

The image displays a large grid of diagnostic test results for the CFFPCB0 processor. The grid is organized into 11 rows and 34 columns. Each cell in the grid contains a small table of data, likely representing test parameters and their outcomes. The text is very small and difficult to read, but the overall structure is a dense array of diagnostic information. The data appears to be organized into sections, with some cells containing headers or sub-headers. The overall appearance is that of a technical manual or a diagnostic report.



# FP11

11/34 FLOATING POINT  
**CFFPCBO**  
PROCESSOR DIAGNOSTIC PART 3

AH-E128B-MC  
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FICHE 2 OF 2

APR 1978  
**digital**  
MADE IN USA

This microfiche card contains a grid of frames. The leftmost column consists of 12 frames, each containing a vertical list of numbers. The remaining frames in the grid contain various data, including what appears to be a table with multiple columns and rows of numbers and text. The data is organized in a structured, tabular format, typical of diagnostic or reference information stored on microfiche.



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IDENTIFICATION  
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PRODUCT CODE: AC-E127B-MC  
PRODUCT NAME: CFFPCBO 11/34 FPP DIAG PRT3  
PRODUCT DATE: 15-FEBRUARY-1978  
MAINTAINER: DIAGNOSTIC ENGINEERING  
AUTHOR: ANTHONY VEZZA  
MODIFIED BY: BARRY SUSSMAN 15-FEB-78

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1. ABSTRACT



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THE THREE PROGRAMS:

DFFPA DFFPB CFFPC

ARE DESIGN TO DETECT AND REPORT LOGIC FAULTS IN THE PDP 11/34 FP11-A FLOATING POINT PROCESSOR. THE DESIGN IS AN ATTEMPT TO REACH ALL ROM STATES, TAKE ALL BRANCH MICRO TESTS (BUT'S) AND VERIFY ALL THE LOGIC. THEY CONSIST OF 155 (OCT) INDIVIDUAL TESTS SEQUENCED TO DETECT AND ATTEMPT TO IDENTIFY FAULTS WITH A MINIMUM HARDWARE OR SOFTWARE LEVEL. THE TESTS ARE PARTIONED INTO THREE STAND-ALONE PROGRAMS DESCRIBED BELOW.

NOTE THAT ERROR REPORTS IN THESE PROGRAMS ARE BASED UPON THE KNOWLEDGE THAT ALL PREVIOUS TESTS HAVE BEEN RUN AND IN MOST CASE THAT THERE IS ONLY A SINGLE POINT FAULT IN THE FP11-A. IF THE PROGRAMS OR TESTS ARE NOT RUN IN ORDER THEN ERROR MESSAGES MAY NOT BE ACCURATE.

A. DFFPA

DFFPA TESTS:

LDFPS  
STFPS  
CFCC  
SETF, SETD, SETI AND SETL  
STST  
LDF AND LDD (ALL SOURCE MODES)  
STD (MODE 0 AND 1)  
ADDF, ADDD AND SUBD (MOST CONDITIONS)

B. DFFPB

DFFPB TESTS:

ADDF, ADDD AND SUBD (ALL CONDITIONS NOT TESTED IN DFFPA)  
CMPD AND CMPF  
DIVD AND DIVF  
MULD AND MULF  
MODD AND MODF

C. CFFPC

CFFPC TESTS:

STF AND STD (ALL MODES)  
STCFD AND STCDF  
CLRD AND CLRF  
NEGF AND NEG0



ABSF AND ABSO  
TSTF AND TSTD  
NEGF, ABSF AND TSTF (ALL SOURCE MODES)  
NEGF, ABSF AND TSTF (ALL SOURCE MODES)  
LOFPS (ALL SOURCE MODES)  
LDCIF AND LDCLF  
LDCID AND LDCLD  
LDEXP  
STFPS (ALL DESTINATION MODES)  
STCFL AND STCFI  
STCDL AND STCDI  
STEXP  
STST

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2. REQUIREMENTS  
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2.1 EQUIPMENT

A PDP 11/34 (WITH OR WITHOUT CONSOLE), LA30 (OR EQUIVALENT) AND AN FP11-A FLOATING POINT PROCESSOR. NOTE THAT A SPECIAL INTERRUPTS TEST MODULE IS BEING DESIGNED FOR USE IN THE MANUFACTURING ENVIRONMENT. WHEN THIS DEVICE IS PRESENT THE PROGRAM DFFPB WILL MAKE USE OF IT TO TEST THE FPP INTERRUPT ON BUS REQUEST FUNCTIONS.

2.2 STORAGE

ALL THREE PROGRAM REQUIRE A MEMORY SYSTEM OF AT LEAST 16K TO LOAD AND RUN.

2.3 PRELIMINARY PROGRAMS

THESE THREE DIAGNOSTICS WILL ASSUME THAT THE PDP 11/34 CENTRAL PROCESSOR IS FAULTLESS. THEREFORE WHEN IN DOUBT RUN THE PDP 11/34 PROCESSOR DIAGNOSTICS BEFORE THESE FP11-A DIAGNOSTICS.

3. LOADING PROCEDURE  
-----

THE PROGRAMS WILL BE SUPPLIED ON THE 11/34 DIAGNOSTIC MEDIA. REFER TO THE XXDP OPERATING MANUAL FOR FURTHER INFORMATION.

4. STARTING PROCEDURE  
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4.1 CONTROL SWITCH SETTINGS

SEE SECTION 5.1

4.2 PROGRAM AND OPERATOR ACTION



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1. LOAD PROGRAM INTO MEMORY
2. LOAD ADDRESS 200
3. SET CONSOLE SWITCHES (IF CONSOLE IS PRESENT)
4. PRESS START  
ON FIRST PASS THE PROGRAM WILL IDENTIFY ITSELF. NOTE THAT IF THERE IS NO PHYSICAL CONSOLE THE PROGRAM WILL REQUEST THE OPERATOR FOR INITIAL VALUE FOR THE SOFTWARE SWITCH REGISTER (SEE SECTION 8.5). IF RUNNING UNDER ACT, APT OR CHAIN THIS DOES NOT APPLY.
5. THE PROGRAM WILL LOOP AND AN END OF PASS AND ERROR SUMMARY WILL BE TYPED AT THE END OF EVERY PASS.

5. OPERATING PROCEDURE  
-----

5.1 OPERATIONAL SWITCH SETTINGS

THE SWITCH SETTING ARE:

	OCTAL	
SW<15>=1...	10000	HALT ON ERROR
SW<14>=1...	40000	LOOP ON CURRENT TEST
SW<13>=1...	20000	INHIBIT ERROR TYPE OUTS
SW<12>=1...	10000	INHIBIT T-BIT TRAPPING
SW<11>=1...	4000	INHIBIT ITERATIONS
SW<10>=1...	2000	RING TTY BELL ON ERROR
SW<9>=1...	1000	LOOP ON ERROR
SW<8>=1...	400	LOOP ON TEST SPECIFIED IN SW<6> THROUGH SW<0>
SW<7>=1...	200	PRINT ERROR SUMMARY EVEN IF SW<13>=1, THIS APPLIES ONLY TO PROGRAM DFFPA.
SW<7>=1...	200	DESELECT CORRECT INTERRUPT TEST IN PROGRAM DFFPB. NOTE THAT THIS TEST WILL AUTOMATICALLY BE DESELECTED BY THE ABSENCE OF THE SPECIAL TEST EQUIPMENT DESIGNED TO CONDUCT THIS TEST. IF THIS EQUIPMENT IS NOT INSTALLED THERE IS NO NEED TO DESELECT THIS TEST. THIS APPLIES ONLY TO PROGRAM DFFPB!

6. ERRORS  
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6.1 SUMMARIES

IN PROGRAM DFFPA TESTS 1 AND 11 HAVE A SPECIAL ERROR SUMMARY FEATURE. THESE TWO TEST RUN MANY TEST PATTERNS THROUGH THE LOGIC. AFTER AN ERROR IS ENCOUNTERED, ONLY THE FIRST FIVE ERRORS ARE REPORTED



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(TYPED ON THE TTY). EVERY ERROR THOUGH IS LOGGED AND AN ERROR SUMMARY IS PRINTED WHEN THE TEST IS COMPLETE. NOTE THAT IF SW<13>=1 THIS SUMMARY WILL NOT BE TYPED UNLESS SW<7>=1. IN OTHER WORDS TO GET JUST AN ERROR SUMMARY FROM EITHER OF THESE TWO TESTS 1 AND 11 IN PROGRAM DFFPA BOTH SWITCHES 13 AND 7 MUST = 1.

6.2 ERROR RECOVERY

SW<15: 9>=0. . . MOST ERRORS WILL CAUSE EXECUTION TO GO TO THE START OF THE NEXT TEST AFTER THE MESSAGE IS TYPED. A FEW TESTS ARE IN SECTIONS. IN THESE TESTS AN ERROR WILL CAUSE EXECUTION TO GO TO THE NEXT SECTION AFTER THE MESSAGE IS TYPED.

SW<15>=1. . . THE PROGRAM WILL HALT AFTER TYPING THE ERROR MESSAGE. PRESSING THE CONSOLE CONTINUE WILL CAUSE THE PROGRAM TO CONTINUE AS IF SW<15>=0.

7. RESTRICTIONS

NONE

8. MISCELLANEOUS

8.1 EXECUTION TIMES

LESS THAN 10 SECONDS FOR EACH PROGRAM ON ANY PASS.

8.2 STACK POINTER

THE STACK POINTER IS INITIALIZED TO 1100 IN EACH OF THE THREE PROGRAMS.

8.3 PASS COUNT

THE PROGRAM MAKES ONE PASS FOR EACH END OF PASS MESSAGE TYPED. THE END OF PASS MESSAGE DESCRIBES THE TOTAL NUMBER OF PASSES COMPLETED AND THE TOTAL NUMBER OF ERRORS SINCE THE LAST END OF PASS MESSAGE.

8.4 T-BIT TRAPPING

IF SW<12>=0 EACH PROGRAM WILL RUN WITH TRACE TRAPS ON EVERY OTHER PASS. FIRST PASS WILL NOT ENABLE TRACE TRAPS. NOTE SW<12>=1 DISABLES T-BIT TRAPS.

8.5 SOFTWARE SWITCH REGISTER



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EACH OF THE THREE PROGRAMS WILL RUN WITH OR WITHOUT A CONSOLE SWITCH REGISTER. IF A PHYSICAL CONSOLE SWITCH REGISTER IS PRESENT ON THE SYSTEM, THEN THESE PROGRAMS WILL GO AHEAD AND USE IT FOR THE SWITCH FUNCTIONS DESCRIBED IN 5.1 ABOVE. IF HOWEVER THERE IS NO CONSOLE SWITCH REGISTER ON THE SYSTEM A SOFTWARE SWITCH REGISTER WILL BE USED. THIS SOFTWARE SWITCH REGISTER CAN BE EXAMINED OR MODIFIED AT ANY TIME BY THE USER IF HE TYPES CONTROL G WHILE THE PROGRAM IS RUNNING. THIS CONTROL G WILL CAUSE THE CONTENTS OF THE SOFTWARE SWITCH REGISTER TO BE TYPED ON THE TTY AND ASK THE USER FOR A NEW VALUE. WHEN THE USER TYPES A VALUE AND CARRIAGE RETURN THEN THE PROGRAM WILL RESUME TESTING AT THE SAME POINT AT WHICH IT LEFT OFF WHEN THE USER TYPED CONTROL G. NOTE THAT WHEN NOT RUNNING UNDER ACT, APT OR CHAIN THE USER WILL BE ASKED FOR A SOFTWARE SWITCH REGISTER VALUE AFTER LOADING ADDRESS 200 AND STARTING THE PROGRAM THE FIRST TIME THE PROGRAM IS RUN AFTER LOADING (ONLY IF NO CONSOLE SWITCH REGISTER IS ON THE SYSTEM).

8.6 INTERRUPTS TEST

IN PROGRAM DFFPB THERE IS A SPECIAL TEST FOR CHECKING THE CORRECT FLOWS OF THE FPP. THIS TEST CAN BE RUN ONLY IF A SPECIAL TEST MODULE IS IN THE SYSTEM. THIS MODULE WILL PROBABLY ONLY BE USED IN MANUFACTURING. IF THIS MODULE IS NOT IN THE SYSTEM THIS TEST WILL AUTOMATICALLY BE DESELECTED. IF THIS TEST MODULE IS ON THE SYSTEM AND SW<7>=0 THIS TEST WILL BE RUN. IF SW<7>=1 THIS TEST WILL BE DESELECTED.

8.7 ACT, APT AND XXDP COMPATIBILITY

THESE PROGRAMS ARE FULLY COMPATIBLE WITH:  
APT  
ACT  
XXDP MONITOR AND CHAIN PROGRAMS.

9. PROGRAM DESCRIPTION

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TEST 1                   STF WITH ILLEGAL ACCUMULATOR TEST  
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THIS IS A TEST OF THE ST INSTRUCTION USING ILLEGAL  
ACCUMULATOR 7, MODE 0.

TEST 2                   FDST MODE 1, FLOATING MODE, TEST  
-----

THIS IS A TEST OF THE STF INSTRUCTION USING FDST  
MODE 1.

TEST 3                   FDST MODE 2 TEST  
-----

THIS IS A TEST OF BOTH STF AND STD WITH FDST MODE 2.

TEST 4                   FDST MODE 2, WITH GR7, TEST  
-----

THIS IS A TEST OF STF WITH GR7 MODE 2 OR IMMEDIATE  
MODE.

TEST 5                   FDST MODE 4 TEST  
-----

THIS IS A TEST OF STD WITH FDST MODE 4.

TEST 6                   FDST MODE 3 TEST  
-----

THIS IS A TEST OF FDST MODE 3 USING STD.

TEST 7                   FDST MODE 5 TEST  
-----

THIS IS A TEST OF FDST MODE 5 USING STD.

TEST 10                  FDST MODE 6, INDEX MODE, TEST  
-----

THIS IS A TEST OF FDST MODE 6, INDEX MODE, USING  
STD.

TEST 11                  FDST MODE 7, INDEX DEFERRED MODE, TEST  
-----

THIS IS A TEST OF FDST MODE 7, INDEX DEFERRED MODE,  
USING STD.

TEST 12                  STCFD TEST  
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439 THIS IS A TEST OF THE STCFD INSTRUCTION.  
440  
441 TEST 13 STCDF TEST  
442 -----  
443  
444 THIS IS A TEST OF THE STCDF INSTRUCTION.  
445  
446 TEST 14 STCDF WITH ILLEGAL ACCUMULATOR TEST  
447 -----  
448  
449 THIS TEST STCFD WITH ILLEGAL AC 6.  
450  
451 TEST 15 CLRD TEST  
452 -----  
453  
454 THIS IS A TEST OF THE CRLF AND CLRD INSTRUCTIONS.  
455  
456 TEST 16 CLRD WITH ILLEGAL ACCUMULATOR TEST  
457 -----  
458  
459 THIS IS A TEST OF CLRD WITH ILLEGAL AC7.  
460  
461 TEST 17 NEGF, ABSF AND TSTF SOURCE MODE 0 WITH ILLEGAL AC7, TEST  
462 -----  
463  
464 THIS IS A TEST OF THE SPECIAL DEST FLOWS USING THE  
465 NEGD INST WITH MODE ZERO AND ILLEGAL AC7.  
466  
467 TEST 20 NEGF, ABSF AND TSTF SOURCE MODE 0 TEST  
468 -----  
469  
470 THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS.  
471 THE NEGD INSTRUCTION IS USED TO TEST MODE 0  
472  
473 TEST 21 NEGF, ABSF AND TSTF SOURCE MODE 1 TEST  
474 -----  
475  
476 THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS.  
477 THE NEGD INSTRUCTION IS USED TO TEST MODE 1  
478  
479 TEST 22 NEGF, ABSF AND TSTF SOURCE MODE 2 TEST  
480 -----  
481  
482 THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS.  
483 THE ABSD INSTRUCTION IS USED TO TEST MODE 2  
484  
485 TEST 23 NEGF, ABSF AND TSTF SOURCE MODE 4 TEST  
486 -----  
487  
488 THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS.  
489 THE ABSD INSTRUCTION IS USED TO TEST MODE 4  
490  
491 TEST 24 NEGF, ABSF AND TSTF SOURCE MODE 3 TEST  
492 -----  
493  
494 THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS.



495 THE ABSD INSTRUCTION IS USED TO TEST MODE 3  
496  
497 TEST 25 NEGf, ABSF AND TSTF SOURCE MODE 5 TEST  
498 -----  
499  
500 THIS IS A TEST THE NEGf, ABSF AND TSTF SOURCE FLOWS.  
501 THE NEGd INSTRUCTION IS USED TO TEST MODE 5  
502  
503 TEST 26 NEGf, ABSF AND TSTF SOURCE MODE 6 TEST  
504 -----  
505  
506 THIS IS A TEST THE NEGf, ABSF AND TSTF SOURCE FLOWS.  
507 THE ABSD INSTRUCTION IS USED TO TEST MODE 6  
508  
509 TEST 27 NEGf, ABSF AND TSTF SOURCE MODE 7 TEST  
510 -----  
511  
512 THIS IS A TEST THE NEGf, ABSF AND TSTF SOURCE FLOWS.  
513 THE ABSD INSTRUCTION IS USED TO TEST MODE 6  
514  
515 TEST 30 NEGf, ABSF AND TSTF SOURCE MODE 6, GR7, TEST  
516 -----  
517  
518 THIS IS A TEST THE NEGf, ABSF AND TSTF SOURCE FLOWS.  
519 THE NEGd INSTRUCTION IS USED TO TEST MODE 6  
520  
521 TEST 31 NEGf, ABSF AND TSTF SOURCE MODE 7, GR7, TEST  
522 -----  
523  
524 THIS IS A TEST THE NEGf, ABSF AND TSTF SOURCE FLOWS.  
525 THE ABSD INSTRUCTION IS USED TO TEST MODE 7  
526  
527 TEST 32 SPECIAL DEST, MODE 0, TEST  
528 -----  
529  
530 THIS IS A TEST OF THE NEGf ABSF AND TSTF DESTINATION  
531 FLOWS MODE 0 USING THE NEGd INSTR.  
532  
533 TEST 33 SPECIAL DEST, MODE 1, TEST  
534 -----  
535  
536 THIS IS A TEST OF THE NEGf ABSF AND TSTF DESTINATION  
537 FLOWS MODE 1 USING THE NEGd INSTR.  
538  
539 TEST 34 SPECIAL DEST, MODE 2, TEST  
540 -----  
541  
542 THIS IS A TEST OF THE NEGf ABSF AND TSTF DESTINATION  
543 FLOWS MODE 2 USING THE NEGd INSTR.  
544  
545 TEST 35 SPECIAL DEST, MODE 4, TEST  
546 -----  
547  
548 THIS IS A TEST OF THE NEGf ABSF AND TSTF DESTINATION  
549 FLOWS MODE 4 USING THE NEGd INSTR.  
550



551 TEST 36 SPECIAL DEST, MODE 3, TEST  
552 -----  
553  
554 THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION  
555 FLOWS MODE 3 USING THE NEGD INSTR.  
556  
557 TEST 37 SPECIAL DEST, MODE 5, TEST  
558 -----  
559  
560 THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION  
561 FLOWS MODE 5 USING THE NEGD INSTR.  
562  
563 TEST 40 SPECIAL DEST, FLOATING MODE 2, TEST  
564 -----  
565  
566 THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION  
567 FLOWS MODE 2 USING THE NEGF INSTR.  
568  
569 TEST 41 SPECIAL DEST, MODE2, GR7 (IMMEDIATE), TEST  
570 -----  
571  
572 THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION  
573 FLOWS MODE 2(IMMEDIATE) USING THE NEGD INSTR.  
574  
575 TEST 42 SPECIAL DEST, MODE 6, TEST  
576 -----  
577  
578 THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION  
579 FLOWS MODE 6 USING THE NEGD INSTR.  
580  
581 TEST 43 SPECIAL DEST, MODE 7, TEST  
582 -----  
583  
584 THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION  
585 FLOWS MODE 7 USING THE NEGD INSTR.  
586  
587 TEST 44 NEGD, ABSD AND TSTD TEST  
588 -----  
589  
590 THIS IS A TEST OF THE NEGD ABSD AND TSTD  
591 INSTRUCTIONS.  
592  
593 TEST 45 SOURCE MODES, MODE 1 (FL=0), TEST  
594 -----  
595  
596 THIS IS A TEST OF SOURCE MODE 1 USING THE LDFPS  
597 INSTR  
598  
599 TEST 46 SOURCE MODES, MODE 2 (FL=0), TEST  
600 -----  
601  
602 THIS IS A TEST OF SOURCE MODE 2 USING THE LDFPS  
603 INSTR  
604  
605 TEST 47 SOURCE MODES, MODE 4 (FL=0), TEST  
606 -----



607  
608  
609 THIS IS A TEST OF SOURCE MODE 4 USING THE LDFPS  
610 INSTR  
611 TEST 50 SOURCE MODES, MODE 3 (FL=0), TEST  
612 -----  
613  
614 THIS IS A TEST OF SOURCE MODE 3 USING THE LDFPS  
615 INSTR  
616 TEST 51 SOURCE MODES, MODE 5 (FL=0), TEST  
617 -----  
618  
619 THIS IS A TEST OF SOURCE MODE 5 USING THE LDFPS  
620 INSTR  
621 TEST 52 SOURCE MODES, MODE 6 (FL=0), TEST  
622 -----  
623  
624 THIS IS A TEST OF SOURCE MODE 6 USING THE LDFPS  
625 INSTR  
626 TEST 53 SOURCE MODES, MODE 7 (FL=0), TEST  
627 -----  
628  
629 THIS IS A TEST OF SOURCE MODE 7 USING THE LDFPS  
630 INSTR  
631 TEST 54 SOURCE MODES, MODE 2 GR7 (FL=1), TEST  
632 -----  
633  
634 THIS IS A TEST OF THE LDCLD WITH IMMEDIATE  
635 ADDRESSING MODE  
636 TEST 55 SOURCE MODES, MODE 2 (FL=1), TEST  
637 -----  
638  
639 THIS IS A TEST OF THE LDCLD INSTR WITH MODE 2.  
640 TEST 56 LDCIF AND LDCLF TEST  
641 -----  
642  
643 THIS IS A TEST OF THE LDCIF AND THE LDCLF  
644 INSTRUCTIONS.  
645 TEST 57 LDCID AND LDCLD TEST  
646 -----  
647  
648 THIS IS A TEST OF LDCID AND LDCLD  
649 TEST 60 LDEXP TEST  
650 -----  
651  
652 THIS IS A TEST OF THE LDEXP INST A SUBROUTINE IS  
653 USED TO SET UP OPERANDS, EXECUTE THE LDEXP INST AND  
654 CHECK THE RESULTS.  
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663 TEST 61 DESTINATION MODES, MODE 1 (FL=0), TEST  
664 -----  
665 THIS IS A TEST OF DESTINATION MODE 1 USING THE STFPS  
666 INSTRUCTION  
667  
668 TEST 62 DESTINATION MODES, MODE 2 (FL=0), TEST  
669 -----  
670 THIS IS A TEST OF DESTINATION MODE 2 USING THE STFPS  
671 INSTRUCTION  
672  
673 TEST 63 DESTINATION MODES, MODE 4 (FL=0), TEST  
674 -----  
675 THIS IS A TEST OF DESTINATION MODE 4 USING THE STFPS  
676 INSTRUCTION  
677  
678 TEST 64 DESTINATION MODES, MODE 3 (FL=0), TEST  
679 -----  
680 THIS IS A TEST OF DESTINATION MODE 3 USING THE STFPS  
681 INSTRUCTION  
682  
683 TEST 65 DESTINATION MODES, MODE 5 (FL=0), TEST  
684 -----  
685 THIS IS A TEST OF DESTINATION MODE 5 USING THE STFPS  
686 INSTRUCTION  
687  
688 TEST 66 DESTINATION MODES, MODE 6 (FL=0), TEST  
689 -----  
690 THIS IS A TEST OF DESTINATION MODE 6 USING THE STFPS  
691 INSTRUCTION  
692  
693 TEST 67 DESTINATION MODES, MODE 7 (FL=0), TEST  
694 -----  
695 THIS IS A TEST OF DESTINATION MODE 7 USING THE STFPS  
696 INSTRUCTION  
697  
698 TEST 70 DESTINATION MODES, MODE 2 (FL=1), TEST  
699 -----  
700 THIS IS A TEST OF DESTINATION MODE 2 USING STCOL  
701 WITH REGISTER 0  
702  
703 TEST 71 DESTINATION MODES, MODE 4 (FL=1), TEST  
704 -----  
705 THIS IS A TEST OF DESTINATION MODE 4 USING STCDL  
706 WITH REGISTER 0  
707  
708 TEST 72 STCDI AND STCDL TEST  
709 -----  
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THIS IS A TEST OF THE STCDI AND STCDL INSTRUCTIONS.  
NOTE THAT A SUBROUTINE, STCSUB, IS USED TO SET UP  
THE OPERANDS, EXECUTE THE STC INSTRUCTION AND CHECK  
THE RESULT.

TEST 73 STCFL AND STCFI TEST  
-----

THIS IS A TEST OF STCFL AND STCFI. IT MAKES USE OF  
THE SAME SUBROUTINE, STCSUB, WHICH WAS USED TO TEST  
STCDL AND STCDI.

TEST 74 STEXP TEST  
-----

THIS IS A TEST OF THE STEXP INSTRUCTION

TEST 75 STST TEST  
-----

THIS IS A TEST OF THE STST INSTRUCTION. FIRST AN  
ILLEGAL FPS OP CODE (INSTRUCTION) IS USED TO ENTER  
AN ERROR CONDITION IN THE FEC AND FEA. THE STST IS  
EXECUTED AND THE FEC AND FEA ARE CHECKED

10. LISTING  
-----

000443  
000003

&  
MNUMBER=443  
PROGNUM=3

. LIST ME  
. NLIST MD, MC, CND



- 775
- 776
- 777
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846

. ENABL ABS

. TITLE CFFPCBO 11/34 FPP DIAG PRT3

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; \*MAYNARD, MASS. 01754

; \*

; \*PROGRAM BY ANTHONY S. VEZZA

; \*

; \*THIS PROGRAM WAS ASSEMBLED USING THE PDP-11 MAINDEC SYSMAC

; \*PACKAGE (MAINDEC-11-DZQAC-C2), SEPT 14, 1976.

; \*

\$TN=1

\$SWR=160000 ;; HALT ON ERROR, LOOP ON TEST, INHIBIT ERROR TYP0UT

000001  
160000

FPVECT=244

\$SWR=177400

\$SWRMSK=200

TAB=11

CRLF=15

000244  
177400  
000200  
000011  
000015

. SBTTL BASIC DEFINITIONS

; \*INITIAL ADDRESS OF THE STACK POINTER \*\*\* 1100 \*\*\*

STACK= 1100

. EQUIV EMT,ERROR ;; BASIC DEFINITION OF ERROR CALL

. EQUIV IOT,SCOPE ;; BASIC DEFINITION OF SCOPE CALL

001100

; \*MISCELLANEOUS DEFINITIONS

HT= 11 ;; CODE FOR HORIZONTAL TAB

LF= 12 ;; CODE FOR LINE FEED

CR= 15 ;; CODE FOR CARRIAGE RETURN

CRLF= 200 ;; CODE FOR CARRIAGE RETURN-LINE FEED

PS= 177776 ;; PROCESSOR STATUS WORD

. EQUIV PS,PSW

STKLMT= 177774 ;; STACK LIMIT REGISTER

PIRQ= 177772 ;; PROGRAM INTERRUPT REQUEST REGISTER

DSWR= 177570 ;; HARDWARE SWITCH REGISTER

DDISP= 177570 ;; HARDWARE DISPLAY REGISTER

000011  
000012  
000015  
000200  
177776  
177774  
177772  
177570  
177570

; \*GENERAL PURPOSE REGISTER DEFINITIONS

R0= %0 ;; GENERAL REGISTER

R1= %1 ;; GENERAL REGISTER

R2= %2 ;; GENERAL REGISTER

R3= %3 ;; GENERAL REGISTER

R4= %4 ;; GENERAL REGISTER

000000  
000001  
000002  
000003  
000004



847	000005	R5=	%5	:: GENERAL REGISTER
848	000006	R6=	%6	:: GENERAL REGISTER
849	000007	R7=	%7	:: GENERAL REGISTER
850	000006	SP=	%6	:: STACK POINTER
851	000007	PC=	%7	:: PROGRAM COUNTER
852				
853		; *PRIORITY LEVEL DEFINITIONS		
854	000000	PRO=	0	:: PRIORITY LEVEL 0
855	000040	PR1=	40	:: PRIORITY LEVEL 1
856	000100	PR2=	100	:: PRIORITY LEVEL 2
857	000140	PR3=	140	:: PRIORITY LEVEL 3
858	000200	PR4=	200	:: PRIORITY LEVEL 4
859	000240	PR5=	240	:: PRIORITY LEVEL 5
860	000300	PR6=	300	:: PRIORITY LEVEL 6
861	000340	PR7=	340	:: PRIORITY LEVEL 7
862				
863		; *"SWITCH REGISTER" SWITCH DEFINITIONS		
864	100000	SW15=	100000	
865	040000	SW14=	40000	
866	020000	SW13=	20000	
867	010000	SW12=	10000	
868	004000	SW11=	4000	
869	002000	SW10=	2000	
870	001000	SW09=	1000	
871	000400	SW08=	400	
872	000200	SW07=	200	
873	000100	SW06=	100	
874	000040	SW05=	40	
875	000020	SW04=	20	
876	000010	SW03=	10	
877	000004	SW02=	4	
878	000002	SW01=	2	
879	000001	SW00=	1	
880		. EQUIV	SW09, SW9	
881		. EQUIV	SW08, SW8	
882		. EQUIV	SW07, SW7	
883		. EQUIV	SW06, SW6	
884		. EQUIV	SW05, SW5	
885		. EQUIV	SW04, SW4	
886		. EQUIV	SW03, SW3	
887		. EQUIV	SW02, SW2	
888		. EQUIV	SW01, SW1	
889		. EQUIV	SW00, SW0	
890				
891		; *DATA BIT DEFINITIONS (BIT00 TO BIT15)		
892	100000	BIT15=	100000	
893	040000	BIT14=	40000	
894	020000	BIT13=	20000	
895	010000	BIT12=	10000	
896	004000	BIT11=	4000	
897	002000	BIT10=	2000	
898	001000	BIT09=	1000	
899	000400	BIT08=	400	
900	000200	BIT07=	200	
901	000100	BIT06=	100	
902	000040	BIT05=	40	

```
903      000020      BIT04= 20
904      000010      BIT03= 10
905      000004      BIT02= 4
906      000002      BIT01= 2
907      000001      BIT00= 1
908      .EQUIV BIT09,BIT9
909      .EQUIV BIT08,BIT8
910      .EQUIV BIT07,BIT7
911      .EQUIV BIT06,BIT6
912      .EQUIV BIT05,BIT5
913      .EQUIV BIT04,BIT4
914      .EQUIV BIT03,BIT3
915      .EQUIV BIT02,BIT2
916      .EQUIV BIT01,BIT1
917      .EQUIV BIT00,BIT0
918
919      ;*BASIC "CPU" TRAP VECTOR ADDRESSES
920      000004      ERRVEC= 4          ;; TIME OUT AND OTHER ERRORS
921      000010      RESVEC= 10         ;; RESERVED AND ILLEGAL INSTRUCTIONS
922      000014      TBITVEC=14        ;; "T" BIT
923      000014      TRTVEC= 14        ;; TRACE TRAP
924      000014      BPTVEC= 14        ;; BREAKPOINT TRAP (BPT)
925      000020      IOTVEC= 20        ;; INPUT/OUTPUT TRAP (IOT) **SCOPE**
926      000024      PWRVEC= 24        ;; POWER FAIL
927      000030      EMTVEC= 30        ;; EMULATOR TRAP (EMT) **ERROR**
928      000034      TRAPVEC=34        ;; "TRAP" TRAP
929      000060      TKVEC= 60         ;; TTY KEYBOARD VECTOR
930      000064      TPVEC= 64         ;; TTY PRINTER VECTOR
931      000240      PIRVEC=240        ;; PROGRAM INTERRUPT REQUEST VECTOR
932      .SBTTL FPP REGISTER DEFINITIONS
933      000000      AC0      =%0
934      000001      AC1      =%1
935      000002      AC2      =%2
936      000003      AC3      =%3
937      000004      AC4      =%4
938      000005      AC5      =%5
939      000006      AC6      =%6
940      000007      AC7      =%7
941
942      .SBTTL TRAP CATCHER
943
944      000000      . =0
945      ;*ALL UNUSED LOCATIONS FROM 4 - 776 CONTAIN A ". +2,HALT"
946      ;*SEQUENCE TO CATCH ILLEGAL TRAPS AND INTERRUPTS
947      ;*LOCATION 0 CONTAINS 0 TO CATCH IMPROPERLY LOADED VECTORS
948      . =174
949      000174      000000      DISPREG: .WORD 0          ;; SOFTWARE DISPLAY REGISTER
950      000176      000000      SWREG:   .WORD 0          ;; SOFTWARE SWITCH REGISTER
951
952      000200      000137      006106      .SBTTL STARTING ADDRESS(ES)
953                                          JMP      @#START ;; JUMP TO STARTING ADDRESS OF PROGRAM
```



953  
 954  
 955  
 956  
 957  
 958  
 959 001100  
 960 001100 001100  
 961 001100 000000  
 962 001102 000  
 963 001103 000  
 964 001104 000000  
 965 001106 000000  
 966 001110 000000  
 967 001112 000000  
 968 001114 000  
 969 001115 001  
 970 001116 000000  
 971 001120 000000  
 972 001122 000000  
 973 001124 000000  
 974 001126 000000  
 975 001130 000000  
 976 001132 000000  
 977 001134 000  
 978 001135 000  
 979 001136 000000  
 980 001140 177570  
 981 001142 177570  
 982 001144 177560  
 983 001146 177562  
 984 001150 177564  
 985 001152 177566  
 986 001154 000  
 987 001155 002  
 988 001156 012  
 989 001157 000  
 990 001160 000000  
 991  
 992 001162 000000  
 993 001164 000000  
 994 001166 000000  
 995 001170 000000  
 996 001172 000000  
 997 001174 000000  
 998 001176 000000  
 999 001200 000000  
 1000 001202 000000  
 1001 001204 000000  
 1002 001206 000000  
 1003 001210 000000  
 1004 001212 000000  
 1005 001214 000000  
 1006 001216 000000  
 1007 001220 000000  
 1008 001222 000000

.SBTTL COMMON TAGS

;; \*\*\*\*\*  
 ;\*THIS TABLE CONTAINS VARIOUS COMMON STORAGE LOCATIONS  
 ;\*USED IN THE PROGRAM.

. =1100  
 SCMTAG: . =1100 ;: START OF COMMON TAGS  
 STSTNM: . WORD 0 ;: CONTAINS THE TEST NUMBER  
 SERFLG: . BYTE 0 ;: CONTAINS ERROR FLAG  
 SICNT: . WORD 0 ;: CONTAINS SUBTEST ITERATION COUNT  
 SLPADR: . WORD 0 ;: CONTAINS SCOPE LOOP ADDRESS  
 SLPERR: . WORD 0 ;: CONTAINS SCOPE RETURN FOR ERRORS  
 SERTTL: . WORD 0 ;: CONTAINS TOTAL ERRORS DETECTED  
 SITEMB: . BYTE 0 ;: CONTAINS ITEM CONTROL BYTE  
 SERMAX: . BYTE 1 ;: CONTAINS MAX. ERRORS PER TEST  
 SERRPC: . WORD 0 ;: CONTAINS PC OF LAST ERROR INSTRUCTION  
 SGDADR: . WORD 0 ;: CONTAINS ADDRESS OF 'GOOD' DATA  
 SBDADR: . WORD 0 ;: CONTAINS ADDRESS OF 'BAD' DATA  
 SGDDAT: . WORD 0 ;: CONTAINS 'GOOD' DATA  
 SBDDAT: . WORD 0 ;: CONTAINS 'BAD' DATA  
 . WORD 0 ;: RESERVED--NOT TO BE USED  
 SAUTOB: . BYTE 0 ;: AUTOMATIC MODE INDICATOR  
 SINTAG: . BYTE 0 ;: INTERRUPT MODE INDICATOR  
 . WORD 0  
 SWR: . WORD DSWR ;: ADDRESS OF SWITCH REGISTER  
 DISPLAY: . WORD DDISP ;: ADDRESS OF DISPLAY REGISTER  
 STKS: 177560 ;: TTY KBD STATUS  
 STKB: 177562 ;: TTY KBD BUFFER  
 STPS: 177564 ;: TTY PRINTER STATUS REG. ADDRESS  
 STPB: 177566 ;: TTY PRINTER BUFFER REG. ADDRESS  
 SNULL: . BYTE 0 ;: CONTAINS NULL CHARACTER FOR FILLS  
 SFILLS: . BYTE 2 ;: CONTAINS # OF FILLER CHARACTERS REQUIRED  
 SFILLC: . BYTE 12 ;: INSERT FILL CHARS. AFTER A "LINE FEED"  
 STPFLG: . BYTE 0 ;: "TERMINAL AVAILABLE" FLAG (BIT<07>=0=YES)  
 SREGAD: . WORD 0 ;: CONTAINS THE ADDRESS FROM  
 ;: WHICH (SREGO) WAS OBTAINED  
 SREGO: . WORD 0 ;: CONTAINS ((SREGAD)+0)  
 SREG1: . WORD 0 ;: CONTAINS ((SREGAD)+2)  
 SREG2: . WORD 0 ;: CONTAINS ((SREGAD)+4)  
 SREG3: . WORD 0 ;: CONTAINS ((SREGAD)+6)  
 SREG4: . WORD 0 ;: CONTAINS ((SREGAD)+10)  
 SREG5: . WORD 0 ;: CONTAINS ((SREGAD)+12)  
 SREG6: . WORD 0 ;: CONTAINS ((SREGAD)+14)  
 SREG7: . WORD 0 ;: CONTAINS ((SREGAD)+16)  
 SREG10: . WORD 0 ;: CONTAINS ((SREGAD)+20)  
 SREG11: . WORD 0 ;: CONTAINS ((SREGAD)+22)  
 SREG12: . WORD 0 ;: CONTAINS ((SREGAD)+24)  
 SREG13: . WORD 0 ;: CONTAINS ((SREGAD)+26)  
 SREG14: . WORD 0 ;: CONTAINS ((SREGAD)+30)  
 SREG15: . WORD 0 ;: CONTAINS ((SREGAD)+32)  
 SREG16: . WORD 0 ;: CONTAINS ((SREGAD)+34)  
 SREG17: . WORD 0 ;: CONTAINS ((SREGAD)+36)  
 SREG20: . WORD 0 ;: CONTAINS ((SREGAD)+40)

1009	001224	000000	\$REG21:	. WORD	0	:: CONTAINS ((\$REGAD)+42)
1010	001226	000000	\$REG22:	. WORD	0	:: CONTAINS ((\$REGAD)+44)
1011	001230	000000	\$REG23:	. WORD	0	:: CONTAINS ((\$REGAD)+46)
1012	001232	000000	STMP0:	. WORD	0	:: USER DEFINED
1013	001234	000000	STMP1:	. WORD	0	:: USER DEFINED
1014	001236	000000	STMP2:	. WORD	0	:: USER DEFINED
1015	001240	000000	STMP3:	. WORD	0	:: USER DEFINED
1016	001242	000000	STMP4:	. WORD	0	:: USER DEFINED
1017	001244	000000	STMP5:	. WORD	0	:: USER DEFINED
1018	001246	000000	STMP6:	. WORD	0	:: USER DEFINED
1019	001250	000000	STMP7:	. WORD	0	:: USER DEFINED
1020	001252	000000	STMP10:	. WORD	0	:: USER DEFINED
1021	001254	000000	STMP11:	. WORD	0	:: USER DEFINED
1022	001256	000000	STMP12:	. WORD	0	:: USER DEFINED
1023	001260	000000	STMP13:	. WORD	0	:: USER DEFINED
1024	001262	000000	STMP14:	. WORD	0	:: USER DEFINED
1025	001264	000000	STMP15:	. WORD	0	:: USER DEFINED
1026	001266	000000	STMP16:	. WORD	0	:: USER DEFINED
1027	001270	000000	STMP17:	. WORD	0	:: USER DEFINED
1028	001272	000000	STMP20:	. WORD	0	:: USER DEFINED
1029	001274	000000	STMP21:	. WORD	0	:: USER DEFINED
1030	001276	000000	STMP22:	. WORD	0	:: USER DEFINED
1031	001300	000000	STMP23:	. WORD	0	:: USER DEFINED
1032	001302	000000	STIMES:	0		:: MAX. NUMBER OF ITERATIONS
1033	001304	000000	SESCAPE:	0		:: ESCAPE ON ERROR ADDRESS
1034	001306	177607	\$BELL:	. ASCIZ	<207><377><377>	:: CODE FOR BELL
1035	001312	077	\$QUES:	. ASCII	/?/	:: QUESTION MARK
1036	001313	015	\$CRLF:	. ASCII	<15>	:: CARRIAGE RETURN
1037	001314	000012	\$LF:	. ASCIZ	<12>	:: LINE FEED
1038			; *****			
1039			.SBTTL APT MAILBOX-ETABLE			
1040			; *****			
1041			.EVEN			
1042			.SMAIL:			
1043	001316		; APT MAILBOX			
1044	001316	000000	\$MSGTY:	. WORD	AMSGTY	:: MESSAGE TYPE CODE
1045	001320	000000	\$FATAL:	. WORD	AFATAL	:: FATAL ERROR NUMBER
1046	001322	000000	\$TESTN:	. WORD	ATESTN	:: TEST NUMBER
1047	001324	000000	\$PASS:	. WORD	APASS	:: PASS COUNT
1048	001326	000000	\$DEVCT:	. WORD	ADEVCT	:: DEVICE COUNT
1049	001330	000000	\$UNIT:	. WORD	AUNIT	:: I/O UNIT NUMBER
1050	001332	000000	\$MSGAD:	. WORD	AMSGAD	:: MESSAGE ADDRESS
1051	001334	000000	\$MSGLG:	. WORD	AMSGLG	:: MESSAGE LENGTH
1052	001336		; APT ENVIRONMENT TABLE			
1053	001336	000	\$ENV:	. BYTE	AENV	:: ENVIRONMENT BYTE
1054	001337	000	\$ENVM:	. BYTE	AENVM	:: ENVIRONMENT MODE BITS
1055	001340	000000	\$SWREG:	. WORD	ASWREG	:: APT SWITCH REGISTER
1056	001342	000000	\$USWR:	. WORD	AUSWR	:: USER SWITCHES
1057	001344	000000	\$CPUOP:	. WORD	ACPUOP	:: CPU TYPE, OPTIONS
1058			; * BIT 15-11=CPU TYPE			
1059			; * 11/04=01, 11/05=02, 11/20=03, 11/40=04, 11/45=05			
1060			; * 11/70=06, PDQ=07, Q=10			
1061			; * BIT 10=REAL TIME CLOCK			
1062			; * BIT 9=FLOATING POINT PROCESSOR			
1063			; * BIT 8=MEMORY MANAGEMENT			
1064	001346	000	\$MAMS1:	. BYTE	AMAMS1	:: HIGH ADDRESS, M. S. BYTE



```
1065 001347 000 SMTYP1: . BYTE AMTYP1 ;; MEM. TYPE, BLK#1
1066 ;* MEM. TYPE BYTE -- (HIGH BYTE)
1067 ;* 900 NSEC CORE=001
1068 ;* 300 NSEC BIPOLAR=002
1069 ;* 500 NSEC MOS=003
1070 001350 000000 SMADR1: . WORD AMADR1 ;; HIGH ADDRESS, BLK#1
1071 ;* MEM. LAST ADDR. =3 BYTES, THIS WORD AND LOW OF "TYPE" ABOVE
1072 001352 000 SMAMS2: . BYTE AMAMS2 ;; HIGH ADDRESS, M. S. BYTE
1073 001353 000 SMTYP2: . BYTE AMTYP2 ;; MEM. TYPE, BLK#2
1074 001354 000000 SMADR2: . WORD AMADR2 ;; MEM. LAST ADDRESS, BLK#2
1075 001356 000 SMAMS3: . BYTE AMAMS3 ;; HIGH ADDRESS, M. S. BYTE
1076 001357 000 SMTYP3: . BYTE AMTYP3 ;; MEM. TYPE, BLK#3
1077 001360 000000 SMADR3: . WORD AMADR3 ;; MEM. LAST ADDRESS, BLK#3
1078 001362 000 SMAMS4: . BYTE AMAMS4 ;; HIGH ADDRESS, M. S. BYTE
1079 001363 000 SMTYP4: . BYTE AMTYP4 ;; MEM. TYPE, BLK#4
1080 001364 000000 SMADR4: . WORD AMADR4 ;; MEM. LAST ADDRESS, BLK#4
1081 001366 000000 SVECT1: . WORD AVECT1 ;; INTERRUPT VECTOR#1, BUS PRIORITY#1
1082 001370 000000 SVECT2: . WORD AVECT2 ;; INTERRUPT VECTOR#2 BUS PRIORITY#2
1083 001372 000000 SBASE: . WORD ABASE ;; BASE ADDRESS OF EQUIPMENT UNDER TEST
1084 001374 000000 SDEVN: . WORD ADEVN ;; DEVICE MAP
1085 001376 000000 SCDW1: . WORD ACDW1 ;; CONTROLLER DESCRIPTION WORD#1
1086 001400 000000 SCDW2: . WORD ACDW2 ;; CONTROLLER DESCRIPTION WORD#2
1087 001402 000000 SDDW0: . WORD ADDW0 ;; DEVICE DESCRIPTOR WORD#0
1088 001404 000000 SDDW1: . WORD ADDW1 ;; DEVICE DESCRIPTOR WORD#1
1089 001406 000000 SDDW2: . WORD ADDW2 ;; DEVICE DESCRIPTOR WORD#2
1090 001410 000000 SDDW3: . WORD ADDW3 ;; DEVICE DESCRIPTOR WORD#3
1091 001412 000000 SDDW4: . WORD ADDW4 ;; DEVICE DESCRIPTOR WORD#4
1092 001414 000000 SDDW5: . WORD ADDW5 ;; DEVICE DESCRIPTOR WORD#5
1093 001416 000000 SDDW6: . WORD ADDW6 ;; DEVICE DESCRIPTOR WORD#6
1094 001420 000000 SDDW7: . WORD ADDW7 ;; DEVICE DESCRIPTOR WORD#7
1095 001422 000000 SDDW8: . WORD ADDW8 ;; DEVICE DESCRIPTOR WORD#8
1096 001424 000000 SDDW9: . WORD ADDW9 ;; DEVICE DESCRIPTOR WORD#9
1097 001426 000000 SDDW10: . WORD ADDW10 ;; DEVICE DESCRIPTOR WORD#10
1098 001430 000000 SDDW11: . WORD ADDW11 ;; DEVICE DESCRIPTOR WORD#11
1099 001432 000000 SDDW12: . WORD ADDW12 ;; DEVICE DESCRIPTOR WORD#12
1100 001434 000000 SDDW13: . WORD ADDW13 ;; DEVICE DESCRIPTOR WORD#13
1101 001436 000000 SDDW14: . WORD ADDW14 ;; DEVICE DESCRIPTOR WORD#14
1102 001440 000000 SDDW15: . WORD ADDW15 ;; DEVICE DESCRIPTOR WORD#15
1103
1104
1105 001442 SETEND:
1106
```

Line No.	Item No.	EM	DH	DT	DF
1107					
1108					
1109					
1110					
1111					
1112					
1113					
1114					
1115					
1116					
1117					
1118					
1119					
1120					
1121	001442				
1122					
1123	001442	043122	067312	071016	
1124	001450	070450			
1125					
1126	001452	043161	067365	071036	
1127	001460	070457			
1128					
1129	001462	043214	067455	071060	
1130	001470	070457			
1131					
1132	001472	043247	067545	071102	
1133	001500	070457			
1134					
1135	001502	043307	067634	071124	
1136	001510	070467			
1137					
1138	001512	043331	067634	071152	
1139	001520	070501			
1140					
1141	001522	043435	067545	071102	
1142	001530	070457			
1143					
1144	001532	043476	067634	071124	
1145	001540	070467			
1146					
1147	001542	043521	067545	071102	
1148	001550	070457			
1149					
1150	001552	043562	067634	071124	
1151	001560	070505			
1152					
1153	001562	043605	067675	071152	
1154	001570	070501			
1155					
1156	001572	043605	067675	071152	
1157	001600	070501			
1158					
1159	001602	043641	067634	071124	
1160	001610	070505			
1161					
1162	001612	043662	067735	071164	

.SBTTL ERROR POINTER TABLE

;\*THIS TABLE CONTAINS THE INFORMATION FOR EACH ERROR THAT CAN OCCUR.  
 ;\*THE INFORMATION IS OBTAINED BY USING THE INDEX NUMBER FOUND IN  
 ;\*LOCATION SITEMB. THIS NUMBER INDICATES WHICH ITEM IN THE TABLE IS PERTINENT.  
 ;\*NOTE1: IF SITEMB IS 0 THE ONLY PERTINENT DATA IS (SERRPC).  
 ;\*NOTE2: EACH ITEM IN THE TABLE CONTAINS 4 POINTERS EXPLAINED AS FOLLOWS:

;\* EM ;:POINTS TO THE ERROR MESSAGE  
 ;\* DH ;:POINTS TO THE DATA HEADER  
 ;\* DT ;:POINTS TO THE DATA  
 ;\* DF ;:POINTS TO THE DATA FORMAT

SERRTB:  
 ;ITEM 1 .WORD EM1, DH1, DT1, DF1  
 ;ITEM 2 .WORD EM2, DH2, DT2, DF2  
 ;ITEM 3 .WORD EM3, DH3, DT3, DF3  
 ;ITEM 4 .WORD EM4, DH4, DT4, DF4  
 ;ITEM 5 .WORD EM5, DH5, DT5, DF5  
 ;ITEM 6 .WORD EM6, DH6, DT6, DF6  
 ;ITEM 7 .WORD EM7, DH7, DT7, DF7  
 ;ITEM 10 .WORD EM10, DH10, DT10, DF10  
 ;ITEM 11 .WORD EM11, DH11, DT11, DF11  
 ;ITEM 12 .WORD EM12, DH12, DT12, DF12  
 ;ITEM 13 .WORD EM13, DH13, DT13, DF13  
 ;ITEM 14 .WORD EM14, DH14, DT14, DF14  
 ;ITEM 15 .WORD EM15, DH15, DT15, DF15  
 ;ITEM 16 .WORD EM16, DH16, DT16, DF16



1163	001620	070457					
1164					: ITEM 17		
1165	001622	043711	067675	071152	. WORD	EM17, DH17, DT17, DF17	
1166	001630	070501					
1167					: ITEM 20		
1168	001632	043747	067545	071164	. WORD	EM20, DH20, DT20, DF20	
1169	001640	070457					
1170					: ITEM 21		
1171	001642	044010	067634	071124	. WORD	EM21, DH21, DT21, DF21	
1172	001650	070505					
1173					: ITEM 22		
1174	001652	044010	067634	071124	. WORD	EM22, DH22, DT22, DF22	
1175	001660	070505					
1176					: ITEM 23		
1177	001662	044033	067675	071152	. WORD	EM23, DH23, DT23, DF23	
1178	001670	070501					
1179					: ITEM 24		
1180	001672	044072	067545	071164	. WORD	EM24, DH24, DT24, DF24	
1181	001700	070457					
1182					: ITEM 25		
1183	001702	044134	067634	071124	. WORD	EM25, DH25, DT25, DF25	
1184	001710	070505					
1185					: ITEM 26		
1186	001712	044160	067675	071152	. WORD	EM26, DH26, DT26, DF26	
1187	001720	070501					
1188					: ITEM 27		
1189	001722	044217	067545	071164	. WORD	EM27, DH27, DT27, DF27	
1190	001730	070457					
1191					: ITEM 30		
1192	001732	044261	067634	071124	. WORD	EM30, DH30, DT30, DF30	
1193	001740	070505					
1194					: ITEM 31		
1195	001742	044305	067675	071152	. WORD	EM31, DH31, DT31, DF31	
1196	001750	070501					
1197					: ITEM 32		
1198	001752	044343	067545	071164	. WORD	EM32, DH32, DT32, DF32	
1199	001760	070457					
1200					: ITEM 33		
1201	001762	044404	067634	071124	. WORD	EM33, DH33, DT33, DF33	
1202	001770	070505					
1203					: ITEM 34		
1204	001772	044427	067675	071152	. WORD	EM34, DH34, DT34, DF34	
1205	002000	070501					
1206					: ITEM 35		
1207	002002	044466	067545	071164	. WORD	EM35, DH35, DT35, DF35	
1208	002010	070457					
1209					: ITEM 36		
1210	002012	044530	067634	071124	. WORD	EM36, DH36, DT36, DF36	
1211	002020	070505					
1212					: ITEM 37		
1213	002022	044554	070024	071206	. WORD	EM37, DH37, DT37, DF37	
1214	002030	070517					
1215					: ITEM 40		
1216	002032	044600	070024	071206	. WORD	EM40, DH40, DT40, DF40	
1217	002040	070517					
1218					: ITEM 41		

1219	002042	044626	070114	071252	. WORD	EM41, DH41, DT41, DF41
1220	002050	070540				
1221					; ITEM 42	
1222	002052	044654	070024	071206	. WORD	EM42, DH42, DT42, DF42
1223	002060	070517				
1224					; ITEM 43	
1225	002062	044733	070024	071206	. WORD	EM43, DH43, DT43, DF43
1226	002070	070517				
1227					; ITEM 44	
1228	002072	045037	070024	071206	. WORD	EM44, DH44, DT44, DF44
1229	002100	070517				
1230					; ITEM 45	
1231	002102	045137	070024	071206	. WORD	EM45, DH45, DT45, DF45
1232	002110	070517				
1233					; ITEM 46	
1234	002112	045215	070024	071206	. WORD	EM46, DH46, DT46, DF46
1235	002120	070517				
1236					; ITEM 47	
1237	002122	045321	070024	071206	. WORD	EM47, DH47, DT47, DF47
1238	002130	070517				
1239					; ITEM 50	
1240	002132	045421	070024	071206	. WORD	EM50, DH50, DT50, DF50
1241	002140	070517				
1242					; ITEM 51	
1243	002142	045535	070024	071206	. WORD	EM51, DH51, DT51, DF51
1244	002150	070517				
1245					; ITEM 52	
1246	002152	045561	070024	071206	. WORD	EM52, DH52, DT52, DF52
1247	002160	070517				
1248					; ITEM 53	
1249	002162	045605	070114	071252	. WORD	EM53, DH53, DT53, DF53
1250	002170	070517				
1251					; ITEM 54	
1252	002172	045631	070024	071206	. WORD	EM54, DH54, DT54, DF54
1253	002200	070517				
1254					; ITEM 55	
1255	002202	045710	070024	071206	. WORD	EM55, DH55, DT55, DF55
1256	002210	070517				
1257					; ITEM 56	
1258	002212	046036	070024	071206	. WORD	EM56, DH56, DT56, DF56
1259	002220	070517				
1260					; ITEM 57	
1261	002222	046140	070024	071206	. WORD	EM57, DH57, DT57, DF57
1262	002230	070517				
1263					; ITEM 60	
1264	002232	046250	070024	071206	. WORD	EM60, DH60, DT60, DF60
1265	002240	070517				
1266					; ITEM 61	
1267	002242	046360	070024	071206	. WORD	EM61, DH61, DT61, DF61
1268	002250	070517				
1269					; ITEM 62	
1270	002252	046462	067365	071164	. WORD	EM62, DH62, DT62, DF62
1271	002260	070457				
1272					; ITEM 63	
1273	002262	046566	067455	071164	. WORD	EM63, DH63, DT63, DF63
1274	002270	070457				



1275					; ITEM 64	
1276	002272	046614	067634	071124	. WORD	EM64, DH64, DT64, DF64
1277	002300	070467				
1278					; ITEM 65	
1279	002302	046670	067365	071164	. WORD	EM65, DH65, DT65, DF65
1280	002310	070457				
1281					; ITEM 66	
1282	002312	046713	067545	071102	. WORD	EM66, DH66, DT66, DF66
1283	002320	070457				
1284					; ITEM 67	
1285	002322	046752	067365	071102	. WORD	EM67, DH67, DT67, DF67
1286	002330	070457				
1287					; ITEM 70	
1288	002332	047053	067455	071102	. WORD	EM70, DH70, DT70, DF70
1289	002340	070457				
1290					; ITEM 71	
1291	002342	047144	067634	071316	. WORD	EM71, DH71, DT71, DF71
1292	002350	070561				
1293					; ITEM 72	
1294	002352	047163	067365	071102	. WORD	EM72, DH72, DT72, DF72
1295	002360	070457				
1296					; ITEM 73	
1297	002362	047244	067634	071352	. WORD	EM73, DH73, DT73, DF73
1298	002370	070561				
1299					; ITEM 74	
1300	002372	047265	067545	071102	. WORD	EM74, DH74, DT74, DF74
1301	002400	070457				
1302					; ITEM 75	
1303	002402	047307	067365	071036	. WORD	EM75, DH75, DT75, DF75
1304	002410	070457				
1305					; ITEM 76	
1306	002412	047332	067675	071152	. WORD	EM76, DH76, DT76, DF76
1307	002420	070501				
1308					; ITEM 77	
1309	002422	047373	067634	071352	. WORD	EM77, DH77, DT77, DF77
1310	002430	070561				
1311					; ITEM 100	
1312	002432	047415	067545	071102	. WORD	EM100, DH100, DT100, DF100
1313	002440	070457				
1314					; ITEM 101	
1315	002442	047440	067365	071036	. WORD	EM101, DH101, DT101, DF101
1316	002450	070457				
1317					; ITEM 102	
1318	002452	047464	067675	071152	. WORD	EM102, DH102, DT102, DF102
1319	002460	070501				
1320					; ITEM 103	
1321	002462	047525	067634	071352	. WORD	EM103, DH103, DT103, DF103
1322	002470	070561				
1323					; ITEM 104	
1324	002472	047547	067545	071102	. WORD	EM104, DH104, DT104, DF104
1325	002500	070457				
1326					; ITEM 105	
1327	002502	047572	067365	071036	. WORD	EM105, DH105, DT105, DF105
1328	002510	070457				
1329					; ITEM 106	
1330	002512	047616	067675	071152	. WORD	EM106, DH106, DT106, DF106

1331	002520	070501				
1332					; ITEM 107	
1333	002522	047204	067675	071152	. WORD	EM107, DH107, DT107, DF107
1334	002530	070501				
1335					; ITEM 110	
1336	002532	047660	067634	071352	. WORD	EM110, DH110, DT110, DF110
1337	002540	070561				
1338					; ITEM 111	
1339	002542	047703	067545	071102	. WORD	EM111, DH111, DT111, DF111
1340	002550	070457				
1341					; ITEM 112	
1342	002552	047727	067365	071036	. WORD	EM112, DH112, DT112, DF112
1343	002560	070457				
1344					; ITEM 113	
1345	002562	047754	067675	071152	. WORD	EM113, DH113, DT113, DF113
1346	002570	070501				
1347					; ITEM 114	
1348	002572	050016	067634	071352	. WORD	EM114, DH114, DT114, DF114
1349	002600	070561				
1350					; ITEM 115	
1351	002602	050041	067545	071102	. WORD	EM115, DH115, DT115, DF115
1352	002610	070457				
1353					; ITEM 116	
1354	002612	050065	067775	071036	. WORD	EM116, DH116, DT116, DF116
1355	002620	070457				
1356					; ITEM 117	
1357	002622	050112	067675	071152	. WORD	EM117, DH117, DT117, DF117
1358	002630	070501				
1359					; ITEM 120	
1360	002632	050153	067634	071352	. WORD	EM120, DH120, DT120, DF120
1361	002640	070561				
1362					; ITEM 121	
1363	002642	050175	067545	071102	. WORD	EM121, DH121, DT121, DF121
1364	002650	070457				
1365					; ITEM 122	
1366	002652	050220	067365	071036	. WORD	EM122, DH122, DT122, DF122
1367	002660	070457				
1368					; ITEM 123	
1369	002662	050244	067675	071152	. WORD	EM123, DH123, DT123, DF123
1370	002670	070501				
1371					; ITEM 124	
1372	002672	050306	067634	071352	. WORD	EM124, DH124, DT124, DF124
1373	002700	070561				
1374					; ITEM 125	
1375	002702	050331	067545	071102	. WORD	EM125, DH125, DT125, DF125
1376	002710	070457				
1377					; ITEM 126	
1378	002712	050355	067365	071036	. WORD	EM126, DH126, DT126, DF126
1379	002720	070457				
1380					; ITEM 127	
1381	002722	050402	067675	071152	. WORD	EM127, DH127, DT127, DF127
1382	002730	070501				
1383					; ITEM 130	
1384	002732	050444	067634	071352	. WORD	EM130, DH130, DT130, DF130
1385	002740	070561				
1386					; ITEM 131	



1387	002742	050467	067365	071036	. WORD	EM131, DH131, DT131, DF131
1388	002750	070457				
1389					; ITEM 132	
1390	002752	050514	067575	071152	. WORD	EM132, DH132, DT132, DF132
1391	002760	070501				
1392					; ITEM 133	
1393	002762	050557	067634	071352	. WORD	EM133, DH133, DT133, DF133
1394	002770	070561				
1395					; ITEM 134	
1396	002772	050603	067365	071036	. WORD	EM134, DH134, DT134, DF134
1397	003000	070457				
1398					; ITEM 135	
1399	003002	050631	067634	071124	. WORD	EM135, DH135, DT135, DF135
1400	003010	070505				
1401					; ITEM 136	
1402	003012	050704	067634	071124	. WORD	EM136, DH136, DT136, DF136
1403	003020	070505				
1404					; ITEM 137	
1405	003022	050723	067365	071164	. WORD	EM137, DH137, DT137, DF137
1406	003030	070457				
1407					; ITEM 140	
1408	003032	050744	067634	071124	. WORD	EM140, DH140, DT140, DF140
1409	003040	070505				
1410					; ITEM 141	
1411	003042	050765	067545	071102	. WORD	EM141, DH141, DT141, DF141
1412	003050	070457				
1413					; ITEM 142	
1414	003052	051034	067365	071102	. WORD	EM142, DH142, DT142, DF142
1415	003060	070457				
1416					; ITEM 143	
1417	003062	051057	067634	071124	. WORD	EM143, DH143, DT143, DF143
1418	003070	070505				
1419					; ITEM 144	
1420	003072	051101	067545	071102	. WORD	EM144, DH144, DT144, DF144
1421	003100	070457				
1422					; ITEM 145	
1423	003102	051151	067365	071102	. WORD	EM145, DH145, DT145, DF145
1424	003110	070457				
1425					; ITEM 146	
1426	003112	051175	067634	071124	. WORD	EM146, DH146, DT146, DF146
1427	003120	070505				
1428					; ITEM 147	
1429	003122	051217	067545	071102	. WORD	EM147, DH147, DT147, DF147
1430	003130	070457				
1431					; ITEM 150	
1432	003132	051267	067365	071102	. WORD	EM150, DH150, DT150, DF150
1433	003140	070457				
1434					; ITEM 151	
1435	003142	051313	067634	071124	. WORD	EM151, DH151, DT151, DF151
1436	003150	070505				
1437					; ITEM 152	
1438	003152	051336	067545	071102	. WORD	EM152, DH152, DT152, DF152
1439	003160	070457				
1440					; ITEM 153	
1441	003162	051407	067365	071102	. WORD	EM153, DH153, DT153, DF153
1442	003170	070457				

1443					; ITEM 154	
1444	003172	051434	067634	071124	. WORD	EM154, DH154, DT154, DF154
1445	003200	070505				
1446					; ITEM 155	
1447	003202	051457	067545	071102	. WORD	EM155, DH155, DT155, DF155
1448	003210	070457				
1449					; ITEM 156	
1450	003212	051530	067365	071102	. WORD	EM156, DH156, DT156, DF156
1451	003220	070457				
1452					; ITEM 157	
1453	003222	051555	067634	071124	. WORD	EM157, DH157, DT157, DF157
1454	003230	070505				
1455					; ITEM 160	
1456	003232	051577	067545	071102	. WORD	EM160, DH160, DT160, DF160
1457	003240	070457				
1458					; ITEM 161	
1459	003242	051671	067365	071102	. WORD	EM161, DH161, DT161, DF161
1460	003250	070457				
1461					; ITEM 162	
1462	003252	051715	067634	071124	. WORD	EM162, DH162, DT162, DF162
1463	003260	070505				
1464					; ITEM 163	
1465	003262	051740	067365	071102	. WORD	EM163, DH163, DT163, DF163
1466	003270	070457				
1467					; ITEM 164	
1468	003272	051765	067735	071102	. WORD	EM164, DH164, DT164, DF164
1469	003300	070457				
1470					; ITEM 165	
1471	003302	052563	070024	071206	. WORD	EM165, DH165, DT165, DF165
1472	003310	070517				
1473					; ITEM 166	
1474	003312	052604	070024	071206	. WORD	EM166, DH166, DT166, DF166
1475	003320	070517				
1476					; ITEM 167	
1477	003322	052625	070024	071206	. WORD	EM167, DH167, DT167, DF167
1478	003330	070517				
1479					; ITEM 170	
1480	003332	052646	070024	071206	. WORD	EM170, DH170, DT170, DF170
1481	003340	070517				
1482					; ITEM 171	
1483	003342	052671	070024	071206	. WORD	EM171, DH171, DT171, DF171
1484	003350	070517				
1485					; ITEM 172	
1486	003352	052714	070024	071206	. WORD	EM172, DH172, DT172, DF172
1487	003360	070517				
1488					; ITEM 173	
1489	003362	052737	070114	071252	. WORD	EM173, DH173, DT173, DF173
1490	003370	070540				
1491					; ITEM 174	
1492	003372	052762	070114	071252	. WORD	EM174, DH174, DT174, DF174
1493	003400	070540				
1494					; ITEM 175	
1495	003402	053005	070114	071252	. WORD	EM175, DH175, DT175, DF175
1496	003410	070540				
1497					; ITEM 176	
1498	003412	047076	067365	071102	. WORD	EM176, DH176, DT176, DF176



1499	003420	070457				
1500					; ITEM 177	
1501	003422	047121	067455	071102	. WORD	EM177, DH177, DT177, DF177
1502	003430	070457				
1503					; ITEM 200	
1504	003432	053030	070024	071206	. WORD	EM200, DH200, DT200, DF200
1505	003440	070517				
1506					; ITEM 201	
1507	003442	053105	070024	071206	. WORD	EM201, DH201, DT201, DF201
1508	003450	070517				
1509					; ITEM 202	
1510	003452	053206	070024	071206	. WORD	EM202, DH202, DT202, DF202
1511	003460	070517				
1512					; ITEM 203	
1513	003462	053307	070024	071206	. WORD	EM203, DH203, DT203, DF203
1514	003470	070517				
1515					; ITEM 204	
1516	003472	053467	070024	071206	. WORD	EM204, DH204, DT204, DF204
1517	003500	070517				
1518					; ITEM 205	
1519	003502	053544	070024	071206	. WORD	EM205, DH205, DT205, DF205
1520	003510	070517				
1521					; ITEM 206	
1522	003512	053643	070024	071206	. WORD	EM206, DH206, DT206, DF206
1523	003520	070517				
1524					; ITEM 207	
1525	003522	053744	070024	071206	. WORD	EM207, DH207, DT207, DF207
1526	003530	070517				
1527					; ITEM 210	
1528	003532	054043	070024	071206	. WORD	EM210, DH210, DT210, DF210
1529	003540	070517				
1530					; ITEM 211	
1531	003542	054142	070024	071206	. WORD	EM211, DH211, DT211, DF211
1532	003550	070517				
1533					; ITEM 212	
1534	003552	054250	070024	071206	. WORD	EM212, DH212, DT212, DF212
1535	003560	070517				
1536					; ITEM 213	
1537	003562	054351	070024	071206	. WORD	EM213, DH213, DT213, DF213
1538	003570	070517				
1539					; ITEM 214	
1540	003572	054476	070024	071206	. WORD	EM214, DH214, DT214, DF214
1541	003600	070517				
1542					; ITEM 215	
1543	003602	052041	067735	071102	. WORD	EM215, DH215, DT215, DF215
1544	003610	070457				
1545					; ITEM 216	
1546	003612	052172	067634	071124	. WORD	EM216, DH216, DT216, DF216
1547	003620	070505				
1548					; ITEM 217	
1549	003622	052214	067545	071102	. WORD	EM217, DH217, DT217, DF217
1550	003630	070457				
1551					; ITEM 220	
1552	003632	052264	067365	071102	. WORD	EM220, DH220, DT220, DF220
1553	003640	070457				
1554					; ITEM 221	

1555	003642	052310	067735	071102	. WORD	EM221, DH221, DT221, DF221
1556	003650	070457				
1557					; ITEM 222	
1558	003652	052442	067634	071124	. WORD	EM222, DH222, DT222, DF222
1559	003660	070505				
1560					; ITEM 223	
1561	003662	052465	067545	071102	. WORD	EM223, DH223, DT223, DF223
1562	003670	070457				
1563					; ITEM 224	
1564	003672	052536	067365	071102	. WORD	EM224, DH224, DT224, DF224
1565	003700	070457				
1566					; ITEM 225	
1567	003702	054623	067545	071102	. WORD	EM225, DH225, DT225, DF225
1568	003710	070576				
1569					; ITEM 226	
1570	003712	054646	067365	071102	. WORD	EM226, DH226, DT226, DF226
1571	003720	070576				
1572					; ITEM 227	
1573	003722	054672	070211	071152	. WORD	EM227, DH227, DT227, DF227
1574	003730	070606				
1575					; ITEM 230	
1576	003732	054722	067545	071102	. WORD	EM230, DH230, DT230, DF230
1577	003740	070576				
1578					; ITEM 231	
1579	003742	054746	067365	071102	. WORD	EM231, DH231, DT231, DF231
1580	003750	070576				
1581					; ITEM 232	
1582	003752	054773	070211	071152	. WORD	EM232, DH232, DT232, DF232
1583	003760	070606				
1584					; ITEM 233	
1585	003762	055024	067545	071102	. WORD	EM233, DH233, DT233, DF233
1586	003770	070576				
1587					; ITEM 234	
1588	003772	055050	067365	071102	. WORD	EM234, DH234, DT234, DF234
1589	004000	070576				
1590					; ITEM 235	
1591	004002	055075	070211	071152	. WORD	EM235, DH235, DT235, DF235
1592	004010	070606				
1593					; ITEM 236	
1594	004012	055126	067545	071102	. WORD	EM236, DH236, DT236, DF236
1595	004020	070576				
1596					; ITEM 237	
1597	004022	055153	067365	071102	. WORD	EM237, DH237, DT237, DF237
1598	004030	070576				
1599					; ITEM 240	
1600	004032	055201	070211	071152	. WORD	EM240, DH240, DT240, DF240
1601	004040	070606				
1602					; ITEM 241	
1603	004042	055233	067545	071102	. WORD	EM241, DH241, DT241, DF241
1604	004050	070576				
1605					; ITEM 242	
1606	004052	055260	067365	071102	. WORD	EM242, DH242, DT242, DF242
1607	004060	070576				
1608					; ITEM 243	
1609	004062	055306	070211	071152	. WORD	EM243, DH243, DT243, DF243
1610	004070	070606				



1611					; ITEM 244	
1612	004072	055340	067545	071102	. WORD	EM244, DM244, DT244, DF244
1613	004100	070576				
1614					; ITEM 245	
1615	004102	055364	067365	071102	. WORD	EM245, DM245, DT245, DF245
1616	004110	070576				
1617					; ITEM 246	
1618	004112	055411	067735	071102	. WORD	EM246, DM246, DT246, DF246
1619	004120	070576				
1620					; ITEM 247	
1621	004122	055442	070211	071152	. WORD	EM247, DM247, DT247, DF247
1622	004130	070606				
1623					; ITEM 250	
1624	004132	055473	067545	071102	. WORD	EM250, DM250, DT250, DF250
1625	004140	070576				
1626					; ITEM 251	
1627	004142	055520	067365	071102	. WORD	EM251, DM251, DT251, DF251
1628	004150	070576				
1629					; ITEM 252	
1630	004152	055546	067735	071102	. WORD	EM252, DM252, DT252, DF252
1631	004160	070576				
1632					; ITEM 253	
1633	004162	055600	070211	071152	. WORD	EM253, DM253, DT253, DF253
1634	004170	070606				
1635					; ITEM 254	
1636	004172	055632	067735	071102	. WORD	EM254, DM254, DT254, DF254
1637	004200	070576				
1638					; ITEM 255	
1639	004202	055666	070211	071152	. WORD	EM255, DM255, DT255, DF255
1640	004210	070606				
1641					; ITEM 256	
1642	004212	055722	067545	071102	. WORD	EM256, DM256, DT256, DF256
1643	004220	070576				
1644					; ITEM 257	
1645	004222	055750	067365	071102	. WORD	EM257, DM257, DT257, DF257
1646	004230	070576				
1647					; ITEM 260	
1648	004232	055777	070024	071206	. WORD	EM260, DM260, DT260, DF260
1649	004240	070612				
1650					; ITEM 261	
1651	004242	056034	070024	071206	. WORD	EM261, DM261, DT261, DF261
1652	004250	070612				
1653					; ITEM 262	
1654	004252	056073	070024	071206	. WORD	EM262, DM262, DT262, DF262
1655	004260	070612				
1656					; ITEM 263	
1657	004262	056173	070024	071206	. WORD	EM263, DM263, DT263, DF263
1658	004270	070612				
1659					; ITEM 264	
1660	004272	056221	070024	071206	. WORD	EM264, DM264, DT264, DF264
1661	004300	070612				
1662					; ITEM 265	
1663	004302	056316	070024	071206	. WORD	EM265, DM265, DT265, DF265
1664	004310	070612				
1665					; ITEM 266	
1666	004312	056407	070024	071206	. WORD	EM266, DM266, DT266, DF266

1667	004320	070612				
1668					; ITEM 267	
1669	004322	056522	070024	071206	. WORD	EM267, DH267, DT267, DF267
1670	004330	070612				
1671					; ITEM 270	
1672	004332	056617	070024	071206	. WORD	EM270, DH270, DT270, DF270
1673	004340	070612				
1674					; ITEM 271	
1675	004342	056660	070024	071206	. WORD	EM271, DH271, DT271, DF271
1676	004350	070612				
1677					; ITEM 272	
1678	004352	056726	070024	071206	. WORD	EM272, DH272, DT272, DF272
1679	004360	070612				
1680					; ITEM 273	
1681	004362	057017	070024	071206	. WORD	EM273, DH273, DT273, DF273
1682	004370	070633				
1683					; ITEM 274	
1684	004372	057054	070024	071206	. WORD	EM274, DH274, DT274, DF274
1685	004400	070633				
1686					; ITEM 275	
1687	004402	057113	070024	071206	. WORD	EM275, DH275, DT275, DF275
1688	004410	070633				
1689					; ITEM 276	
1690	004412	057213	070024	071206	. WORD	EM276, DH276, DT276, DF276
1691	004420	070633				
1692					; ITEM 277	
1693	004422	057310	070024	071206	. WORD	EM277, DH277, DT277, DF277
1694	004430	070633				
1695					; ITEM 300	
1696	004432	057364	070024	071206	. WORD	EM300, DH300, DT300, DF300
1697	004440	070633				
1698					; ITEM 301	
1699	004442	057461	070024	071406	. WORD	EM301, DH301, DT301, DF301
1700	004450	070654				
1701					; ITEM 302	
1702	004452	057505	070024	071406	. WORD	EM302, DH302, DT302, DF302
1703	004460	070654				
1704					; ITEM 303	
1705	004462	057533	070114	071460	. WORD	EM303, DH303, DT303, DF303
1706	004470	070700				
1707					; ITEM 304	
1708	004472	057561	070024	071406	. WORD	EM304, DH304, DT304, DF304
1709	004500	070654				
1710					; ITEM 305	
1711	004502	057650	070024	071406	. WORD	EM305, DH305, DT305, DF305
1712	004510	070654				
1713					; ITEM 306	
1714	004512	057753	070024	071406	. WORD	EM306, DH306, DT306, DF306
1715	004520	070654				
1716					; ITEM 307	
1717	004522	060140	070024	071406	. WORD	EM307, DH307, DT307, DF307
1718	004530	070654				
1719					; ITEM 310	
1720	004532	060242	070024	071406	. WORD	EM310, DH310, DT310, DF310
1721	004540	070654				
1722					; ITEM 311	



1723	004542	060345	070024	071406	. WORD	EM311, DH311, DT311, DF311
1724	004550	070654				
1725					; ITEM 312	
1726	004552	060446	070024	071406	. WORD	EM312, DH312, DT312, DF312
1727	004560	070654				
1728					; ITEM 313	
1729	004562	060550	070024	071406	. WORD	EM313, DH313, DT313, DF313
1730	004570	070654				
1731					; ITEM 314	
1732	004572	060651	070024	071406	. WORD	EM314, DH314, DT314, DF314
1733	004600	070654				
1734					; ITEM 315	
1735	004602	060752	070024	071406	. WORD	EM315, DH315, DT315, DF315
1736	004610	070654				
1737					; ITEM 316	
1738	004612	061053	070024	071406	. WORD	EM316, DH316, DT316, DF316
1739	004620	070654				
1740					; ITEM 317	
1741	004622	061154	070024	071406	. WORD	EM317, DH317, DT317, DF317
1742	004630	070654				
1743					; ITEM 320	
1744	004632	061255	070024	071406	. WORD	EM320, DH320, DT320, DF320
1745	004640	070654				
1746					; ITEM 321	
1747	004642	061356	070024	071406	. WORD	EM321, DH321, DT321, DF321
1748	004650	070654				
1749					; ITEM 322	
1750	004652	061457	070024	071532	. WORD	EM322, DH322, DT322, DF322
1751	004660	070724				
1752					; ITEM 323	
1753	004662	061514	070024	071532	. WORD	EM323, DH323, DT323, DF323
1754	004670	070724				
1755					; ITEM 324	
1756	004672	061553	070114	071576	. WORD	EM324, DH324, DT324, DF324
1757	004700	070745				
1758					; ITEM 325	
1759	004702	061612	070024	071532	. WORD	EM325, DH325, DT325, DF325
1760	004710	070724				
1761					; ITEM 326	
1762	004712	061612	070024	071532	. WORD	EM326, DH326, DT326, DF326
1763	004720	070724				
1764					; ITEM 327	
1765	004722	061753	070024	071532	. WORD	EM327, DH327, DT327, DF327
1766	004730	070724				
1767					; ITEM 330	
1768	004732	062055	070024	071532	. WORD	EM330, DH330, DT330, DF330
1769	004740	070724				
1770					; ITEM 331	
1771	004742	062160	070024	071532	. WORD	EM331, DH331, DT331, DF331
1772	004750	070724				
1773					; ITEM 332	
1774	004752	063434	070024	071532	. WORD	EM332, DH332, DT332, DF332
1775	004760	070724				
1776					; ITEM 333	
1777	004762	061514	070024	071532	. WORD	EM333, DH333, DT333, DF333
1778	004770	070724				

1779					; ITEM 334	
1780	004772	062263	070024	071532	. WORD	EM334, DH334, DT334, DF334
1781	005000	070724				
1782					; ITEM 335	
1783	005002	062357	070024	071532	. WORD	EM335, DH335, DT335, DF335
1784	005010	070724				
1785					; ITEM 336	
1786	005012	062461	070024	071532	. WORD	EM336, DH336, DT336, DF336
1787	005020	070724				
1788					; ITEM 337	
1789	005022	062535	070024	071532	. WORD	EM337, DH337, DT337, DF337
1790	005030	070724				
1791					; ITEM 340	
1792	005032	062637	070024	071532	. WORD	EM340, DH340, DT340, DF340
1793	005040	070724				
1794					; ITEM 341	
1795	005042	062741	070024	071532	. WORD	EM341, DH341, DT341, DF341
1796	005050	070724				
1797					; ITEM 342	
1798	005052	063045	070024	071532	. WORD	EM342, DH342, DT342, DF342
1799	005060	070724				
1800					; ITEM 343	
1801	005062	063147	070024	071532	. WORD	EM343, DH343, DT343, DF343
1802	005070	070724				
1803					; ITEM 344	
1804	005072	063251	070024	071532	. WORD	EM344, DH344, DT344, DF344
1805	005100	070724				
1806					; ITEM 345	
1807	005102	063526	070024	071532	. WORD	EM345, DH345, DT345, DF345
1808	005110	070724				
1809					; ITEM 346	
1810	005112	063626	070024	071532	. WORD	EM346, DH346, DT346, DF346
1811	005120	070724				
1812					; ITEM 347	
1813	005122	063724	070024	071532	. WORD	EM347, DH347, DT347, DF347
1814	005130	070766				
1815					; ITEM 350	
1816	005132	063750	070024	071532	. WORD	EM350, DH350, DT350, DF350
1817	005140	070766				
1818					; ITEM 351	
1819	005142	063776	067675	071152	. WORD	EM351, DH351, DT351, DF351
1820	005150	070606				
1821					; ITEM 352	
1822	005152	064102	070024	071532	. WORD	EM352, DH352, DT352, DF352
1823	005160	070766				
1824					; ITEM 353	
1825	005162	064206	070024	071532	. WORD	EM353, DH353, DT353, DF353
1826	005170	070766				
1827					; ITEM 354	
1828	005172	064312	070024	071532	. WORD	EM354, DH354, DT354, DF354
1829	005200	070766				
1830					; ITEM 355	
1831	005202	064416	070024	071532	. WORD	EM355, DH355, DT355, DF355
1832	005210	070766				
1833					; ITEM 356	
1834	005212	064522	067545	071036	. WORD	EM356, DH356, DT356, DF356



1835	005220	070576					
1836						; ITEM 357	
1837	005222	064620	070251	071060		. WORD	EM357, DH357, DT357, DF357
1838	005230	070576					
1839						; ITEM 360	
1840	005232	064716	067675	071152		. WORD	EM360, DH360, DT360, DF360
1841	005240	070606					
1842						; ITEM 361	
1843	005242	067146	067365	071406		. WORD	EM361, DH361, DT361, DF361
1844	005250	070576					
1845						; ITEM 362	
1846	005252	000000	000000	000000		. WORD	EM362, DH362, DT362, DF362
1847	005260	000000					
1848						; ITEM 363	
1849	005262	000000	000000	000000		. WORD	EM363, DH363, DT363, DF363
1850	005270	000000					
1851						; ITEM 364	
1852	005272	000000	000000	000000		. WORD	EM364, DH364, DT364, DF364
1853	005300	000000					
1854						; ITEM 365	
1855	005302	000000	000000	000000		. WORD	EM365, DH365, DT365, DF365
1856	005310	000000					
1857						; ITEM 366	
1858	005312	000000	000000	000000		. WORD	EM366, DH366, DT366, DF366
1859	005320	000000					
1860						; ITEM 367	
1861	005322	000000	000000	000000		. WORD	EM367, DH367, DT367, DF367
1862	005330	000000					
1863						; ITEM 370	
1864	005332	000000	000000	000000		. WORD	EM370, DH370, DT370, DF370
1865	005340	000000					
1866						; ITEM 371	
1867	005342	000000	000000	000000		. WORD	EM371, DH371, DT371, DF371
1868	005350	000000					
1869						; ITEM 372	
1870	005352	000000	000000	000000		. WORD	EM372, DH372, DT372, DF372
1871	005360	000000					
1872						; ITEM 373	
1873	005362	000000	000000	000000		. WORD	EM373, DH373, DT373, DF373
1874	005370	000000					
1875						; ITEM 374	
1876	005372	000000	000000	000000		. WORD	EM374, DH374, DT374, DF374
1877	005400	000000					
1878						; ITEM 375	
1879	005402	000000	000000	000000		. WORD	EM375, DH375, DT375, DF375
1880	005410	000000					
1881						; ITEM 376	
1882	005412	000000	000000	000000		. WORD	EM376, DH376, DT376, DF376
1883	005420	000000					
1884						; ITEM 377	
1885	005422	000000	000000	000000		. WORD	EM377, DH377, DT377, DF377
1886	005430	000000					
1887						; ITEM 400	
1888	005432	000000	000000	000000		. WORD	EM400, DH400, DT400, DF400
1889	005440	000000					
1890						; ITEM 401	

1891	005442	065011	067545	071102	. WORD	EM401, DM401, DT401, DF401
1892	005450	070576				
1893					; ITEM 402	
1894	005452	065034	067365	071102	. WORD	EM402, DM402, DT402, DF402
1895	005460	070576				
1896					; ITEM 403	
1897	005462	065056	067675	071152	. WORD	EM403, DM403, DT403, DF403
1898	005470	070606				
1899					; ITEM 404	
1900	005472	065210	070211	071152	. WORD	EM404, DM404, DT404, DF404
1901	005500	070606				
1902					; ITEM 405	
1903	005502	065240	067545	071102	. WORD	EM405, DM405, DT405, DF405
1904	005510	070576				
1905					; ITEM 406	
1906	005512	065264	067365	071102	. WORD	EM406, DM406, DT406, DF406
1907	005520	070576				
1908					; ITEM 407	
1909	005522	065307	067675	071152	. WORD	EM407, DM407, DT407, DF407
1910	005530	070606				
1911					; ITEM 410	
1912	005532	065442	070211	071152	. WORD	EM410, DM410, DT410, DF410
1913	005540	070606				
1914					; ITEM 411	
1915	005542	065473	067545	071102	. WORD	EM411, DM411, DT411, DF411
1916	005550	070576				
1917					; ITEM 412	
1918	005552	065517	067365	071102	. WORD	EM412, DM412, DT412, DF412
1919	005560	070576				
1920					; ITEM 413	
1921	005562	065542	067675	071152	. WORD	EM413, DM413, DT413, DF413
1922	005570	070606				
1923					; ITEM 414	
1924	005572	065675	070211	071152	. WORD	EM414, DM414, DT414, DF414
1925	005600	070606				
1926					; ITEM 415	
1927	005602	065726	067545	071102	. WORD	EM415, DM415, DT415, DF415
1928	005610	070576				
1929					; ITEM 416	
1930	005612	065753	067365	071102	. WORD	EM416, DM416, DT416, DF416
1931	005620	070576				
1932					; ITEM 417	
1933	005622	065777	067675	071152	. WORD	EM417, DM417, DT417, DF417
1934	005630	070606				
1935					; ITEM 420	
1936	005632	066045	070211	071152	. WORD	EM420, DM420, DT420, DF420
1937	005640	070606				
1938					; ITEM 421	
1939	005642	066077	067545	071102	. WORD	EM421, DM421, DT421, DF421
1940	005650	070576				
1941					; ITEM 422	
1942	005652	066124	067365	071102	. WORD	EM422, DM422, DT422, DF422
1943	005660	070576				
1944					; ITEM 423	
1945	005662	066150	067675	071152	. WORD	EM423, DM423, DT423, DF423
1946	005670	070606				



1947					; ITEM 424	
1948	005672	066216	070211	071152	. WORD	EM424, DM424, DT424, DF424
1949	005700	070606				
1950					; ITEM 425	
1951	005702	066250	067545	071102	. WORD	EM425, DM425, DT425, DF425
1952	005710	070576				
1953					; ITEM 426	
1954	005712	066274	067365	071102	. WORD	EM426, DM426, DT426, DF426
1955	005720	070576				
1956					; ITEM 427	
1957	005722	066317	067675	071152	. WORD	EM427, DM427, DT427, DF427
1958	005730	070606				
1959					; ITEM 430	
1960	005732	066452	070211	071152	. WORD	EM430, DM430, DT430, DF430
1961	005740	070606				
1962					; ITEM 431	
1963	005742	066503	067675	071152	. WORD	EM431, DM431, DT431, DF431
1964	005750	070606				
1965					; ITEM 432	
1966	005752	066556	067545	071102	. WORD	EM432, DM432, DT432, DF432
1967	005760	070576				
1968					; ITEM 433	
1969	005762	066603	067365	071102	. WORD	EM433, DM433, DT433, DF433
1970	005770	070576				
1971					; ITEM 434	
1972	005772	066627	067675	071152	. WORD	EM434, DM434, DT434, DF434
1973	006000	070606				
1974					; ITEM 435	
1975	006002	066763	070211	071152	. WORD	EM435, DM435, DT435, DF435
1976	006010	070606				
1977					; ITEM 436	
1978	006012	067015	067675	071152	. WORD	EM436, DM436, DT436, DF436
1979	006020	070606				
1980					; ITEM 437	
1981	006022	067072	067545	071102	. WORD	EM437, DM437, DT437, DF437
1982	006030	070576				
1983					; ITEM 440	
1984	006032	067120	067545	071102	. WORD	EM440, DM440, DT440, DF440
1985	006040	070576				
1986					; ITEM 441	
1987	006042	067171	070341	071642	. WORD	EM441, DM441, DT441, DF441
1988	006050	071007				
1989					; ITEM 442	
1990	006052	067225	070407	071660	. WORD	EM442, DM442, DT442, DF442
1991	006060	071007				
1992					; ITEM 443	
1993	006062	067257	070407	071660	. WORD	EM443, DM443, DT443, DF443
1994	006070	071007				
1995						
1996						
1997					. SBTTL ACT11 HOOKS	
1998						
1999					; *****	
2000					; HOOKS REQUIRED BY ACT11	
2001	006072				SSVPC=	; SAVE PC
2002	000046				. =46	

```

2003 000046 037344 SENDAD ; ;1)SET LOC.46 TO ADDRESS OF SENDAD IN .SEOP
2004 000052 000052 . =52
2005 000052 000000 . WORD 0 ; ;2)SET LOC.52 TO ZERO
2006 006072 006072 . =SSVPC ; ; RESTORE PC
2007 .SBTTL APT PARAMETER BLOCK
2008
2009 ; ;*****
2010 ;SET LOCATIONS 24 AND 44 AS REQUIRED FOR APT
2011 ; ;*****
2012 006072 . SX= ; ;SAVE CURRENT LOCATION
2013 000024 . =24 ; ;SET POWER FAIL TO POINT TO START OF PROGRAM
2014 000024 000200 200 ; ;FOR APT START UP
2015 000044 . =44 ; ;POINT TO APT INDIRECT ADDRESS PNTR.
2016 000044 006072 SAPTHDR ; ;POINT TO APT HEADER BLOCK
2017 006072 . = SX ; ;RESET LOCATION COUNTER
2018 ; ;*****
2019 ;SETUP APT PARAMETER BLOCK AS DEFINED IN THE APT-PDP11 DIAGNOSTIC
2020 ;INTERFACE SPEC.
2021
2022 SAPTHD:
2023 006072 000000 SHIBTS: . WORD 0 ; ;TWO HIGH BITS OF 18 BIT MAILBOX ADDR.
2024 006074 001316 SMBADR: . WORD $MAIL ; ;ADDRESS OF APT MAILBOX (BITS 0-15)
2025 006076 000010 STSTM: . WORD 10 ; ;RUN TIM OF LONGEST TEST
2026 006100 000040 SPASTM: . WORD 40 ; ;RUN TIME IN SECS. OF 1ST PASS ON 1 UNIT (QUICK VERIFY)
2027 006102 000000 SUNITM: . WORD 0 ; ;ADDITIONAL RUN TIME (SECS) OF A PASS FOR EACH ADDITIONAL UNIT
2028 006104 000052 . WORD SETEND-$MAIL/2 ; ;LENGTH MAILBOX-ETABLE(WORDS)
2029
2030
2031 006106 START:
2032 .SBTTL INITIALIZE THE COMMON TAGS
2033 ; ;CLEAR THE COMMON TAGS ($CMTAG) AREA
2034 006106 012706 001100 MOV $CMTAG,R6 ; ;FIRST LOCATION TO BE CLEARED
2035 006112 005026 CLR (R6)+ ; ;CLEAR MEMORY LOCATION
2036 006114 022706 001140 CMP $SWR,R6 ; ;DONE?
2037 006120 001374 BNE -6 ; ;LOOP BACK IF NO
2038 006122 012706 001100 MOV $STACK,SP ; ;SETUP THE STACK POINTER
2039 ; ;INITIALIZE A FEW VECTORS
2040 006126 012737 037424 000020 MOV $SCOPE,@IOTVEC ; ;IOT VECTOR FOR SCOPE ROUTINE
2041 006134 012737 000340 000022 MOV $340,@IOTVEC+2 ; ;LEVEL 7
2042 006142 012737 037704 000030 MOV $ERROR,@EMTVEC ; ;EMT VECTOR FOR ERROR ROUTINE
2043 006150 012737 000340 000032 MOV $340,@EMTVEC+2 ; ;LEVEL 7
2044 006156 012737 041652 000034 MOV $STRAP,@TRAPVEC ; ;TRAP VECTOR FOR TRAP CALLS
2045 006164 012737 000340 000036 MOV $340,@TRAPVEC+2 ; ;LEVEL 7
2046 006172 012737 041736 000024 MOV $SPWRDN,@PWRVEC ; ;POWER FAILURE VECTOR
2047 006200 012737 000340 000026 MOV $340,@PWRVEC+2 ; ;LEVEL 7
2048 006206 016767 030754 030744 MOV SENDCT,SEOPCT ; ;SETUP END-OF-PROGRAM COUNTER
2049 006214 005067 173062 CLR $TIMES ; ;INITIALIZE NUMBER OF ITERATIONS
2050 006220 005067 173060 CLR $ESCAPE ; ;CLEAR THE ESCAPE ON ERROR ADDRESS
2051 006224 112767 000001 172663 MOVB #1,$SERMAX ; ;ALLOW ONE ERROR PER TEST
2052 ; ;INITIALIZE THE "T-BIT" TRAP VECTOR. THEN LOAD LOCATION "SRTRN", IN
2053 ; ;THE "END-OF-PASS" (SEOP) ROUTINE, WITH A "RTI" OR "RTT".
2054 006232 012737 037410 000014 MOV $SRTRN,@TBITVEC ; ;SET "T" BIT VECTOR TO SRTRN
2055 006240 012737 000340 000016 MOV $340,@TBITVEC+2 ; ;LEVEL 7
2056 006246 012767 000002 031134 MOV $RTI,$SRTRN ; ;SET SRTRN TO A RTI
2057 006254 012737 00630 000010 MOV $65,$RESVEC ; ;TRY TO DO A RTT
2058 006262 005046 CLR -(SP) ; ;DUMMY PS

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2059 006264 012746 006272          MOV    #64$, -(SP)      ;; AND PC
2060 006270 000006          RTT                    ;; TRY THE RTT
2061 006272 012767 000006 031110 64$:  MOV    #RTT, $RTN      ;; RTT IS LEGAL--SET $RTN TO A RTT
2062 006300 000402          BR     66$
2063 006302 062706 000010          ADD    #10, SP         ;; RTT ILLEGAL--CLEAN OFF THE STACK
2064 006306 012737 000012 000010 66$:  MOV    #RESVEC+2, @RESVEC ;; RESTORE TRAP CATCHER
2065 006314 005067 031076          CLR    $TBIT          ;; CLEAR "T" BIT SWITCH
2066 006320 012767 006320 172560  MOV    #, $SLPADR     ;; INITIALIZE THE LOOP ADDRESS FOR SCOPE
2067 006326 012767 006326 172554  MOV    #, $SLPERR     ;; SETUP THE ERROR LOOP ADDRESS
2068                                ;; SIZE FOR A HARDWARE SWITCH REGISTER. IF NOT FOUND OR IT IS
2069                                ;; EQUAL TO A "-1", SETUP FOR A SOFTWARE SWITCH REGISTER.
2070 006334 013746 000004          MOV    @ERRVEC, -(SP) ;; SAVE ERROR VECTOR
2071 006340 012737 006374 000004  MOV    #67$, @ERRVEC  ;; SET UP ERROR VECTOR
2072 006346 012767 177570 172564  MOV    #DSWR, SWR     ;; SETUP FOR A HARDWARE SWICH REGISTER
2073 006354 012767 177570 172560  MOV    #DDISP, DISPLAY ;; AND A HARDWARE DISPLAY REGISTER
2074 006362 022777 177777 172550  CMP    #-1, @SWR      ;; TRY TO REFERENCE HARDWARE SWR
2075 006370 001012          BNE   69$            ;; BRANCH IF NO TIMEOUT TRAP OCCURRED
2076                                ;; AND THE HARDWARE SWR IS NOT = -1
2077 006372 000403          BR     68$            ;; BRANCH IF NO TIMEOUT
2078 006374 012716 006402          67$:  MOV    #68$, (SP)    ;; SET UP FOR TRAP RETURN
2079 006400 000002          RTI
2080 006402 012767 000176 172530 68$:  MOV    #SWREG, SWR    ;; POINT TO SOFTWARE SWR
2081 006410 012767 000174 172524  MOV    #DISPREG, DISPLAY
2082 006416 012637 000004          69$:  MOV    (SP)+, @ERRVEC ;; RESTORE ERROR VECTOR
2083
2084 006422 005067 172676          CLR    $PASS         ;; CLEAR PASS COUNT
2085 006426 132767 000200 172703  BITB  #APTSIZE, $ENVM ;; TEST USER SIZE UNDER APT
2086 006434 001403          BEQ   70$            ;; YES, USE NON-APT SWITCH
2087 006436 012767 001340 172474  MOV    #SSWREG, SWR  ;; NO, USE APT SWITCH REGISTER
2088 006444          70$:
2089 .SBTTL  TYPE PROGRAM NAME
2090 ;; TYPE THE NAME OF THE PROGRAM IF FIRST PASS
2091 006444 005227 177777          INC    #-1           ;; FIRST TIME?
2092 006450 001046          BNE   71$            ;; BRANCH IF NO
2093 006452 022737 037344 000042  CMP    #SENDAD, @#42 ;; ACT-11?
2094 006460 001442          BEQ   71$            ;; BRANCH IF YES
2095 006462 104401 006530          TYPE  ,72$          ;; TYPE ASCIZ STRING
2096 .SBTTL  GET VALUE FOR SOFTWARE SWITCH REGISTER
2097 006466 005737 000042          TST   @#42          ;; ARE WE RUNNING UNDER XXDP/ACT?
2098 006472 001012          BNE   73$            ;; BRANCH IF YES
2099 006474 126727 172636 000001  CMPB  $ENV, #1      ;; ARE WE RUNNING UNDER APT?
2100 006502 001406          BEQ   73$            ;; BRANCH IF YES
2101 006504 026727 172430 000176  CMP    SWR, #SWREG  ;; SOFTWARE SWITCH REG SELECTED?
2102 006512 001005          BNE   74$            ;; BRANCH IF NO
2103 006514 104405          GTSWR                ;; GET SOFT-SWR SETTINGS
2104 006516 000403          BR     74$
2105 006520 112767 000001 172406 73$:  MOVB  #1, $AUTOB    ;; SET AUTO-MODE INDICATOR
2106 006526          74$:
2107 006526 000417          BR     71$          ;; GET OVER THE ASCIZ
2108                                ;; 72$: .ASCIZ <CRLF>*CFFPCBO 11/34 FPP DIAG PRT3*<CRLF>
2109                                71$:
2110
2111 006566          LOOP:
2112
2113
2114

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2115
2116
2117 ;*****
2118 ;*TEST 1      STF WITH ILLEGAL ACCUMULATOR TEST
2119 ;*
2120 ;*THIS IS A TEST OF THE ST INSTRUCTION USING ILLEGAL ACCUMULATOR 7, MODE 0.
2121 ;*
2122 ;*****
2123 006566 000004 TST1:  SCOPE
2124
2125 006570 0001:
2126 006570 104413      L PERR      ;SET UP THE LOOP ON ERROR ADDRESS.
2127 006572 005000      CLR      RO      ;SET THE FPS.
2128 006574 170100      LDFPS     RO
2129
2130 006576 012737 006634 000244      MOV      #000T, @#FPVECT ;SET UP FOR FP TRAPS.
2131 006604 012737 006612 001236      MOV      #15, @#STMP2
2132
2133 006612 174007 15:      STF      ACO, AC7      ;THIS TEST INSTRUCTION SHOULD
2134 ;CAUSE A TRAP.
2135
2136 ;REPORT FAILURE OF USE OF ILLEGAL ACCUMULATOR 7 TO CAUSE AN FPP TRAP.
2137 006614 0002:
2138 006614 170200      STFPS     RO      ;GET FPS.
2139 006616 010037 001240      MOV      RO, @#STMP3
2140 006622 170300      STST     RO      ;GET FEC.
2141 006624 010037 001242      MOV      RO, @#STMP4
2142 006630 104001 35:      ERROR     1      ;STF WITH ILLEGAL ACCUMULATOR, MODE
2143 ;0, DIDN'T TRAP. ST 765 TO ST 537.
2144 006632 000434      BR      OOODONE
2145
2146 ;TRAP TO 000T, HERE, WHEN THE EXPECTED ERROR OCCURS.
2147 006634 011600 000T:      MOV      (SP), RO      ;MAKE SURE THE ERROR OCCURRED
2148 006636 022700 006614      CMP      #0002, RO      ;AT THE CORRECT ADDRESS.
2149 006642 001402      BEQ      0003      ;BRANCH IF TRAP ADDRESS CORRECT.
2150 006644 000137 042554      JMP      @#FPSPUR      ;IF INCORRECT GO REPORT SPURIOUS
2151 ;FP TRAP.
2152
2153 006650 170204 0003:      STFPS     R4      ;GET FPS.
2154 006652 170305      STST     R5      ;GET FEC.
2155 006654 010437 001240      MOV      R4, @#STMP3      ;SAVE DATA INCASE OF ERROR.
2156 006660 010537 001242      MOV      R5, @#STMP4
2157 006664 012702 100000      MOV      #100000, R2      ;EXPECTED FPS
2158 006670 012703 000002      MOV      #2, R3      ;EXPECTED FEC
2159 006674 010237 001244      MOV      R2, @#STMP5
2160 006700 010337 001246      MOV      R3, @#STMP6
2161 006704 022626      CMP      (SP)+, (SP)+      ;RESET THE STACK.
2162
2163 006706 020204      CMP      R2, R4      ;WAS FPS CORRECT?
2164 006710 001402      BEQ      0004      ;BRANCH IF YES.
2165 ;OTHERWISE REPORT FPS INCORRECTLY
2166 006712 104002 15:      ERROR     2      ;SET AFTER USE OF ILLEGAL ACC.
2167 006714 000403      BR      OOODONE
2168
2169 006716 020305 0004:      CMP      R3, R5      ;WAS THE FEC CORRECT?
2170 006720 001401      BEQ      OOODONE      ;BRANCH IF CORRECT.

```



```
2171 ; OTHERWISE REPORT INCORRECT FEC  
2172 006722 104003 15: ERROR 3 ; AFTER USE OF ILLEGAL ACC.  
2173  
2174 006724  
2175 006724 104412  
2176 ; GO INITIALIZE THE FPS AND STACK; AND  
2177 ; SEE IF THE USER HAS EXPRESSED  
2178 ; THE DESIRE TO CHANGE THE SOFTWARE  
2179 ; VIRTUAL CONSOLE SWITCH REGISTER (HAS  
2180 ; THE USER TYPED CONTROL G?).  
2181  
2182  
2183  
2184 ; ; *****  
2185 ; *TEST 2 FDST MODE 1, FLOATING MODE, TEST  
2186 ; *  
2187 ; *THIS IS A TEST OF THE STF INSTRUCTION USING FDST MODE 1.  
2188 ; *  
2189 ; ; *****  
2190 006726 000004 TST2: SCOPE  
2191  
2192 006730  
2193 006730 104413  
2194  
2195 006732 012700 177777  
2196 006736 012701 007066  
2197 006742 012702 000014  
2198 006746 010021  
2199 006750 077202  
2200  
2201 006752 012700 000200  
2202 006756 170100  
2203 006760 012700 007116  
2204 006764 172410  
2205  
2206 006766 012700 007102  
2207 006772 005002  
2208 006774 170102  
2209 006776 012737 007010 001236  
2210 007004 010037 001240  
2211  
2212 007010 174010  
2213  
2214 007012 022700 007102  
2215 007016 001404  
2216  
2217 007020 010037 001242  
2218 007024 104004 15: ERROR 4  
2219 007026 000456 BR PPPDONE ; GO TO NEXT TEST.  
2220  
2221 007030 012700 007102  
2222 007034 012701 007116  
2223 007040 022021  
2224 007042 001031  
2225 007044 022011  
2226 007046 001027  
  
; SET UP THE LOOP ON ERROR ADDRESS.  
; SET UP A BACKGROUND PATTERN IN THE  
; INPUT BUFFER.  
; SET FD MODE.  
; PUT TEST DATA INTO ACO.  
; FDST ADDRESS.  
; CLEAR THE FPS.  
; TEST INSTRUCTION.  
; WAS RO MODIFIED DURING EXECUTION?  
; BRANCH IF RO NOT MODIFIED, CORRECT.  
; OTHERWISE REPORT ERROR, RO MODIFIED.  
; CHECK THE DATA IN THE OUTPUT BUFFER.  
; BRANCH IF INCORRECT.  
; BRANCH IF INCORRECT.
```

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2227 007050 022720 177777      CMP      #-1,(R0)+      ;WAS FLOATING MODE USED?
2228 007054 001034              BNE      PPP15         ;BRANCH IF NOT.
2229 007056 022710 177777      CMP      #-1,(R0)
2230 007062 001031              BNE      PPP15
2231 007064 000437              BR       PPPDONE ;GO TO NEXT TEST.
2232
2233 007066 177777 177777 177777 PPPBFO: .WORD  -1,-1,-1,-1,-1,-1
2234 007074 177777 177777 177777
2235
2236 007102 177777 177777 177777 PPPBF1: .WORD  -1,-1,-1,-1,-1,-1
2237 007110 177777 177777 177777
2238
2239 007116 123456 023456      PPPTP1: .WORD  123456,23456
2240 007122 034567 045671      .WORD  34567,45671
2241
2242      ;REPORT DATA IN OUT PUT BUFFER INCORRECT.
2243 007126 012737 007116 001242 PPP10:  MOV      #PPPTP1,@#STMP4
2244 007134 012737 007102 001240      MOV      #PPBF1,@#STMP3
2245 007142 104005              15:     ERROR    5      ;BAD DATA.
2246 007144 000407              BR       PPPDONE
2247
2248      ;REPORT FLOATING MODE NOT USED, BUT FD FAILED.
2249 007146 012737 007116 001242 PPP15:  MOV      #PPPTP1,@#STMP4
2250 007154 012737 007102 001240      MOV      #PPBF1,@#STMP3
2251 007162 104006              15:     ERROR    6      ;ST 707 TO 245 INTO 244 (BUT FD).
2252
2253 007164      PPPDONE:
2254 007164 104412      RSETUP      ;GO INITIALIZE THE FPS AND STACK; AND
2255      ;SEE IF THE USER HAS EXPRESSED
2256      ;THE DESIRE TO CHANGE THE SOFTWARE
2257      ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2258      ;THE USER TYPED CONTROL G?).
2259
2260
2261
2262
2263      ;*****
2264      ;*TEST 3      FDST MODE 2 TEST
2265      ;*
2266      ;*THIS IS A TEST OF BOTH STF AND STD WITH FDST MODE 2.
2267      ;*
2268      ;*****
2269 007166 000004      TST3:     SCOPE
2270
2271      ;FIRST TEST STF.
2272 007170      QQQ1:
2273 007170 104413      LPERR      ;SET UP THE LOOP ON ERROR ADDRESS.
2274
2275 007172 012700 177777      MOV      #-1,R0 ;SET UP THE OUTPUT BUFFER.
2276 007176 012701 007330      MOV      #QQBFO,R1
2277 007202 012702 000014      MOV      #14,R2
2278 007206 010021      QQQ2:     MOV      R0,(R1)+
2279 007210 077202      SOB      R2,QQQ2
2280
2281 007212 012700 000200      MOV      #200,R0 ;SET FD MODE.
2282 007216 170100      LDFPS    R0
    
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2283 007220 012700 007360      MOV      #QQQTP1,RO      ;SETUP ACO.
2284 007224 172410      LDD      (RO),ACO
2285
2286 007226 012700 007344      MOV      #QQQBF1,RO      ;FDST ADDRESS.
2287 007232 005002      CLR      R2
2288 007234 170102      LDFPS   R2              ;SET FPS.
2289 007236 012737 007244 001236  MOV      #QQQ3,@#STMP2
2290
2291 007244 174020      QQQ3:   STF      ACO,(RO)+      ;TEST INSTRUCTION.
2292
2293 007246 022700 007350      CMP      #QQQBF1+4,RO      ;WAS RO INCREMENTED BY 4 PROPERLY?
2294
2295 007252 001407      BEQ      QQQ4              ;BRANCH IF RO CORRECT.
2296 007254 010037 001242      MOV      RO,@#STMP4      ;REPORT RO INCORRECT AFTER FDST MODE 2.
2297 007260 012737 007350 001240  MOV      #QQQBF1+4,@#STMP3
2298 007266 104007      15:     ERROR      7              ;BAD CONSTANT USED OR DIDN'T GO 527 TO 642
2299 007270 000526      BR       QQQDONE
2300 007272 012700 007344      QQQ4:   MOV      #QQQBF1,RO      ;WAS THE OUTPUT DATA CORRECT?
2301 007276 012701 007360      MOV      #QQQTP1,R1
2302 007302 022021      CMP      (RO)+,(R1)+
2303 007304 001031      BNE     QQQ10              ;BRANCH IF INCORRECT.
2304 007306 022021      CMP      (RO)+,(R1)+
2305 007310 001027      BNE     QQQ10              ;BRANCH IF INCORRECT.
2306 007312 022027 177777      CMP      (RO)+,#-1        ;SEE IF ANY OTHER DATA BUFFER WORDS WERE MODIFIED.
2307 007316 001024      BNE     QQQ10              ;BRANCH IF INCORRECT.
2308 007320 022027 177777      CMP      (RO)+,#-1
2309 007324 001021      BNE     QQQ10              ;BRANCH IF INCORRECT.
2310 007326 000430      BR       QQQ20
2311 007330 177777 177777 177777  QQQBFO: .WORD    -1,-1,-1,-1,-1,-1
2312 007336 177777 177777 177777
2313 007344 177777 177777 177777  QQQBF1: .WORD    -1,-1,-1,-1,-1,-1
2314 007352 177777 177777 177777
2315 007360 076543      QQQTP1: 76543
2316 007362 065432      65432
2317 007364 054321      54321
2318 007366 043210      43210
2319      ;REPORT OUTPUT DATA INCORRECT:
2320 007370 012737 007360 001240  QQQ10:  MOV      #QQQTP1,@#STMP3
2321 007376 012737 007344 001242  MOV      #QQQBF1,@#STMP4
2322 007404 104010      15:     ERROR      10              ;BAD DATA
2323 007406 000457      BR       QQQDONE
2324
2325      ;NOW TEST STD MODE 2.
2326
2327      QQQ20:
2328 007410      LPERR   ;SET UP THE LOOP ON ERROR ADDRESS.
2329 007412 104413      MOV      #QQQBFO,RO      ;SET UP DEFAULT INPUT DATA BUFFER.
2330 007416 010001      MOV      RO,R1
2331 007420 012702 000014      MOV      #14,R2
2332 007424 010021      QQQ22:  MOV      RO,(R1)+
2333 007426 077202      SOB     R2,QQQ22
2334 007430 012700 000200      MOV      #200,RO        ;ENTER FLOATING DOUBLE MODE.
2335 007434 170100      LDFPS   RO
2336 007436 012700 007360      MOV      #QQQTP1,RO      ;LOAD ACO.
2337 007442 172410      LDD     (RO),ACO
2338 007444 012700 007344      MOV      #QQQBF1,RO      ;SET DESTINATION ADDRESS.
  
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2339 007450 012737 007456 001236      MOV      #QQQ23,@#STMP2
2340 007456 174020      QQQ23:  STD      ACO,(R0)+      ;TEST INSTRUCTION.
2341 007460 022700 007354      CMP      #QQQBF1+10,R0 ;WAS R0 INCREMENTED BY 10 CORRECTLY?
2342 007464 001407      BEQ      QQQ24          ;BRANCH IF CORRECT.
2343 007466 010037 001242      MOV      R0,@#STMP4    ;REPORT R0 INCORRECTL INCREMENTED.
2344 007472 012737 007354 001240      MOV      #QQQBF1+10,@#STMP3
2345 007500 104011      15:     ERROR      11      ;DO NOT INCREM BY 10 BAD CONSTANT
2346 007502 000421      BR       QQQDONE
2347 007504 012700 007344      QQQ24:  MOV      #QQQBF1,R0    ;DID THE DATA REACH THE OUTPUT BUFFER CORRECTLY?
2348 007510 012701 007360      MOV      #QQQTP1,R1
2349 007514 012702 000004      MOV      #4,R2
2350 007520 022021      15:     CMP      (R0)+,(R1)+
2351 007522 001002      BNE      QQQ25          ;BRANCH IF INCORRECT.
2352 007524 077203      SOB      R2,15
2353 007526 000407      BR       QQQDONE
2354                                     ;REPORT DATA INCORRECT.
2355 007530 012737 007360 001240      QQQ25:  MOV      #QQQTP1,@#STMP3
2356 007536 012737 007344 001242      MOV      #QQQBF1,@#STMP4
2357 007544 104012      15:     ERROR      12      ;BAD DATA
2358 007546      QQQDONE:
2359 007546 104412      RSETUP      ;GO INITIALIZE THE FPS AND STACK; AND
2360                                     ;SEE IF THE USER HAS EXPRESSED
2361                                     ;THE DESIRE TO CHANGE THE SOFTWARE
2362                                     ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2363                                     ;THE USER TYPED CONTROL G?).
2364
2365      ;*****
2366      ;*TEST 4          FDST MODE 2, WITH GR7, TEST
2367      ;*
2368      ;*THIS IS A TEST OF STF WITH GR7 MODE 2 OR IMMEDIATE MODE.
2369      ;*
2370      ;*****
2371 007550 000004      TST4:    SCOPE
2372
2373 007552      RRR1:
2374 007552 104413      LPERR      ;SET UP THE LOOP ON ERROR ADDRESS.
2375 007554 012700 007632      MOV      #RRR3,R0      ;SET UP THE DATA BUFFER FOLLOWING THE TEST INSTRUCTION.
2376 007560 012701 007700      MOV      #RRRTP1,R1
2377 007564 012702 000004      MOV      #4,R2
2378 007570 012021      15:     MOV      (R0)+,(R1)+
2379 007572 077202      SOB      R2,15
2380 007574 012700 000200      MOV      #200,R0      ;ENTER FLOATING DOUBLE MODE.
2381 007600 170100      LDFPS     R0
2382 007602 012700 007710      MOV      #RRRTP2,R0    ;SET UP ACO.
2383 007606 172410      LDD      (R0),ACO
2384 007610 012737 007730 000004      MOV      #RRR10,@#ERRVECT ;SET UP FOR AN ODD ADDRESS.
2385 007616 012737 007630 001236      MOV      #RRR2,@#STMP2
2386 007624 005001      CLR      R1
2387 007626 005004      CLR      R4
2388      ;THIS IS THE TEST INSTRUCTION. IT SHOULD MODIFY THE FIRST LOCATION
2389      ;AFTER IT TO BE AN INCREMENT R4, INC R4, INSTRUCTION INSTEAD
2390      ;OF AN INCREMENT R1 INSTRUCTION. THE INCREMENT R4 SHOULD NOT BE
2391      ;EXECUTED SINCE THE PC SHOULD BE INCREMENTED BY TWO DURING IMMEDIATE
2392      ;MODE ADDRESSING. THUS AFTER THE EXECUTION OF THE NEXT 5 INSTRUCTIONS
2393      ;R1 SHOULD CONTAIN 3 AND R4 SHOULD CONTAIN 0.
2394 007630 174027      RRR2:    STD      ACO,(R7)+      ;TEST INSTRUCTION.
  
```



G 4

CFFPCBO 11/34 FPP DIAG PRT3 MACY11 30A(1052) 05-MAY-78 15:24 PAGE 46  
 CFFPCB.P11 05-MAY-78 15:23 T4 FDST MODE 2, WITH GR7, TEST SEQ 0045

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2395 007632 005201 RRR3: INC R1 ;THE STD INSTRUCTION SHOULD CHANGE THIS TO INC R4.
2396 007634 005201 INC R1
2397 007636 005201 INC R1
2398 007640 005201 INC R1
2399 007642 012700 007720 MOV #RRREXP,R0 ;SEE IF THE DATA WAS OUTPUT CORRECTLY.
2400 007646 012702 007632 MOV #RRR3,R2
2401 007652 012703 000004 MOV #4,R3
2402 007656 022022 RRR4: CMP (R0)+,(R2)+
2403 007660 001051 BNE RRR25 ;BRANCH IF INCORRECT.
2404 007662 077303 SOB R3,RRR4
2405 007664 005704 TST R4 ;MAKE SURE R4 IS 0.
2406 007666 001056 BNE RRR15 ;BRANCH IF R4 IS INCORRECT.
2407 007670 022701 000003 CMP #3,R1 ;SEE IF R1 IS CORRECT.
2408 007674 001053 BNE RRR15 ;BRANCH IF R1 IS INCORRECT.
2409 007676 000474 BR RRRDONE
2410 ;THESE ARE TEST DATA PATTERNS USED TO SET UP THE OUTPUT BUFFER AT RRR3.
2411 007700 005201 RRRTP1: INC R1
2412 007702 005201 INC R1
2413 007704 005201 INC R1
2414 007706 005201 INC R1
2415 ;THIS IS THE DATA PUT IN ACD BEFORE EXECUTION OF THE STD.
2416 007710 005204 RRRTP2: INC R4
2417 007712 005204 INC R4
2418 007714 005204 INC R4
2419 007716 005204 INC R4
2420 ;THIS IS THE EXPECTED DATA AT RRR3 AFTER EXECUTION OF THE STD.
2421 007720 005204 RRREXP: INC R4
2422 007722 005201 INC R1
2423 007724 005201 INC R1
2424 007726 005201 INC R1
2425 ;IF A FAILURE IN THE FDST FLOWS RESULTS IN AN ODD ADDRESS TRAP THROUGH
2426 ;4 TO HERE:
2427 007730 011602 RRR10: MOV (SP),R2 ;SEE IF THE TRAP WAS BECAUSE OF AN ODD ADDRESS.
2428 007732 032702 000001 BIT #1,R2
2429 007736 001005 BNE RRR11 ;BRANCH IF YES.
2430 007740 020227 007634 CMP R2,#RRR3+2 ;SEE IF THE TRAP OCCURRED AT THE TEST INSTRUCTION.
2431 007744 001412 BEQ RRR12 ;BRANCH IF YES.
2432 007746 000137 042610 JMP @#CPSUR ;OTHERWISE REPORT A SPURIOUS TRAP THROUGH VECTOR 4.
2433 ;REPORT A FAILURE IN THE FDST FLOWS RESULTED IN AN ODD ADDRESS TRAP.
2434 007752 010237 001236 RRR11: MOV R2,@#STMP2
2435 007756 012737 007634 001240 MOV #RRR3+2,@#STMP3
2436 007764 022626 CMP (SP)+,(SP)+
2437 007766 104013 15: ERROR 13 ;BAD CONSTANT #2 + PC ODD ADDR.
2438 007770 000437 BR RRRDONE
2439 007772 010237 001236 RRR12: MOV R2,@#STMP2
2440 007776 022626 CMP (SP)+,(SP)+
2441 010000 104014 15: ERROR 14 ;ODD ADDRESS TRAP
2442 010002 000432 BR RRRDONE ;WRONG MODE USED.
2443
2444 ;REPORT DATA INCORRECT:
2445 010004 012737 007632 001240 RRR25: MOV #RRR3,@#STMP3
2446 010012 012737 007720 001242 MOV #RRREXP,@#STMP4
2447 010020 104015 15: ERROR 15 ;BAD DATA BUT GR7 FAIL
2448 010022 000422 BR RRRDONE
2449
2450 ;REPORT PC INCORRECT MODIFIED DURING THE EXECUTION OF FDST IMMEDIATE
  
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2451 ;MODE. THE PC SHOULD HAVE BEEN INCREMENTED BY 2 BUT IT WASN'T.
2452 ;USE R1 AND R4 TO COMPUTE THE ACTUAL ACTION THAT WAS TAKEN ON THE PC.
2453 010024 012737 007634 001240 RRR15: MOV #RRR3+2,@#STMP3
2454 010032 005704 TST R4 ;IS R4 CLEAR.
2455 010034 001404 BEQ 15
2456 010036 012737 007632 001242 MOV #RRR3,@#STMP4
2457 010044 000410 BR 25
2458 010046 012702 007634 15: MOV #RRR3+2,R2
2459 010052 062701 177775 ADD #-3,R1
2460 010056 006301 ASL R1
2461 010060 160102 SUB R1,R2
2462 010062 010237 001242 MOV R2,@#STMP4
2463 010066 25:
2464 010066 104016 35: ERROR 16 ;BAD CONSTANT PC+
2465 010070 RRRDONE:
2466 010070 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
2467 ;SEE IF THE USER HAS EXPRESSED
2468 ;THE DESIRE TO CHANGE THE SOFTWARE
2469 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2470 ;THE USER TYPED CONTROL G?).
2471
2472 ;*****
2473 ;*TEST 5 FDST MODE 4 TEST
2474 ;*
2475 ;*THIS IS A TEST OF STD WITH FDST MODE 4.
2476 ;*
2477 ;*****
2478 010072 000004 TST5: SCOPE
2479
2480 010074 SSS1:
2481 010074 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
2482 010076 012700 177777 MOV #-1,R0 ;SET UP THE OUTPUT BUFFER.
2483 010102 012701 010232 MOV #SSSBFO,R1
2484 010106 012702 000010 MOV #10,R2
2485 010112 010021 15: MOV RO,(R1)+
2486 010114 077202 SOB R2,15
2487 010116 012700 000200 MOV #200,R0 ;ENTER FLOATING DOUBLE MODE.
2488 010122 170100 LDFPS RO
2489 010124 012700 010252 MOV #SSSTP1,RO ;SET UP ACO.
2490 010130 172410 LDD (RO),ACO
2491 010132 012737 010272 000004 MOV #SSS10,@#ERRVECT ;SET UP FOR A TRAP TO 4.
2492 010140 012737 010152 001236 MOV #SSS2,@#STMP2
2493 010146 012700 010242 MOV #SSSA1,RO ;SET UP THE DESTINATION ADDRESS.
2494
2495 010152 174040 SSS2: STD ACO,-(RO) ;TEST INSTRUCTION.
2496 010154 005201 INC R1
2497 010156 020027 010232 CMP RO,#SSSBFO ;SEE IF RO WAS DECREMENTED PROPERLY.
2498 010162 001060 BNE SSS15 ;BRANCH IF RO IS INCORRECT.
2499 010164 012700 010232 MOV #SSSBFO,RO ;WAS THE OUTPUT DATA CORRECT?
2500 010170 012701 010252 MOV #SSSTP1,R1
2501 010174 012702 000004 MOV #4,R2
2502 010200 022021 15: CMP (RO)+,(R1)+
2503 010202 001057 BNE SSS20 ;BRANCH IF INCORRECT.
2504 010204 077203 SOB R2,15
2505 010206 012700 177777 MOV #-1,RO ;IS THE REST OF THE OUTPUT BUFFER CORRECT, -1?
2506 010212 012701 010242 MOV #SSSA1,R1
    
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2507 010216 012702 000004
2508 010222 020021
2509 010224 001056
2510 010226 077203
2511 010230 000463
2512
2513
2514 010232 177777
2515 010234 177777
2516 010236 177777
2517 010240 177777
2518 010242 177777
2519 010244 177777
2520 010246 177777
2521 010250 177777
2522
2523
2524 010252 147250
2525 010254 036147
2526 010256 025036
2527 010260 147250
2528 010262 177777
2529 010264 177777
2530 010266 177777
2531 010270 177777
2532
2533
2534 010272 011600
2535 010274 020027 010154
2536 010300 001405
2537 010302 020027 010156
2538 010306 001402
2539 010310 000137 042610
2540
2541 010314 010037 001236
2542 010320 104017
2543 010322 000426
2544
2545
2546 010324 010037 001242
2547 010330 012737 010232 001240
2548 010336 104020
2549 010340 000417
2550
2551
2552 010342 012737 010232 001240
2553 010350 012737 010252 001242
2554 010356 104021
2555 010360 000407
2556 010362 012737 010242 001242
2557 010370 012737 010262 001240
2558 010376 104022
2559 010400
2560 010400 104412
2561
2562

; THIS IS THE OUTPUT DATA BUFFER.
SSSBFO: -1
        -1
        -1
        -1
SSSA1: -1
        -1
        -1
        -1

; THIS IS THE TEST DATA LOADED INTO ACO:
SSSTP1: 147250
        36147
        25036
        147250
SSSTP2: -1
        -1
        -1
        -1

; IF AN ODD ADDRESS TRAP OCCURS COME HERE:
SSS10: MOV (SP),RO ;SEE IF THE TRAP ACCURRED ON THE TEST INSTRUCTION.
        CMP RO,#SSS2+2
        BEQ SSS11 ;BRANCH IF YES.
        CMP RO,#SSS2+4
        BEQ SSS11 ;BRANCH IF YES.
        JMP @#CPSPUR ;OTHERWISE GO REPORT A SPURIOUS TRAP THROUGH 4.
;REPORT FAILURE IN FDST FLOWS RESULTED IN AN ODD ADDRESS.
SSS11: MOV RO,@#STMP2
25: ERROR 17 ;FDST FORK X ODD AD RES.
BR SSSDONE

;REPORT RO INCORRECTLY DECREMENTED.
SSS15: MOV RO,@#STMP4
        MOV #SSSBFO,@#STMP3
15: ERROR 20 ;RO NOT DECRE PROP
BR SSSDONE

;REPORT OUTPUT DATA INCORRECT:
SSS20: MOV #SSSBFO,@#STMP3
        MOV #SSSTP1,@#STMP4
15: ERROR 21 ;BAD DATA
BR SSSDONE
SSS25: MOV #SSSA1,@#STMP4
        MOV #SSSTP2,@#STMP3
15: ERROR 22 ;DATA BAD OUTSIDE TARGET AREA
SSSDONE: RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
;SEE IF THE USER HAS EXPRESSED
;THE DESIRE TO CHANGE THE SOFTWARE

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2563 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2564 ;THE USER TYPED CONTROL G?).
2565
2566 ;*****
2567 ;*TEST 6 FDST MODE 3 TEST
2568 ;*
2569 ;*THIS IS A TEST OF FDST MODE 3 USING STD.
2570 ;*
2571 ;*****
2572 010402 000004 TST6: SCOPE
2573
2574 010404 TTT1:
2575 010404 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
2576 010406 012701 010524 MOV #TTTBFO,R1 ;SET UP THE OUTPUT DATA BUFFER.
2577 010412 012700 177777 MOV #-1,R0
2578 010416 012702 000012 MOV #12,R2
2579 010422 010021 15: MOV RO,(R1)+
2580 010424 077202 SOB R2,15
2581 010426 012737 010524 010540 MOV #TTTBFO,@#TTTA2
2582 010434 012700 000200 MOV #200,R0 ;ENTER DOUBLE FLOATING MODE.
2583 010440 170100 LDFPS RO
2584 010442 012700 010550 MOV #TTTTP1,RO ;SET UP ACO.
2585 010446 172410 LDD (RO),ACO
2586 010450 012737 010560 000004 MOV #TTT10,@#ERRVECT ;SET UP FOR TRAPS TO 4.
2587 010456 016737 000006 001236 MOV TTT2,@#STMP2
2588 010464 012700 010540 MOV #TTTA2,RO ;SET UP THE DESTINATION ADDRESS.
2589
2590 010470 174030 TTT2: STD ACO,@(RO)+ ;TEST INSTRUCTION.
2591
2592 010472 020027 010542 CMP RO,#TTTA2+2 ;SEE IF RO WAS INCREMENTED CORRECTLY.
2593 010476 001046 BNE TTT15 ;BRANCH IF INCORRECT.
2594 010500 012701 010524 MOV #TTTBFO,R1 ;CHECK THE OUTPUT DATA BUFFER.
2595 010504 012702 010550 MOV #TTTTP1,R2
2596 010510 012703 000004 MOV #4,R3
2597 010514 022122 TTT3: CMP (R1)+,(R2)+
2598 010516 001045 BNE TTT20 ;BRANCH IF NOT CORRECT.
2599 010520 077303 SOB R3,TTT3
2600 010522 000452 BR TTTDONE
2601
2602 ;THIS IS THE OUTPUT DATA BUFFER:
2603 010524 177777 TTTBFO: -1
2604 010526 177777 -1
2605 010530 177777 -1
2606 010532 177777 -1
2607 010534 177777 -1
2608 010536 177777 TTTA1: -1
2609 010540 010524 TTTA2: TTTBFO
2610 010542 177777 TTTA3: -1
2611 010544 177777 -1
2612 010546 177777 -1
2613 010550 101213 TTTTTP1: 101213
2614 010552 141516 141516
2615 010554 071727 71727
2616 010556 037475 37475
2617
2618 ;TRAP THROUGH VECTOR 4 TO HERE.
    
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CFFPCBD 11/34 FPP DIAG PRT3          MACY11 30A(1052) 05-MAY-78 15:24 PAGE 50
CFFPCB.P11 05-MAY-78 15:23          T6      FDST MODE 3 TEST
                                                    K 4
                                                    SEQ 0049

2619 010560 011602          TTT10: MOV      (SP),R2          ;SEE IF THE TRAP ADDRESS IS THAT OF THE TEST INSTRUCTION
2620 010562 020227 010472          CMP      R2,#TTT2+2
2621 010566 001405          BEQ      TTT11          ;BRANCH IF YES.
2622 010570 020227 010474          CMP      R2,#TTT2+4
2623 010574 001402          BEQ      TTT11          ;BRANCH IF YES.
2624 010576 000137 042610          JMP      @#CPSPUR      ;OTHERWISE GO REPORT A SPURIOUS TRAP TO 4.
2625
2626          ;REPORT A FAILURE IN THE FDST FLOWS RESULTED IN AN ODD ADDRESS TRAP.
2627 010602 010237 001236          TTT11: MOV      R2,@#STMP2
2628 010606 022626          CMP      (SP)+,(SP)+
2629 010610 104023          15:      ERROR   23          ;BET FDST X ODD ADR
2630 010612 000416          BR       TTTDONE
2631
2632          ;REPORT RO INCORRECT:
2633 010614 010037 001242          TTT15: MOV      RO,@#STMP4
2634 010620 012737 010542 001240          MOV      #TTTA2+2,@#STMP3
2635 010626 104024          15:      ERROR   24          ;RO NOT INCREMENT PROPERLY
2636 010630 000407          BR       TTTDONE
2637
2638          ;REPORT INCORRECT OUTPUT DATA:
2639 010632 012737 010524 001240          TTT20: MOV      #TTTBFO,@#STMP3
2640 010640 012737 010550 001242          MOV      #TTTTP1,@#STMP4
2641 010646 104025          15:      ERROR   25          ;BAD DATA
2642 010650          TTTDONE:
2643 010650 104412          RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
2644          ;SEE IF THE USER HAS EXPRESSED
2645          ;THE DESIRE TO CHANGE THE SOFTWARE
2646          ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2647          ;THE USER TYPED CONTROL G?).
2648
2649          ;*****
2650          ;*TEST 7      FDST MODE 5 TEST
2651          ;*
2652          ;*THIS IS A TEST OF FDST MODE 5 USING STD.
2653          ;*
2654          ;*****
2655 010652 000004          TST7:  SCOPE
2656
2657 010654          UUU1:
2658 010654 104413          LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
2659 010656 012701 010774          MOV      #UUUBFO,R1          ;SET UP THE OUTPUT DATA BUFFER.
2660 010662 012700 177777          MOV      #-1,R0
2661 010666 012702 000012          MOV      #12,R2
2662 010672 010021          15:      MOV      RO,(R1)+
2663 010674 077202          SOB      R2,15
2664 010676 012737 010774 011006          MOV      #UUUBFO,@#UUUA1
2665 010704 012700 000200          MOV      #200,R0          ;ENTER DOUBLE FLOATING MODE.
2666 010710 170100          LDFPS      RO
2667 010712 012700 011020          MOV      #UUUTP1,RO          ;SET UP ACO.
2668 010716 172410          LDD      (RO),ACO
2669 010720 012737 011030 000004          MOV      #UUU10,@#ERRVECT ;GET READY FOR ANY TRAPS TO 4.
2670 010726 016737 000006 001236          MOV      UUU2,@#STMP2
2671 010734 012700 011010          MOV      #UUUA2,RO          ;SET UP THE DESTINATION ADDRESS.
2672 010740 174050          UUU2:  STD      ACO,@-(RO)          ;TEST INSTRUCTION.
2673 010742 020027 011006          CMP      RO,#UUUA2-2          ;WAS RO DECRIMENTED PROPERLY?
2674 010746 001046          BNE      UUU15          ;BRANCH IF RO IS INCORRECT.

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2675 010750 012701 010774      MOV      #UUUBFO,R1      ;WAS THE DATA OUTPUT CORRECTLY?
2676 010754 012702 011020      MOV      #UUUTP1,R2
2677 010760 012703 000004      MOV      #4,R3
2678 010764 022122      UUU3:    CMP      (R1)+,(R2)+
2679 010766 001045      BNE     UUU20      ;BRANCH IF DATA IS INCORRECT.
2680 010770 077303      SOB     R3,UUU3
2681 010772 000452      BR      UUUDONE
2682
2683      ;THIS IS THE OUTPUT DATA BUFFER
2684 010774 177777      UUUBFO: -1
2685 010776 177777      -1
2686 011000 177777      -1
2687 011002 177777      -1
2688 011004 177777      -1
2689 011006 010774      UUUA1:  UUUBFO
2690 011010 177777      UUUA2:  -1
2691 011012 177777      UUUA3:  -1
2692 011014 177777      -1
2693 011016 177777      -1
2694 011020 020212      UUUTP1: 20212
2695 011022 023242      23242
2696 011024 026273      26273
2697 011026 031323      031323
2698
2699      ; IF A TRAP TO 4 OCCURS COME HERE.
2700 011030 011602      UUU10:  MOV      (SP),R2      ;SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION.
2701 011032 020227 010742      CMP      R2,#UUU2+2
2702 011036 001405      BEQ     UUU11      ;BRANCH IF YES.
2703 011040 020227 010744      CMP      R2,#UUU2+4
2704 011044 001402      BEQ     UUU11      ;BRANCH IF YES.
2705 011046 000137 042610      JMP     @#CSPUR      ;OTHERWISE REPORT A SPURIOUS TRAP TO 4.
2706      ;REPORT FAILURE OF FDST RESULTED IN AN ODD ADDRESS TRAP TO 4.
2707 011052 010237 001236      UUU11:  MOV      R2,@#STMP2
2708 011056 022626      CMP      (SP)+,(SP)+
2709 011060 104026      15:    ERROR   26      ;BET FDST X ODD ADR
2710 011062 000416      BR      UUUDONE
2711
2712      ;REPORT RO INCORRECT.
2713 011064 010037 001242      UUU15:  MOV      RO,@#STMP4
2714 011070 012737 011012 001240      MOV     #UUUA2+2,@#STMP3
2715 011076 104027      15:    ERROR   27      ;RO NOT INCREMENT PROPERLY
2716 011100 000407      BR      UUUDONE
2717
2718      ;REPORT BAD DATA
2719 011102 012737 010774 001242      UUU20:  MOV      #UUUBFO,@#STMP4
2720 011110 012737 011020 001240      MOV     #UUUTP1,@#STMP3
2721 011116 104030      15:    ERROR   30      ;BAD DATA
2722 011120      UUUDONE:
2723 011120 104412      RSETUP      ;GO INITIALIZE THE FPS AND STACK; AND
2724      ;SEE IF THE USER HAS EXPRESSED
2725      ;THE DESIRE TO CHANGE THE SOFTWARE
2726      ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2727      ;THE USER TYPED CONTROL G?).
2728
2729      ;*****
2730      ;*TEST 10      FDST MODE 6, INDEX MODE, TEST
  
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2731 ;*
2732 ;*THIS IS A TEST OF FDST MODE 6, INDEX MODE, USING STD.
2733 ;*
2734 ;*****
2735 011122 000004 TST10: SCOPE
2736
2737 011124 VVV1:
2738 011124 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
2739 011126 012700 000200 MOV #200,R0 ;ENTER DOUBLE FLOATING MODE.
2740 011132 170100 LDFPS RO
2741 011134 012701 011244 MOV #VVVBFO,R1 ;SET UP THE OUT PUT DATA BUFFER.
2742 011140 012700 177777 MOV #-1,R0
2743 011144 012702 000004 MOV #4,R2
2744 011150 010021 15: MOV RO,(R1)+
2745 011152 077202 SOB R2,15
2746 011154 012737 011264 000004 MOV #VVV10,@ERRVECT ;SET UP VECTOR 4 INCASE OF ERROR.
2747 011162 012700 011254 MOV #VVVTP1,RO ;SET UP ACO.
2748 011166 172410 LDD (RO),ACO
2749 011170 012737 011206 001236 MOV #VVV2,@STMP2
2750 011176 012700 003343 MOV #VVVBFO-5701,RO ;SET UP THE DESTINATION ADDRESS.
2751 011202 012701 000001 MOV #1,R1
2752 011206 174060 005701 VVV2: STD ACO,5701(RO) ;TEST INSTRUCTION.
2753
2754 011212 020027 003343 CMP RO,#VVVBFO-5701 ;SEE IF RO WAS MODIFIED.
2755 011216 001040 BNE VVV15 ;BRANCH IF INCORRECT.
2756 011220 012702 011244 MOV #VVVBFO,R2 ;WAS THE OUTPUT DATA CORRECT.
2757 011224 012703 011254 MOV #VVVTP1,R3
2758 011230 012704 000004 MOV #4,R4
2759 011234 022223 15: CMP (R2)+,(R3)+
2760 011236 001037 BNE VVV20 ;BRANCH IF INCORRECT DATA.
2761 011240 077403 SOB R4,15
2762 011242 000444 BR VVVDONE
2763 011244 177777 VVVBFO: -1
2764 011246 177777 -1
2765 011250 177777 -1
2766 011252 177777 -1
2767 011254 030313 VVVTP1: 30313
2768 011256 023334 23334
2769 011260 035363 35363
2770 011262 074041 74041
2771
2772 ;COME HERE AFTER A TRAP THROUGH VECTOR 4.
2773 011264 011602 VVV10: MOV (SP),R2 ;SEE IF THE TRAP OCCURRED ON THE TEST INSTR.
2774 011266 020227 011210 CMP R2,#VVV2+2
2775 011272 001405 BEQ VVV11 ;BRANCH IF YES.
2776 011274 020227 011212 CMP R2,#VVV2+4
2777 011300 001402 BEQ VVV11 ;BRANCH IF YES.
2778 011302 000137 042554 JMP @FFSPUR ;OTHERWISE GO REPORT SPURIOUS TRAP TO 4.
2779 ;REPORT FAILURE OF FDST RESULTED IN AN ODD ADDRESS TRAP TO 4.
2780 011306 010237 001236 VVV11: MOV R2,@STMP2
2781 011312 022626 CMP (SP)+,(SP)+
2782 011314 104031 15: ERROR 31 ;FDST FORK X ODD ADD
2783 011316 000416 BR VVVDONE
2784
2785 ;REPORT RO MODIFIED.
2786 011320 010037 001242 VVV15: MOV RO,@STMP4
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2787 011324 012737 003343 001240      MOV    #VVVBFO-5701,@#STMP3
2788 011332 104032      15:   ERROR    32          ;RO MODIFIED!
2789 011334 000407      BR     VVVDONE
2790
2791      ;REPORT INCORRECT DATA.
2792 011336 012737 011244 001240  VVV20: MOV    #VVVBFO,@#STMP3
2793 011344 012737 011254 001242      MOV    #VVVTP1,@#STMP4
2794 011352 104033      15:   ERROR    33          ;BAD DATA
2795 011354
2796 011354 104412      VVVDONE: RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
2797      ;SEE IF THE USER HAS EXPRESSED
2798      ;THE DESIRE TO CHANGE THE SOFTWARE
2799      ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2800      ;THE USER TYPED CONTROL G?).
2801
2802      ;*****
2803      ;*TEST 11      FDST MODE 7, INDEX DEFERRED MODE, TEST
2804      ;*
2805      ;*THIS IS A TEST OF FDST MODE 7, INDEX DEFERRED MODE, USING STD.
2806      ;*
2807      ;*****
2808 011356 000004      TST11: SCOPE
2809
2810      WWW1:
2811 011360 104413      LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
2812 011362 012700 000200      MOV    #200,RO  ;ENTER DOUBLE FLOATING MODE.
2813 011366 170100      LDFPS        RO
2814 011370 012701 011506      MOV    #WWWBFO,R1 ;SET UP THE OUTPUT DATA BUFFER.
2815 011374 012700 177777      MOV    #-1,RO
2816 011400 012702 000004      MOV    #4,R2
2817 011404 010021      15:   MOV    RO,(R1)+
2818 011406 077202      SOB     R2,15
2819 011410 012737 011536 000004      MOV    #WWW10,@ERRVECT ;SET UP FOR TRAPS TO 4.
2820 011416 012700 011516      MOV    #WWWTP1,RO  ;SET UP ACO.
2821 011422 172410      LDD     (RO),ACO
2822 011424 012737 011450 001236      MOV    #WWW2,@#STMP2
2823 011432 012700 003625      MOV    #WWWBF1-5701,RO ;SET UP THE DESTINATION ADDRESS.
2824 011436 012701 000001      MOV    #1,R1
2825 011442 012737 011506 011526      MOV    #WWWBFO,@WWWBF1
2826 011450 174070 005701      WWW2:  STD    ACO,@5701(RO) ;TEST INSTRUCTION.
2827
2828 011454 020027 003625      CMP    RO,#WWWBF1-5701 ;IS RO CORRECT?
2829 011460 001044      BNE    WWW15      ;BRANCH IF INCORRECT.
2830 011462 012702 011506      MOV    #WWWBFO,R2  ;WAS THE DATA OUTPUT CORRECTLY?
2831 011466 012703 011516      MOV    #WWWTP1,R3
2832 011472 012704 000004      MOV    #4,R4
2833 011476 022223      15:   CMP    (R2)+,(R3)+
2834 011500 001043      BNE    WWW20      ;BRANCH IF DATA IS INCORRECT.
2835 011502 077403      SOB     R4,15
2836 011504 000450      BR     WWWDONE
2837 011506 177777      WWWBFO: -1
2838 011510 177777      -1
2839 011512 177777      -1
2840 011514 177777      -1
2841 011516 041424      WWWTP1: 41424
2842 011520 034445      34445
  
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2843 011522 046475 46475
2844 011524 051525 051525
2845 011526 177777 WWBF1: -1
2846 011530 177777 -1
2847 011532 177777 -1
2848 011534 177777 -1
2849
2850 ;TRAP THROUGH 4 TO HERE.
2851 011536 011602 WW10: MOV (SP),R2 ;SEE IF THE TRAP OCCURRED ON THE TEST INSTR.
2852 011540 020227 011452 CMP R2,#WW2+2
2853 011544 001405 BEQ WW11 ;BRANCH IF YES.
2854 011546 020227 011454 CMP R2,#WW2+4
2855 011552 001402 BEQ WW11 ;BRANCH IF YES.
2856 011554 000137 042554 JMP @#FSPUR ;OTHERWISE GO REPORT SPURIOUS TRAP TO 4.
2857 ;REPORT FAILURE OF FDST FORK RESULTED IN AN ODD ADDRESS TRAP TO 4.
2858 011560 010237 001236 WW11: MOV R2,@#STMP2
2859 011564 022626 CMP (SP)+,(SP)+
2860 011566 104034 15: ERROR 34 ;FDST FORK X ODD ADD
2861 011570 000416 BR WWDONE
2862
2863 ;REPORT RO MODIFIED.
2864 011572 010037 001242 WW15: MOV RO,@#STMP4
2865 011576 012737 003605 001240 MOV #WWBFO-5701,@#STMP3
2866 011604 104035 15: ERROR 35 ;RO MODIFIED!
2867 011606 000407 BR WWDONE
2868
2869 ;REPORT DATA INCORRECT
2870 011610 012737 011506 001240 WW20: MOV #WWBFO,@#STMP3
2871 011616 012737 011516 001242 MOV #WWTP1,@#STMP4
2872 011624 104036 15: ERROR 36 ;BAD DATA
2873 011626 WWWDONE:
2874 011626 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
2875 ;SEE IF THE USER HAS EXPRESSED
2876 ;THE DESIRE TO CHANGE THE SOFTWARE
2877 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2878 ;THE USER TYPED CONTROL G?).
2879
2880 ;*****
2881 ;*TEST 12 STCFD TEST
2882 ;*
2883 ;*THIS IS A TEST OF THE STCFD INSTRUCTION.
2884 ;*
2885 ;*****
2886 011630 000004 TST12: SCOPE
2887
2888 ;AC=0
2889 011632 XXX1:
2890 011632 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
2891 011634 004767 000330 JSR PC,STCFDS
2892 011640 000000 15: 0 ;AC
2893 011642 000000 0
2894 011644 000000 0
2895 011646 000000 0
2896 011650 000000 25: 0 ;RES
2897 011652 000000 0
2898 011654 000000 0
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2899 011656 000000      0
2900 011660 000000      35: 0          ;ERROR RES.
2901 011662 000000      0
2902 011664 177777      -1
2903 011666 177777      -1
2904 011670 047000      45: 47000       ;FPS BEFORE EXECUTION.
2905 011672 047004      47004       ;FPS AFTER EXECUTION.
2906 011674 177777      -1          ;FEC
2907 011676 147004      147004     ;ERROR FPS.
2908 011700 104042      55: ERROR      42          ;DFDL<---DFDLXST 767
2909 011702 000401      BR          65
2910 011704 104043      ERROR      43          ;BUT EZBT X ST560 TO 061 INTO 261
2911 011706
2912 ;
2913 011706
2914 011706 104413      XXX2: LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
2915 011710 004767 000254 JSR          PC,STCFDS
2916 011714 017203      15: 17203       ;AC
2917 011716 142536      142536
2918 011720 047506      47506
2919 011722 172031      172031
2920 011724 017203      25: 17203       ;RES
2921 011726 142536      142536
2922 011730 000000      0
2923 011732 000000      0
2924 011734 017203      35: 17203       ;ERROR RES.
2925 011736 142536      142536
2926 011740 047506      47506
2927 011742 172031      172031
2928 011744 040000      45: 40000       ;FPS BEFORE EXECUTION.
2929 011746 040000      40000       ;FPS AFTER EXECUTION.
2930 011750 177777      -1          ;FEC
2931 011752 177777      -1          ;ERROR FPS.
2932 011754 104044      55: ERROR      44          ;X11(1,0)<---0 X ST766
2933 011756 000401      BR          65
2934 011760 104040      ERROR      40
2935 011762
2936 ;
2937 011762
2938 011762 104413      XXX3: LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
2939 011764 004767 000200 JSR          PC,STCFDS
2940 011770 050717      15: 50717       ;AC
2941 011772 027374      27374
2942 011774 075767      75767
2943 011776 077071      77071
2944 012000 050717      25: 50717       ;RES
2945 012002 027374      27374
2946 012004 000000      0
2947 012006 000000      0
2948 012010 000000      35: 0          ;ERROR RES.
2949 012012 000000      0
2950 012014 000000      0
2951 012016 000000      0
2952 012020 047000      45: 47000       ;FPS BEFORE EXECUTION.
2953 012022 047000      47000       ;FPS AFTER EXECUTION.
2954 012024 177777      -1          ;FEC
  
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2955 012026 174002          174002          ;ERROR FPS.
2956 012030 104045          55:  ERROR 45          ;BUT OPIC X ST251
2957 012032 000401          BR 65
2958 012034 104046          ERROR 46          ;BUT EZBT X ST421
2959 012036
2960
2961 012036
2962 012036 104413          XXX4:  LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
2963 012040 004767 000124  JSR  PC,STCFDS
2964 012044 020212          15:  20212          ;AC
2965 012046 032425          32425
2966 012050 026272          26272
2967 012052 002123          02123
2968 012054 020212          25:  20212          ;RES
2969 012056 032425          32425
2970 012060 000000          0
2971 012062 000000          0
2972 012064 020212          35:  20212          ;ERROR RES.
2973 012066 032425          32425
2974 012070 100000          100000
2975 012072 000000          0
2976 012074 040000          45:  40000          ;FPS BEFORE EXECUTION.
2977 012076 040000          40000          ;FPS AFTER EXECUTION.
2978 012100 177777          -1          ;FEC
2979 012102 177777          -1          ;ERROR FPS.
2980 012104 104047          55:  ERROR 47          ;BUT FD IN ROUND X ST113
2981 012106 000401          BR 65
2982 012110 104040          ERROR 40
2983 012112
2984
2985 012112
2986 012112 104413          XXX5:  LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
2987 012114 004767 000050  JSR  PC,STCFDS
2988 012120 121314          15:  121314          ;AC
2989 012122 151617          151617
2990 012124 101112          101112
2991 012126 131415          131415
2992 012130 121314          25:  121314          ;RES
2993 012132 151617          151617
2994 012134 000000          0
2995 012136 000000          0
2996 012140 021314          35:  21314          ;ERROR RES.
2997 012142 151617          151617
2998 012144 000000          0
2999 012146 000000          0
3000 012150 040000          45:  40000          ;FPS BEFORE EXECUTION.
3001 012152 040010          40010          ;FPS AFTER EXECUTION.
3002 012154 177777          -1          ;FEC
3003 012156 177777          -1          ;ERROR FPS.
3004 012160 104050          55:  ERROR 50          ;BUT ENBT X ST567 OR BAD SIGN ST460
3005 012162 000401          BR 65
3006 012164 104040          ERROR 40
3007 012166 000535          65:  BR  XXXDONE
3008
3009
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012170 012601  
 012172 012700 000200  
 012176 170100  
 012200 010100  
 012202 172410  
 012204 012700 177777  
 012210 012702 012452  
 012214 012703 000004  
 012220 010022  
 012222 077302  
 012224 016100 000030  
 012230 170100  
 012232 012737 012244 001236  
 012240 012700 012452  
 012244 176010  
 012246 170204  
 012250 170305  
 012252 010102  
 012254 010237 001240  
 012260 062702 000010  
 012264 010237 001244  
 012270 012737 012452 001242

```

; THIS SUBROUTINE, STCFDS, IS USED TO SET UP THE OPERANDS, EXECUTE
; THE STCFD INSTRUCTION AND CHECK THE RESULTS. A CALL
; TO IT IS MADE THUS:
;
; JSR      PC, @STCFDS
; ACARG:   .WORD  X,X,X,X      ; AC OPERAND
; RES:     .WORD  X,X,X,X      ; EXPECTED RESULT
; ERRES:   .WORD  X,X,X,X      ; ERROR RESULT
; FPSB:    .WORD  X              ; FPS BEFORE EXECUTION
; FPSA:    .WORD  X              ; FPS AFTER EXECUTION
; FEC:     .WORD  X              ; EXPECTED FEC
; ERFPS:   .WORD  X              ; ERROR FPS.
; ERR1:    ERROR  X              ; DATA ERROR.
;          BR      CONT
; ERR2:    ERROR  X              ; FPS ERROR.
; CONT:    CONT   X              ; RETURN ADDRESS
;
; THE OPERANDS ARE SET UP (USING ACO AS THE ACCUMULATOR). THEN
; THE STCFD INSTRUCTION IS EXECUTED.
; THE RESULT IS CHECKED AGAINST RES. IF THE RESULT IS CORRECT THEN THE FPS IS
; COMPARED WITH FPSA IF THIS TOO IS CORRECT STCFDS RETURNS CONTROL
; TO THE CALLING ROUTINE AT CONT. IF THE FPS IS BAD STCFDS
; COMPARE IT TO ERROR FPS. IF THIS MATCHES THEN STCFDS WILL RETURN
; TO THE ERROR CALL AT ERR2, OTHERWISE STCFDS ITSELF
; REPORTS THIS FAILURE AND THEN RETURNS TO CONT. IF THE RESULT OF THE
; STCFD IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
; ANTICIPATED FAILING DATA PATTERN, ERRES. IF THE FAILURE IN
; THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN STCFDS
; WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1. OTHERWISE THE
; RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND STCFDS WILL
; REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT.

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STCFDS: MOV      (SP)+, R1      ; PICK UP THE POINTER TO THE OPERANDS.
        MOV      #200, R0      ; ENTER DOUBLE FLOATING MODE.
        LDFPS   R0
        MOV      R1, R0        ; LOAD ACO.
        LDD     (R0), ACO
        MOV      #-1, R0        ; FILL THE OUTPUT BUFFER WITH -1'S.
        MOV      #STCFT, R2
        MOV      #4, R3
15:     MOV      R0, (R2)+
        SOB     R3, 15
        MOV      30(R1), R0     ; LOAD THE FPS.
        LDFPS   R0
        MOV      #25, @#STMP2
        MOV      #STCFT, R0     ; SET UP THE DESTINATION ADDRESS.
25:     STCFD   ACO, (R0)      ; TEST INSTRUCTION.

        STFPS   R4              ; GET THE FPS.
        STST   R5              ; GET THE FEC.
        MOV     R1, R2          ; SAVE THE DATA IN CASE OF ERROR.
        MOV     R2, @#STMP3
        ADD    #10, R2
        MOV     R2, @#STMP5
        MOV     #STCFT, @#STMP4

```



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3067 012276 010437 001250      MOV      R4, @#STMP7
3068 012302 016137 000032 001252  MOV      32(R1), @#STMP10
3069
3070 012310 010102      MOV      R1, R2          ; CHECK THE RESULT.
3071 012312 062702 000010      ADD      #10, R2
3072 012316 012703 012452      MOV      #STCFT, R3
3073 012322 012700 000004      MOV      #4, R0
3074 012326 022223      35:     CMP      (R2)+, (R3)+
3075 012330 001014      BNE      15$            ; BRANCH IF INCORRECT.
3076 012332 077003      SOB      R0, 35
3077
3078 012334 016102 000032      MOV      32(R1), R2
3079 012340 020204      CMP      R2, R4          ; IS THE FPS CORRECT?
3080 012342 001025      BNE      20$            ; BRANCH IF FPS INCORRECT.
3081 012344 005702      TST      R2              ; IF EXPECTED FPS IS NEGATIVE, THEN
3082 012346 100003      BPL      4$              ; GO AHEAD AND CHECK THE FEC.
3083 012350 026105 000036      CMP      36(R1), R5
3084 012354 001027      BNE      25$            ; BRANCH IF FEC IS INCORRECT.
3085 012356 000161 000046      45:     JMP      46(R1)      ; RETURN.
3086
3087      ; RESULT INCORRECT:
3088 012362 010102      15$:    MOV      R1, R2          ; SEE IF ERROR WAS ANTICIPATED.
3089 012364 062702 000020      ADD      #20, R2
3090 012370 012703 012452      MOV      #STCFT, R3
3091 012374 012700 000004      MOV      #4, R0
3092 012400 022223      16$:    CMP      (R2)+, (R3)+
3093 012402 001003      BNE      17$            ; BRANCH IF NOT ANTICIPATED.
3094 012404 077003      SOB      R0, 16$
3095 012406 000161 000040      JMP      40(R1)          ; IF ERROR WAS ANTICIPATED RETURN.
3096      ; OTHERWISE REPORT RESULT INCORRECT HERE.
3097 012412      17$:
3098 012412 104037      18$:    ERROR  37          ; DATA ERROR
  
```

```

3099 012414 000760 BR 45
3100
3101 ;FPS INCORRECT:
3102 012416 020461 000034 205: CMP R4,34(R1) ;WAS THE ERROR ANTICIPATED.
3103 012422 001002 ;BRANCH IF NOT ANTICIPATED.
3104 012424 000161 000044 JMP 44(R1) ;IF IT WAS ANTICIPATED RETURN.
3105
3106 ;THE FPS ERROR WAS NOT ANTICIPATED SO REPORT FPS INCORRECT HERE.
3107 012430 215:
3108 012430 104040 225: ERROR 40 ;FPS X
3109 012432 000751 BR 45
3110
3111 ;REPORT FEC INCORRECT:
3112 012434 016137 000036 001256 255: MOV 36(R1),@#STMP12
3113 012442 010537 001254 MOV R5,@#STMP11
3114 012446 104041 265: ERROR 41 ;FEC X
3115 012450 000742 BR 45
3116 012452 177777 177777 177777 STCFD: -1,-1,-1,-1
3117 012460 177777
3118 012462 XXXDONE:
3119 012462 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
3120 ;SEE IF THE USER HAS EXPRESSED
3121 ;THE DESIRE TO CHANGE THE SOFTWARE
3122 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
3123 ;THE USER TYPED CONTROL G?).
3124
3125 ;*****
3126 ;*TEST 13 STCDF TEST
3127 ;*
3128 ;*THIS IS A TEST OF THE STCDF INSTRUCTION.
3129 ;*
3130 ;*****
3131 012464 000004 TST13: SCOPE
3132
3133 ;AC=0
3134 012466 YYY1:
3135 012466 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
3136 012470 004767 000330 JSR PC,STCDF5
3137 012474 000000 15: 0 ;AC
3138 012476 000000 0
3139 012500 000000 0
3140 012502 000000 0
3141 012504 000000 25: 0 ;RES
3142 012506 000000 0
3143 012510 177777 -1
3144 012512 177777 -1
3145 012514 000000 35: 0 ;ERROR RES.
3146 012516 000000 0
3147 012520 000000 0
3148 012522 000000 0
3149 012524 047200 45: 47200 ;FPS BEFORE EXECUTION.
3150 012526 047204 47204 ;FPS AFTER EXECUTION.
3151 012530 177777 -1 ;FEC
3152 012532 177777 -1 ;ERROR FPS.
3153 012534 104054 55: ERROR 54 ;FDFL<---FDFL X ST767
3154 012536 000401 BR 65
  
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3155 012540 104052          ERROR 52          ;FPS INCORRECT.
3156 012542          65:
3157                      ;
3158 012542          ;YYY2:
3159 012542 104413          LPERR          ;SET UP THE LOOP CN ERROR ADDRESS.
3160 012544 004767 000254  JSR          PC,STCDFS
3161 012550 067574          15: 67574          ;ACO
3162 012552 073727          73727
3163 012554 170777          170777
3164 012556 067574          67574
3165 012560 067574          25: 67574          ;RES
3166 012562 073730          73730
3167 012564 177777          -1
3168 012566 177777          -1
3169 012570 067574          35: 67574          ;ERROR RES.
3170 012572 073727          73727
3171 012574 177777          -1
3172 012576 177777          -1
3173 012600 040200          45: 40200          ;FPS BEFORE EXECUTION.
3174 012602 040200          40200          ;FPS AFTER EXECUTION.
3175 012604 177777          -1          ;FEC
3176 012606 177777          -1          ;ERROR FPS.
3177 012610 104055          55: ERROR 55          ;EITHER ROUND FAILED OR WENT TO 766 X1(1,0)----0 INTO 76
3178 012612 000401          BR 65
3179 012614 104052          ERROR 52
3180 012616          65:
3181                      ;
3182 012616          ;YYY3:
3183 012616 104413          LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
3184 012620 004767 000200  JSP          PC,STCDFS
3185 012624 077777          15: 77777          ;ACO
3186 012626 177777          -1
3187 012630 100000          100000
3188 012632 000000          0
3189 012634 000000          25: 0          ;RES
3190 012636 000000          0
3191 012640 177777          -1
3192 012642 177777          -1
3193 012644 077777          35: 77777          ;ERROR RES.
3194 012646 177777          -1
3195 012650 177777          -1
3196 012652 177777          -1
3197 012654 040200          45: 40200          ;FPS BEFORE EXECUTION.
3198 012656 040206          40206          ;FPS AFTER EXECUTION.
3199 012660 177777          -1          ;FEC
3200 012662 040204          40204          ;ERROR FPS.
3201 012664 104055          55: ERROR 55
3202 012666 000401          BR 65
3203 012670 104056          ERROR 56          ;BUT EZBT X ST421 TO 062 INTO 262
3204 012672          65:
3205                      ;
3206 012672          ;YYY4:
3207 012672 104413          LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
3208 012674 004767 000124  JSR          PC,STCDFS
3209 012700 077777          15: 77777          ;ACO
3210 012702 177777          -1
  
```

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3211 012704 100000          100000
3212 012706 000000          0
3213 012710 000000      25: 0          ;RES
3214 012712 000000          0
3215 012714 177777          -1
3216 012716 177777          -1
3217 012720 077777      35: 77777          ;ERROR RES.
3218 012722 177777          -1
3219 012724 177777          -1
3220 012726 177777          -1
3221 012730 040200      45: 40200          ;FPS BEFORE EXECUTION.
3222 012732 040206          40206          ;FPS AFTER EXECUTION.
3223 012734 177777          -1          ;FEC
3224 012736 140206          140206          ;ERROR FPS.
3225 012740 104055      55: ERROR 55
3226 012742 000401          BR 65
3227 012744 104057          ERROR 57          ;BUT FIV ST262 TO 123 INTO 103
3228 012746
3229
3230 012746
3231 012746 104413      000050      LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
3232 012750 004767      JSR PC,STCDF5
3233 012754 177777      15: 177777          ;ACO
3234 012756 177777          -1
3235 012760 100000          100000
3236 012762 000000          0
3237 012764 100000      25: 100000          ;RES
3238 012766 000000          0
3239 012770 177777          -1
3240 012772 177777          -1
3241 012774 000000      35: 0          ;ERROR RES.
3242 012776 000000          0
3243 013000 177777          -1
3244 013002 177777          -1
3245 013004 047200      45: 47200          ;FPS BEFORE EXECUTION.
3246 013006 147216          147216          ;FPS AFTER EXECUTION.
3247 013010 000010          10          ;FEC
3248 013012 047206          47206          ;ERROR FPS.
3249 013014 104060      55: ERROR 60          ;BUT FIV ST262 FAIL TO 103 INT 123
3250 013016 000401          BR 65
3251 013020 104061          ERROR 61          ;BUT FLAG ST 147 X TO ST 361 INTO 365
3252 013022 000535      65: BR YYDONE
3253 ;THIS SUBROUTINE, STCDF5, IS USED TO SET UP THE OPERANDS, EXECUTE
3254 ;THE STCDF INSTRUCTION AND CHECK THE RESULTS. A CALL
3255 ;TO IT IS MADE THUS:
3256 ;
3257 ;
3258 ;          JSR PC,#STCDF5
3259 ;          ACARG: .WORD X,X,X,X          ;AC OPERAND
3260 ;          RES: .WORD X,X,X,X          ;EXPECTED RESULT
3261 ;          ERRES: .WORD X,X,X,X          ;ERROR RESULT
3262 ;          FPSB: .WORD X          ;FPS BEFORE EXECUTION
3263 ;          FPSA: .WORD X          ;FPS AFTER EXECUTION
3264 ;          FEC: .WORD X          ;EXPECTED FEC
3265 ;          ERFPS: .WORD X          ;ERROR FPS.
3266 ;          ERR1: ERROR X          ;DATA ERROR.
;          BR CONT

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3267 ; ERR2: ERROR X ;FPS ERROR.
3268 ; CONT: ;RETURN ADDRESS
3269 ;
3270 ; THE OPERANDS ARE SET UP (USING ACO AS THE ACCUMULATOR). THEN
3271 ; THE STCDF INSTRUCTION IS EXECUTED.
3272 ; THE RESULT IS CHECKED AGAINST RES. IF THE RESULT IS CORRECT THEN THE FPS IS
3273 ; COMPARED WITH FPSA IF THIS TOO IS CORRECT STCFDS RETURNS CONTROL
3274 ; TO THE CALLING ROUTINE AT CONT. IF THE FPS IS BAD STCFDS
3275 ; COMPARE IT TO ERROR FPS. IF THIS MATCHES THEN STCFDS WILL RETURN
3276 ; TO THE ERROR CALL AT ERR2, OTHERWISE STCFDS ITSELF
3277 ; REPORTS THIS FAILURE AND THEN RETURNS TO CONT. IF THE RESULT OF THE
3278 ; STCDF IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
3279 ; ANTICIPATED FAILING DATA PATTERN, ERRES. IF THE FAILURE IN
3280 ; THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN STCFDS
3281 ; WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1. OTHERWISE THE
3282 ; RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND STCFDS WILL
3283 ; REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT.
3284
3285 013024 012601 STCDFS: MOV (SP)+,R1 ;PICK UP THE POINTER TO THE OPERANDS.
3286 013026 012700 000200 MOV #200,R0 ;ENTER DOUBLE FLOATING MODE.
3287 013032 170100 LDFPS RO
3288 013034 010100 MOV R1,R0 ;LOAD ACO.
3289 013036 172410 LDD (R0),ACO
3290 013040 012700 177777 MOV #-1,R0 ;FILL THE OUTPUT BUFFER WITH -1'S.
3291 013044 012702 013306 MOV #STCDT,R2
3292 013050 012703 000004 MOV #4,R3
3293 0130E4 010022 15: MOV RO,(R2)+
3294 013056 077302 SOB R3,15
3295 013060 016100 000030 MOV 30(R1),RO ;LOAD THE FPS.
3296 013064 170100 LDFPS RO
3297 013066 012737 013100 001236 MOV #25,@#STMP2
3298 013074 012700 013306 MOV #STCDT,RO ;SET UP THE DESTINATION ADDRESS.
3299 013100 176010 25: STCDF ACO,(RO) ;TEST INSTRUCTION.
3300
3301 013102 170204 STFPS R4 ;GET THE FPS.
3302 013104 170305 STST R5 ;GET THE FEC.
3303 013106 010102 MOV R1,R2 ;SAVE THE DATA IN CASE OF ERROR.
3304 013110 010237 001240 MOV R2,@#STMP3
3305 013114 062702 000010 ADD #10,R2
3306 013120 010237 001244 MOV R2,@#STMP5
3307 013124 012737 013306 001242 MOV #STCDT,@#STMP4
3308 013132 010437 001250 MOV R4,@#STMP7
3309 013136 016137 000032 001252 MOV 32(R1),@#STMP10
3310
3311 013144 010102 MOV R1,R2 ;CHECK THE RESULT.
3312 013146 062702 000010 ADD #10,R2
3313 013152 012703 013306 MOV #STCDT,R3
3314 013156 012700 000004 MOV #4,RO
3315 013162 022223 35: CMP (R2)+,(R3)+
3316 013164 001014 BNE 155 ;BRANCH IF INCORRECT.
3317 013166 077003 SOB RO,35
3318
3319 013170 016102 000032 MOV 32(R1),R2
3320 013174 020204 CMP R2,R4 ;IS THE FPS CORRECT?
3321 013176 001025 BNE 205 ;BRANCH IF FPS INCORRECT.
3322 013200 005702 TST R2 ;IF EXPECTED FPS IS NEGATIVE, THEN

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3323 013202 100003          BPL      45          ;GO AHEAD AND CHECK THE FEC.
3324 013204 026105 000034    CMP      34(R1),R5
3325 013210 001027          BNE      255         ;BRANCH IF FEC IS INCORRECT.
3326 013212 000161 000046    45:     JMP      46(R1)     ;RETURN.
3327
3328          ;RESULT INCORRECT:
3329 013216 010102    155:     MOV      R1,R2          ;SEE IF ERROR WAS ANTICIPATED.
3330 013220 062702          ADD      #20,R2
3331 013224 012703 013306    MOV      #STCDT,R3
3332 013230 012700 000004    MOV      #4,R0
3333 013234 022223    165:     CMP      (R2)+,(R3)+
3334 013236 001003          BNE      175         ;BRANCH IF NOT ANTICIPATED.
3335 013240 077003          SOB      R0,165
3336 013242 000161 000040    JMP      40(R1)     ;IF ERROR WAS ANTICIPATED RETURN.
3337          ;OTHERWISE REPORT RESULT INCORRECT HERE.
3338 013246          175:
3339 013246 104051    185:     ERROR   51          ;DATA ERROR
3340 013250 000760          BR       45
3341
3342          ;FPS INCORRECT:
3343 013252 020461 000034    205:     CMP      R4,34(R1)          ;WAS THE ERROR ANTICIPATED.
3344 013256 001002          BNE      215         ;BRANCH IF NOT ANTICIPATED.
3345 013260 000161 000044    JMP      44(R1)     ;IF IT WAS ANTICIPATED RETURN.
3346
3347          ;THE FPS ERROR WAS NOT ANTICIPATED SO REPORT FPS INCORRECT HERE.
3348 013264          215:
3349 013264 104052    225:     ERROR   52          ;FPS X
3350 013266 000751          BR       45
3351
3352          ;REPORT FEC INCORRECT:
3353 013270 016137 000036 001256 255:     MOV      36(R1),@#STMP12
3354 013276 010537 001254          MOV      R5,@#STMP11
3355 013302 104053    265:     ERROR   53          ;FEC X
3356 013304 000742          BR       45
3357 013306 177777 177777 177777 STCDT:  -1,-1,-1,-1
3358 013314 177777
3359 013316          YYYYDONE:
3360 013316 104412          RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
3361          ;SEE IF THE USER HAS EXPRESSED
3362          ;THE DESIRE TO CHANGE THE SOFTWARE
3363          ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
3364          ;THE USER TYPED CONTROL G?).
3365          ;*****
3366          ;*TEST 14          STCFD WITH ILLEGAL ACCUMULATOR TEST
3367          ;*
3368          ;*THIS TEST STCFD WITH ILLEGAL AC 6.
3369          ;*
3370          ;*****
3371 013320 000004          TST14:  SCOPE
3372
3373          ZZZ1:
3374 013322 104413          LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
3375 013324 012700 040000    MOV      #40000,R0          ;DISSABLE INTERRUPTS.
3376 013330 170100          LDFPS      R0
3377 013332 012737 013340 001236    MOV      #ZZZ2,@#STMP2
3378 013340 176006          ZZZ2:  STCFD      ACO,AC6          ;THIS TEST INSTRUCTION SHOULD CAUSE AN ERROR.
  
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3379
3380 013342 170204          STFPS R4          ;GET FPS.
3381 013344 170305          STST  R5          ;GET FEC.
3382 013346 020427 140000  CMP    R4,#140000 ;IS FPS CORRECT?
3383 013352 001004          BNE    ZZZ10      ;BRANCH IF INCORRECT FPS.
3384 013354 022705 000002  CMP    #2,R5      ;IS FEC CORRECT?
3385 013360 001010          BNE    ZZZ15      ;BRANCH IF INCORRECT.
3386 013362 000415          BR     ZZZDONE
3387
3388          ;REPORT FPS INCORRECT AFTER USE OF ILLEGAL ACCUMULATOR.
3389 013364 010437 001242  ZZZ10: MOV    R4,@#STMP4
3390 013370 012737 140000 001240  MOV    #140000,@#STMP3
3391 013376 104062          15:   ERROR 62          ;BUT FDST ST767 X TO 567 INTO 577
3392 013400 000406          BR     ZZZDONE
3393
3394          ;REPORT FEC INCORRECT AFTER USE OF ILLEGAL ACCUMULATOR.
3395 013402 010537 001242  ZZZ15: MOV    R5,@#STMP4
3396 013406 012737 000002 001240  MOV    #2,@#STMP3
3397 013414 104063          15:   ERROR 63          ;FEC---2 ST577 X
3398 013416          ZZZDONE:
3399 013416 104412          RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
3400          ;SEE IF THE USER HAS EXPRESSED
3401          ;THE DESIRE TO CHANGE THE SOFTWARE
3402          ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
3403          ;THE USER TYPED CONTROL G?).
3404
3405          ;*****
3406          ;*TEST 15          CLRD TEST
3407          ;*
3408          ;*THIS IS A TEST OF THE CRLF AND CLRD INSTRUCTIONS.
3409          ;*
3410          ;*****
3411 013420 000004          TST15: SCOPE
3412 013422          AAB1:
3413 013422 104413          LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
3414 013424 012700 013610  MOV    #AABTP1,R0 ;SET UP OUTPUT BUFFER
3415 013430 012701 013600  MOV    #AABBFO,R1
3416 013434 012702 000004  MOV    #4,R2
3417 013440 012021          15:   MOV    (R0)+,(R1)+
3418 013442 077202          SOB    R2,15
3419 013444 012700 013600  MOV    #AABBFO,R0 ;SET UP DESTINATION OPERAND ADDRESS.
3420 013450 012701 000213  MOV    #213,R1    ;SET UP FPS.
3421 013454 170101          LDFPS R1
3422 013456 012737 013464 001236  MOV    #25,@#STMP2
3423 013464 170410          25:   CLRD  (R0)          ;TEST INSTRUCTION.
3424
3425          STFPS R5          ;GET FPS.
3426 013470 012702 000004  MOV    #4,R2          ;SEE IF RESULT CLEAR, 0.
3427 013474 012701 013600  MOV    #AABBFO,R1
3428 013500 005721          35:   TST  (R1)+
3429 013502 001010          BNE    AAB2          ;BRANCH IF RESULT INCORRECT, NOT 0.
3430 013504 077203          SOB    R2,35
3431 013506 022705 000204  CMP    #204,R5      ;SEE IF FPS IS CORRECT.
3432 013512 001014          BNE    AAB3          ;BRANCH IF INCORRECT.
3433 013514 020027 013600  CMP    R0,#AABBFO   ;SEE IF R0 IS CORRECT.
3434 013520 001020          BNE    AAB4          ;BRANCH IF R0 IS INCORRECT.
  
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3435 013522 000442 BR AABDONE
3436
3437 ;RESULT NOT 0, REPORT ERROR.
3438 013524 012737 013600 001240 AAB2: MOV #AABBF0, @#STMP3
3439 013532 012737 013620 001242 MOV #AABTP2, @#STMP4
3440 013540 104064 15: ERROR 64 ;BAD DATA = 0 X 11+ZERO ST770 X
3441 013542 000432 BR AABDONE
3442
3443 ;REPORT FPS INCORRECT:
3444 013544 010437 001242 AAB3: MOV R4, @#STMP4
3445 013550 012737 000204 001240 MOV #204, @#STMP3
3446 013556 104065 15: ERROR 65 ;BAD FPS
3447 013560 000423 BR AABDONE
3448
3449 ;REPORT RO INCORRECT.
3450 013562 010037 001242 AAB4: MOV RO, @#STMP4
3451 013566 012737 013600 001240 MOV #AABBF0, @#STMP3
3452 013574 104066 15: ERROR 66
3453 013576 000414 BR AABDONE
3454
3455 ;THIS IS THE TEST DATA BUFFER, OUTPUT DATA BUFFER.
3456 013600 073475 AABBF0: 73475
3457 013602 067707 67707
3458 013604 127347 127347
3459 013606 056770 56770
3460 ;THIS IS THE DATA USED TO SET UP THE OUTPUT BUFFER.
3461 013610 073475 AABTP1: 73475
3462 013612 067707 67707
3463 013614 127347 127347
3464 013616 056770 56770
3465 ;THIS IS THE EXPECTED DATA, RESULT:
3466 013620 000000 AABTP2: 0
3467 013622 000000 0
3468 013624 000000 0
3469 013626 000000 0
3470 013630 AABDONE:
3471 013630 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
3472 ;SEE IF THE USER HAS EXPRESSED
3473 ;THE DESIRE TO CHANGE THE SOFTWARE
3474 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
3475 ;THE USER TYPED CONTROL G?).
3476
3477 ;*****
3478 ;*TEST 16 CLRD WITH ILLEGAL ACCUMULATOR TEST
3479 ;*
3480 ;*THIS IS A TEST OF CLRD WITH ILLEGAL AC7.
3481 ;*
3482 ;*****
3483 013632 000004 TST16: SCOPE
3484 013634 CCB1:
3485 013634 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
3486 013636 012700 040200 MOV #40200, RO ;SET UP THE FPS, NO INTERRUPTS AND FD=1.
3487 013642 170100 LDFPS RO
3488 013644 012737 013652 001236 MOV #CCB2, @#STMP2
3489 013652 170407 CCB2: CLRD AC7 ;TEST INSTRUCTION.
3490
    
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3491 013654 170204          STFPS R4          ;GET FPS.
3492 013656 170305          STST  R5          ;GET FEC.
3493 013660 020427 140200    CMP    R4,#140200 ;IS THE FPS CORRECT?
3494 013664 001004          BNE   CCB10       ;BRANCH IF FPS IS INCORRECT.
3495 013666 022705 000002    CMP    #2,R5      ;IS THE FEC CORRECT?
3496 013672 001010          BNE   CCB15       ;BRANCH IF FEC IS INCORRECT.
3497 013674 000415          BR    CCBDONE
3498
3499                          ;REPORT INCORRECT FPS:
3500 013676 010437 001242    CCB10: MOV    R4,#STMP4
3501 013702 012737 140200 001240    MOV    #140200,#STMP3
3502 013710 104067          15:   ERROR 67    ;BUT FDST ST 700X TO 607 INTO 677
3503 013712 000406          BR    CCBDONE
3504
3505                          ;REPORT INCORRECT FEC:
3506 013714 010537 001242    CCB15: MOV    R5,#STMP4
3507 013720 012737 000002 001240    MOV    #2,#STMP3
3508 013726 104070          15:   ERROR 70    ;FECK---2 ST 677 X
3509 013730          CCBDONE:
3510 013730 104412          RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
3511                          ;SEE IF THE USER HAS EXPRESSED
3512                          ;THE DESIRE TO CHANGE THE SOFTWARE
3513                          ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
3514                          ;THE USER TYPED CONTROL G?).
3515
3516                          ;*****
3517                          ;*TEST 17      NEGF, ABSF AND TSTF SOURCE MODE 0 WITH ILLEGAL AC7, TEST
3518                          ;*
3519                          ;*THIS IS A TEST OF THE SPECIAL
3520                          ;*DEST FLOWS USING THE NEGD INST
3521                          ;*WITH MODE ZERO AND ILLEGAL
3522                          ;*AC7.
3523                          ;*
3524                          ;*****
3525 013732 000004          TST17: SCOPE
3526
3527                          VVB1:
3528 013734 104413          LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
3529 013736 012700 040200    MOV    #40200,R0 ;SET UP THE FPS, FID=1 AND FD=1.
3530 013742 170100          LDFPS R0
3531 013744 012737 013752 001236    MOV    #VVB2,#STMP2
3532
3533 013752 170707          VVB2: NEGD    AC7    ;TEST INSTRUCTION.
3534
3535 013754 170204          STFPS R4          ;GET FPS.
3536 013756 170305          STST  R5          ;GET FEC.
3537
3538 013760 022704 140200    CMP    #140200,R4 ;IS FPS CORRECT?
3539 013764 001004          BNE   VVB10       ;BRANCH IF FPS IS INCORRECT.
3540 013766 022705 000002    CMP    #2,R5      ;IS FEC CORRECT?
3541 013772 001010          BNE   VVB15       ;BRANCH IF FEC IS INCORRECT.
3542 013774 000415          BR    VVBDONE
3543
3544                          ;REPORT INCORRECT FPS:
3545 013776 012737 140200 001240    VVB10: MOV    #140200,#STMP3
3546 014004 010437 001242    MOV    R4,#STMP4
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3547 014010 104176 15: ERROR 176 ;FPS BAD
3548 014012 000406 BR VVBDONE
3549
3550 ;REPORT FEC INCORRECT:
3551 014014 012737 000002 001240 VVB15: MOV #2,@#STMP3
3552 014022 010537 001242 MOV R5,@#STMP4
3553 014026 104177 15: ERROR 177 ;FEC BAD
3554
3555 014030 VVBDONE:
3556 014030 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
3557 ;SEE IF THE USER HAS EXPRESSED
3558 ;THE DESIRE TO CHANGE THE SOFTWARE
3559 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
3560 ;THE USER TYPED CONTROL G?).
3561
3562 ;*****
3563 ;*TEST 20 NEGF, ABSF AND TSTF SOURCE MODE 0 TEST
3564 ;*
3565 ;*THIS IS A TEST THE NEGF, ABSF AND TSTF
3566 ;*SOURCE FLOWS. THE NEG0 INSTRUCTION
3567 ;*IS USED TO TEST MODE 0
3568 ;*
3569 ;*****
3570 014032 000004 TST20: SCOPE
3571
3572 014034 DDB1:
3573 014034 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
3574 014036 012700 000200 MOV #200,R0 ;SET FD MODE.
3575 014042 170100 LDFPS R0
3576 014044 012700 014206 MOV #DDBTP1,R0 ;SET UP ACO.
3577 014050 172410 LDD (R0),ACO ;SET ACO = 0
3578 014052 005000 CLR R0 ;CLEAR THE FPS.
3579 014054 170100 LDFPS R0
3580 014056 012700 014216 MOV #DDBTP2,R0 ;LOAD ACO TO BE A FLOATING 0.
3581 014062 172410 LDF (R0),ACO ;SET ACO=ZERO
3582 ;FLOAT
3583 014064 012700 000201 MOV #201,R0 ;SET FD MODE.
3584 014070 170100 LDFPS R0
3585 014072 012737 014100 001236 MOV #DDB2,@#STMP2
3586
3587 014100 170700 DDB2: NEG0 ACO ;TEST INSTRUCTION.
3588
3589 014102 170205 STFPS R5 ;GET FPS.
3590 014104 012700 000200 MOV #200,R0 ;SET FD MODE.
3591 014110 170100 LDFPS R0
3592 014112 012700 014226 MOV #DDBBFO,R0 ;GET THE RESULT OUT OF ACO.
3593 014116 174010 STD ACO,(R0)
3594 ;SEE IF THE RESULT IS CORRECT.
3595 014120 012701 000004 MOV #4,R1
3596 014124 005720 15: TST (R0)+
3597 014126 001005 BNE DDB5 ;BRANCH IF THE RESULT IS INCORRECT.
3598 014130 077103 SOB R1,15
3599 014132 022705 000204 CMP #204,R5 ;IS THE FPS CORRECT?
3600 014136 001014 BNE DDB6 ;BRANCH IF THE FPS IS INCORRECT.
3601 014140 000442 BR DDBDONE
3602
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3603 ;RESULT INCORRECT, REPORT FAILURE:
3604 014142 012737 014216 001242 DDB5: MOV #DDBTP2,@STMP4 ;EXPECT DO
3605 014150 012737 014236 001240 MOV #DDBTP3,@STMP3 ;PREV FO IMPURE
3606 014156 012737 014226 001244 MOV #DDBBFO,@STMP5 ;GOT
3607 014164 104071 15: ERROR 71
3608 014166 000427 BR DDBDONE
3609
3610 ;REPORT FPS INCORRECT:
3611 014170 012737 000204 001240 DDB6: MOV #204,@STMP3
3612 014176 010537 001242 MOV R5,@STMP4
3613 014202 104072 15: ERROR 72
3614 014204 000420 BR DDBDONE
3615
3616 ;THESE ARE TEST DATA TABLES AND AN OUTPUT BUFFER.
3617 014206 101112 DDBTP1: 101112
3618 014210 131415 131415
3619 014212 161710 161710
3620 014214 111213 111213
3621 014216 000000 DDBTP2: 0
3622 014220 000000 0
3623 014222 000000 0
3624 014224 000000 0
3625
3626 014226 177777 DDBBFO: -1
3627 014230 177777 -1
3628 014232 177777 -1
3629 014234 177777 -1
3630 014236 000000 DDBTP3: 0
3631 014240 000000 0
3632 014242 161710 161710
3633 014244 111213 111213
3634
3635 014246 DDBDONE:
3636 014246 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
3637 ;SEE IF THE USER HAS EXPRESSED
3638 ;THE DESIRE TO CHANGE THE SOFTWARE
3639 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
3640 ;THE USER TYPED CONTROL G?).
3641
3642 ;*****
3643 ;*TEST 21 NEGF, ABSF AND TSTF SOURCE MODE 1 TEST
3644 ;*
3645 ;*THIS IS A TEST THE NEGF, ABSF AND TSTF
3646 ;*SOURCE FLOWS. THE NEGD INSTRUCTION
3647 ;*IS USED TO TEST MODE 1
3648 ;*
3649 ;*****
3650 014250 000004 TST21: SCOPE
3651
3652 014252 EEB1:
3653 014252 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
3654 014254 012700 014362 MOV #EEBTP1,R0 ;SET UP THE DATA BUFFER.
3655 014260 012701 014412 MOV #EEBFO1,R1
3656 014264 012702 000004 MOV #4,R2
3657 014270 012021 15: MOV (R0)+,(R1)+
3658 014272 077202 SOB R2,15
  
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3659 014274 012700 000200      MOV      #200,R0      ;SET FD MODE.
3660 014300 170100      LDFPS   R0
3661 014302 012700 014412      MOV      #EEBBF1,R0   ;SET UP THE OPERAND ADDRESS.
3662 014306 012737 014322 001236  MOV      #EEB2,@#STMP2
3663 014314 012737 014422 000004  MOV      #EEB10,@#ERRVECT ;SET UP VECTOR 4 IN CASE OF ERROR.
3664 014322 170710      EEB2:   NEG0      (R0)      ;TEST INSTRUCTION.
3665
3666 014324 170205      STFPS   R5      ;GET FPS.
3667 014326 012701 014412      MOV      #EEBBF1,R1   ;SEE IF RESULT IS CORRECT.
3668 014332 012702 000004      MOV      #4,R2
3669 014336 005721      15:    TST      (R1)+
3670 014340 001046      BNE     EEB15      ;BRANCH IF NOT CORRECT.
3671 014342 077203      SOB     R2,15
3672
3673 014344 020027 014412      CMP     R0,#EEBBF1   ;IS R0 CORRECT?
3674 014350 001055      BNE     EEB20      ;BRANCH IF NOT CORRECT.
3675 014352 022705 000204      CMP     #204,R5     ;IS THE FPS CORRECT?
3676 014356 001061      BNE     EEB25      ;BRANCH IF NOT CORRECT.
3677 014360 000466      BR      EEBDONE
3678
3679      ;THESE ARE TEST DATA TABLES AND A BUFFER.
3680 014362 000177      EEBTP1: 177
3681 014364 167574      167574
3682 014366 137271      137271
3683 014370 107675      107675
3684 014372 000000      EEBTP2: 0
3685 014374 000000      0
3686 014376 000000      0
3687 014400 000000      0
3688 014402 177777      EEBBFO: -1
3689 014404 177777      -1
3690 014406 177777      -1
3691 014410 177777      -1
3692 014412 177777      EEBBF1: -1
3693 014414 177777      -1
3694 014416 177777      -1
3695 014420 177777      -1
3696
3697      ;IF A TRAP TO 4 OCCURS COME HERE:
3698 014422 011602      EEB10:  MOV     (SP),R2      ;SEE IF THE TRAP OCCURRED ON THE TEST INSTR.
3699 014424 020227 014324      CMP     R2,#EEB2+2
3700 014430 001405      BEQ     15          ;BRANCH IF YES.
3701 014432 020227 014326      CMP     R2,#EEB2+4
3702 014436 001402      BEQ     15          ;BRANCH IF YES.
3703 014440 000137 042610      JMP     @#CPSPUR    ;OTHERWISE GO REPORT A SPURIOUS TRAP TO 4.
3704      ;REPORT A FAILURE IN THE FDST FLOWS RESULTED IN AN ODD ADDRESS TRAP TO 4.
3705 014444 022626      15:    CMP     (SP)+,(SP)+   ;RESET THE STACK.
3706 014446 010237 001236      MOV     R2,@#STMP2
3707 014452 104107      25:    ERROR  107      ;ODD ADRES
3708 014454 000430      BR      EEBDONE    ;BUT FDSTX IN ST 771
3709
3710      ;REPORT RESULT INCORRECT.
3711 014456 012737 014372 001242  EEB15: MOV     #EEBTP2,@#STMP4
3712 014464 012737 014362 001240      MOV     #EEBTP1,@#STMP3
3713 014472 012737 014412 001244      MOV     #EEBBF1,@#STMP5
3714 014500 104073      15:    ERROR  73      ;BAD DATA X11*0 ST 312X
  
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3715 014502 000415 BR EEBDONE
3716
3717 ;RO INCORRECT:
3718 014504 012737 014412 001240 EEB20: MOV #EEBBF1,@#STMP3
3719 014512 010037 001242 MOV RO,@#STMP4
3720 014516 104074 15: ERROR 74 ;RO BADX
3721 014520 000406 BR EEBDONE
3722
3723 ;REPORT FPS INCORRECT:
3724 014522 010537 001240 EEB25: MOV R5,@#STMP3
3725 014526 012737 000204 001244 MOV #204,@#STMP5
3726 014534 104075 15: ERROR 75 ;FPS X
3727
3728 014536 EEBDONE:
3729 014536 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
;SEE IF THE USER HAS EXPRESSED
;THE DESIRE TO CHANGE THE SOFTWARE
;VIRTUAL CONSOLE SWITCH REGISTER (HAS
;THE USER TYPED CONTROL G?).
3730
3731
3732
3733
3734
3735 ;*****
3736 ;*TEST 22 NEGF, ABSF AND TSTF SOURCE MODE 2 TEST
3737 ;*
3738 ;*THIS IS A TEST THE NEGF, ABSF AND TSTF
3739 ;*SOURCE FLOWS. THE ABSD INSTRUCTION
3740 ;*IS USED TO TEST MODE 2
3741 ;*
3742 ;*****
3743 014540 000004 TST22: SCOPE
3744
3745 FFB1:
3746 014542 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
3747 014544 MOV #FFBTP1,RO ;SET UP THE DATA BUFFER.
3748 014550 MOV #FFBBF1,R1
3749 014554 MOV #4,R2
3750 014560 15: MOV (RO)+,(R1)+
3751 014562 SOB R2,15
3752 014564 MOV #200,RO ;SET FD.
3753 014570 LDFPS RO
3754 014572 MOV #FFBBF1,RO ;SET UP THE OPERAND ADDRESS.
3755 014576 MOV #FFB2,@#STMP2
3756 014604 MOV #FFB10,@#ERRVECT ;SET UP VECTOR 4 IN CASE OF AN ERROR.
3757
3758 014612 170620 FFB2: ABSD (RO)+ ;TEST INSTRUCTION.
3759
3760 STFPS R5 ;GET FPS.
3761 014616 MOV #FFBBF1,R1 ;CHECK RESULT.
3762 014622 MOV #4,R2
3763 014626 15: TST (R1)+
3764 014630 BNE FFB15 ;BRANCH IF INCORRECT.
3765 014632 SOB R2,15
3766
3767 014634 CMP RO,#FFBBF1+10 ;IS RO CORRECT?
3768 014640 BNE FFB20 ;BRANCH IF INCORRECT.
3769 014642 CMP #204,R5 ;IS THE FPS CORRECT?
3770 014646 BNE FFB25 ;BRANCH IF INCORRECT.
  
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3771 014650 000466 BR FFBDONE
3772
3773 ; THESE ARE TEST DATA TABLES AND DATA BUFFER.
3774 014652 000177 FFBTP1: 177
3775 014654 167574 167574
3776 014656 137271 137271
3777 014660 107675 107675
3778 014662 000000 FFBTP2: 0
3779 014664 000000 0
3780 014666 000000 0
3781 014670 000000 0
3782 014672 177777 FFBFF0: -1
3783 014674 177777 -1
3784 014676 177777 -1
3785 014700 177777 -1
3786 014702 177777 FFBFF1: -1
3787 014704 177777 -1
3788 014706 177777 -1
3789 014710 177777 -1
3790
3791 ; IF A TRAP TO 4 OCCURS COME HERE.
3792 014712 011602 FFB10: MOV (SP), R2 ; SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION.
3793 014714 020227 014614 CMP R2, #FFB2+2
3794 014720 001405 BEQ 15 ; BRANCH IF YES.
3795 014722 020227 014616 CMP R2, #FFB2+4
3796 014726 001402 BEQ 15 ; BRANCH IF YES.
3797 014730 000137 042610 JMP @#CPSPUR ; OTHERWISE GO REPORT SPURIOUS TRAP TO 4.
3798 ; REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4.
3799 014734 022626 15: CMP (SP)+, (SP)+
3800 014736 010237 001236 MOV R2, @#STMP2
3801 014742 104076 25: ERROR 76 ; ODD ADRES
3802 014744 000430 BR FFBDONE ; BUT FDSTX IN ST 771
3803
3804 ; REPORT RESULT INCORRECT:
3805 014746 012737 014662 001240 FFB15: MOV #FFBTP2, @#STMP3
3806 014754 012737 014652 001242 MOV #FFBTP1, @#STMP4
3807 014762 012737 014702 001244 MOV #FFBFF1, @#STMP5
3808 014770 104077 15: ERROR 77 ; BAD DATA X11X0 ST 312X
3809 014772 000415 BR FFBDONE
3810
3811 ; REPORT RO INCORRECT:
3812 014774 012737 014706 001240 FFB20: MOV #FFBFF1+4, @#STMP3
3813 015002 010037 001242 MOV RO, @#STMP4
3814 015006 104100 15: ERROR 100 ; RO BADX
3815 015010 000406 BR FFBDONE
3816
3817 ; REPORT FPS INCORRECT:
3818 015012 010537 001240 FFB25: MOV R5, @#STMP3
3819 015016 012737 000204 001244 MOV #204, @#STMP5
3820 015024 104101 15: ERROR 101 ; FPS X
3821
3822 015026 FFBDONE:
3823 015026 104412 RSETUP ; GO INITIALIZE THE FPS AND STACK; AND
3824 ; SEE IF THE USER HAS EXPRESSED
3825 ; THE DESIRE TO CHANGE THE SOFTWARE
3826 ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
  
```



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3827 ; THE USER TYPED CONTROL G?).
3828 ; ;*****
3829 ; *TEST 23 NEGF, ABSF AND TSTF SOURCE MODE 4 TEST
3830 ; *
3831 ; *THIS IS A TEST THE NEGF, ABSF AND TSTF
3832 ; *SOURCE FLOWS. THE ABSD INSTRUCTION
3833 ; *IS USED TO TEST MODE 4
3834 ; *
3835 ; ;*****
3836 015030 000004 TST23: SCOPE
3837
3838 015032 GGB1:
3839 015032 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
3840 015034 012700 015142 MOV #GGBTP1,RO ; SET UP THE DATA BUFFER.
3841 015040 012701 015162 MOV #GGBBFO,R1
3842 015044 012702 000004 MOV #4,R2
3843 015050 012021 15: MOV (R0)+,(R1)+
3844 015052 077202 SOB R2,15
3845 015054 012700 000200 MOV #200,RO ; SET FD.
3846 015060 170100 LDFPS RO
3847 015062 012700 015172 MOV #GGBBF1,RO ; SET UP THE OPERAND ADDRESS.
3848 015066 012737 015102 001236 MOV #GGB2,@#STMP2
3849 015074 012737 015202 000004 MOV #GGB10,@#ERRVECT ; SET UP VECTOR 4 IN CASE OF AN ERROR.
3850
3851 015102 170640 GGB2: ABSD -(R0) ; TEST INSTRUCTION.
3852
3853 015104 170205 STFPS R5 ; GET FPS.
3854 015106 012701 015162 MOV #GGBBFO,R1 ; CHECK RESULT.
3855 015112 012702 000004 MOV #4,R2
3856 015116 005721 15: TST (R1)+
3857 015120 001046 BNE GGB15 ; BRANCH IF INCORRECT.
3858 015122 077203 SOB R2,15
3859
3860 015124 020027 015162 CMP RO,#GGBBFO ; IS RO CORRECT?
3861 015130 001055 BNE GGB20 ; BRANCH IF INCORRECT.
3862 015132 022705 000204 CMP #204,R5 ; IS THE FPS CORRECT?
3863 015136 001061 BNE GGB25 ; BRANCH IF INCORRECT.
3864 015140 000466 BR GGBDONE
3865
3866 ; THESE ARE TEST DATA TABLES AND DATA BUFFER.
3867 015142 000177 GGBTP1: 177
3868 015144 117273 117273
3869 015146 147576 147576
3870 015150 177071 177071
3871 015152 000000 GGBTP2: 0
3872 015154 000000 0
3873 015156 000000 0
3874 015160 000000 0
3875 015162 177777 GGBBFO: -1
3876 015164 177777 -1
3877 015166 177777 -1
3878 015170 177777 -1
3879 015172 177777 GGBBF1: -1
3880 015174 177777 -1
3881 015176 177777 -1
3882 015200 177777 -1
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3883
3884 ; IF A TRAP TO 4 OCCURS COME HERE.
3885 015202 011602 GGB10: MOV (SP), R2 ; SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION.
3886 015204 020227 015104 CMP R2, #GGB2+2
3887 015210 001405 BEQ 15 ; BRANCH IF YES.
3888 015212 020227 015106 CMP R2, #GGB2+4
3889 015216 001402 BEQ 15 ; BRANCH IF YES.
3890 015220 000137 042610 JMP @#CPSPUR ; OTHERWISE GO REPORT SPURIOUS TRAP TO 4.
3891 ; REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4.
3892 015224 022626 15: CMP (SP)+, (SP)+
3893 015226 010237 001236 MOV R2, @#STMP2
3894 015232 104102 25: ERROR 102 ; ODD ADRES
3895 015234 000430 BR GGBDONE ; BUT FDSTX IN ST 771
3896
3897 ; REPORT RESULT INCORRECT:
3898 015236 012737 015152 001240 GGB15: MOV #GGBTP2, @#STMP3
3899 015244 012737 015142 001242 MOV #GGBTP1, @#STMP4
3900 015252 012737 015162 001244 MOV #GGBBFO, @#STMP5
3901 015260 104103 15: ERROR 103 ; BAD DATA X11*0 ST 312X
3902 015262 000415 BR GGBDONE
3903
3904 ; REPORT RO INCORRECT:
3905 015264 012737 015162 001240 GGB20: MOV #GGBBFO1, @#STMP3
3906 015272 010037 001242 MOV RO, @#STMP4
3907 015276 104104 15: ERROR 104 ; RO BADX
3908 015300 000406 BR GGBDONE
3909
3910 ; REPORT FPS INCORRECT:
3911 015302 010537 001240 GGB25: MOV R5, @#STMP3
3912 015306 012737 000204 001244 MOV #204, @#STMP5
3913 015314 104105 15: ERROR 105 ; FPS X
3914
3915 GGBDONE:
3916 015316 104412 RSETUP ; GO INITIALIZE THE FPS AND STACK; AND
3917 ; SEE IF THE USER HAS EXPRESSED
3918 ; THE DESIRE TO CHANGE THE SOFTWARE
3919 ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
3920 ; THE USER TYPED CONTROL G?).
3921 ; *****
3922 ; *TEST 24 NEGF, ABSF AND TSTF SOURCE MODE 3 TEST
3923 ; *
3924 ; *THIS IS A TEST THE NEGF, ABSF AND TSTF
3925 ; *SOURCE FLOWS. THE ABSD INSTRUCTION
3926 ; *IS USED TO TEST MODE 3
3927 ; *
3928 ; *****
3929 015320 000004 TST24: SCOPE
3930
3931 HHB1:
3932 015322 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
3933 015324 012700 015432 MOV #HHBTP1, RO ; SET UP THE DATA BUFFER.
3934 015330 012701 015462 MOV #HHBBFO, R1
3935 015334 012702 000010 MOV #10, R2
3936 015340 012021 15: MOV (RO)+, (R1)+
3937 015342 077202 SOB R2, 15
3938 015344 012700 000200 MOV #200, RO ; SET FD.
  
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CFFPCBD 11/34 FPP DIAG PRT3          MACY11 30A(1052) 05-MAY-78 15:24 1 6 PAGE 74
CFFPCB.P11 05-MAY-78 15:23          T24      NEG, ABSF AND TSTF SOURCE MODE 3 TEST
                                                                    SEQ 0073

3939 015350 170100          LDFPS  RO
3940 015352 012700 015472    MOV    #HHBBF1,RO      ;SET UP THE OPERAND ADDRESS.
3941 015356 012737 015372 001236  MOV    #HHB2,@#STMP2
3942 015364 012737 015502 000004  MOV    #HHB10,@#ERRVECT ;SET UP VECTOR 4 IN CASE OF AN ERROR.
3943
3944 015372 170630          HHB2:  ABSD  @(RO)+      ;TEST INSTRUCTION.
3945
3946 015374 170205          STFPS  R5              ;GET FPS.
3947 015376 012701 015462    MOV    #HHBBFO,R1      ;CHECK RESULT.
3948 015402 012702 000004    MOV    #4,R2
3949 015406 005721          15:   TST    (R1)+
3950 015410 001052          BNE    HHB15           ;BRANCH IF INCORRECT.
3951 015412 077203          SOB    R2,15
3952 015414 020027 015474    CMP    RO,#HHBBF1+2    ;IS RO CORRECT?
3953 015420 001061          BNE    HHB20           ;BRANCH IF INCORRECT.
3954 015422 022705 000204    CMP    #204,R5        ;IS THE FPS CORRECT?
3955 015426 001065          BNE    HHB25           ;BRANCH IF INCORRECT.
3956 015430 000472          BR     HHBDONE
3957
3958          ;THESE ARE TEST DATA TABLES AND DATA BUFFER.
3959 015432 000177          HHBTP1: 177
3960 015434 147576          147576
3961 015436 177071          177071
3962 015440 107576 015462 177777 107576,HHBBFO,-1,-1,-1
3963 015446 177777 177777
3964 015452 000000 000000 000000 HHBTP2: 0,0,0,0
3965 015460 000000
3966 015462 177777          HHBBFO: -1
3967 015464 177777          -1
3968 015466 177777          -1
3969 015470 177777          -1
3970 015472 177777          HHBBF1: -1
3971 015474 177777          -1
3972 015476 177777          -1
3973 015500 177777          -1
3974
3975          ;IF A TRAP TO 4 OCCURS COME HERE.
3976 015502 011602          HHB10: MOV    (SP),R2      ;SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION.
3977 015504 020227 015374    CMP    R2,#HHB2+2
3978 015510 001405          BEQ    15              ;BRANCH IF YES.
3979 015512 020227 015376    CMP    R2,#HHB2+4
3980 015516 001402          BEQ    15              ;BRANCH IF YES.
3981 015520 000137 042610    JMP    @#CPSPUR        ;OTHERWISE GO REPORT SPURIOUS TRAP TO 4.
3982          ;REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4.
3983 015524 022626          15:   CMP    (SP)+,(SP)+
3984 015526 010237 001236    MOV    R2,@#STMP2
3985 015532 104106          25:   ERROR 106         ;ODD ADRES
3986 015534 000430          BR     HHBDONE        ;BUT FDSTX IN ST 771
3987
3988          ;REPORT RESULT INCORRECT:
3989 015536 012737 015452 001240 HHB15: MOV    #HHBTP2,@#STMP3
3990 015544 012737 015432 001242    MOV    #HHBTP1,@#STMP4
3991 015552 012737 015462 001244    MOV    #HHBBFO,@#STMP5
3992 015560 104110          15:   ERROR 110         ;BAD DATA X11*0 ST 3127
3993 015562 000415          BR     HHBDONE
3994

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3995 ;REPORT RO INCORRECT:
3996 015564 012737 015474 001240 HMB20: MOV #HBBF1+2, @#STMP3
3997 015572 010037 001242 MOV RO, @#STMP4
3998 015576 104111 15: ERROR 111 ;RO INCORRECT.
3999 015600 000406 BR HMBDONE
4000 ;REPORT FPS INCORRECT:
4001 015602 010537 001240 HMB25: MOV R5, @#STMP3
4002 015606 012737 000204 001244 MOV #204, @#STMP5
4003 015614 104112 15: ERROR 112 ;FPSX
4004
4005 015616 HMBDONE:
4006 015616 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
4007 ;SEE IF THE USER HAS EXPRESSED
4008 ;THE DESIRE TO CHANGE THE SOFTWARE
4009 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
4010 ;THE USER TYPED CONTROL G?).
4011 ;*****
4012 ;*TEST 25 NEGF, ABSF AND TSTF SOURCE MODE 5 TEST
4013 ;*
4014 ;*THIS IS A TEST THE NEGF, ABSF AND TSTF
4015 ;*SOURCE FLOWS. THE NEGD INSTRUCTION
4016 ;*IS USED TO TEST MODE 5
4017 ;*
4018 ;*****
4019 015620 000004 TST25: SCOPE
4020
4021 015622 I1B1:
4022 015622 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
4023 015624 012700 015732 MOV #I1BTP1, R0 ;SET UP THE DATA BUFFER.
4024 015630 012701 015762 MOV #I1BBFO, R1
4025 015634 012702 000010 MOV #10, R2
4026 015640 012021 15: MOV (R0)+, (R1)+
4027 015642 077202 SOB R2, 15
4028 015644 012700 000200 MOV #200, R0 ;SET FD.
4029 015650 170100 LDFPS R0
4030 015652 012700 015774 MOV #I1BBF1+2, R0 ;SET UP THE OPERAND ADDRESS.
4031 015656 012737 015672 001236 MOV #I1B2, @#STMP2
4032 015664 012737 016002 000004 MOV #I1B10, @#ERRVECT ;SET UP VECTOR 4 IN CASE OF AN ERROR.
4033
4034 015672 170750 I1B2: NEGD @-(R0) ;TEST INSTRUCTION.
4035
4036 015674 170205 STFPS R5 ;GET FPS.
4037 015676 012701 015762 MOV #I1BBFO, R1 ;CHECK RESULT.
4038 015702 012702 000004 MOV #4, R2
4039 015706 005721 15: TST (R1)+
4040 015710 001052 BNE I1B15 ;BRANCH IF INCORRECT.
4041 015712 077203 SOB R2, 15
4042 015714 020027 015772 CMP RO, #I1BBF1 ;IS RO CORRECT?
4043 015720 001061 BNE I1B20 ;BRANCH IF INCORRECT.
4044 015722 022705 000204 CMP #204, R5 ;IS THE FPS CORRECT?
4045 015726 001065 BNE I1B25 ;BRANCH IF INCORRECT.
4046 015730 000472 BR I1BDONE
4047
4048 ;THESE ARE TEST DATA TABLES AND DATA BUFFER.
4049 015732 000176 I1BTP1: 176
4050 015734 177074 177074
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CFFPCB0 11/34 FPP DIAG PRT3          MACY11 30A(1052) 05-MAY-78 15:24 PAGE 76          K S
CFFPCB.P11 05-MAY-78 15:23          T25          NEGF, ABSF AND TSTF SOURCE MODE 5 TEST          SEQ 0075

4051 015736 127374          127374
4052 015740 157677 015762 177777          157677, I18BFO, -1, -1, -1
4053 015746 177777 177777
4054 015752 000000          I18TP2: 0
4055 015754 000000          0
4056 015756 000000          0
4057 015760 000000          0
4058 015762 177777          I18BFO: -1
4059 015764 177777          -1
4060 015766 177777          -1
4061 015770 177777          -1
4062 015772 177777          I18BF1: -1
4063 015774 177777          -1
4064 015776 177777          -1
4065 016000 177777          -1
4066
4067
4068 016002 011602          ; IF A TRAP TO 4 OCCURS COME HERE.
4069 016004 020227 015674          I1810: MOV (SP), R2 ; SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION.
4070 016010 001405          CMP R2, #I182+2 ; BRANCH IF YES.
4071 016012 020227 015676          BEQ 15 ; BRANCH IF YES.
4072 016016 001402          CMP R2, #I182+4 ; BRANCH IF YES.
4073 016020 000137 042610          BEQ 15 ; BRANCH IF YES.
4074          JMP @#CPSPUR ; OTHERWISE GO REPORT SPURIOUS TRAP TO 4.
4075 016024 022626          ; REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4.
4076 016026 010237 001236          15: CMP (SP)+, (SP)+
4077 016032 104113          MOV R2, @#STMP2
4078 016034 000430          25: ERROR 113 ; ODD ADRES
4079          BR I18DONE ; BUT FDSTX IN ST 771
4080
4081 016036 012737 015752 001240          ; REPORT RESULT INCORRECT:
4082 016044 012737 015732 001242          I1815: MOV #I18TP2, @#STMP3
4083 016052 012737 015762 001244          MOV #I18TP1, @#STMP4
4084 016060 104114          MOV #I18BFO, @#STMP5
4085 016062 000415          15: ERROR 114 ; BAD DATA X11*0 ST 3127
4086          BR I18DONE
4087
4088 016064 012737 015772 001240          ; REPORT RO INCORRECT:
4089 016072 010037 001242          I1820: MOV #I18BF1, @#STMP3
4090 016076 104115          MOV RO, @#STMP4
4091 016100 000406          15: ERROR 115 ; RO BADX
4092          BR I18DONE
4093 016102 010537 001240          ; REPORT FPS INCORRECT:
4094 016106 012737 000204 001244          I1825: MOV R5, @#STMP3
4095 016114 104116          MOV #204, @#STMP5
4096          15: ERROR 116 ; FPSX
4097          I18DONE:
4098 016116 104412          RSETUP ; GO INITIALIZE THE FPS AND STACK; AND
4099          ; SEE IF THE USER HAS EXPRESSED
4100          ; THE DESIRE TO CHANGE THE SOFTWARE
4101          ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
4102          ; THE USER TYPED CONTROL G?).
4103
4104          ; *****
4105          ; *TEST 26          NEGF, ABSF AND TSTF SOURCE MODE 6 TEST
4106          ; *

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```
4107 ;*THIS IS A TEST THE NEG, ABSF AND TSTF
4108 ;*SOURCE FLOWS. THE ABSD INSTRUCTION
4109 ;*IS USED TO TEST MODE 6
4110 ;*
4111 ;*****
4112 016120 000004 TST26: SCOPE
4113
4114 016122 JJB1:
4115 016122 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
4116 016124 012700 016234 MOV #JJBTP1,R0 ;SET UP THE DATA BUFFER.
4117 016130 012701 016256 MOV #JJBFFO,R1
4118 016134 012702 000004 MOV #4,R2
4119 016140 012021 15: MOV (R0)+,(R1)+
4120 016142 077202 SOB R2,15
4121 016144 012700 000200 MOV #200,R0 ;SET FD.
4122 016150 170100 LDFPS R0
4123 016152 012700 016247 MOV #JJBFFO-7,R0 ;SET UP THE OPERAND ADDRESS.
4124 016156 012737 016172 001236 MOV #JJB2,@#STMP2
4125 016164 012737 016276 000004 MOV #JJB10,@#ERRVECT ;SET UP VECTOR 4 IN CASE OF AN ERROR.
4126
4127 016172 170660 000007 JJB2: ABSD 7(R0) ;TEST INSTRUCTION.
4128
4129 016176 170205 STFPS R5 ;GET FPS.
4130 016200 012701 016256 MOV #JJBFFO,R1 ;CHECK RESULT.
4131 016204 012702 000004 MOV #4,R2
4132 016210 005721 15: TST (R1)+
4133 016212 001047 BNE JJB15 ;BRANCH IF INCORRECT.
4134 016214 077203 SOB R2,15
4135 016216 020027 016247 CMP R0,#JJBFFO-7 ;IS R0 CORRECT?
4136 016222 001043 BNE JJB15 ;BRANCH IF INCORRECT.
4137 016224 022705 000204 CMP #204,R5 ;IS THE FPS CORRECT?
4138 016230 001053 BNE JJB20 ;BRANCH IF INCORRECT.
4139 016232 000467 BR JJBDONE
4140
4141 ;THESE ARE TEST DATA TABLES AND DATA BUFFER.
4142 016234 000177 JJBTP1: 177
4143 016236 161524 161524
4144 016240 131273 131273
4145 016242 107174 000000 107174,
4146 016246 000000 JJBTP2: 0
4147 016250 000000 0
4148 016252 000000 0
4149 016254 000000 0
4150 016256 177777 JJBFFO: -1
4151 016260 177777 -1
4152 016262 177777 -1
4153 016264 177777 -1
4154 016266 177777 JJBFF1: -1
4155 016270 177777 -1
4156 016272 177777 -1
4157 016274 177777 -1
4158
4159 ;IF A TRAP TO 4 OCCURS COME HERE.
4160 016276 011602 JJB10: MOV (SP),R2 ;SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION.
4161 016300 020227 016174 CMP R2,#JJB2+2
4162 016304 001405 BEQ 15 ;BRANCH IF YES.
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4163 016306 020227 016176          CMP      R2,#JJB2+4
4164 016312 001402                   BEQ      15          ;BRANCH IF YES.
4165 016314 000137 042610          JMP      @#CPSUR    ;OTHERWISE GO REPORT SPURIOUS TRAP TO 4.
4166                                     ;REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4.
4167 016320 022626                   15:     CMP      (SP)+,(SP)+
4168 016322 010237 001236          MOV      R2,@#STMP2
4169 016326 104117                   25:     ERROR   117          ;ODD ADRES
4170 016330 000430                   BR       JJBDONE    ;BUT FDSTX IN ST 771
4171
4172                                     ;REPORT RESULT INCORRECT:
4173 016332 012737 016246 001240     JJB15:  MOV      #JJBTP2,@#STMP3
4174 016340 012737 016234 001242     MOV      #JJBTP1,@#STMP4
4175 016346 012737 016256 001244     MOV      #JJBFFO,@#STMP5
4176 016354 104120                   15:     ERROR   120          ;BAD DATA X11*0 ST 3127
4177 016356 000415                   BR       JJBDONE
4178
4179                                     ;REPORT RO INCORRECT:
4180 016360 012737 016247 001240     JJB20:  MOV      #JJBFFO-7,@#STMP3
4181 016366 010037 001242                   MOV      RO,@#STMP4
4182 016372 104124                   15:     ERROR   124          ;RO BADX
4183 016374 000406                   BR       JJBDONE
4184                                     ;REPORT FPS INCORRECT:
4185 016376 010537 001240     JJB25:  MOV      R5,@#STMP3
4186 016402 012737 000204 001244     MOV      #204,@#STMP5
4187 016410 104122                   15:     ERROR   122          ;FPSX
4188 016412                   JJBDONE:
4189 016412 104412                   RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
4190                                     ;SEE IF THE USER HAS EXPRESSED
4191                                     ;THE DESIRE TO CHANGE THE SOFTWARE
4192                                     ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
4193                                     ;THE USER TYPED CONTROL G?).
4194                                     ;*****
4195                                     ;*TEST 27      NEGF, ABSF AND TSTF SOURCE MODE 7 TEST
4196                                     ;*
4197                                     ;*THIS IS A TEST THE NEGF, ABSF AND TSTF
4198                                     ;*SOURCE FLOWS. THE ABSD INSTRUCTION
4199                                     ;*IS USED TO TEST MODE 6
4200                                     ;*
4201                                     ;*****
4202 016414 000004     TST27:  SCOPE
4203
4204                                     KKB1:
4205 016416 104413                   LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
4206 016420 012700 016530                   MOV      #KKBTP1,RO  ;SET UP THE DATA BUFFER.
4207 016424 012701 016560                   MOV      #KKBFFO,R1
4208 016430 012702 000010                   MOV      #10,R2
4209 016434 012021                   15:     MOV      (RO)+,(R1)+
4210 016436 077202                   SOB      R2,15
4211 016440 012700 000200                   MOV      #200,RO    ;SET FD.
4212 016444 170100                   LDFPS      RO
4213 016446 012700 016561                   MOV      #KKBFF1-7,RO ;SET UP THE OPERAND ADDRESS.
4214 016452 012737 016466 001236     MOV      #KKB2,@#STMP2
4215 016460 012737 016600 000004     MOV      #KKB10,@#ERRVECT ;SET UP VECTOR 4 IN CASE OF AN ERROR.
4216
4217 016466 170770 000007     KKB2:  NEG      @7(RO)    ;TEST INSTRUCTION.
4218

```

```
4219 016472 170205          STFPS R5          ;GET FPS.
4220 016474 012701 016560    MOV #KKBFF0,R1    ;CHECK RESULT.
4221 016500 012702 000004    MOV #4,R2
4222 016504 005721          15: TST (R1)+
4223 016506 001052          BNE KKB15         ;BRANCH IF INCORRECT.
4224 016510 077203          SOB R2,15
4225 016512 020027 016561    CMP R0,#KKBFF1-7 ;IS R0 CORRECT?
4226 016516 001061          BNE KKB20         ;BRANCH IF INCORRECT.
4227 016520 022705 000204    CMP #204,R5      ;IS THE FPS CORRECT?
4228 016524 001056          BNE KKB20         ;BRANCH IF INCORRECT.
4229 016526 000472          BR KKB DONE
4230
4231          ;THESE ARE TEST DATA TABLES AND DATA BUFFER.
4232 016530 000177          KKBTP1: 177
4233 016532 167574          167574
4234 016534 137271          137271
4235 016536 107675 016560 177777 107675,KKBFF0,-1,-1,-1
4236 016544 177777 177777
4237 016550 000000          KKBTP2: 0
4238 016552 000000          0
4239 016554 000000          0
4240 016556 000000          0
4241 016560 177777          KKBFF0: -1
4242 016562 177777          -1
4243 016564 177777          -1
4244 016566 177777          -1
4245 016570 177777          KKBFF1: -1
4246 016572 177777          -1
4247 016574 177777          -1
```



```
4248 016576 177777 -1
4249
4250 ; IF A TRAP TO 4 OCCURS COME HERE.
4251 016600 011602 KKB10: MOV (SP),R2 ; SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION.
4252 016602 020227 016470 CMP R2,#KKB2+2
4253 016606 001405 BEQ 15 ; BRANCH IF YES.
4254 016610 020227 016472 CMP R2,#KKB2+4
4255 016614 001402 BEQ 15 ; BRANCH IF YES.
4256 016616 000137 042610 JMP @CPCSPUR ; OTHERWISE GO REPORT SPURIOUS TRAP TO 4.
4257 ; REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4.
4258 016622 022626 15: CMP (SP)+,(SP)+
4259 016624 010237 001236 MOV R2,@STMP2
4260 016630 104123 25: ERROR 123 ; ODD ADRES
4261 016632 000430 BR KKBDONE ; BUT FDSTX IN ST 771
4262
4263 ; REPORT RESULT INCORRECT:
4264 016634 012737 016550 001240 KKB15: MOV #KKBTP2,@STMP3
4265 016642 012737 016530 001242 MOV #KKBTP1,@STMP4
4266 016650 012737 016560 001244 MOV #KKBFFO,@STMP5
4267 016656 104124 15: ERROR 124 ; BAD DATA X11*0 ST 3127
4268 016660 000415 BR KKBDONE
4269
4270 ; REPORT RO INCORRECT:
4271 016662 012737 016561 001240 KKB20: MOV #KKBFF1-7,@STMP3
4272 016670 010037 001242 MOV RO,@STMP4
4273 016674 104125 15: ERROR 125 ; RO BADX
4274 016676 000406 BR KKBDONE
4275 ; REPORT FPS INCORRECT:
4276 016700 010537 001240 KKB25: MOV R5,@STMP3
4277 016704 012737 000204 001244 MOV #204,@STMP5
4278 016712 104126 15: ERROR 126 ; FPSX
4279
4280 016714 KKB DONE:
4281 016714 104412 RSETUP ; GO INITIALIZE THE FPS AND STACK; AND
4282 ; SEE IF THE USER HAS EXPRESSED
4283 ; THE DESIRE TO CHANGE THE SOFTWARE
4284 ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
4285 ; THE USER TYPED CONTROL G?).
4286 ; *****
4287 ; *TEST 30 NEGF, ABSF AND TSTF SOURCE MODE 6, GR7, TEST
4288 ; *
4289 ; *THIS IS A TEST THE NEGF, ABSF AND TSTF
4290 ; *SOURCE FLOWS. THE NEGD INSTRUCTION
4291 ; *IS USED TO TEST MODE 6
4292 ; *
4293 ; *****
4294 016716 000004 TST30: SCOPE
4295 016720 LLB1:
4296 016720 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
4297 016722 012700 017020 MOV #LLBTP1,RO ; SET UP THE DATA BUFFER.
4298 016726 012701 017040 MOV #LLBFFO,R1
4299 016732 012702 000004 MOV #4,R2
4300 016736 012021 15: MOV (RO)+,(R1)+
4301 016740 077202 SOB R2,15
4302 016742 012700 000200 MOV #200,RO ; SET FD.
4303 016746 170100 LDFPS RO
```

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CFFPCB0 11/34 FPP DIAG PRT3          MACY11 30A(1052) 05-MAY-78 15:24 PAGE 81
CFFPCB.P11 05-MAY-78 15:23          T30    NEG, ABSF AND TSTF SOURCE MODE 6, GR7, TEST
                                                    C 7
                                                    SEQ 0080

4304 016750 012737 016764 001236      MOV    #LLB2,@#STMP2
4305 016756 012737 017060 000004      MOV    #LLB10,@#ERRVECT ;SET UP VECTOR 4 IN CASE OF AN ERROR.
4306
4307 016764 170767 000050      LLB2:  NEG0    LLBBF0      ;TEST INSTRUCTION.
4308
4309 016770 170205                STFPS  R5                ;GET FPS.
4310 016772 012701 017040      MOV    #LLBBF0,R1        ;CHECK RESULT.
4311 016776 012702 000004      MOV    #4,R2
4312 017002 005721 15:      TST    (R1)+
4313 017004 001043                BNE    LLB15              ;BRANCH IF INCORRECT.
4314 017006 077203                SOB    R2,15
4315 017010 022705 000204      CMP    #204,R5           ;IS THE FPS CORRECT?
4316 017014 001052                BNE    LLB25              ;BRANCH IF INCORRECT.
4317 017016 000457                BR     LLBDONE
4318
4319                ;THESE ARE TEST DATA TABLES AND DATA BUFFER.
4320 017020 000127      LLBTP1: 127
4321 017022 137475                137475
4322 017024 147372                147372
4323 017026 117057                117057
4324 017030 000000      LLBTP2: 0
4325 017032 000000                0
4326 017034 000000                0
4327 017036 000000                0
4328 017040 177777      LLBBF0: -1
4329 017042 177777                -1
4330 017044 177777                -1
4331 017046 177777                -1
4332 017050 177777      LLBBF1: -1
4333 017052 177777                -1
4334 017054 177777                -1
4335 017056 177777                -1
4336
4337                ; IF A TRAP TO 4 OCCURS COME HERE.
4338 017060 011602      LLB10:  MOV    (SP),R2        ;SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION.
4339 017062 020227 016766      CMP    R2,#LLB2+2
4340 017066 001405                BEQ    15                  ;BRANCH IF YES.
4341 017070 020227 016770      CMP    R2,#LLB2+4
4342 017074 001402                BEQ    15                  ;BRANCH IF YES.
4343 017076 000137 042610      JMP    @#CPSPUR           ;OTHERWISE GO REPORT SPURIOUS TRAP TO 4.
4344                ;REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4.
4345 017102 022626 15:      CMP    (SP)+,(SP)+
4346 017104 010237 001236      MOV    R2,@#STMP2
4347 017110 104127 25:      ERROR  127                ;ODD ADRES
4348 017112 000421                BR     LLBDONE            ;BUT FDSTX IN ST 771
4349
4350                ;REPORT RESULT INCORRECT:
4351 017114 012737 017030 001240      LLB15:  MOV    #LLBTP2,@#STMP3
4352 017122 012737 017020 001242      MOV    #LLBTP1,@#STMP4
4353 017130 012737 017040 001244      MOV    #LLBBF0,@#STMP5
4354 017136 104130 15:      ERROR  130                ;BAD DATA X11X0 ST 3127
4355 017140 000406                BR     LLBDONE
4356                ;REPORT FPS INCORRECT:
4357 017142 010537 001240      LLB25:  MOV    R5,@#STMP3
4358 017146 012737 000204 001244      MOV    #204,@#STMP5
4359 017154 104131 15:      ERROR  131                ;FPSX

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4360
4361 017156
4362 017156 104412
4363
4364
4365
4366
4367
4368
4369
4370
4371
4372
4373
4374
4375 017160 000004
4376
4377 017162
4378 017162 104413
4379 017164 012700 017262
4380 017170 012701 017312
4381 017174 012702 000010
4382 017200 012021
4383 017202 077202
4384 017204 012700 000200
4385 017210 170100
4386 017212 012737 017226 001236
4387 017220 012737 017332 000004
4388
4389 017226 170677 000070
4390
4391 017232 170205
4392 017234 012701 017312
4393 017240 012702 000004
4394 017244 005721
4395 017246 001047
4396 017250 077203
4397 017252 022705 000204
4398 017256 001056
4399 017260 000463
4400
4401
4402 017262 000137
4403 017264 045607
4404 017266 101230
4405 017270 045607 017312 177777
4406 017276 177777 177777
4407 017302 000000
4408 017304 000000
4409 017306 000000
4410 017310 000000
4411 017312 177777
4412 017314 177777
4413 017316 177777
4414 017320 177777
4415 017322 177777

LLBDONE:
RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
;SEE IF THE USER HAS EXPRESSED
;THE DESIRE TO CHANGE THE SOFTWARE
;VIRTUAL CONSOLE SWITCH REGISTER (HAS
;THE USER TYPED CONTROL G?).
;*****
;*TEST 31 NEGF, ABSF AND TSTF SOURCE MODE 7, GR7, TEST
;*
;*THIS IS A TEST THE NEGF, ABSF AND TSTF
;*SOURCE FLOWS. THE ABSD INSTRUCTION
;*IS USED TO TEST MODE 7
;*
;*****
TST31: SCOPE

MMB1:
LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
MOV #MMBTP1,R0 ;SET UP THE DATA BUFFER.
MOV #MMBBFO,R1
MOV #10,R2
15: MOV (R0)+,(R1)+
SOB R2,15
MOV #200,R0 ;SET FD.
LDFPS R0
MOV #MMB2,@#STMP2
MOV #MMB10,@#ERRVECT ;SET UP VECTOR 4 IN CASE OF AN ERROR.

MMB2: ABSD @MMBBF1 ;TEST INSTRUCTION.

STFPS RF ;GET FPS.
MOV #MMBBFO,R1 ;CHECK RESULT.
MOV #4,R2
15: TST (R1)+
BNE MMB15 ;BRANCH IF INCORRECT.
SOB R2,15
CMP #204,R5 ;IS THE FPS CORRECT?
BNE MMB25 ;BRANCH IF INCORRECT.
BR MMBDONE

;THESE ARE TEST DATA TABLES AND DATA BUFFER.
MMBTP1: 137
045607
101230
45607,MMBBFO,-1,-1,-1

MMBTP2: 0
0
0
0

MMBBFO: -1
-1
-1
-1

MMBBF1: -1
  
```

```

4416 017324 177777 -1
4417 017326 177777 -1
4418 017330 177777 -1
4419
4420 ; IF A TRAP TO 4 OCCURS COME HERE.
4421 017332 011602 MMB10: MOV (SP),R2 ; SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION.
4422 017334 020227 017230 CMP R2,#MMB2+2
4423 017340 001405 BEQ 15 ; BRANCH IF YES.
4424 017342 020227 017232 CMP R2,#MMB2+4
4425 017346 001402 BEQ 15 ; BRANCH IF YES.
4426 017350 000137 042610 JMP @#CPSPUR ; OTHERWISE GO REPORT SPURIOUS TRAP TO 4.
4427 ; REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4.
4428 017354 022626 15: CMP (SP)+,(SP)+
4429 017356 010237 001236 MOV R2,@#STMP2
4430 017362 104132 25: ERROR 132 ; ODD ADRES
4431 017364 000421 BR MMBDONE ; BUT FDSTX IN ST 771
4432
4433 ; REPORT RESULT INCORRECT:
4434 017366 012737 017302 001240 MMB15: MOV #MMBTP2,@#STMP3
4435 017374 012737 017262 001242 MOV #MMBTP1,@#STMP4
4436 017402 012737 017312 001244 MOV #MMBBFO,@#STMP5
4437 017410 104133 15: ERROR 133 ; BAD DATA X11#0 ST 3127
4438 017412 000406 BR MMBDONE
4439 ; REPORT FPS INCORRECT:
4440 017414 010537 001240 MMB25: MOV R5,@#STMP3
4441 017420 012737 000204 001244 MOV #204,@#STMP5
4442 017426 104134 15: ERROR 134 ; FPSX
4443
4444 MMBDONE:
4445 017430 104412 RSETUP ; GO INITIALIZE THE FPS AND STACK; AND
4446 ; SEE IF THE USER HAS EXPRESSED
4447 ; THE DESIRE TO CHANGE THE SOFTWARE
4448 ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
4449 ; THE USER TYPED CONTROL G?).
4450 ; *****
4451 ; *TEST 32 SPECIAL DEST, MODE 0, TEST
4452 ; *
4453 ; *THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
4454 ; *MODE 0 USING THE NEG0 INSTR.
4455 ; *
4456 ; *****
4457 017432 000004 TST32: SCOPE
4458
4459 NNB1:
4460 017434 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
4461 017436 012700 000200 MOV #200,R0 ; SET FD.
4462 017442 170100 LDFPS R0
4463 017444 012700 017532 MOV #NNBTP1,R0 ; SET UP ACO.
4464 017450 172410 LDD (R0),ACO
4465 017452 012737 017460 001236 MOV #NNB2,@#STMP2
4466
4467 017460 170700 NNB2: NEG0 ACO ; TEST INSTRUCTION.
4468
4469 017462 170205 STFPS R5 ; GET FPS.
4470 017464 012700 000200 MOV #200,R0 ; SET FD.
4471 017470 170100 LDFPS R0
    
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4472 017472 012700 017552      MOV    ##NNBBFO,RO      ;GET THE RESULT.
4473 017476 174010      STD    ACO,(RO)
4474 017500 012700 017552      MOV    ##NNBBFO,RO      ;IS THE RESULT CORRECT?
4475 017504 012701 017542      MOV    ##NNBTP2,R1
4476 017510 012702 000004      MOV    #4,R2
4477 017514 022021      1$:   CMP    (RO)+,(R1)+
4478 017516 001021      BNE    NNB10             ;BRANCH IF INCORRECT.
4479 017520 077203      SOB    R2,1$
4480 017522 022705 000210      CMP    #210,R5          ;IS THE FPS CORRECT?
4481 017526 001033      BNE    NNB15             ;BRANCH IF INCORRECT.
4482 017530 000440      BR     NNBDONE
4483
4484      ;THESE ARE DATA TABLES AND A DATA BUFFER.
4485 017532 013572      NNBTP1: 013572
4486 017534 046013      46013
4487 017536 057246      57246
4488 017540 013570      013570
4489 017542 113572      NNBTP2: 113572
4490 017544 046013      46013
4491 017546 057246      57246
4492 017550 013570      013570
4493 017552 000000      NNBBFO: 0
4494 017554 000000      0
4495 017556 000000      0
4496 017560 000000      0
4497
4498      ;REPORT RESULT INCORRECT:
4499 017562 012737 017552 001240      NNB10: MOV    ##NNBBFO,@#STMP3
4500 017570 012737 017542 001242      MOV    ##NNBTP2,@#STMP4
4501 017576 023737 017532 017552      CMP    @#NNBTP1,@#NNBBFO
4502 017604 001002      BNE    NNB11
4503 017606 104135      1$:   ERROR  135          ;E10*200X ST 336
4504 017610 000410      BR     NNBDONE
4505
4506      ;REPORT RESULT INCORRECT:
4507 017612      NNB11:
4508 017612 104136      1$:   ERROR  136          ;BAD DATA NEGF
4509 017614 000406      BR     NNBDONE
4510
4511      ;REPORT FPS INCORRECT:
4512 017616 010537 001242      NNB15: MOV    R5,@#STMP4
4513 017622 012737 000210 001240      MOV    #210,@#STMP3
4514 017630 104137      1$:   ERROR  137          ;FPSX
4515
4516      NNBDONE:
4517 017632 104412      RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
4518      ;SEE IF THE USER HAS EXPRESSED
4519      ;THE DESIRE TO CHANGE THE SOFTWARE
4520      ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
4521      ;THE USER TYPED CONTROL G?).
4522      ;*****
4523      ;*TEST 33      SPECIAL DEST, MODE 1, TEST
4524      ;*
4525      ;*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
4526      ;*MODE 1 USING THE NEGD INSTR.
4527      ;*
  
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4528 ; ; *****  
4529 017634 000004 TST33: SCOPE  
4530  
4531 017636 00B1:  
4532 017636 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.  
4533 017640 012701 017750 MOV #00BTP1,R1 ;SET UP THE DATA BUFFER.  
4534 017644 012700 017760 MOV #00BTP2,R0  
4535 017650 012702 000004 MOV #4,R2  
4536 017654 012021 15: MOV (R0)+,(R1)+  
4537 017656 077202 SOB R2,15  
4538 017660 012700 017750 MOV #00BTP1,R0  
4539 017664 042710 100000 BIC #100000,(R0) ;MAKE OPERAND POSITIVE.  
4540 017670 012737 017704 001236 MOV #00B2,@#STMP2  
4541 017676 012701 000200 MOV #200,R1 ;SET FD.  
4542 017702 170101 LDFPS R1  
4543  
4544 017704 170710 00B2: NEG0 (R0) ;TEST INSTRUCTION.  
4545 017706 170205 STFPS R5 ;GET FPS.  
4546 017710 012701 017750 MOV #00BTP1,R1 ;IS THE RESULT CORRECT.  
4547 017714 012702 017760 MOV #00BTP2,R2  
4548 017720 012703 000004 MOV #4,R3  
4549 017724 022122 15: CMP (R1)+,(R2)+  
4550 017726 001020 BNE 00B10 ;BRANCH IF INCORRECT.  
4551 017730 077303 SOB R3,15  
4552 017732 022700 017750 CMP #00BTP1,R0 ;IS R0 CORRECT.  
4553 017736 001024 BNE 00B15 ;BRANCH IF INCORRECT.  
4554 017740 022705 000210 CMP #210,R5 ;IS THE FPS CORRECT?  
4555 017744 001030 BNE 00B20 ;BRANCH IF INCORRECT.  
4556 017746 000435 BR 00BDONE  
4557  
4558 ;THESE ARE DATA TABLES AND A DATA BUFFER.  
4559 017750 023245 00BTP1: 023245  
4560 017752 026720 26720  
4561 017754 122324 122324  
4562 017756 052672 52672  
4563 017760 123245 00BTP2: 123245  
4564 017762 026720 26720  
4565 017764 122324 122324  
4566 017766 052672 52672  
4567  
4568 ;REPORT RESULT INCORRECT:  
4569 017770 012737 017750 001240 00B10: MOV #00BTP1,@#STMP3  
4570 017776 012737 017760 001242 MOV #00BTP2,@#STMP4  
4571 020004 104140 15: ERROR 140 ;BAD DATA  
4572 020006 000415 BR 00BDONE  
4573  
4574 ;REPORT R0 INCORRECT:  
4575 020010 012737 017750 001240 00B15: MOV #00BTP1,@#STMP3  
4576 020016 010037 001242 MOV R0,@#STMP4  
4577 020022 104141 15: ERROR 141 ;SPEC DESTX  
4578 020024 000406 BR 00BDONE ;RGX  
4579  
4580 ;REPORT FPS INCORRECT:  
4581 020026 012737 000210 001240 00B20: MOV #210,@#STMP3  
4582 020034 010537 001242 MOV R5,@#STMP4  
4583 020040 104142 15: ERROR 142
```



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4584
4585 020042          OOBDONE:
4586 020042 104412  RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
4587                                     ;SEE IF THE USER HAS EXPRESSED
4588                                     ;THE DESIRE TO CHANGE THE SOFTWARE
4589                                     ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
4590                                     ;THE USER TYPED CONTROL G?).
4591 ;*****
4592 ;*TEST 34          SPECIAL DEST, MODE 2, TEST
4593 ;*
4594 ;*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
4595 ;*MODE 2 USING THE NEGD INSTR.
4596 ;*
4597 ;*****
4598 020044 000004  TST34:  SCOPE
4599 020046          PPB1:
4600 020046 104413  LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
4601
4602 020050 012701 020160  MOV      #PPBTP1,R1      ;SET UP THE DATA BUFFER.
4603 020054 012700 020170  MOV      #PPBTP2,R0
4604 020060 012702 000004  MOV      #4,R2
4605 020064 012021 15:      MOV      (R0)+,(R1)+
4606 020066 077202  SOB      R2,15
4607 020070 012700 020160  MOV      #PPBTP1,R0
4608 020074 042710 100000  BIC      #100000,(R0)    ;MAKE OPERAND POSITIVE.
4609 020100 012737 020114 001236  MOV      #PPB2,@#STMP2
4610 020106 012701 000200  MOV      #200,R1        ;SET FD.
4611 020112 170101  LDFPS   R1
4612
4613 020114 170720  PPB2:  NEGD   (R0)+      ;TEST INSTRUCTION.
4614
4615 020116 170205  STFPS   R5              ;GET FPS.
4616 020120 012701 020160  MOV      #PPBTP1,R1      ;IS THE RESULT CORRECT.
4617 020124 012702 020170  MOV      #PPBTP2,R2
4618 020130 012703 000004  MOV      #4,R3
4619 020134 022122 15:      CMP      (R1)+,(R2)+
4620 020136 001020  BNE     PPB10          ;BRANCH IF INCORRECT.
4621 020140 077303  SOB     R3,15
4622 020142 022700 020170  CMP     #PPBTP1+10,R0    ;IS R0 CORRECT.
4623 020146 001024  BNE     PPB15          ;BRANCH IF INCORRECT.
4624 020150 022705 000210  CMP     #210,R5         ;IS THE FPS CORRECT?
4625 020154 001030  BNE     PPB20          ;BRANCH IF INCORRECT.
4626 020156 000435  BR      PPBDONE
4627
4628 ;THESE ARE DATA TABLES AND A DATA BUFFER.
4629 020160 023245  PPBTP1: 023245
4630 020162 026720 26720
4631 020164 122324 122324
4632 020166 052672 52672
4633 020170 123245  PPBTP2: 123245
4634 020172 026720 26720
4635 020174 122324 122324
4636 020176 052672 52672
4637
4638 ;REPORT RESULT INCORRECT:
4639 020200 012737 020160 001240 PPB10: MOV      #PPBTP1,@#STMP3
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4640 020206 012737 020170 001242      MOV      #PPBTP2,@#STMP4
4641 020214 104143      15:     ERROR      143      ;BAD DATA
4642 020216 000415      BR       PPBDONE
4643
4644      ;REPORT RO INCORRECT:
4645 020220 012737 020170 001240  PPB15:  MOV      #PPBTP1+10,@#STMP3
4646 020226 010037 001242      MOV      RO,@#STMP4
4647 020232 104144      15:     ERROR      144      ;SPEC DESTX ROX
4648 020234 000406      BR       PPBDONE
4649
4650      ;REPORT FPS INCORRECT:
4651 020236 012737 000210 001240  PPB20:  MOV      #210,@#STMP3
4652 020244 010537 001242      MOV      R5,@#STMP4
4653 020250 104145      15:     ERROR      145
4654
4655      PPBDONE:
4656 020252 104412      RSETUP      ;GO INITIALIZE THE FPS AND STACK; AND
4657      ;SEE IF THE USER HAS EXPRESSED
4658      ;THE DESIRE TO CHANGE THE SOFTWARE
4659      ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
4660      ;THE USER TYPED CONTROL G?).
4661      ;*****
4662      ;*TEST 35      SPECIAL DEST, MODE 4, TEST
4663      ;*
4664      ;*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
4665      ;*MODE 4 USING THE NEGD INSTR.
4666      ;*
4667      ;*****
4668 020254 000004      TST35:  SCOPE
4669 020256      QQB1:
4670 020256 104413      LPERR      ;SET UP THE LOOP ON ERROR ADDRESS.
4671 020260 012701 020372      MOV      #QQBTP1,R1      ;SET UP THE DATA BUFFER.
4672 020264 012700 020412      MOV      #QQBTP2,R0
4673 020270 012702 000004      MOV      #4,R2
4674 020274 012021      15:     MOV      (R0)+,(R1)+
4675 020276 077202      SOB      R2,15
4676 020300 012700 020402      MOV      #QQBTP1+10,R0
4677 020304 042760 100000 177770      BIC      #100000,-10(R0) ;MAKE OPERAND POSITIVE.
4678 020312 012737 020326 001236      MOV      #QQB2,@#STMP2
4679 020320 012701 000200      MOV      #200,R1      ;SET FD.
4680 020324 170101      LDFPS    R1
4681
4682 020326 170740      QQB2:  NEGD      -(R0)      ;TEST INSTRUCTION.
4683
4684 020330 170205      STFPS    R5      ;GET FPS.
4685 020332 012701 020372      MOV      #QQBTP1,R1      ;IS THE RESULT CORRECT.
4686 020336 012702 020412      MOV      #QQBTP2,R2
4687 020342 012703 000004      MOV      #4,R3
4688 020346 022122      15:     CMP      (R1)+,(R2)+
4689 020350 001024      BNE     QQB10      ;BRANCH IF INCORRECT.
4690 020352 077303      SOB      R3,15
4691 020354 022700 020372      CMP      #QQBTP1,R0      ;IS RO CORRECT.
4692 020360 001030      BNE     QQB15      ;BRANCH IF INCORRECT.
4693 020362 022705 000210      CMP      #210,R5      ;IS THE FPS CORRECT?
4694 020366 001034      BNE     QQB20      ;BRANCH IF INCORRECT.
4695 020370 000441      BR       QQBDONE
  
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4696
4697 ; THESE ARE DATA TABLES AND A DATA BUFFER.
4698 020372 023245 QQBTP1: 023245
4699 020374 026720          26720
4700 020376 122324          122324
4701 020400 052672          52672
4702 020402 177777 177777 177777 .WORD -1,-1,-1,-1
4703 020410 177777
4704 020412 123245 QQBTP2: 123245
4705 020414 026720          26720
4706 020416 122324          122324
4707 020420 052672          52672
4708
4709 ; REPORT RESULT INCORRECT:
4710 020422 012737 020372 001240 QQB10: MOV #QQBTP1,@#STMP3
4711 020430 012737 020412 001242      MOV #QQBTP2,@#STMP4
4712 020436 104146          15: ERROR 146 ;BAD DATA
4713 020440 000415          BR QQBDONE
4714
4715 ; REPORT RO INCORRECT:
4716 020442 012737 020372 001240 QQB15: MOV #QQBTP1,@#STMP3
4717 020450 010037 001242      MOV RO,@#STMP4
4718 020454 104147          15: ERROR 147 ;SPEC DESTX ROX
4719 020456 000406          BR QQBDONE
4720
4721 ; REPORT FPS INCORRECT:
4722
4723 020460 012737 000210 001240 QQB20: MOV #210,@#STMP3
4724 020466 010537 001242      MOV R5,@#STMP4
4725 020472 104150          15: ERROR 150
4726
4727 QQBDONE:
4728 020474 104412          RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
4729 ;SEE IF THE USER HAS EXPRESSED
4730 ;THE DESIRE TO CHANGE THE SOFTWARE
4731 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
4732 ;THE USER TYPED CONTROL G?).
4733
4734 ; *****
4735 ; *TEST 36 SPECIAL DEST, MODE 3, TEST
4736 ; *
4737 ; *THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
4738 ; *MODE 3 USING THE NEGD INSTR.
4739 ; *
4740 ; *****
4741 020476 000004 TST36: SCOPE
4742
4743 RRB1:
4744 020500          LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
4745 020500 104413      MOV #RRBTP1,R1 ;SET UP THE DATA BUFFER.
4746 020502 012701 020620      MOV #RRBTP2,R0
4747 020506 012700 020630      MOV #4,R2
4748 020512 012702 000004      15: MOV (R0)+,(R1)+
4749 020516 012021          SOB R2,15
4750 020520 077202          MOV #RRBTP3,R0
4751 020526 012710 020640      MOV #RRBTP1,(R0)
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4752 020532 042737 100000 020620      BIC      #100000, @#RRBTP1      ; MAKE THE OPERAND POSITIVE.
4753 020540 012737 020554 001236      MOV      #RRB2, @#STMP2
4754 020546 012701 000200      MOV      #200, R1              ; SET FD.
4755 020552 170101      LDFPS   R1
4756
4757 020554 170730      RRB2:   NEG0      @ (R0)+      ; TEST INSTRUCTION.
4758
4759 020556 170205      STFPS   R5              ; GET FPS.
4760 020560 012701 020620      MOV      #RRBTP1, R1          ; IS THE RESULT CORRECT.
4761 020564 012702 020630      MOV      #RRBTP2, R2
4762 020570 012703 000004      MOV      #4, R3
4763 020574 022122      15:    CMP      (R1)+, (R2)+
4764 020576 001021      BNE     RRB10          ; BRANCH IF INCORRECT.
4765 020600 077303      SOB     R3, 15
4766 020602 022700 020642      CMP      #RRBTP3+2, R0      ; IS R0 CORRECT.
4767 020606 001025      BNE     RRB15          ; BRANCH IF INCORRECT.
4768 020610 022705 000210      CMP      #210, R5          ; IS THE FPS CORRECT?
4769 020614 001031      BNE     RRB20          ; BRANCH IF INCORRECT.
4770 020616 000436      BR      RRBDONE
4771
4772      ; THESE ARE DATA TABLES AND A DATA BUFFER.
4773 020620 023245      RRBTP1: 023245
4774 020622 026720      26720
4775 020624 122324      122324
4776 020626 052672      52672
4777 020630 123245      RRBTP2: 123245
4778 020632 026720      26720
4779 020634 123324      123324
4780 020636 052672      52672
4781 020640 020620      RRBTP3: RRBTP1
4782
4783      ; REPORT RESULT INCORRECT:
4784 020642 012737 020620 001240      RRB10:  MOV      #RRBTP1, @#STMP3
4785 020650 012737 020630 001242      MOV      #RRBTP2, @#STMP4
4786 020656 104150      15:    ERROR    150          ; BAD DATA
4787 020660 000415      BR      RRBDONE
4788
4789      ; REPORT R0 INCORRECT:
4790 020662 012737 020642 001240      RRB15:  MOV      #RRBTP3+2, @#STMP3
4791 020670 010037 001242      MOV      R0, @#STMP4
4792 020674 104152      15:    ERROR    152          ; SPEC DESTX ROX
4793 020676 000406      BR      RRBDONE
4794
4795      ; REPORT FPS INCORRECT:
4796 020700 012737 000210 001240      RRB20:  MOV      #210, @#STMP3
4797 020706 010537 001242      MOV      R5, @#STMP4
4798 020712 104153      15:    ERROR    153
4799
4800      RRBDONE:
4801 020714 104412      RSETUP      ; GO INITIALIZE THE FPS AND STACK; AND
4802      ; SEE IF THE USER HAS EXPRESSED
4803      ; THE DESIRE TO CHANGE THE SOFTWARE
4804      ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
4805      ; THE USER TYPED CONTROL G?).
4806
4807      ; *****
  
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4808 ;*TEST 37 SPECIAL DEST, MODE 5, TEST
4809 ;*
4810 ;*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
4811 ;*MODE 5 USING THE NEGD INSTR.
4812 ;*
4813 ;*****
4814 020716 000004 TST37: SCOPE
4815 020720 SSB1:
4816 020720 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
4817 020722 012701 021042 MOV #SSBTP1,R1 ;SET UP THE DATA BUFFER.
4818 020726 012700 021052 MOV #SSBTP2,R0
4819 020732 012702 000004 MOV #4,R2
4820 020736 012021 15: MOV (R0)+,(R1)+
4821 020740 077202 SOB R2,15
4822 020742 012700 021064 MOV #SSBTP3+2,R0
4823 020746 012760 021042 177776 MOV #SSBTP1,-2(R0)
4824 020754 042737 100000 021042 BIC #100000,@#SSBTP1 ;MAKE THE OPERAND POSITIVE.
4825 020762 012737 020776 001236 MOV #SSB2,@#STMP2
4826 020770 012701 000200 MOV #200,R1 ;SET FD.
4827 020774 170101 LDFPS R1
4828
4829 020776 170750 SSB2: NEGD @-(R0) ;TEST INSTRUCTION.
4830
4831 021000 170205 STFPS R5 ;GET FPS.
4832 021002 012701 021042 MOV #SSBTP1,R1 ;IS THE RESULT CORRECT.
4833 021006 012702 021052 MOV #SSBTP2,R2
4834 021012 012703 000004 MOV #4,R3
4835 021016 022122 15: CMP (R1)+,(R2)+
4836 021020 001021 3NE SSB10 ;BRANCH IF INCORRECT.
4837 021022 077303 SOB R3,15
4838 021024 022700 021062 CMP #SSBTP3,R0 ;IS R0 CORRECT.
4839 021030 001025 BNE SSB15 ;BRANCH IF INCORRECT.
4840 021032 022705 000210 CMP #210,R5 ;IS THE FPS CORRECT?
4841 021036 001031 BNE SSB20 ;BRANCH IF INCORRECT.
4842 021040 000436 BR SSBDONE
4843
4844 ;THESE ARE DATA TABLES AND A DATA BUFFER.
4845 021042 023245 SSBTP1: 023245
4846 021044 026720 26720
4847 021046 122324 122324
4848 021050 052672 52672
4849 021052 123245 SSBTP2: 123245
4850 021054 026270 26270
4851 021056 122324 122324
4852 021060 052672 52672
4853 021062 021042 SSBTP3: SSBTP1
4854
4855 ;REPORT RESULT INCORRECT:
4856 021064 012737 021042 001240 SSB10: MOV #SSBTP1,@#STMP3
4857 021072 012737 021052 001242 MOV #SSBTP2,@#STMP4
4858 021100 104154 15: ERROR 154 ;BAD DATA
4859 021102 000415 BR SSBDONE
4860
4861 ;REPORT R0 INCORRECT:
4862 021104 012737 021062 001240 SSB15: MOV #SSBTP3,@#STMP3
4863 021112 010037 001242 MOV R0,@#STMP4
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4864 021116 104155          15:  ERROR 155          ;SPEC DESTX ROX
4865 021120 000406          BR      SSBDONE
4866
4867 ;REPORT FPS INCORRECT:
4868 021122 012737 000210 001240 SSB20: MOV #210,@#STMP3
4869 021130 010537 001242          MOV R5,@#STMP4
4870 021134 104156          15:  ERROR 156
4871
4872 021136          SSBDONE:
4873 021136 104412          RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
4874          ;SEE IF THE USER HAS EXPRESSED
4875          ;THE DESIRE TO CHANGE THE SOFTWARE
4876          ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
4877          ;THE USER TYPED CONTROL G?).
4878 ;*****
4879 ;*TEST 40 SPECIAL DEST. FLOATING MODE 2. TEST
4880 ;*
4881 ;*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
4882 ;*MODE 2 USING THE NEGF INSTR.
4883 ;*
4884 ;*****
4885 021140 000004          TST40: SCOPE
4886 021142          TTb1:
4887 021142 104413          LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
4888 021144 012701 021254          MOV #TTbTP1,R1 ;SET UP THE DATA BUFFER.
4889 021150 012700 021264          MOV #TTbTP2,R0
4890 021154 012702 000004          MOV #4,R2
4891 021160 012021          15:  MOV (R0)+,(R1)+
4892 021162 077202          SOB R2,15
4893 021164 012700 021254          MOV #TTbTP1,R0
4894 021170 042710 100000          BIC #100000,(R0) ;MAKE OPERAND POSITIVE.
4895 021174 012737 021210 001236          MOV #TTb2,@#STMP2
4896 021202 012701 000000          MOV #000,R1 ;SET FD.
4897 021206 170101          LDFPS R1
4898
4899 021210 170720          TTb2: NEGF (R0)+ ;TEST INSTRUCTION.
4900
4901          STFPS R5 ;GET FPS.
4902 021214 012701 021254          MOV #TTbTP1,R1 ;IS THE RESULT CORRECT.
4903 021220 012702 021264          MOV #TTbTP2,R2
4904 021224 012703 000004          MOV #4,R3
4905 021230 022122          15:  CMP (R1)+,(R2)+
4906 021232 001020          BNE TTb10 ;BRANCH IF INCORRECT.
4907 021234 077303          SOB R3,15
4908 021236 022700 021260          CMP #TTbTP1+4,R0 ;IS R0 CORRECT.
4909 021242 001024          BNE TTb15 ;BRANCH IF INCORRECT.
4910 021244 022705 000010          CMP #010,R5 ;IS THE FPS CORRECT?
4911 021250 001030          BNE TTb20 ;BRANCH IF INCORRECT.
4912 021252 000435          BR TTbDONE
4913
4914 ;THESE ARE DATA TABLES AND A DATA BUFFER.
4915 021254 023245          TTbTP1: 023245
4916 021256 026720          26720
4917 021260 122324          122324
4918 021262 052672          52672
4919 021264 123245          TTbTP2: 123245
  
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4920 021266 026720 26720
4921 021270 122324 122324
4922 021272 052672 52672
4923
4924 ;REPORT RESULT INCORRECT:
4925 021274 012737 021254 001240 TTB10: MOV #TTBTP1,@#STMP3
4926 021302 012737 021264 001242 MOV #TTBTP2,@#STMP4
4927 021310 104150 15: ERROR 150 ;BAD DATA
4928 021312 000415 BR TTBDONE
4929
4930 ;REPORT RO INCORRECT:
4931 021314 012737 021260 001240 TTB15: MOV #TTBTP1+4,@#STMP3
4932 021322 010037 001242 MOV RO,@#STMP4
4933 021326 104160 15: ERROR 160 ;SPEC DESTX ROX
4934 021330 000406 BR TTBDONE
4935
4936 ;REPORT FPS INCORRECT:
4937 021332 012737 000010 001240 TTB20: MOV #010,@#STMP3
4938 021340 010537 001242 MOV R5,@#STMP4
4939 021344 104161 15: ERROR 161
4940
4941 021346 TTBDONE:
4942 021346 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
4943 ;SEE IF THE USER HAS EXPRESSED
4944 ;THE DESIRE TO CHANGE THE SOFTWARE
4945 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
4946 ;THE USER TYPED CONTROL G?).
4947 ;*****
4948 ;*TEST 41 SPECIAL DEST, MODE2, GR7 (IMMEDIATE), TEST
4949 ;*
4950 ;*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
4951 ;*MODE 2(IMMEDIATE) USING THE NEG0 INSTR.
4952 ;*
4953 ;*****
4954 021350 000004 TST41: SCOPE
4955 021352 UUB1:
4956 021352 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
4957 021354 012700 021500 MOV #UUBTP2,R0
4958 021360 012701 021426 MOV #UUBTP1,R1 ;SET UP THE DATA BUFFER.
4959 021364 012702 000004 MOV #4,R2
4960 021370 012021 15: MOV (R0)+,(R1)+
4961 021372 077202 SOB R2,15
4962 021374 012700 021426 MOV #UUBTP1,R0
4963 021400 042737 100000 021426 BIC #100000,@#UUBTP1 ;MAKE THE OPERAND POSITIVE.
4964 021406 012737 021424 001236 MOV #UUB2,@#STMP2
4965 021414 012701 000200 MOV #200,R1 ;SET FD.
4966 021420 170101 LDFPS R1
4967 021422 005001 CLR R1
4968
4969 021424 170727 UUB2: NEG0 (R7)+ ;TEST INSTRUCTION.
4970 021426 005201 005201 005201 UUBTP1: 5201,5201,5201,5201
4971 021434 005201
4972 ;NOTE THAT AFTER EXECUTING THIS INSTRUCTION R1 SHOULD CONTAIN 3.
4973 021436 170205 STFPS R5 ;GET FPS.
4974 021440 012703 021426 MOV #UUBTP1,R3 ;IS THE RESULT CORRECT.
4975 021444 012702 021500 MOV #UUBTP2,R2
    
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4976 021450 012704 000004
4977 021454 022322
4978 021456 001014
4979 021460 077403
4980 021462 022701 000003
4981 021466 001027
4982 021470 022705 000210
4983 021474 001015
4984 021476 000436
4985
4986 ; THESE ARE DATA TABLE.
4987 021500 105201 UUBTP2: 105201
4988 021502 005201 5201
4989 021504 005201 5201
4990 021506 005201 5201
4991
4992 ; REPORT RESULT INCORRECT:
4993 021510 012737 021426 001240 UUB10: MOV #UUBTP1, @#STMP3
4994 021516 012737 021500 001242 MOV #UUBTP2, @#STMP4
4995 021524 104162 15: ERROR 162 ; BAD DATA
4996 021526 000422 BR UUBDONE
4997
4998 ; REPORT FPS INCORRECT:
4999 021530 012737 000210 001240 UUB20: MOV #210, @#STMP3
5000 021536 010537 001242 MOV R5, @#STMP4
5001 021542 104163 15: ERROR 163 ; FPS
5002 021544 000413 BR UUBDONE
5003
5004 ; REPORT PC INCORRECTLY INCREMENTED DURING EXECUTION.
5005 021546 162701 000003 UUB15: SUB #3, R1
5006 021552 006301 ASL R1
5007 021554 012702 021430 MOV #UUBTP1+2, R2
5008 021560 010237 001240 MOV R2, @#STMP3
5009 021564 160102 SUB R1, R2
5010 021566 010237 001242 MOV R2, @#STMP4
5011 021572 104164 15: ERROR 164 ; PC BAD CONSTAND B GR7X
5012
5013 UUBDONE:
5014 021574 104412 RSETUP ; GO INITIALIZE THE FPS AND STACK; AND
5015 ; SEE IF THE USER HAS EXPRESSED
5016 ; THE DESIRE TO CHANGE THE SOFTWARE
5017 ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
5018 ; THE USER TYPED CONTROL G?).
5019 ; *****
5020 ; *TEST 42 SPECIAL DEST, MODE 6, TEST
5021 ; *
5022 ; *THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
5023 ; *MODE 6 USING THE NEG0 INSTR.
5024 ; *
5025 ; *****
5026 021576 000004 TST42: SCOPE
5027 021600 XXB1:
5028 021600 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
5029 021602 012701 021724 MOV #XXBTP1, R1 ; SET UP THE DATA BUFFER.
5030 021606 012700 021734 MOV #XXBTP2, R0
5031 021612 012702 000004 MOV #4, R2
```



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5032 021616 012021      15:  MOV      (R0)+, (R1)+
5033 021620 077202      SOB      R2, 15
5034 021622 012700 014523  MOV      #XXBTP1-5201, R0
5035 021626 042737 100000 021724  BIC      #100000, @#XXBTP1; MAKE OPERAND POSITIVE.
5036 021634 012737 021652 001236  MOV      #XXB2, @#STMP2
5037 021642 012701 000200  MOV      #200, R1          ; SET FD.
5038 021646 170101  LDFPS   R1
5039
5040 021650 005001      CLR      R1
5041 021652 170760 005201  XXB2:  NEGD   5201(R0)          ; TEST INSTRUCTION.
5042
5043 021656 170205      STFPS   R5          ; GET FPS.
5044 021660 005701      TST     R1
5045 021662 001030      BNE    XXB25        ; WAS THE PC CORRECT AFTER EXECUTION?
5046 021664 012701 021724  MOV      #XXBTP1, R1      ; IS THE RESULT CORRECT.
5047 021670 012702 021734  MOV      #XXBTP2, R2
5048 021674 012703 000004  MOV      #4, R3
5049 021700 022122      15:  CMP      (R1)+, (R2)+
5050 021702 001030      BNE    XXB10        ; BRANCH IF INCORRECT.
5051 021704 077303      SOB    R3, 15
5052 021706 022700 014523  CMP      #XXBTP1-5201, R0 ; IS R0 CORRECT.
5053 021712 001034      BNE    XXB15        ; BRANCH IF INCORRECT.
5054 021714 022705 000210  CMP      #210, R5        ; IS THE FPS CORRECT?
5055 021720 001040      BNE    XXB20        ; BRANCH IF INCORRECT.
5056 021722 000445      BR     XXBDONE
5057
5058      ; THESE ARE DATA TABLES AND A DATA BUFFER.
5059 021724 023245  XXBTP1: 023245
5060 021726 026720      26720
5061 021730 122324      122324
5062 021732 052672      52672
5063 021734 123245  XXBTP2: 123245
5064 021736 026720      26720
5065 021740 122324      122324
5066 021742 052672      52672
5067
5068
5069      ; REPORT PC INCORRECT AFTER EXECUTION.
5070 021744 012737 021654 001242  XXB25: MOV      #XXB2+2, @#STMP4
5071 021752 012737 021656 001240  MOV      #XXB2+4, @#STMP3
5072 021760 104215      15:  ERROR   215          ; PC NOT INCREMENTED BY 2.
5073 021762 000425      BR     XXBDONE
5074
5075      ; REPORT RESULT INCORRECT:
5076 021764 012737 021724 001240  XXB10: MOV      #XXBTP1, @#STMP3
5077 021772 012737 021734 001242  MOV      #XXBTP2, @#STMP4
5078 022000 104216      15:  ERROR   216          ; BAD DATA
5079 022002 000415      BR     XXBDONE
5080
5081      ; REPORT R0 INCORRECT:
5082 022004 012737 014523 001240  XXB15: MOV      #XXBTP1-5201, @#STMP3
5083 022012 010037 001242  MOV      R0, @#STMP4
5084 022016 104217      15:  ERROR   217          ; SPEC DESTX ROX
5085 022020 000406      BR     XXBDONE
5086
5087
    
```

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5088 ;REPORT FPS INCORRECT:
5089 022022 012737 000210 001240 XXB20: MOV #210, @#STMP3
5090 022030 010537 001242 MOV R5, @#STMP4
5091 022034 104220 15: ERROR 220
5092
5093 022036 XXBDONE:
5094 022036 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
5095 ;SEE IF THE USER HAS EXPRESSED
5096 ;THE DESIRE TO CHANGE THE SOFTWARE
5097 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
5098 ;THE USER TYPED CONTROL G?).
5099
5100 ;*****
5101 ;*TEST 43 SPECIAL DEST, MODE 7, TEST
5102 ;*
5103 ;*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
5104 ;*MODE 7 USING THE NEGD INSTR.
5105 ;*
5106 ;*****
5107 022040 000004 TST43: SCOPE
5108
5109 022042 YYB1:
5110 022042 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
5111 022044 012701 022174 MOV #YYBTP1,R1 ;SET UP THE DATA BUFFER.
5112 022050 012700 022204 MOV #YYBTP2,R0
5113 022054 012702 000004 MOV #4,R2
5114 022060 012021 15: MOV (R0)+,(R1)+
5115 022062 077202 SOB R2,15
5116 022064 012700 015013 MOV #YYBTP3-5201,R0
5117 022070 012760 022174 005201 MOV #YYBTP1,5201(R0)
5118 022076 042737 100000 022174 BIC #100000,@#YYBTP1 ;MAKE THE OPERAND POSITIVE.
5119 022104 012737 022122 001236 MOV #YYB2,@#STMP2
5120 022112 012701 000200 MOV #200,R1 ;SET FD.
5121 022116 170101 LDFPS R1
5122
5123 022120 005001 YYB2: CLR R1
5124 022122 170770 005201 NEGD @5201(R0) ;TEST INSTRUCTION.
5125
5126 022126 170205 STFPS R5 ;GET FPS.
5127 022130 005701 TST R1 ;WAS THE PC CORRECT AFTER EXECUTION?
5128 022132 001031 BNE YYB25
5129 022134 012701 022174 MOV #YYBTP1,R1 ;IS THE RESULT CORRECT.
5130 022140 012702 022204 MOV #YYBTP2,R2
5131 022144 012703 000004 MOV #4,R3
5132 022150 022122 15: CMP (R1)+,(R2)+
5133 022152 001031 BNE YYB10 ;BRANCH IF INCORRECT.
5134 022154 077303 SOB R3,15
5135 022156 022700 015013 CMP #YYBTP3-5201,R0 ;IS R0 CORRECT.
5136 022162 001035 BNE YYB15 ;BRANCH IF INCORRECT.
5137 022164 022705 000210 CMP #210,R5 ;IS THE FPS CORRECT?
5138 022170 001041 BNE YYB20 ;BRANCH IF INCORRECT.
5139 022172 000446 BR YYBDONE
5140
5141 ;THESE ARE DATA TABLES AND A DATA BUFFER.
5142 022174 023245 YYBTP1: 023245
5143 022176 026720 26720
    
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5144 022200 122324 122324
5145 022202 052672 52672
5146 022204 123245 YYBTP2: 123245
5147 022206 026720 26720
5148 022210 123324 123324
5149 022212 052672 52672
5150 022214 022174 YYBTP3: YYBTP1
5151
5152 ;REPORT PC INCORRECT AFTER EXECUTION.
5153 022216 016737 177702 001242 YYB25: MOV YYB2+2,@#STMP4
5154 022224 016737 177676 001240 MOV YYB2+4,@#STMP3
5155 022232 104221 15: ERROR 221 ;PC NOT INCREMENTED BY 2.
5156 022234 000425 BR YYBDONE
5157
5158 ;REPORT RESULT INCORRECT:
5159 022236 012737 022174 001240 YYB10: MOV #YYBTP1,@#STMP3
5160 022244 012737 022204 001242 MOV #YYBTP2,@#STMP4
5161 022252 104222 15: ERROR 222 ;BAD DATA
5162 022254 000415 BR YYBDONE
5163
5164 ;REPORT RO INCORRECT:
5165 022256 012737 015013 001240 YYB15: MOV #YYBTP3-5201,@#STMP3
5166 022264 010037 001242 MOV RO,@#STMP4
5167 022270 104223 15: ERROR 223 ;SPEC DESTX ROX
5168 022272 000406 BR YYBDONE
5169
5170 ;REPORT FPS INCORRECT:
5171 022274 012737 000210 001240 YYB20: MOV #210,@#STMP3
5172 022302 010537 001242 MOV R5,@#STMP4
5173 022306 104224 15: ERROR 224
5174
5175 YYBDONE:
5176 022310 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
5177 ;SEE IF THE USER HAS EXPRESSED
5178 ;THE DESIRE TO CHANGE THE SOFTWARE
5179 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
5180 ;THE USER TYPED CONTROL G?).
5181 ;*****
5182 ;*TEST 44 NEG, ABSD AND TSTD TEST
5183 ;*
5184 ;*THIS IS A TEST OF THE NEG, ABSD AND TSTD INSTRUCTIONS.
5185 ;*
5186 ;*****
5187 022312 000004 TST44: SCOPE
5188 ;TEST NEG, ABSD AND TSTD WITH POS NONZERO OPERAND
5189 WMB1:
5190 022314 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
5191 022316 004767 000634 JSR PC,NATSUB
5192 022322 000000 15: 0 ;FLAG=NEG.
5193 022324 016341 25: 16341 ;OPERAND.
5194 022326 055772 55772
5195 022330 021133 21133
5196 022332 055447 55447
5197 022334 116341 35: 116341 ;RESULT.
5198 022336 055772 55772
5199 022340 021133 21133
  
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5200	022342	055447			55447		
5201	022344	016341		45:	16341		; ERROR RES.
5202	022346	055772			55772		
5203	022350	021133			21133		
5204	022352	055447			55447		
5205	022354	000207		55:	207		; FPS BEFORE EXECUTION.
5206	022356	000210			210		; FPS AFTER EXECUTION.
5207	022360	000200			200		; ERROR FPS.
5208	022362	177777			-1		; FEC
5209	022364	104200		65:	ERROR	200	; E10<---E10*200X ST 336
5210	022366	000401			BR	75	
5211	022370	104201			ERROR	201	; BUT ENBT ST 336X WENT TO 053 INTO 453
5212	022372			75:			
5213					; TEST NEG. WITH NEG. OPERAND.		
5214	022372			WNB2:			
5215	022372	104413			LPERR		; SET UP THE LOOP ON ERROR ADDRESS.
5216	022374	004767	000556		JSR	PC, NATSUB	
5217	022400	000000		15:	0		; FLAG=NEG.
5218	022402	152525		25:	152525		; OPERAND.
5219	022404	053545			53545		
5220	022406	055565			55565		
5221	022410	057505			57505		
5222	022412	052525		35:	52525		; RESULT.
5223	022414	053545			53545		
5224	022416	055565			55565		
5225	022420	057505			57505		
5226	022422	152525		45:	152525		; ERROR RES.
5227	022424	053545			53545		
5228	022426	055565			55565		
5229	022430	057505			57505		
5230	022432	000217		55:	217		; FPS BEFORE EXECUTION.
5231	022434	000200			200		; FPS AFTER EXECUTION.
5232	022436	000210			210		; ERROR FPS.
5233	022440	177777			-1		; FEC
5234	022442	104200		65:	ERROR	200	; E10<---E10*200X S336
5235	022444	000401			BR	75	
5236	022446	104202			ERROR	202	; BUT ENBT X ST336 TO 453 INTO 053
5237	022450			75:			
5238					; TEST ABSD WITH POSITIVE OPERAND		
5239	022450			WNB3:			
5240	022450	104413			LPERR		; SET UP THE LOOP ON ERROR ADDRESS.
5241	022452	004767	000500		JSR	PC, NATSUB	
5242	022456	000001		15:	1		; FLAG=ABSD.
5243	022460	060705		25:	60705		; OPERAND.
5244	022462	124735			124735		
5245	022464	060124			60124		
5246	022466	073560			73560		
5247	022470	060705		35:	60705		; RESULT.
5248	022472	124735			124735		
5249	022474	060124			60124		
5250	022476	073560			73560		
5251	022500	160705		45:	160705		; ERROR RES.
5252	022502	124735			124735		
5253	022504	060124			60124		
5254	022506	073560			73560		
5255	022510	000217		55:	217		; FPS BEFORE EXECUTION.



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5256 022512 000200          200          ;FPS AFTER EXECUTION.
5257 022514 000210          210          ;ERROR FPS.
5258 022516 177777          -1           ;EITHER BUT OP18
5259 022520 104203          65:  ERROR    203          ;BUT ST 055 TO 336 INTO 335
5260 022522 000401          BR           75
5261 022524 104203          ERROR    203          ;OR BUT ENBT ST 335 TO 452 INTO 052
5262 022526
5263          75:
;TEST ABSD WITH NEG. OPERAND
5264 022526          HWB4:
5265 022526 104413          LPERR
5266 022530 004767 000422          JSR      PC,NATSUB          ;SET UP THE LOOP ON ERROR ADDRESS.
5267 022534 000001          15:  1
5268 022536 154345          25:  154345          ;FLAG=ABSD.
5269 022540 076567          76567          ;OPERAND.
5270 022542 032123          32123
5271 022544 043234          43234
5272 022546 054345          35:  54345          ;RESULT.
5273 022550 076567          76567
5274 022552 032123          32123
5275 022554 043234          43234
5276 022556 154345          45:  154345          ;ERROR RES.
5277 022560 076567          76567
5278 022562 032123          32123
5279 022564 043234          43234
5280 022566 000217          55:  217
5281 022570 000200          200          ;FPS BEFORE EXECUTION.
5282 022572 177777          -1           ;FPS AFTER EXECUTION.
5283 022574 177777          -1           ;ERROR FPS.
5284 022576 104204          65:  ERROR    204          ;E10*E10*200X ST 452
5285 022600 000401          BR           75
5286 022602 104171          ERROR    171
5287 022604
5288          75:
;TEST WITH POSITIVE OP
5289 022604          HWB5:
5290 022604 104413          LPERR
5291 022606 004767 000344          JSR      PC,NATSUB          ;SET UP THE LOOP ON ERROR ADDRESS.
5292 022612 000002          15:  2
5293 022614 012321          25:  12321          ;FLAG=TSTD.
5294 022616 045654          45654          ;OPERAND.
5295 022620 070107          70107
5296 022622 034543          34543
5297 022624 012321          35:  12321          ;RESULT.
5298 022626 045654          45654
5299 022630 070107          70107
5300 022632 034543          34543
5301 022634 112321          45:  112321          ;ERROR RES.
5302 022636 045654          45654
5303 022640 070107          70107
5304 022642 034543          34543
5305 022644 000217          55:  217
5306 022646 000200          200          ;FPS BEFORE EXECUTION.
5307 022650 000210          210          ;FPS AFTER EXECUTION.
5308 022652 177777          -1           ;ERROR FPS.
5309 022654 104205          65:  ERROR    205          ;BUT (OP18) X ST044 TO 336 INTO 334
5310 022656 000401          BR           75
5311 022660 104206          ERROR    206          ;BUT ENBT ST 334 TO 453 INTO 053
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5312 022662          7$:  
5313                ; TEST TSTD WITH NEG OP  
5314 022662          WWB6:  
5315 022662 104413   LPERR                ; SET UP THE LOOP ON ERROR ADDRESS.  
5316 022664 004767 000266 JSR          PC,NATSUB  
5317 022670 000002    1$: 2                ; FLAG=TSTD.  
5318 022672 123765    2$: 123765           ; OPERAND.  
5319 022674 023407    23407  
5320 022676 034510    34510  
5321 022700 045621    45621  
5322 022702 123765    3$: 123765           ; RESULT.  
5323 022704 023407    23407  
5324 022706 034510    34510  
5325 022710 045621    45621  
5326 022712 023765    4$: 23765           ; ERROR RES.  
5327 022714 023407    23407  
5328 022716 034510    34510  
5329 022720 045621    45621  
5330 022722 000207    5$: 207             ; FPS BEFORE EXECUTION.  
5331 022724 000210    210             ; FPS AFTER EXECUTION.  
5332 022726 000200    200             ; ERROR FPS.  
5333 022730 177777    -1  
5334 022732 104207    6$: ERROR 207       ; BUT OPB1 ST 055 TO 335 INTO 334  
5335 022734 000401    BR 7$  
5336 022736 104210    ERROR 210       ; BUT ENBT ST 334 TO 053 INTO 453  
5337 022740          7$:  
5338                ; TEST TSTD 0 OP  
5339 022740          WWB7:  
5340 022740 104413   LPERR                ; SET UP THE LOOP ON ERROR ADDRESS.  
5341 022742 004767 000210 JSR          PC,NATSUB  
5342 022746 000002    1$: 2                ; FLAG=TSTD.  
5343 022750 000175    2$: 175             ; OPERAND.  
5344 022752 176737    176737  
5345 022754 071727    71727  
5346 022756 037574    37574  
5347 022760 000175    3$: 175             ; RESULT.  
5348 022762 176737    176737  
5349 022764 071727    71727  
5350 022766 037574    37574  
5351 022770 000000    4$: 0               ; ERROR RES.  
5352 022772 000000    0  
5353 022774 000000    0  
5354 022776 000000    0  
5355 023000 000200    5$: 200             ; FPS BEFORE EXECUTION.  
5356 023002 000204    204             ; FPS AFTER EXECUTION.  
5357 023004 000214    214             ; ERROR FPS.  
5358 023006 177777    -1  
5359 023010 104211    6$: ERROR 211       ; BUT OP1B ST 255 TO 311 OR 312 INTO 310  
5360 023012 000401    BR 7$  
5361 023014 104212    ERROR 212       ; BUT ENBT ST 310 TO 402 INTO 002  
5362 023016          7$:  
5363                ; TEST TSTD -0 OP FIUV=0  
5364 023016          WWB8:  
5365 023016 104413   LPERR                ; SET UP THE LOOP ON ERROR ADDRESS.  
5366 023020 004767 000132 JSR          PC,NATSUB  
5367 023024 000002    1$: 2                ; FLAG=TSTD.
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5368 023026 100123      25: 100123      ; OPERAND.
5369 023030 021012      21012
5370 023032 034565      34565
5371 023034 043210      43210
5372 023036 100123      35: 100123      ; RESULT.
5373 023040 021012      21012
5374 023042 034565      34565
5375 023044 043210      43210
5376 023046 000000      45: 0           ; ERROR RES.
5377 023050 000000      0
5378 023052 000000      0
5379 023054 000000      0
5380 023056 040203      55: 40203        ; FPS BEFORE EXECUTION.
5381 023060 040214      040214        ; FPS AFTER EXECUTION.
5382 023062 140214      140214        ; ERROR FPS.
5383 023064 177777      -1
5384 023066 104211      65: ERROR 211     ; +
5385 023070 000401      BR 75
5386 023072 104213      ERROR 213     ; BUT FIUV ST 257 TO 355 INTO 255
5387 023074
5388
5389 023074      ; TEST TSTD -0 OP FIUV=1
5390 023074 104413      HWB9:
5391 023076 004767 000054      LPERR          ; SET UP THE LOOP ON ERROR ADDRESS.
5392 023102 000002      JSR PC,NATSUB
5393 023104 100137      15: 2           ; FLAG=TSTD.
5394 023106 024613      25: 100137     ; OPERAND.
5395 023110 057024      24613
5396 023112 060137      57024
5397 023114 100137      35: 100137     ; RESULT.
5398 023116 024613      24613
5399 023120 057024      57024
5400 023122 060137      60137
5401 023124 000000      45: 0           ; ERROR RES.
5402 023126 000000      0
5403 023130 000000      0
5404 023132 000000      0
5405 023134 044200      55: 44200        ; FPS BEFORE EXECUTION.
5406 023136 144214      144214        ; FPS AFTER EXECUTION.
5407 023140 044214      044214        ; ERROR FPS.
5408 023142 000014      14
5409 023144 104211      65: ERROR 211     ; +
5410 023146 000401      BR 75
5411 023150 104214      ERROR 214     ; BUT FIUV ST 257 TO 255 INTO 355
5412 023152
5413 023152 000167 000414      75: JMP WBDONE
5414
5415
5416
; THIS SUBROUTINE, NATSUB, IS USED TO SET UP THE OPERANDS, EXECUTE
; THE EITHER A TSTD, AN ABSD OR A NEG, INSTRUCTION AND CHECK THE RESULTS. A CALL

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; TO IT IS MADE THUS:

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;
; JSR PC, @NATSUB
; FLAG: .WORD X ; INSTRUCTION TYPE FLAG.
; ACARG: .WORD X, X, X, X ; OPERAND
; RES: .WORD X, X, X, X ; EXPECTED RESULT
; ERRES: .WORD X, X, X, X ; ERROR RESULT
; FPSB: .WORD X ; FPS BEFORE EXECUTION
; FPSA: .WORD X ; FPS AFTER EXECUTION
; FEC: .WORD X ; EXPECTED FEC
; ERFPS: .WORD X ; ERROR FPS.
; ERR1: ERROR X ; DATA ERROR.
; BR CONT
; ERR2: ERROR X ; FPS ERROR.
; CONT: ; RETURN ADDRESS

```

; THE OPERAND IS SET UP IN NATBF1. THEN  
; THE EITHER THE TSTD, NEG, OR ABSD INSTRUCTION IS EXECUTED.  
; NATSUB USES THE FIRST OPERAND AS A FLAG TO DETERMINE WHICH INSTRUCTION  
; IS TO BE EXECUTED: 0 = NEG, 1 = ABSD, 2 = TSTD.  
; THE RESULT IS CHECKED AGAINST RES. IF THE RESULT IS CORRECT THEN THE FPS IS  
; COMPARED WITH FPSA. IF THIS TOO IS CORRECT NATSUB RETURNS CONTROL  
; TO THE CALLING ROUTINE AT CONT. IF THE FPS IS BAD NATSUB  
; COMPARE IT TO ERROR FPS. IF THIS MATCHES THEN NATSUB WILL RETURN  
; TO THE ERROR CALL AT ERR2, OTHERWISE NATSUB ITSELF  
; REPORTS THIS FAILURE AND THEN RETURNS TO CONT. IF THE RESULT OF THE  
; INSTRUCTION IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE  
; ANTICIPATED FAILING DATA PATTERN, ERRES. IF THE FAILURE IN  
; THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN NATSUB  
; WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1. OTHERWISE THE  
; RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND NATSUB WILL  
; REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT.

5451 023156 012601  
5452 023160 010102  
5453 023162 062702 000002  
5454 023166 012703 023560  
5455 023172 012704 000004  
5456 023176 012223  
5457 023200 077402  
5458 023202 016100 000032  
5459 023206 170100  
5460 023210 012700 023560  
5461 023214 011102  
5462 023216 006302  
5463 023220 006302  
5464 023222 012703 023236  
5465 023226 060203  
5466 023230 010337 001236  
5467 023234 000113  
5468 023236 170710  
5469 023240 000403  
5470 023242 170610  
5471 023244 000401  
5472 023246 170510

```

NATSUB: MOV (SP)+, R1 ; GET A POINTER TO THE ARGUMENTS.
        MOV R1, R2 ; COPY THE OPERAND.
        ADD #2, R2
        MOV #NATBF1, R3
        MOV #4, R4
15:     MOV (R2)+, (R3)+
        SOB R4, 15
        MOV 32(R1), R0 ; LOAD THE FPS.
        LDFPS R0
        MOV #NATBF1, R0 ; SET UP THE OPERAND ADDRESS.
        MOV (R1), R2 ; GET THE FLAG TO DETERMINE WHICH
        ASL R2 ; INSTRUCTION TO EXECUTE.
        ASL R2 ; 0 = NEG, 1 = ABSD, 2 = TSTD
        MOV #NATINS, R3
        ADD R2, R3
        MOV R3, @STMP2
        JMP (R3) ; GO EXECUTE THE INSTRUCTION.
NATINS: NEG (R0)
        BR 25
        ABSD (R0)
        BR 25
        TSTD (R0)

```



```
5473
5474 023250 170204          25:  STFPS  R4          ;GET THE FPS.
5475 023252 170305          STST  R5          ;GET THE FEC.
5476 023254 010102          MOV   R1,R2
5477 023256 062702 000002   ADD   #2,R2
5478 023262 010237 001240   MOV   R2,@#STMP3
5479 023266 062702 000010   ADD   #10,R2
5480 023272 010237 001244   MOV   R2,@#STMP5
5481 023276 012737 023560 001242   MOV   #NATBF1,@#STMP4
5482 023304 010437 001250   MOV   R4,@#STMP7
5483 023310 016137 000034 001252   MOV   34(R1),@#STMP10
5484 023316 010100          MOV   R1,R0          ;WAS THE RESULT CORRECT?
5485 023320 062700 000012   ADD   #12,R0
5486 023324 012702 023560   MOV   #NATBF1,R2
5487 023330 012703 000004   MOV   #4,R3
5488 023334 022022          35:  CMP   (R0)+,(R2)+
5489 023336 001014          BNE   105           ;BRANCH IF INCORRECT.
5490 023340 077303          SOB   R3,35
5491 023342 026104 000034   CMP   34(R1),R4     ;WAS THE FPS CORRECT?
5492 023346 001032          BNE   155           ;BRANCH IF INCORRECT.
5493 023350 005761 000034   TST   34(R1)        ;IF THE EXPECTED FPS WAS NEGATIVE CHECK THE FEC.
5494 023354 100003          BPL   45
5495 023356 026105 000040   CMP   40(R1),R5     ;WAS THE FEC CORRECT.
5496 023362 001037          BNE   205           ;BRANCH IF INCORRECT.
5497 023364 000161 000050 45:  JMP   50(R1)        ;RETURN.
5498
5499          ;THE RESULT WAS INCORRECT BUT WAS THIS FAILURE ANTICIPATED?
5500          ;SEE IF THE RESULT WAS ANTICIPATED:
5501 023370          105:
5502 023370 011105          MOV   (R1),R5
5503 023372 006305          ASL   R5
5504 023374 006305          ASL   R5
5505 023376 062705 023510   ADD   #NATER1,R5
5506 023402 010100          MOV   R1,R0
5507 023404 062700 000022   ADD   #22,R0
5508 023410 012702 023560   MOV   #NATBF1,R2
5509 023414 012703 000004   MOV   #4,R3
5510 023420 022022          115:  CMP   (R0)+,(R2)+
5511 023422 001003          BNE   125           ;BRANCH IF NOT ANTICIPATED.
5512 023424 077303          SOB   R3,115
5513
5514          ;THE ERROR WAS ANTICIPATED SO RETURN.
5515 023426 000161 000042   JMP   42(R1)
5516
5517          ;THE ERROR WAS NOT ANTICIPATED SO REPORT IT HERE.
5518 023432 000115          125:  JMP   (R5)          ;GO TO THE PROPER ERROR CALL.
5519
5520          ;THE FPS WAS INCORRECT.
5521 023434 026105 000036 155:  CMP   36(R1),R5     ;WAS THIS ERROR ANTICIPATED?
5522 023440 001002          BNE   165           ;BRANCH IF NOT ANTICIPATED.
5523
5524          ;THE FPS ERROR WAS ANTICIPATED SO RETURN.
5525 023442 000161 000046   JMP   46(R1)
5526
5527          ;THE FPS FAILURE WAS NOT ANTICIPATED SO REPORT IT HERE.
5528 023446 011102          165:  MOV   (R1),R2
```

```

5529 023450 006302 ASL R2
5530 023452 006302 ASL R2
5531 023454 062702 023526 ADD #NATER2,R2
5532 023460 000112 JMP (R2) ;GO TO THE PROPER ERROR CALL.
5533
5534 ;REPORT THAT THE FEC WAS INCORRECT.
5535 023462 016137 000040 001256 205: MOV 40(R1),#STMP12
5536 023470 010537 001254 MOV R5,#STMP11
5537 023474 011102 MOV (R1),R2
5538 023476 006302 ASL R2
5539 023500 006302 ASL R2
5540 023502 062702 023542 ADD #NATER3,R2
5541 023506 000112 JMP (R2) ;GO TO THE PROPER ERROR CALL.
5542
5543 ;THESE ARE THE ERROR CALLS FOR EACH INDIVIDUAL INSTRUCTION AND CONDITION.
5544 023510 104165 NATER1: ERROR 165 ;NEGD BAD DATA
5545 023512 000403 BR NATRET
5546 023514 104166 ERROR 166 ;ABSD BAD DATA
5547 023516 000401 BR NATRET
5548 023520 104167 ERROR 167 ;TSTD BAD DATA
5549 023522 000161 000050 NATRET: JMP 50(R1)
5550
5551 ;FPS INCORRECT:
5552 023526 104170 NATER2: ERROR 170 ;NEGD FPSX
5553 023530 000774 BR NATRET
5554 023532 104171 ERROR 171 ;ABSD FPSX
5555 023534 000772 BR NATRET
5556 023536 104172 ERROR 172 ;TSTD FPSX
5557 023540 000770 BR NATRET
5558
5559 ;FEC INCORRECT:
5560 023542 104173 NATER3: ERROR 173 ;NEGD FECX
5561 023544 000766 BR NATRET
5562 023546 104174 ERROR 174 ;ABSD FECX
5563 023550 000764 BR NATRET
5564 023552 104175 ERROR 175 ;TSTD FECX
5565 023554 000762 BR NATRET
5566
5567 023556 177777 .WORD -1
5568 023560 177777 177777 177777 NATBF1: .WORD -1,-1,-1,-1,-1
5569 023566 177777 177777
5570
5571 023572 WWBDONE:
5572 023572 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
5573 ;SEE IF THE USER HAS EXPRESSED
5574 ;THE DESIRE TO CHANGE THE SOFTWARE
5575 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
5576 ;THE USER TYPED CONTROL G?).
5577
5578
5579
5580 ;*****
5581 ;*TEST 45 SOURCE MODES, MODE 1 (FL=0), TEST
5582 ;*
5583 ;* THIS IS A TEST OF SOURCE MODE 1
5584 ;* USING THE LDFPS INSTR

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```
5585 ;*
5586 ;*****
5587 023574 000004 TST45: SCOPE
5588
5589
5590 023576 AAC1:
5591 023576 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
5592
5593 023600 012700 023656 MOV #AACTP1,R0 ;SET UP TEST DATA IN BUFFER.
5594 023604 012710 147517 MOV #147517,(R0)
5595 023610 012737 147517 001240 MOV #147517,@#STMP3 ;SAVE DATA IN CASE OF ERROR.
5596 023616 012737 023632 001236 MOV #AAC2,@#STMP2
5597 023624 012737 023716 000004 AAC2: MOV #AAC20,@ERRVECT ;SET UP FOR TRAPS TO 4.
5598 023632 170110 LDFPS (R0) ;TEST INSTRUCTION.
5599
5600 023634 170205 STFPS R5 ;GET FPS
5601
5602 023636 020027 023656 CMP R0,#AACTP1 ;IS R0 CORRECT?
5603 023642 001007 BNE AAC10 ;BR IF NOT.
5604 023644 022705 147517 CMP #147517,R5 ;IS FPS CORRECT?
5605 023650 001013 BNE AAC11 ;BR IF NOT.
5606 023652 000437 BR AACDONE
5607
5608 ;TEST BUFFER AND DATA:
5609 023654 177777 -1
5610 023656 147517 AAC10: 147517
5611 023660 177777 -1
5612
5613 ;REPORT R0 INCORRECT.
5614 023662 012737 023656 001240 AAC10: MOV #AACTP1,@#STMP3
5615 023670 010037 001242 MOV R0,@#STMP4
5616 023674 104225 15: ERROR 225 ;R0 BAD BUT FSRC FAILED
5617 023676 000425 BR AACDONE
5618
5619 ;REPORT FPS INCORRECT.
5620 023700 012737 147517 001240 AAC11: MOV #147517,@#STMP3 ;REPORT FPS INCORRECT.
5621 023706 010537 001242 MOV R5,@#STMP4
5622 023712 104226 15: ERROR 226
5623 023714 000416 BR AACDONE
5624
5625 ;TRAP HERE THROUGH VECTOR FOUR. SEE IF THE TRAP WAS DURING
5626 ;EXECUTION OF THE FPS INSTRUCTION BEING TESTED. IF SO REPORT
5627 ;FAILURE. OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING.
5628 023716 AAC20:
5629 023716 011602 MOV (SP),R2
5630 023720 020227 023634 CMP R2,#AAC2+2
5631 023724 001405 BEQ 15
5632 023726 020227 023636 CMP R2,#AAC2+4
5633 023732 001402 BEQ 15
5634 023734 000137 042610 JMP @#CSPUR
5635 023740 022626 15: CMP (SP)+,(SP)+
5636 023742 010237 001236 MOV R2,@#STMP2
5637 023746 104227 25: ERROR 227 ;ODD ADRES
5638 023750 000400 BR AACDONE ;BUT FDSTX IN ST 771
5639
5640 023752 AACDONE:
```

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5641 023752 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
5642 ;SEE IF THE USER HAS EXPRESSED
5643 ;THE DESIRE TO CHANGE THE SOFTWARE
5644 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
5645 ;THE USER TYPED CONTROL G?).
5646
5647
5648 ;*****
5649 ;*TEST 46 SOURCE MODES, MODE 2 (FL=0), TEST
5650 ;*
5651 ;* THIS IS A TEST OF SOURCE MODE 2
5652 ;* USING THE LDFPS INSTR
5653 ;*
5654 ;*****
5655 023754 000004 TST46: SCOPE
5656
5657 023756 BBC1:
5658 023756 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
5659
5660 023760 012700 024036 MOV #BBCTP1,RO ;SET UP TEST DATA IN BUFFER.
5661 023764 012710 145212 MOV #145212,(RO)
5662 023770 012737 145212 001240 MOV #145212,@#STMP3 ;SAVE DATA IN CASE OF ERROR.
5663 023776 012737 024012 001236 MOV #BBC2,@#STMP2
5664 024004 012737 024076 000004 MOV #BBC20,@#ERRVECT ;SET UP FOR TRAPS TO 4.
5665
5666 024012 170120 BBC2: LDFPS (RO)+ ;TEST INSTRUCTION.
5667
5668 024014 170205 STFPS R5 ;GET FPS
5669
5670 024016 020027 024040 CMP RO,#BBCTP1+2 ;IS RO CORRECT?
5671 024022 001007 BNE BBC10 ;BR IF NOT.
5672 024024 022705 145212 CMP #145212,R5 ;IS THE FPS CORRECT?
5673 024030 001013 BNE BBC11 ;BR IF NOT.
5674 024032 000436 BR BBCDONE
5675
5676
5677 ;TEST BUFFER AND DATA:
5678 024034 177777 -1
5679 024036 177777 BBC10: .WORD -1
5680 024040 177777 -1
5681
5682
5683 ;REPORT RO INCORRECT.
5684 024042 012737 024040 001240 BBC10: MOV #BBCTP1+2,@#STMP3
5685 024050 010037 001242 MOV RO,@#STMP4
5686 024054 104230 15: ERROR 230 ;RO BAD BUT FSRC FAILED
5687 024056 000424 BR BBCDONE
5688
5689 ;REPORT FPS INCORRECT.
5690 024060 012737 145212 001240 BBC11: MOV #145212,@#STMP3 ;REPORT FPS INCORRECT.
5691 024066 010537 001242 MOV R5,@#STMP4
5692 024072 104231 15: ERROR 231
5693 024074 000415 BR BBCDONE
5694
5695 ;TRAP HERE THROUGH VECTOR FOUR. SEE IF THE TRAP WAS DURING
5696 ;EXECUTION OF THE FPS INSTRUCTION BEING TESTED. IF SO REPORT
```



5697  
5698 024076  
5699 024076 011602  
5700 024100 020227 024014  
5701 024104 001405  
5702 024106 020227 024016  
5703 024112 001402  
5704 024114 000137 042610  
5705 024120 022626  
5706 024122 010237 001236  
5707 024126 104232  
5708  
5709  
5710 024130  
5711 024130 104412  
5712  
5713  
5714  
5715  
5716  
5717  
5718  
5719  
5720  
5721  
5722  
5723  
5724  
5725 024132 000004  
5726  
5727 024134  
5728 024134 104413  
5729  
5730 024136 012700 024226  
5731 024142 012760 105252 177776  
5732 024150 012737 105252 001240  
5733 024156 012737 024172 001236  
5734 024164 012737 024272 000004  
5735 024172 170140  
5736 024174 170205  
5737 024176 020027 024224  
5738 024202 001015  
5739 024204 022705 105252  
5740 024210 001021  
5741 024212 000444  
5742  
5743 024214 177777 177777 177777  
5744 024222 177777  
5745 024224 177777  
5746 024226 177777 177777 177777  
5747 024234 177777  
5748  
5749 024236 012737 024224 001240  
5750 024244 010037 001242  
5751 024250 104233  
5752 024252 000424

;FAILURE. OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING.  
BBC20:

MOV (SP),R2  
CMP R2,#BBC2+2  
BEQ 15  
CMP R2,#BBC2+4  
BEQ 15  
JMP @#CSPUR  
15: CMP (SP)+,(SP)+  
MOV R2,@#STMP2  
25: ERROR 232

;ODD ADRES  
;BUT FOSTX IN ST 771

BBCDONE:

RSETUP

;GO INITIALIZE THE FPS AND STACK; AND  
;SEE IF THE USER HAS EXPRESSED  
;THE DESIRE TO CHANGE THE SOFTWARE  
;VIRTUAL CONSOLE SWITCH REGISTER (HAS  
;THE USER TYPED CONTROL G?).

;;\*\*\*\*\*

\*TEST 47 SOURCE MODES, MODE 4 (FL=0), TEST

;\*  
;\*  
;\* THIS IS A TEST OF SOURCE MODE 4  
;\* USING THE LDFPS INSTR  
;\*  
;;\*\*\*\*\*

TST47: SCOPE

DDC1:

LPERR ;SET UP THE LOOP ON ERROR ADDRESS.  
MOV #DDCTP1+2,R0 ;SET UP THE TEST DATA BUFFER.  
MOV #105252,-2(R0)  
MOV #105252,@#STMP3 ;SAVE DATA IN CASE OF ERROR.  
MOV #DDC2,@#STMP2  
MOV #DDC20,@#ERRVEC

DDC2:

LDFPS -(R0)  
STFPS R5  
CMP R0,#DDCTP1  
BNE DDC10  
CMP #105252,R5  
BNE DDC11  
BR DDCDONE

DDCTP1:

-1,-1,-1,-1  
-1  
-1,-1,-1,-1

DDC10:

MOV #DDCTP1,@#STMP3  
MOV R0,@#STMP4  
15: ERROR 233 ;R0 BAD BUT FSRC FAILED  
BR DDCDONE

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CFFPCB0 11/34 FPP DIAG PRT3          MACY11 30A(1052) 05-MAY-78 15:24 PAGE 107
CFFPCB.P11 05-MAY-78 15:23          T47 SOURCE MODES, MODE 4 (FL=0), TEST          SEQ 0106

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5753	024254	012737	105252	001240	DDC11:	MOV	#105252,@#STMP3	;REPORT FPS INCORRECT.
5754	024262	010537	001242			MOV	R5,@#STMP4	
5755	024266	104234			15:	ERROR	234	
5756	024270	000415				BR	DDCDONE	
5757	024272	011602			DDC20:	MOV	(SP),R2	
5758	024274	020227	024174			CMP	R2,#DDC2+2	
5759	024300	001405				BEQ	15	
5760	024302	020227	024176			CMP	R2,#DDC2+4	
5761	024306	001402				BEQ	15	
5762	024310	000137	042610			JMP	@#CSPUR	
5763	024314	022626			15:	CMP	(SP)+,(SP)+	
5764	024316	010237	001236			MOV	R2,@#STMP2	
5765	024322	104235			25:	ERROR	235	;DDD ADRES
5766	024324				DDCDONE:			
5767	024324	104412				RSETUP		;GO INITIALIZE THE FPS AND STACK; AND
5768								;SEE IF THE USER HAS EXPRESSED
5769								;THE DESIRE TO CHANGE THE SOFTWARE
5770								;VIRTUAL CONSOLE SWITCH REGISTER (HAS
5771								;THE USER TYPED CONTROL G?).
5772								;;*****
5773								;*TEST 50 SOURCE MODES, MODE 3 (FL=0), TEST
5774								;*
5775								;* THIS IS A TEST OF SOURCE MODE 3
5776								;* USING THE LDFPS INSTR
5777								;*
5778								;;*****
5779	024326	000004			TST50:	SCOPE		
5780	024330				EEC1:			
5781	024330	104413				LPERR		;SET UP THE LOOP ON ERROR ADDRESS.
5782	024332	012700	024434			MOV	#EECTP2,RO	
5783	024336	012710	024424			MOV	#EECTP1,(RO)	
5784	024342	012767	103456	000054		MOV	#103456,EECTP1	
5785	024350	012737	103456	001240		MOV	#103456,@#STMP3	
5786	024356	012737	024372	001236		MOV	#EEC2,@#STMP2	
5787	024364	012737	024502	000004		MOV	#EEC20,@#ERRVECT	;SET UP FOR TRAPS TO 4.
5788	024372	170130			EEC2:	LDFPS	@(RO)+	;TEST INSTRUCTION.
5789	024374	170205				STFPS	R5	;GET THE FPS.
5790	024376	020027	024436			CMP	RO,#EECTP2+2	;IS RO CORRECT?
5791	024402	001021				BNE	EEC10	;BR IF NOT.
5792	024404	022705	103456			CMP	#103456,R5	;IS THE FPS CORRECT?
5793	024410	001025				BNE	EEC11	;BR IF NOT.
5794	024412	000450				BR	EECDONE	
5795								
5796								
5797								;TEST BUFFER AND DATA:
5798	024414	177777	177777	177777			-1,-1,-1,-1	
5799	024422	177777						
5800	024424	177777			EECTP1:		-1	
5801	024426	177777	177777	177777			-1,-1,-1	
5802	024434	024424	177777	177777	EECTP2:		EECTP1,-1,-1,-1,	
5803	024442	177777	000000					
5804								
5805								
5806								;REPORT RO INCORRECT.
5807	024446	012737	024436	001240	EEC10:	MOV	#EECTP2+2,@#STMP3	
5808	024454	010037	001242			MOV	RO,@#STMP4	



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5809 024460 104236      15:      ERROR      236      ;RO BAD BUT FSRC FAILED
5810 024462 000424      BR      EECDONE
5811
5812 ;REPORT FPS INCORRECT.
5813 024464 012737 103456 001240 EEC11: MOV      #103456,@#STMP3 ;REPORT FPS INCORRECT.
5814 024472 010537 001242      MOV      R5,@#STMP4
5815 024476 104237      15:      ERROR      237
5816 024500 000415      BR      EECDONE
5817 ;TRAP HERE THROUGH VECTOR FOUR. SEE IF THE TRAP WAS DURING
5818 ;EXECUTION OF THE FPS INSTRUCTION BEING TESTED. IF SO REPORT
5819 ;FAILURE. OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING.
5820 024502 011602      EEC20: MOV      (SP),R2
5821 024504 020227 024374      CMP      R2,#EEC2+2
5822 024510 001405      BEQ      15
5823 024512 020227 024376      CMP      R2,#EEC2+4
5824 024516 001402      BEQ      15
5825 024520 000137 042610      JMP      @#CPSPUR
5826 024524 022626      15:      CMP      (SP)+,(SP)+
5827 024526 010237 001236      MOV      R2,@#STMP2
5828 024532 104240      25:      ERROR      240      ;DDD ADRES
5829 024534      EECDONE:
5830 024534 104412      RSETUP      ;GO INITIALIZE THE FPS AND STACK; AND
5831 ;SEE IF THE USER HAS EXPRESSED
5832 ;THE DESIRE TO CHANGE THE SOFTWARE
5833 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
5834 ;THE USER TYPED CONTROL G?).
5835 ;*****
5836 ;*TEST 51      SOURCE MODES, MODE 5 (FL=0), TEST
5837 ;*
5838 ;* THIS IS A TEST OF SOURCE MODE 5
5839 ;* USING THE LDFPS INSTR
5840 ;*
5841 ;*****
5842 024536 000004      TST51: SCOPE
5843 024540      FFC1:
5844 024540 104413      LPERR      ;SET UP THE LOOP ON ERROR ADDRESS.
5845 024542 012700 024642      MOV      #FFCTP2+2,RO ;SET UP THE TEST DATA BUFFER.
5846 024546 012760 024630 177776      MOV      #FFCTP1,-2(RO)
5847 024554 012737 045412 024630      MOV      #45412,@#FFCTP1
5848 024562 012737 045412 001240      MOV      #45412,@#STMP3 ;SAVE DATA IN CASE OF ERROR.
5849 024570 012737 024540 001236      MOV      #FFC1,@#STMP2
5850 024576 012737 024704 000004      MOV      #FFC20,@#ERRVECT ;SET UP FOR TRAPS TO 4.
5851 024604 170150      FFC2: LDFPS   @-(RO)      ;TEST INSTRUCTION.
5852 024606 170205      STFPS   R5          ;GET THE FPS.
5853 024610 020027 024640      CMP     RO,#FFCTP2  ;IS RO CORRECT?
5854 024614 001015      BNE     FFC10      ;BR IF NOT.
5855 024616 022705 045412      CMP     #45412,R5  ;IS THE FPS CORRECT?
5856 024622 001021      BNE     FFC11      ;BR IF NOT.
5857 024624 000444      BR      FFCDONE
5858
5859
5860 ;TEST BUFFER AND DATA:
5861 024626 177777      -1
5862 024630 177777      FFCTP1: -1
5863 024632 177777 177777 177777      -1,-1,-1
5864 024640 024630 177777 177777      FFCTP2: FFCTP1,-1,-1,-1
    
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5865 024646 177777
5866
5867
5868 ;REPORT RO INCORRECT.
5869 024650 012737 024640 001240 FFC10: MOV #FFCTP2, @#STMP3
5870 024656 010037 001242 MOV RO, @#STMP4
5871 024662 104241 15: ERROR 241 ;RO BAD BUT FSRC FAILED
5872 024664 000424 BR FFCDONE
5873
5874 ;REPORT FPS INCORRECT.
5875 024666 012737 045412 001240 FFC11: MOV #45412, @#STMP3 ;REPORT FPS INCORRECT.
5876 024674 010537 001242 MOV R5, @#STMP4
5877 024700 104242 15: ERROR 242
5878 024702 000415 BR FFCDONE
5879 ;TRAP HERE THROUGH VECTOR FOUR. SEE IF THE TRAP WAS DURING
5880 ;EXECUTION OF THE FPS INSTRUCTION BEING TESTED. IF SO REPORT
5881 ;FAILURE. OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING.
5882 024704 011602 FFC20: MOV (SP), R2
5883 024706 020227 024606 CMP R2, #FFC2+2
5884 024712 001405 BEQ 15
5885 024714 020227 024610 CMP R2, #FFC2+4
5886 024720 001402 BEQ 15
5887 024722 000137 042610 JMP @#CSPUR
5888 024726 022626 15: CMP (SP)+, (SP)+
5889 024730 010237 001236 MOV R2, @#STMP2
5890 024734 104243 25: ERROR 243 ;ODD ADRES
5891 024736 FFCDONE: RSETUP
5892 024736 104412 ;GO INITIALIZE THE FPS AND STACK; AND
5893 ;SEE IF THE USER HAS EXPRESSED
5894 ;THE DESIRE TO CHANGE THE SOFTWARE
5895 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
5896 ;THE USER TYPED CONTROL G?).
5897 ;*****
5898 ;*TEST 52 SOURCE MODES, MODE 6 (FL=0), TEST
5899 ;*
5900 ;* THIS IS A TEST OF SOURCE MODE 6
5901 ;* USING THE LDFPS INSTR
5902 ;*
5903 ;*****
5904 024740 000004 TST52: SCOPE
5905 024742 GGC1:
5906 024742 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
5907 024744 012700 017633 MOV #GGCTP1-5201, RO ;SET UP THE TEST DATA BUFFER.
5908 024750 012737 046543 025034 MOV #46543, @#GGCTP1
5909 024756 012737 046543 001240 MOV #46543, @#STMP3 ;SAVE DATA IN CASE OF ERROR.
5910 024764 012737 025002 001236 MOV #GGC2, @#STMP2
5911 024772 005001 CLR R1
5912 024774 012737 025122 000004 GGC2: MOV #GGC20, @#ERRVECT ;SET UP FOR TRAPS TO 4.
5913 025002 170160 005201 LDFPS 5201(RO) ;TEST INSTRUCTION.
5914 025006 170204 STFPS R4 ;GET THE FPS.
5915 025010 005701 TST R1 ;WAS PC CORRECT AFTER EXECUTION?
5916 025012 001033 BNE GGC25 ;BR IF NOT.
5917 025014 020027 017633 CMP RO, #GGCTP1-5201 ;IS RO CORRECT?
5918 025020 001012 BNE GGC10 ;BR IF NOT.
5919 025022 022704 046543 CMP #46543, R4 ;IS THE FPS CORRECT?
5920 025026 001016 BNE GGC11 ;BR IF NOT.

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5921 025030 000451 BR GGC DONE
5922
5923
5924 ; TEST BUFFER AND DATA:
5925 025032 177777 -1
5926 025034 177777 177777 177777 GGCTP1: -1,-1,-1,-1
5927 025042 177777
5928 025044 177777 -1
5929
5930 ; REPORT RO INCORRECT.
5931 025046 012737 017633 001240 GGC10: MOV #GGCTP1-5201, @#STMP3
5932 025054 010037 001242 MOV RO, @#STMP4
5933 025060 104244 15: ERROR 244 ; RO BAD BUT FSRC FAILED
5934 025062 000434 BR GGC DONE
5935
5936 ; REPORT FPS INCORRECT.
5937 025064 012737 046543 001240 GGC11: MOV #46543, @#STMP3 ; REPORT FPS INCORRECT.
5938 025072 010437 001242 MOV R4, @#STMP4
5939 025076 104245 15: ERROR 245
5940 025100 000425 BR GGC DONE
5941
5942 ; REPORT PC INCORRECT AFTER INSTRUCTION.
5943 025102 012737 025006 001240 GGC25: MOV #GGC2+4, @#STMP3
5944 025110 012737 025004 001242 MOV #GGC2+2, @#STMP4
5945 025116 104246 15: ERROR 246 ; PC X
5946 025120 000415 BR GGC DONE
5947
5948 ; TRAP HERE THROUGH VECTOR FOUR. SEE IF THE TRAP WAS DURING
5949 ; EXECUTION OF THE FPS INSTRUCTION BEING TESTED. IF SO REPORT
5950 ; FAILURE. OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING.
5951 025122 011602 GGC20: MOV (SP), R2
5952 025124 020227 025004 CMP R2, #GGC2+2
5953 025130 001405 BEQ 15
5954 025132 020227 025006 CMP R2, #GGC2+4
5955 025136 001402 BEQ 15
5956 025140 000137 042610 JMP @#CPSPUR
5957 025144 022626 15: CMP (SP)+, (SP)+
5958 025146 010237 001236 MOV R2, @#STMP2
5959 025152 104247 25: ERROR 247 ; ODD ADRES
5960 025154 104412 GGC DONE: RSETUP ; GO INITIALIZE THE FPS AND STACK; AND
5961 ; SEE IF THE USER HAS EXPRESSED
5962 ; THE DESIRE TO CHANGE THE SOFTWARE
5963 ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
5964 ; THE USER TYPED CONTROL G?).
5965 ; *****
5966 ; *TEST 53 SOURCE MODES, MODE 7 (FL=0), TEST
5967 ; *
5968 ; * THIS IS A TEST OF SOURCE MODE 7
5969 ; * USING THE LDFPS INSTR
5970 ; *
5971 ; *****
5972 025156 000004 TST53: SCOPE
5973 025160 HHC1:
5974 025160 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
5975 025162 012700 020067 MOV #HHCTP2-5201, RO ; SET UP THE TEST DATA BUFFER.
5976 025166 012760 025260 005201 MOV #HHCTP1, 5201(RO)
  
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5977 025174 012737 004547 025260      MOV      #4547, @#HHC2P1
5978 025202 012737 004547 001240      MOV      #4547, @#STMP3 ; SAVE DATA IN CASE OF ERROR.
5979 025210 012737 025226 001236      MOV      #HHC2, @#STMP2
5980 025216 005001                CLR      R1
5981 025220 012737 025354 000004      MOV      #HHC20, @#ERRVECT ; SET UP FOR TRAPS TO 4.
5982 025226 170170 005201      HHC2:    LDFPS  @5201(R0) ; TEST INSTRUCTION.
5983 025232 170204                STFPS   R4 ; GET THE FPS.
5984 025234 005701                TST     R1 ; WAS PC CORRECT AFTER EXECUTION?
5985 025236 001036                BNE    HHC25 ; BR IF NOT.
5986 025240 020027 020067      CMP     RO, #HHC2P2-5201 ; IS RO CORRECT?
5987 025244 001015                BNE    HHC10 ; BR IF NOT.
5988 025246 022704 004547      CMP     #4547, R4 ; IS THE FPS CORRECT?
5989 025252 001021                BNE    HHC11 ; BR IF NOT.
5990 025254 000454                BR     HHCDONE
5991
5992
5993                ; TEST BUFFER AND DATA:
5994 025256 177777                -1
5995 025260 177777 177777 177777      HHC1P1: .WORD -1, -1, -1, -1
5996 025266 177777
5997 025270 177777 177777 177777      HHC1P2: .WORD -1, -1, -1, -1
5998 025276 177777
5999
6000                ; REPORT RO INCORRECT.
6001 025300 012737 020067 001240      HHC10:  MOV     #HHC2P2-5201, @#STMP3
6002 025306 010037 001242                MOV     RO, @#STMP4
6003 025312 104250                15:    ERROR  250 ; RO BAD BUT FSRC FAILED
6004 025314 000434                BR     HHCDONE
6005
6006                ; REPORT FPS INCORRECT.
6007 025316 012737 004547 001240      HHC11:  MOV     #4547, @#STMP3 ; REPORT FPS INCORRECT.
6008 025324 010437 001242                MOV     R4, @#STMP4
6009 025330 104251                15:    ERROR  251
6010 025332 000425                BR     HHCDONE
6011
6012                ; REPORT PC INCORRECT AFTER INSTRUCTION.
6013 025334 012737 025232 001240      HHC25:  MOV     #HHC2+4, @#STMP3
6014 025342 012737 025230 001242                MOV     #HHC2+2, @#STMP4
6015 025350 104252                15:    ERROR  252 ; PC X
6016 025352 000415                BR     HHCDONE
6017
6018                ; TRAP HERE THROUGH VECTOR FOUR. SEE IF THE TRAP WAS DURING
6019                ; EXECUTION OF THE FPS INSTRUCTION BEING TESTED. IF SO REPORT
6020                ; FAILURE. OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING.
6021 025354 011602                HHC20:  MOV     (SP), R2
6022 025356 020227 025230                CMP     R2, #HHC2+2
6023 025362 001405                BEQ    15
6024 025364 020227 025232                CMP     R2, #HHC2+4
6025 025370 001402                BEQ    15
6026 025372 000137 042610                JMP     @#CPSPUR
6027 025376 022626                15:    CMP     (SP)+, (SP)+
6028 025400 010237 001236                MOV     R2, @#STMP2
6029 025406 104253                25:    ERROR  253 ; ODD ADDRESS
6030 025406 104412                HHCDONE: RSETUP ; GO INITIALIZE THE FPS AND STACK; AND
6031                ; SEE IF THE USER HAS EXPRESSED
6032                ; THE DESIRE TO CHANGE THE SOFTWARE

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6033 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
6034 ;THE USER TYPED CONTROL G?).
6035
6036
6037
6038 ;*****
6039 ;*TEST 54 SOURCE MODES, MODE 2 GR7 (FL=1), TEST
6040 ;*
6041 ;* THIS IS A TEST OF THE LDCLD WITH
6042 ;* IMMEDIATE ADDRESSING MODE
6043 ;*
6044 ;*****
6045 025410 000004 TST54: SCOPE
6046
6047 025412 IIC1:
6048 025412 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
6049 025414 012737 025440 001236 MOV #IIC2,@#STMP2 ;SAVE DATA IN CASE OF ERROR.
6050 025422 012737 025512 000004 MOV #IIC20,@#ERRVECT ;SET UP FOR TRAPS TO 4.
6051 025430 012700 000300 MOV #300,R0
6052 025434 170100 LDFPS R0
6053 025436 005001 CLR R1
6054
6055 025440 177027 IIC2: LDCLD (R7)+,ACO ;TEST INSTRUCTION.
6056 025442 005201 5201
6057 025444 005201 5201
6058 025446 005201 5201
6059 025450 005201 5201
6060
6061 025452 020127 000003 CMP R1,#3 ;WAS PC CORRECT AFTER EXECUTION?
6062 025456 001421 BEQ IICDONE ;BR IF YES.
6063
6064
6065 ;REPORT PC INCORRECT AFTER INSTRUCTION.
6066 025460 012704 025444 IIC3: MOV #IIC2+4,R4
6067 025464 162701 000003 SUB #3,R1
6068 025470 006301 ASL R1
6069 025472 160104 SUB R1,R4
6070 025474 010437 001242 MOV R4,@#STMP4
6071 025500 012737 025444 001240 MOV #IIC2+4,@#STMP3
6072 025506 104254 15: ERROR 254 ;BAD CONSTANT
6073 025510 000404 BR IICDONE
6074 ;TRAP HERE THROUGH VECTOR FOUR. SEE IF THE TRAP WAS DURING
6075 ;EXECUTION OF THE FPS INSTRUCTION BEING TESTED. IF SO REPORT
6076 ;FAILURE. OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING.
6077 025512 011637 001236 IIC20: MOV (SP),@#STMP2
6078 025516 022626 CMP (SP)+,(SP)+
6079 025520 104255 15: ERROR 255 ;BAD CONSTANT ODD ADD
6080
6081 025522 IICDONE:
6082 025522 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
6083 ;SEE IF THE USER HAS EXPRESSED
6084 ;THE DESIRE TO CHANGE THE SOFTWARE
6085 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
6086 ;THE USER TYPED CONTROL G?).
6087
6088
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```
6089 ; ; *****
6090 ; *TEST 55 SOURCE MODES, MODE 2 (FL=1), TEST
6091 ; *
6092 ; * THIS IS A TEST OF THE LDCLD INSTR
6093 ; * WITH MODE 2.
6094 ; *
6095 ; ; *****
6096 025524 000004 TST55: SCOPE
6097
6098 025526 TCC1:
6099 025526 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
6100 025530 016737 000014 001236 MOV TCC2,@#STMP2 ; SAVE DATA IN CASE OF ERROR.
6101 025536 012700 000300 MOV #300,R0
6102 025542 170100 LDFPS R0
6103 025544 012700 025640 MOV #TCCBFO,R0 ; SET UP THE TEST DATA BUFFER.
6104 025550 177020 TCC2: LDCLD (R0)+,ACO ; TEST INSTRUCTION.
6105
6106 025552 170204 STFPS R4 ; GET THE FPS.
6107 025554 012701 025650 MOV #TCCBF1,R1 ; GET THE RESULT.
6108 025560 012702 000200 MOV #200,R2
6109 025564 170102 LDFPS R2
6110 025566 174011 STD ACO,(R1)
6111 025570 020027 025644 CMP RO,#TCCBFO+4 ; IS RO CORRECT?
6112 025574 001407 BEQ TCC3
6113 ; REPORT RO INCORRECT.
6114 025576 010037 001242 MOV RO,@#STMP4
6115 025602 012737 025644 001240 MOV #TCCBFO+4,@#STMP3
6116 025610 104256 15: ERROR 256 ; BAD CONST
6117 025612 000422 BR TCCDONE
6118
6119 025614 022704 000300 TCC3: CMP #300,R4 ; IS THE FPS CORRECT?
6120 025620 001417 BEQ TCCDONE
6121
6122 ; REPORT FPS INCORRECT.
6123 025622 010437 001242 MOV R4,@#STMP4
6124 025626 012737 000300 001240 MOV #300,@#STMP3
6125 025634 104257 15: ERROR 257 ; FPS X
6126 025636 000410 BR TCCDONE
6127
6128
6129 ; TEST BUFFER AND DATA:
6130 025640 001234 067076 054321 TCCBFO: .WORD 01234,67076,54321,012345
6131 025646 012345
6132 025650 177777 177777 177777 TCCBF1: -1,-1,-1,-1
6133 025656 177777
6134
6135 025660 TCCDONE:
6136 025660 104412 RSETUP ; GO INITIALIZE THE FPS AND STACK; AND
6137 ; SEE IF THE USER HAS EXPRESSED
6138 ; THE DESIRE TO CHANGE THE SOFTWARE
6139 ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
6140 ; THE USER TYPED CONTROL G?).
6141
6142
6143
6144 ; ; *****
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6145 ;*TEST 56 LDCIF AND LDCLF TEST
6146 ;*
6147 ;* THIS IS A TEST OF THE LDCIF AND
6148 ;* THE LDCLF INSTRUCTIONS.
6149 ;*
6150 ;*****
6151 025662 000004 TST56: SCOPE
6152
6153
6154 ;ZERO OPERAND FL=0
6155
6156 025664 KKC1:
6157 025664 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
6158 025666 004737 027016 JSR PC,@#LDCFSUB ;GO EXECUTE INSTRUCTION.
6159
6160 025672 000000 000000 15: .WORD 0,0 ;FSRC OPERAND.
6161 025676 000000 000000 25: .WORD 0,0 ;EXPECTED RESULT.
6162 025702 177777 177777 35: .WORD -1,-1 ;ANTICIPATED ERRONEOUS RESULT.
6163 025706 000000 45: 0 ;FPS BEFORE EXECUTION.
6164 025710 000004 4 ;FPS AFTER EXECUTION.
6165 025712 177777 -1 ;ANTICIPATED ERRONEOUS FPS.
6166 025714 104260 55: ERROR 260 ;REPORT RESULT INCORRECT.
6167 025716 000401 BR 65
6168 025720 104261 ERROR 261 ;REPORT FPS INCORRECT.
6169 025722
6170
6171 ;ZERO OPERAND FL=0
6172
6173 025722 KKC2:
6174 025724 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
6175 025724 004737 027016 JSR PC,@#LDCFSUB ;GO EXECUTE THE INSTRUCTION.
6176 025730 000000 177777 15: .WORD 0,-1 ;FSRC OPERAND.
6177 025734 000000 000000 25: .WORD 0,0 ;EXPECTED RESULT.
6178 025740 004177 177400 35: 4177,177400 ;ANTICIPATED ERRONEOUS RESULT.
6179 025744 000000 45: 0 ;FPS BEFORE EXECUTION.
6180 025746 000004 4 ;FPS AFTER EXECUTION.
6181 025750 177777 -1 ;ANTICIPATED ERRONEOUS FPS.
6182 025752 104262 55: ERROR 262 ;(BUT FL) ST
6183 025754 000401 BR 65 ;277 TO 300
6184 025756 104261 ERROR 261 ;INTO 301
6185 025760
6186
6187 ;ZERO OPERAND FL=1
6188
6189 025760 KKC3:
6190 025762 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
6191 025762 004737 027016 JSR PC,@#LDCFSUB ;GO EXECUTE THE INSTRUCTION.
6192 025766 000000 000000 15: .WORD 0,0 ;FSRC OPERAND.
6193 025772 000000 000000 25: .WORD 0,0 ;EXPECTED RESULT.
6194 025776 177777 177777 35: .WORD -1,-1 ;ANTICIPATED ERRONEOUS RESULT.
6195 026002 000100 45: 100 ;FPS BEFORE EXECUTION.
6196 026004 000104 104 ;FPS AFTER EXECUTION.
6197 026006 000004 4 ;ANTICIPATED ERRONEOUS FPS.
6198 026010 104260 55: ERROR 260 ;REPORT RESULT INCORRECT.
6199 026012 000401 BR 65
6200 026014 104263 ERROR 263 ;FL WAS CLR'ED
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6201	026016			65:			
6202				; OPERAND	POSITIVE	FL=0	
6203	026016			KKC4:			
6204	026016	104413		LPERR			; SET UP THE LOOP ON ERROR ADDRESS.
6205	026020	004737	027016	JSR	PC, @#LDCFSUB		; GO EXECUTE THE INSTRUCTION.
6206	026024	040000	000000	15:	. WORD	40000, 0	; FSRC OPERAND.
6207	026030	043600	000000	25:	. WORD	43600, 0	; EXPECTED RESULT.
6208	026034	047600	000000	35:	. WORD	47600, 0	; ANTICIPATED ERRONEOUS RESULT.
6209	026040	000017		45:	17		; FPS BEFORE EXECUTION.
6210	026042	000000			0		; FPS AFTER EXECUTION.
6211	026044	177777			-1		; ANTICIPATED ERRONEOUS FPS.
6212	026046	104264		55:	ERROR	264	; ST 107 BAD
6213	026050	000401			BR	65	; CONSTANT 231 IMSD
6214	026052	104261			ERROR	261	; 215
6215	026054			65:			
6216				; OPERAND=1,	FL=0		
6217	026054			KKC5:			
6218	026054	104413		LPERR			; SET UP THE LOOP ON ERROR ADDRESS.
6219	026056	004737	027016	JSR	PC, @#LDCFSUB		; GO EXECUTE THE INSTRUCTION.
6220	026062	000001	000000	15:	. WORD	1, 0	; FSRC OPERAND.
6221	026066	040200	000000	25:	. WORD	40200, 0	; EXPECTED RESULT.
6222	026072	044200	000000	35:	. WORD	44200, 0	; ANTICIPATED ERRONEOUS RESULT.
6223	026076	000017		45:	17		; FPS BEFORE EXECUTION.
6224	026100	000000			0		; FPS AFTER EXECUTION.
6225	026102	177777			-1		; ANTICIPATED ERRONEOUS FPS.
6226	026104	104264		55:	ERROR	264	; REPORT RESULT INCORRECT.
6227	026106	000401			BR	65	
6228	026110	104261			ERROR	261	; REPORT FPS INCORRECT.
6229	026112			65:			
6230							
6231							
6232				; OPERAND=	PATTERN	FL=0	
6233	026112			KKC6:			
6234	026112	104413		LPERR			; SET UP THE LOOP ON ERROR ADDRESS.
6235	026114	004737	027016	JSR	PC, @#LDCFSUB		; GO EXECUTE THE INSTRUCTION.
6236	026120	000252	000000	15:	. WORD	252, 0	; FSRC OPERAND.
6237	026124	042052	000000	25:	. WORD	42052, 0	; EXPECTED RESULT.
6238	026130	046052	000000	35:	. WORD	46052, 0	; ANTICIPATED ERRONEOUS RESULT.
6239	026134	000000		45:	0		; FPS BEFORE EXECUTION.
6240	026136	000000			0		; FPS AFTER EXECUTION.
6241	026140	177777			-1		; ANTICIPATED ERRONEOUS FPS.
6242	026142	104264		55:	ERROR	264	; REPORT RESULT INCORRECT.
6243	026144	000401			BR	65	
6244	026146	104261			ERROR	261	; REPORT FPS INCORRECT.
6245	026150			65:			
6246							
6247				; OPERAND=-40000	FL=0		
6248	026150			KKC7:			
6249	026150	104413		LPERR			; SET UP THE LOOP ON ERROR ADDRESS.
6250	026152	004737	027016	JSR	PC, @#LDCFSUB		; GO EXECUTE THE INSTRUCTION.
6251	026156	140000	000000	15:	. WORD	-40000, 0	; FSRC OPERAND.
6252	026162	143600	000000	25:	. WORD	143600, 0	; EXPECTED RESULT.
6253	026166	043600	000000	35:	. WORD	43600, 0	; ANTICIPATED ERRONEOUS RESULT.
6254	026172	000007		45:	7		; FPS BEFORE EXECUTION.
6255	026174	000010			10		; FPS AFTER EXECUTION.
6256	026176	177777			-1		; ANTICIPATED ERRONEOUS FPS.



6257	026200	104265		55:	ERROR	265		;(SET SIGN) ST 146
6258	026202	000401			BR	65		
6259	026204	104261			ERROR	261		;REPORT FPS INCORRECT.
6260	026206			65:				
6261								
6262					; OPERAND=-1	FL=0		
6263	026206			KKC8:				
6264	026206	104413			LPERR			;SET UP THE LOOP ON ERROR ADDRESS.
6265	026210	004737	027016		JSR	PC, @#LDCFSUB		;GO EXECUTE THE INSTRUCTION.
6266	026214	177777	000000	15:	.WORD	-1,0		;FSRC OPERAND.
6267	026220	140200	000000	25:	.WORD	140200,0		;EXPECTED RESULT.
6268	026224	144000	000400	35:	.WORD	144000,400		;ANTICIPATED ERRONEOUS RESULT.
6269	026230	000000		45:	0			;FPS BEFORE EXECUTION.
6270	026232	000010			10			;FPS AFTER EXECUTION.
6271	026234	177777			-1			;ANTICIPATED ERRONEOUS FPS.
6272	026236	104266		55:	ERROR	266		;ST 372 TO 152 INTO
6273	026240	000401			BR	65		;112 (BUF XNBT)
6274	026242	104261			ERROR	261		;REPORT FPS INCORRECT.
6275	026244			65:				
6276								
6277					; OPERAND=PATTERN	FL=0		
6278	026244			KKC9:				
6279	026244	104413			LPERR			;SET UP THE LOOP ON ERROR ADDRESS.
6280	026246	004737	027016		JSR	PC, @#LDCFSUB		;GO EXECUTE THE INSTRUCTION.
6281	026252	125252	000000	15:	.WORD	125252,0		;FSRC OPERAND.
6282	026256	143652	126000	25:	.WORD	143652,126000		;EXPECTED RESULT.
6283	026262	043652	126000	35:	.WORD	43652,126000		;ANTICIPATED ERRONEOUS RESULT.
6284	026266	000007		45:	7			;FPS BEFORE EXECUTION.
6285	026270	000010			10			;FPS AFTER EXECUTION.
6286	026272	177777			-1			;ANTICIPATED ERRONEOUS FPS.
6287	026274	104265		55:	ERROR	265		;REPORT RESULT INCORRECT.
6288	026276	000401			BR	65		
6289	026300	104261			ERROR	261		;REPORT FPS INCORRECT.
6290	026302			65:				
6291								
6292					; OPERAND	POS	FL=1	
6293	026302			KKC10:				
6294	026302	104413			LPERR			;SET UP THE LOOP ON ERROR ADDRESS.
6295	026304	004737	027016		JSR	PC, @#LDCFSUB		;GO EXECUTE THE INSTRUCTION.
6296	026310	040000	000000	15:	.WORD	40000,0		;FSRC OPERAND.
6297	026314	047600	000000	25:	.WORD	47600,0		;EXPECTED RESULT.
6298	026320	043600	000000	35:	.WORD	43600,0		;ANTICIPATED ERRONEOUS RESULT.
6299	026324	000117		45:	117			;FPS BEFORE EXECUTION.
6300	026326	000100			100			;FPS AFTER EXECUTION.
6301	026330	177777			-1			;ANTICIPATED ERRONEOUS FPS.
6302	026332	104267		55:	ERROR	267	;ST 107	CONSTANT
6303	026334	000401			BR	65		;BAD 237 INST 217
6304	026336	104261			ERROR	261		;REPORT FPS INCORRECT.
6305	026340			65:				
6306								
6307					; OPERAND=1	FL=1		
6308	026340			KKC11:				
6309	026340	104413			LPERR			;SET UP THE LOOP ON ERROR ADDRESS.
6310	026342	004737	027016		JSR	PC, @#LDCFSUB		;GO EXECUTE THE INSTRUCTION.
6311	026346	000000	000001	15:	.WORD	0,1		;FSRC OPERAND.
6312	026352	040200	000000	25:	.WORD	40200,0		;EXPECTED RESULT.

6313	026356	034200	000000	35:	. WORD	34200,0		; ANTICIPATED ERRONEOUS RESULT.
6314	026362	000100		45:	100			; FPS BEFORE EXECUTION.
6315	026364	000100			100			; FPS AFTER EXECUTION.
6316	026366	177777			-1			; ANTICIPATED ERRONEOUS FPS.
6317	026370	104267		55:	ERROR	267		; REPORT RESULT INCORRECT.
6318	026372	000401			BR	65		
6319	026374	104261			ERROR	261		; REPORT FPS INCORRECT.
6320	026376			65:				
6321								
6322					; OPERAND=	PATTERN FL=1		
6323	026376			KKC12:				
6324	026376	104413			LPERR			; SET UP THE LOOP ON ERROR ADDRESS.
6325	026400	004737	027016		JSR	PC, @#LDCFSUB		; GO EXECUTE THE INSTRUCTION.
6326	026404	000000	000252	15:	. WORD	0,252		; FSRC OPERAND.
6327	026410	042052	000000	25:	. WORD	42052,0		; EXPECTED RESULT.
6328	026414	036052	000000	35:	. WORD	36052,0		; ANTICIPATED ERRONEOUS RESULT.
6329	026420	000111		45:	111			; FPS BEFORE EXECUTION.
6330	026422	000100			100			; FPS AFTER EXECUTION.
6331	026424	177777			-1			; ANTICIPATED ERRONEOUS FPS.
6332	026426	104267		55:	ERROR	267		; REPORT RESULT INCORRECT.
6333	026430	000401			BR	65		
6334	026432	104261			ERROR	261		; REPORT FPS INCORRECT.
6335	026434			65:				
6336								
6337					; OPERAND=-40000,0	FL=1		
6338	026434			KKC13:				
6339	026434	104413			LPERR			; SET UP THE LOOP ON ERROR ADDRESS.
6340	026436	004737	027016		JSR	PC, @#LDCFSUB		; GO EXECUTE THE INSTRUCTION.
6341	026442	140000	000000	15:	. WORD	-40000,0		; FSRC OPERAND.
6342	026446	147600	000000	25:	. WORD	147600,0		; EXPECTED RESULT.
6343	026452	047600	000000	35:	. WORD	47600,0		; ANTICIPATED ERRONEOUS RESULT.
6344	026456	000107		45:	107			; FPS BEFORE EXECUTION.
6345	026460	000110			110			; FPS AFTER EXECUTION.
6346	026462	177777			-1			; ANTICIPATED ERRONEOUS FPS.
6347	026464	104265		55:	ERROR	265	; SET SIGN	
6348	026466	000401			BR	65		
6349	026470	104261			ERROR	261		; REPORT FPS INCORRECT.
6350	026472			65:				
6351								
6352					; OPERAND=-1,-1	FL=1		
6353	026472			KKC14:				
6354	026472	104413			LPERR			; SET UP THE LOOP ON ERROR ADDRESS.
6355	026474	004737	027016		JSR	PC, @#LDCFSUB		; GO EXECUTE THE INSTRUCTION.
6356	026500	177777	177777	15:	. WORD	-1,-1		; FSRC OPERAND.
6357	026504	140200	000000	25:	. WORD	140200,0		; EXPECTED RESULT.
6358	026510	150000	000000	35:	. WORD	150000,0		; ANTICIPATED ERRONEOUS RESULT.
6359	026514	000100		45:	100			; FPS BEFORE EXECUTION.
6360	026516	000110			110			; FPS AFTER EXECUTION.
6361	026520	177777			-1			; ANTICIPATED ERRONEOUS FPS.
6362	026522	104266		55:	ERROR	266		; (BUT XNBT)
6363	026524	000401			BR	65		
6364	026526	104261			ERROR	261		; REPORT FPS INCORRECT.
6365	026530			65:				
6366								
6367					; OPERAND=-PATTERN	FL=1, ROUND MODE		
6368	026530			KKC15:				





6425 026720  
6426  
6427 026720  
6428 026720 104413  
6429 026722 004737 027016  
6430 026726 100000 000000  
6431 026732 144000 000000  
6432 026736 143600 000000  
6433 026742 000007  
6434 026744 000010  
6435 026746 177777  
6436 026750 104272  
6437 026752 000401  
6438 026754 104261  
6439 026756  
6440  
6441  
6442 026756  
6443 026756 104413  
6444 026760 004737 027016  
6445 026764 100000 000000  
6446 026770 150000 000000  
6447 026774 147600 000000  
6448 027000 000107  
6449 027002 000110  
6450 027004 177777  
6451 027006 104272  
6452 027010 000401  
6453 027012 104261  
6454 027014 000506  
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65:
; OPERAND=100000,0 (MOST NEG #) FL=0
KCC19:
    LPERR
    JSR    PC, @#LDCFSUB ; SET UP THE LOOP ON ERROR ADDRESS.
; GO EXECUTE THE INSTRUCTION.
15:    .WORD 100000,0 ; FSRC OPERAND.
25:    .WORD 144000,0 ; EXPECTED RESULT.
35:    .WORD 143600,0 ; ANTICIPATED ERRONEOUS RESULT.
45:    7 ; FPS BEFORE EXECUTION.
    10 ; FPS AFTER EXECUTION.
    -1 ; ANTICIPATED ERRONEOUS FPS.
55:    ERROR 272 ; ST 630 RH#R14+1
    BR 65
    ERROR 261 ; REPORT FPS INCORRECT.
65:

```

```

; OPERAND=100000,0 FL=1
KCC20:
    LPERR
    JSR    PC, @#LDCFSUB ; SET UP THE LOOP ON ERROR ADDRESS.
; GO EXECUTE THE INSTRUCTION.
15:    .WORD 100000,0 ; FSRC OPERAND.
25:    .WORD 150000,0 ; EXPECTED RESULT.
35:    .WORD 147600,0 ; ANTICIPATED ERRONEOUS RESULT.
45:    107 ; FPS BEFORE EXECUTION.
    110 ; FPS AFTER EXECUTION.
    -1 ; ANTICIPATED ERRONEOUS FPS.
55:    ERROR 272 ; REPORT RESULT INCORRECT.
    BR 65
    ERROR 261 ; REPORT FPS INCORRECT.
65:    BR KCCDONE

```

; THIS SUBROUTINE, LDCFSUB, IS USED TO SET UP THE OPERANDS, EXECUTE  
; THE LDCIF OR LDCLF INSTRUCTION AND CHECK THE RESULTS. A CALL  
; TO IT IS MADE THUS:

```

;
; JSR    PC, @#LDCFSUB
; ACARG: .WORD X,X ; AC OPERAND
; RES: .WORD X,X ; EXPECTED RESULT
; ERRES: .WORD X,X ; ERROR RESULT
; FPSB: .WORD X ; FPS BEFORE EXECUTION
; FPSA: .WORD X ; FPS AFTER EXECUTION
; ERFPS: .WORD X ; ERROR FPS
; ERR1: ERROR X ; DATA ERROR
; BR CONT
; ERR2: ERROR X ; FPS ERROR
; CONT: ; RETURN ADDRESS

```

; THE OPERANDS ARE SET UP (USING ACO AS THE ACCUMULATOR). THEN  
; THE LDCIF OR LDCLF INSTRUCTION IS EXECUTED.  
; THE RESULT IS CHECKED AGAINST RES. IF THE RESULT IS CORRECT THEN THE FPS IS  
; COMPARED WITH FPSA IF THIS TOO IS CORRECT LDCFSUB RETURNS CONTROL  
; TO THE CALLING ROUTINE AT CONT. IF THE FPS IS BAD LDCFSUB WILL  
; COMPARE IT TO ERROR FPS. IF THIS MATCHES THEN LDCFSUB WILL RETURN  
; TO THE ERROR CALL AT ERR2, OTHERWISE LDCFSUB ITSELF  
; REPORTS THIS FAILURE AND THEN RETURNS TO CONT. IF THE RESULT OF THE  
; LDCIF OR LDCLF IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE



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6481 ;ANTICIPATED FAILING DATA PATTERN, ERRES. IF THE FAILURE IN
6482 ;THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN LDCFSUB
6483 ;WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1. OTHERWISE THE
6484 ;RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND LDCFSUB
6485 ;REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT.
6486
6487 027016 012601 LDCFSUB: MOV (SP)+,R1 ;GET A POINTER TO THE ARGUMENTS.
6488 027020 016100 000014 MOV 14(R1),R0 ;SET THE FPS.
6489 027024 170100 LDFPS R0
6490 027026 012737 027036 001236 MOV #15,@#STMP2
6491 027034 010100 MOV R1,R0
6492
6493 027036 177010 15: LDCIF (R0),ACO ;TEST INSTRUCTION LDCIF OR LDCLF.
6494
6495 027040 170204 STFPS R4 ;GET FPS.
6496 027042 012700 027222 MOV #LDCT,R0 ;GET THE RESULT.
6497 027046 012702 000200 MOV #200,R2
6498 027052 170102 LDFPS R2
6499 027054 174010 STD ACO,(R0)
6500
6501 027056 012702 027222 MOV #LDCT,R2 ;SEE IF THE RESULT WAS CORRECT.
6502 027062 010237 001242 MOV R2,@#STMP4
6503 027066 010137 001240 MOV R1,@#STMP3
6504 027072 010103 MOV R1,R3
6505 027074 062703 000004 ADD #4,R3
6506 027100 010337 001244 MOV R3,@#STMP5
6507 027104 010437 001250 MOV R4,@#STMP7
6508 027110 016137 000016 001252 MOV 16(R1),@#STMP10
6509 027116 010100 MOV R1,R0
6510 027120 062700 000004 ADD #4,R0
6511 027124 012703 000002 MOV #2,R3
6512 027130 022022 25: CMP (R0)+,(R2)+
6513 027132 001006 BNE 105 ;BR IF INCORRECT.
6514 027134 077303 SOB R3,25
6515
6516 027136 026104 000016 CMP 16(R1),R4 ;SEE IF THE FPS WAS CORRECT.
6517 027142 001020 BNE 155 ;BR IF INCORRECT.
6518 027144 000161 000030 35: JMP 30(R1) ;RETURN.
6519
6520 ;RESULT IN CORRECT SO SEE IF THE FAILURE WAS ANTICIPATED.
6521 027150 012702 027222 105: MOV #LDCT,R2
6522 027154 010100 MOV R1,R0
6523 027156 062700 000010 ADD #10,R0
6524 027162 012703 000002 MOV #2,R3
6525 027166 022022 115: CMP (R0)+,(R2)+
6526 027170 001003 BNE 135
6527 027172 077303 SOB R3,115
6528 027174 000161 000022 JMP 22(R1)
6529
6530 ;THE FAILURE WAS NOT ANTICIPATED SO REPORT THE ERROR HERE.
6531 027200 135:
6532
6533 027200 104260 145: ERROR 260 ;BAD RES
6534 027202 000760 BR 35
6535
6536

```

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6537 ; THE FPS WAS INCORRECT SO SEE IF IT WAS ANTICIPATED.
6538 027204 026104 000020 155:  CMP 20(R1),R4
6539 027210 001002 BNE 165
6540 027212 000161 000026 JMP 26(R1)
6541
6542 ; FPS ERROR NOT ANTICIPATED SO REPORT IT HERE.
6543 027216 165:
6544 027216 104261 175:  ERROR 261 ; BAD FPS
6545 027220 000751 BR 35
6546
6547 ; DATA BUFFER:
6548 027222 000000 000000 000000 LDCT: . WORD 0,0,0,0
6549 027230 000000
6550
6551 027232 KKCDONE:
6552 027232 104412 RSETUP
6553 ; GO INITIALIZE THE FPS AND STACK; AND
6554 ; SEE IF THE USER HAS EXPRESSED
6555 ; THE DESIRE TO CHANGE THE SOFTWARE
6556 ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
6557 ; THE USER TYPED CONTROL G?).
```



```
6558
6559 ; ; *****
6560 ; *TEST 57 LDCID AND LDCLD TEST
6561 ; *
6562 ; * THIS IS A TEST OF LDCID AND LDCLD
6563 ; *
6564 ; ; *****
6565 027234 000004 TST57: SCOPE
6566 ; OPERAND=0 FL=0, FD=1
6567 027236 LLC1:
6568 027236 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
6569 027240 004737 030034 JSR PC, @#LDCDSUB ; GO EXECUTE THE INSTRUCTION.
6570 027244 000000 000000 15: . WORD 0,0 ; FSRC OPERAND.
6571 027250 000000 000000 000000 25: . WORD 0,0,0,0 ; EXPECTED RESULT.
6572 027256 000000
6573 027260 177777 177777 177777 35: . WORD -1,-1,-1,-1 ; ANTICIPATED ERRONEOUS RESULT.
6574 027266 177777
6575 027270 000213 45: 213 ; FPS BEFORE EXECUTION.
6576 027272 000204 204 ; FPS AFTER EXECUTION.
6577 027274 177777 -1 ; ANTICIPATED ERRONEOUS FPS.
6578 027276 104273 55: ERROR 273 ; REPORT RESULT INCORRECT.
6579 027300 000401 BR 65
6580 027302 104274 ERROR 274 ; REPORT FPS INCORRECT.
6581 027304
6582 ; OPERAND=0 FL=0, FD=1
6583 027304 LLC2:
6584 027304 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
6585 027306 004737 030034 JSR PC, @#LDCDSUB ; GO EXECUTE THE INSTRUCTION.
6586 027312 000000 177777 15: . WORD 0,-1 ; FSRC OPERAND.
6587 027316 000000 000000 000000 25: . WORD 0,0,0,0 ; EXPECTED RESULT.
6588 027324 000000
6589 027326 004177 177400 000000 35: . WORD 4177,177400,0,0 ; ANTICIPATED ERRONEOUS RESULT.
6590 027334 000000
6591 027336 000200 45: 200 ; FPS BEFORE EXECUTION.
6592 027340 000204 204 ; FPS AFTER EXECUTION.
6593 027342 177777 -1 ; ANTICIPATED ERRONEOUS FPS.
6594 027344 104275 55: ERROR 275 ; (BUT FL)S+277
6595 027346 000401 BR 65 ; TO 300 INTO 301
6596 027350 104274 ERROR 274 ; REPORT FPS INCORRECT.
6597 027352
6598
6599 ; OPERAND=0 FL=1 FD=1
6600 027352 LLC3:
6601 027352 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
6602 027354 004737 030034 JSR PC, @#LDCDSUB ; GO EXECUTE THE INSTRUCTION.
6603 027360 000000 000000 15: . WORD 0,0 ; FSRC OPERAND.
6604 027364 000000 000000 000000 25: . WORD 0,0,0,0 ; EXPECTED RESULT.
6605 027372 000000
6606 027374 177777 177777 177777 35: . WORD -1,-1,-1,-1 ; ANTICIPATED ERRONEOUS RESULT.
6607 027402 177777
6608 027404 000211 45: 211 ; FPS BEFORE EXECUTION.
6609 027406 000204 204 ; FPS AFTER EXECUTION.
6610 027410 177777 -1 ; ANTICIPATED ERRONEOUS FPS.
6611 027412 104273 55: ERROR 273 ; REPORT RESULT INCORRECT.
6612 027414 000401 BR 65
6613 027416 104274 ERROR 274 ; REPORT FPS INCORRECT.
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6614 027420 65:
6615
6616 ; OPERAND=40000 FL=0 FD=1
6617 027420 LLC4:
6618 027420 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
6619 027422 004737 030034 JSR PC, @#LDCDSUB ; GO EXECUTE THE INSTRUCTION.
6620 027426 040000 000000 15: . WORD 40000, 0 ; FSRC OPERAND.
6621 027432 043600 000000 000000 25: . WORD 43600, 0, 0, 0 ; EXPECTED RESULT.
6622 027440 000000
6623 027442 047600 000000 000000 35: . WORD 47600, 0, 0, 0 ; ANTICIPATED ERRONEOUS RESULT.
6624 027450 000000
6625 027452 000217 45: 217 ; FPS BEFORE EXECUTION.
6626 027454 000200 200 ; FPS AFTER EXECUTION.
6627 027456 177777 -1 ; ANTICIPATED ERRONEOUS FPS.
6628 027460 104276 55: ERROR 276 ; ST 107 BAD CONST
6629 027462 000401 BR 65
6630 027464 104274 ERROR 274 ; REPORT FPS INCORRECT.
6631 027466
6632
6633 ; OPERAND=-40000 FL=0 FD=1
6634 027466 LLC5:
6635 027466 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
6636 027470 004737 030034 JSR PC, @#LDCDSUB ; GO EXECUTE THE INSTRUCTION.
6637 027474 140000 000000 15: . WORD -40000, 0 ; FSRC OPERAND.
6638 027500 143600 000000 000000 25: . WORD 143600, 0, 0, 0 ; EXPECTED RESULT.
6639 027506 000000
6640 027510 043600 000000 000000 35: . WORD 43600, 0, 0, 0 ; ANTICIPATED ERRONEOUS RESULT.
6641 027516 000000
6642 027520 000200 45: 200 ; FPS BEFORE EXECUTION.
6643 027522 000210 210 ; FPS AFTER EXECUTION.
6644 027524 177777 -1 ; ANTICIPATED ERRONEOUS FPS.
6645 027526 104277 55: ERROR 277 ; (SET SIGN) ST 176
6646 027530 000401 BR 65
6647 027532 104274 ERROR 274 ; REPORT FPS INCORRECT.
6648 027534
6649
6650 ; OPERAND=40000, 0 FL=1 FD=1
6651 027534 LLC6:
6652 027534 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
6653 027536 004737 030034 JSR PC, @#LDCDSUB ; GO EXECUTE THE INSTRUCTION.
6654 027542 040000 000000 15: . WORD 40000, 0 ; FSRC OPERAND.
6655 027546 047600 000000 000000 25: . WORD 47600, 0, 0, 0 ; EXPECTED RESULT.
6656 027554 000000
6657 027556 043600 000000 000000 35: . WORD 43600, 0, 0, 0 ; ANTICIPATED ERRONEOUS RESULT.
6658 027564 000000
6659 027566 000317 317 ; FPS BEFORE EXECUTION.
6660 027570 000300 300 ; FPS AFTER EXECUTION.
6661 027572 177777 -1 ; ANTICIPATED ERRONEOUS FPS.
6662 027574 104300 55: ERROR 300 ; ST 107 BAD CONS
6663 027576 000401 BR 65
6664 027600 104274 ERROR 274 ; REPORT FPS INCORRECT.
6665 027602
6666
6667 ; OPERAND=0, 1 FL=1 FD=1
6668 027602 LLC7:
6669 027602 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
    
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6670	027604	004737	030034			JSR	PC, @#LDCDSUB	;GO EXECUTE THE INSTRUCTION.
6671	027610	000000	000001		1\$:	.WORD	0,1	;FSRC OPERAND.
6672	027614	040200	000000	000000	2\$:	.WORD	40200,0,0,0	;EXPECTED RESULT.
6673	027622	000000						
6674	027624	034200	000000	000000	3\$:	.WORD	34200,0,0,0	;ANTICIPATED ERRONEOUS RESULT.
6675	027632	000000						
6676	027634	000300			4\$:	300		;FPS BEFORE EXECUTION.
6677	027636	000300				300		;FPS AFTER EXECUTION.
6678	027640	177777				-1		;ANTICIPATED ERRONEOUS FPS.
6679	027642	104300			5\$:	ERROR	300	;REPORT FPS INCORRECT.
6680	027644	000401				BR	6\$	
6681	027646	104274				ERROR	274	;REPORT FPS INCORRECT.
6682	027650				6\$:			
6683								
6684								;OPERAND=77777,177777 FL=1 FD=1
6685	027650							LLC8:
6686	027650	104413				LPERR		;SET UP THE LOOP ON ERROR ADDRESS.
6687	027652	004737	030034			JSR	PC, @#LDCDSUB	;GO EXECUTE THE INSTRUCTION.
6688	027656	077777	177777		1\$:	.WORD	77777,177777	;FSRC OPERAND.
6689	027662	047777	177777	177000	2\$:	.WORD	47777,177777,177000,0	;EXPECTED RESULT.
6690	027670	000000						
6691	027672	177777	177777	177777	3\$:	.WORD	-1,-1,-1,-1	;ANTICIPATED ERRONEOUS RESULT.
6692	027700	177777						
6693	027702	000317			4\$:	317		;FPS BEFORE EXECUTION.
6694	027704	000300				300		;FPS AFTER EXECUTION.
6695	027706	177777				-1		;ANTICIPATED ERRONEOUS FPS.
6696	027710	104273			5\$:	ERROR	273	;REPORT RESULT INCORRECT.
6697	027712	000401				BR	6\$	
6698	027714	104274				ERROR	274	;REPORT FPS INCORRECT.
6699	027716				6\$:			
6700								
6701								;OPERAND=-PATTERN FL=1 FD=1
6702								
6703	027716							LLC9:
6704	027716	104413				LPERR		;SET UP THE LOOP ON ERROR ADDRESS.
6705	027720	004767	000110			JSR	PC, LDCDSUB	;GO EXECUTE THE INSTRUCTION.
6706	027724	177777	177526		1\$:	.WORD	-1,-252	;FSRC OPERAND.
6707	027730	142052	000000	000000	2\$:	.WORD	142052,0,0,0	;EXPECTED RESULT.
6708	027736	000000						
6709	027740	136052	000000	000000	3\$:	.WORD	136052,0,0,0	;ANTICIPATED ERRONEOUS RESULT.
6710	027746	000000						
6711	027750	000307			4\$:	307		;FPS BEFORE EXECUTION.
6712	027752	000310				310		;FPS AFTER EXECUTION.
6713	027754	177777				-1		;ANTICIPATED ERRONEOUS FPS.
6714	027756	104300			5\$:	ERROR	300	;REPORT RESULT INCORRECT.
6715	027760	000401				BR	6\$	
6716	027762	104274				ERROR	274	;REPORT FPS INCORRECT.
6717	027764				6\$:			
6718								
6719								;OPERAND=PATTERN FL=1 FD=1 FT=1
6720	027764							LLC10:
6721	027764	104413				LPERR		;SET UP THE LOOP ON ERROR ADDRESS.
6722	027766	004767	000042			JSR	PC, LDCDSUB	;GO EXECUTE THE INSTRUCTION.
6723	027772	012345	067012		1\$:	.WORD	12345,67012	;FSRC OPERAND.
6724	027776	047247	025560	050000	2\$:	.WORD	47247,025560,050000,0	;EXPECTED RESULT.
6725	030004	000000						

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6726 030006 177777 177777 177777 35: .WORD -1,-1,-1,-1 ;ANTICIPATED ERRONEOUS RESULT.
6727 030014 177777
6728 030016 000352 45: 352 ;FPS BEFORE EXECUTION.
6729 030020 000340 340 ;FPS AFTER EXECUTION.
6730 030022 177777 -1 ;ANTICIPATED ERRONEOUS FPS.
6731 030024 104273 55: ERROR 273 ;REPORT RESULT INCORRECT.
6732 030026 000401 BR 65
6733 030030 104274 ERROR 274 ;REPORT FPS INCORRECT.
6734 030032 000502 65: BR LLCDONE
    
```

; THIS SUBROUTINE, LDCDSUB, IS USED TO SET UP THE OPERANDS, EXECUTE  
 ; THE LDCID OR LDCLD INSTRUCTION AND CHECK THE RESULTS. A CALL  
 ; TO IT IS MADE THUS:

```

;
; JSR PC, @#LDCDSUB
; ACARG: .WORD X, X ;AC OPERAND
; RES: .WORD X, X, X, X ;EXPECTED RESULT
; ERRES: .WORD X, X, X, X ;ERROR RESULT
; FPSB: .WORD X ;FPS BEFORE EXECUTION
; FPSA: .WORD X ;FPS AFTER EXECUTION
; ERFPS: .WORD X ;ERROR FPS.
; ERR1: ERROR X ;DATA ERROR.
; BR CONT
; ERR2: ERROR X ;FPS ERROR.
; CONT: ;RETURN ADDRESS
    
```

; THE OPERANDS ARE SET UP (USING ACO AS THE ACCUMULATOR). THEN  
 ; THE LDCID OR LDCLD INSTRUCTION IS EXECUTED.  
 ; THE RESULT IS CHECKED AGAINST RES. IF THE RESULT IS CORRECT THEN THE FPS IS  
 ; COMPARED WITH FPSA IF THIS TOO IS CORRECT LDCDSUB RETURNS CONTROL  
 ; TO THE CALLING ROUTINE AT CONT. IF THE FPS IS BAD LDCDSUB  
 ; COMPARE IT TO ERROR FPS. IF THIS MATCHES THEN LDCDSUB WILL RETURN  
 ; TO THE ERROR CALL AT ERR2, OTHERWISE LDCDSUB ITSELF  
 ; REPORTS THIS FAILURE AND THEN RETURNS TO CONT. IF THE RESULT OF THE  
 ; LDCID OR LDCLD IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE  
 ; ANTICIPATED FAILING DATA PATTERN, ERRES. IF THE FAILURE IN  
 ; THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN LDCDSUB  
 ; WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1. OTHERWISE THE  
 ; RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND LDCDSUB WILL  
 ; REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT.

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6767 030034 012601 LDCDSUB: MOV (SP)+, R1 ;GET A POINTER TO THE ARGUMENTS.
6768 030036 016100 000024 MOV 24(R1), RO ;SET THE FPS.
6769 030042 170100 LDFPS RO
6770 030044 012737 030054 001236 MOV #15, @#STMP2
6771 030052 010100 MOV R1, RO
6772 030054 177010 15: LDCID (RO), ACO ;TEST INSTRUCTION, LDCID OR LDCLD.
6773
6774 030056 170204 STFPS R4 ;GET FPS.
6775 030060 012700 027222 MOV #LDCT, RO ;GET THE RESULT.
6776 030064 012702 000200 MOV #200, R2
6777 030070 170102 LDFPS R2
6778 030072 174010 STD ACO, (RO)
6779
6780 ;SEE IF THE RESULT IS CORRECT.
6781 030074 012702 027222 MOV #LDCT, R2
    
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6782 030100 010237 001242      MOV      R2, @#STMP4
6783 030104 010137 001240      MOV      R1, @#STMP3
6784 030110 010103              MOV      R1, R3
6785 030112 062703 000004      ADD      #4, R3
6786 030116 010337 001244      MOV      R3, @#STMP5
6787 030122 010437 001250      MOV      R4, @#STMP7
6788 030126 016137 000026 001252      MOV      26(R1), @#STMP10
6789 030134 010100              MOV      R1, R0
6790 030136 062700 000004      ADD      #4, R0
6791 030142 012703 000002              MOV      #2, R3
6792 030146 022022 25:      CMP      (R0)+, (R2)+
6793 030150 001006              BNE      10$          ; BR IF INCORRECT.
6794 030152 077303              SOB      R3, 2$
6795
6796 030154 026104 000026              CMP      26(R1), R4          ; IS THE FPS CORRECT?
6797 030160 001020              BNE      15$          ; BR IF INCORRECT.
6798 030152 000161 000040 35:      JMP      40(R1)          ; RETURN.
6799
6800 ; THE RESULT WAS INCORRECT SO SEE IF THE ERROR WAS ANTICIPATED.
6801 030166 012702 027222 10$:      MOV      #LDCID, R2
6802 030172 010100              MOV      R1, R0
6803 030174 062700 000014      ADD      #14, R0
6804 030200 012703 000002              MOV      #2, R3
6805 030204 022022 11$:      CMP      (R0)+, (R2)+
6806 030206 001003              BNE      13$
6807 030210 077303              SOB      R3, 11$
6808 030212 000161 000032              JMP      32(R1)
6809 030216 13$:
6810 ; ERROR NOT ANTICIPATED SO REPORT RESULT INCORRECT HERE.
6811 030216 104273 14$:      ERROR   273          ; BAD RES
6812 030220 000760              BR       3$
6813
6814 ; THE FPS WAS INCORRECT. SEE IF FAILURE WAS ANTICIPATED.
6815 030222 026104 000030 15$:      CMP      30(R1), R4
6816 030226 001002              BNE      16$
6817 030230 000161 000036              JMP      36(R1)
6818 ; FPS ERROR WAS NOT ANTICIPATED SO REPORT FAILURE HERE.
6819 030234 16$:
6820
6821 030234 104274 17$:      ERROR   274          ; BAD FPS
6822 030236 000751              BR       3$
6823
6824 030240 LLCIDONE:
6825 030240 104412              RSETUP          ; GO INITIALIZE THE FPS AND STACK; AND
6826 ; SEE IF THE USER HAS EXPRESSED
6827 ; THE DESIRE TO CHANGE THE SOFTWARE
6828 ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
6829 ; THE USER TYPED CONTROL G?).
6830
6831
6832 ; *****
6833 ; *TEST 60          LDEXP TEST
6834 ; *
6835 ; * THIS IS A TEST OF THE LDEXP INST
6836 ; * A SUBROUTINE IS USED TO SET UP
6837 ; * OPERANDS, EXECUTE THE LDEXP INST AND
    
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6838 ; * CHECK THE RESULTS.
6839 ; *
6840 ; ; *****
6841 030242 000004 TST60: SCOPE
6842
6843 ; NON-ZERO RES. VALID EXPON=210 (EXCESS 200)=10
6844 MMC1:
6845 030244 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
6846 030246 004767 001334 JSR PC, LDXSUB ; GO EXECUTE THE INSTRUCTION.
6847 030252 012345 067012 034567 1$: . WORD 12345, 67012, 34567, 012345 ; ACO OPERAND.
6848 030260 012345
6849 030262 000010 2$: . WORD 10 ; EXPONENT OPERAND.
6850 030264 042145 067012 034567 3$: . WORD 42145, 67012, 34567, 012345 ; EXPECTED RESULT.
6851 030272 012345
6852 030274 002145 067012 034567 4$: . WORD 2145, 67012, 34567, 012345 ; ANTICIPATED ERRONEOUS RESULT.
6853 030302 012345
6854 030304 047217 5$: 47217 ; FPS BEFORE EXECUTION.
6855 030306 047200 47200 ; FPS AFTER EXECUTION.
6856 030310 147200 147200 ; ANTICIPATED ERRONEOUS FPS.
6857 030312 177777 -1 ; EXPECTED FEC.
6858 030314 104304 6$: ERROR 304 ; E12+E12+200 BAD
6859 030316 000400 BR 7$ ; ST 624
6860 030320 104305 7$: ERROR 305 ; REPORT FPS INCORRECT.
6861 ; ST 625 INTO 304
6862 ; NON-ZERO RES NEG.
6863 MMC2:
6864 030322 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
6865 030324 004737 031606 JSR PC, @LDXSUB ; EXPON=377
6866 030330 123456 070123 045670 1$: . WORD 123456, 70123, 45670, 123456 ; ACO OPERAND.
6867 030336 123456
6868 030340 000177 2$: . WORD 177 ; EXPONENT OPERAND.
6869 030342 177656 070123 045670 3$: . WORD 177656, 70123, 45670, 123456 ; EXPECTED RESULT.
6870 030350 123456
6871 030352 137656 070123 045670 4$: . WORD 137656, 70123, 45670, 123456 ; ANTICIPATED ERRONEOUS RESULT.
6872 030360 123456
6873 030362 047207 5$: 47207 ; FPS BEFORE EXECUTION.
6874 030364 047210 47210 ; FPS AFTER EXECUTION.
6875 030366 147210 147210 ; ANTICIPATED ERRONEOUS FPS.
6876 030370 177777 -1 ; EXPECTED FEC.
6877 030372 104304 6$: ERROR 304 ; REPORT RESULT INCORRECT.
6878 030374 000401 BR 7$
6879 030376 104305 7$: ERROR 305 ; REPORT FPS INCORRECT.
6880 030400
6881 ; NON-ZERO RES, EXP=256=(56)REAL
6882 MMC3:
6883 030400 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
6884 030400 104413 JSR PC, @LDXSUB ; GO EXECUTE THE INSTRUCTION.
6885 030402 004737 031606 057645 043323 1$: . WORD 73261, 057645, 43323, 101760 ; ACO OPERAND.
6886 030406 073261
6887 030414 101760
6888 030416 000056 2$: . WORD 56 ; EXPONENT OPERAND.
6889 030420 053461 057645 043323 3$: . WORD 53461, 057645, 43323, 101760 ; EXPECTED RESULT.
6890 030426 101760
6891 030430 177777 177777 4$: . WORD -1, -1, -1, -1 ; ANTICIPATED ERRONEOUS RESULT.
6892 030436 177777
6893 030440 047200 5$: 47200 ; FPS BEFORE EXECUTION.
  
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6894 030442 047200          47200          ;FPS AFTER EXECUTION.
6895 030444 147200          147200         ;ANTICIPATED ERRONEOUS FPS.
6896 030446 177777          -1              ;EXPECTED FEC.
6897 030450 104301          6$: ERROR 301      ;REPORT RESULT INCORRECT.
6898 030452 000401          BR 7$
6899 030454 104305          ERROR 305      ;REPORT FPS INCORRECT.
6900 030456
6901
6902 ;EXP=27 (EXCESS 200)=-151 (OCT)
6903 030456 MMC4:
6904 030456 104413          LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
6905 030460 004737 031606          JSR PC, @#LDXSUB ;GO EXECUTE THE INSTRUCTION.
6906 030464 012223 024252 062720 1$: . WORD 12223, 24252, 62720, 21222 ;ACO OPERAND.
6907 030472 021222
6908 030474 177627          . WORD -151    ;EXPONENT OPERAND.
6909 030476 005623 024252 062720 3$: . WORD 5623, 24252, 62720, 21222 ;EXPECTED RESULT.
6910 030504 021222
6911 030506 177777 177777 177777 4$: . WORD -1, -1, -1, -1 ;ANTICIPATED ERRONEOUS RESULT.
6912 030514 177777
6913 030516 047200          5$: 47200      ;FPS BEFORE EXECUTION.
6914 030520 047200          47200          ;FPS AFTER EXECUTION.
6915 030522 147200          147200         ;ANTICIPATED ERRONEOUS FPS.
6916 030524 177777          -1              ;EXPECTED FEC.
6917 030526 104301          6$: ERROR 301      ;REPORT RESULT INCORRECT.
6918 030530 000401          BR 7$
6919 030532 104306          ERROR 306      ;(BUT EZBT) ST 544 TO 504 INTO 704 0 (BUT EXBT) ST 704 1
6920 030534
6921
6922 ;EXP=0 (EXCESS 200)=-200 (OCT), POSITIVE FRAC
6923 ; FIV=1
6924 030534 MMC5:
6925 030534 104413          LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
6926 030536 004737 031606          JSR PC, @#LDXSUB ;GO EXECUTE THE INSTRUCTION.
6927 030542 030131 032334 035363 1$: . WORD 30131, 32334, 35363, 73031 ;ACO OPERAND.
6928 030550 073031
6929 030552 177600          . WORD -200    ;EXPONENT OPERAND.
6930 030554 000131 032334 035363 3$: . WORD 00131, 32334, 35363, 73031 ;EXPECTED RESULT.
6931 030562 073031
6932 030564 000000 000000 000000 4$: . WORD 0, 0, 0, 0 ;ANTICIPATED ERRONEOUS RESULT.
6933 030572 000000
6934 030574 042200          5$: 42200      ;FPS BEFORE EXECUTION.
6935 030576 142204          142204         ;FPS AFTER EXECUTION.
6936 030600 042202          42202          ;ANTICIPATED ERRONEOUS FPS.
6937 030602 000012          12              ;EXPECTED FEC.
6938 030604 104307          6$: ERROR 307      ;(BUT EXBT) ST 704 TO 64 INST 264
6939 030606 000401          BR 7$
6940 030610 104310          ERROR 310      ;(BUT FIU) ST 264 X
6941 030612
6942
6943 ;EXP=0 (EXCESS 200)=-200 (OCT), NEG FRACT, FIU=1
6944 030612 MMC6:
6945 030612 104413          LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
6946 030614 004737 031606          JSR PC, @#LDXSUB ;GO EXECUTE THE INSTRUCTION.
6947 030620 140414 024344 045464 1$: . WORD 140414, 24344, 45464, 74045 ;ACO OPERAND.
6948 030626 074045
6949 030630 177600          . WORD -200    ;EXPONENT OPERAND.
    
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6950 030632 100014 024344 045464 35: .WORD 100014,24344,45464,74045 ; -0 ; EXPECTED RESULT.
6951 030640 074045
6952 030642 000000 000000 000000 45: .WORD 0,0,0,0 ; ANTICIPATED ERRONEOUS RESULT.
6953 030650 000000
6954 030652 042200 55: 42200 ; FPS BEFORE EXECUTION.
6955 030654 142214 142214 ; FPS AFTER EXECUTION.
6956 030656 042214 42214 ; ANTICIPATED ERRONEOUS FPS.
6957 030660 000012 12 ; EXPECTED FEC.
6958 030662 104307 65: ERROR 307 ; REPORT RESULT INCORRECT.
6959 030664 000401 BR 75
6960 030666 104310 ERROR 310 ; REPORT FPS INCORRECT.
6961 030670
6962
6963 ; EXP=0 (EXCESS 200)=-200 (OCT), POS FRAC, FIU=0
6964
6965 030670 MMC7:
6966 030670 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
6967 030672 004737 031606 JSR PC, @#LDXSUB ; GO EXECUTE THE INSTRUCTION.
6968 030676 051525 035455 005675 15: .WORD 51525,35455,5675,05152 ; ACO OPERAND.
6969 030704 005152
6970 030706 177600 25: .WORD -200 ; EXPONENT OPERAND.
6971 030710 000000 000000 000000 35: .WORD 0,0,0,0 ; EXPECTED RESULT.
6972 030716 000000
6973 030720 000125 035455 005675 45: .WORD 00125,35455,5675,05152 ; ANTICIPATED ERRONEOUS RESULT.
6974 030726 005152
6975 030730 045200 45200 ; FPS BEFORE EXECUTION.
6976 030732 045204 45204 ; FPS AFTER EXECUTION.
6977 030734 145204 145204 ; ANTICIPATED ERRONEOUS FPS.
6978 030736 177777 -1 ; EXPECTED FEC.
6979 030740 104311 65: ERROR 311 ; (BUT FIU) ST, 264 X ; REPORT RESULT INCORRECT
6980 030742 000401 BR 75
6981 030744 104302 ERROR 302 ; REPORT FPS INCORRECT.
6982 030746
6983
6984 ; EXP=-1405 (EXCESS 200)=-1605 (OCT), FIU=1
6985 030746 MMC8:
6986 030746 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
6987 030750 004737 031606 JSR PC, @#LDXSUB ; GO EXECUTE THE INSTRUCTION.
6988 030754 061626 062636 046566 15: .WORD 61626,62636,46566,67606 ; ACO OPERAND.
6989 030762 067606
6990 030764 176173 25: .WORD -1605 ; EXPONENT OPERAND.
6991 030766 076626 062636 046566 35: .WORD 76626,62636,46566,67606 ; EXPECTED RESULT.
6992 030774 067606
6993 030776 000000 000000 000000 45: .WORD 0,0,0,0 ; ANTICIPATED ERRONEOUS RESULT.
6994 031004 000000
6995 031006 042200 55: 42200 ; FPS BEFORE EXECUTION.
6996 031010 142200 142200 ; FPS AFTER EXECUTION.
6997 031012 042204 42204 ; ANTICIPATED ERRONEOUS FPS.
6998 031014 000012 12 ; EXPECTED FEC.
6999 031016 104312 65: ERROR 312 ; (BUT EZBT) ST 544 TO 704 INTO 504
7000 031020 000401 BR 75
7001 031022 104302 ERROR 302 ; REPORT FPS INCORRECT.
7002 031024
7003 ; EXP=-17416 (EXCESS 200)=-17616 (OCT), FIU=0
7004 031024 MMC9:
7005 031024 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
  
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7006 031026 004737 031606 JSR PC, @#LDXSUB ;GO EXECUTE THE INSTRUCTION.
7007 031032 071727 037475 076777 15: .WORD 71727, 37475, 76777, 17273 ;ACO OPERAND.
7008 031040 017273
7009 031042 160162 25: .WORD -17616 ;EXPONENT OPERAND.
7010 031044 000000 000000 000000 35: .WORD 0, 0, 0, 0 ;EXPECTED RESULT.
7011 031052 000000
7012 031054 074527 037475 076777 45: .WORD 74527, 37475, 76777, 17273 ;ANTICIPATED ERRONEOUS RESULT.
7013 031062 017273
7014 031064 045200 55: 45200 ;FPS BEFORE EXECUTION.
7015 031066 045204 45204 ;FPS AFTER EXECUTION.
7016 031070 145200 145200 ;ANTICIPATED ERRONEOUS FPS.
7017 031072 177777 -1 ;EXPECTED FEC.
7018 031074 104313 65: ERROR 313 ;(BUT FIU) ST 504
7019 031076 000401 BR 75
7020 031100 104302 ERROR 302 ;REPORT FPS INCORRECT.
7021 031102 75:
7022
7023 ;EXP=-1601 (EXCESS 200)=-2001 (OCT), FIU=1
7024 031102 MMC10:
7025 031102 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
7026 031104 004737 031606 JSR PC, @#LDXSUB ;GO EXECUTE THE INSTRUCTION.
7027 031110 001020 030405 006070 15: .WORD 01020, 30405, 06070, 00102 ;ACO OPERAND.
7028 031116 000102
7029 031120 175777 25: .WORD -2001 ;EXPONENT OPERAND.
7030 031122 037620 030405 006070 35: .WORD 37620, 30405, 06070, 00102 ;EXPECTED RESULT.
7031 031130 000102
7032 031132 000000 000000 000000 45: .WORD 0, 0, 0, 0 ;ANTICIPATED ERRONEOUS RESULT.
7033 031140 000000
7034 031142 042200 55: 42200 ;FPS BEFORE EXECUTION.
7035 031144 142200 142200 ;FPS AFTER EXECUTION.
7036 031146 042204 42204 ;ANTICIPATED ERRONEOUS FPS.
7037 031150 000012 12 ;EXPECTED FEC.
7038 031152 104312 65: ERROR 312 ;(BUT FIU) ST 504
7039 031154 000401 BR 75
7040 031156 104302 ERROR 302 ;REPORT FPS INCORRECT.
7041 031160 75:
7042
7043 ;EXP=1206 (EXCESS 200)=1006 (OCT) FIV =1
7044 031160 MMC11:
7045 031160 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
7046 031162 004737 031606 JSR PC, @#LDXSUB ;GO EXECUTE THE INSTRUCTION.
7047 031166 012131 014151 016171 15: .WORD 12131, 14151, 16171, 10111 ;ACO OPERAND.
7048 031174 010111
7049 031176 001006 25: .WORD 1006 ;EXPONENT OPERAND.
7050 031200 041531 014151 016171 35: .WORD 41531, 14151, 16171, 10111 ;EXPECTED RESULT.
7051 031206 010111
7052 031210 000000 000000 000000 45: .WORD 0, 0, 0, 0 ;ANTICIPATED ERRONEOUS RESULT.
7053 031216 000000
7054 031220 041200 55: 41200 ;FPS BEFORE EXECUTION.
7055 031222 141202 141202 ;FPS AFTER EXECUTION.
7056 031224 041204 41204 ;ANTICIPATED ERRONEOUS FPS.
7057 031226 000010 10 ;EXPECTED FEC.
7058 031230 104314 65: ERROR 314 ;(BUT FIV) ST 104
7059 031232 000401 BR 75
7060 031234 104302 ERROR 302 ;REPORT FPS INCORRECT.
7061 031236 75:
  
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7062
7063 ;EXP=16315 (EXCESS 200)=16115 (OCT) FIV=0
7064 031236 MMC12:
7065 031236 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
7066 031240 004737 031606 JSR PC, @#LDXSUB ;GO EXECUTE THE INSTRUCTION.
7067 031244 027262 025242 023222 15: .WORD 27262, 25242, 23222, 21202 ;ACO OPERAND.
7068 031252 021202
7069 031254 016115 25: .WORD 16115 ;EXPONENT OPERAND.
7070 031256 000000 000000 000000 35: .WORD 0, 0, 0, 0 ;EXPECTED RESULT.
7071 031264 000000
7072 031266 063262 025242 023222 45: .WORD 63262, 25242, 23222, 21202 ;ANTICIPATED ERRONEOUS RESULT.
7073 031274 021202
7074 031276 046200 55: 46200 ;FPS BEFORE EXECUTION.
7075 031300 046206 46206 ;FPS AFTER EXECUTION.
7076 031302 146202 146202 ;ANTICIPATED ERRONEOUS FPS.
7077 031304 177777 -1 ;EXPECTED FEC.
7078 031306 104315 65: ERROR 315 ;(BUT FIV) ST 104
7079 031310 000401 BR 75
7080 031312 104302 ERROR 302 ;REPORT FPS INCORRECT.
7081 031314
7082
7083 ;EXP=11011 (EXCESS 200)=10611 (OCT) FIV=1
7084
7085 031314 MMC13:
7086 031314 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
7087 031316 004737 031606 JSR PC, @#LDXSUB ;GO EXECUTE THE INSTRUCTION.
7088 031322 030313 032333 034353 15: .WORD 30313, 32333, 34353, 36373 ;ACO OPERAND.
7089 031330 036373
7090 031332 010611 25: .WORD 10611 ;EXPONENT OPERAND.
7091 031334 002313 032333 034353 35: .WORD 2313, 32333, 34353, 36373 ;EXPECTED RESULT.
7092 031342 036373
7093 031344 000000 000000 000000 45: .WORD 0, 0, 0, 0 ;ANTICIPATED ERRONEOUS RESULT.
7094 031352 000000
7095 031354 041200 55: 41200 ;FPS BEFORE EXECUTION.
7096 031356 141202 141202 ;FPS AFTER EXECUTION.
7097 031360 041204 41204 ;ANTICIPATED ERRONEOUS FPS.
7098 031362 000010 10 ;EXPECTED FEC.
7099 031364 104316 65: ERROR 316 ;(BUT FIV) ST 144
7100 031366 000401 BR 75
7101 031370 104302 ERROR 302 ;REPORT FPS INCORRECT.
7102 031372
7103
7104 ;EXP=17123 (EXCESS 200)=16723 (OCT) FIV=0
7105
7106 031372 MMC14:
7107 031372 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
7108 031374 004737 031606 JSR PC, @#LDXSUB ;GO EXECUTE THE INSTRUCTION.
7109 031400 040414 042434 044454 15: .WORD 40414, 42434, 44454, 46474 ;ACO OPERAND.
7110 031406 046474
7111 031410 016723 25: .WORD 16723 ;EXPONENT OPERAND.
7112 031412 000000 000000 000000 35: .WORD 0, 0, 0, 0 ;EXPECTED RESULT.
7113 031420 000000
7114 031422 024614 042434 044454 45: .WORD 24614, 42434, 44454, 46474 ;ANTICIPATED ERRONEOUS RESULT.
7115 031430 046474
7116 031432 046200 55: 46200 ;FPS BEFORE EXECUTION.
7117 031434 046206 46206 ;FPS AFTER EXECUTION.
  
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7118 031436 146202          146202          ; ANTICIPATED ERRONEOUS FPS.
7119 031440 177777          -1          ; EXPECTED FEC.
7120 031442 104317          65:  ERROR  317          ; (BUT FIV) ST 144
7121 031444 000401          BR 75
7122 031446 104302          ERROR  302          ; REPORT FPS INCORRECT.
7123 031450
7124
7125          ; EXP= 254 (OCT)= 454 (EXCESS 200) FIV=1
7126
7127 031450          MMC15:
7128 031450 104413          LPERR          ; SET UP THE LOOP ON ERROR ADDRESS.
7129 031452 004737 031606  JSR  PC, @#LDXSUB ; GO EXECUTE THE INSTRUCTION.
7130 031456 050515 052535 054555 15:  .WORD  50515, 52535, 54555, 56575 ; ACO OPERAND.
7131 031464 056575
7132 031466 000254          25:  .WORD  254          ; EXPONENT OPERAND.
7133 031470 013115 052535 054555 35:  .WORD  13115, 52535, 54555, 56575 ; EXPECTED RESULT.
7134 031476 056575
7135 031500 000000 000000 000000 45:  .WORD  0, 0, 0, 0          ; ANTICIPATED ERRONEOUS RESULT.
7136 031506 000000
7137 031510 041200          55:  41200          ; FPS BEFORE EXECUTION.
7138 031512 141202          141202          ; FPS AFTER EXECUTION.
7139 031514 041204          41204          ; ANTICIPATED ERRONEOUS FPS.
7140 031516 000010          10          ; EXPECTED FEC.
7141 031520 104320          65:  ERROR  320          ; (BUT FIV) ST344
7142 031522 000401          BR 75
7143 031524 104302          ERROR  302          ; REPORT FPS INCORRECT.
7144 031526
7145
7146          ; EXP= 313 (OCT)= 513(EXCESS 200) FIV=0
7147
7148 031526          MMC16:
7149 031526 104413          LPERR          ; SET UP THE LOOP ON ERROR ADDRESS.
7150 031530 004737 031606  JSR  PC, @#LDXSUB ; GO EXECUTE THE INSTRUCTION.
7151 031534 060616 062636 064656 15:  .WORD  60616, 62636, 64656, 66676 ; ACO OPERAND.
7152 031542 066676
7153 031544 000313          25:  .WORD  313          ; EXPONENT OPERAND.
7154 031546 000000 000000 000000 35:  .WORD  0, 0, 0, 0          ; EXPECTED RESULT.
7155 031554 000000
7156 031556 022616 062636 064656 45:  .WORD  22616, 62636, 64656, 66676 ; ANTICIPATED ERRONEOUS RESULT.
7157 031564 066676
7158 031566 046200          55:  46200          ; FPS BEFORE EXECUTION.
7159 031570 046206          46206          ; FPS AFTER EXECUTION.
7160 031572 146202          146202          ; ANTICIPATED ERRONEOUS FPS.
7161 031574 177777          -1          ; EXPECTED FEC.
7162 031576 104321          65:  ERROR  321          ; (BUT FIV) ST 344
7163 031600 000401          BR 75
7164 031602 104302          ERROR  302          ; REPORT FPS INCORRECT.
7165 031604
7166 031604 000540          BR  MMCDONE
7167
7168          ; THIS SUBROUTINE, LDXSUB, IS USED TO SET UP THE OPERANDS, EXECUTE
7169          ; THE LDEXP INSTRUCTION AND CHECK THE RESULTS. A CALL
7170          ; TO IT IS MADE THUS:
7171          ;
7172          ; JSR  PC, @#LDXSUB
7173          ; ACARG: .WORD  X, X, X, X          ; AC OPERAND

```

```

7174      ;
7175      ;
7176      ;
7177      ;
7178      ;
7179      ;
7180      ;
7181      ;
7182      ;
7183      ;
7184      ;
7185      ;
7186      ;
7187      ;
7188      ;
7189      ;
7190      ;
7191      ;
7192      ;
7193      ;
7194      ;
7195      ;
7196      ;
7197      ;
7198      ;
7199      ;
7200      ;

```

EXP:	WORD	X	; EXPONENT
RES:	WORD	X, X, X, X	; EXPECTED RESULT
ERRES:	WORD	X, X, X, X	; ERROR RESULT
FPSB:	WORD	X	; FPS BEFORE EXECUTION
FPSA:	WORD	X	; FPS AFTER EXECUTION
ERFPS:	WORD	X	; ERROR FPS.
FEC:	WORD	X	; EXPECTED FEC
ERR1:	ERROR	X	; DATA ERROR.
	BR	CONT	
ERR2:	ERROR	X	; FPS ERROR.
CONT:			; RETURN ADDRESS

```

; THE OPERANDS ARE SET UP (USING ACO AS THE ACCUMULATOR). THEN
; THE LDEXP INSTRUCTION IS EXECUTED.
; THE RESULT IS CHECKED AGAINST RES. IF THE RESULT IS CORRECT THEN THE FPS IS
; COMPARED WITH FPSA IF THIS TOO IS CORRECT LDXSUB RETURNS CONTROL
; TO THE CALLING ROUTINE AT CONT. IF THE FPS IS BAD LDXSUB
; COMPARE IT TO ERROR FPS. IF THIS MATCHES THEN LDXSUB WILL RETURN
; TO THE ERROR CALL AT ERR2, OTHERWISE LDXSUB ITSELF
; REPORTS THIS FAILURE AND THEN RETURNS TO CONT. IF THE RESULT OF THE
; LDEXP IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
; ANTICIPATED FAILING DATA PATTERN, ERRES. IF THE FAILURE IN
; THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN LDXSUB
; WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1. OTHERWISE THE
; RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND LDXSUB WILL
; REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT.

```

```

7201 031606 012601          LDXSUB: MOV      (SP)+, R1      ; GET A POINTER TO THE ARGUMENTS.
7202 031610 012700 000200  MOV      #200, R0          ; LOAD THE ACO OPERAND.
7203 031614 170100          LDFPS   R0
7204 031616 010100          MOV      R1, R0
7205 031620 172410          LDD     (R0), ACO
7206 031622 012737 031644 001236  MOV      #15, @#STMP2
7207 031630 016100 000032          MOV      32(R1), R0      ; SET UP THE FPS.
7208 031634 170100          LDFPS   R0
7209 031636 010100          MOV      R1, R0
7210 031640 062700 000010          ADD     #10, R0
7211
7212 031644 176410          15:   LDEXP   (R0), ACO      ; TEST INSTRUCTION.
7213
7214 031646 170204          STFPS   R4                ; GET THE FPS.
7215 031650 170305          STST   R5                ; GET THE FEC.
7216 031652 012700 000200          MOV      #200, R0          ; GET THE RESULT.
7217 031656 170100          LDFPS   R0
7218 031660 012700 032076          MOV      #LDXT, R0
7219 031664 174010          STD    ACO, (R0)
7220 031666 010437 001250          MOV      R4, @#STMP7
7221 031672 016137 000034 001252          MOV      34(R1), @#STMP10
7222 031700 010537 001254          MOV      R5, @#STMP11
7223 031704 016137 000040 001256          MOV      40(R1), @#STMP12
7224 031712 010102          MOV      R1, R2
7225 031714 010237 001240          MOV      R2, @#STMP3
7226 031720 062702 000010          ADD     #10, R2
7227 031724 011237 001242          MOV      (R2), @#STMP4
7228 031730 062702 000002          ADD     #2, R2
7229 031734 010237 001244          MOV      R2, @#STMP5

```



```

7230 031740 012737 032076 001246      MOV      #LDXT, @#STMP6
7231 031746 012702 032076      MOV      #LDXT, R2          ; SEE IF THE RESULT WAS CORRECT.
7232 031752 010103                MOV      R1, R3
7233 031754 062703 000012      ADD      #12, R3
7234 031760 012700 000004      MOV      #4, R0
7235 031764 022223                25:     CMP      (R2)+, (R3)+
7236 031766 001014                BNE      105                ; BRANCH IF NOT CORRECT.
7237 031770 077003                SOB      R0, 25
7238 031772 020461 000034      CMP      R4, 34(R1)        ; SEE IF THE FPS WAS CORRECT.
7239 031776 001026                BNE      155                ; BRANCH IF NOT CORRECT.
7240 032000 005761 000034      TST      34(R1)
7241 032004 100003                BPL      35
7242 032006 020561 000040      CMP      R5, 40(R1)        ; SEE IF THE FEC WAS CORRECT.
7243 032012 001027                BNE      205                ; BRANCH IF NOT CORRECT.
7244
7245 032014 000161 000050                35:     JMP      50(R1)            ; RETURN.
7246
7247                ; THE RESULT WAS INCORRECT SO SEE IF THE FAILURE WAS ANTICIPATED.
7248 032020 012702 032076                105:    MOV      #LDXT, R2
7249 032024 010103                MOV      R1, R3
7250 032026 062703 000022      ADD      #22, R3
7251 032032 012700 000004      MOV      #4, R0
7252 032036 022223                115:    CMP      (R2)+, (R3)+
7253 032040 001003                BNE      125
7254 032042 077003                SOB      R0, 115
7255 032044 000161 000042      JMP      42(R1)
7256
7257                ; THE ERROR WAS NOT ANTICIPATED SO REPORT IT HERE.
7258 032050                125:
7259 032050 104301                135:    ERROR   301          ; BAD RES
7260 032052 000760                BR      35
7261
7262                ; SEE IF THE FPS ERROR WAS ANTICIPATED.
7263 032054 026104 000036                155:    CMP      36(R1), R4
7264 032060 001002                BNE      165
7265 032062 000161 000046                JMP      46(R1)
7266 032066                165:
7267                ; THE FPS WAS NOT ANTICIPATED SO REPORT IT HERE.
7268 032066 104302                175:    ERROR   302          ; BAD FPS
7269 032070 000751                BR      35                ; BUT EZBTY8
7270                                ; ST 063
7271
7272 032072                205:
7273                ; REPORT FEC INCORRECT.
7274 032072 104303                215:    ERROR   303          ; BAD FEC
7275 032074 000747                BR      35
7276
7277                ; DATA BUFFER:
7278 032076 000000 000000 000000  LDXT:   .WORD  0,0,0,0
7279 032104 000000
7280
7281                MMCDONE:
7282 032106 104412                RSETUP
7283
7284                                ; GO INITIALIZE THE FPS AND STACK; AND
7285                                ; SEE IF THE USER HAS EXPRESSED
                                ; THE DESIRE TO CHANGE THE SOFTWARE
                                ; VIRTUAL CONSOLE SWITCH REGISTER (HAS

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; THE USER TYPED CONTROL G?).

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7286
7287
7288
7289
7290
7291
7292
7293
7294
7295
7296
7297 032110 000004
7298
7299
7300 032112
7301 032112 104413
7302 032114 012700 032212
7303 032120 012701 000006
7304 032124 012720 177777
7305 032130 077103
7306 032132 012700 102345
7307 032136 012737 032160 001236
7308 032144 012737 032312 000004
7309 032152 170100
7310 032154 012700 032216
7311
7312 032160 170210
7313 032162 020027 032216
7314 032166 001017
7315 032170 023727 032216 102345
7316 032176 001023
7317 032200 023727 032220 177777
7318 032206 001030
7319 032210 000453
7320
7321
7322 032212 177777 177777
7323 032216 177777 177777 177777
7324 032224 177777
7325
7326
7327 032226 010037 001242
7328 032232 012737 032216 001240
7329 032240
7330 032240 104377
7331 032242 000001
7332
7333 032244 000435
7334
7335
7336 032246 012737 102345 001240
7337 032254 013737 032216 001242
7338 032262
7339 032262 104377
7340 032264 000002
7341
```

```

;*****
;TEST 61 DESTINATION MODES, MODE 1 (FL=0), TEST
;
; THIS IS A TEST OF DESTINATION MODE 1 USING
; THE STFPS INSTRUCTION
;
;*****
TST61: SCOPE

NNC1:
LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
MOV #NNCTBO,RO ;SET UP THE DATA BUFFER.
MOV #6,R1
15: MOV #-1,(RO)+
SOB R1,15
MOV #102345,RO
MOV #NNC2,@#STMP2
MOV #NNC25,@#ERRVECT ;SET UP FOR TRAPS TO 4.
LDFPS RO ;SET UP FPS.
MOV #NNCTB1,RO

NNC2: STFPS (RO) ;TEST INSTRUCTION.
CMP RO,#NNCTB1 ;IS RO CORRECT?
BNE NNC10 ;BRANCH IF NOT CORRECT.
CMP @#NNCTB1,#102345 ;IS RESULT CORRECT?
BNE NNC15 ;BRANCH IF NOT CORRECT.
CMP @#NNCTB1+2,#-1 ;IS THE RESULT CORRECT?
BNE NNC20 ;BRANCH IF NOT CORRECT.
BR NNCDONE

;TEST DATA BUFFER:
NNCTBO: .WORD -1,-1
NNCTB1: .WORD -1,-1,-1,-1

;REPORT RO INCORRECT.
NNC10: MOV RO,@#STMP4
MOV #NNCTB1,@#STMP3
15: ERROR 377
.WORD 1
BR NNCDONE ;RO BAD (BUT
; FDST)X

;REPORT RESULT INCORRECT.
NNC15: MOV #102345,@#STMP3 ; ST 634
MOV @#NNCTB1,@#STMP4
15: ERROR 377
.WORD 2 ;BAD DATA
```



```

7342 032266 000424          BR      NNCDONE
7343
7344
7345          ;REPORT RESULT INCORRECT.
7346 032270 012737 177777 001240 NNC20: MOV      #-1,@#STMP3
7347 032276 013737 032220 001242      MOV      @#NNCTB1+2,@#STMP4
7348 032304
7349 032304 104377          15:      ERROR    377
7350 032306 000003          .WORD   3
7351
7352 032310 000413          BR      NNCDONE          ;(BUT GR7,FL)
7353                                     ;ST 357 TO 416
7354                                     ;INTO 417
7355          ;IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
7356          ;DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO
7357          ;TO THE SPURIOUS TRAP TO 4 HANDLER.
7358 032312 011604          NNC25: MOV      (SP),R4
7359 032314 020427 032162      CMP      R4,#NNC2+2
7360 032320 001402          BEQ     15
7361 032322 000137 042610      JMP     @#CPSPUR
7362
7363 032326 011637 001236          15:      MOV      (SP),@#STMP2
7364 032332 022626          CMP     (SP)+,(SP)+
7365 032334          25:
7366 032334 104377          ERROR    377
7367 032336 000004          .WORD   4
7368                                     ;(BUT FDST)+ ST634
7369
7370 032340          NNCDONE:
7371 032340 104412          RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
7372                                     ;SEE IF THE USER HAS EXPRESSED
7373                                     ;THE DESIRE TO CHANGE THE SOFTWARE
7374                                     ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
7375                                     ;THE USER TYPED CONTROL G?).
7376
7377
7378          ;*****
7379          ;*TEST 62      DESTINATION MODES, MODE 2 (FL=0), TEST
7380          ;*
7381          ;* THIS IS A TEST OF DESTINATION MODE 2 USING
7382          ;* THE STFPS INSTRUCTION
7383          ;*
7384          ;*****
7385 032342 000004          TST62: SCOPE
7386
7387
7388          00C1:
7389 032344 104413          LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
7390 032346 012700 032444      MOV      #0OCTB0,R0          ;SET UP THE DATA BUFFER.
7391 032352 012701 000006      MOV      #6,R1
7392 032356 012720 177777          15:      MOV      #-1,(R0)+
7393 032362 077103          SOB     R1,15
7394 032364 012700 105412      MOV      #105412,R0
7395 032370 012737 032412 001236      MOV      #00C2,@#STMP2
7396 032376 012737 032544 000004      MOV      #00C25,@#ERRVECT ;SET UP FOR TRAPS TO VECTOR 4.
7397 032404 170100          LDFPS   R0          ;SET UP FPS.
    
```

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7398 032406 012700 032450          MOV      #00CTB1,R0
7399
7400 032412 170220          OOC2:   STFPS   (R0)+      ;TEST INSTRUCTION.
7401 032414 020027 032452          CMP      R0,#00CTB1+2    ;IS R0 CORRECT?
7402 032420 001017          BNE     00C10            ;BRANCH IF NOT CORRECT.
7403 032422 023727 032450 105412    CMP      @#00CTB1,#105412 ;IS THE RESULT CORRECT?
7404 032430 001023          BNE     00C15            ;BRANCH IF NOT CORRECT.
7405 032432 023727 032452 177777    CMP      @#00CTB1+2,#-1  ;IS THE RESULT CORRECT?
7406 032440 001030          BNE     00C20            ;BRANCH IF NOT CORRECT.
7407 032442 000453          BR      00CDONE
7408
7409          ;TEST DATA BUFFER:
7410 032444 177777 177777          OOC2B0: .WORD  -1,-1
7411 032450 177777 177777 177777    OOC2B1: .WORD  -1,-1,-1,-1
7412 032456 177777
7413
7414          ;REPORT R0 INCORRECT.
7415 032460 010037 001242          OOC10:   MOV      R0,@#STMP4
7416 032464 012737 032452 001240    MOV      #00CTB1+2,@#STMP3
7417 032472
7418 032472 104377          15:     ERROR    377
7419 032474 000005          .WORD   5
7420
7421 032476 000435          BR      00CDONE          ;RO BAD (BUT
                          ; FDST)X
7422
7423          ;REPORT RESULT INCORRECT.
7424 032500 012737 105412 001240    OOC15:   MOV      #105412,@#STMP3
7425 032506 013737 032450 001242    MOV      @#00CTB1,@#STMP4
7426 032514
7427 032514 104377          15:     ERROR    377
7428 032516 000006          .WORD   6
7429
7430 032520 000424          BR      00CDONE          ;BAD DATA
7431
7432
7433          ;REPORT RESULT INCORRECT.
7434 032522 012737 177777 001240    OOC20:   MOV      #-1,@#STMP3
7435 032530 013737 032452 001242    MOV      @#00CTB1+2,@#STMP4
7436 032536
7437 032536 104377          15:     ERROR    377
7438 032540 000007          .WORD   7
7439
7440 032542 000413          BR      00CDONE          ;(BUT GR7,FL)
                          ;ST 357 TO 416
7441
7442
7443          ; IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
7444          ; DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO
7445          ; TO THE SPURIOUS TRAP TO 4 HANDLER.
7446 032544 011604          OOC25:   MOV      (SP),R4
7447 032546 020427 032414          CMP      R4,#00C2+2
7448 032552 001402          BEQ     15
7449 032554 000137 042610          JMP     @#CPSPUR
7450
7451 032560 011637 001236          15:     MOV      (SP),@#STMP2
7452 032564 022626          CMP     (SP)+,(SP)+
7453 032566          25:
  
```



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CFFPCBD 11/34 FPP DIAG PRT3          MACY11 30A(1052) 05-MAY-78 15:24 H 11 PAGE 138
CFFPCB.P11 05-MAY-78 15:23          T62      DESTINATION MODES, MODE 2 (FL=0), TEST
                                                                                               SEQ 0137

7454 032566 104377          ERROR 377
7455 032570 000010          .WORD 10
7456                                     ;(BUT FDST)+ ST634
7457
7458 032572          OOCDONE:
7459 032572 104412          RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
7460                                     ;SEE IF THE USER HAS EXPRESSED
7461                                     ;THE DESIRE TO CHANGE THE SOFTWARE
7462                                     ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
7463                                     ;THE USER TYPED CONTROL G?).
7464
7465
7466
7467                                     ;*****
7468                                     ;*TEST 63      DESTINATION MODES, MODE 4 (FL=0), TEST
7469                                     ;*
7470                                     ;* THIS IS A TEST OF DESTINATION MODE 4 USING
7471                                     ;* THE STFPS INSTRUCTION
7472                                     ;*
7473                                     ;*****
7474 032574 000004          TST63: SCOPE
7475
7476 032576          PPC1:
7477 032576 104413          LPERR          ;SET UP THE LOOP ON ERROR ADDRESS.
7478 032600 012700 032676          MOV #PPCTB0,RO ;SET UP THE DATA BUFFER.
7479 032604 012701 000006          MOV #6,R1
7480 032610 012720 177777          15: MOV #-1,(RO)+
7481 032614 077103          SOB R1,15
7482 032616 012700 105555          MOV #105555,RO
7483 032622 012737 032644 001236          MOV #PPC2,@#STMP2
7484 032630 012737 032776 000004          MOV #PPC25,@#ERRVECT ;SET UP FOR TRAPS TO VECTOR 4.
7485 032636 170100          LDFPS RO      ;SET UP FPS.
7486 032640 012700 032704          MOV #PPCTB1+2,RO
7487
7488 032644 170240          PPC2: STFPS -(RO) ;TEST INSTRUCTION.
7489 032646 020027 032702          CMP RO,#PPCTB1 ;IS RO CORRECT?
7490 032652 001017          BNE PPC10      ;BRANCH IF NOT CORRECT.
7491 032654 023727 032702 105555          CMP @#PPCTB1,#105555 ;IS THE RESULT CORRECT?
7492 032662 001023          BNE PPC15      ;BRANCH IF NOT CORRECT.
7493 032664 023727 032704 177777          CMP @#PPCTB1+2,#-1 ;IS THE RESULT CORRECT?
7494 032672 001030          BNE PPC20      ;BRANCH IF NOT CORRECT.
7495 032674 000453          BR PPCDONE
7496
7497                                     ;TEST DATA BUFFER:
7498 032676 177777 177777          PPCTB0: .WORD -1,-1
7499 032702 177777 177777 177777          PPCTB1: .WORD -1,-1,-1,-1
7500 032710 177777
7501
7502                                     ;REPORT RO INCORRECT.
7503 032712 010037 001242          PPC10: MOV RO,@#STMP4
7504 032716 012737 032702 001240          MOV #PPCTB1,@#STMP3
7505 032724          15:
7506 032724 104377          ERROR 377
7507 032726 000011          .WORD 11
7508                                     ;RO BAD (BUT
7509 032730 000435          BR PPCDONE      ; FDST)X

```

```

7510
7511
7512 032732 012737 105555 001240 ;REPORT RESULT INCORRECT.
7513 032740 013737 032702 001242 PPC15: MOV #105555,@#STMP3 ; ST 634
7514 032746 15: MOV @#PPCTB1,@#STMP4
7515 032746 104377 15: ERROR 377
7516 032750 000012 .WORD 12
7517 ;BAD DATA
7518 032752 000424 BR PPCDONE
7520
7521 ;REPORT RESULT INCORRECT.
7522 032754 012737 177777 001240 PPC20: MOV #-1,@#STMP3 /
7523 032762 013737 032704 001242 MOV @#PPCTB1+2,@#STMP4
7524 032770 15:
7525 032770 104377 15: ERROR 377
7526 032772 000013 .WORD 13
7527 ;(BUT GR7,FL)
7528 032774 000413 BR PPCDONE ;ST 357 TO 416
7529 ;INTO 417
7530
7531 ; IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
7532 ; DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO
7533 ; TO THE SPURIOUS TRAP TO 4 HANDLER.
7534 032776 011604 PPC25: MOV (SP),R4
7535 033000 020427 032646 CMP R4,#PPC2+2
7536 033004 001402 BEQ 15
7537 033006 000137 042610 JMP @#CPSPUR
7538
7539 033012 011637 001236 15: MOV (SP),@#STMP2
7540 033016 022626 CMP (SP)+,(SP)+
7541 033020 25:
7542 033020 104377 25: ERROR 377
7543 033022 000014 .WORD 14
7544 ;(BUT FDST)+ ST634
7545
7546 033024 PPCDONE:
7547 033024 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
7548 ;SEE IF THE USER HAS EXPRESSED
7549 ;THE DESIRE TO CHANGE THE SOFTWARE
7550 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
7551 ;THE USER TYPED CONTROL G?).
7552
7553
7554
7555 ;*****
7556 ;*TEST 64 DESTINATION MODES, MODE 3 (FL=0), TEST
7557 ;*
7558 ;* THIS IS A TEST OF DESTINATION MODE 3 USING
7559 ;* THE STFPS INSTRUCTION
7560 ;*
7561 ;*****
7562 033026 000004 TST64: SCOPE
7563
7564 033030 QQC1:
7565 033030 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
  
```



```

7566 033032 012700 033134      MOV      #QQCTB0,RO      ;SET UP THE DATA BUFFER.
7567 033036 012701 000010      MOV      #10,R1
7568 033042 012720 177777      15:     MOV      #-1,(RO)+
7569 033046 077103              SOB      R1,15
7570 033050 012700 106653      MOV      #106653,RO
7571 033054 012737 033102 001236  MOV      #QQC2,@#STMP2
7572 033062 012737 033240 000004  MOV      #QQC25,@#ERRVECT ;SET UP FOR TRAPS TO VECTOR 4.
7573 033070 170100              LDFPS   RO              ;SET UP FPS.
7574 033072 012700 033150      MOV      #QQCTB2,RO
7575 033076 012710 033140      MOV      #QQCTB1,(RO)
7576
7577 033102 170230      QQC2:   STFPS   @(RO)+      ;TEST INSTRUCTION.
7578 033104 020027 033152      CMP      RO,#QQCTB2+2      ;IS RO CORRECT?
7579 033110 001021              BNE     QQC10              ;BRANCH IF NOT CORRECT.
7580 033112 023727 033140 106653  CMP      @#QQCTB1,#106653 ;IS THE RESULT CORRECT?
7581 033120 001025              BNE     QQC15              ;BRANCH IF NOT CORRECT.
7582 033122 023727 033150 033140  CMP      @#QQCTB2,#QQCTB1 ;IS THE RESULT CORRECT?
7583 033130 001032              BNE     QQC20              ;BRANCH IF NOT CORRECT.
7584 033132 000455              BR      QQCDONE
7585
7586              ;TEST DATA BUFFER:
7587 033134 177777 177777      QQC10:  .WORD   -1,-1
7588 033140 177777 177777 177777  QQC15:  .WORD   -1,-1,-1,-1
7589 033146 177777
7590 033150 177777 177777      QQC20:  .WORD   -1,-1
7591
7592              ;REPORT RO INCORRECT.
7593 033154 010037 001242      QQC10:  MOV      RO,@#STMP4
7594 033160 012737 033152 001240  MOV      #QQCTB2+2,@#STMP3
7595 033166
7596 033166 104377      15:     ERROR   377
7597 033170 000015      .WORD   15
7598
7599 033172 000435      BR      QQCDONE              ;RO BAD (BUT
7600
7601              ;REPORT RESULT INCORRECT.
7602 033174 012737 106653 001240  QQC15:  MOV      #106653,@#STMP3      ; ST 634
7603 033202 013737 033140 001242  MOV      @#QQCTB1,@#STMP4
7604 033210
7605 033210 104377      15:     ERROR   377
7606 033212 000016      .WORD   16
7607
7608 033214 000424      BR      QQCDONE              ;BAD DATA
7609
7610
7611              ;REPORT RESULT INCORRECT.
7612 033216 012737 033150 001240  QQC20:  MOV      #QQCTB2,@#STMP3      ; (BUT FDST)
7613 033224 013737 033142 001242  MOV      @#QQCTB1+2,@#STMP4
7614 033232
7615 033232 104377      15:     ERROR   377
7616 033234 000017      .WORD   17
7617 033236 000413      BR      QQCDONE
7618
7619
7620              ;IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
7621              ;DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO

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CFFPCB0 11/34 FPP DIAG PRT3          MACY11 30A(1052) 05-MAY-78 15:24 PAGE 141
CFFPCB.P11 05-MAY-78 15:23          T64      DESTINATION MODES, MODE 3 (FL=0), TEST          SEQ 0140
                                         K 11
7622                                     ; TO THE SPURIOUS TRAP TO 4 HANDLER.
7623 033240 011604                      QQC25: MOV      (SP),R4
7624 033242 020427 033104                CMP      R4,#QQC2+2
7625 033246 001402                      BEQ      15
7626 033250 000137 042610                JMP      @#CPSPUR
7627
7628 033254 011637 001236                15:     MOV      (SP),@#STMP2
7629 033260 022626                      CMP      (SP)+,(SP)+
7630 033262
7631 033262 104377                      25:     ERROR   377
7632 033264 000020                      .WORD   20
7633
7634                                     ; (BUT FDST)+ ST634
7635 033266
7636 033266 104412                      QQCDONE: RSETUP
7637
7638                                     ; GO INITIALIZE THE FPS AND STACK; AND
7639                                     ; SEE IF THE USER HAS EXPRESSED
7640                                     ; THE DESIRE TO CHANGE THE SOFTWARE
7641                                     ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
7642                                     ; THE USER TYPED CONTROL G?).
7643
7644                                     ; *****
7645                                     ; *TEST 65      DESTINATION MODES, MODE 5 (FL=0), TEST
7646                                     ; *
7647                                     ; * THIS IS A TEST OF DESTINATION MODE 5 USING
7648                                     ; * THE STFPS INSTRUCTION
7649                                     ; *
7650                                     ; *****
7651 033270 000004                      TST65:  SCOPE
7652
7653
7654                                     RRC1:
7655 033272 104413                      LPERR
7656 033274 012700 033400                MOV      #RRCTB0,RO ; SET UP THE LOOP ON ERROR ADDRESS.
7657 033300 012701 000006                MOV      #6,R1      ; SET UP THE DATA BUFFER.
7658 033304 012720 177777                15:     MOV      #-1,(RO)+
7659 033310 077103                      SOB      R1,15
7660 033312 012700 004301                MOV      #004301,RO
7661 033316 012737 033346 001236        MOV      #RRC2,@#STMP2
7662 033324 012737 033504 000004        MOV      #RRC25,@#ERRVECT ; SET UP FOR TRAPS TO VECTOR 4.
7663 033332 170100                      LDFPS   RO          ; SET UP FPS.
7664 033334 012700 033416                MOV      #RRCTB2+2,RO
7665 033340 012760 033404 177776        MOV      #RRCTB1,-2(RO)
7666
7667 033346 170250                      RRC2:  STFPS   @-(RO) ; TEST INSTRUCTION.
7668 033350 020027 033414                CMP      RO,#RRCTB2 ; IS RO CORRECT?
7669 033354 001021                      BNE     RRC10      ; BRANCH IF NOT CORRECT.
7670 033356 023727 033404 004301        CMP      @#RRCTB1,#004301 ; IS THE RESULT CORRECT?
7671 033364 001025                      BNE     RRC15      ; BRANCH IF NOT CORRECT.
7672 033366 023727 033414 033404        CMP      @#RRCTB2,#RRCTB1 ; IS THE RESULT CORRECT?
7673 033374 001032                      BNE     RRC20      ; BRANCH IF NOT CORRECT.
7674 033376 000455                      BR      RRCDONE
7675
7676                                     ; TEST DATA BUFFER:
7677 033400 177777 177777                RRCTB0: .WORD   -1,-1

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7678 033404 177777 177777 177777 RRCTB1: .WORD -1,-1,-1,-1
7679 033412 177777
7680 033414 177777 177777 RRCTB2: .WORD -1,-1
7681
7682 ;REPORT RO INCORRECT.
7683 033420 010037 001242 RRC10: MOV RO,@#STMP4
7684 033424 012737 033414 001240 MOV #RRCTB2,@#STMP3
7685 033432 15:
7686 033432 104377 ERROR 377
7687 033434 000021 .WORD 21
7688 ;RO BAD (BUT
7689 033436 000435 BR RRCDONE ; FDST)X
7690
7691 ;REPORT RESULT INCORRECT.
7692 033440 012737 004301 001240 RRC15: MOV #004301,@#STMP3 ; ST 634
7693 033446 013737 033404 001242 MOV @RRCTB1,@#STMP4
7694 033454 15:
7695 033454 104377 ERROR 377
7696 033456 000022 .WORD 22
7697 ;BAD DATA
7698 033460 000424 BR RRCDONE
7699
7700
7701 ;REPORT RESULT INCORRECT.
7702 033462 012737 033414 001240 RRC20: MOV #RRCTB2,@#STMP3 ; BUT FDST)
7703 033470 013737 033406 001242 MOV @RRCTB1+2,@#STMP4
7704 033476 15:
7705 033476 104377 ERROR 377
7706 033500 000023 .WORD 23
7707 ;(BUT GR7,FL)
7708 033502 000413 BR RRCDONE ;ST 357 TO 416
7709 ; INTO 417
7710
7711 ; IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
7712 ; DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO
7713 ; TO THE SPURIOUS TRAP TO 4 HANDLER.
7714 033504 011604 RRC25: MOV (SP),R4
7715 033506 020427 033350 CMP R4,#RRC2+2
7716 033512 001402 BEQ 15
7717 033514 000137 042610 JMP @#CPSPUR
7718
7719 033520 011637 001236 15: MOV (SP),@#STMP2
7720 033524 022626 CMP (SP)+,(SP)+
7721 033526 25:
7722 033526 104377 ERROR 377
7723 033530 000024 .WORD 24
7724 ;(BUT FDST)+ ST634
7725
7726 033532 RRCDONE:
7727 033532 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
7728 ;SEE IF THE USER HAS EXPRESSED
7729 ;THE DESIRE TO CHANGE THE SOFTWARE
7730 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
7731 ;THE USER TYPED CONTROL G?).
7732
7733
  
```

```
7734 ;*****  
7735 ;*TEST 66 DESTINATION MODES, MODE 6 (FL=0), TEST  
7736 ;*  
7737 ;* THIS IS A TEST OF DESTINATION MODE 6 USING  
7738 ;* THE STFPS INSTRUCTION  
7739 ;*  
7740 ;*****  
7741 033534 000004 TST66: SCOPE  
7742  
7743  
7744 033536 SSC1:  
7745 033536 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.  
7746 033540 012700 033650 MOV #SSCTB0,R0 ;SET UP THE DATA BUFFER.  
7747 033544 012701 000006 MOV #6,R1  
7748 033550 012720 177777 15: MOV #-1,(R0)+  
7749 033554 077103 SOB R1,15  
7750 033556 012700 102514 MOV #102514,R0  
7751 033562 012737 033606 001236 MOV #SSC2,@#STMP2  
7752 033570 012737 033750 000004 MOV #SSC25,@#ERRVECT ;SET UP FOR TRAPS TO VECTOR 4.  
7753 033576 170100 LDFPS R0 ;SET UP FPS.  
7754 033600 005001 CLR R1  
7755 033602 012700 026453 MOV #SSCTB1-5201,R0  
7756  
7757 033606 170260 005201 SSC2: STFPS 5201(R0) ;TEST INSTRUCTION.  
7758 033612 020127 000000 CMP R1,#0 ;WAS PC CORRECT AFTER EXECUTION?  
7759 033616 001070 BNE SSC30 ;BRANCH IF NOT CORRECT.  
7760 033620 020027 026453 CMP R0,#SSCTB1-5201 ;IS R0 CORRECT?  
7761 033624 001017 BNE SSC10 ;BRANCH IF NOT CORRECT.  
7762 033626 023727 033654 102514 CMP @#SSCTB1,#102514 ;IS THE RESULT CORRECT?  
7763 033634 001023 BNE SSC15 ;BRANCH IF NOT CORRECT.  
7764 033636 023727 033656 177777 CMP @#SSCTB1+2,#-1 ;IS THE RESULT CORRECT?  
7765 033644 001030 BNE SSC20 ;BRANCH IF NOT CORRECT.  
7766 033646 000456 BR SSCDONE  
7767  
7768 ;TEST DATA BUFFER:  
7769 033650 177777 177777 SSCTB0: .WORD -1,-1  
7770 033654 177777 177777 177777 SSCTB1: .WORD -1,-1,-1,-1  
7771 033662 177777  
7772  
7773 ;REPORT R0 INCORRECT.  
7774 033664 010037 001242 SSC10: MOV R0,@#STMP4  
7775 033670 012737 026453 001240 MOV #SSCTB1-5201,@#STMP3  
7776 033676 15:  
7777 033676 104377 ERROR 377  
7778 033700 000025 .WORD 25
```



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7779  
7780 033702 000440 BR SSCDONE ;RO BAD  
7781  
7782 ;REPORT RESULT INCORRECT.  
7783 033704 012737 102534 001240 SSC15: MOV #102534,@#STMP3  
7784 033712 013737 033654 001242 MOV @#SSCTB1,@#STMP4  
7785 033720 15:  
7786 033720 104377 ERROR 377  
7787 033722 000026 .WORD 26  
7788 ;BAD DATA  
7789 033724 000427 BR SSCDONE  
7790  
7791  
7792 ;REPORT RESULT INCORRECT.  
7793 033726 012737 177777 001240 SSC20: MOV #-1,@#STMP3  
7794 033734 013737 033656 001242 MOV @#SSCTB1+2,@#STMP4  
7795 033742 15:  
7796 033742 104377 ERROR 377  
7797 033744 000027 .WORD 27  
7798 ;(BUT GR7,FL)  
7799 033746 000416 BR SSCDONE ;ST 357 TO 416  
7800 ;INTO 417  
7801  
7802 ;IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED  
7803 ;DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO  
7804 ;TO THE SPURIOUS TRAP TO 4 HANDLER.  
7805 033750 011604 SSC25: MOV (SP),R4  
7806 033752 020427 033610 CMP R4,#SSC2+2  
7807 033756 001402 BEQ 15  
7808 033760 000137 042610 JMP @#CSPUR  
7809  
7810 033764 011637 001236 15: MOV (SP),@#STMP2  
7811 033770 022626 CMP (SP)+,(SP)+  
7812 033772 25:  
7813 033772 104377 ERROR 377  
7814 033774 000030 .WORD 30  
7815 ;(BUT FDST)+ ST634  
7816 033776 000402 BR SSCDONE  
7817  
7818 ;REPORT PC NOT INCREMENTED BY 2 DURING EXECUTION.  
7819 034000 SSC30:  
7820 034000 15:  
7821 034000 104377 ERROR 377  
7822 034002 000031 .WORD 31  
7823 ;PC NOT  
7824 ;INCREMENTED  
7825 ;BY 2  
7826  
7827 034004 SSCDONE:  
7828 034004 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND  
7829 ;SEE IF THE USER HAS EXPRESSED  
7830 ;THE DESIRE TO CHANGE THE SOFTWARE  
7831 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS  
7832 ;THE USER TYPED CONTROL G?).  
7833  
7834
```

```
7835 ; ; *****
7836 ; *TEST 67 DESTINATION MODES, MODE 7 (FL=0), TEST
7837 ; *
7838 ; * THIS IS A TEST OF DESTINATION MODE 7 USING
7839 ; * THE STFPS INSTRUCTION
7840 ; *
7841 ; ; *****
7842 034006 C00004 TST67: SCOPE
7843
7844 034010 TTC1:
7845 034010 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
7846 034012 012700 034130 MOV #TTCTB0,RO ;SET UP THE DATA BUFFER.
7847 034016 012701 000010 MOV #10,R1
7848 034022 012720 177777 15: MOV #-1,(RO)+
7849 034026 077103 SOB R1,15
7850 034030 012700 103747 MOV #103747,RO
7851 034034 012737 034066 001236 MOV #TTC2,@#STMP2
7852 034042 012737 034234 000004 MOV #TTC25,@#ERRVECT ;SET UP FOR TRAPS TO VECTOR 4.
7853 034050 170100 LDFPS RO ;SET UP FPS.
7854 034052 005001 CLR R1
7855 034054 012700 026743 MOV #TTCTB2-5201,RO
7856 034060 012760 034134 005201 MOV #TTCTB1,5201(RO)
7857
7858 034066 170270 005201 TTC2: STFPS @5201(RO) ;TEST INSTRUCTION.
7859 034072 022701 000000 CMP #0,R1 ;WAS PC CORRECT AFTER EXECUTION?
7860 034076 001072 BNE TTC30 ;BRANCH IF NOT CORRECT.
7861 034100 020027 026743 CMP RO,#TTCTB2-5201 ;IS RO CORRECT?
7862 034104 001021 BNE TTC10 ;BRANCH IF NOT CORRECT.
7863 034106 023727 034134 103747 CMP @#TTCTB1,#103747 ;IS THE RESULT CORRECT?
7864 034114 001025 BNE TTC15 ;BRANCH IF NOT CORRECT.
7865 034116 023727 034136 177777 CMP @#TTCTB1+2,#-1 ;IS THE RESULT CORRECT?
7866 034124 001032 BNE TTC20 ;BRANCH IF NOT CORRECT.
7867 034126 000460 BR TTCDONE
7868
7869 ;TEST DATA BUFFER:
7870 034130 177777 177777 TTCTB0: .WORD -1,-1
7871 034134 177777 177777 177777 TTCTB1: .WORD -1,-1,-1,-1
7872 034142 177777 TTCTB2: .WORD -1,-1
7873 034144 177777 177777
7874
7875 ;REPORT RO INCORRECT.
7876 034150 010037 001242 TTC10: MOV RO,@#STMP4
7877 034154 012737 026743 001240 MOV #TTCTB2-5201,@#STMP3
7878 034162 15:
7879 034162 104377 ERROR 377
7880 034164 000032 .WORD 32 ;RO BAD
7881
7882 034166 000440 BR TTCDONE
7883
7884
7885 ;REPORT RESULT INCORRECT.
7886 034170 012737 103747 001240 TTC15: MOV #103747,@#STMP3
7887 034176 013737 034134 001242 MOV @#TTCTB1,@#STMP4
7888 034204 15:
7889 034204 104377 ERROR 377
7890 034206 000033 .WORD 33
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7891 ;BAD DATA
7892 034210 000427 BR TTCDONE
7893
7894
7895 ;REPORT RESULT INCORRECT.
7896 034212 012737 177777 001240 TTC20: MOV #-1,@#STMP3
7897 034220 013737 034136 001242 MOV @#TTCTB1+2,@#STMP4
7898 034226 15:
7899 034226 104377 ERROR 377
7900 034230 000034 .WORD 34
7901 ;(BUT GR7,FL)
7902 034232 000416 BR TTCDONE ;ST 357 TO 416
7903 ;INTO 417
7904
7905 ; IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
7906 ; DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO
7907 ; TO THE SPURIOUS TRAP TO 4 HANDLER.
7908 034234 011604 TTC25: MOV (SP),R4
7909 034236 020427 034070 CMP R4,#TTC2+2
7910 034242 001402 BEQ 15
7911 034244 000137 042610 JMP @#CPSPUR
7912 034250 011637 001236 15: MOV (SP),@#STMP2
7913 034254 022626 CMP (SP)+,(SP)+
7914 25:
7915 034256 104377 ERROR 377
7916 034260 000035 .WORD 35
7917 ;(BUT FSDT)+ ST634
7918 034262 000402 BR TTCDONE
7919
7920 ;REPORT PC NOT INCREMENTED BY 2 DURING EXECUTION.
7921 034264 TTC30:
7922 034264 15:
7923 034264 104377 ERROR 377
7924 034266 000036 .WORD 36
7925 ;PC NOT
7926 ;INCREMENTED
7927 034270 TTCDONE:
7928 034270 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
7929 ;SEE IF THE USER HAS EXPRESSED
7930 ;THE DESIRE TO CHANGE THE SOFTWARE
7931 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
7932 ;THE USER TYPED CONTROL G?).
7933
7934 ;*****
7935 ;*TEST 70 DESTINATION MODES, MODE 2 (FL=1), TEST
7936 ;*
7937 ;* THIS IS A TEST OF DESTINATION MODE
7938 ;* 2 USING STCOL WITH REGISTER 0
7939 ;*
7940 ;*****
7941 034272 000004 TST70: SCOPE
7942 034274 UUC1:
7943 034274 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
7944 034276 012700 000300 MOV #300,R0 ;SET UP FPS.
7945 034302 170100 LDFPS R0
7946 034304 012700 034354 MOV #UUCTP1,R0 ;SET UP THE ACO OPERAND.
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7947 034310 172410          LDD      (RO), ACO
7948 034312 012737 034324 001236  MOV      #UUC2, @#STMP2
7949 034320 012700 034366  MOV      #UUCBFO, RO
7950
7951 034324 175420          UUC2:   STCDL   ACO, (RO)+      ; TEST INSTRUCTION.
7952
7953 034326 020027 034372          CMP      RO, #UUCBFO+4      ; IS RO CORRECT?
7954 034332 001420          BEQ      UUCDONE           ; BRANCH IF CORRECT.
7955
7956                          ; REPORT RO INCORRECT.
7957 034334 010037 001242          UUC3:   MOV      RO, @#STMP4
7958 034340 012737 034372 001240  MOV      #UUCBFO+4, @#STMP3
7959 034346
7960 034346 104377          15:    ERROR    377
7961 034350 000037          .WORD   37
7962
7963 034352 000410          BR       UUCDONE           ; RO NOT INCR BY 4
7964
7965 034354 000000 000000 000000  UUCTP1: .WORD   0, 0, 0, 0
7966 034362 000000
7967 034364 177777          -1
7968 034366 177777 177777 177777  UUCBFO: .WORD   -1, -1, -1
7969
7970 034374          UUCDONE:
7971 034374 104412          RSETUP
7972
7973                          ; GO INITIALIZE THE FPS AND STACK; AND
7974                          ; SEE IF THE USER HAS EXPRESSED
7975                          ; THE DESIRE TO CHANGE THE SOFTWARE
7976                          ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
7977                          ; THE USER TYPED CONTROL G?).
7978
7979                          ; *****
7980                          ; *TEST 71 DESTINATION MODES, MODE 4 (FL=1), TEST
7981                          ; *
7982                          ; * THIS IS A TEST OF DESTINATION MODE
7983                          ; * 4 USING STCDL WITH REGISTER 0
7984                          ; * *****
7985                          ; *****
7986 034376 000004          TST71:  SCOPE
7987
7988 034400          VVC1:
7989 034400 104413          LPERR   ; SET UP THE LOOP ON ERROR ADDRESS.
7990 034402 012700 000300          MOV      #300, RO         ; SET UP FPS.
7991 034406 170100          LDFPS   RO
7992 034410 012700 034460          MOV      #VVC1, RO       ; SET UP THE ACO OPERAND.
7993 034414 172410          LDD      (RO), ACO
7994 034416 012737 034430 001236  MOV      #VVC2, @#STMP2
7995 034424 012700 034476  MOV      #VVCBFO+4, RO
7996
7997 034430 175440          VVC2:   STCDL   ACO, -(RO)      ; TEST INSTRUCTION.
7998
7999 034432 020027 034472          CMP      RO, #VVCBFO      ; IS RO CORRECT?
8000 034436 001420          BEQ      VVCDONE
8001
8002                          ; REPORT RO INCORRECT.
8003 034440 010037 001242          VVC3:   MOV      RO, @#STMP4
8004 034444 012737 034472 001240  MOV      #VVCBFO, @#STMP3
  
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8003 034452          15:
8004 034452 104377      ERROR 377
8005 034454 000040      .WORD 40
8006                                     ;RO NOT DECR BY 4
8007 034456 000410      BR      VVCDONE
8008                                     ;TEST DATA BUFFER:
8009 034460 000000 000000 000000 VVCTP1: .WORD 0,0,0,0
8010 034466 000000
8011 034470 177777      -1
8012 034472 177777 177777 177777 VVCBFO: .WORD -1,-1,-1
8013
8014 034500          VVCDONE:
8015 034500 104412      RSETUP                                     ;GO INITIALIZE THE FPS AND STACK; AND
8016                                     ;SEE IF THE USER HAS EXPRESSED
8017                                     ;THE DESIRE TO CHANGE THE SOFTWARE
8018                                     ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
8019                                     ;THE USER TYPED CONTROL G?).
8020
8021                                     ;*****
8022                                     ;*TEST 72      STCDI AND STCDL TEST
8023                                     ;*
8024                                     ;* THIS IS A TEST OF THE STCDI AND
8025                                     ;* STCDL INSTRUCTIONS. NOTE THAT A
8026                                     ;* SUBROUTINE, STCSUB, IS USED TO
8027                                     ;* SET UP THE OPERANDS, EXECUTE THE STC
8028                                     ;* INSTRUCTION AND CHECK THE RESULT.
8029                                     ;*
8030                                     ;*****
8031 034502 000004      TST72: SCOPE
8032
8033                                     ;FIRST TEST STC WITH EXP=100 (EXCESS 200)
8034 WWC1:
8035 034504 104413      LPERR
8036 034506 004737 035652 JSR      PC,@#STCSUB ;SET UP THE LOOP ON ERROR ADDRESS.
8037 034512 020000 000000 000000 15: .WORD 20000,0,0,0 ;GO EXECUTE THE INSTRUCTION.
8038 034520 000000      ;AC0 OPERAND.
8039 034522 000000 000000 25: .WORD 0,0 ;EXPECTED RESULT.
8040 034526 177777 177777 35: .WORD -1,-1 ;ERROR RES.
8041 034532 040300      45: 40300 ;FPS BEFORE EXECUTION.
8042 034534 040304      40304 ;FPS AFTER EXECUTION.
8043 034536 140304      140304 ;ANTICIPATED ERRONEOUS FPS.
8044 034540 177777      -1 ;REPORT RESULT INCORRECT.
8045 034542 104322      55: ERROR 322 ;RESULT INCORP.
8046 034544 000401      BR      65
8047 034546 104325      ERROR 325 ;EITHER (BUT FLAG)
8048 034550      65: ;ST 662
8049                                     ;OR CLEAR FLAG
8050                                     ;ST 774
8051
8052                                     ;EXP=0 (OCT) FL=1 FIC=0
8053 WWC2:
8054 034550 104413      LPERR
8055 034552 004737 035652 JSR      PC,@#STCSUB ;SET UP THE LOOP ON ERROR ADDRESS.
8056 034556 040000 000000 000000 15: .WORD 40000,0,0,0 ;GO EXECUTE THE INSTRUCTION.
8057 034564 000000      ;AC ;AC0 OPERAND.
8058 034566 000000 000000 25: .WORD 0,0 ;EXPECTED RESULT.
  
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8059 034572 177777 177777 35: .WORD -1,-1 ; ANTICIPATED ERRONEOUS RESULT.
8060 034576 040313 45: 40313 ; FPS BEFORE EXECUTION.
8061 034600 040304 40304 ; FPS AFTER EXECUTION.
8062 034602 140304 140304 ; ANTICIPATED ERRONEOUS FPS.
8063 034604 177777 -1 ; EXPECTED FEC.
8064 034606 104322 55: ERROR 322 ; REPORT RESULT INCORRECT.
8065 034610 000401 BR 65
8066 034612 104326 65: ERROR 326 ; REPORT FPS INCORRECT.
8067 034614
8068
8069 ; EXP=37 (OCT) FL=1 FIC=1
8070 034614 WWC4:
8071 034614 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
8072 034616 004737 035652 JSR PC, @#STCSUB ; GO EXECUTE THE INSTRUCTION.
8073 034622 047667 075757 157737 15: .WORD 47667,75757,157737,167773 ; ACO OPERAND.
8074 034630 167773
8075 034632 055675 173757 25: .WORD 55675,173757 ; EXPECTED RESULT.
8076 034636 122102 004021 35: .WORD 122102,004021 ; ANTICIPATED ERRONEOUS RESULT.
8077 034642 040717 45: 40717 ; FPS BEFORE EXECUTION.
8078 034644 040700 40700 ; FPS AFTER EXECUTION.
8079 034646 140705 140705 ; ANTICIPATED ERRONEOUS FPS.
8080 034650 177777 -1 ; EXPECTED FEC.
8081 034652 104327 55: ERROR 327 ; (BUT ENBT) ST 632
8082 034654 000401 BR 65
8083 034656 104326 65: ERROR 326 ; REPORT FPS INCORRECT.
8084 034660
8085
8086 ; EXP=40 (OCT) FL=1 FIC=1
8087 034660 WWC5:
8088 034660 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
8089 034662 004737 035652 JSR PC, @#STCSUB ; GO EXECUTE THE INSTRUCTION.
8090 034666 050000 000000 000000 15: .WORD 50000,0,0,0 ; ACO OPERAND.
8091 034674 000000
8092 034676 000000 000000 25: .WORD 0,0 ; EXPECTED RESULT.
8093 034702 177777 177777 35: .WORD -1,-1 ; ANTICIPATED ERRONEOUS RESULT.
8094 034706 040700 45: 40700 ; FPS BEFORE EXECUTION.
8095 034710 140705 140705 ; FPS AFTER EXECUTION.
8096 034712 040705 40705 ; ANTICIPATED ERRONEOUS FPS.
8097 034714 000006 6 ; EXPECTED FEC.
8098 034716 104322 55: ERROR 322 ; REPORT RESULT INCORRECT.
8099 034720 000401 BR 65
8100 034722 104330 65: ERROR 330 ; (BUT FIC) ST 004 ; REPORT FPS INCORRECT.
8101 ; TO 305 INTO
8102 034724 ; 315
8103
8104 ; EXP=40 (OCT) FL=1 FIC=0
8105 034724 WWC6:
8106 034724 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
8107 034726 004737 035652 JSR PC, @#STCSUB ; GO EXECUTE THE INSTRUCTION.
8108 034732 050000 000000 000000 15: .WORD 50000,0,0,0 ; ACO OPERAND.
8109 034740 000000
8110 034742 000000 000000 25: .WORD 0,0 ; EXPECTED RESULT.
8111 034746 177777 177777 35: .WORD -1,-1 ; ANTICIPATED ERRONEOUS RESULT.
8112 034752 040312 45: 40312 ; FPS BEFORE EXECUTION.
8113 034754 040305 40305 ; FPS AFTER EXECUTION.
8114 034756 140305 140305 ; ANTICIPATED ERRONEOUS FPS.
    
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8171
8172 ;EXP=20 (OCT) FL=0 FIC=1
8173 035144 WWC10:
8174 035144 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
8175 035146 004737 035652 JSR PC,@#STCSUB ;GO EXECUTE THE INSTRUCTION.
8176 035152 044000 000000 000000 15: .WORD 44000,0,0,0 ;ACO OPERAND.
8177 035160 000000
8178 035162 000000 177777 25: .WORD 0,-1 ;EXPECTED RESULT.
8179 035166 177777 177777 35: .WORD -1,-1 ;ANTICIPATED ERRONEOUS RESULT.
8180 035172 040600 45: 40600 ;FPS BEFORE EXECUTION.
8181 035174 140605 140605 ;FPS AFTER EXECUTION.
8182 035176 040600 40600 ;ANTICIPATED ERRONEOUS FPS.
8183 035200 000006 6 ;EXPECTED FEC.
8184 035202 104322 55: ERROR 322 ;REPORT RESULT INCORRECT.
8185 035204 000401 BR 65
8186 035206 104334 ERROR 334 ;BAD CONSTANT ST 066
8187 035210 65:
8188
8189 ;EXP=10 (OCT), AC NEGATIVE, FL=0, FIC=1
8190 035210 WWC11:
8191 035210 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
8192 035212 004737 035652 JSR PC,@#STCSUB ;GO EXECUTE THE INSTRUCTION.
8193 035216 142000 000000 000000 15: .WORD 142000,0,0,0 ;ACO OPERAND.
8194 035224 000000
8195 035226 177600 177777 25: .WORD 177600,-1 ;EXPECTED RESULT.
8196 035232 000200 000000 35: .WORD 200,0 ;ANTICIPATED ERRONEOUS RESULT.
8197 035236 040600 45: 40600 ;FPS BEFORE EXECUTION.
8198 035240 040610 40610 ;FPS AFTER EXECUTION.
8199 035242 040600 40600 ;ANTICIPATED ERRONEOUS FPS.
8200 035244 177777 -1 ;EXPECTED FEC.
8201 035246 104335 55: ERROR 335 ;(BUT ENBT) ST 632
8202 035250 000401 BR 65
8203 035252 104336 ERROR 336 ;(SET FN) ST 473
8204 035254 65:
8205
8206 ;EXP=37 (OCT), FL=1, FIC=1, AC NEG.
8207 035254 WWC12:
8208 035254 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
8209 035256 004737 035652 JSR PC,@#STCSUB ;GO EXECUTE THE INSTRUCTION.
8210 035262 147600 000000 000000 15: .WORD 147600,0,0,0 ;ACO OPERAND.
8211 035270 000000
8212 035272 140000 000000 25: .WORD 140000,0 ;EXPECTED RESULT.
8213 035276 137777 000000 35: .WORD 137777,0 ;ANTICIPATED ERRONEOUS RESULT.
8214 035302 040700 45: 40700 ;FPS BEFORE EXECUTION.
8215 035304 040710 40710 ;FPS AFTER EXECUTION.
8216 035306 177777 -1 ;ANTICIPATED ERRONEOUS FPS.
8217 035310 177777 -1 ;EXPECTED FEC.
8218 035312 104337 55: ERROR 337 ;(BUT COUT) ST 375
8219 035314 000401 BR 65 ;ST 275 TO 074
8220 035316 104323 ERROR 323 ;INTO 274
8221 035320 65:
8222
8223 ;EXP=37 (OCT), FL=1, FIC=1, AC NEG
8224 035320 WWC13:
8225 035320 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
8226 035322 004737 035652 JSR PC,@#STCSUB ;GO EXECUTE THE INSTRUCTION.
```



8227 035326 147600 000000 001000 15: . WORD 147600,0,1000,0 ;ACO OPERAND.  
8228 035334 000000  
8229 035336 137777 177777 25: . WORD 137777,177777 ; EXPECTED RESULT.  
8230 035342 140000 177777 35: . WORD 140000,177777 ; ANTICIPATED ERRONEOUS RESULT.  
8231 035346 040707 45: 40707 ; FPS BEFORE EXECUTION.  
8232 035350 040710 40710 ; FPS AFTER EXECUTION.  
8233 035352 177777 -1 ; ANTICIPATED ERRONEOUS FPS.  
8234 035354 177777 -1 ; EXPECTED FEC.  
8235 035356 104340 55: ERROR 340 ; (BUT COUT) ST 375  
8236 035360 000401 BR 65 ; TO 274 INTO 074  
8237 035362 104323 ERROR 323 ; REPORT FPS INCORRECT.  
8238 035364 65:  
8239  
8240 ; EXP=41 (OCT), AC NEG, FL=1, FIC=1  
8241 035364 WWC14:  
8242 035364 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.  
8243 035366 004737 035652 JSR PC,@#STCSUB ; GO EXECUTE THE INSTRUCTION.  
8244 035372 150200 000000 000000 15: . WORD 150200,0,0,0 ; ACO OPERAND.  
8245 035400 000000  
8246 035402 000000 000000 25: . WORD 0,0 ; EXPECTED RESULT.  
8247 035406 177777 177777 35: . WORD -1,-1 ; ANTICIPATED ERRONEOUS RESULT.  
8248 035412 040700 45: 40700 ; FPS BEFORE EXECUTION.  
8249 035414 140705 140705 ; FPS AFTER EXECUTION.  
8250 035416 177777 -1 ; ANTICIPATED ERRONEOUS FPS.  
8251 035420 000006 6 ; EXPECTED FEC.  
8252 035422 104322 55: ERROR 322 ; REPORT RESULT INCORRECT.  
8253 035424 000401 BR 65  
8254 035426 104341 ERROR 341 ; (BUT EZBT) ST 377  
8255 035430 65:  
8256 ; EXP=40 (OCT), AC NEG, FL=1, FIC=1  
8257 035430 WWC15:  
8258 035430 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.  
8259 035432 004737 035652 JSR PC,@#STCSUB ; GO EXECUTE THE INSTRUCTION.  
8260 035436 150000 000001 000000 15: . WORD 150000,1,0,0 ; ACO OPERAND.  
8261 035444 000000  
8262 035446 000000 000000 25: . WORD 0,0 ; EXPECTED RESULT.  
8263 035452 100000 177600 35: . WORD 100000,-200 ; ANTICIPATED ERRONEOUS RESULT.  
8264 035456 040700 45: 40700 ; FPS BEFORE EXECUTION.  
8265 035460 140705 140705 ; FPS AFTER EXECUTION.  
8266 035462 040700 40700 ; ANTICIPATED ERRONEOUS FPS.  
8267 035464 000006 6 ; EXPECTED FEC.  
8268 035466 104342 55: ERROR 342 ; (BUT COUT) ST 360  
8269 035470 000401 BR 65 ; TO 654 INTO 454  
8270 035472 104323 ERROR 323 ; REPORT FPS INCORRECT.  
8271 035474 65:  
8272  
8273 ; EXP=40, AC NEGATIVE, FL=1, FIC=1  
8274 035474 WWC16:  
8275 035474 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.  
8276 035476 004737 035652 JSR PC,@#STCSUB ; GO EXECUTE THE INSTRUCTION.  
8277 035502 150001 000000 000000 15: . WORD 150001,0,0,0 ; ACO OPERAND.  
8278 035510 000000  
8279 035512 000000 000000 25: . WORD 0,0 ; EXPECTED RESULT.  
8280 035516 077400 000000 35: . WORD 77400,0 ; ANTICIPATED ERRONEOUS RESULT.  
8281 035522 040700 45: 40700 ; FPS BEFORE EXECUTION.  
8282 035524 140705 140705 ; FPS AFTER EXECUTION.

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8283 035526 177777          -1          ; ANTICIPATED ERRONEOUS FPS.
8284 035530 000006          6          ; EXPECTED FEC.
8285 035532 104343          55:      ERROR    343          ; REPORT RESULT INCORRECT.
8286 035534 000401          BR        65
8287 035536 104323          ERROR    323          ; REPORT FPS INCORRECT.
8288 035540
8289
8290
8291          ; EXP 40      (OCT), AC MOST NEG LONG INT, FL=1
8292          ; FIC=1
8293 035540          WWC17:
8294 035540 104413          LPERR          ; SET UP THE LOOP ON ERROR ADDRESS.
8295 035542 004737 035652  JSR      PC, @#STCSUB ; GO EXECUTE THE INSTRUCTION.
8296 035546 150000 000000 000000 15:      .WORD    150000, 0, 0, 0 ; ACO OPERAND.
8297 035554 000000
8298 035556 100000 000000 25:      .WORD    100000, 0          ; EXPECTED RESULT.
8299 035562 000000 000000 35:      .WORD    0, 0          ; ANTICIPATED ERRONEOUS RESULT.
8300 035566 040700          45:      40700          ; FPS BEFORE EXECUTION.
8301 035570 040710          40710          ; FPS AFTER EXECUTION.
8302 035572 140705          140705          ; ANTICIPATED ERRONEOUS FPS.
8303 035574 177777          -1          ; EXPECTED FEC.
8304 035576 104344          55:      ERROR    344          ; (BUT NBIT) ST 654
8305 035600 000401          BR        65          ; OR (BUT COUT) ST 454
8306 035602 104323          ERROR    323          ; REPORT FPS INCORRECT.
8307 035604
8308
8309          ; EXP=20, AC = MOST NEG INTEGER, FL=0, FIC=1
8310
8311 035604          WWC18:
8312 035604 104413          LPERR          ; SET UP THE LOOP ON ERROR ADDRESS.
8313 035606 004737 035652  JSR      PC, @#STCSUB ; GO EXECUTE THE INSTRUCTION.
8314 035612 144000 000001 000000 15:      .WORD    144000, 1, 0, 0 ; ACO OPERAND.
8315 035620 000000
8316 035622 100000 177777 25:      .WORD    100000, -1          ; EXPECTED RESULT.
8317 035626 100000 177400 35:      .WORD    100000, 177400      ; ANTICIPATED ERRONEOUS RESULT.
8318 035632 040600          45:      40600          ; FPS BEFORE EXECUTION.
8319 035634 040610          40610          ; FPS AFTER EXECUTION.
8320 035636 140605          140605          ; ANTICIPATED ERRONEOUS FPS.
8321 035640 177777          -1          ; EXPECTED FEC.
8322 035642 104345          55:      ERROR    345          ; (BUT FL) ST 633
8323 035644 000401          BR        65          ; TO 655 INTO 654
8324 035646 104323          ERROR    323          ; REPORT FPS INCORRECT.
8325
8326 035650 000534          65:      BR        WWC00NE
8327
8328          ; THIS SUBROUTINE, STCSUB, IS USED TO SET UP THE OPERANDS, EXECUTE
8329          ; THE STCDI OR STCDL INSTRUCTION AND CHECK THE RESULTS. A CALL
8330          ; TO IT IS MADE THUS:
8331          ;
8332          ; JSR      PC, @#STCSUB
8333          ; ACARG:  .WORD    X, X, X, X          ; AC OPERAND
8334          ; RES:      .WORD    X, X          ; EXPECTED RESULT
8335          ; ERRES:   .WORD    X, X          ; ERROR RESULT
8336          ; FPSB:    .WORD    X          ; FPS BEFORE EXECUTION
8337          ; FPSA:    .WORD    X          ; FPS AFTER EXECUTION
8338          ; ERFPS:  .WORD    X          ; ERROR FPS.

```



```

8339      ;
8340      ;
8341      ;
8342      ;
8343      ;
8344      ;
8345      ;
8346      ;
8347      ;
8348      ;
8349      ;
8350      ;
8351      ;
8352      ;
8353      ;
8354      ;
8355      ;
8356      ;
8357      ;
8358      ;
8359      ;
8360 035652 012601      STCSUB: MOV      (SP)+, R1      ; GET A POINTER TO THE ARGUMENTS.
8361 035654 012700 000200      MOV      #200, R0      ; SET UP THE ACO OPERAND.
8362 035660 170100      LDFPS   RO
8363 035662 010100      MOV      R1, R0
8364 035664 172410      LDD     (R0), ACO
8365 035666 012702 036132      MOV      #STCIBF, R2      ; INITIALIZE THE OUT PUT BUFFER.
8366 035672 012700 000004      MOV      #4, R0
8367 035676 012722 177777      15:     MOV      #-1, (R2)+
8368 035702 077003      SOB     RO, 15
8369 035704 016100 000020      MOV      20(R1), R0      ; SET THE FPS.
8370 035710 170100      LDFPS   RO
8371 035712 012737 035724 001236      MOV      #25, @#STMP2
8372 035720 012700 036132      MOV      #STCIBF, R0
8373 035724 175410      25:     STCOL   ACO, (R0)      ; TEST INSTRUCTION.
8374
8375 035726 170204      STFPS   R4      ; GET THE FPS.
8376 035730 170305      STST   R5      ; GET THE FEC.
8377 035732 010102      MOV      R1, R2
8378 035734 010237 001240      MOV      R2, @#STMP3
8379 035740 062702 000010      ADD     #10, R2
8380 035744 010237 001244      MOV      R2, @#STMP5
8381 035750 012737 036132 001242      MOV      #STCIBF, @#STMP4
8382 035756 010437 001250      MOV      R4, @#STMP7
8383 035762 016137 000022 001252      MOV      22(R1), @#STMP10
8384 035770 010102      MOV      R1, R2
8385 035772 062702 000010      ADD     #10, R2
8386 035776 012700 036132      MOV      #STCIBF, R0      ; SEE IF THE RESULT IS CORRECT.
8387 036002 012703 000002      MOV      #2, R3
8388 036006 022022      35:     CMP     (R0)+, (R2)+
8389 036010 001014      BNE     155
8390 036012 077303      SOB     R3, 35
8391 036014 016102 000022      MOV      22(R1), R2
8392 036020 020204      CMP     R2, R4      ; SEE IF THE FPS IS CORRECT.
8393 036022 001025      BNE     205      ; BRANCH IF INCORRECT.
8394 036024 005702      TST     R2
  
```

```

FEC:      WORD      X      ; EXPECTED FEC
ERR1:     ERROR     X      ; DATA ERROR.
          BR        CONT
ERR2:     ERROR     X      ; FPS ERROR.
CONT:
          ; RETURN ADDRESS
  
```

```

; THE OPERANDS ARE SET UP (USING ACO AS THE ACCUMULATOR). THEN
; THE STCDI OR STCDL INSTRUCTION IS EXECUTED.
; THE RESULT IS CHECKED AGAINST RES. IF THE RESULT IS CORRECT THEN THE FPS IS
; COMPARED WITH FPSA IF THIS TOO IS CORRECT STCSUB RETURNS CONTROL
; TO THE CALLING ROUTINE AT CONT. IF THE FPS IS BAD STCSUB
; COMPARE IT TO ERROR FPS. IF THIS MATCHES THEN STCSUB WILL RETURN
; TO THE ERROR CALL AT ERR2, OTHERWISE STCSUB ITSELF
; REPORTS THIS FAILURE AND THEN RETURNS TO CONT. IF THE RESULT OF THE
; STCDI OR STCDL IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
; ANTICIPATED FAILING DATA PATTERN, ERRES. IF THE FAILURE IN
; THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN STCSUB
; WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1. OTHERWISE THE
; RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND STCSUB WILL
; REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT.
  
```

8395 036026 100003  
8396 036030 026105 000026  
8397 036034 001027  
8398  
8399 036036 000161 000036  
8400  
8401  
8402 036042 010102  
8403 036044 062702 000014  
8404 036050 012700 036132  
8405 036054 012703 000002  
8406 036060 022022  
8407 036062 001003  
8408 036064 077303  
8409 036066 000161 000030  
8410 036072  
8411  
8412 036072 104322  
8413 036074 000760  
8414  
8415  
8416 036076 020461 000024  
8417 036102 001002  
8418 036104 000161 000034  
8419 036110  
8420  
8421 036110 104323  
8422 036112 000751  
8423  
8424  
8425 036114 016137 000026 001256  
8426 036122 010537 001254  
8427 036126 104324  
8428 036130 000742  
8429  
8430  
8431 036132 177777 177777 177777  
8432 036140 177777  
8433  
8434 036142  
8435 036142 104412  
8436  
8437  
8438  
8439  
8440  
8441  
8442  
8443  
8444  
8445  
8446  
8447  
8448  
8449  
8450 036144 000004

BPL 45  
CMP 26(R1),R5 ;SEE IF THE FEC IS CORRECT.  
BNE 255 ;BRANCH IF INCORRECT.  
45: JMP 36(R1) ;RETURN.  
;DATA ERROR:  
;SEE IF THE FAILURE WAS ANTICIPATED.  
155: MOV R1,R2  
ADD #14,R2  
MOV #STCIBF,RO  
MOV #2,R3  
165: CMP (RO)+,(R2)+  
BNE 175  
SOB R3,165  
JMP 30(R1)  
175:  
;FAILURE WAS NOT ANTICIPATED SO REPORT INCORRECT RESULT HERE.  
185: ERROR 322 ;DATA BAD  
BR 45  
;FPS INCORRECT, SO SEE IF FAILURE WAS ANTICIPATED.  
205: CMP R4,24(R1)  
BNE 215  
JMP 34(R1)  
215:  
;NOT ANTICIPATED SO REPORT BAD FPS HERE.  
225: ERROR 323 ;FPS BAD  
BR 45  
;REPORT INCORRECT FEC.  
255: MOV 26(R1),@#STMP12  
MOV R5,@#STMP11  
265: ERROR 324  
BR 45  
;DATA BUFFER:  
STCIBF: .WORD -1,-1,-1,-1  
WWCDONE:  
RSETUP ;GO INITIALIZE THE FPS AND STACK; AND  
;SEE IF THE USER HAS EXPRESSED  
;THE DESIRE TO CHANGE THE SOFTWARE  
;VIRTUAL CONSOLE SWITCH REGISTER (HAS  
;THE USER TYPED CONTROL G?).  
;\*\*\*\*\*  
;\*TEST 73 STCFL AND STCFI TEST  
;\* THIS IS A TEST OF STCFL AND STCFI. IT  
;\* MAKES USE OF THE SAME SUBROUTINE, STCSUB,  
;\* WHICH WAS USED TO TEST STCDL AND STCDI.  
;\*\*\*\*\*  
TST73: SCOPE



```

8451
8452
8453 ; EXPONENT=37, FL=1
8454 036146 XXC1:
8455 036146 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
8456 036150 004737 035652 JSR PC, @#STCSUB ; GO EXECUTE THE INSTRUCTION.
8457 036154 047777 177777 177777 15: . WORD 47777, -1, -1, -1 ; ACO OPERAND.
8458 036162 177777
8459 036164 077777 177600 25: . WORD 77777, 177600 ; EXPECTED RESULT.
8460 036170 077777 177777 35: . WORD 77777, 177777 ; ANTICIPATED ERRONEOUS RESULT.
8461 036174 040100 45: 40100 ; FPS BEFORE EXECUTION.
8462 036176 040100 40100 ; FPS AFTER EXECUTION.
8463 036200 177777 -1 ; ANTICIPATED ERRONEOUS FPS.
8464 036202 177777 -1 ; EXPECTED FEC.
8465 036204 104346 55: ERROR 346 ; X11(1,0)+0 ST 773X
8466 036206 000401 BR 65
8467 036210 104323 ERROR 323 ; REPORT FPS INCORRECT.
8468 036212
8469
8470 036212 XXCDONE:
8471 036212 104412 RSETUP ; GO INITIALIZE THE FPS AND STACK; AND
8472 ; SEE IF THE USER HAS EXPRESSED
8473 ; THE DESIRE TO CHANGE THE SOFTWARE
8474 ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
8475 ; THE USER TYPED CONTROL G?).
8476
8477
8478 ; *****
8479 ; *TEST 74 STEXP TEST
8480 ; *
8481 ; * THIS IS A TEST OF THE STEXP
8482 ; * INSTRUCTION
8483 ; *
8484 ; *****
8485 036214 000004 TST74: SCOPE
8486
8487 ; EXP = 100 (EXCESS 200)
8488 036216 YYC1:
8489 036216 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
8490 036220 004737 036504 JSR PC, @#STXSUB
8491 036224 020000 000000 000000 15: . WORD 20000, 0, 0, 0 ; AC
8492 036232 000000
8493 036234 177700 25: -100 ; EXP RES
8494 036236 052525 35: 52525 ; ERROR EXP.
8495 036240 040000 45: 40000 ; FPSB
8496 036242 040010 40010 ; FPSA
8497 036244 040000 40000 ; ERROR FPS
8498 036246 104347 55: ERROR 347 ; BAD EXP
8499 036250 000401 BR 65
8500 036252 104352 ERROR 352 ; +(BUT ENBT) ST 376
8501 036254
8502
8503 ; EXP = 200 (EXCESS 200)
8504 036254 YYC2:
8505 036254 104413 LPERR ; SET UP THE LOOP ON ERROR ADDRESS.
8506 036256 004737 036504 JSR PC, @#STXSUB ; GO EXECUTE THE INSTRUCTION.
  
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8507 036262 040000 000000 000000 15: .WORD 40000,0,0,0 ;ACO OPERAND.
8508 036270 000000
8509 036272 000000 25: 0 ;EXPECTED EXPONENT RESULT.
8510 036274 052525 35: 52525 ;ANTICIPATED ERRONEOUS RESULT.
8511 036276 040000 45: 40000 ;FPS BEFORE EXECUTION.
8512 036300 040004 ;FPS AFTER EXECUTION.
8513 036302 040000 40000 ;ANTICIPATED ERRONEOUS FPS.
8514 036304 104347 55: ERROR 347 ;REPORT RESULT INCORRECT.
8515 036306 000401 BR 65
8516 036310 104353 ERROR 353 ;(BUT EZBT) ST 071
8517 ;TO 072 INT 272
8518 036312 65:
8519
8520 ; EXP = 201 (EXCESS 200)
8521
8522 036312 YYC3:
8523 036312 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
8524 036314 004737 036504 JSR PC,@#STXSUB ;GO EXECUTE THE INSTRUCTION.
8525 036320 040200 000000 000000 15: .WORD 40200,0,0,0 ;ACO OPERAND.
8526 036326 000000
8527 036330 000001 25: 1 ;EXPECTED EXPONENT RESULT.
8528 036332 052525 35: 52525 ;ANTICIPATED ERRONEOUS RESULT.
8529 036334 040000 45: 40000 ;FPS BEFORE EXECUTION.
8530 036336 040000 40000 ;FPS AFTER EXECUTION.
8531 036340 040004 ;ANTICIPATED ERRONEOUS FPS.
8532 036342 104347 55: ERROR 347 ;REPORT RESULT INCORRECT.
8533 036344 000401 BR 65
8534 036346 104354 ERROR 354 ;(BUT EZBT) ST 071
8535 036350 65: ;TO 272 INTO 072
8536
8537 ; EXP = 375 (EXCESS 200)
8538
8539 036350 YYC4:
8540 036350 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
8541 036352 004737 036504 JSR PC,@#STXSUB ;GO EXECUTE THE INSTRUCTION.
8542 036356 077200 000000 000000 15: .WORD 77200,0,0,0 ;ACO OPERAND.
8543 036364 000000
8544 036366 000175 25: 175 ;EXPECTED EXPONENT RESULT.
8545 036370 052525 35: 52525 ;ANTICIPATED ERRONEOUS RESULT.
8546 036372 040000 45: 40000 ;FPS BEFORE EXECUTION.
8547 036374 040000 40000 ;FPS AFTER EXECUTION.
8548 036376 040010 40010 ;ANTICIPATED ERRONEOUS FPS.
8549 036400 104347 55: ERROR 347 ;REPORT RESULT INCORRECT.
8550 036402 000401 BR 65
8551 036404 104355 ERROR 355 ;(BUT ENBT) ST 376
8552 036406 65: ;TO 471 INTO 071
8553
8554 ; EXP = 1 (EXCESS 200)
8555
8556 036406 YYC5:
8557 036406 104413 LPERR ;SET UP THE LOOP ON ERROR ADDRESS.
8558 036410 004737 036504 JSR PC,@#STXSUB ;GO EXECUTE THE INSTRUCTION.
8559 036414 000200 000000 000000 15: .WORD 200,0,0,0 ;ACO OPERAND.
8560 036422 000000
8561 036424 177601 25: -177 ;EXPECTED EXPONENT RESULT.
8562 036426 052525 35: 52525 ;ANTICIPATED ERRONEOUS RESULT.
  
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8563 036430 040000      45:      40000      ;FPS BEFORE EXECUTION.
8564 036432 040010      ;FPS AFTER EXECUTION.
8565 036434 040000      ;ANTICIPATED ERRONEOUS FPS.
8566 036436 104347      55:      ERROR      347      ;REPORT RESULT INCORRECT.
8567 036440 000401      BR          65
8568 036442 104352      ;REPORT FPS INCORRECT.
8569 036444      65:
8570
8571      ; EXP = 156 (EXCESS 200)
8572
8573 036444      YYC6:
8574 036444 104413      LPERR      ;SET UP THE LOOP ON ERROR ADDRESS.
8575 036446 004737 036504 JSR      PC,@#STXSUB ;GO EXECUTE THE INSTRUCTION.
8576 036452 033400 000000 000000 15:      .WORD     33400,0,0,0 ;AC0 OPERAND.
8577 036460 000000
8578 036462 177756      25:      -22          ;EXPECTED EXPONENT RESULT.
8579 036464 052525      35:      52525      ;ANTICIPATED ERRONEOUS RESULT.
8580 036466 047707      45:      47707      ;FPS BEFORE EXECUTION.
8581 036470 047710      ;FPS AFTER EXECUTION.
8582 036472 177777      -1        ;ANTICIPATED ERRONEOUS FPS.
8583 036474 104347      55:      ERROR      347      ;REPORT RESULT INCORRECT.
8584 036476 000401      BR          65
8585 036500 104350      ;REPORT FPS INCORRECT.
8586
8587 036502 000510      65:      BR          YYCDONE
8588
8589      ;THIS SUBROUTINE, STXSUB, IS USED TO SET UP THE OPERANDS, EXECUTE
8590      ;THE STEXP INSTRUCTION AND CHECK THE RESULTS. A CALL
8591      ;TO IT IS MADE THUS:
8592      ;
8593      ;
8594      ;      JSR      PC,@#STXSUB
8595      ;      ACARG:  .WORD     X,X,X,X      ;AC OPERAND
8596      ;      RES:    .WORD     X          ;EXPECTED RESULT
8597      ;      ERRES:  .WORD     X          ;ERROR RESULT
8598      ;      FPSB:   .WORD     X          ;FPS BEFORE EXECUTION
8599      ;      FPSA:   .WORD     X          ;FPS AFTER EXECUTION
8600      ;      ERFPS:  .WORD     X          ;ERROR FPS.
8601      ;      ERR1:   ERROR    X          ;DATA ERROR.
8602      ;      BR      CONT
8603      ;      ERR2:   ERROR    X          ;FPS ERROR.
8604      ;      CONT:   ;RETURN ADDRESS
8605      ;
8606      ;THE OPERANDS ARE SET UP (USING AC0 AS THE ACCUMULATOR). THEN
8607      ;THE STEXP INSTRUCTION IS EXECUTED.
8608      ;THE RESULT IS CHECKED AGAINST RES. IF THE RESULT IS CORRECT THEN THE FPS IS
8609      ;COMPARED WITH FPSA IF THIS TOO IS CORRECT STXSUB RETURNS CONTROL
8610      ;TO THE CALLING ROUTINE AT CONT. IF THE FPS IS BAD STXSUB
8611      ;COMPARE IT TO ERROR FPS. IF THIS MATCHES THEN STXSUB WILL RETURN
8612      ;TO THE ERROR CALL AT ERR2, OTHERWISE STXSUB ITSELF
8613      ;REPORTS THIS FAILURE AND THEN RETURNS TO CONT. IF THE RESULT OF THE
8614      ;STEXP IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
8615      ;ANTICIPATED FAILING DATA PATTERN, ERRES. IF THE FAILURE IN
8616      ;THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN STXSUB
8617      ;WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1. OTHERWISE THE
8618      ;RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND STXSUB WILL
      ;REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT.

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8619
8620 036504 012601          STXSUB: MOV      (SP)+,R1          ;GET A POINTER TO THE ARGUMENTS.
8621 036506 010102          MOV      R1,R2
8622 036510 010237 001240    MOV      R2,@#STMP3
8623 036514 062702 000010    ADD      #10,R2
8624 036520 012237 001244    MOV      (R2)+,@#STMP5
8625 036524 012737 036572 001236  MOV      #15,@#STMP2
8626 036532 012737 123456 036712  MOV      #123456,@#STXBF
8627 036540 012737 076543 036714  MOV      #76543,@#STXBF+2
8628 036546 012700 000200    MOV      #200,R0
8629 036552 170100          LDFPS   R0
8630 036554 010100          MOV      R1,R0          ;SET UP THE ACO OPERAND.
8631 036556 172410          LDD      (R0),ACO
8632 036560 016100 000016    MOV      16(R1),R0      ;SET THE FPS.
8633 036564 170100          LDFPS   R0
8634 036566 012700 036712    MOV      #STXBF,R0
8635 036572 175010          15:    STEXP  ACO,(R0)      ;TEST INSTRUCTION.
8636 036574 170204          STFPS   R4              ;GET FPS.
8637 036576 010437 001250    MOV      R4,@#STMP7
8638 036602 016137 000016 001252  MOV      16(R1),@#STMP10
8639 036610 013737 036712 001242  MOV      @#STXBF,@#STMP4
8640 036616 026137 000010 036712  CMP      10(R1),@#STXBF ;WAS RESULT CORRECT?
8641 036624 001411          BEQ      55              ;BRANCH IF CORRECT.
8642 036626 026137 000012 036712  CMP      12(R1),@#STXBF ;OTHERWISE SEE IF THE FAILURE WAS ANTICIPATED.
8643 036634 001002          BNE      25
8644 036636 000161 000022    JMP      22(R1)
8645
8646          ; IF NOT ANTICIPATED REPORT ERROR HERE.
8647 036642          25:
8648 036642 104347          35:    ERROR  347          ;EXP BAD
8649 036644 000161 000030    45:    JMP      30(R1)
8650
8651 036650 020461 000016    55:    CMP      R4,16(R1)      ;SEE IF THE FPS IS CORRECT.
8652 036654 001407          BEQ      105            ;BRANCH IF CORRECT.
8653 036656 020461 000020    CMP      R4,20(R1)      ;SEE IF THE FAILURE WAS ANTICIPATED.
8654 036662 001002          BNE      65
8655 036664 000161 000026    JMP      26(R1)
8656
8657          ;FPS ERROR WAS NOT ANTICIPATED SO REPORT ERROR HERE.
8658 036670          65:
8659 036670 104350          75:    ERROR  350          ;FPS BAD
8660 036672 000764          BR      45
8661
8662          ;SEE IF MORE THAN ONE WORD WAS WRITTEN IN THE OUTPUT BUFFER.
8663 036674 022737 076543 036714 105:    CMP      #76543,@#STXBF+2
8664 036702 001760          BEQ      45
8665 036704 104351          115:   ERROR  351          ;FDL+0 ST 347X
8666 036706 000756          BR      45
8667
8668 036710 177777          -1
8669 036712 177777 177777 177777  STXBF: .WORD  -1,-1,-1,-1,-1
8670 036720 177777 177777
8671
8672 036724          YYCDONE:
8673 036724 104412          RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
8674          ;SEE IF THE USER HAS EXPRESSED
  
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8675                                     ; THE DESIRE TO CHANGE THE SOFTWARE
8676                                     ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
8677                                     ; THE USER TYPED CONTROL G?).
8678
8679                                     ; *****
8680                                     ; *TEST 75      STST TEST
8681                                     ; *
8682                                     ; * THIS IS A TEST OF THE STST
8683                                     ; * INSTRUCTION.  FIRST AN ILLEGAL FPS OP CODE
8684                                     ; * (INSTRUCTION) IS USED TO ENTER AN
8685                                     ; * ERROR CONDITION IN THE FEC AND
8686                                     ; * FEA.  THE STST IS EXECUTED AND
8687                                     ; * THE FEC AND FEA ARE CHECKED
8688                                     ; *
8689                                     ; *****
8690 036726 000004                       TST75: SCOPE
8691
8692 036730                               ZZC1:
8693 036730 104413                       LPERR                               ; SET UP THE LOOP ON ERROR ADDRESS.
8694 036732 012700 040000                MOV      #40000,RO                 ; SET FPS. FID=1.
8695 036736 170100                       LDFPS   RO
8696
8697 036740 170003                       ZZC2: .WORD 170003                ; ILLEGAL FPP
8698                                     ; OP CODE
8699 036742 012700 037116                 MOV      #ZZCBF,RO                ; SET UP THE OUTPUT BUFFER.
8700 036746 012710 177777                 MOV      #-1,(RO)
8701 036752 012760 177777 000002         MOV      #-1,2(RO)
8702 036760 012737 036766 001236         MOV      #ZZC3,@#STMP2
8703 036766 170310                       ZZC3: STST (RO)                  ; GET FEC AND
8704                                     ; FEA
8705 036770 170204                       STFPS   R4                        ; GET FPS.
8706 036772 012700 037116                 MOV      #ZZCBF,RO
8707 036776 011037 001240                 MOV      (RO),@#STMP3
8708 037002 016037 000002 001242         MOV      2(RO),@#STMP4
8709 037010 012737 000002 001244         MOV      #2,@#STMP5
8710 037016 012737 036740 001246         MOV      #ZZC2,@#STMP6
8711 037024 010437 001250                 MOV      R4,@#STMP7
8712 037030 012737 140000 001252         MOV      #140000,@#STMP10
8713
8714 037036 022710 000002                 CMP      #2,(RO) ; SEE IF FEC IS CORRECT.
8715 037042 001010                       BNE     ZZC5                      ; BRANCH IF INCORRECT.
8716 037044 022760 036740 000002         CMP      #ZZC2,2(RO)              ; SEE IF FEA, ADDRESS, IS CORRECT.
8717 037052 001006                       BNE     ZZC10                     ; BRANCH IF INCORRECT.
8718 037054 022704 140000                 CMP      #140000,R4               ; SEE IF FPS IS CORRECT.
8719 037060 001013                       BNE     ZZC15                     ; BRANCH IF INCORRECT.
8720 037062 000422                       BR      ZZCDONE
8721
8722                                     ; REPORT FEC INCORRECT
8723 037064                               ZZC5:
8724 037064 104356                       15:    ERROR 356                  ; STST BAD
8725 037066 000420                       BR      ZZCDONE                   ; FECX
8726
8727                                     ; REPORT FEA INCORRECT
8728 037070 022760 177777 000002         ZZC10: CMP      #-1,2(RO)
8729 037076 001402                       BEQ     ZZC12
8730 037100 104357                       15:    ERROR 357                  ; STST BAD FEA
  
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8731 037102 000412          BR      ZZCDONE
8732 037104          ZZC12:
8733 037104 104360        15:    ERROR  360          ;SET FD FL ST 636
8734 037106 000410          BR      ZZCDONE
8735
8736          ;REPORT FPS INCORRECT
8737 037110        ZZC15:
8738 037110 104361        15:    ERROR  361          ;FPS X AFTER ST ST
8739 037112 000406          BR      ZZCDONE
8740
8741          ;DATA BUFFER:
8742 037114 177777          -1
8743 037116 177777 177777 177777 ZZCBF: .WORD  -1,-1,-1,-1
8744 037124 177777          -1
8745 037126 177777
8746
8747 037130        ZZCDONE:
8748 037130 104412        RSETUP          ;GO INITIALIZE THE FPS AND STACK; AND
8749          ;SEE IF THE USER HAS EXPRESSED
8750          ;THE DESIRE TO CHANGE THE SOFTWARE
8751          ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
8752          ;THE USER TYPED CONTROL G?).
8753
8754 037132        TST76:
8755
8756
8757
8758          .SBTTL  END OF PASS ROUTINE
8759
8760          ;; *****
8761          ;*INCREMENT THE PASS NUMBER ($PASS)
8762          ;*INDICATE END-OF-PROGRAM AFTER 1 PASSES THRU THE PROGRAM
8763          ;*IF SW12=1 INHIBIT TRACE TRAP
8764          ;*IF THERES A MONITOR GO TO IT
8765          ;*IF THERE ISN'T JUMP TO LOOP
8766
8767          SEOP:
8768 037132 000004          SCOPE
8769 037134 005067 141742  CLR      $STSTM          ;; ZERO THE TEST NUMBER
8770 037140 005067 142136  CLR      $TIMES          ;; ZERO THE NUMBER OF ITERATIONS
8771 037144 005267 142154  INC      $PASS          ;; INCREMENT THE PASS NUMBER
8772 037150 042767 100000 142146 BIC      #100000,$PASS  ;; DON'T ALLOW A NEG. NUMBER
8773 037156 005327          DEC      (PC)+          ;; LOOP?
8774 037160 000001        SEOPCT: .WORD  1
8775 037162 003074        BGT      $DOAGN          ;; YES
8776 037164 012737        MOV      (PC)+,2(PC)+  ;; RESTORE COUNTER
8777 037166 000001        SENDCT: .WORD  1
8778 037170 037160        SEOPCT
8779 037172 104401 037200  TYPE      ,655          ;; TYPE ASCIZ STRING
8780 037176 000407        BR      645          ;; GET OVER THE ASCIZ
8781          ;; 655: .ASCIZ <12><15>/END PASS #/
8782 037216
8783 037216 016746 142102        MOV      $PASS,-(SP)  ;; SAVE $PASS FOR TYPEOUT
8784          ;; TYPE PASS NUMBER IN OCTAL
8785 037222 104403        TYPOS          ;; GO TYPE--OCTAL ASCII
8786 037224 006          .BYTE  6          ;; TYPE 6 DIGITS
  
```



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8787 037225 000 .BYTE 0 ;; SUPPRESS LEADING ZEROS
8788 037226 104401 037234 TYPE ,675 ;; TYPE ASCII STRING
8789 037232 000421 BR 665 ;; GET OVER THE ASCIIZ
8790 ;; 675: .ASCIIZ / TOTAL ERRORS SINCE LAST REPORT /
8791 037276 665:
8792 037276 016746 141610 MOV $ERTTL,-(SP) ;; SAVE $ERTTL FOR TYPEOUT
8793 ;; TOTAL NUMBER OF ERRORS IN OCTAL
8794 037302 104403 TYPOS ;; GO TYPE--OCTAL ASCII
8795 037304 006 .BYTE 6 ;; TYPE 6 DIGITS
8796 037305 000 .BYTE 0 ;; SUPPRESS LEADING ZEROS
8797 037306 104401 001313 TYPE ,$CRLF ;; TYPE CARRIAGE RETURN, LINE FEED
8798 037312 005067 141574 CLR $ERTTL ;; CLEAR ERROR TOTAL
8799 037316 013700 000042 $GET42: MOV @#42,RO ;; GET MONITOR ADDRESS
8800 037322 001414 BEQ $DOAGN ;; BRANCH IF NO MONITOR
8801 037324 005046 CLR -(SP) ;; INSURE THE "T" BIT IS CLEAR
8802 037326 012746 037334 MOV #$CLR.T,-(SP) ;; SETUP FOR AN RTI OR RTT
8803 037332 000426 BR $RTRN ;; GO DO AN RTI OR RTT TO LOAD THE PSW
8804 ;; WITH A CLEARED "T" BIT
8805 037334 $CLR.T:
8806 037334 013700 000042 MOV @#42,RO ;; INSURE RO CONTAINS THE MONITORS
8807 037340 001405 BEQ $DOAGN ;; RETURN ADDRESS
8808 037342 000005 RESET ;; CLEAR THE WORLD
8809 037344 004710 $ENDAD: JSR PC,(RO) ;; GO TO MONITOR
8810 037346 000240 NOP ;; SAVE ROOM
8811 037350 000240 NOP ;; FOR
8812 037352 000240 NOP ;; ACT11
8813 037354 $DOAGN:
8814 037354 104400 TRAP ;; PUSH OLD PSW AND PC ON STACK
8815 037356 042716 000020 BIC #20,(SP) ;; CLEAR THE "T" BIT
8816 037362 032777 010000 141550 BIT #BIT12,@SWR ;; RUN WITH TRACE TRAP?
8817 037370 001005 BNE 15 ;; BR IF NO
8818 037372 005167 000020 COM $TBIT ;; IS IT TIME FOR TRACE TRAP
8819 037376 100402 BMI 15 ;; BR IF NO
8820 037400 052716 000020 BIS #20,(SP) ;; SET TRACE TRAP
8821 037404 012746 037412 15: MOV #$LOOP,-(SP) ;; JUMP TO START OF TEST
8822 037410 000002 $RTRN: RTI ;; RETURN--THIS IS CHANGED TO
8823 ;; AN "RTT" IF "RTT" IS A LEGAL
8824 ;; INSTRUCTION
8825 037412 $LOOP:
8826 037412 000137 JMP @PC+ ;; RETURN
8827 037414 006566 $RTNAD: .WORD LOOP
8828 037416 000000 $TBIT: .WORD 0 ;; "T" BIT STATE INDICATOR
8829 037420 377 377 000 $ENULL: .BYTE -1,-1,0 ;; NULL CHARACTER STRING
8830 037424 .EVEN
8831
8832 .SBTTL SCOPE HANDLER ROUTINE
8833
8834 ;; *****
8835 ;; *THIS ROUTINE CONTROLS THE LOOPING OF SUBTESTS. IT WILL INCREMENT
8836 ;; *AND LOAD THE TEST NUMBER($TSTNM) INTO THE DISPLAY REG. (DISPLAY<7: 0>)
8837 ;; *AND LOAD THE ERROR FLAG ($ERFLG) INTO DISPLAY<15: 08>
8838 ;; *THE SWITCH OPTIONS PROVIDED BY THIS ROUTINE ARE:
8839 ;; *$SW14=1 LOOP ON TEST
8840 ;; *$SW11=1 INHIBIT ITERATIONS
8841 ;; *$SW09=1 LOOP ON ERROR
8842 ;; *$SW08=1 LOOP ON TEST IN SWR<7: 0>

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```

8843 ;*CALL
8844 ;* SCOPE ;:SCOPE=10T
8845
8846 $SCOPE:
8847 037424 104406 CKSWR ;:TEST FOR CHANGE IN SOFT-SWR
8848 037424 032777 040000 141504 1$: BIT #BIT14, @SWR ;:LOOP ON PRESENT TEST?
8849 037434 001114 BNE $OVER ;:YES IF SW14=1
8850 ;#####START OF CODE FOR THE XOR TESTER#####
8851 037436 000416 $XTSTR: BR 6$ ;:IF RUNNING ON THE "XOR" TESTER CHANGE
8852 ;THIS INSTRUCTION TO A "NOP" (NOP=240)
8853 037440 013746 000004 MOV @#ERRVEC, -(SP) ;:SAVE THE CONTENTS OF THE ERROR VECTOR
8854 037444 012737 037464 000004 MOV #5$, @#ERRVEC ;:SET FOR TIMEOUT
8855 037452 005737 177060 TST @#177060 ;:TIME OUT ON XOR?
8856 037456 012637 000004 MOV (SP)+, @#ERRVEC ;:RESTORE THE ERROR VECTOR
8857 037462 000463 BR $SVLAD ;:GO TO THE NEXT TEST
8858 037464 022626 5$: CMP (SP)+, (SP)+ ;:CLEAR THE STACK AFTER A TIME OUT
8859 037466 012637 000004 MOV (SP)+, @#ERRVEC ;:RESTORE THE ERROR VECTOR
8860 037472 000423 BR 7$ ;:LOOP ON THE PRESENT TEST
8861 037474 6$: ;#####END OF CODE FOR THE XOR TESTER#####
8862 037474 032777 000400 141436 BIT #BIT08, @SWR ;:LOOP ON SPEC. TEST?
8863 037502 001404 BEQ 2$ ;:BR IF NO
8864 037504 127767 141430 141370 CMPB @SWR, $STNM ;:ON THE RIGHT TEST? SWR<?: 0>
8865 037512 001465 BEQ $OVER ;:BR IF YES
8866 037514 105767 141363 2$: TSTB $ERFLG ;:HAS AN ERROR OCCURRED?
8867 037520 001421 BEQ 3$ ;:BR IF NO
8868 037522 126767 141367 141353 CMPB $ERMAX, $ERFLG ;:MAX. ERRORS FOR THIS TEST OCCURRED?
8869 037530 101015 BHI 3$ ;:BR IF NO
8870 037532 032777 001000 141400 BIT #BIT09, @SWR ;:LOOP ON ERROR?
8871 037540 001404 BEQ 4$ ;:BR IF NO
8872 037542 016767 141342 141336 7$: MOV $LPERR, $LPADR ;:SET LOOP ADDRESS TO LAST SCOPE
8873 037550 000446 BR $OVER
8874 037552 105067 141325 4$: CLRB $ERFLG ;:ZERO THE ERROR FLAG
8875 037556 005067 141520 CLR $TIMES ;:CLEAR THE NUMBER OF ITERATIONS TO MAKE
8876 037562 000415 BR 1$ ;:ESCAPE TO THE NEXT TEST
8877 037564 032777 004000 141346 3$: BIT #BIT11, @SWR ;:INHIBIT ITERATIONS?
8878 037572 001011 BNE 1$ ;:BR IF YES
8879 037574 005767 141524 TST $PASS ;:IF FIRST PASS OF PROGRAM
8880 037600 001406 BEQ 1$ ;: INHIBIT ITERATIONS
8881 037602 005267 141276 INC $ICNT ;:INCREMENT ITERATION COUNT
8882 037606 026767 141470 141270 CMP $TIMES, $ICNT ;:CHECK THE NUMBER OF ITERATIONS MADE
8883 037614 002024 BGE $OVER ;:BR IF MORE ITERATION REQUIRED
8884 037616 012767 000001 141260 1$: MOV #1, $ICNT ;:REINITIALIZE THE ITERATION COUNTER
8885 037624 016767 000052 141450 MOV $MXCNT, $TIMES ;:SET NUMBER OF ITERATIONS TO DO
8886 037632 105267 141244 $SVLAD: INCB $STNM ;:COUNT TEST NUMBERS
8887 037636 116767 141240 141456 MOVB $STNM, $TESTN ;:SET TEST NUMBER IN APT MAILBOX
8888 037644 011667 141236 MOV (SP), $LPADR ;:SAVE SCOPE LOOP ADDRESS
8889 037650 011667 141234 MOV (SP), $LPERR ;:SAVE ERROR LOOP ADDRESS
8890 037654 005067 141424 CLR $ESCAPE ;:CLEAR THE ESCAPE FROM ERROR ADDRESS
8891 037660 112767 000001 141227 MOVB #1, $ERMAX ;:ONLY ALLOW ONE(1) ERROR ON NEXT TEST
8892 037666 016777 141210 141246 $OVER: MOV $STNM, @DISPLAY ;:DISPLAY TEST NUMBER
8893 037674 016716 141206 MOV $LPADR, (SP) ;:FUDGE RETURN ADDRESS
8894 037700 000002 RTI ;:FIXES PS
8895 037702 000001 $MXCNT: 1 ;:MAX. NUMBER OF ITERATIONS
8896
8897 .SBTTL ERROR HANDLER ROUTINE
8898
  
```



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8899 ;*****
8900 ;*THIS ROUTINE WILL INCREMENT THE ERROR FLAG AND THE ERROR COUNT,
8901 ;*SAVE THE ERROR ITEM NUMBER AND THE ADDRESS OF THE ERROR CALL
8902 ;*AND GO TO ERTYPE ON ERROR
8903 ;*THE SWITCH OPTIONS PROVIDED BY THIS ROUTINE ARE:
8904 ;*SW15=1 HALT ON ERROR
8905 ;*SW13=1 INHIBIT ERROR TYPEOUTS
8906 ;*SW10=1 BELL ON ERROR
8907 ;*SW09=1 LOOP ON ERROR
8908 ;*CALL
8909 ;* ERROR N ;;ERROR=EMT AND N=ERROR ITEM NUMBER
8910
8911 037704 SERROR:
8912 037704 104406 CKSWR ;;TEST FOR CHANGE IN SOFT-SWR
8913 037706 105267 141171 7$: INCB $ERFLG ;;SET THE ERROR FLAG
8914 037712 001775 BEQ 7$ ;;DON'T LET THE FLAG GO TO ZERO
8915 037714 016777 141162 141220 MOV $TSTNM, @DISPLAY ;;DISPLAY TEST NUMBER AND ERROR FLAG
8916 037722 032777 002000 141210 BIT #BIT10, @SWR ;;BELL ON ERROR?
8917 037730 001402 BEQ 1$ ;;NO - SKIP
8918 037732 104401 001306 TYPE , $BELL ;;RING BELL
8919 037736 005267 141150 1$: INC $ERTTL ;;COUNT THE NUMBER OF ERRORS
8920 037742 011667 141150 MOV (SP), $ERRPC ;;GET ADDRESS OF ERROR INSTRUCTION
8921 037746 162767 000002 141142 SUB #2, $ERRPC
8922 037754 117767 141136 141132 MOVB @ERRPC, $ITEMB ;;STRIP AND SAVE THE ERROR ITEM CODE
8923 037762 032777 020000 141150 BIT #BIT13, @SWR ;;SKIP TYPEOUT IF SET
8924 037770 001004 BNE 20$ ;;SKIP TYPEOUTS
8925 037772 004767 002124 JSR PC, ERTYPE ;;GO TO USER ERROR ROUTINE
8926 037776 104401 001313 TYPE , $CRLF
8927 040002 20$: CMPB #APTENV, $ENV ;;RUNNING IN APT MODE
8928 040002 122767 000001 141326 BNE 2$ ;;NO, SKIP APT ERROR REPORT
8929 040010 001007 MOVB $ITEMB, 21$ ;;SET ITEM NUMBER AS ERROR NUMBER
8930 040012 116767 141076 000004 JSR PC, $ATY4 ;;REPORT FATAL ERROR TO APT
8931 040020 004767 000740 21$: . BYTE 0
8932 040024 000 . BYTE 0
8933 040025 000 22$: BR 22$ ;;APT ERROR LOOP
8934 040026 000777 25$: TST @SWR ;;HALT ON ERROR
8935 040030 005777 141104 BPL 3$ ;;SKIP IF CONTINUE
8936 040034 100002 HALT ;;HALT ON ERROR!
8937 040036 000000 CKSWR ;;TEST FOR CHANGE IN SOFT-SWR
8938 040040 104406 3$: BIT #BIT09, @SWR ;;LOOP ON ERROR SWITCH SET?
8939 040042 032777 001000 141070 BEQ 4$ ;;BR IF NO
8940 040050 001402 MOV $LPERR, (SP) ;;FUDGE RETURN FOR LOOPING
8941 040052 016716 141032 4$: TST $ESCAPE ;;CHECK FOR AN ESCAPE ADDRESS
8942 040056 005767 141222 BEQ 5$ ;;BR IF NONE
8943 040062 001402 MOV $ESCAPE, (SP) ;;FUDGE RETURN ADDRESS FOR ESCAPE
8944 040064 016716 141214 5$: CMP #SENDAD, @#42 ;;ACT-11 AUTO-ACCEPT?
8945 040070 022737 037344 000042 BNE 6$ ;;BRANCH IF NO
8946 040076 001031 HALT ;;YES
8947 040100 000000 6$: BIT #BIT09, @SWR
8948 040102 032777 001000 141030 BNE ERM10
8949 040110 001013 MOV (SP), @SREGO ;;SEE IF ERROR #377
8950 040112 011637 001162 ADD #-2, @SREGO
8951 040116 062737 177776 001162 CMPB #377, @SREGO
8952 040124 122777 000377 141030

```

8955 040132 001002  
8956 040134 062716 000002  
8957 040140 000002  
8958  
8959  
8960  
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8975  
8976  
8977 040142  
8978 040142 010046  
8979 040144 010146  
8980 040146 010246  
8981 040150 010346  
8982 040152 010446  
8983 040154 010546  
8984 040156 016646 000022  
8985 040162 016646 000022  
8986 040166 016646 000022  
8987 040172 016646 000022  
8988 040176 000002  
8989  
8990  
8991  
8992  
8993 040200  
8994 040200 012666 000022  
8995 040204 012666 000022  
8996 040210 012666 000022  
8997 040214 012666 000022  
8998 040220 012605  
8999 040222 012604  
9000 040224 012603  
9001 040226 012602  
9002 040230 012601  
9003 040232 012600  
9004 040234 000002  
9005  
9006  
9007  
9008  
9009  
9010

BNE ERM10  
ADD #2, (SP)  
ERM10: RTI

.SBTTL SAVE AND RESTORE R0-R5 ROUTINES

;; \*\*\*\*\*  
;\*SAVE R0-R5  
;\*CALL:  
;\* SAVREG  
;\*UPON RETURN FROM \$SAVREG THE STACK WILL LOOK LIKE:  
;\*  
;\*TOP---(+16)  
;\* +2---(+18)  
;\* +4---R5  
;\* +6---R4  
;\* +8---R3  
;\*+10---R2  
;\*+12---R1  
;\*+14---R0

\$SAVREG:

MOV R0, -(SP) ;; PUSH R0 ON STACK  
MOV R1, -(SP) ;; PUSH R1 ON STACK  
MOV R2, -(SP) ;; PUSH R2 ON STACK  
MOV R3, -(SP) ;; PUSH R3 ON STACK  
MOV R4, -(SP) ;; PUSH R4 ON STACK  
MOV R5, -(SP) ;; PUSH R5 ON STACK  
MOV 22(SP), -(SP) ;; SAVE PS OF MAIN FLOW  
MOV 22(SP), -(SP) ;; SAVE PC OF MAIN FLOW  
MOV 22(SP), -(SP) ;; SAVE PS OF CALL  
MOV 22(SP), -(SP) ;; SAVE PC OF CALL  
RTI

;\*RESTORE R0-R5

;\*CALL:

;\* RESREG

\$RESREG:

MOV (SP)+, 22(SP) ;; RESTORE PC OF CALL  
MOV (SP)+, 22(SP) ;; RESTORE PS OF CALL  
MOV (SP)+, 22(SP) ;; RESTORE PC OF MAIN FLOW  
MOV (SP)+, 22(SP) ;; RESTORE PS OF MAIN FLOW  
MOV (SP)+, R5 ;; POP STACK INTO R5  
MOV (SP)+, R4 ;; POP STACK INTO R4  
MOV (SP)+, R3 ;; POP STACK INTO R3  
MOV (SP)+, R2 ;; POP STACK INTO R2  
MOV (SP)+, R1 ;; POP STACK INTO R1  
MOV (SP)+, R0 ;; POP STACK INTO R0  
RTI

.SBTTL TYPE ROUTINE

;; \*\*\*\*\*  
;\*ROUTINE TO TYPE ASCIZ MESSAGE. MESSAGE MUST TERMINATE WITH A 0 BYTE.  
;\*THE ROUTINE WILL INSERT A NUMBER OF NULL CHARACTERS AFTER A LINE FEED.



```
9011 ;*NOTE1:          $NULL CONTAINS THE CHARACTER TO BE USED AS THE FILLER CHARACTER.
9012 ;*NOTE2:          $FILLS CONTAINS THE NUMBER OF FILLER CHARACTERS REQUIRED.
9013 ;*NOTE3:          $FILLC CONTAINS THE CHARACTER TO FILL AFTER.
9014 ;*
9015 ;*CALL:
9016 ;*1) USING A TRAP INSTRUCTION
9017 ;*      TYPE      ,MESADR          ;;MESADR IS FIRST ADDRESS OF AN ASCIZ STRING
9018 ;*OR
9019 ;*      TYPE
9020 ;*      MESADR
9021 ;*
9022
9023 040236 105767 140715 $TYPE:  TSTB      $TFPLG          ;; IS THERE A TERMINAL?
9024 040242 100002          BPL          1$              ;; BR IF YES
9025 040244 000000          HALT          ;; HALT HERE IF NO TERMINAL
9026 040246 000430          BR          3$              ;; LEAVE
9027 040250 010046          1$:  MOV          RO,-(SP)          ;; SAVE RO
9028 040252 017600 000002  MOV          @2(SP),RO          ;; GET ADDRESS OF ASCIZ STRING
9029 040256 122767 000001 141052  CMPB      #APTENV,$ENV          ;; RUNNING IN APT MODE
9030 040264 001011          BNE          62$          ;; NO, GO CHECK FOR APT CONSOLE
9031 040266 132767 000100 141043  BITB      #APTPOOL,$ENVM        ;; SPOOL MESSAGE TO APT
9032 040274 001405          BEQ          62$          ;; NO, GO CHECK FOR CONSOLE
9033 040276 010067 000004          MOV          RO,61$          ;; SETUP MESSAGE ADDRESS FOR APT
9034 040302 004767 000446          JSR          PC,$ATY3          ;; SPOOL MESSAGE TO APT
9035 040306 000000          61$:  .WORD          0          ;; MESSAGE ADDRESS
9036 040310 132767 000040 141021  62$:  BITB      #APTCSUP,$ENVM    ;; APT CONSOLE SUPPRESSED
9037 040316 001003          BNE          60$          ;; YES, SKIP TYPE OUT
9038 040320 112046          2$:  MOVB      (RO)+,-(SP)        ;; PUSH CHARACTER TO BE TYPED ONTO STACK
9039 040322 001005          BNE          4$          ;; BR IF IT ISN'T THE TERMINATOR
9040 040324 005726          TST      (SP)+          ;; IF TERMINATOR POP IT OFF THE STACK
9041 040326 012600          60$:  MOV          (SP)+,RO          ;; RESTORE RO
9042 040330 062716 000002  3$:  ADD          #2,(SP)          ;; ADJUST RETURN PC
9043 040334 000002          RTI          ;; RETURN
9044 040336 122716 000011  4$:  CMPB      #HT,(SP)          ;; BRANCH IF <HT>
9045 040342 001430          BEQ          8$          ;; BRANCH IF NOT <CRLF>
9046 040344 122716 000200          CMPB      #CRLF,(SP)
9047 040350 001006          BNE          5$          ;; POP <CR><LF> EQUIV
9048 040352 005726          TST      (SP)+          ;; TYPE A CR AND LF
9049 040354 104401          TYPE
9050 040356 001313          $CRLF
9051 040360 105067 000130          CLRB      $CHARCNT          ;; CLEAR CHARACTER COUNT
9052 040364 000755          BR          2$          ;; GET NEXT CHARACTER
9053 040366 004767 000056  5$:  JSR          PC,$TYPEC          ;; GO TYPE THIS CHARACTER
9054 040372 126726 140560  6$:  CMPB      $FILLC,(SP)+        ;; IS IT TIME FOR FILLER CHARS. ?
9055 040376 001350          BNE          2$          ;; IF NO GO GET NEXT CHAR.
9056 040400 016746 140550          MOV          $NULL,-(SP)      ;; GET # OF FILLER CHARS. NEEDED
9057          ;; AND THE NULL CHAR.
9058 040404 105366 000001  7$:  DECB      1(SP)          ;; DOES A NULL NEED TO BE TYPED?
9059 040410 002770          BLT          6$          ;; BR IF NO--GO POP THE NULL OFF OF STACK
9060 040412 004767 000032          JSR          PC,$TYPEC          ;; GO TYPE A NULL
9061 040416 105367 000072          DECB      $CHARCNT          ;; DO NOT COUNT AS A COUNT
9062 040422 000770          BR          7$          ;; LOOP
9063
9064 ;HORIZONTAL TAB PROCESSOR
9065
9066 040424 112716 000040  8$:  MOVB      #' ,(SP)          ;; REPLACE TAB WITH SPACE
```

```

9067 040430 004767 000014 95: JSR PC,$TYPEC ;;TYPE A SPACE
9068 040434 132767 000007 000052 BITB #7,$CHARCNT ;;BRANCH IF NOT AT
9069 040442 001372 BNE 95 ;;TAB STOP
9070 040444 005726 TST (SP)+ ;;POP SPACE OFF STACK
9071 040446 000724 BR 25 ;;GET NEXT CHARACTER
9072 040450 105777 140474 $TYPEC: TSTB @STPS ;;WAIT UNTIL PRINTER IS READY
9073 040454 100375 BPL $TYPEC
9074 040456 116677 000002 140466 MOVB 2(SP),@STPB ;;LOAD CHAR TO BE TYPED INTO DATA REG.
9075 040464 122766 000015 000002 CMPB #CR,2(SP) ;;IS CHARACTER A CARRIAGE RETURN?
9076 040472 001003 BNE 15 ;;BRANCH IF NO
9077 040474 105067 000014 CLRB $CHARCNT ;;YES--CLEAR CHARACTER COUNT
9078 040500 000406 BR $TYPEX ;;EXIT
9079 040502 122766 000012 000002 15: CMPB #LF,2(SP) ;;IS CHARACTER A LINE FEED?
9080 040510 001402 BEQ $TYPEX ;;BRANCH IF YES
9081 040512 105227 INCB (PC)+ ;;COUNT THE CHARACTER
9082 040514 000000 $CHARCNT: WORD 0 ;;CHARACTER COUNT STORAGE
9083 040516 000207 $TYPEX: RTS PC
9084
9085
9086 .SBTTL BINARY TO OCTAL (ASCII) AND TYPE
9087
9088 ;;*****
9089 ;*THIS ROUTINE IS USED TO CHANGE A 16-BIT BINARY NUMBER TO A 6-DIGIT
9090 ;*OCTAL (ASCII) NUMBER AND TYPE IT.
9091 ;*$TYPOS---ENTER HERE TO SETUP SUPPRESS ZEROS AND NUMBER OF DIGITS TO TYPE
9092 ;*CALL:
9093 ;* MOV NUM,-(SP) ;;NUMBER TO BE TYPED
9094 ;* TYPOS ;;CALL FOR TYPEOUT
9095 ;* .BYTE N ;;N=1 TO 6 FOR NUMBER OF DIGITS TO TYPE
9096 ;* .BYTE M ;;M=1 OR 0
9097 ;* ;;1=TYPE LEADING ZEROS
9098 ;* ;;0=SUPPRESS LEADING ZEROS
9099 ;*
9100 ;*$STYPON---ENTER HERE TO TYPE OUT WITH THE SAME PARAMETERS AS THE LAST
9101 ;*$TYPOS OR $TYPOC
9102 ;*CALL:
9103 ;* MOV NUM,-(SP) ;;NUMBER TO BE TYPED
9104 ;* TYPON ;;CALL FOR TYPEOUT
9105 ;*
9106 ;*$TYPOC---ENTER HERE FOR TYPEOUT OF A 16 BIT NUMBER
9107 ;*CALL:
9108 ;* MOV NUM,-(SP) ;;NUMBER TO BE TYPED
9109 ;* TYPOC ;;CALL FOR TYPEOUT
9110 ;*
9111 040520 017646 000000 000211 $TYPOS: MOV @2(SP),-(SP) ;;PICKUP THE MODE
9112 040524 116667 000001 MOVB 1(SP),$OFILL ;;LOAD ZERO FILL SWITCH
9113 040532 112667 000207 MOVB (SP)+,$OMODE+1 ;;NUMBER OF DIGITS TO TYPE
9114 040536 062716 000002 ADD #2,(SP) ;;ADJUST RETURN ADDRESS
9115 040542 000406 BR $STYPON
9116 040544 112767 000001 000171 $TYPOC: MOVB #1,$OFILL ;;SET THE ZERO FILL SWITCH
9117 040552 112767 000006 000165 MOVB #6,$OMODE+1 ;;SET FOR SIX(6) DIGITS
9118 040560 112767 000005 000154 $STYPON: MOVB #5,$OCNT ;;SET THE ITERATION COUNT
9119 040566 010346 MOV R3,-(SP) ;;SAVE R3
9120 040570 010446 MOV R4,-(SP) ;;SAVE R4
9121 040572 010546 MOV R5,-(SP) ;;SAVE R5
9122 040574 116704 000145 MOVB $OMODE+1,R4 ;;GET THE NUMBER OF DIGITS TO TYPE

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9123 040600 005404          NEG      R4
9124 040602 062704 000006  ADD      #6,R4          ;; SUBTRACT IT FOR MAX. ALLOWED
9125 040606 110467 000132  MOVVB   R4,$OMODE     ;; SAVE IT FOR USE
9126 040612 116704 000125  MOVVB   $OFILL,R4     ;; GET THE ZERO FILL SWITCH
9127 040616 016605 000012  MOV     12(SP),R5     ;; PICKUP THE INPUT NUMBER
9128 040622 005003          CLR      R3          ;; CLEAR THE OUTPUT WORD
9129 040624 006105          15:    ROL      R5          ;; ROTATE MSB INTO "C"
9130 040626 000404          BR       3$          ;; GO DO MSB
9131 040630 006105          25:    ROL      R5          ;; FORM THIS DIGIT
9132 040632 006105          ROL      R5
9133 040634 006105          ROL      R5
9134 040636 010503          MOV     R5,R3
9135 040640 006103          35:    ROL      R3          ;; GET LSB OF THIS DIGIT
9136 040642 105367 000076  DECB   $OMODE         ;; TYPE THIS DIGIT?
9137 040646 100016          BPL     7$          ;; BR IF NO
9138 040650 042703 177770  BIC    #177770,R3     ;; GET RID OF JUNK
9139 040654 001002          BNE     4$          ;; TEST FOR 0
9140 040656 005704          TST     R4          ;; SUPPRESS THIS 0?
9141 040660 001403          BEQ     5$          ;; BR IF YES
9142 040662 005204          45:    INC     R4          ;; DON'T SUPPRESS ANYMORE 0'S
9143 040664 052703 000060  BIS    #'0,R3         ;; MAKE THIS DIGIT ASCII
9144 040670 052703 000040  55:    BIS    #' ,R3     ;; MAKE ASCII IF NOT ALREADY
9145 040674 110367 000040  MOVVB   R3,8$         ;; SAVE FOR TYPING
9146 040700 104401 040740  TYPE   ,8$           ;; GO TYPE THIS DIGIT
9147 040704 105367 000032  75:    DECB   $OCNT     ;; COUNT BY 1
9148 040710 003347          BGT     2$          ;; BR IF MORE TO DO
9149 040712 002402          BLT     6$          ;; BR IF DONE
9150 040714 005204          INC     R4          ;; INSURE LAST DIGIT ISN'T A BLANK
9151 040716 000744          BR      2$          ;; GO DO THE LAST DIGIT
9152 040720 012605          65:    MOV     (SP)+,R5     ;; RESTORE R5
9153 040722 012604          MOV     (SP)+,R4     ;; RESTORE R4
9154 040724 012603          MOV     (SP)+,R3     ;; RESTORE R3
9155 040726 016666 000002 000004  MOV     2(SP),4(SP)   ;; SET THE STACK FOR RETURNING
9156 040734 012616          MOV     (SP)+,(SP)
9157 040736 000002          RTI                    ;; RETURN
9158 040740          85:    .BYTE   0          ;; STORAGE FOR ASCII DIGIT
9159 040741          .BYTE   0          ;; TERMINATOR FOR TYPE ROUTINE
9160 040742          $OCNT:  .BYTE   0          ;; OCTAL DIGIT COUNTER
9161 040743          $OFILL: .BYTE   0          ;; ZERO FILL SWITCH
9162 040744 000000          $OMODE: .WORD   0          ;; NUMBER OF DIGITS TO TYPE
9163
9164          .SBTTL  APT COMMUNICATIONS ROUTINE
9165
9166          ;; *****
9167 040746 112767 000001 000236  $ATY1: MOVVB   #1,$FFLG     ;; TO REPORT FATAL ERROR
9168 040754 112767 000001 000226  $ATY3: MOVVB   #1,$MFLG     ;; TO TYPE A MESSAGE
9169 040762 000403          BR       $ATYC
9170 040764 112767 000001 000220  $ATY4: MOVVB   #1,$FFLG     ;; TO ONLY REPORT FATAL ERROR
9171 040772          $ATYC:
9172 040772 010046          MOV     R0,-(SP)     ;; PUSH R0 ON STACK
9173 040774 010146          MOV     R1,-(SP)     ;; PUSH R1 ON STACK
9174 040776 105767 000206          TSTB   $MFLG         ;; SHOULD TYPE A MESSAGE?
9175 041002 001450          BEQ     5$          ;; IF NOT: BR
9176 041004 122767 000001 140324  CMPB   #APTENV,$ENV   ;; OPERATING UNDER APT?
9177 041012 001031          BNE     3$          ;; IF NOT: BR
9178 041014 132767 000100 140315  BITB   #APTPOOL,$ENVM ;; SHOULD SPOOL MESSAGES?
  
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9179 041022 001425          BEQ      35          ;; IF NOT: BR
9180 041024 017600 000004    MOV      @4(SP),RO    ;; GET MESSAGE ADDR.
9181 041030 062766 000002 000004    ADD      #2,4(SP)    ;; BUMP RETURN ADDR.
9182 041036 005767 140254    15:     TST      $MSGTYPE    ;; SEE IF DONE W/ LAST XMISSION?
9183 041042 001375          BNE      15          ;; IF NOT: WAIT
9184 041044 010067 140262    MOV      RO,$MSGAD    ;; PUT ADDR IN MAILBOX
9185 041050 105720          25:     TSTB     (RO)+       ;; FIND END OF MESSAGE
9186 041052 001376          BNE      25
9187 041054 166700 140252    SUB      $MSGAD,RO    ;; SUB START OF MESSAGE
9188 041060 006200          ASR      RO          ;; GET MESSAGE LGTH IN WORDS
9189 041062 010067 140246    MOV      RO,$MSGLGT   ;; PUT LENGTH IN MAILBOX
9190 041066 012767 000004 140222    MOV      #4,$MSGTYPE  ;; TELL APT TO TAKE MSG.
9191 041074 000413          BR       55
9192 041076 017667 000004 000016 35:     MOV      @4(SP),45    ;; PUT MSG ADDR IN JSR LINKAGE
9193 041104 062766 000002 000004    ADD      #2,4(SP)    ;; BUMP RETURN ADDRESS
9194 041112 016746 136660    MOV      177776,-(SP) ;; PUSH 177776 ON STACK
9195 041116 004767 177114    JSR      PC,$TYPE    ;; CALL TYPE MACRO
9196 041122 000000          45:     .WORD   0
9197 041124          55:
9198 041124 105767 000062    105:    TSTB     $FFLG       ;; SHOULD REPORT FATAL ERROR?
9199 041130 001416          BEQ      125         ;; IF NOT: BR
9200 041132 005767 140200    TST      $ENV        ;; RUNNING UNDER APT?
9201 041136 001413          BEQ      125         ;; IF NOT: BR
9202 041140 005767 140152    115:    TST      $MSGTYPE    ;; FINISHED LAST MESSAGE?
9203 041144 001375          BNE      115         ;; IF NOT: WAIT
9204 041146 017667 000004 140144    MOV      @4(SP),$FATAL ;; GET ERROR #
9205 041154 062766 000002 000004    ADD      #2,4(SP)    ;; BUMP RETURN ADDR.
9206 041162 005267 140130    INC      $MSGTYPE    ;; TELL APT TO TAKE ERROR
9207 041166 105067 000020    125:    CLRB     $FFLG       ;; CLEAR FATAL FLAG
9208 041172 105067 000013    CLRB     $LFLG       ;; CLEAR LOG FLAG
9209 041176 105067 000006    CLRB     $MFLG       ;; CLEAR MESSAGE FLAG
9210 041202 012601          MOV      (SP)+,R1    ;; POP STACK INTO R1
9211 041204 012600          MOV      (SP)+,RO    ;; POP STACK INTO RO
9212 041206 000207          RTS      PC          ;; RETURN
9213 041210 000          $MFLG: .BYTE 0      ;; MESSG. FLAG
9214 041211 000          $LFLG: .BYTE 0      ;; LOG FLAG
9215 041212 000          $FFLG: .BYTE 0      ;; FATAL FLAG
9216          041214          .EVEN
9217          000200          APTSIZE=200
9218          000001          APTENV=001
9219          000100          APTSPool=100
9220          000040          APTCSUP=040
9221
9222          .SBTTL  TTY INPUT ROUTINE
9223
9224          ;; *****
9225          .ENABL  LSB
9226
9227          ;; *****
9228          ;*SOFTWARE SWITCH REGISTER CHANGE ROUTINE.
9229          ;*ROUTINE IS ENTERED FROM THE TRAP HANDLER, AND WILL
9230          ;*SERVICE THE TEST FOR CHANGE IN SOFTWARE SWITCH REGISTER TRAP CALL
9231          ;*WHEN OPERATING IN TTY FLAG MODE.
9232 041214 022767 000176 137716  $CKSWR: CMP      #SWREG,SWR    ;; IS THE SOFT-SWR SELECTED?
9233 041222 001074          BNE      155         ;; BRANCH IF NO
9234 041224 105777 137714    TSTB     @5TKS       ;; CHAR THERE?
    
```



9235	041230	100071		BPL	155	:: IF NO, DON'T WAIT AROUND
9236	041232	117746	137710	MOVB	2\$TKB, -(SP)	:: SAVE THE CHAR
9237	041236	042716	177600	BIC	# C177, (SP)	:: STRIP-OFF THE ASCII
9238	041242	022726	000007	CMP	#7, (SP)+	:: IS IT A CONTROL G?
9239	041246	001062		BNE	155	:: NO, RETURN TO USER
9240	041250	126727	137660	CMPB	\$AUTOB, #1	:: ARE WE RUNNING IN AUTO-MODE?
9241	041256	001456	000001	BEQ	155	:: BRANCH IF YES
9242						
9243	041260	104401	041623	TYPE	, \$CNTLG	:: ECHO THE CONTROL-G ( G)
9244	041264	104401	041630	TYPE	, \$MSWR	:: TYPE CURRENT CONTENTS
9245	041270	016746	136702	MOV	\$WREG, -(SP)	:: SAVE \$WREG FOR TYPEOUT
9246	041274	104402		TYPOC		:: GO TYPE--OCTAL ASCII (ALL DIGITS)
9247	041276	104401	041641	TYPE	, \$MNEW	:: PROMPT FOR NEW SWR
9248	041302	005046		195: CLR	-(SP)	:: CLEAR COUNTER
9249	041304	005046		CLR	-(SP)	:: THE NEW SWR
9250	041306	105777	137632	75: TSTB	2\$TKS	:: CHAR THERE?
9251	041312	100375		BPL	75	:: IF NOT TRY AGAIN
9252						
9253	041314	117746	137626	MOVB	2\$TKB, -(SP)	:: PICK UP CHAR
9254	041320	042716	177600	BIC	# C177, (SP)	:: MAKE IT 7-BIT ASCII
9255						
9256						
9257						
9258	041324	021627	000025	95: CMP	(SP), #25	:: IS IT A CONTROL-U?
9259	041330	001005		BNE	105	:: BRANCH IF NOT
9260	041332	104401	041616	TYPE	, \$CNTLU	:: YES, ECHO CONTROL-U ( U)
9261	041336	062706	000006	205: ADD	#6, SP	:: IGNORE PREVIOUS INPUT
9262	041342	000757		BR	195	:: LET'S TRY IT AGAIN
9263						
9264						
9265	041344	021627	000015	105: CMP	(SP), #15	:: IS IT A <CR>?
9266	041350	001022		BNE	165	:: BRANCH IF NO
9267	041352	005766	000004	TST	4(SP)	:: YES, IS IT THE FIRST CHAR?
9268	041356	001403		BEQ	115	:: BRANCH IF YES
9269	041360	016677	000002	137552	MOV	2(SP), 2\$SWR
9270	041366	062706	000006	115: ADD	#6, SP	:: CLEAR UP STACK
9271	041372	104401	001313	145: TYPE	, \$CRLF	:: ECHO <CR> AND <LF>
9272	041376	126727	137533	000001	CMPB	\$INTAG, #1
9273	041404	001003		BNE	155	:: RE-ENABLE TTY KBD INTERRUPTS?
9274	041406	012777	000100	137530	MOV	#100, 2\$TKS
9275	041414	000002		155: RTI		:: RETURN
9276	041416	004767	177026	165: JSR	PC, \$TYPEC	:: ECHO CHAR
9277	041422	021627	000060	CMP	(SP), #60	:: CHAR < 0?
9278	041426	002420		BLT	185	:: BRANCH IF YES
9279	041430	021627	000067	CMP	(SP), #67	:: CHAR > 7?
9280	041434	003015		BGT	185	:: BRANCH IF YES
9281	041436	042726	000060	BIC	#60, (SP)+	:: STRIP-OFF ASCII
9282	041442	005766	000002	TST	2(SP)	:: IS THIS THE FIRST CHAR
9283	041446	001403		BEQ	175	:: BRANCH IF YES
9284	041450	006316		ASL	(SP)	:: NO, SHIFT PRESENT
9285	041452	006316		ASL	(SP)	:: CHAR OVER TO MAKE
9286	041454	006316		ASL	(SP)	:: ROOM FOR NEW ONE.
9287	041456	005266	000002	175: INC	2(SP)	:: KEEP COUNT OF CHAR
9288	041462	056616	177776	BIS	-2(SP), (SP)	:: SET IN NEW CHAR
9289	041466	000707		BR	75	:: GET THE NEXT ONE
9290	041470	104401	001312	185: TYPE	, \$QUES	:: TYPE ?<CR><LF>

```

9291 041474 000720          BR      205          ;; SIMULATE CONTROL-U
9292          .DSABL  LSB
9293
9294
9295          ;; *****
9296          ;; THIS ROUTINE WILL INPUT A SINGLE CHARACTER FROM THE TTY
9297          ;; *CALL:
9298          ;; *   RDCHR          ;; INPUT A SINGLE CHARACTER FROM THE TTY
9299          ;; *   RETURN HERE    ;; CHARACTER IS ON THE STACK
9300          ;; *                   ;; WITH PARITY BIT STRIPPED OFF
9301          ;;
9302
9303 041476 011646          SRDCHR: MOV      (SP), -(SP)    ;; PUSH DOWN THE PC
9304 041500 016666 000004 000002  MOV      4(SP), 2(SP)    ;; SAVE THE PS
9305 041506 105777 137432 15:    TSTB     @5TKS          ;; WAIT FOR
9306 041512 100375          BPL      15             ;; A CHARACTER
9307 041514 117766 137426 000004  MOVB     @5TKB, 4(SP)    ;; READ THE TTY
9308 041522 042766 177600 000004  BIC      # C<177>, 4(SP) ;; GET RID OF JUNK IF ANY
9309 041530 026627 000004 000023  CMP      4(SP), #23     ;; IS IT A CONTROL-S?
9310 041536 001013          BNE      35             ;; BRANCH IF NO
9311 041540 105777 137400 25:    TSTB     @5TKS          ;; WAIT FOR A CHARACTER
9312 041544 100375          BPL      25             ;; LOOP UNTIL ITS THERE
9313 041546 117746 137374          MOVB     @5TKB, -(SP)    ;; GET CHARACTER
9314 041552 042716 177600          BIC      # C177, (SP)   ;; MAKE IT 7-BIT ASCII
9315 041556 022627 000021          CMP      (SP)+, #21     ;; IS IT A CONTROL-Q?
9316 041562 001366          BNE      25             ;; IF NOT DISCARD IT
9317 041564 000750          BR       15             ;; YES, RESUME
9318 041566 026627 000004 000140 35:    CMP      4(SP), #140    ;; IS IT UPPER CASE?
9319 041574 002407          BLT      45             ;; BRANCH IF YES
9320 041576 026627 000004 000175  CMP      4(SP), #175    ;; IS IT A SPECIAL CHAR?
9321 041604 003003          BGT      45             ;; BRANCH IF YES
9322 041606 042766 000040 000004  BIC      #40, 4(SP)     ;; MAKE IT UPPER CASE
9323 041614 000002 45:    RTI                      ;; GO BACK TO USER
9324 041616 052536 005015 000  SCNTLU: .ASCIZ / U<15><12> ;; CONTROL "U"
9325 041623 136 006507 000012  SCNTLG: .ASCIZ / G<15><12> ;; CONTROL "G"
9326 041630 005015 053523 020122 SMSWR:  .ASCIZ <15><12>/SWR = /
9327 041636 020075 000
9328 041641 040 047040 053505 SMNEW:  .ASCIZ / NEW = /
9329 041646 036440 000040
9330
9331          .SBTTL  TRAP DECODER
9332
9333          ;; *****
9334          ;; THIS ROUTINE WILL PICKUP THE LOWER BYTE OF THE "TRAP" INSTRUCTION
9335          ;; AND USE IT TO INDEX THROUGH THE TRAP TABLE FOR THE STARTING ADDRESS
9336          ;; OF THE DESIRED ROUTINE. THEN USING THE ADDRESS OBTAINED IT WILL
9337          ;; GO TO THAT ROUTINE.
9338
9339 041652 010046          STRAP:  MOV      RO, -(SP)    ;; SAVE RO
9340 041654 016600 000002  MOV      2(SP), RO      ;; GET TRAP ADDRESS
9341 041660 005740          TST      -(RO)         ;; BACKUP BY 2
9342 041662 111000          MOVB     (RO), RO      ;; GET RIGHT BYTE OF TRAP
9343 041664 006300          ASL      RO           ;; POSITION FOR INDEXING
9344 041666 016000 041706  MOV      $TRPAD(RO), RO ;; INDEX TO TABLE
9345 041672 000200          RTS      RO           ;; GO TO ROUTINE
9346

```



```

9347
9348      ;; THIS IS USE TO HANDLE THE "GETPRI" MACRO
9349
9350 041674 011646      STRAP2: MOV      (SP), -(SP)      ;; MOVE THE PC DOWN
9351 041676 016666 000004 000002  MOV      4(SP), 2(SP)      ;; MOVE THE PSW DOWN
9352 041704 000002      RTI                          ;; RESTORE THE PSW
9353
9354      .SBTTL TRAP TABLE
9355
9356      ;*THIS TABLE CONTAINS THE STARTING ADDRESSES OF THE ROUTINES CALLED
9357      ;*BY THE "TRAP" INSTRUCTION.
9358
9359      ; ROUTINE
9360      ; -----
9361 041706 041674      STRPAD: .WORD      STRAP2
9362 041710 040236      STYPE      ;; CALL=TYPE      TRAP+1(104401) TTY TYPEOUT ROUTINE
9363 041712 040544      STYPOC     ;; CALL=TYPOC     TRAP+2(104402) TYPE OCTAL NUMBER (WITH LEADING ZEROS)
9364 041714 040520      STYPOS     ;; CALL=TYPOS     TRAP+3(104403) TYPE OCTAL NUMBER (NO LEADING ZEROS)
9365 041716 040560      STYPON     ;; CALL=TYPON     TRAP+4(104404) TYPE OCTAL NUMBER (AS PER LAST CALL)
9366
9367 041720 041264      SGTSWR     ;; CALL=GTSWR     TRAP+5(104405) GET SOFT-SWR SETTING
9368
9369 041722 041214      SCKSWR     ;; CALL=CKSWR     TRAP+6(104406) TEST FOR CHANGE IN SOFT-SWR
9370 041724 041476      SRDCHR     ;; CALL=RDCHR     TRAP+7(104407) TTY TYPEIN CHARACTER ROUTINE
9371 041726 040142      $SAVREG   ;; CALL=SAVREG   TRAP+10(104410) SAVE R0-R5 ROUTINE
9372 041730 040200      $RESREG   ;; CALL=RESREG   TRAP+11(104411) RESTORE R0-R5 ROUTINE
9373 041732 042656      .RSET     ;; CALL=RSETUP    TRAP+12(104412) ROUTINE TO INITIALIZE AT END OF EACH TES
9374 041734 042650      .LPER     ;; CALL=LPERR    TRAP+13(104413) ROUTINE TO SET UP LOOP ON ERROR ADDRESS
9375      000030
9376
9377      STERM= .-STRPAD
9378
9379      .SBTTL POWER DOWN AND UP ROUTINES
9380
9381      ;*****
9382      ;POWER DOWN ROUTINE
9383      ;*****
9384 SPWRDN: MOV      #SILLUP, @PWRVEC ;; SET FOR FAST UP
9385      MOV      #340, @PWRVEC+2 ;; PRIO: 7
9386      MOV      R0, -(SP)      ;; PUSH R0 ON STACK
9387      MOV      R1, -(SP)      ;; PUSH R1 ON STACK
9388      MOV      R2, -(SP)      ;; PUSH R2 ON STACK
9389      MOV      R3, -(SP)      ;; PUSH R3 ON STACK
9390      MOV      R4, -(SP)      ;; PUSH R4 ON STACK
9391      MOV      R5, -(SP)      ;; PUSH R5 ON STACK
9392      MOV      @SWR, -(SP)    ;; PUSH @SWR ON STACK
9393      MOV      SP, $SAVR6     ;; SAVE SP
9394      MOV      #SPWRUP, @PWRVEC ;; SET UP VECTOR
9395      HALT
9396      BR      .-2      ;; HANG UP
9397
9398      ;*****
9399      ;POWER UP ROUTINE
9400      ;*****
9401 SPWRUP: MOV      #SILLUP, @PWRVEC ;; SET FOR FAST DOWN
9402      MOV      $SAVR6, SP     ;; GET SP
9403      CLR      $SAVR6        ;; WAIT LOOP FOR THE TTY
9404      15: INC      $SAVR6     ;; WAIT FOR THE INC
9405      BNE     15            ;; OF WORD
9406      MOV      (SP)+, @SWR    ;; POP STACK INTO @SWR
    
```

```

9403 042040 012605      MOV      (SP)+,R5      ;; POP STACK INTO R5
9404 042042 012604      MOV      (SP)+,R4      ;; POP STACK INTO R4
9405 042044 012603      MOV      (SP)+,R3      ;; POP STACK INTO R3
9406 042046 012602      MOV      (SP)+,R2      ;; POP STACK INTO R2
9407 042050 012601      MOV      (SP)+,R1      ;; POP STACK INTO R1
9408 042052 012600      MOV      (SP)+,R0      ;; POP STACK INTO R0
9409 042054 012737 041736 000024  MOV      #SPWRDN,@#PWRVEC ;; SET UP THE POWER DOWN VECTOR
9410 042062 012737 000340 000026  MOV      #340,@#PWRVEC-2 ;; PRIO: 7
9411 042070 104401      TYPE      ;; REPORT THE POWER FAILURE
9412 042072 042726      SPWRMG: . WORD POWERM      ;; POWER FAIL MESSAGE POINTER
9413 042074 012716      MOV      (PC)+,(SP)      ;; RESTART AT START
9414 042076 006106      SPWRAD: . WORD START      ;; RESTART ADDRESS
9415 042100 042766 000020 000002  BIC      #20,2(SP)      ;; CLEAR "T" BIT
9416 042106 005067 175304  CLR      $TBIT      ;; CLEAR THE "T" BIT FLAG
9417 042112 000002      RTI
9418 042114 000000      $ILLUP: HALT      ;; THE POWER UP SEQUENCE WAS STARTED
9419 042116 000776      BR      .-2      ;; BEFORE THE POWER DOWN WAS COMPLETE
9420 042120 000000      $SAVR6: 0      ;; PUT THE SP HERE
  
```

```

; SBTTL ERROR TYPE OUT ROUTINE
; *****
; *****
; *THIS ROUTINE IS CALLED TO TYPE AN ERROR MESSAGE WHICH IS INCLUDED
; *IN THE ERROR MESSAGE DATA TABLE. IT IS CALLED BY THE SERROR ROUTINE
; *OR BY FIRST SETTING $ITEMB EQUAL TO THE ERROR TABLE ITEM TO BE PRINTED
; *OUT AND THEN EXECUTING A:
; *      JSR      PC,ERTYPE
; *
  
```

```

9431
9432 042122 104401      ERTYPE: TYPE      ;; TYPE A CRLF
9433 042124 001313      . WORD      $CRLF
9434 042126 113737 001102 001232  MOV      @#STSTNM,@#STMPO
9435 042134 042737 177400 001232  BIC      #177400,@#STMPO
9436 042142 013737 001116 001234  MOV      @#SERRPC,@#STMP1      ;; GET PC OF CALL
9437 042150 010046      MOV      RO,-(SP)      ;; SAVE RO
9438
9439 042152 113700 001114      MOV      @#$ITEMB,RO      ;; GET THE ITEM NUMBER.
9440 042156 042700 177400      BIC      #177400,RO
9441 042162 001005      BNE      15
9442
9443 042164 013746 001116      MOV      @#SERRPC,-(SP)      ;; IF ZERO THEN JUST
9444 042170 104402      TYPOC      ;; PRINT THE PC
9445 042172 000137 042550      JMP      @#ERT5
9446
9447 042176 022700 000377 15:      CMP      #377,RO
9448 042202 001005      BNE      205
9449 042204 016600 000004      MOV      4(SP),RO
9450 042210 011000      MOV      (RO),RO
9451 042212 062700 000400      ADD      #400,RO
9452 042216 005300 205:      DEC      RO      ;; OTHERWISE MAKE RO AN
9453 042220 006300      ASL      RO      ;; INDEX FOR THE TABLE.
9454 042222 006300      ASL      RO
9455 042224 006300      ASL      RO
9456 042226 062700 001442      ADD      #SERRTB,RO
9457
9458 042232 012037 042242      MOV      (RO)+,@#25      ;; PICK UP THE ADDRESS
  
```



9459	042236	001404			BEQ	35		; OF THE EM, ERROR MESSAGE
9460	042240	104401			TYPE			
9461	042242	000000		25:	.WORD	0		
9462	042244	104401			TYPE			
9463	042246	001313			.WORD	5CRLF		
9464								
9465	042250	012037	042260	35:	MOV	(R0)+, @#45		; GET THE DH, DATA HEADER
9466	042254	001404			BEQ	55		
9467	042256	104401			TYPE			
9468	042260	000000		45:	.WORD	0		
9469	042262	104401			TYPE			
9470	042264	001313			.WORD	5CRLF		
9471								
9472	042266	010146		55:	MOV	R1, -(SP)		; SAVE R1, R2 AND R3
9473	042270	010246			MOV	R2, -(SP)		
9474	042272	010346			MOV	R3, -(SP)		
9475								
9476	042274	012001			MOV	(R0)+, R1		; GET THE ADDRESS OF THE
9477								; DATA TABLE.
9478	042276	001001			BNE	65		
9479	042300	000516			BR	ERT4		; RETURN IF NO DATA.
9480								
9481	042302	011000		65:	MOV	(R0), R0		; GET A POINTER TO THE DATA
9482								; FORMAT TABLE.
9483	042304	105710		ERT1:	TSTB	(R0)		; FORMAT ZERO?
9484	042306	001003			BNE	75		
9485								
9486	042310	013146			MOV	@(R1)+, -(SP)		; FORMAT ZERO SO TYPE
9487	042312	104402			TYPOC			; AN OCTAL NUMBER.
9488	042314	000502			BR	ERT2		
9489								
9490	042316			75:				
9491	042316	122710	000002	85:	CMPB	#2, (R0)		; FORMAT TWO?
9492	042322	001010			BNE	95		
9493								
9494	042324	013102			MOV	@(R1)+, R2		; FORMAT TWO SO TYPE TWO
9495	042326	012246			MOV	(R2)+, -(SP)		; OCTAL NUMBERS.
9496	042330	104402			TYPOC			
9497	042332	104401			TYPE			
9498	042334	042772			.WORD	SPACE		
9499	042336	011246			MOV	(R2), -(SP)		
9500	042340	104402			TYPOC			
9501	042342	000467			BR	ERT2		
9502								
9503	042344	122710	000003	95:	CMPB	#3, (R0)		; FORMAT THREE?
9504	042350	001020			BNE	105		
9505								
9506	042352	013102			MOV	@(R1)+, R2		; FORMAT THREE SO TYPE
9507	042354	012246			MOV	(R2)+, -(SP)		; FOUR OCTAL NUMBERS.
9508	042356	104402			TYPOC			
9509	042360	104401			TYPE			
9510	042362	042772			.WORD	SPACE		
9511	042364	012246			MOV	(R2)+, -(SP)		
9512	042366	104402			TYPOC			
9513	042370	104401			TYPE			
9514	042372	042772			.WORD	SPACE		

9515	042374	012246			MOV	(R2)+, -(SP)	
9516	042376	104402			TYPOC		
9517	042400	104401			TYPE		
9518	042402	042772			.WORD	SPACE	
9519	042404	011246			MOV	(R2), -(SP)	
9520	042406	104402			TYPOC		
9521	042410	000444			BR	ERT2	
9522							
9523	042412	122710	000004	105:	CMPB	#4, (R0)	;FORMAT FOUR?
9524	042416	001004			BNE	115	
9525							
9526	042420	013146			MOV	@(R1)+, -(SP)	;FORMAR FOUR SO TYPE
9527	042422	104403			TYPOS		;AN OCTAL NUMBER
9528	042424	016			.BYTE	16	;SUPPRESSING LEADING ZEROES.
9529	042425	000			.BYTE	0	
9530	042426	000435			BR	ERT2	
9531							
9532	042430	122710	000005	115:	CMPB	#5, (R0)	;FORMAT FIVE?
9533	042434	001005			BNE	135	
9534							
9535	042436	012137	042444		MOV	(R1)+, @#125	;FORMAT FIVE SO TYPE AN
9536	042442	104401			TYPE		;ASCIZ STRING.
9537	042444	000000		125:	.WORD	0	
9538	042446	000427			BR	ERT3	
9539							
9540	042450	122710	000011	135:	CMPB	#11, (R0)	;FORMAT ELEVEN?
9541	042454	001005			BNE	155	
9542							
9543	042456	013137	042464		MOV	@(R1)+, @#145	;FORMAT ELEVEN SO PICK
9544	042462	104401			TYPE		;A POINTER TO AN ASCIZ
9545	042464	000000		145:	.WORD	0	;STRING.
9546	042466	000417			BR	ERT3	
9547							
9548	042470	122710	000012	155:	CMPB	#12, (R0)	;FORMAT TWELVE?
9549	042474	001011			BNE	175	
9550							
9551	042476	013102			MOV	@(R1)+, R2	;FORMAT TWELVE SO TYPE
9552	042500	012703	000006		MOV	#6, R3	;TYPE SIX OCTAL NUMBERS



9553 042504 012246  
 9554 042506 104402  
 9555 042510 104401  
 9556 042512 042772  
 9557 042514 077305  
 9558 042516 000401  
 9559  
 9560 042520 000000  
 9561  
 9562 042522 104401  
 9563 042524 042775  
 9564  
 9565  
 9566  
 9567 042526 005200  
 9568 042530 005711  
 9569 042532 001401  
 9570 042534 000663  
 9571  
 9572 042536 104401  
 9573 042540 001313  
 9574 042542 012603  
 9575 042544 012602  
 9576 042546 012601  
 9577 042550 012600  
 9578 042552 000207  
 9579  
 9580  
 9581  
 9582  
 9583  
 9584  
 9585  
 9586  
 9587  
 9588  
 9589  
 9590 042554 011637 001236  
 9591 042560 022626  
 9592 042562 170200  
 9593 042564 010037 001240  
 9594 042570 170300  
 9595 042572 010037 001242  
 9596 042576 104377  
 9597 042600 000441  
 9598 042602 104412  
 9599  
 9600  
 9601  
 9602  
 9603 042604 000137 037132  
 9604  
 9605  
 9606  
 9607  
 9608

```

165:  MOV      (R2)+, -(SP)
      TYPOC
      TYPE
      .WORD   SPACE
      SOB     R3, 165
      BR      ERT2

175:  HALT                                ; UNDEFINED FORMAT FOR DATA?????

ERT2:  TYPE                                ; PRINT A TAB AFTER TYPING
      .WORD   STAB                        ; AN DATA TABLE ENTRY
                                           ; OF ALL FORMATS EXCEPT
                                           ; ASCIZ, FORMATS 5 OR 11

ERT3:  INC     RO                          ; POINT TO THE NEXT FORMAT
      TST     (R1)                        ; END OF DATA TABLE.
      BEQ     ERT4
      BR      ERT1

ERT4:  TYPE                                ; DONE.
      .WORD   SCRLF
      MOV     (SP)+, R3                    ; RESTORE R1, R2 AND R3
      MOV     (SP)+, R2
      MOV     (SP)+, R1
ERT5:  MOV     (SP)+, RO                    ; RESTORE RO.
      RTS     PC                           ; AND RETURN.

```

```

      .SBTTL  FPP SPURIOUS TRAP TO 244 HANDLER
      ;; *****
      ;; *****
      ;*THIS ROUTINE HANDLES UNEXPECTED TRAPS TO THE FPP TRAP VECTOR AT 244.
      ;*THE LAST FPP INSTRUCTION EXECUTED AND ITS ADDRESS HAS BEEN RECORDED
      ;*THESE ALONG WITH THE FEC, FPS AND PC OF TRAP ARE REPORTED.
      ;*
FPSPUR: MOV     (SP), @#STMP2                ; SAVE PC OF TRAP.
      CMP     (SP)+, (SP)+                  ; RESTORE SP.
      STFPS   RO                             ; GET FPS
      MOV     RO, @#STMP3
      STST    RO                             ; GET FEC
      MOV     RO, @#STMP4
15:    ERROR   377
      .WORD   441
      RSETUP                                ; GO INITIALIZE THE FPS AND STACK; AND
                                           ; SEE IF THE USER HAS EXPRESSED
                                           ; THE DESIRE TO CHANGE THE SOFTWARE
                                           ; VIRTUAL CONSOLE SWITCH REGISTER (HAS
                                           ; THE USER TYPED CONTROL G?).

      JMP     @#SEOP

```

```

      .SBTTL  CPU SPURIOUS TRAP TO 4 HANDLER
      ;; *****
      ;; *****

```

```
9609 ;*THIS ROUTINE REPORTS UNEXPECTED CPU TRAPS TO VECTOR 4.
9610 ;*
9611 042610 011637 001236 CPSPUR: MOV (SP),@#STMP2 ;SAVE PC OF TRAP.
9612 042614 022626 CMP (SP)+,(SP)+
9613 042616 104377 15: ERROR 377
9614 042620 000442 .WORD 442
9615 042622 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
9616 ;SEE IF THE USER HAS EXPRESSED
9617 ;THE DESIRE TO CHANGE THE SOFTWARE
9618 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
9619 ;THE USER TYPED CONTROL G?).
9620 042624 000137 037132 JMP @#SEOP
9621
9622 .SBTTL CPU SPURIOUS TRAP TO 10 HANDLER
9623 ;*****
9624 ;*****
9625 ;*THIS ROUTINE REPORTS UNEXPECTED CPU TRAPS TO VECTOR 10.
9626 ;*
9627 ;*
9628 042630 011637 001236 CPTWO: MOV (SP),@#STMP2 ;SAVE PC OF TRAP.
9629 042634 022626 CMP (SP)+,(SP)+
9630 042636 104377 15: ERROR 377
9631 042640 000443 .WORD 443
9632 042642 104412 RSETUP ;GO INITIALIZE THE FPS AND STACK; AND
9633 ;SEE IF THE USER HAS EXPRESSED
9634 ;THE DESIRE TO CHANGE THE SOFTWARE
9635 ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
9636 ;THE USER TYPED CONTROL G?).
9637 042644 000137 037132 JMP @#SEOP
9638
9639 .SBTTL SET LOOP ON ERROR ADDRESS ROUTINE
9640 ;*****
9641 ;*****
9642 ;*
9643 ;*
9644 ;*
9645 ;*
9646 ;*
9647 042650 011637 001110 LPER: MOV (SP),@#SLPERR
9648 042654 000002 RTI
9649
9650 .SBTTL FLAG RESET AND CONSOLE TEST ROUTINE
9651 ;*****
9652 ;*****
9653 ;*THIS ROUTINE WILL BE CALLED AT THE END OF EACH TEST TO
9654 ;*RESET THE STACK, CLEAR THE FPS AND SEE IF THE USER HAS TYPED
9655 ;*CONTROL G ON THE TERMINAL. IF THE USER HAS TYPED CONTROL G AND
9656 ;*THERE IS NO PHYSICAL CONSOLE SWITCH REGISTER THEN THE CONTENTS
9657 ;*OF THE SOFTWARE SWITCH REGISTER WILL BE TYPED IN OCTAL ON THE
9658 ;*TELETYPE AND THE USER CAN MODIFY IT.
9659 ;*
9660 042656 023727 001140 177570 RSET: CMP @#SWR,#177570 ;SEE IF THERE IS A PHYSICAL
9661 ;CONSOLE SWITCH REGISTER.
9662 042664 001001 BNE 15 ;BRANCH IF NO.
9663 042666 104406 CKSWR ;OTHERWISE TYPE THE CONTENTS
9664 ;OF THE PROGRAM VIRTUAL SWITCH REGISTER
```



```

9665
9666
9667 042670 012737 042554 000244 15:  MOV  #FPSPUR, @#FPVECT      ; AND GIVE THE USER A CHANCE TO
9668 042676 012737 042610 000004      MOV  #CPSPUR, @#ERRVECT      ; MODIFY IT.
9669 042704 012737 042630 000010      MOV  #CPTWO, @#10
9670 042712 011600                      MOV  (SP), RO                ; SAVE RETURN ADDRESS.
9671 042714 012706 001100              MOV  #STACK, SP             ; RESET THE STACK POINTER.
9672 042720 005004                      CLR  R4                     ; CLEAR THE FPS.
9673 042722 170104                      LDFPS R4
9674 042724 000110                      JMP  (RO)                   ; RETURN.
9675
9676
9677

```

.NLIST BEX

; THESE ARE SPECIAL MESSAGES:

```

042726 050200 053517 051105 POWERM: .ASCIZ <CRLF>'POWER FAILURE. PROGRAM RESTARTING. '
042772 020040      000      SPACE: .ASCIZ ' '
042775      011      000      $TAB: .ASCIZ <TAB>

042777      107 052117 051040 MS1: .ASCIZ 'GOT RESULT: '<TAB><TAB>
043015      105 050130 041505 MS2: .ASCIZ 'EXPECTED RESULT: '<TAB>
043037      101 020103 050117 MS3: .ASCIZ 'AC OPERAND: '<TAB><TAB>
043055      123 052517 041522 MS4: .ASCIZ 'SOURCE OPERAND: '<TAB>
043077      105 050130 047117 MS11: .ASCIZ 'EXPONENT OPERAND: '<TAB>

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; THESE ARE ERROR MESSAGES:

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043122 052123 020106 026101 EM1: .ASCIZ 'STF A, AC7 DID NOT TRAP. FID=0. '
043161      123 043124 040440 EM2: .ASCIZ 'STF A, AC7. FPS BAD. FID=0. '
043214 052123 020106 026101 EM3: .ASCIZ 'STF A, AC7. FEC BAD. FID=0. '
(0) 043247      EM4:
(1) 043247      123 043124 040440 .ASCIZ STF A, (R). RO BAD. FDST FAILED.
(0) 043307      EM5:
(1) 043307      123 043124 040440 .ASCIZ STF A, (R) FAILED.
043330      000      .BYTE 0
(0) 043331      EM6:
(1) 043331      123 043124 040440 .ASCIZ STF A, (R). FDST FAILED.
(1) 043360 024200 052502 020124 .ASCIZ <CRLF> (BUT FD) ST 707 WENT TO 245 INSTEAD OF 244.
(0) 043435      EM7:
(1) 043435      123 043124 040440 .ASCIZ STF A, (R)+. RO BAD. FDST FAILED.
(0) 043476      EM10:
(1) 043476 052123 020106 026101 .ASCIZ STF A, (R)+ FAILED.
043520      000      .BYTE 0
(0) 043521      EM11:
(1) 043521      123 042124 040440 .ASCIZ STD A, (R)+. RO BAD. FDST FAILED.
(0) 043562      EM12:
(1) 043562 052123 020104 026101 .ASCIZ STD A, (R)+ FAILED.
043604      000      .BYTE 0
043605      123 042124 040440 EM13: .ASCIZ 'STD A, #N TRAP TO 4 IN FDST. '
EM14=EM13
(0) 043641      EM15:
(1) 043641      123 042124 040440 .ASCIZ STD A, #N FAILED.
043661      000      .BYTE 0
043662 041520 041040 042101 EM16: .ASCIZ 'PC BAD AFTER STD A, #N. '

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(0)	043711				EM17:		
(1)	043711	123	042124	040440		.ASCIZ	STD A,-(R) TRAP TO 4 IN FDST.
(0)	043747				EM20:		
(1)	043747	123	042124	040440		.ASCIZ	STD A,-(R). RO BAD. FDST FAILED.
(0)	044010				EM21:		
(1)	044010	052123	020104	026101		.ASCII	STD A,-(R) FAILED.
	044032	000				.BYTE	0
		044010			EM22=EM21		
(0)	044033				EM23:		
(1)	044033	123	042124	040440		.ASCIZ	STD A,@(R)+ TRAP TO 4 IN FDST.
(0)	044072				EM24:		
(1)	044072	052123	020104	026101		.ASCIZ	STD A,@(R)+. RO BAD. FDST FAILED.
(0)	044134				EM25:		
(1)	044134	052123	020104	026101		.ASCII	STD A,@(R)+ FAILED.
	044157	000				.BYTE	0
(0)	044160				EM26:		
(1)	044160	052123	020104	026101		.ASCIZ	STD A,@-(R) TRAP TO 4 IN FDST.
(0)	044217				EM27:		
(1)	044217	123	042124	040440		.ASCIZ	STD A,@-(R). RO BAD. FDST FAILED.
(0)	044261				EM30:		
(1)	044261	123	042124	040440		.ASCII	STD A,@-(R) FAILED.
	044304	000				.BYTE	0
(0)	044305				EM31:		
(1)	044305	123	042124	040440		.ASCIZ	STD A,N(R) TRAP TO 4 IN FDST.
(0)	044343				EM32:		
(1)	044343	123	042124	040440		.ASCIZ	STD A,N(R). RO BAD. FDST FAILED.
(0)	044404				EM33:		
(1)	044404	052123	020104	026101		.ASCII	STD A,N(R) FAILED.
	044426	000				.BYTE	0
(0)	044427				EM34:		
(1)	044427	123	042124	040440		.ASCIZ	STD A,@N(R) TRAP TO 4 IN FDST.
(0)	044466				EM35:		
(1)	044466	052123	020104	026101		.ASCIZ	STD A,@N(R). RO BAD. FDST FAILED.
(0)	044530				EM36:		
(1)	044530	052123	020104	026101		.ASCII	STD A,@N(R) FAILED.
	044553	000				.BYTE	0
(0)	044554				EM37:		
(1)	044554	052123	043103	020104		.ASCII	'STCFD A,(R) FAILED.'
	044577	000				.BYTE	0
(0)	044600				EM40:		
(1)	044600	052123	043103	020104		.ASCII	STCFD A,(R). FPS BAD.
	044625	000				.BYTE	0
(0)	044626				EM41:		
(1)	044626	052123	043103	020104		.ASCII	STCFD A,(R). FEC BAD.
	044653	000				.BYTE	0
(0)	044654				EM42:		
(1)	044654	052123	043103	020104		.ASCII	'TCFD A,(R) FAILED.'
	044677	200	047111	042526		.ASCIZ	<CRLF>'INVERT DFPL ST 767-FAILED.'
(0)	044733				EM43:		
(1)	044733	123	041524	042106		.ASCII	STCFD A,(R). FPS BAD.
(1)	044760	024200	052502	020124		.ASCIZ	<CRLF>(BUT EZBT) ST 560 WENT TO 061 INSTEAD OF 261.
(0)	045037				EM44:		
(1)	045037	123	041524	042106		.ASCII	'STCFD A,(R) FAILED.'
	045062	046200	053517	047440		.ASCIZ	<CRLF>'LOW ORDER BITS OF X11 DID NOT GET 0 ST 766.'
(0)	045137				EM45:		
(1)	045137	123	041524	042106		.ASCII	'STCFD A,(R) FAILED.'



(0)	045162	024200	052502	020124	EM46:	.ASCIZ <CRLF>'(BUT OP1C) ST 251 FAILED.'
(1)	045215	123	041524	042106		.ASCII STCFD A.(R). FPS BAD.
(1)	045242	024200	052502	020124	EM47:	.ASCIZ <CRLF>(BUT EZBT) ST 421 WENT TO 262 INSTEAD OF 062.
(0)	045321					
(1)	045321	123	041524	042106		.ASCII 'STCFD A.(R) FAILED.'
(1)	045344	024200	052502	020124	EM50:	.ASCIZ <CRLF>(BUT FD) ST 113 WENT TO 415 INSTEAD OF 414.
(0)	045421					
(1)	045421	123	041524	042106		.ASCII 'STCFD A.(R) FAILED.'
	045444	051440	043511	020116		.ASCII 'SIGN BAD.'
(1)	045456	024200	052502	020124	EM51:	.ASCIZ <CRLF>(BUT ENBT) ST 567 WENT TO 060 INSTEAD OF 460.
(0)	045535					
(1)	045535	123	041524	043104		.ASCII 'STCDF A.(R) FAILED.'
	045560	000				.BYTE 0
(0)	045561				EM52:	
(1)	045561	123	042124	040440		.ASCII STD A.(R). FPS BAD.
	045604	000				.BYTE 0
(0)	045605				EM53:	
(1)	045605	123	042124	040440		.ASCII STD A.(R). FEC BAD.
	045630	000				.BYTE 0
(0)	045631				EM54:	
(1)	045631	123	041524	043104		.ASCII 'STCDF A.(R) FAILED.'
	045654	044600	053116	051105	EM55:	.ASCIZ <CRLF>'INVERT FDFL ST 767 FAILED.'
(0)	045710					
(1)	045710	052123	042103	020106		.ASCII 'STCDF A.(R) FAILED.'
	045733	200	047522	047125		.ASCII <CRLF>'ROUND ERROR, OR'
(1)	045753	200	041050	052125	EM56:	.ASCIZ <CRLF>(BUT BREAKOUT) ST 400 WENT TO 766 INSTEAD OF 767.
(0)	046036					
(1)	046036	052123	020104	026101		.ASCII STD A.(R). FPS BAD.
(1)	046061	200	041050	052125	EM57:	.ASCIZ <CRLF>(BUT EZBT) ST 421 WENT TO 062 INSTEAD OF 262.
(0)	046140					
(1)	046140	052123	020104	026101		.ASCII STD A.(R). FPS BAD.
	046163	040	044506	036526		.ASCII 'FIV=0.'
(1)	046172	024200	052502	020124	EM60:	.ASCIZ <CRLF>(BUT FIV) ST 262 WENT TO 123 INSTEAD OF 103.
(0)	046250					
(1)	046250	052123	042103	020106		.ASCII 'STCDF A.(R) FAILED.'
	046273	040	044506	036526		.ASCII 'FIV=1.'
(1)	046302	024200	052502	020124	EM61:	.ASCIZ <CRLF>(BUT FIV) ST 262 WENT TO 103 INSTEAD OF 123.
(0)	046360					
(1)	046360	052123	020104	026101		.ASCII STD A.(R). FPS BAD.
(1)	046403	200	041050	052125	EM62:	.ASCIZ <CRLF>(BUT FLAG) ST 147 WENT TO 361 INSTEAD OF 365.
	046462	052123	043103	020104		.ASCII 'STCFD A.AC6. FPS BAD.'
(1)	046507	200	041050	052125	EM63:	.ASCIZ <CRLF>(BUT FDST) ST 767 WENT TO 567 INSTEAD OF 577.
	046566	052123	043103	020104	EM64:	.ASCIZ 'STCFD A.AC6. FEC BAD.'
(0)	046614					
(1)	046614	046103	042122	024040		.ASCII CLRD (R) FAILED.
	046634	055200	051105	020117	EM65:	.ASCIZ <CRLF>'ZERO X11 AT ST 770 FAILED.'
(0)	046670					
(1)	046670	046103	042122	024040		.ASCII CLRD (R). FPS BAD.
	046712	000				.BYTE 0
(0)	046713				EM66:	
(1)	046713	103	051114	020104		.ASCIZ CLRD (R). RO BAD. FDST FAILED.
(0)	046752				EM67:	
(1)	046752	046103	042122	040440		.ASCII CLRD AC7. FPS BAD.
(1)	046774	024200	052502	020124	EM70:	.ASCIZ <CRLF>(BUT FDST) ST 770 WENT TO 607 INSTEAD OF 617.
(0)	047053					

(1)	047053	103	051114	020104	. ASCII	CLRD AC7. FEC BAD.
	047075	000			. BYTE	0
	047076	042516	043107	040440	EM176:	. ASCIIZ 'NEGF AC7. FPS BAD.'
	047121	116	043505	020106	EM177:	. ASCIIZ 'NEGF AC7. FEC BAD.'
(0)	047144				EM71:	
(1)	047144	042516	043107	040440	. ASCIIZ	NEGF A FAILED.
(0)	047163				EM72:	
(1)	047163	116	043505	020106	. ASCIIZ	NEGF A. FPS BAD.
(0)	047204				EM107:	
(1)	047204	042516	042107	024040	. ASCIIZ	NEGD (R) TRAP TO 4 IN SRC MODE.
(0)	047244				EM73:	
(1)	047244	042516	042107	024040	. ASCIIZ	NEGD (R) FAILED.
(0)	047265				EM74:	
(1)	047265	116	043505	020104	. ASCIIZ	NEGD (R). RO BAD.
(0)	047307				EM75:	
(1)	047307	116	043505	020104	. ASCIIZ	NEGD (R). FPS BAD.
(0)	047332				EM76:	
(1)	047332	041101	042123	024040	. ASCIIZ	ABSD (R)+ TRAP TO 4 IN SRC MODE.
(0)	047373				EM77:	
(1)	047373	101	051502	020104	. ASCIIZ	ABSD (R)+ FAILED.
(0)	047415				EM100:	
(1)	047415	101	051502	020104	. ASCIIZ	ABSD (R)+. RO BAD.
(0)	047440				EM101:	
(1)	047440	041101	042123	024040	. ASCIIZ	ABSD (R)+. FPS BAD.
(0)	047464				EM102:	
(1)	047464	041101	042123	026440	. ASCIIZ	ABSD -(R) TRAP TO 4 IN SRC MODE.
(0)	047525				EM103:	
(1)	047525	101	051502	020104	. ASCIIZ	ABSD -(R) FAILED.
(0)	047547				EM104:	
(1)	047547	101	051502	020104	. ASCIIZ	ABSD -(R). RO BAD.
(0)	047572				EM105:	
(1)	047572	041101	042123	026440	. ASCIIZ	ABSD -(R). FPS BAD.
(0)	047616				EM106:	
(1)	047616	041101	042123	040040	. ASCIIZ	ABSD @ (R)+ TRAP TO 4 IN SRC MODE.
(0)	047660				EM110:	
(1)	047660	041101	042123	040040	. ASCIIZ	ABSD @ (R)+ FAILED.
(0)	047703				EM111:	
(1)	047703	101	051502	020104	. ASCIIZ	ABSD @ (R)+. RO BAD.
(0)	047727				EM112:	
(1)	047727	101	051502	020104	. ASCIIZ	ABSD @ (R)+. FPS BAD.
(0)	047754				EM113:	
(1)	047754	042516	042107	040040	. ASCIIZ	NEGD @-(R) TRAP TO 4 IN SRC MODE.
(0)	050016				EM114:	
(1)	050016	042516	042107	040040	. ASCIIZ	NEGD @-(R) FAILED.
(0)	050041				EM115:	
(1)	050041	116	043505	020104	. ASCIIZ	NEGD @-(R). RO BAD.
(0)	050065				EM116:	
(1)	050065	116	043505	020104	. ASCIIZ	NEGD @-(R). FPS BAD.
(0)	050112				EM117:	
(1)	050112	041101	042123	047040	. ASCIIZ	ABSD N(R) TRAP TO 4 IN SRC MODE.
(0)	050153				EM120:	
(1)	050153	101	051502	020104	. ASCIIZ	ABSD N(R) FAILED.
(0)	050175				EM121:	
(1)	050175	101	051502	020104	. ASCIIZ	ABSD N(R). RO BAD.
(0)	050220				EM122:	
(1)	050220	041101	042123	047040	. ASCIIZ	ABSD N(R). FPS BAD.



(0)	050244				EM123:	
(1)	050244	042516	042107	040040	. ASCIZ	NEGD @N(R) TRAP TO 4 IN SRC MODE.
(0)	050306				EM124:	
(1)	050306	042516	042107	040040	. ASCIZ	NEGD @N(R) FAILED.
(0)	050331				EM125:	
(1)	050331	116	043505	020104	. ASCIZ	NEGD @N(R). RO BAD.
(0)	050355				EM126:	
(1)	050355	116	043505	020104	. ASCIZ	NEGD @N(R). FPS BAD.
(0)	050402				EM127:	
(1)	050402	042516	042107	047040	. ASCIZ	NEGD N(R7) TRAP TO 4 IN SRC MODE.
(0)	050444				EM130:	
(1)	050444	042516	042107	047040	. ASCIZ	NEGD N(R7) FAILED.
(0)	050467				EM131:	
(1)	050467	116	043505	020104	. ASCIZ	NEGD N(R7). FPS BAD.
(0)	050514				EM132:	
(1)	050514	041101	042123	040040	. ASCIZ	ABSD @N(R7) TRAP TO 4 IN SRC MODE.
(0)	050557				EM133:	
(1)	050557	101	051502	020104	. ASCIZ	ABSD @N(R7) FAILED.
(0)	050603				EM134:	
(1)	050603	101	051502	020104	. ASCIZ	ABSD @N(R7). FPS BAD.
	050631	116	043505	020104	EM135:	. ASCII 'NEGD A FAILED.'
	050647	200	047530	020122	EM135:	. ASCII <CRLF>'XOR SIGN BIT ST 336 FAILED.'
(0)	050704				EM136:	
(1)	050704	042516	042107	040440	. ASCIZ	NEGD A FAILED.
(0)	050723				EM137:	
(2)	050723	116	043505	020104	. ASCIZ	NEGD A. FPS BAD.
(0)	050744				EM140:	
(1)	050744	042516	042107	024040	. ASCIZ	NEGD (R) FAILED.
(0)	050765				EM141:	
(1)	050765	116	043505	020104	. ASCIZ	NEGD (R). RO BAD. SPECIAL DEST FAILED.
(0)	051034				EM142:	
(2)	051034	042516	042107	024040	. ASCIZ	NEGD (R). FPS BAD.
(0)	051057				EM143:	
(1)	051057	116	043505	020104	. ASCIZ	NEGD (R)+ FAILED.
(0)	051101				EM144:	
(1)	051101	116	043505	020104	. ASCIZ	NEGD (R)+. RO BAD. SPECIAL DEST FAILED.
(0)	051151				EM145:	
(2)	051151	116	043505	020104	. ASCIZ	NEGD (R)+. FPS BAD.
(0)	051175				EM146:	
(1)	051175	116	043505	020104	. ASCIZ	NEGD -(R) FAILED.
(0)	051217				EM147:	
(1)	051217	116	043505	020104	. ASCIZ	NEGD -(R). RO BAD. SPECIAL DEST FAILED.
(0)	051267				EM150:	
(2)	051267	116	043505	020104	. ASCIZ	NEGD -(R). FPS BAD.
(0)	051313				EM151:	
(1)	051313	116	043505	020104	. ASCIZ	NEGD @N(R)+ FAILED.
(0)	051336				EM152:	
(1)	051336	042516	042107	040040	. ASCIZ	NEGD @N(R)+. RO BAD. SPECIAL DEST FAILED.
(0)	051407				EM153:	
(2)	051407	116	043505	020104	. ASCIZ	NEGD @N(R)+. FPS BAD.
(0)	051434				EM154:	
(1)	051434	042516	042107	040040	. ASCIZ	NEGD @-(R) FAILED.
(0)	051457				EM155:	
(1)	051457	116	043505	020104	. ASCIZ	NEGD @-(R). RO BAD. SPECIAL DEST FAILED.
(0)	051530				EM156:	
(2)	051530	042516	042107	040040	. ASCIZ	NEGD @-(R). FPS BAD.

(0)	051555				EM157:	
(1)	051555	116	043505	020106	.ASCIZ	NEGF (R)+ FAILED.
	051577	116	043505	020106	.ASCII	'NEGF (R)+. RO BAD.'
	051621	102	042101	041440	.ASCIZ	'BAD CONSTANT USED. SPECIAL DEST FAILED.'
(0)	051671				EM161:	
(2)	051671	116	043505	020106	.ASCIZ	NEGF (R)+. FPS BAD.
(0)	051715				EM162:	
(1)	051715	116	043505	020104	.ASCIZ	NEGD (R7)+ FAILED.
(0)	051740				EM163:	
(2)	051740	042516	042107	024040	.ASCIZ	NEGD (R7)+. FPS BAD.
	051765	120	020103	040502	EM164:	.ASCIZ 'PC BAD AFTER NEGD (R7)+. BAD CONSTANT USED.'
(0)	052041				EM215:	
(1)	052041	120	020103	040502	.ASCII	PC BAD AFTER NEGD N(R). BAD CONSTANT USED 746 746.
(1)	052123	200	051117	024040	.ASCIZ	<CRLF>'OR (BUT FDST) IN SPECIAL DEST FAILED.'
(0)	052172				EM216:	
(1)	052172	042516	042107	047040	.ASCIZ	NEGD N(R) FAILED.
(0)	052214				EM217:	
(1)	052214	042516	042107	047040	.ASCIZ	NEGD N(R). RO BAD. SPECIAL DEST FAILED.
(0)	052264				EM220:	
(2)	052264	042516	042107	047040	.ASCIZ	NEGD N(R). FPS BAD.
(0)	052310				EM221:	
(1)	052310	041520	041040	042101	.ASCII	PC BAD AFTER NEGD N(R). BAD CONSTANT USED 747 747.
(1)	052373	200	051117	024040	.ASCIZ	<CRLF>'OR (BUT FDST) IN SPECIAL DEST FAILED.'
(0)	052442				EM222:	
(1)	052442	042516	042107	040040	.ASCIZ	NEGD N(R) FAILED.
(0)	052465				EM223:	
(1)	052465	116	043505	020104	.ASCIZ	NEGD N(R). RO BAD. SPECIAL DEST FAILED.
(0)	052536				EM224:	
(2)	052536	042516	042107	040040	.ASCIZ	NEGD N(R). FPS BAD.
(0)	052563				EM165:	
(1)	052563	116	043505	020104	.ASCIZ	NEGD (R) FAILED.
(0)	052604				EM166:	
(1)	052604	041101	042123	024040	.ASCIZ	R9SD (R) FAILED.
(0)	052625				EM167:	
(1)	052625	124	052123	020104	.ASCIZ	TSTD (R) FAILED.
(0)	052646				EM170:	
(1)	052646	042516	042107	024040	.ASCIZ	NEGD (R). FPS BAD.
(0)	052671				EM171:	
(1)	052671	101	051502	020104	.ASCIZ	ABSD (R). FPS BAD.
(0)	052714				EM172:	
(1)	052714	051524	042124	024040	.ASCIZ	TSTD (R). FPS BAD.
(0)	052737				EM173:	
(1)	052737	116	043505	020104	.ASCIZ	NEGD (R). FEC BAD.
(0)	052762				EM174:	
(1)	052762	041101	042123	024040	.ASCIZ	ABSD (R). FEC BAD.
(0)	053005				EM175:	
(1)	053005	124	052123	020104	.ASCIZ	TSTD (R). FEC BAD.
(0)	053030				EM200:	
(1)	053030	042516	042107	024040	.ASCII	NEGD (R) FAILED.
	053050	054200	051117	051440	.ASCIZ	<CRLF>'XOR SIGN BIT FAILED ST 336.'
(0)	053105				EM201:	
(1)	053105	116	043505	020104	.ASCII	NEGD (R). FPS BAD.
(1)	053127	200	041050	052125	.ASCIZ	<CRLF> (BUT ENBT) ST 336 WENT TO 053 INSTEAD OF 453.
(0)	053206				EM202:	
(1)	053206	042516	042107	024040	.ASCII	NEGD (R). FPS BAD.
(1)	053230	024200	052502	020124	.ASCIZ	<CRLF> (BUT ENBT) ST 336 WENT TO 453 INSTEAD OF 053.



(0)	053307				EM203:	
(1)	053307	101	051502	020104	. ASCII	ABSD (R) FAILED.
	053327	200	041050	052125	. ASCII	<CRLF> (BUT OP18) ST 055 WENT TO 336 INSTEAD OF 335, OR'
(1)	053410	024200	052502	020124	. ASCII2	<CRLF> (BUT ENBT) ST 335 WENT TO 452 INSTEAD OF 052.
(0)	053467				EM204:	
(1)	053467	101	051502	020104	. ASCII	ABSD (R) FAILED.
	053507	200	047530	020122	. ASCII2	<CRLF> XOR SIGN BIT FAILED ST 452. '
(0)	053544				EM205:	
(1)	053544	051524	042124	024040	. ASCII	TSTD (R) FAILED.
(1)	053564	024200	052502	020124	. ASCII2	<CRLF> (BUT OP18) ST 055 WENT TO 336 INSTEAD OF 334.
(0)	053643				EM206:	
(1)	053643	124	052123	020104	. ASCII	TSTD (R). FPS BAD.
(1)	053665	200	041050	052125	. ASCII2	<CRLF> (BUT ENBT) ST 334 WENT TO 453 INSTEAD OF 053.
(0)	053744				EM207:	
(1)	053744	051524	042124	024040	. ASCII	TSTD (R) FAILED.
(1)	053764	024200	052502	020124	. ASCII2	<CRLF> (BUT OP18) ST 057 WENT TO 335 INSTEAD OF 334.
(0)	054043				EM210:	
(1)	054043	124	052123	020104	. ASCII	TSTD (R) FAILED.
(1)	054063	200	041050	052125	. ASCII2	<CRLF> (BUT ENBT) ST 334 WENT TO 053 INSTEAD OF 453.
(0)	054142				EM211:	
(1)	054142	051524	042124	024040	. ASCII	TSTD (R) FAILED.
(1)	054162	024200	052502	020124	. ASCII2	<CRLF> (BUT OP18) ST 255 WENT TO 311 OR 312 INSTEAD OF 310.
(0)	054250				EM212:	
(1)	054250	051524	042124	024040	. ASCII	TSTD (R). FPS BAD.
(1)	054272	024200	052502	020124	. ASCII2	<CRLF> (BUT ENBT) ST 310 WENT TO 402 INSTEAD OF 002.
(0)	054351				EM213:	
(1)	054351	124	052123	020104	. ASCII	TSTD (R). FPS BAD.
	054373	040	044506	053125	. ASCII	' FIUV=0, OPERAND=-0. '
(1)	054417	200	041050	052125	. ASCII2	<CRLF> (BUT FIUV) ST 257 WENT TO 355 INSTEAD OF 255.
(0)	054476				EM214:	
(1)	054476	051524	042124	024040	. ASCII	TSTD (R). FPS BAD.
	054520	043040	052511	036526	. ASCII	' FIUV=1, OPERAND=-0. '
(1)	054544	024200	052502	020124	. ASCII2	<CRLF> (BUT FIUV) ST 257 WENT TO 255 INSTEAD OF 355.
(0)	054623				EM225:	
(1)	054623	114	043104	051520	. ASCII2	LDFPS (R). RO BAD.
(0)	054646				EM226:	
(1)	054646	042114	050106	020123	. ASCII2	LDFPS (R). FPS BAD.
(0)	054672				EM227:	
(1)	054672	042114	050106	020123	. ASCII2	LDFPS (R) TRAPPED TO 4.
(0)	054722				EM230:	
(1)	054722	042114	050106	020123	. ASCII2	LDFPS (R)+. RO BAD.
(0)	054746				EM231:	
(1)	054746	042114	050106	020123	. ASCII2	LDFPS (R)+. FPS BAD.
(0)	054773				EM232:	
(1)	054773	114	043104	051520	. ASCII2	LDFPS (R)+ TRAPPED TO 4.
(0)	055024				EM233:	
(1)	055024	042114	050106	020123	. ASCII2	LDFPS -(R). RO BAD.
(0)	055050				EM234:	
(1)	055050	042114	050106	020123	. ASCII2	LDFPS -(R). FPS BAD.
(0)	055075				EM235:	
(1)	055075	114	043104	051520	. ASCII2	LDFPS -(R) TRAPPED TO 4.

(0)	055126				EM236:		
(1)	055126	042114	050106	020123		.ASCIZ	LDFPS @ (R)+. RO BAD.
(0)	055153				EM237:		
(1)	055153	114	043104	051520		.ASCIZ	LDFPS @ (R)+. FPS BAD.
(0)	055201				EM240:		
(1)	055201	114	043104	051520		.ASCIZ	LDFPS @ (R)+ TRAPPED TO 4.
(0)	055233				EM241:		
(1)	055233	114	043104	051520		.ASCIZ	LDFPS @-(R). RO BAD.
(0)	055260				EM242:		
(1)	055260	042114	050106	020123		.ASCIZ	LDFPS @-(R). FPS BAD.
(0)	055306				EM243:		
(1)	055306	042114	050106	020123		.ASCIZ	LDFPS @-(R) TRAPPED TO 4.
(0)	055340				EM244:		
(1)	055340	042114	050106	020123		.ASCIZ	LDFPS N(R). RO BAD.
(0)	055364				EM245:		
(1)	055364	042114	050106	020123		.ASCIZ	LDFPS N(R). FPS BAD.
(0)	055411				EM246:		
(1)	055411	120	020103	040502		.ASCIZ	PC BAD AFTER LDFPS N(R).
(0)	055442				EM247:		
(1)	055442	042114	050106	020123		.ASCIZ	LDFPS N(R) TRAPPED TO 4.
(0)	055473				EM250:		
(1)	055473	114	043104	051520		.ASCIZ	LDFPS @N(R). RO BAD.
(0)	055520				EM251:		
(1)	055520	042114	050106	020123		.ASCIZ	LDFPS @N(R). FPS BAD.
(0)	055546				EM252:		
(1)	055546	041520	041040	042101		.ASCIZ	PC BAD AFTER LDFPS @N(R).
(0)	055600				EM253:		
(1)	055600	042114	050106	020123		.ASCIZ	LDFPS @N(R) TRAPPED TO 4.
(0)	055632				EM254:		
(1)	055632	041520	041040	042101		.ASCIZ	PC BAD AFTER LDCLD (R)+,A.
(0)	055666				EM255:		
(1)	055666	042114	046103	020104		.ASCIZ	LDCLD (R)+,A TRAPPED TO 4.
(0)	055722				EM256:		
(1)	055722	042114	046103	020104		.ASCIZ	LDCLD (R)+,A. RO BAD.
(0)	055750				EM257:		
(1)	055750	042114	046103	020104		.ASCIZ	LDCLD (R)+,A. FPS BAD.
(0)	055777				EM260:		
(1)	055777	114	041504	043111		.ASCIZ	LDCIF OR LDCLF (R),A FAILED.
	056033	000				.BYTE	0
(0)	056034				EM261:		
(1)	056034	042114	044503	020106		.ASCIZ	LDCIF OR LDCLF (R),A. FPS BAD.
	056072	000				.BYTE	0
(0)	056073				EM262:		
(1)	056073	114	041504	043111		.ASCIZ	LDCIF (R),A FAILED.
(1)	056116	024200	052502	020124		.ASCIZ	<CRLF> (BUT FL) ST 277 WENT TO 300 INSTEAD OF 301.
(0)	056173				EM263:		



(1)	056173	114	041504	043114		. ASCII	LDCLF (R),A. FPS BAD.
	056220	000				. BYTE	0
(0)	056221				EM264:		
(1)	056221	114	041504	043111		. ASCII	LDCIF (R),A FAILED.
	056244	052600	042523	020104		. ASCII	<CRLF>'USED CONSTANT 237 INSTEAD OF 217 ST 107. '
(0)	056316				EM265:		
(1)	056316	042114	044503	020106		. ASCII	LDCIF OR LDCLF (R),A FAILED.
	056352	051600	052105	051440		. ASCII	<CRLF>'SET SIGN BIT FAILED ST 146. '
(0)	056407				EM266:		
(1)	056407	114	041504	043111		. ASCII	LDCIF OR LDCLF (R),A FAILED.
(1)	056443	200	041050	052125		. ASCII	<CRLF> (BUT XNBT) ST 372 WENT TO 152 INSTEAD OF 112.
(0)	056522				EM267:		
(1)	056522	042114	046103	020106		. ASCII	LDCLF (R),A FAILED.
	056545	200	051525	042105		. ASCII	<CRLF>'USED CONSTANT 217 INSTEAD OF 237 ST 107. '
(0)	056617				EM270:		
(1)	056617	114	041504	043114		. ASCII	LDCLF (R),A FAILED.
	056642	051040	052517	042116		. ASCII	' ROUND ERROR. '
(0)	056660				EM271:		
(1)	056660	042114	046103	020106		. ASCII	LDCLF (R),A FAILED.
	056703	040	051124	047125		. ASCII	' TRUNCATION ERROR. '
(0)	056726				EM272:		
(1)	056726	042114	044503	020106		. ASCII	LDCIF OR LDCLF (R),A FAILED.
	056762	051200	032061	047040		. ASCII	<CRLF>'R14 NOT INCREMENTED ST 630. '
(0)	057017				EM273:		
(1)	057017	114	041504	042111		. ASCII	LDCID OR LDCLD (R),A FAILED.
	057053	000				. BYTE	0
(0)	057054				EM274:		
(1)	057054	042114	044503	020104		. ASCII	LDCID OR LDCLD (R),A. FPS BAD.
	057112	000				. BYTE	0
(0)	057113				EM275:		
(1)	057113	114	041504	042111		. ASCII	LDCID (R),A FAILED.
(1)	057136	024200	052502	020124		. ASCII	<CRLF> (BUT FL) ST 277 WENT TO 300 INSTEAD OF 301.
(0)	057213				EM276:		
(1)	057213	114	041504	042111		. ASCII	LDCID (R),A FAILED.
	057236	052600	042523	020104		. ASCII	<CRLF>'USED CONSTANT 237 INSTEAD OF 217 ST 107. '
(0)	057310				EM277:		
(1)	057310	042114	044503	020104		. ASCII	LDCID (R),A FAILED.
	057333	200	042523	020124		. ASCII	<CRLF>'SET SIGN FAILED ST 146. '
(0)	057364				EM300:		
(1)	057364	042114	046103	020104		. ASCII	LDCLD (R),A FAILED.
	057407	200	051525	042105		. ASCII	<CRLF>'USED CONSTANT 217 INSTEAD OF 237 ST 107. '
(0)	057461				EM301:		
(1)	057461	114	042504	050130		. ASCII	LDEXP (R),A FAILED.

(0)	057504	000				. BYTE	0	
(1)	057505	114	042504	050130	EM302:	. ASCII	LDEXP (R), A FPS BAD.	
	057532	000				. BYTE	0	
	057533	114	042504	050130	EM303:	. ASCIIZ	'LDEXP (R), A FEC BAD.'	
(0)	057561				EM304:			
(1)	057561	114	042504	050130		. ASCII	LDEXP (R), A FAILED.	
	057604	042600	041530	051505		. ASCIIZ	<CRLF>'EXCESS 200 CALCULATION ST 624 BAD.'	
(0)	057650				EM305:			
(1)	057650	042114	054105	020120		. ASCII	LDEXP (R), A FPS BAD.	
	057675	050	052502	020124		. ASCII	'(BUT ENBT, EZBT, XNBT) ST 625 DID NOT GO TO 304.'	
(0)	057753				EM306:			
(1)	057753	114	042504	050130		. ASCII	LDEXP (R), A FPS BAD.	
	060000	024200	052502	020124		. ASCII	<CRLF>'(BUT EZBT) ST 544 WENT TO 504 INSTEAD OF 704, OR'	
(1)	060061	200	041050	052125		. ASCIIZ	<CRLF>(BUT EZBT) ST 704 WENT TO 264 INSTEAD OF 064.	
(0)	060140				EM307:			
(1)	060140	042114	054105	020120		. ASCII	LDEXP (R), A FAILED.	
(1)	060163	200	041050	052125		. ASCIIZ	<CRLF>(BUT EZBT) ST 704 WENT TO 064 INSTEAD OF 264.	
(0)	060242				EM310:			
(1)	060242	042114	054105	020120		. ASCII	LDEXP (R), A FPS BAD.	
(1)	060267	200	041050	052125		. ASCIIZ	<CRLF>(BUT FIU) ST 264 WENT TO 115 INSTEAD OF 155.	
(0)	060345				EM311:			
(1)	060345	114	042504	050130		. ASCII	LDEXP (R), A FAILED.	
(1)	060370	024200	052502	020124		. ASCIIZ	<CRLF>(BUT FIU) ST 264 WENT TO 155 INSTEAD OF 115.	
(0)	060446				EM312:			
(1)	060446	042114	054105	020120		. ASCII	LDEXP (R), A FAILED.	
(1)	060471	200	041050	052125		. ASCIIZ	<CRLF>(BUT EZBT) ST 544 WENT TO 704 INSTEAD OF 504.	
(0)	060550				EM313:			
(1)	060550	042114	054105	020120		. ASCII	LDEXP (R), A FAILED.	
(1)	060573	200	041050	052125		. ASCIIZ	<CRLF>(BUT FIU) ST 504 WENT TO 155 INSTEAD OF 115.	
(0)	060651				EM314:			
(1)	060651	114	042504	050130		. ASCII	LDEXP (R), A FAILED.	
(1)	060674	024200	052502	020124		. ASCIIZ	<CRLF>(BUT FIV) ST 104 WENT TO 116 INSTEAD OF 136.	
(0)	060752				EM315:			
(1)	060752	042114	054105	020120		. ASCII	LDEXP (R), A FAILED.	
(1)	060775	200	041050	052125		. ASCIIZ	<CRLF>(BUT FIV) ST 104 WENT TO 136 INSTEAD OF 116.	
(0)	061053				EM316:			
(1)	061053	114	042504	050130		. ASCII	LDEXP (R), A FAILED.	
(1)	061076	024200	052502	020124		. ASCIIZ	<CRLF>(BUT FIV) ST 144 WENT TO 116 INSTEAD OF 136.	
(0)	061154				EM317:			
(1)	061154	042114	054105	020120		. ASCII	LDEXP (R), A FAILED.	
(1)	061177	200	041050	052125		. ASCIIZ	<CRLF>(BUT FIV) ST 144 WENT TO 136 INSTEAD OF 116.	
(0)	061255				EM320:			



(1)	061255	114	042504	050130		. ASCII	LDEXP (R), A FAILED.
(1)	061300	024200	052502	020124		. ASCIIZ	<CRLF> (BUT FIV) ST 344 WENT TO 116 INSTEAD OF 136.
(0)	061356				EM321:		
(1)	061356	042114	054105	020120		. ASCII	LDEXP (R), A FAILED.
(1)	061401	200	041050	052125		. ASCIIZ	<CRLF> (BUT FIV) ST 344 WENT TO 136 INSTEAD OF 116.
(0)	061457				EM322:		
(1)	061457	123	041524	044504		. ASCII	STCDI OR STCDL (R), A FAILED.
	061513	000				. BYTE	0
(0)	061514				EM323:		
(1)	061514	052123	042103	020111		. ASCII	STCDI OR STCDL (R), A. FPS BAD.
	061552	000				. BYTE	0
	061553	123	041524	044504	EM324:	. ASCIIZ	'STCDI OR STCDL (R), A. FEC BAD. '
(0)	061612				EM325:		
(1)	061612	052123	042103	020114		. ASCII	STCDL (R), A. FPS BAD.
	061637	200	046103	040505		. ASCII	<CRLF> 'CLEAR FLAG ST 774 FAILED, OR'
(1)	061674	024200	052502	020124		. ASCIIZ	<CRLF> (BUT FLAG) ST 662 WENT TO 365 INSTEAD OF 361.
	061612				EM326=EM325		
(0)	061753				EM327:		
(1)	061753	123	041524	046104		. ASCII	STCDL (R), A FAILED.
(1)	061776	024200	052502	020124		. ASCIIZ	<CRLF> (BUT ENBT) ST 632 WENT TO 473 INSTEAD OF 073.
(0)	062055				EM330:		
(1)	062055	123	041524	046104		. ASCII	STCDL (R), A. FPS BAD.
(1)	062102	024200	052502	020124		. ASCIIZ	<CRLF> (BUT FIC) ST 004 WENT TO 305 INSTEAD OF 315.
(0)	062160				EM331:		
(1)	062160	052123	042103	020114		. ASCII	STCDL (R), A. FPS BAD.
(1)	062205	200	041050	052125		. ASCIIZ	<CRLF> (BUT FIC) ST 004 WENT TO 315 INSTEAD OF 305.
	061514				EM333=EM323		
(0)	062263				EM334:		
(1)	062263	123	041524	044504		. ASCII	STCDI (R), A. FPS BAD.
	062310	052600	042523	020104		. ASCIIZ	<CRLF> 'USED CONSTANT 37 INSTEAD OF 17 ST 66. '
(0)	062357				EM335:		
(1)	062357	123	041524	044504		. ASCII	STCDI (R), A FAILED.
(1)	062402	024200	052502	020124		. ASCIIZ	<CRLF> (BUT ENBT) ST 632 WENT TO 073 INSTEAD OF 473.
(0)	062461				EM336:		
(1)	062461	123	041524	044504		. ASCII	STCDI (R), A. FPS BAD.
	062506	051600	052105	043040		. ASCIIZ	<CRLF> 'SET FN ST 473 FAILED. '
(0)	062535				EM337:		
(1)	062535	123	041524	046104		. ASCII	STCDL (R), A FAILED.
(1)	062560	024200	052502	020124		. ASCIIZ	<CRLF> (BUT COUT) ST 275 WENT TO 074 INSTEAD OF 274.
(0)	062637				EM340:		
(1)	062637	123	041524	046104		. ASCII	STCDL (R), A FAILED.

(1)	062662	024200	052502	020124		.ASCIZ <CRLF> (BUT COUT) ST 275 WENT TO 274 INSTEAD OF 074.
(0)	062741				EM341:	
(1)	062741	123	041524	046104		.ASCII STCDL (R), A FPS BAD.
(1)	062766	024200	052502	020124		.ASCIZ <CRLF> (BUT EZBT) ST 377 WENT TO 633 INSTEAD OF 433.
(0)	063045				EM342:	
(1)	063045	123	041524	046104		.ASCII STCDL (R), A FAILED.
(1)	063070	024200	052502	020124		.ASCIZ <CRLF> (BUT COUT) ST 360 WENT TO 654 INSTEAD OF 454.
(0)	063147				EM343:	
(1)	063147	123	041524	046104		.ASCII STCDL (R), A FAILED.
(1)	063172	024200	052502	020124		.ASCIZ <CRLF> (BUT NBIT) ST 654 WENT TO 531 INSTEAD OF 431.
(0)	063251				EM344:	
(1)	063251	123	041524	046104		.ASCII STCDL (R), A FAILED.
	063274	024200	052502	020124		.ASCII <CRLF> (BUT COUT) ST 360 WENT TO 454 INSTEAD OF 654, OR '
(1)	063355	200	041050	052125		.ASCIZ <CRLF> (BUT NBIT) ST 654 WENT TO 431 INSTEAD OF 531.
(0)	063434				EM332:	
(1)	063434	052123	042103	020111		.ASCII STCDI (R), A FAILED.
	063457	200	051525	042105		.ASCIZ <CRLF> 'USED CONSTANT 37 INSTEAD OF 17 ST 66. '
(0)	063526				EM345:	
(1)	063526	052123	042103	020111		.ASCII STCDI (R), A FAILED.
(1)	063551	200	041050	052125		.ASCIZ <CRLF> (BUT FL) ST 633 WENT TO 655 INSTEAD OF 654.
(0)	063626				EM346:	
(1)	063626	052123	043103	020114		.ASCII STCFL (R), A FAILED.
	063651	200	042532	047522		.ASCIZ <CRLF> 'ZERO LOW ORDER PART OF X11 FAILED ST 773. '
(0)	063724				EM347:	
(1)	063724	052123	054105	020120		.ASCII STEXP A, (R) FAILED.
	063747	000				.BYTE 0
(0)	063750				EM350:	
(1)	063750	052123	054105	020120		.ASCII STEXP A, (R). FPS BAD.
	063775	000				.BYTE 0
	063776	047515	042522	052040	EM351:	.ASCII 'MORE THAN ONE WORD '
	064021	127	044522	052124		.ASCIZ 'WRITTEN BY STEXP A, (R). '<CRLF>'ZERO FDFL ST 347 FAILED. '
(0)	064102				EM352:	
(1)	064102	052123	054105	020120		.ASCII STEXP A, (R). FPS BAD.
(1)	064127	200	041050	052125		.ASCIZ <CRLF> (BUT ENBT) ST 376 WENT TO 071 INSTEAD OF 471.
(0)	064206				EM353:	
(1)	064206	052123	054105	020120		.ASCII STEXP A, (R). FPS BAD.
(1)	064233	200	041050	052125		.ASCIZ <CRLF> (BUT EZBT) ST 071 WENT TO 072 INSTEAD OF 272.
(0)	064312				EM354:	
(1)	064312	052123	054105	020120		.ASCII STEXP A, (R). FPS BAD.
(1)	064337	200	041050	052125		.ASCIZ <CRLF> (BUT EZBT) ST 071 WENT TO 272 INSTEAD OF 072.
(0)	064416				EM355:	



(1)	064416	052123	054105	020120		. ASCII	STEXP A (R). FPS BAD.
(1)	064443	200	041050	052125		. ASCII	<CRLF> (BUT ENBT) ST 376 WENT TO 471 INSTEAD OF 071.
	064522	052123	052123	024040	EM356:	. ASCII	'STST (R) GOT BAD FEC. '<CRLF>
	064550	043101	042524	020122		. ASCII	'AFTER EXECUTING AN ILLEGAL FPP OP CODE. '
	064620	052123	052123	024040	EM357:	. ASCII	'STST (R) GOT BAD FEC. '<CRLF>
	064646	043101	042524	020122		. ASCII	'AFTER EXECUTING AN ILLEGAL FPP OP CODE. '
	064716	047117	054514	047440	EM360:	. ASCII	'ONLY ONE WORD WRITTEN BY STST (R). '
	064761	123	052105	043040		. ASCII	'SET FDFL ST 636 FAILED. '
(0)	065011				EM401:		
(1)	065011	123	043124	051520		. ASCII	STFPS (R). RO BAD.
(0)	065034				EM402:		
(1)	065034	052123	050106	020123		. ASCII	STFPS (R) FAILED.
	065056	047515	042522	052040	EM403:	. ASCII	'MORE THAN ONE WORD WRITTEN BY STFPS (R). '
(1)	065126	024200	052502	020124		. ASCII	<CRLF> (BUT GR7,-FL) ST 357 WENT TO 416 INSTEAD OF 417.
(0)	065210				EM404:		
(1)	065210	052123	050106	020123		. ASCII	STFPS (R) TRAPPED TO 4.
(0)	065240				EM405:		
(1)	065240	052123	050106	020123		. ASCII	STFPS (R)+. RO BAD.
(0)	065264				EM406:		
(1)	065264	052123	050106	020123		. ASCII	STFPS (R)+ FAILED.
	065307	115	051117	020105	EM407:	. ASCII	'MORE THAN ONE WORD WRITTEN BY STFPS (R)+. '
(1)	065360	024200	052502	020124		. ASCII	<CRLF> (BUT GR7,-FL) ST 357 WENT TO 416 INSTEAD OF 417.
(0)	065442				EM410:		
(1)	065442	052123	050106	020123		. ASCII	STFPS (R)+ TRAPPED TO 4.
(0)	065473				EM411:		
(1)	065473	123	043124	051520		. ASCII	STFPS -(R). RO BAD.
(0)	065517				EM412:		
(1)	065517	123	043124	051520		. ASCII	STFPS -(R) FAILED.
	065542	047515	042522	052040	EM413:	. ASCII	'MORE THAN ONE WORD WRITTEN BY STFPS -(R). '
(1)	065613	200	041050	052125		. ASCII	<CRLF> (BUT GR7,-FL) ST 357 WENT TO 416 INSTEAD OF 417.
(0)	065675				EM414:		
(1)	065675	123	043124	051520		. ASCII	STFPS -(R) TRAPPED TO 4.
(0)	065726				EM415:		
(1)	065726	052123	050106	020123		. ASCII	STFPS @ (R)+. RO BAD.
(0)	065753				EM416:		
(1)	065753	123	043124	051520		. ASCII	STFPS @ (R)+ FAILED.
	065777	123	043124	051520	EM417:	. ASCII	'STFPS @ (R)+ DID NOT DEFFER THE WRITE. '
(0)	066045				EM420:		
(1)	066045	123	043124	051520		. ASCII	STFPS @ (R)+ TRAPPED TO 4.
(0)	066077				EM421:		
(1)	066077	123	043124	051520		. ASCII	STFPS @-(R). RO BAD.
(0)	066124				EM422:		
(1)	066124	052123	050106	020123		. ASCII	STFPS @-(R) FAILED.
	066150	052123	050106	020123	EM423:	. ASCII	'STFPS @-(R) DID NOT DEFFER THE WRITE. '
(0)	066216				EM424:		
(1)	066216	052123	050106	020123		. ASCII	STFPS @-(R) TRAPPED TO 4.

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(0) 066250          EM425:
(1) 066250 052123 050106 020123 .ASCIZ STFPS N(R). RO BAD.
(0) 066274          EM426:
(1) 066274 052123 050106 020123 .ASCIZ STFPS N(R) FAILED.
    066317      115 051117 020105 EM427: .ASCII 'MORE THAN ONE WORD WRITTEN BY STFPS N(R). '
(1) 066370 024200 052502 020124 .ASCIZ '<CRLF> (BUT GR7,-FL) ST 357 WENT TO 416 INSTEAD OF 417.
(0) 066452          EM430:
(1) 066452 052123 050106 020123 .ASCIZ STFPS N(R) TRAPPED TO 4.
    066503      120 020103 040502 EM431: .ASCII 'PC BAD AFTER STFPS N(R). BAD CONSTANT USED. '

(0) 066556          EM432:
(1) 066556 052123 050106 020123 .ASCIZ STFPS AN(R). RO BAD.
(0) 066603          EM433:
(1) 066603      123 043124 051520 .ASCIZ STFPS AN(R) FAILED.
    066627      115 051117 020105 EM434: .ASCII 'MORE THAN ONE WORD WRITTEN BY STFPS AN(R). '
(1) 066701      200 041050 052125 .ASCIZ '<CRLF> (BUT GR7,-FL) ST 357 WENT TO 416 INSTEAD OF 417.
(0) 066763          EM435:
(1) 066763      123 043124 051520 .ASCIZ STFPS AN(R) TRAPPED TO 4.
    067015      120 020103 040502 EM436: .ASCIZ 'PC BAD AFTER STFPS AN(R). BAD CONSTANT USED. '

(0) 067072          EM437:
(1) 067072 052123 042103 020114 .ASCIZ STCDL A (R)+. RO BAD.

(0) 067120          EM440:
(1) 067120 052123 042103 020114 .ASCIZ STCDL A -(R). RO BAD.

    067146 052123 052123 024040 EM361: .ASCIZ 'STST (R). FPS BAD. '

    000000          EM362=0
    000000          EM363=0
    000000          EM364=0
    000000          EM365=0
    000000          EM366=0
    000000          EM367=0
    000000          EM370=0
    000000          EM371=0
    000000          EM372=0
    000000          EM373=0
    000000          EM374=0
    000000          EM375=0
    000000          EM376=0
    000000          EM377=0
    000000          EM400=0

    067171      125 042516 050130 EM441: .ASCIZ 'UNEXPECTED FPP TRAP TO 244. '
    067225      125 042516 050130 EM442: .ASCIZ 'UNEXPECTED CPU TRAP TO 4. '
    067257      125 042516 050130 EM443: .ASCIZ 'UNEXPECTED CPU TRAP TO 10. '

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; THESE ARE DATA TABLE HEADERS:

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(0) 067312 020040 042524 052123 DH1: .ASCII ' TEST. '<TAB>'PC OF CALL. '<TAB>'PC OF ERROR. '
    067352 043011 051520 004456 .ASCIZ '<TAB>'FPS. '<TAB>'FEC. '
(1) 067365      040 052040 051505 DH2: .ASCII ' TEST. '<TAB>'PC OF CALL. '<TAB>'PC OF ERROR. '
    067425      011 047507 020124 .ASCIZ '<TAB>'GOT FPS. '<TAB>'EXPECTED FPS. '
(0) 067455          DH3:

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(1)	067455	040	052040	051505		. ASCII	' TEST. '<TAB>'PC OF CALL. '<TAB>'PC OF ERROR. '
	067515	011	047507	020124		. ASCII	<TAB>'GOT FEC. '<TAB>'EXPECTED FEC. '
(0)	067545				DM4:		
(1)	067545	040	052040	051505		. ASCII	' TEST. '<TAB>'PC OF CALL. '<TAB>'PC OF ERROR. '
	067605	011	047507	020124		. ASCII	<TAB>'GOT RG. '<TAB>'EXPECTED RO. '
(0)	067634				DM5:		
(1)	067634	020040	042524	052123		. ASCII	' TEST. '<TAB>'PC OF CALL. '<TAB>'PC OF ERROR. '
	067674	000				. BYTE	0
	067634				DM6=DM5		
	067545				DM7=DM4		
	067634				DM10=DM5		
	067545				DM11=DM4		
	067634				DM12=DM5		
067675	040	052040	051505		DM13:	. ASCII	' TEST. '<TAB>'PC OF CALL. '<TAB>'PC OF TRAP. '
	067675				DM14=DM13		
	067634				DM15=DM5		
(0)	067735				DM16:		
(1)	067735	040	052040	051505		. ASCII	' TEST. '<TAB>'PC OF CALL. '<TAB>'PC OF ERROR. '
	067775	011	047507	020124		. ASCII	<TAB>'GOT PC. '<TAB>'EXPECTED PC. '
	067675				DM17=DM13		
	067545				DM20=DM4		
	067634				DM21=DM5		
	067634				DM22=DM5		
	067675				DM23=DM13		
	067545				DM24=DM4		
	067634				DM25=DM5		
	067675				DM26=DM13		
	067545				DM27=DM4		
	067634				DM30=DM5		
	067675				DM31=DM13		
	067545				DM32=DM4		
	067634				DM33=DM5		
	067675				DM34=DM13		
	067545				DM35=DM4		
	067634				DM36=DM5		
070024	020040	042524	052123		DM37:	. ASCII	' TEST. '<TAB>'PC OF CALL. '<TAB>'PC OF ERROR. '<TAB>'GOT FPS. '<TAB>'EXPEC
	070024				DM40=DM37		
070114	020040	042524	052123		DM41:	. ASCII	' TEST. '<TAB>'PC OF CALL. '<TAB>'PC OF ERROR. '<TAB>'FPS. '<TAB>'GOT FEC.
	070024				DM42=DM37		
	070024				DM43=DM37		
	070024				DM44=DM37		
	070024				DM45=DM37		
	070024				DM46=DM37		
	070024				DM47=DM37		
	070024				DM50=DM37		
	070024				DM51=DM37		
	070024				DM52=DM37		
	070114				DM53=DM41		
	070024				DM54=DM37		
	070024				DM55=DM37		
	070024				DM56=DM37		
	070024				DM57=DM37		
	070024				DM60=DM37		
	070024				DM61=DM37		
	067365				DM62=DM2		
	067455				DM63=DM3		

067634	DH64=DH5
067365	DH65=DH2
067545	DH66=DH4
067365	DH67=DH2
067455	DH70=DH3
067365	DH176=DH2
067455	DH177=DH3
067634	DH71=DH5
067365	DH72=DH2
067675	DH107=DH13
067634	DH73=DH5
067545	DH74=DH4
067365	DH75=DH2
067675	DH76=DH107
067634	DH77=DH5
067545	DH100=DH4
067365	DH101=DH2
067675	DH102=DH107
067634	DH103=DH5
067545	DH104=DH4
067365	DH105=DH2
067675	DH106=DH107
067634	DH110=DH5
067545	DH111=DH4
067365	DH112=DH2
067675	DH113=DH107
067634	DH114=DH5
067545	DH115=DH4
067365	DH116=DH2
067675	DH117=DH107
067634	DH120=DH5
067545	DH121=DH4
067365	DH122=DH2
067675	DH123=DH107
067634	DH124=DH5
067545	DH125=DH4
067365	DH126=DH2
067675	DH127=DH107
067634	DH130=DH5
067365	DH131=DH2
067675	DH132=DH107
067634	DH133=DH5
067365	DH134=DH2
067634	DH135=DH5
067634	DH136=DH5
067365	DH137=DH2
067634	DH140=DH5
067545	DH141=DH4
067365	DH142=DH2
067634	DH143=DH5
067545	DH144=DH4
067365	DH145=DH2
067634	DH146=DH5
067545	DH147=DH4
067365	DH150=DH2
067634	DH151=DH5



067545	DH152=DH4
067365	DH153=DH2
067634	DH154=DH5
067545	DH155=DH4
067365	DH156=DH2
067634	DH157=DH5
067545	DH160=DH4
067365	DH161=DH2
067634	DH162=DH5
067365	DH163=DH2
067735	DH164=DH16
067735	DH215=DH16
067634	DH216=DH5
067545	DH217=DH4
067365	DH220=DH2
067735	DH221=DH16
067634	DH222=DH5
067545	DH223=DH4
067365	DH224=DH2
070024	DH165=DH37
070024	DH166=DH37
070024	DH167=DH37
070024	DH170=DH37
070024	DH171=DH37
070024	DH172=DH37
070114	DH173=DH41
070114	DH174=DH41
070114	DH175=DH41
070024	DH200=DH37
070024	DH201=DH37
070024	DH202=DH37
070024	DH203=DH37
070024	DH204=DH37
070024	DH205=DH37
070024	DH206=DH37
070024	DH207=DH37
070024	DH210=DH37
070024	DH211=DH37
070024	DH212=DH37
070024	DH213=DH37
070024	DH214=DH37

070211	067545	052040	051505	DH225=DH4	
	067365			DH226=DH2	
	040			DH227: .ASCIZ	TEST. '<TAB>'PC OF CALL. '<TAB>'PC OF TRAP.'
	067545			DH230=DH4	
	067365			DH231=DH2	
	070211			DH232=DH227	
	067545			DH233=DH4	
	067365			DH234=DH2	
	070211			DH235=DH227	
	067545			DH236=DH4	
	067365			DH237=DH2	
	070211			DH240=DH227	
	067545			DH241=DH4	
	067365			DH242=DH2	

070211	DH243=DH227
067545	DH244=DH4
067365	DH245=DH2
067735	DH246=DH16
070211	DH247=DH227
067545	DH250=DH4
067365	DH251=DH2
067735	DH252=DH16
070211	DH253=DH227
067735	DH254=DH16
070211	DH255=DH227
067545	DH256=DH4
067365	DH257=DH2
070024	DH260=DH37
070024	DH261=DH37
070024	DH262=DH37
070024	DH263=DH37
070024	DH264=DH37
070024	DH265=DH37
070024	DH266=DH37
070024	DH267=DH37
070024	DH270=DH37
070024	DH271=DH37
070024	DH272=DH37
070024	DH273=DH37
070024	DH274=DH37
070024	DH275=DH37
070024	DH276=DH37
070024	DH277=DH37
070024	DH300=DH37
070024	DH301=DH37
070024	DH302=DH37
070114	DH303=DH41
070024	DH304=DH37
070024	DH305=DH37
070024	DH306=DH37
070024	DH307=DH37
070024	DH310=DH37
070024	DH311=DH37
070024	DH312=DH37
070024	DH313=DH37
070024	DH314=DH37
070024	DH315=DH37
070024	DH316=DH37
070024	DH317=DH37
070024	DH320=DH37
070024	DH321=DH37
070024	DH322=DH37
070024	DH323=DH37
070114	DH324=DH41
070024	DH325=DH37
070024	DH326=DH37
070024	DH327=DH37
070024	DH330=DH37
070024	DH331=DH37
070024	DH332=DH37





067545	DH401=DH4
067365	DH402=DH2
067675	DH403=DH13
070211	DH404=DH227
067545	DH405=DH4
067365	DH406=DH2
067675	DH407=DH13
070211	DH410=DH227
067545	DH411=DH4
067365	DH412=DH2
067675	DH413=DH13
070211	DH414=DH227
067545	DH415=DH4
067365	DH416=DH2
067675	DH417=DH13
070211	DH420=DH227
067545	DH421=DH4
067365	DH422=DH2
067675	DH423=DH13
070211	DH424=DH227
067545	DH425=DH4
067365	DH426=DH2
067675	DH427=DH13
070211	DH430=DH227
067675	DH431=DH13
067545	DH432=DH4
067365	DH433=DH2
067675	DH434=DH13
070211	DH435=DH227
067675	DH436=DH13
067545	DH437=DH4
067545	DH440=DH4

070341	040	052040	051505	DH441: .ASCIZ	'	TEST.	'<TAB>'PC OF CALL.	'<TAB>'PC OF ERROR.	'<TAB>'FEC.'
070407	040	052040	051505	DH442: .ASCIZ	'	TEST.	'<TAB>'PC OF CALL.	'<TAB>'PC OF ERROR.	'
	070407			DH443=DH442					

; THESE ARE FORMAT SPECIFICATIONS FOR THE DATA TABLES:

070450	004	000	005	DF1: .BYTE	4,0,5,0,5,0,0
070457	004	000	005	DF2: .BYTE	4,0,5,0,5,0,5,0
	070457			DF3=DF2	
	070457			DF4=DF2	
070467	004	000	005	DF5: .BYTE	4,0,5,0,5,5,2,5,5,2
070501	004	000	005	DF6: .BYTE	4,0,5,0
	070457			DF7=DF4	
	070467			DF10=DF5	
	070457			DF11=DF4	
070505	004	000	005	DF12: .BYTE	4,0,5,0,5,5,3,5,5,3
	070501			DF13=DF6	
	070501			DF14=DF6	
	070505			DF15=DF12	
	070457			DF16=DF2	
	070501			DF17=DF6	
	070457			DF20=DF2	
	070505			DF21=DF12	



	070505			DF 22=DF 12	
	070501			DF 23=DF 6	
	070457			DF 24=DF 2	
	070505			DF 25=DF 12	
	070501			DF 26=DF 6	
	070457			DF 27=DF 2	
	070505			DF 30=DF 12	
	070501			DF 31=DF 6	
	070457			DF 32=DF 2	
	070505			DF 33=DF 12	
	070501			DF 34=DF 6	
	070457			DF 35=DF 2	
	070505			DF 36=DF 12	
070517	004	000	005	DF 37: . BYTE	4, 0, 5, 0, 5, 0, 5, 0, 5, 5, 3, 5, 5, 3, 5, 5, 3
	070517			DF 40=DF 37	
070540	004	000	005	DF 41: . BYTE	4, 0, 5, 0, 5, 0, 0, 0, 5, 5, 3, 5, 5, 3, 5, 5, 3
	070517			DF 42=DF 37	
	070517			DF 43=DF 37	
	070517			DF 44=DF 37	
	070517			DF 45=DF 37	
	070517			DF 46=DF 37	
	070517			DF 47=DF 37	
	070517			DF 50=DF 37	
	070517			DF 51=DF 37	
	070517			DF 52=DF 37	
	070517			DF 53=DF 37	
	070517			DF 54=DF 37	
	070517			DF 55=DF 37	
	070517			DF 56=DF 37	
	070517			DF 57=DF 37	
	070517			DF 60=DF 37	
	070517			DF 61=DF 37	
	070457			DF 62=DF 2	
	070457			DF 63=DF 2	
	070467			DF 64=DF 5	
	070457			DF 65=DF 2	
	070457			DF 66=DF 2	
	070457			DF 67=DF 2	
	070457			DF 70=DF 2	
	070457			DF 176=DF 2	
	070457			DF 177=DF 2	
070561	004	000	005	DF 71: . BYTE	4, 0, 5, 0, 5, 5, 3, 5, 5, 3, 5, 5, 3
	070457			DF 72=DF 2	
	070501			DF 107=DF 6	
	070561			DF 73=DF 71	
	070457			DF 74=DF 2	
	070457			DF 75=DF 2	
	070501			DF 76=DF 6	
	070561			DF 77=DF 71	
	070457			DF 100=DF 2	
	070457			DF 101=DF 2	
	070501			DF 102=DF 6	
	070561			DF 103=DF 71	
	070457			DF 104=DF 2	
	070457			DF 105=DF 2	
	070501			DF 106=DF 6	

070561	DF110=DF71
070457	DF111=DF2
070457	DF112=DF2
070501	DF113=DF6
070561	DF114=DF71
070457	DF115=DF2
070457	DF116=DF2
070501	DF117=DF6
070561	DF120=DF71
070457	DF121=DF2
070457	DF122=DF2
070501	DF123=DF6
070561	DF124=DF71
070457	DF125=DF2
070457	DF126=DF2
070501	DF127=DF6
070561	DF130=DF71
070457	DF131=DF2
070501	DF132=DF6
070561	DF133=DF71
070457	DF134=DF2
070505	DF135=DF12
070505	DF136=DF12
070457	DF137=DF2
070505	DF140=DF12
070457	DF141=DF2
070457	DF142=DF2
070505	DF143=DF12
070457	DF144=DF2
070457	DF145=DF2
070505	DF146=DF12
070457	DF147=DF2
070457	DF150=DF2
070505	DF151=DF12
070457	DF152=DF2
070457	DF153=DF2
070505	DF154=DF12
070457	DF155=DF2
070457	DF156=DF2
070505	DF157=DF12
070457	DF160=DF2
070457	DF161=DF2
070505	DF162=DF12
070457	DF163=DF2
070457	DF164=DF2
070457	DF215=DF2
070505	DF216=DF12
070457	DF217=DF2
070457	DF220=DF2
070457	DF221=DF2
070505	DF222=DF12
070457	DF223=DF2
070457	DF224=DF2
070517	DF165=DF37
070517	DF166=DF37
070517	DF167=DF37



	070517			DF170=DF37	
	070517			DF171=DF37	
	070517			DF172=DF37	
	070540			DF173=DF41	
	070540			DF174=DF41	
	070540			DF175=DF41	
	070517			DF200=DF37	
	070517			DF201=DF37	
	070517			DF202=DF37	
	070517			DF203=DF37	
	070517			DF204=DF37	
	070517			DF205=DF37	
	070517			DF206=DF37	
	070517			DF207=DF37	
	070517			DF210=DF37	
	070517			DF211=DF37	
	070517			DF212=DF37	
	070517			DF213=DF37	
	070517			DF214=DF37	
070576	004	000	005	DF225: . BYTE	4,0,5,0,5,0,5,0
	070576			DF226=DF225	
070606	004	000	005	DF227: . BYTE	4,0,5,0
	070576			DF230=DF225	
	070576			DF231=DF225	
	070606			DF232=DF227	
	070576			DF233=DF225	
	070576			DF234=DF225	
	070606			DF235=DF227	
	070576			DF236=DF225	
	070576			DF237=DF225	
	070606			DF240=DF227	
	070576			DF241=DF225	
	070576			DF242=DF225	
	070606			DF243=DF227	
	070576			DF244=DF225	
	070576			DF245=DF225	
	070576			DF246=DF225	
	070606			DF247=DF227	
	070576			DF250=DF225	
	070576			DF251=DF225	
	070576			DF252=DF225	
	070606			DF253=DF227	
	070576			DF254=DF225	
	070606			DF255=DF227	
	070576			DF256=DF225	
	070576			DF257=DF225	
070612	004	000	005	DF260: . BYTE	4,0,5,0,5,0,5,0,5,5,2,5,5,2,5,5,2
	070612			DF261=DF260	
	070612			DF262=DF260	
	070612			DF263=DF260	
	070612			DF264=DF260	
	070612			DF265=DF260	
	070612			DF266=DF260	
	070612			DF267=DF260	
	070612			DF270=DF260	

	070612			DF 271=DF 260	
	070612			DF 272=DF 260	
070633	004	000	005	DF 273: . BYTE	4, 0, 5, 0, 5, 0, 5, 0, 5, 5, 2, 5, 5, 3, 5, 5, 3
	070633			DF 274=DF 273	
	070633			DF 275=DF 273	
	070633			DF 276=DF 273	
	070633			DF 277=DF 273	
	070633			DF 300=DF 273	
070654	004	000	005	DF 301: . BYTE	4, 0, 5, 0, 5, 0, 5, 0, 5, 5, 3, 5, 5, 0, 5, 5, 3, 5, 5, 3
	070654			DF 302=DF 301	
070700	004	000	005	DF 303: . BYTE	4, 0, 5, 0, 5, 0, 0, 0, 5, 5, 3, 5, 5, 0, 5, 5, 3, 5, 5, 3
	070654			DF 304=DF 301	
	070654			DF 305=DF 301	
	070654			DF 306=DF 301	
	070654			DF 307=DF 301	
	070654			DF 310=DF 301	
	070654			DF 311=DF 301	
	070654			DF 312=DF 301	
	070654			DF 313=DF 301	
	070654			DF 314=DF 301	
	070654			DF 315=DF 301	
	070654			DF 316=DF 301	
	070654			DF 317=DF 301	
	070654			DF 320=DF 301	
	070654			DF 321=DF 301	
070724	004	000	005	DF 322: . BYTE	4, 0, 5, 0, 5, 0, 5, 0, 5, 5, 3, 5, 5, 2, 5, 5, 2
	070724			DF 323=DF 322	
070745	004	000	005	DF 324: . BYTE	4, 0, 5, 0, 5, 0, 0, 0, 5, 5, 3, 5, 5, 2, 5, 5, 2
	070724			DF 325=DF 322	
	070724			DF 326=DF 322	
	070724			DF 327=DF 322	
	070724			DF 330=DF 322	
	070724			DF 331=DF 322	
	070724			DF 332=DF 322	
	070724			DF 333=DF 322	
	070724			DF 334=DF 322	
	070724			DF 335=DF 322	
	070724			DF 336=DF 322	
	070724			DF 337=DF 322	
	070724			DF 340=DF 322	
	070724			DF 341=DF 322	
	070724			DF 342=DF 322	
	070724			DF 343=DF 322	
	070724			DF 344=DF 322	
	070724			DF 345=DF 322	
	070724			DF 346=DF 322	
070766	004	000	005	DF 347: . BYTE	4, 0, 5, 0, 5, 0, 5, 0, 5, 5, 3, 5, 5, 0, 5, 5, 0
	070766			DF 350=DF 347	
	070606			DF 351=DF 227	
	070766			DF 352=DF 347	
	070766			DF 353=DF 347	
	070766			DF 354=DF 347	
	070766			DF 355=DF 347	



070576	DF 356=DF 225
070576	DF 357=DF 225
070606	DF 360=DF 227
070576	DF 361=DF 225

000000	DF 362=0
000000	DF 363=0
000000	DF 364=0
000000	DF 365=0
000000	DF 366=0
000000	DF 367=0
000000	DF 370=0
000000	DF 371=0
000000	DF 372=0
000000	DF 373=0
000000	DF 374=0
000000	DF 375=0
000000	DF 376=0
000000	DF 377=0
000000	DF 400=0

070576	DF 401=DF 225
070576	DF 402=DF 225
070606	DF 403=DF 227
070606	DF 404=DF 227
070576	DF 405=DF 225
070576	DF 406=DF 225
070606	DF 407=DF 227
070606	DF 410=DF 227
070576	DF 411=DF 225
070576	DF 412=DF 225
070606	DF 413=DF 227
070606	DF 414=DF 227
070576	DF 415=DF 225
070576	DF 416=DF 225
070606	DF 417=DF 227
070606	DF 420=DF 227
070576	DF 421=DF 225
070576	DF 422=DF 225
070606	DF 423=DF 227
070606	DF 424=DF 227
070576	DF 425=DF 225
070576	DF 426=DF 225
070606	DF 427=DF 227
070606	DF 430=DF 227
070606	DF 431=DF 227
070576	DF 432=DF 225
070576	DF 433=DF 225
070606	DF 434=DF 227
070606	DF 435=DF 227
070606	DF 436=DF 227
070576	DF 437=DF 225
070576	DF 440=DF 225

071007	004	000	005	DF 441: . BYTE	4, 0, 5, 0, 5, 0
071007				DF 442=DF 441	
071007				DF 443=DF 441	

071016

. EVEN

; THESE ARE THE ERROR MESSAGE DATA TABLES:

071016	001232	001234	042775	DT1:	. WORD	STMP0, STMP1, STAB, STMP2, STAB, STMP3, STMP4, 0
071036	001232	001234	042775	DT2:	. WORD	STMP0, STMP1, STAB, STMP2, STAB, STMP3, STAB, STMP5, 0
071060	001232	001234	042775	DT3:	. WORD	STMP0, STMP1, STAB, STMP2, STAB, STMP4, STAB, STMP6, 0
071102	001232	001234	042775	DT4:	. WORD	STMP0, STMP1, STAB, STMP2, STAB, STMP4, STAB, STMP3, 0
071124	001232	001234	042775	DT5:	. WORD	STMP0, STMP1, STAB, STMP2, SCRLF, MS1, STMP3
071142	001313	043015	001242		. WORD	SCRLF, MS2, STMP4, 0
071152	001232	001234	042775	DT6:	. WORD	STMP0, STMP1, STAB, STMP2, 0
	071102			DT7=DT4		
	071124			DT10=DT5		
	071102			DT11=DT4		
	071124			DT12=DT5		
	071152			DT13=DT6		
	071152			DT14=DT6		
	071124			DT15=DT5		
071164	001232	001234	042775	DT16:	. WORD	STMP0, STMP1, STAB, STMP2, STAB, STMP4, STAB, STMP3, 0
	071152			DT17=DT6		
	071164			DT20=DT16		
	071124			DT21=DT5		
	071124			DT22=DT5		
	071152			DT23=DT6		
	071164			DT24=DT16		
	071124			DT25=DT5		
	071152			DT26=DT6		
	071164			DT27=DT16		
	071124			DT30=DT5		
	071152			DT31=DT6		
	071164			DT32=DT16		
	071124			DT33=DT5		
	071152			DT34=DT6		
	071164			DT35=DT16		
	071124			DT36=DT5		
071206	001232	001234	042775	DT37:	. WORD	STMP0, STMP1, STAB, STMP2, STAB, STMP7, STAB, STMP10, SCRLF
071230	043055	001240	001313		. WORD	MS4, STMP3, SCRLF, MS1, STMP4, SCRLF, MS2, STMP5, 0
	071206			DT40=DT37		
071252	001232	001234	042775	DT41:	. WORD	STMP0, STMP1, STAB, STMP2, STAB, STMP7, STMP11, STMP12
071272	001313	043055	001240		. WORD	SCRLF, MS4, STMP3, SCRLF, MS1, STMP4, SCRLF, MS2, STMP5, 0
	071206			DT42=DT37		
	071206			DT43=DT37		
	071206			DT44=DT37		
	071206			DT45=DT37		
	071206			DT46=DT37		
	071206			DT47=DT37		
	071206			DT50=DT37		
	071206			DT51=DT37		
	071206			DT52=DT37		
	071252			DT53=DT41		
	071206			DT54=DT37		
	071206			DT55=DT37		
	071206			DT56=DT37		
	071206			DT57=DT37		



	071206			DT60=DT37		
	071206			DT61=DT37		
	071164			DT62=DT16		
	071164			DT63=DT16		
	071124			DT64=DT5		
	071164			DT65=DT16		
	071102			DT66=DT4		
	071102			DT67=DT4		
	071102			DT70=DT4		
	071102			DT176=DT4		
	071102			DT177=DT4		
071316	001232	001234	042775	DT71:	. WORD	\$TMP0, \$TMP1, \$TAB, \$TMP2, \$CRLF, MS3, \$TMP3, \$CRLF, MS1
071340	001244	001313	043015		. WORD	\$TMP5, \$CRLF, MS2, \$TMP4, 0
	071102			DT72=DT4		
	071152			DT107=DT6		
071352	001232	001234	042775	DT73:	. WORD	\$TMP0, \$TMP1, \$TAB, \$TMP2, \$CRLF, MS4, \$TMP4
071370	001313	042777	001244		. WORD	\$CRLF, MS1, \$TMP5, \$CRLF, MS2, \$TMP3, 0
	071102			DT74=DT4		
	071036			DT75=DT2		
	071152			DT76=DT6		
	071352			DT77=DT73		
	071102			DT100=DT4		
	071036			DT101=DT2		
	071152			DT102=DT6		
	071352			DT103=DT73		
	071102			DT104=DT4		
	071036			DT105=DT2		
	071152			DT106=DT6		
	071352			DT110=DT73		
	071102			DT111=DT4		
	071036			DT112=DT2		
	071152			DT113=DT6		
	071352			DT114=DT73		
	071102			DT115=DT4		
	071036			DT116=DT2		
	071152			DT117=DT6		
	071352			DT120=DT73		
	071102			DT121=DT4		
	071036			DT122=DT2		
	071152			DT123=DT6		
	071352			DT124=DT73		
	071102			DT125=DT4		
	071036			DT126=DT2		
	071152			DT127=DT6		
	071352			DT130=DT73		
	071036			DT131=DT2		
	071152			DT132=DT6		
	071352			DT133=DT73		
	071036			DT134=DT2		
	071124			DT135=DT5		
	071124			DT136=DT5		
	071164			DT137=DT16		
	071124			DT140=DT5		
	071102			DT141=DT4		
	071102			DT142=DT4		
	071124			DT143=DT5		

071102	DT144=DT4
071102	DT145=DT4
071124	DT146=DT5
071102	DT147=DT4
071102	DT150=DT4
071124	DT151=DT5
071102	DT152=DT4
071102	DT153=DT4
071124	DT154=DT5
071102	DT155=DT4
071102	DT156=DT4
071124	DT157=DT5
071102	DT160=DT4
071102	DT161=DT4
071124	DT162=DT5
071102	DT163=DT4
071102	DT164=DT4
071102	DT215=DT4
071124	DT216=DT5
071102	DT217=DT4
071102	DT220=DT4
071102	DT221=DT4
071124	DT222=DT5
071102	DT223=DT4
071102	DT224=DT4
071206	DT165=DT37
071206	DT166=DT37
071206	DT167=DT37
071206	DT170=DT37
071206	DT171=DT37
071206	DT172=DT37
071252	DT173=DT41
071252	DT174=DT41
071252	DT175=DT41
071206	DT200=DT37
071206	DT201=DT37
071206	DT202=DT37
071206	DT203=DT37
071206	DT204=DT37
071206	DT205=DT37
071206	DT206=DT37
071206	DT207=DT37
071206	DT210=DT37
071206	DT211=DT37
071206	DT212=DT37
071206	DT213=DT37
071206	DT214=DT37
071102	DT225=DT4
071102	DT226=DT4
071152	DT227=DT6
071102	DT230=DT4
071102	DT231=DT4
071152	DT232=DT6
071102	DT233=DT4
071102	DT234=DT4



071152	DT235=DT6
071102	DT236=DT4
071102	DT237=DT4
071152	DT240=DT6
071102	DT241=DT4
071102	DT242=DT4
071152	DT243=DT6
071102	DT244=DT4
071102	DT245=DT4
071102	DT246=DT4
071152	DT247=DT6
071102	DT250=DT4
071102	DT251=DT4
071102	DT252=DT4
071152	DT253=DT6
071102	DT254=DT4
071152	DT255=DT6
071102	DT256=DT4
071102	DT257=DT4

071206	DT260=DT37
071206	DT261=DT37
071206	DT262=DT37
071206	DT263=DT37
071206	DT264=DT37
071206	DT265=DT37
071206	DT266=DT37
071206	DT267=DT37
071206	DT270=DT37
071206	DT271=DT37
071206	DT272=DT37
071206	DT273=DT37
071206	DT274=DT37
071206	DT275=DT37
071206	DT276=DT37
071206	DT277=DT37
071206	DT300=DT37

071406	001232	001234	042775	DT301:	. WORD	STMP0, STMP1, STAB, STMP2, STAB, STMP7, STAB, STMP10
071426	001313	043037	001240		. WORD	SCRLF, MS10, STMP3, SCRLF, MS11, STMP4
071442	001313	042777	001246		. WORD	SCRLF, MS1, STMP6, SCRLF, MS2, STMP5, 0
	071406			DT302=	DT301	
071460	001232	001234	042775	DT303:	. WORD	STMP0, STMP1, STAB, STMP2, STAB, STMP7, STMP11, STMP12
071500	001313	043037	001240		. WORD	SCRLF, MS10, STMP3, SCRLF, MS11, STMP4
071514	001313	042777	001246		. WORD	SCRLF, MS1, STMP6, SCRLF, MS2, STMP5, 0
	071406			DT304=	DT301	
	071406			DT305=	DT301	
	071406			DT306=	DT301	
	071406			DT307=	DT301	
	071406			DT310=	DT301	
	071406			DT311=	DT301	
	071406			DT312=	DT301	
	071406			DT313=	DT301	
	071406			DT314=	DT301	
	071406			DT315=	DT301	
	071406			DT316=	DT301	

	071406			DT317=DT301	
	071406			DT320=DT301	
	071406			DT321=DT301	
071532	001232	001234	042775	DT322: . WORD	\$TMP0, \$TMP1, \$TAB, \$TMP2, \$TAB, \$TMP7, \$TAB, \$TMP10
071552	001313	043037	001240	. WORD	\$CRLF, MS10, \$TMP3, \$CRLF, MS1, \$TMP4, \$CRLF, MS2, \$TMP5, 0
	071532			DT323=DT322	
071576	001232	001234	042775	DT324: . WORD	\$TMP0, \$TMP1, \$TAB, \$TMP2, \$TAB, \$TMP7, \$TMP11, \$TMP12
071616	001313	043037	001240	. WORD	\$CRLF, MS10, \$TMP3, \$CRLF, MS1, \$TMP4, \$CRLF, MS2, \$TMP5, 0
	071532			DT325=DT322	
	071532			DT326=DT322	
	071532			DT327=DT322	
	071532			DT330=DT322	
	071532			DT331=DT322	
	071532			DT332=DT322	
	071532			DT333=DT322	
	071532			DT334=DT322	
	071532			DT335=DT322	
	071532			DT336=DT322	
	071532			DT337=DT322	
	071532			DT340=DT322	
	071532			DT341=DT322	
	071532			DT342=DT322	
	071532			DT343=DT322	
	071532			DT344=DT322	
	071532			DT345=DT322	
	071532			DT346=DT322	
	071532			DT347=DT322	
	071532			DT350=DT322	
	071152			DT351=DT6	
	071532			DT352=DT322	
	071532			DT353=DT322	
	071532			DT354=DT322	
	071532			DT355=DT322	
	071036			DT356=DT2	
	071060			DT357=DT3	
	071152			DT360=DT6	
	071406			DT361=DT302	
	000000			DT362=0	
	000000			DT363=0	
	000000			DT364=0	
	000000			DT365=0	
	000000			DT366=0	
	000000			DT367=0	
	000000			DT370=0	
	000000			DT371=0	
	000000			DT372=0	
	000000			DT373=0	
	000000			DT374=0	
	000000			DT375=0	
	000000			DT376=0	
	000000			DT377=0	
	000000			DT400=0	



	071102			DT401=DT4	
	071102			DT402=DT4	
	071152			DT403=DT6	
	071152			DT404=DT6	
	071102			DT405=DT4	
	071102			DT406=DT4	
	071152			DT407=DT6	
	071152			DT410=DT6	
	071102			DT411=DT4	
	071102			DT412=DT4	
	071152			DT413=DT6	
	071152			DT414=DT6	
	071102			DT415=DT4	
	071102			DT416=DT4	
	071152			DT417=DT6	
	071152			DT420=DT6	
	071102			DT421=DT4	
	071102			DT422=DT4	
	071152			DT423=DT6	
	071152			DT424=DT6	
	071102			DT425=DT4	
	071102			DT426=DT4	
	071152			DT427=DT6	
	071152			DT430=DT6	
	071152			DT431=DT6	
	071102			DT432=DT4	
	071102			DT433=DT4	
	071152			DT434=DT6	
	071152			DT435=DT6	
	071152			DT436=DT6	
	071102			DT437=DT4	
	071102			DT440=DT4	
071642	001232	001234	042775	DT441: . WORD	STMPO, STMP1, STAB, STMP2, STAB, STMP3, 0
071660	001232	001234	042775	DT442: . WORD	STMPO, STMP1, STAB, STMP2, 0
	071660			DT443=DT442	

000001 ;12345 . END

RABBF0	013600	3415	3419	3427	3433	3438	3451	3456#
RABD0N	013630	3435	3441	3447	3453	3470#		
RABTP1	013610	3414	3461#					
RABTP2	013620	3439	3466#					
RAB1	013422	3412#						
RAB2	013524	3429	3438#					
RAB3	013544	3432	3444#					
RAB4	013562	3434	3450#					
RACD0N	023752	5606	5617	5623	5638	5640#		
RACTP1	023656	5593	5602	5610#	5614			
RAC1	023576	5590#						
RAC10	023662	5603	5614#					
RAC11	023700	5605	5620#					
RAC2	023632	5596	5598#	5630	5632			
RAC20	023716	5597	5623#					
ABASE =	000000	1042	1083					
ACD01 =	000000	1042	1085					
ACD02 =	000000	1042	1086					
ACPU0P =	000000	1042	1057					
ADD00 =	000000	1042	1087					
ADD01 =	000000	1042	1088					
ADD010 =	000000	1042	1097					
ADD011 =	000000	1042	1098					
ADD012 =	000000	1042	1099					
ADD013 =	000000	1042	1100					
ADD014 =	000000	1042	1101					
ADD015 =	000000	1042	1102					
ADD02 =	000000	1042	1089					
ADD03 =	000000	1042	1090					
ADD04 =	000000	1042	1091					
ADD05 =	000000	1042	1092					
ADD06 =	000000	1042	1093					
ADD07 =	000000	1042	1094					
ADD08 =	000000	1042	1095					
ADD09 =	000000	1042	1096					
AD0VCT =	000000	1042	1048					
AD0V01 =	000000	1042	1084					
AD0V02 =	000000	1042	1053					
AD0V03 =	000000	1042	1054					
AD0V04 =	000000	1042	1045					
AD0V05 =	000000	1042	1070					
AD0V06 =	000000	1042	1074					
AD0V07 =	000000	1042	1077					
AD0V08 =	000000	1042	1080					
AD0V09 =	000000	1042	1064					
AD0V10 =	000000	1042	1072					
AD0V11 =	000000	1042	1075					
AD0V12 =	000000	1042	1078					
AD0V13 =	000000	1042	1050					
AD0V14 =	000000	1042	1051					
AD0V15 =	000000	1042	1044					
AD0V16 =	000000	1042	1065					
AD0V17 =	000000	1042	1073					
AD0V18 =	000000	1042	1076					
AD0V19 =	000000	1042	1079					
AD0V20 =	000000	1042	1047					









DF 114 = 070561	1348	9677#
DF 115 = 070457	1351	9677#
DF 116 = 070457	1354	9677#
DF 117 = 070501	1357	9677#
DF 12 = 070505	1150	9677#
DF 120 = 070561	1360	9677#
DF 121 = 070457	1363	9677#
DF 122 = 070457	1366	9677#
DF 123 = 070501	1369	9677#
DF 124 = 070561	1372	9677#
DF 125 = 070457	1375	9677#
DF 126 = 070457	1378	9677#
DF 127 = 070501	1381	9677#
DF 13 = 070501	1153	9677#
DF 130 = 070561	1384	9677#
DF 131 = 070457	1387	9677#
DF 132 = 070501	1390	9677#
DF 133 = 070561	1393	9677#
DF 134 = 070457	1396	9677#
DF 135 = 070505	1399	9677#
DF 136 = 070505	1402	9677#
DF 137 = 070457	1405	9677#
DF 14 = 070501	1156	9677#
DF 140 = 070505	1408	9677#
DF 141 = 070457	1411	9677#
DF 142 = 070457	1414	9677#
DF 143 = 070505	1417	9677#
DF 144 = 070457	1420	9677#
DF 145 = 070457	1423	9677#
DF 146 = 070505	1426	9677#
DF 147 = 070457	1429	9677#
DF 15 = 070505	1159	9677#
DF 150 = 070457	1432	9677#
DF 151 = 070505	1435	9677#
DF 152 = 070457	1438	9677#
DF 153 = 070457	1441	9677#
DF 154 = 070505	1444	9677#
DF 155 = 070457	1447	9677#
DF 156 = 070457	1450	9677#
DF 157 = 070505	1453	9677#
DF 16 = 070457	1162	9677#
DF 160 = 070457	1456	9677#
DF 161 = 070457	1459	9677#
DF 162 = 070505	1462	9677#
DF 163 = 070457	1465	9677#
DF 164 = 070457	1468	9677#
DF 165 = 070517	1471	9677#
DF 166 = 070517	1474	9677#
DF 167 = 070517	1477	9677#
DF 17 = 070501	1165	9677#
DF 170 = 070517	1480	9677#
DF 171 = 070517	1483	9677#
DF 172 = 070517	1486	9677#
DF 173 = 070540	1489	9677#
DF 174 = 070540	1492	9677#
DF 175 = 070540	1495	9677#

DF176 = 070457	1498	9677#
DF177 = 070457	1501	9677#
DF2 = 070457	1126	9677#
DF20 = 070457	1168	9677#
DF200 = 070517	1504	9677#
DF201 = 070517	1507	9677#
DF202 = 070517	1510	9677#
DF203 = 070517	1513	9677#
DF204 = 070517	1516	9677#
DF205 = 070517	1519	9677#
DF206 = 070517	1522	9677#
DF207 = 070517	1525	9677#
DF21 = 070505	1171	9677#
DF210 = 070517	1528	9677#
DF211 = 070517	1531	9677#
DF212 = 070517	1534	9677#
DF213 = 070517	1537	9677#
DF214 = 070517	1540	9677#
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JJ88FO	016256	4117	4123	4130	4135	4150#	4175	4180	
JJ88F1	016266	4154#							
JJ8DON	016412	4139	4170	4177	4183	4188#			
JJ8TP1	016234	4116	4142#	4174					
JJ8TP2	016246	4146#	4173						
JJ81	016122	4114#							
JJ810	016276	4125	4160#						
JJ815	016332	4133	4136	4173#					
JJ82	016172	4124	4127#	4161	4163				
JJ820	016360	4138	4180#						
JJ825	016376	4185#							
KK88FO	016560	4207	4220	4235	4241#	4266			
KK88F1	016570	4213	4225	4245#	4271				
KK8DON	016714	4229	4261	4268	4274	4280#			
KK8TP1	016530	4206	4232#	4265					
KK8TP2	016550	4237#	4264						
KK81	016416	4204#							
KK810	016600	4215	4251#						
KK815	016634	4223	4264#						
KK82	016466	4214	4217#	4252	4254				
KK820	016662	4226	4228	4271#					
KK825	016700	4276#							
KKCDON	027232	6454	6551#						
KKC1	025664	6156#							
KKC10	026302	6293#							

KKC11	026340	6308#												
KKC12	026376	6323#												
KKC13	026434	6338#												
KKC14	026472	6353#												
KKC15	026530	6368#												
KKC16	026566	6383#												
KKC17	026624	6398#												
KKC18	026662	6413#												
KKC19	026720	6427#												
KKC2	025722	6172#												
KKC20	026756	6442#												
KKC3	025760	6188#												
KKC4	026016	6203#												
KKC5	026054	6217#												
KKC6	026112	6233#												
KKC7	026150	6248#												
KKC8	026206	6263#												
KKC9	026244	6278#												
LDCDSU	030034	6569	6585	6602	6619	6636	6653	6670	6687	6705	6722	6767#		
LDCFSU	027016	6158	6174	6190	6205	6219	6235	6250	6265	6280	6295	6310	6325	6340
		6355	6370	6385	6400	6415	6429	6444	6487#					
LDCT	027222	6496	6501	6521	6548#	6775	6781	6801						
LDXSUB	031606	6846	6865	6885	6905	6926	6946	6967	6987	7006	7026	7046	7066	7087
		7108	7129	7150	7201#									
LDXT	032076	7218	7230	7231	7248	7278#								
LF =	000012	831#	9079	9085										
LLBBFO	017040	4298	4307*	4310	4328#	4353								
LLBBF1	017050	4332#												
LLBDM	017156	4317	4348	4355	4361#									
LLBTP1	017020	4297	4320#	4352										
LLBTP2	017030	4324#	4351											
LLB1	016720	4295#												
LLB10	017060	4305	4338#											
LLB15	017114	4313	4351#											
LLB2	016764	4304	4307#	4339	4341									
LLB25	017142	4316	4357#											
LLCDON	030240	6734	6824#											
LLC1	027236	6567#												
LLC10	027764	6720#												
LLC2	027304	6583#												
LLC3	027352	6600#												
LLC4	027420	6617#												
LLC5	027466	6634#												
LLC6	027534	6651#												
LLC7	027602	6668#												
LLC8	027650	6685#												
LLC9	027716	6703#												
LOOP	006566	2111#	8827											
LPERR =	104413	2126	2193	2273	2328	2374	2481	2575	2658	2738	2811	2890	2914	2938
		2962	2986	3135	3159	3183	3207	3231	3374	3413	3485	3528	3573	3653
		3746	3839	3932	4022	4115	4205	4296	4378	4460	4532	4600	4670	4744
		4816	4887	4956	5028	5110	5190	5215	5240	5265	5290	5315	5340	5365
		5390	5591	5658	5728	5781	5844	5906	5974	6048	6099	6157	6173	6189
		6204	6218	6234	6249	6264	6279	6294	6309	6324	6339	6354	6369	6384
		6399	6414	6428	6443	6568	6584	6601	6618	6635	6652	6669	6686	6704
		6721	6845	6864	6884	6904	6925	6945	6966	6986	7005	7025	7045	7065



		7086	7107	7128	7149	7301	7389	7477	7565	7655	7745	7845	7943	7987
		8035	8054	8071	8088	8106	8123	8140	8157	8174	8191	8208	8225	8242
		8258	8275	8294	8312	8455	8489	8505	8523	8540	8557	8574	8693	9374#
MMBFO	017312	4380	4392	4405	4411#	4436								
MMBF1	017322	4389#	4415#											
MMBDON	017430	4399	4431	4438	4444#									
MMBTP1	017262	4379	4402#	4435										
MMBTP2	017302	4407#	4434											
MMB1	017162	4377#												
MMB10	017332	4387	4421#											
MMB15	017366	4395	4434#											
MMB2	017226	4386	4389#	4422	4424									
MMB25	017414	4398	4440#											
MBCDON	032106	7166	7281#											
MBC1	030244	6844#												
MBC10	031102	7024#												
MBC11	031160	7044#												
MBC12	031236	7064#												
MBC13	031314	7085#												
MBC14	031372	7106#												
MBC15	031450	7127#												
MBC16	031526	7148#												
MBC2	030322	6863#												
MBC3	030400	6883#												
MBC4	030456	6903#												
MBC5	030534	6924#												
MBC6	030612	6944#												
MBC7	030670	6965#												
MBC8	030746	6985#												
MBC9	031024	7004#												
MNUMBE =	000443	766#	1122											
MS1	042777	9677#												
MS10 =	043037	9677#												
MS11	043077	9677#												
MS2	043015	9677#												
MS3	043037	9677#												
MS4	043055	9677#												
NATBF1	023560	5454	5460	5481	5486	5508	5568#							
NATER1	023510	5505	5544#											
NATER2	023526	5531	5552#											
NATER3	023542	5540	5560#											
NATINS	023236	5464	5468#											
NATRET	023522	5545	5547	5549#	5553	5555	5557	5561	5563	5565				
NATSUB	023156	5191	5216	5241	5266	5291	5316	5341	5366	5391	5451#			
NMBFO	017552	4472	4474	4493#	4499	4501								
NMBDON	017632	4482	4504	4509	4516#									
NMBTP1	017532	4463	4485#	4501										
NMBTP2	017542	4475	4489#	4500										
NMB1	017434	4459#												
NMB10	017562	4478	4499#											
NMB11	017612	4502	4507#											
NMB15	017616	4481	4512#											
NMB2	017460	4465	4467#											
MBCDON	032340	7319	7333	7342	7352	7370#								
MNCTBO	032212	7302	7322#											
MNCTB1	032216	7310	7313	7315	7317	7323#	7328	7337	7347					

NMC1	032112	7300#							
NMC10	032226	7314	7327#						
NMC15	032246	7316	7336#						
NMC2	032160	7307	7312#	7359					
NMC20	032270	7318	7346#						
NMC25	032312	7308	7358#						
OBDON	020042	4556	4572	4578	4585#				
OBTTP1	017750	4533	4538	4546	4552	4559#	4569	4575	
OBTTP2	017760	4534	4547	4563#	4570				
O0B1	017636	4531#							
O0B10	017770	4550	4569#						
O0B15	020010	4553	4575#						
O0B2	017704	4540	4544#						
O0B20	020026	4555	4581#						
O0CDON	032572	7407	7421	7430	7440	7458#			
O0CTB0	032444	7390	7410#						
O0CTB1	032450	7398	7401	7403	7405	7411#	7416	7425	7435
O0C1	032344	7388#							
O0C10	032460	7402	7415#						
O0C15	032500	7404	7424#						
O0C2	032412	7395	7400#	7447					
O0C20	032522	7406	7434#						
O0C25	032544	7396	7446#						
O0ODON	006724	2144	2167	2170	2174#				
O0OT	006634	2130	2147#						
O001	006570	2125#							
O002	006614	2137#	2148						
O003	006650	2149	2153#						
O004	006716	2164	2169#						
PIRQ =	177772	837#							
PIRQVE =	000240	931#							
POWERM	042726	9412	9677#						
PPBDON	020252	4626	4642	4648	4655#				
PPBTP1	020160	4602	4607	4616	4622	4629#	4639	4645	
PPBTP2	020170	4603	4617	4633#	4640				
PPB1	020046	4599#							
PPB10	020200	4620	4639#						
PPB15	020220	4623	4645#						
PPB2	020114	4609	4613#						
PPB20	020236	4625	4651#						
PPCDON	033024	7495	7509	7518	7528	7546#			
PPCTB0	032676	7478	7498#						
PPCTB1	032702	7486	7489	7491	7493	7499#	7504	7513	7523
PPC1	032576	7476#							
PPC10	032712	7490	7503#						
PPC15	032732	7492	7512#						
PPC2	032644	7483	7488#	7535					
PPC20	032754	7494	7522#						
PPC25	032776	7484	7534#						
PPPBF0	007066	2196	2233#						
PPPBF1	007102	2206	2214	2221	2236#	2244	2250		
PPPDON	007164	2219	2231	2246	2253#				
PPPTP1	007116	2203	2222	2239#	2243	2249			
PPP1	006730	2192#							
PPP10	007126	2224	2226	2243#					
PPP15	007146	2228	2230	2249#					











TCC3	025614	6112	6119#
TKVEC =	000060	929#	
TPVEC =	000064	930#	
TRAPVE =	000034	928#	2044# 2045#
TRTVEC =	000014	923#	
TST1	006566	2123#	
TST10	011122	2735#	
TST11	011356	2808#	
TST12	011630	2886#	
TST13	012464	3131#	
TST14	013320	3371#	
TST15	013420	3411#	
TST16	013632	3483#	
TST17	013732	3525#	
TST2	006726	2190#	
TST20	014032	3570#	
TST21	014250	3650#	
TST22	014540	3743#	
TST23	015030	3836#	
TST24	015320	3929#	
TST25	015620	4019#	
TST26	016120	4112#	
TST27	016414	4202#	
TST3	007166	2269#	
TST30	016716	4294#	
TST31	017160	4375#	
TST32	017432	4457#	
TST33	017634	4529#	
TST34	020044	4598#	
TST35	020254	4668#	
TST36	020476	4741#	
TST37	020716	4814#	
TST4	007550	2371#	
TST40	021140	4885#	
TST41	021350	4954#	
TST42	021576	5026#	
TST43	022040	5107#	
TST44	022312	5187#	
TST45	023574	5587#	
TST46	023754	5655#	
TST47	024132	5725#	
TST5	010072	2478#	
TST50	024326	5779#	
TST51	024536	5842#	
TST52	024740	5904#	
TST53	025156	5972#	
TST54	025410	6045#	
TST55	025524	6096#	
TST56	025662	6151#	
TST57	027234	6565#	
TST6	010402	2572#	
TST60	030242	6841#	
TST61	032110	7297#	
TST62	032342	7385#	
TST63	032574	7474#	
TST64	033026	7562#	





UUB20	021530	4983	4999#						
UUCBFO	034366	7949	7953	7958	7968#				
UUCDON	034374	7954	7963	7970#					
UUCTP1	034354	7946	7965#						
UUC1	034274	7942#							
UUC2	034324	7948	7951#						
UUC3	034334	7957#							
UUUA1	011006	2664#	2689#						
UUUA2	011010	2671	2673	2690#	2714				
UUUA3	011012	2691#							
UUUBFO	010774	2659	2664	2675	2684#	2689	2719		
UUUDON	011120	2681	2710	2716	2722#				
UUUTP1	011020	2667	2676	2694#	2720				
UUU1	010654	2657#							
UUU10	011030	2669	2700#						
UUU11	011052	2702	2704	2707#					
UUU15	011064	2674	2713#						
UUU2	010740	2670	2672#	2701	2703				
UUU20	011102	2679	2719#						
UUU3	010764	2678#	2680						
VVBDON	014030	3542	3548	3555#					
VVB1	013734	3527#							
VVB10	013776	3539	3545#						
VVB15	014014	3541	3551#						
VVB2	013752	3531	3533#						
VVCBFO	034472	7993	7997	8002	8012#				
VVCDON	034500	7998	8007	8014#					
VVCTP1	034460	7990	8009#						
VVC1	034400	7986#							
VVC2	034430	7992	7995#						
VVC3	034440	8001#							
VVVBFO	011244	2741	2750	2754	2756	2763#	2787	2792	
VVVDON	011354	2762	2783	2789	2795#				
VVVTP1	011254	2747	2757	2767#	2793				
VVV1	011124	2737#							
VVV10	011264	2746	2773#						
VVV11	011306	2775	2777	2780#					
VVV15	011320	2755	2786#						
VVV2	011206	2749	2752#	2774	2776				
VVV20	011336	2760	2792#						
WNBON	023572	5413	5571#						
WNB1	022314	5189#							
WNB2	022372	5214#							
WNB3	022450	5239#							
WNB4	022526	5264#							
WNB5	022604	5289#							
WNB6	022662	5314#							
WNB7	022740	5339#							
WNB8	023016	5364#							
WNB9	023074	5389#							
WNCDON	036142	8326	8434#						
WNC1	034504	8034#							
WNC10	035144	8173#							
WNC11	035210	8190#							
WNC12	035254	8207#							
WNC13	035320	8224#							



WMC14	035364	8241#							
WMC15	035430	8257#							
WMC16	035474	8274#							
WMC17	035540	8293#							
WMC18	035604	8311#							
WMC2	034550	8053#							
WMC4	034614	8070#							
WMC5	034660	8087#							
WMC6	034724	8105#							
WMC7	034770	8122#							
WMC8	035034	8139#							
WMC9	035100	8156#							
WMBFO	011506	2814	2825	2830	2837#	2865	2870		
WMBF1	011526	2823	2825*	2828	2845#				
WMDON	011626	2836	2861	2867	2873#				
WMTTP1	011516	2820	2831	2841#	2871				
WMM1	011360	2810#							
WMM10	011536	2819	2851#						
WMM11	011560	2853	2855	2858#					
WMM15	011572	2829	2864#						
WMM2	011450	2822	2826#	2852	2854				
WMM20	011610	2834	2870#						
XXBDON	022036	5056	5073	5079	5085	5093#			
XXBTP1	021724	5029	5034	5035*	5046	5052	5059#	5076	5082
XXBTP2	021734	5030	5047	5063#	5077				
XXB1	021600	5027#							
XXB10	021764	5050	5076#						
XXB15	022004	5053	5082#						
XXB2	021652	5036	5041#	5070	5071				
XXB20	022022	5055	5089#						
XXB25	021744	5045	5070#						
XXCDON	036212	8470#							
XXC1	036146	8454#							
XXXDON	012462	3007	3118#						
XXX1	011632	2889#							
XXX2	011706	2913#							
XXX3	011762	2937#							
XXX4	012036	2961#							
XXX5	012112	2985#							
YYBDON	022310	5139	5156	5162	5168	5175#			
YYBTP1	022174	5111	5117	5118*	5129	5142#	5150	5159	
YYBTP2	022204	5112	5130	5146#	5160				
YYBTP3	022214	5116	5135	5150#	5165				
YYB1	022042	5109#							
YYB10	022236	5133	5159#						
YYB15	022256	5136	5165#						
YYB2	022122	5119	5124#	5153	5154				
YYB20	022274	5138	5171#						
YYB25	022216	5128	5153#						
YYCDON	036724	8587	8672#						
YYC1	036216	8488#							
YYC2	036254	8504#							
YYC3	036312	8522#							
YYC4	036350	8539#							
YYC5	036406	8556#							
YYC6	036444	8573#							



















ACCMAC	790#														
ASMAC1	784#														
ASMAC2	785#														
COMMEN	1#	932#													
DHM	9677#														
D1	9677#														
D2	9677#														
D3	9677#														
D4	9677#														
ENDCOM	1#	932#													
ENDPAS	773#	8779													
ERMAL	779#	8950													
ERROR	826#	2142	2166	2172	2218	2245	2251	2298	2322	2345	2357	2437	2441	2447	2464
	2542	2548	2554	2558	2629	2635	2641	2709	2715	2721	2782	2788	2794	2860	2866
	2872	2908	2910	2932	2934	2956	2958	2980	2982	3004	3006	3098	3108	3114	3153
	3155	3177	3179	3201	3203	3225	3227	3249	3251	3339	3349	3355	3391	3397	3440
	3446	3452	3502	3508	3547	3553	3607	3613	3707	3714	3720	3726	3801	3808	3814
	3820	3894	3901	3907	3913	3985	3992	3998	4003	4077	4084	4090	4095	4169	4176
	4182	4187	4260	4267	4273	4278	4347	4354	4359	4430	4437	4442	4503	4508	4514
	4571	4577	4583	4641	4647	4653	4712	4718	4725	4786	4792	4798	4858	4864	4870
	4927	4933	4939	4995	5001	5011	5072	5078	5084	5091	5155	5161	5167	5173	5209
	5211	5234	5236	5259	5261	5284	5286	5309	5311	5334	5336	5359	5361	5384	5386
	5409	5411	5544	5546	5548	5552	5554	5556	5560	5562	5564	5616	5622	5637	5686
	5692	5707	5751	5755	5765	5809	5815	5828	5871	5877	5890	5933	5939	5945	5958
	6003	6009	6015	6028	6072	6079	6116	6125	6166	6168	6182	6184	6198	6200	6212
	6214	6226	6228	6242	6244	6257	6259	6272	6274	6287	6289	6302	6304	6317	6319
	6332	6334	6347	6349	6362	6364	6377	6379	6392	6394	6407	6409	6422	6424	6436
	6438	6451	6453	6533	6544	6578	6580	6594	6596	6611	6613	6628	6630	6645	6647
	6662	6664	6679	6681	6696	6698	6714	6716	6731	6733	6811	6821	6858	6860	6877
	6879	6897	6899	6917	6919	6938	6940	6958	6960	6979	6981	6999	7001	7018	7020
	7038	7040	7058	7060	7078	7080	7099	7101	7120	7122	7141	7143	7162	7164	7259
	7268	7274	7330	7339	7349	7366	7418	7427	7437	7454	7506	7515	7525	7542	7596
	7605	7615	7631	7686	7695	7705	7722	7777	7786	7796	7813	7821	7879	7889	7899
	7915	7923	7960	8004	8045	8047	8064	8066	8081	8083	8098	8100	8116	8118	8133
	8135	8150	8152	8167	8169	8184	8186	8201	8203	8218	8220	8235	8237	8252	8254
	8268	8270	8285	8287	8304	8306	8322	8324	8412	8421	8427	8465	8467	8498	8500
	8514	8516	8532	8534	8549	8551	8566	8568	8583	8585	8648	8659	8665	8724	8730
	8733	8738	9596	9613	9630										
ESCAPE	1#	932#													
FLM	9677#														
GETPRI	1#	932#	9814												
GETSMR	1#	932#	2096#												
HMAC1	786#														
HMAC2	788#														
HMAC3	789#														
ITEMAC	781#	1122	1125	1128	1131	1134	1137	1140	1143	1146	1149	1152	1155	1158	1161
	1164	1167	1170	1173	1176	1179	1182	1185	1188	1191	1194	1197	1200	1203	1206
	1209	1212	1215	1218	1221	1224	1227	1230	1233	1236	1239	1242	1245	1248	1251
	1254	1257	1260	1263	1266	1269	1272	1275	1278	1281	1284	1287	1290	1293	1296
	1299	1302	1305	1308	1311	1314	1317	1320	1323	1326	1329	1332	1335	1338	1341
	1344	1347	1350	1353	1356	1359	1362	1365	1368	1371	1374	1377	1380	1383	1386
	1389	1392	1395	1398	1401	1404	1407	1410	1413	1416	1419	1422	1425	1428	1431
	1434	1437	1440	1443	1446	1449	1452	1455	1458	1461	1464	1467	1470	1473	1476
	1479	1482	1485	1488	1491	1494	1497	1500	1503	1506	1509	1512	1515	1518	1521
	1524	1527	1530	1533	1536	1539	1542	1545	1548	1551	1554	1557	1560	1563	1566
	1569	1572	1575	1578	1581	1584	1587	1590	1593	1596	1599	1602	1605	1608	1611











.SSB2D	1#		
.SSB20	1#		
.SSCOP	1#	800#	8832
.SSIZE	1#		
.SSUPR	1#		
.STRAP	1#	800#	9331
.STYPB	1#		
.STYPD	1#	800#	
.STYPE	1#	800#	9006
.STYPO	1#	800#	9086
.S4OCA	1#		
.1170	1#		

.ABS. 071672 000

ERRORS DETECTED: 0

CFFPCB.BIN,CFFPCB.LST/CRF/SOL/NL: TOC=CFFPCB.SML,CFFPCB.P11  
RUN-TIME: 31 39 7 SECONDS  
RUN-TIME RATIO: 248/78=3.1  
CORE USED: 40K (79 PAGES)