELOCATION XFER EXECUT-
42 : ION TO TAKE PLACE AS ALWAYS, BUT THE PROGRAM IS ALWAYS
43 : TRANSFERRED TO LOGICAL LOCATION "0". THIS IS ESPECIALLY
44 : USEFUL IN SYSTEMS WHERE IN MAPPED MODE THE PROGRAM
45 : FAILS IN RELOCATION AND A SPECIFIC AREA OF PHYSICAL
46 : MEMORY IS SUSPECT OF BEING INSTRUCTION EXECUTION OR
47 : DATA XFER SENSITIVE. IN MAPPED MODE THE BASIC 16K PRO-
48 : GRAM IS REPOSITIONED UP 16K (PHYSICALLY) AFTER EVERY
49 : THIRD EXECUTION CYCLE AND EVENTUALLY RESIDES IN THE
50 : SUSPECTED PHYSICAL AREA WHILE THE PROGRAM CODE BASIC-
51 : ALLY REFLECTS THE PROGRAM LISTING.
52 :
53 : CAUTION
54 :-----
55 : IT IS THE USERS RESPONSIBILITY TO RESTORE THE PROGRAM
56 : TO ITS ORIGINAL STATE AND VERIFY PROPER EXECUTION.
57 :
58 : .EJEC
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0015 ESPL

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01 4.7.6 INHIBIT ITERATION(S) CONTROL
02 *****
03
04
05 WHEN PROGRAM EXECUTION IS STARTED AT LOC. 176 OCTAL THE
06 ITERATION CONTROL FLAG IS COMPLEMENTED. I.E. NORMALLY THE
07 PROGRAM WILL EXECUTE WITH ITERATIONS FOLLOWING FIRST PASS
08 EXECUTION (WITHOUT ERRORS). WHEN STARTED AT LOC. 176
09 THE CONTROL ENTRY IS COMPLEMENTED AND THE FIRST TIME THAT
10 THE PROGRAM IS STARTED AT THAT LOCATION ITERATIONS WILL BE
11 SUPPRESSED IN ANY SUCCESSIVE PASSES AS WELL. NOTE THAT IF
12 THE USER WISHES TO RETURN TO THE NORMAL MODE OF OPERATION HE
13 JUST STARTS AT LOC. 176 OCTAL AGAIN.
14
15 4.7.7 RESTRICTION
16 *****
17
18 THE PASS COUNT ENTRY IS NOT ADVANCED IF EITHER ITERATIONS,
19 MAPPED EXECUTION OR RELOCATION CONTROL ARE INVOKED.
20 I.E. END OF PASS WILL BE SIGNIFIED BY THE FOLLOWING OUTPUT:
21 PASS = 0
22 PASS = 0
23 ETC.
24 THIS IS TO ASSURE THAT THE USER WILL KNOW THAT NORMAL
25 PROGRAM EXECUTION HAS BEEN SUSPENDED.
26
27 4.8 NEW FEATURES
28 *****
29
30 4.8.1 QUICK VERIFY EXECUTION
31 *****
32
33 FOR LARGE S/230 OR C/330 (356-K MEMORY) SYSTEMS A
34 METHOD FOR QUICK VERIFICATION OF SYSTEMS INTEGRITY
35 HAS BEEN ADDED. IT'S PRIMARY INTENDED USE IS FOR THE
36 REDUCTION OF EXECUTION TIME FOLLOWING CORRECTIVE MAIN-
37 TENANCE. IT MAY ALSO BE USED AS A QUICK METHOD OF USER
38 VERIFICATION OF SYSTEMS CAPABILITY PRIOR TO LONG TERM
39 RELIABILITY TESTING. (I.E. OVER NIGHT RUNALL OR CRUNALL
40 EXECUTION UNDER DTOS).
41 CAUTION!
42 *****
43
44 BE SURE TO RETURN THE SWREG SETTING TO NON-
45 QUICK VERIFY MODE USING THE DTOS "SWREG" COMMAND.
46
47 RESTRICTION
48 *****
49
50 THIS METHOD OF OPERATION IS "NOT RECOMMENDED"
51 FOR FINAL SYSTEMS ACCEPTANCE, OR IN CASES WHERE FAILURES
    OCCUR EITHER RANDOMLY OR INFREQUENTLY.

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.EJEC

0016 ESPL

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01 4.8.2 SELECTION OF QV
02 *****
03
04
05 QUICK VERIFICATION MODE OF OPERATION MAY BE SELECTED
06 AT ANY TIME SIMPLY BY HITTING KEY "P" ON THE
07 TTI DURING PROGRAM EXECUTION.
08 IT MAY ALSO BE SELECTED BEFORE LOADING THE PROGRAM WHEN
09 RUNNING UNDER DTOS BY FIRST UTILIZING THE SWREG COMMAND
10 AND INSERTING "ICR)". WHEN SELECTED IN THIS MANNER,
11 THE QV OPTION IS ENABLED FOR ANY FUTURE DTOS PROGRAMS.
12 THEREFORE, IF IT IS NOT DESIRED ON OTHER PROGRAMS,
13 THE SWREG MUST BE CLEARED BY USING THE SWREG COMMAND
14 AND RESPONDING WITH "0(CR)".
15
16
17 4.8.3 ERROR CODE ID
18 *****
19
20 A METHOD OF RELATING TO PROBABLE CAUSE OF FAILURES HAS
21 BEEN ADDED TO THE ECLIPSE EXERCISER PROGRAMS THAT USE
22 THE "EPAK" BASIC ECLIPSE EXERCISER UTILITY PACKAGE.
23 TWO VALUES OF ERROR CODE CAN BE GENERATED FOR EACH HARD
24 FAILURE, ONCE THEY HAVE BEEN RECORDED THE HISTORY OF ALL
25 PAST FAILURES CAN BE REFERENCED TO AFFECT REPAIR.
26
27 4.8.4 PROBABLE FAULT ID SELECTION
28 *****
29
30 WHEN QUICK VERIFY MODE IS EXECUTED ABOVE PROBABLE FAULT
31 (ERROR CODE ID) SELECTION IS ENABLED AND A COURSE ID
32 VALUE IS GENERATED WHEN AN ERROR IS ENCOUNTERED. IT CAN
33 BE IN THE RANGE OF 000 THRU 100 OCTAL.
34
35 WHEN DTOS "LOAD" MODE PROGRAM EXECUTION IS EXECUTED AND
36 SW "1" IS SELECTED FOR SWITCH REGISTER SELECTION A SECOND OR
37 FINE ID VALUE IS GENERATED WHEN ERRORS ARE ENCOUNTERED. IT
38 CAN BE IN THE RANGE OF 000000 THRU 177776 OCTAL.
39
40 DURING MONITOR MODE EXECUTION UNDER DTOS ANOTHER UNIQUE
41 PROBABLE FAULT (ERROR CODE ID) IS GENERATED AND IT'S
42 VALUE IS 177777 OCTAL. THIS ENTRY SIGNIFIES THAT A FATAL
43 ERROR HAS BEEN ENCOUNTERED DURING PROGRAM EXECUTION.
44
45 THE PROBABLE FAULT (ERROR CODE ID) IS APPENDED TO ANY OF
46 THE ADDITIONAL ERROR INFORMATION AT COMPLETION OF THE FIRST
47 PASS OF PROGRAM EXECUTION, UNDER CONTROL OF THE SWITCH
48 REGISTER SELECTION.

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.EJEC

\*\*00000 TOTAL ERRORS, 00000 PASS 1 ERRORS

4.9 NEW TRACE CAPABILITY  
 USER MAY TRACE PROGRAM EXECUTION OF ANY "SINGLE  
 MEMORY REFERENCE INSTRUCTION" BY REPLACING IT WITH A  
 TRACE CALL "XOP" INSTRUCTION, I.E. "104030" (OCTAL).  
 THIS WILL RESULT IN THE FOLLOWING TYPICAL DISPLAY OUTPUT  
 AT "XOP" TRACE CALL EXECUTION:  
 TRACE: "N"

```

4.9.1
:TEST# CRY AC0 AC1 AC2 AC3 LISTING LOGICAL
:XXXX X XXXXX XXXXX XXXXX XXXXX XXXX
:
: NOTE:
: SEE 4.9.2 CAUTION BELOW. ALSO NOTE THAT DISPLAY
: TRACE: "N" (WHERE "N") SIGNIFIES THE OCTAL NUMBER OF
: CURRENT TRACE "XOP" CALL BEING EXECUTED. THIS VALUE
: WILL NORMALLY INCREMENT BY ONE EACH TIME EXCEPT WHEN
: "TCM?T" HAS BEEN MODIFIED BY THE USER. SEE 4.9.5 BELOW.
: 4.5.1 WMPU/WMPUL AUTO MAP DUMP DISPLAY AND 4.4.9 BYTE FORMAT
: DISPLAY WILL ACCOMPANY THE REQUESTED TRACE INFORMATION IF
: APPLICABLE AT THE TIME OF EXECUTION. THE USER MAY REPLACE
: LOCATION "DEB?G:" SYMBOLIC WITH THE INSTRUCTION THAT WOULD
: HAVE BEEN EXECUTED.
4.9.2 CAUTION
:
: ADDRESSING MODES THAT REQUIRE RELATIVE MEMORY REFERENCES
: BY THE INSTRUCTION REPLACED MUST BE JUDICIOUSLY SELECTED
: BY THE USER.

```

```

4.9.3 ADDITIONAL TRACE CAPABILITY
:
: EXTENDED INSTRUCTION EXECUTION
4.9.4
:
: THE MORE ADVANCED USER MAY MODIFY LOCATIONS "DEB?G:"
: THRU "DEB?G:+2" TO ALLOW THE EXECUTION OF EXTENDED INST-
: RUCTIONS, DURING TRACE EXECUTION. SEE CAUTION 4.9.2
: ABOVE.

```

```

4.9.5 "N"TH OCCURRENCE EXECUTION OF TRACE CALLS
:
: THE MORE ADVANCED USER MAY MODIFY LOCATION "TCM?T:"
: SYMBOLIC, TO ENABLE SELECTIVE "XOP" TRACE CALL ON
: THE "N"TH OCCURRENCE OF THE "XOP". WHERE "N"TH IS A
: POSITIVE OCTAL NUMBER OF "XOP" TRACE INSTRUCTIONS
: BETWEEN INFORMATION THAT IS DISPLAYED.
: NOTE:
: THE FIRST OCCURRENCE OF THE "XOP" TRACE CALL WILL ALWAYS
: RESULT IN INFORMATION DISPLAY EXECUTION.

```

.EOT

0019 ESPCL

CRTLF 012433	EN	2/01
ENVNT 000000		9/33
ESTKD 001044	MC	4/16
INTRX 000000		1/01
MEFSS 012440	EN	2/01
POFCT 012425	EN	2/01
STMPD 005717	MC	6/01