

7030 DPS

SSIP

File No. JA UA 1

SSIP

Sense Switch Interrogation Program

JA UA 1

August 24, 1961

1. Programs becoming obsolete. None
2. Used to provide common control of J series programs for the Sigma Area.

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1. PURPOSE

The Sense Switch Interrogation Program(SSIP) provides the maintenance engineer a standard method of control and monitoring of maintenance programs. This control is provided through the maintenance bits of maintenance console and options are defined below.

2. PROGRAMMING INTRODUCTION

2.1. General

Functions have been assigned to the sense switches so that, if they are all off or the machine is not in Maintenance Mode, the tests will run in Normal Mode. In Normal Mode, all the test routines will be run in order, once, and then the machine will stop. If any errors occur, the test in which they occurred will be identified by a print out. No other printouts will occur and testing will continue. In Normal Mode the interruption system will be disabled unless a specific test enables the interrupt system in order to test interruption.

The SSIP monitor, when activated, monitors continuity within the maintenance program. It may be activated (or enabled) by replacing a branch instruction, location 002543.0, with a NOP. After a sequence error, the monitor will return control to the last previous in sequence point.

Only ERS and SSW exits are monitored. Manual branches to the first instruction of a test may be made from either half word of the maintenance bits. In this case no monitor error will occur if the branch is left in the bits.

Paragraph 3.2. lists the sense switch options available. Appendix A is a flow chart of the sense switch interrogation routines.

2.2. Communication

2.2.1. Entry Points

1. SSW-location 1301.0, normal exit for sense switch interrogation.
2. ERS-location 1302.0, error exit for sense switch interrogation (not normally used).

3. SERS-location 1304.0, special exit for error when test is not complete. It provides for return to the maintenance program at the instruction following the SIC, SEN; B, SERS. The B, SERS should not be a BD or BE because control will not be monitored in SSIP.

2.2.2. Return points from the SSIP to the maintenance program are provided by Instruction Counter Storage into the following locations:

1. SEN, location 1310.00, receives IC on SERS exit.
2. SEN0 to SEN 31, location 1311.00 to 1350.40, receives IC on exit from SSW and ERS. The number, ie, SENn, (where n is a number) gives the relative location of the loop address. It is word count from the first instruction in the routine to be executed to the branch to SSW or ERS. It provides the return address for a loop option.

2.2.3. At the beginning of each test routine, the maintenance program will store the routine identity in location DPET13 (1437.00).

2.2.4. The maintenance program will branch to SSW at the beginning of the program to provide for the initial set up of the SSIP.

2.3. Output From SSIP

Output from the SSIP will be through the operators console printer unless suppress printing option is selected. Output from monitoring routine or forced identity printouts may occur as noted below even though the suppress printing option is selected.

At the beginning of each test section of a maintenance program, the program will store the section identity and branch to the SSIP. The program will store the identity in location DPET13, address 1437.0, and branch to the SSIP at location IDF 1 (1443.0) or IDF2 (1444.4). The IC will be stored in RET (1306.4).

The normal exit to the SSIP will be IDF1. If sense switch 36 is active and the console printer (typewriter) is ready, the heading will be printed and control will be returned to the maintenance program at the instruction following the SIC, RET; B, IDF1.

If the maintenance program branches to IDF2 in SSIP, sensing sense switch 36 is bypassed and printing will occur if the console printer is ready.

2.3.1. Print Formats

1. Identity Print

1200

The section identification is the only thing printed with SSW36 active and a branch to IDF1 or a branch to IDF2.

2. Single Error Print

1200 005673.4

The section identification precedes the octal address. The octal address is the stored instruction counter from an active branch to SERS or ERS.

3. Total Error Count - SSW34 active

1200 005677.0 0059

Section identity is printed. The octal address is the stored instruction counter from an active branch to ERS or SSW. 0059 is the decimal error count during 100 passes through the routine. This count may be a maximum of 9,999. If the error count is zero printing will not occur.

4. Indicator Printout as a result of an Interrupt

1200 005317.4 IJ

1200 is section identification, will be SSIP if SSIP had control at interrupt. 005317.4 is the address of the instruction following the one causing the interrupt.

IJ-Mnemonic name of the indicator causing the interrupt.

2.3.2. Printout from Monitor

When the SSIP monitor is enabled, printouts will occur on the console printer independent of the sense switch settings. The printout will contain a statement "IN SEQ AT" or "OUT OF SEQ AT" and an address. The address will be the IC stored on a branch to SSW or ERS.

2.4. Interrupts and Resets

The SSIP has within it a master interrupt table. It requires the initial setup for locating it in the normal operating area and to set the proper interrupt address (address 2.0). The interrupt address (starting location of the table) is INT, location 1353.0. Any program intentionally producing interrupts should modify this table to prevent an indicator printout. An indicator printout will be interpreted as an error by the maintenance engineer. The address to modify will be INT plus the indicator number, ie, AD is indicator 16 so INT + 16.0 may be changed to a branch to the maintenance program indicating success. The next branch to SSW or ERS will restore the interrupt table to its initial condition. Additional conditioning with each branch to SSW or ERS follows; the interval timer will be loaded to a maximum, the indicator mask will be restored, the boundaries and control bit will be reset to zero, the interrupt address will be reset, and indicators will be cleared.

3. OPERATING PROCEDURES

3.1. Loading Procedures (PUNFUL Cards)

3.1.1. Equipment

- 1. SSIP Binary Deck
- 2. Desired Maintenance Program Decks.

3.1.2. Procedure

- 1. Push Master Reset button
- 2. Place Interrupt disable in the inactive position.
- 3. Place Time Clock disable switch in the inactive position.
- 4. Place maintenance switch in active position (Maintenance Mode). Note: If maintenance switch is inactive, the SSIP will run as in normal mode, ie, no SSW active, regardless of position. Programmed halts in SSIP may be bypass under this condition.
- 5. Place sense switches in the desired location (see 3.2 below). Reference: note under 3.1.2.4. above.

- 6. Depress IPL key (initial program load) on operators console.
- 7. Place SSIP card deck in the card reader hopper. The control card at front of deck should have the chain flag set or word count sufficient to prevent initiating the SSIP.
- 8. Push the Start pushbutton on the card reader.

When the "out of material" light comes on the SSIP is in memory. To load the maintenance program proceed as follows:

- 9. If SSIP monitoring is desired, replace Branch in SSIP with NOP (Addr 2543. 0).
- 10. Depress IPL key on operators console.
- 11. Place maintenance program deck in the card reader hopper.
- 12. Push the Start pushbutton on the card reader.

If the control word of the deck has the proper word count, after the deck is read in the first word of the program just read in will be executed. This instruction should be an active branch which will start the program.

3.2. Options

Sense Switch	Effect of setting to 1
(Maintenance Bits)	
32	Suppress error print ont
33	Stop on error
34	Repeat each test 100X and print number of errors
35	Repeat current test indefinitely

- 36 Print out section identity
- 37 Repeat block of tests
- 38 Start each test Enabled
- 39 Spare

If SSW 33 is on and 32 is off, printing will occur before the halt. If SSW 34 and 35 are both on, the test will be repeated indefinitely in blocks of 100X each with the error count being recorded. Use of SSW 37 and 61 are not available in card loaded versions of SSIP.

3.3. Output Media

The output from the SSIP will be by console printer (typewriter) when available. The error halt may be used instead of the console printer (see options above).

4. PROGRAM PHILOSOPHY

The SSIP is a package of routines providing a uniform method of control and output from sigma area maintenance programs. The present SSIP (PUNFUL card loaded) does not control the reading in the maintenance program. It therefore must rely on the maintenance programmer to give control to the SSIP to provide for an initial setup at the beginning of his program. This permits SSIP to housekeep registers and tables that will be used later. If monitoring for continuity is desired, the branch at 2543. 0 will have been replaced with a NOP and a dummy pass into the monitor routine will also occur. The housekeeping will consist of setting interval timer to all ones, setting boundaries and the control bit to zero, setting interrupt address, transferring the interrupt table to its operating location, indicators will be cleared, and the mask will be reset. The indicator mask will be as follows; 0-25, 28, 33, and 34 set and the remaining mask bits will be cleared. Each time a maintenance program branches to SSW or ERS, the above housekeeping will occur before control is returned to the maintenance program (except during looping).

The MP (maintenance program) will again branch to SSIP with the section identity stored in DPET13. Branching to IDF1 will cause the identity to be printed if SSW 36 is set. Branching IDF2 will cause the identity to be printed independent of SSW 36 setting (Both contingent on console printer being ready and both independent of SSW 32 settings). Control is returned to the instruction following the branch to IDF1 or IDF2.

Index register 13 is used throughout the SSIP and will not be restored on return to the MP. All other index registers will be restored if used.

SENSE SWITCH INTERROGATION PROGRAM

An error halt (SSW33 active) requires a manual branch from the maintenance bits to continue.

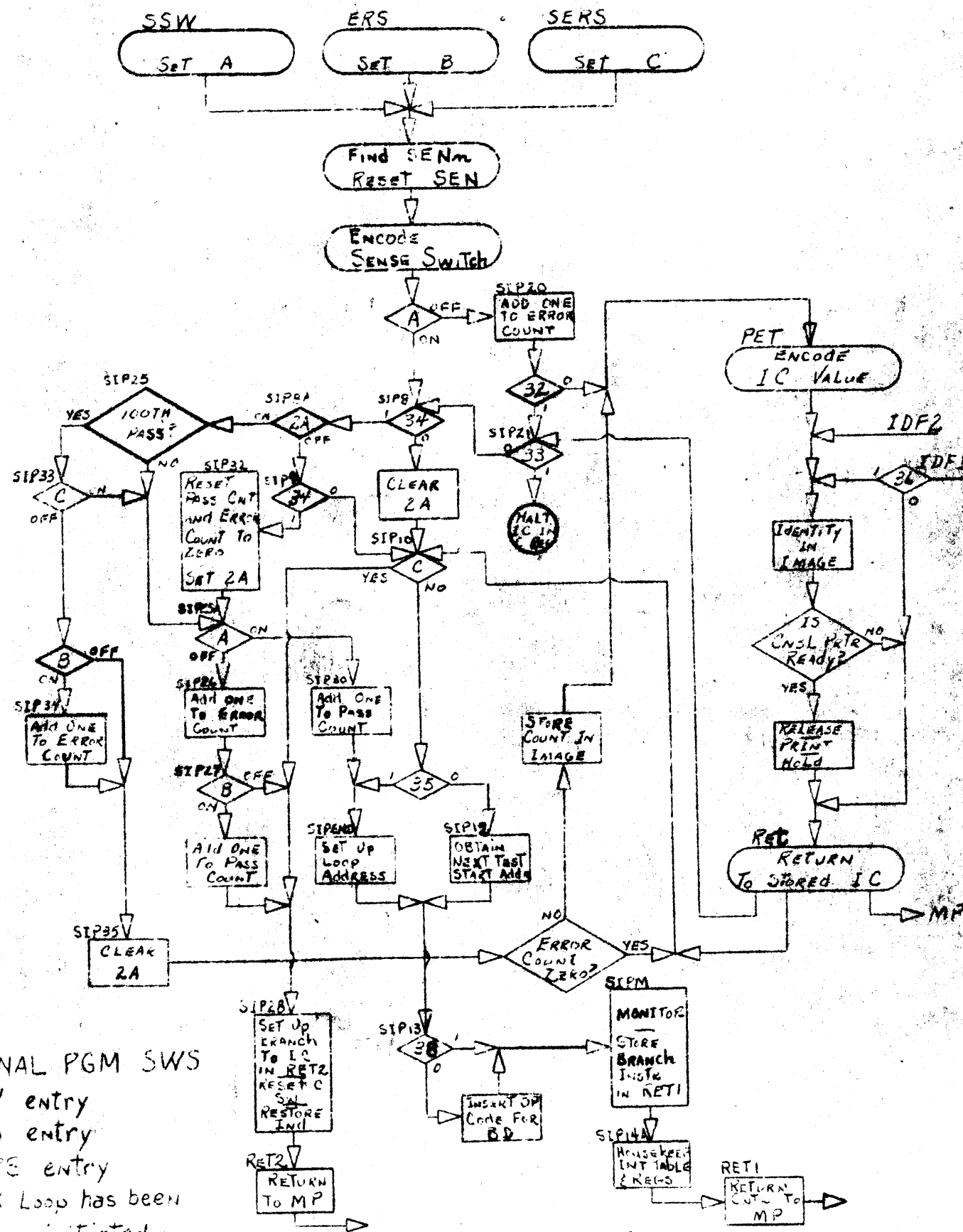
After the MP gains control after branching to IDF1 or 2, testing will begin. Whenever an error is detected the program will indicate this by branching SIC, SEN; B, SERS. This should not be an enabling or disabling branch because SSIP will return control to the MP in the same manner it was received. SSIP rechecks the sense switches, prints unless suppressed, and continues if halt is not requested. If the 100X loop has been requested the error count is stepped one and control is returned to the MP.

When the MP completes a routine, it will SIC, SENn; B, SSW (or ERS). Normally ERS is not desired because it may cause an error indication that was previously given. Otherwise the exits are the same. The sense switches are read and the results are stored (At this point the error print occurs for ERS). Next the 100X loop option is checked. If 100X loop option has been started a check is made of pass count. If entry was through ERS the error count is increased by one. If this is not the 100th pass, the pass count is increased by one and index registers are restore. Control is returned to the MP at the starting address of the loop. If this is the 100th pass, the looping switch (memory location) is cleared. The error count is checked and printed unless count is zero.

The unconditional loop option is now checked and return to start of loop is requested.

If looping is not requested, the SSIP determines the first instruction of next routine. Sense switch 38 is now checked to determine if control is to be returned system enabled or disabled. The machine environment is restored (housekeeping) as stated above and control is returned to the MP.

The interrupt table is made up of 48 memory locations; one for each indicator that can cause an interrupt. When an interrupt occurs the system will get a free instruction. This instruction is determined by the address stored in the interrupt address register (location 2.0) plus the indicator causing interruption. In the SSIP interrupt table the free instruction will be SIC, INTZ; BD, INT (n). From here the indicator mnemonic name is obtained for printout. If the console printer is ready the print out occurs and control is returned to the MP at the instruction following the instruction causing the interrupt. The MP may replace the free instruction with a branch to their own program as a check for specific interrupts.



INTERNAL PGM SWS
 A = SSW entry
 B = ERS entry
 C = SERS entry
 2A = 100X Loop has been initiated

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PROGRAM WRITEUP ADDENDUM

Program SSIP

File No. JA UA1

MAINTENANCE TAPE CONTROL CARD

Location/s of Exit Branches

1.	<u>1</u>	<u>3</u>	<u>1</u>	<u>0</u>	<u>0</u>
2.					
3.					
4.					
5.					
6.					

Pre-Loading Manual Intervention Required ? Yes _____ No **x**

Pre-Loading Procedure (If Any)

PRINTED,

SSIP CBD 2-9-61

JA UAI

12

11

10

9

8

7

6

5

4

3

2

PXNID,SSIP2961U

37.00 80 000000.00 00

000040.00 W

SLC,100.

000144.00

END

0.00

000144.00

12

11

10

9

8

7

6

5

4

3

2

	PUNFUL			
	SEM,6,G			
	SLC,%8□1300.			001300.00
	CW%CD□,SSW,DSIPM9-\$+1.		1301.00 20 030660.00 00	001300.00 V
	CNOP	-START AT FULL WORD		
SSW	LV,\$X13,DSIP2	-SET SW. A ON	2025.72 30	001301.00
	SV,\$X13,DSIP20		2046.33 30	001301.40
	B,SIP1		1446.50 00	001302.00
ERS	LV,\$X13,DSIP2	-SET SW. B ON	2025.72 30	001302.40
	SV,\$X13,DSIP21		2046.73 30	001303.00
	B,SIP1		1446.50 00	001303.40
SERS	LX,\$X13,11.0	-SAVE INDICATORS	13.32 10	001304.00
	SX,\$X13,DSIP23		2050.33 10	001304.40
	LV,\$X13,DSIP2	-SET SW. C ON	2025.72 30	001305.00
	SV,\$X13,DSIP22		2047.33 30	001305.40
	B,SIP1		1446.50 00	001306.00
RET	B,0.0	-RETURN TO SSIP FROM PRINTING	0.10 00	001306.40
RET1	BE,0.0	-RETURN TO TESTS FROM SSW OR ERS	0.00 00	001307.00
RET2	B,0.0	-RETURN TO TESTS FROM SERS	0.10 00	001307.40
	CNOP			
12				
11	SEN	DD%BU,32,8□,0,0		0000000000 001310.00
				0000000000 001310.40
10				
9	SEN0	DD%BU,32,8□,0,0		0000000000 001311.00
				0000000000 001311.40
8				
7	SEN1	DD%BU,32,8□,0,0		0000000000 001312.00
				0000000000 001312.40
6				
5	SEN2	DD%BU,32,8□,0,0		0000000000 001313.00
				0000000000 001313.40
4				
3	SEN3	DD%BU,32,8□,0,0		0000000000 001314.00
				0000000000 001314.40
2				
	SEN4	DD%BU,32,8□,0,0		0000000000 001315.00

			0000000000	001315.40
	SEN5	DD%BU,32,8□,0,0	0000000000	001316.00
			0000000000	001316.40
	SEN6	DD%BU,32,8□,0,0	0000000000	001317.00
			0000000000	001317.40
	SEN7	DD%BU,32,8□,0,0	0000000000	001320.00
			0000000000	001320.40
	SEN8	DD%BU,32,8□,0,0	0000000000	001321.00
			0000000000	001321.40
	SEN9	DD%BU,32,8□,0,0	0000000000	001322.00
			0000000000	001322.40
	SEN10	DD%BU,32,8□,0,0	0000000000	001323.00
			0000000000	001323.40
	SEN11	DD%BU,32,8□,0,0	0000000000	001324.00
			0000000000	001324.40
	SEN12	DD%BU,32,8□,0,0	0000000000	001325.00
			0000000000	001325.40
	SEN13	DD%BU,32,8□,0,0	0000000000	001326.00
			0000000000	001326.40
	SEN14	DD%BU,32,8□,0,0	0000000000	001327.00
			0000000000	001327.40
12	SEN15	DD%BU,32,8□,0,0	0000000000	001330.00
			0000000000	001330.40
11				
10	SEN16	DD%BU,32,8□,0,0	0000000000	001331.00
			0000000000	001331.40
9				
8	SEN17	DD%BU,32,8□,0,0	0000000000	001332.00
			0000000000	001332.40
7				
6	SEN18	DD%BU,32,8□,0,0	0000000000	001333.00
			0000000000	001333.40
5				
4	SEN19	DD%BU,32,8□,0,0	0000000000	001334.00
			0000000000	001334.40
3				
2	SEN20	DD%BU,32,8□,0,0	0000000000	001335.00
			0000000000	001335.40

	SEN21	DD%BU,32,8□,0,0		0000000000	001336.00
				0000000000	001336.40
	SEN22	DD%BU,32,8□,0,0		0000000000	001337.00
				0000000000	001337.40
	SEN23	DD%BU,32,8□,0,0		0000000000	001340.00
				0000000000	001340.40
	SEN24	DD%BU,32,8□,0,0		0000000000	001341.00
				0000000000	001341.40
	SEN25	DD%BU,32,8□,0,0		0000000000	001342.00
				0000000000	001342.40
	SEN26	DD%BU,32,8□,0,0		0000000000	001343.00
				0000000000	001343.40
	SEN27	DD%BU,32,8□,0,0		0000000000	001344.00
				0000000000	001344.40
	SEN28	DD%BU,32,8□,0,0		0000000000	001345.00
				0000000000	001345.40
	SEN29	DD%BU,32,8□,0,0		0000000000	001346.00
				0000000000	001346.40
	SEN30	DD%BU,32,8□,0,0		0000000000	001347.00
				0000000000	001347.40
	SEN31	DD%BU,32,8□,0,0		0000000000	001350.00
				0000000000	001350.40
12					
	DSEN	VF,0	-IC VALUE FROM SEN	0.00+	001351.00
11					
	DSEN1	VF,0	-INSERT COMPLEMENT N VALUE	0.00+	001351.40
10					
	DSEN2	VF,%8□777700.77		777700.77+	001352.00
9					
		CNOP		0.30 00	001352.40
8					
	INT	DR%BU,64,8□,48	-INTERRUPT TABLE OCCUPIES THIS SPACE	60.00	001353.00
7					
	ERCT	VF,0.0		0.00+	001433.00
6					
	DPET10	XW,0	-FIRST CONSOLE WORD	0.00 00 000000.00 00	001434.00
5					
	DPET11	XW,0	-2ND CONSOLE WORD	0.00 00 000000.00 00	001435.00
4					
	DPET12	XW,0	-3RD CONSOLE WORD	0.00 00 000000.00 00	001436.00
3					
	DPET13	XW,0	-1ST MESSAGE WORD	0.00 00 000000.00 00	001437.00
2					
	DPET14	XW,0	-2ND MESSAGE WORD	0.00 00 000000.00 00	001440.00

	DPET15	XW,0	-3RD MESSAGE WORD	0.00 00 000000.00 00	001441.00
	DPET16	VF,%8□773770.0	-CARRIAGE RETURN AND END MARK	773770.00+	001442.00
		VF,%8□176776.00		176776.00+	001442.40
	IDF1	LX,\$X13,DSIP14	-SECTION IDENTIFICATION	2041.32 10.	001443.00
		BXVLZ,IDF2		1444.70 C2	001443.40
		B,RET	-DO NOT PRINT	1306.50 00	001444.00
	IDF2	LX,\$X13,DPET16	-SET UP END WORDS	1442.32 10	001444.40
		SX,\$X13,DPET14		1440.33 10	001445.00
		SX,\$X13,DPET15		1441.33 10	001445.40
		B,PET25A		2000.50 00	001446.00
	SIP1	SX,\$X12,DSIP24	-SAVE X12	2051.31 10	001446.40
		LX,\$X12,DSIP26	-TO FIND IC IN SEN	2053.30 10	001447.00
	SIP2	LV,\$X13,SEN%\$X12□		1310.32 3C	001447.40
		BZXVZ,SIP4	-GOT IT ON BRANCH	1451.71 40	001450.00
		CBH,\$X12,SIP2		1447.70 C8	001450.40
	SIP3	B,\$	-* PROG, GOOF, NOTHING IN SEN AREA	1451.10 00	001451.00
	SIP4	SV,\$X13,DSEN	-SAVE IC	1351.33 30	001451.40
		LX,\$X13,DPET11	-RESET LOCATION 0	1435.32 10	001452.00
		SX,\$X13,0.0	-AND SEN AREA	0.33 10	001452.40
		SV,\$X13,SEN%\$X12□		1310.33 3C	001453.00
12		SC,\$X12,DSEN1	-FIND 24 BIT COMPLEMENT OF N.	1351.71 50	001453.40
11		LV,\$X13,DSEN1	-LOAD PARTIAL COMPLEMENT.	1351.72 30	001454.00
10		SVA,\$X13,SIP5		1455.73 D0	001454.40
9		LVI,\$X13,63.0		77.33 01	001455.00
8	SIP5	V-1,\$X13,0.		0.33 0D	001455.40
7		SV,\$X13,DSEN1		1351.73 30 ZR	001456.00
6		NOP		0.30 00 ZL	001456.40
5		SX,\$X11,DSIP28		2055.27 10	001457.00
4		LX,\$X11,DSIP29	-SAVE AND SETUP X11	2056.26 10	001457.40
3		LC,\$X13,4.32	-ENCODE SWITCHES	4.72 50	001460.00
2		SC,\$X13,DSIP27		2054.33 50	001460.40
		LV,\$X13,DSIP27	-VF HAS SW 0-17 AND PLUS SIGN	2054.32 30	001461.00

	SIP5A	V+,\$X13,DSIP3+.32%\$X11	-ADD-1 TO BIT ZERO	2026.72 BB	001461.40
		BXVLZ,SIP6		1463.70 C2	001462.00
		LV,\$X12,DSIP2	-SW 0 IS ON	2025.70 30	001462.40
		B,SIP7		1464.50 00	001463.00
	SIP6	V+,\$13,DSIP3%\$X11	-RESTORE ZERO IN BIT 0 AND + SIGN	2026.32 BB	001463.40
		LV,\$X12,DSIP1	-SW 0 IS OFF	2025.30 30	001464.00
	SIP7	SV,\$X12,DSIP10%\$X11	-STORE IN PROG, SW 0	2035.31 3B	001464.40
		CB+,\$X11,SIP5A	-REPEAT ABOVE FOR 7 MORE SWITCHES	1461.67 48	001465.00
		LV,\$X13,DSIP20	-TEXT SWA	2046.32 30	001465.40
		BZXVLZ,SIP20	-THERE WAS AN ERROR, GO TO TEST SW 0	1605.30 C0	001466.00
	SIP8	LV,\$X13,DSIP12	-TEST SW 2	2037.32 30	001466.40
		BXVLZ,SIP8A		1471.30 C2	001467.00
		LV,\$X13,DSIP1		2025.32 30	001467.40
		SV,\$X13,DSIP25	-RESET SW 2A	2052.33 30	001470.00
		B,SIP10		1473.10 00	001470.40
	SIP8A	LV,\$X13,DSIP25	-TEST SW 2A	2052.32 30	001471.00
		BXVLZ,SIP25	-IN 100X LOOP	1616.30 C2	001471.40
	SIP9	LV,\$X13,DSIP12	-TEST SW 2	2037.32 30	001472.00
		BXVLZ,SIP32	-START 100X LOOP	1637.70 C2	001472.40
	SIP10	LV,\$X13,DSIP22	-TEST SW C	2047.32 30	001473.00
		BXVLZ,SIP28	-CAME FROM SERS, GO TO NEXT T. INST.	1627.70 C2	001473.40
12					
11					
10	SIP11	LV,\$X13,DSIP13	-TEST SW 3	2040.32 30	001474.00
9		BXVLZ,SIP31	-GO TO INDEFINATE LOOP	1636.30 C2	001474.40
8	SIP12	LV,\$X12,DSIP1	-FIND ADDRESS OF NEXT TEST	1351.30 30	001475.00
7		LV,\$X13,0.0%\$X12	-PICKUP ADDRESS AT IC	0.32 3C	001475.40
6		KVI,\$X13,SEN		1310.33 04	001476.00
5		BXL,SIP13	-BRANCH, ADDRESS LESS THAN SEN <i>don't branch</i>	1500.72 42	001476.40
4		KVI,\$X13,SEN31+.32		1350.73 04	001477.00
3		BXH,SIP13	-BRANCH, ADDRESS GREATER THAN SEN 31	1500.73 42	001477.40
2		V+,\$X12,DSIP1	-INCREASE RETURN ADDRESS ONE	2025.30 B0	001500.00
	SIP13	LV,\$X13,DSIP16	-TEST SW. 6	2043.32 30	001500.40

5
75

	BXVLZ,SIPM	-MAKE BE INST. BY LEAVING ZERO OP.	2541.70 C2	001501.00
	V+,\$X12,DSIP30	-INSERT OP CODE FOR BD	2057.30 B0	001501.40
	B,SIPM		2541.50 00	001502.00
	-			
	SIP14A LX,\$X13,DINT+0		2101.32 10	001502.40
	SX,\$X13,INT+0	-RESET INTERRUPT TABLE	1353.33 10	001503.00
	LX,\$X13,DINT+1		2102.32 10	001503.40
	SX,\$X13,INT+1		1354.33 10	001504.00
	LX,\$X13,DINT+2		2103.32 10	001504.40
	SX,\$X13,INT+2		1355.33 10	001505.00
	LX,\$X13,DINT+3		2104.32 10	001505.40
	SX,\$X13,INT+3		1356.33 10	001506.00
	LX,\$X13,DINT+4		2105.32 10	001506.40
	SX,\$X13,INT+4		1357.33 10	001507.00
	LX,\$X13,DINT+5		2106.32 10	001507.40
	SX,\$X13,INT+5		1360.33 10	001510.00
	LX,\$X13,DINT+6		2107.32 10	001510.40
	SX,\$X13,INT+6		1361.33 10	001511.00
	LX,\$X13,DINT+7		2110.32 10	001511.40
	SX,\$X13,INT+7		1362.33 10	001512.00
	LX,\$X13,DINT+8		2111.32 10	001512.40
12	SX,\$X13,INT+8		1363.33 10	001513.00
11	LX,\$X13,DINT+9		2112.32 10	001513.40
10	SX,\$X13,INT+9		1364.33 10	001514.00
9	LX,\$X13,DINT+10		2113.32 10	001514.40
8	SX,\$X13,INT+10		1365.33 10	001515.00
7	LX,\$X13,DINT+11		2114.32 10	001515.40
6	SX,\$X13,INT+11		1366.33 10	001516.00
5	LX,\$X13,DINT+12		2115.32 10	001516.40
4	SX,\$X13,INT+12		1367.33 10	001517.00
3	LX,\$X13,DINT+13		2116.32 10	001517.40
2	SX,\$X13,INT+13		1370.33 10	001520.00
	LX,\$X13,DINT+14		2117.32 10	001520.40

	SX,\$X13,INT+14	1371.33 10	001521.00
	LX,\$X13,DINT+15	2120.32 10	001521.40
	SX,\$X13,INT+15	1372.33 10	001522.00
	LX,\$X13,DINT+16	2121.32 10	001522.40
	SX,\$X13,INT+16	1373.33 10	001523.00
	LX,\$X13,DINT+17	2122.32 10	001523.40
	SX,\$X13,INT+17	1374.33 10	001524.00
	LX,\$X13,DINT+18	2123.32 10	001524.40
	SX,\$X13,INT+18	1375.33 10	001525.00
	LX,\$X13,DINT+19	2124.32 10	001525.40
	SX,\$X13,INT+19	1376.33 10	001526.00
	LX,\$X13,DINT+20	2125.32 10	001526.40
	SX,\$X13,INT+20	1377.33 10	001527.00
	LX,\$X13,DINT+21	2126.32 10	001527.40
	SX,\$X13,INT+21	1400.33 10	001530.00
	LX,\$X13,DINT+22	2127.32 10	001530.40
	SX,\$X13,INT+22	1401.33 10	001531.00
	LX,\$X13,DINT+23	2130.32 10	001531.40
	SX,\$X13,INT+23	1402.33 10	001532.00
	LX,\$X13,DINT+24	2131.32 10	001532.40
	SX,\$X13,INT+24	1403.33 10	001533.00
12	LX,\$X13,DINT+25	2132.32 10	001533.40
11	SX,\$X13,INT+25	1404.33 10	001534.00
10	LX,\$X13,DINT+26	2133.32 10	001534.40
9	SX,\$X13,INT+26	1405.33 10	001535.00
8	LX,\$X13,DINT+27	2134.32 10	001535.40
7	SX,\$X13,INT+27	1406.33 10	001536.00
6	LX,\$X13,DINT+28	2135.32 10	001536.40
5	SX,\$X13,INT+28	1407.33 10	001537.00
4	LX,\$X13,DINT+29	2136.32 10	001537.40
3	SX,\$X13,INT+29	1410.33 10	001540.00
2	LX,\$X13,DINT+30	2137.32 10	001540.40
	SX,\$X13,INT+30	1411.33 10	001541.00

	LX,\$X13,DINT+31	2140.32 10	001541.40
	SX,\$X13,INT+31	1412.33 10	001542.00
	LX,\$X13,DINT+32	2141.32 10	001542.40
	SX,\$X13,INT+32	1413.33 10	001543.00
	LX,\$X13,DINT+33	2142.32 10	001543.40
	SX,\$X13,INT+33	1414.33 10	001544.00
	LX,\$X13,DINT+34	2143.32 10	001544.40
	SX,\$X13,INT+34	1415.33 10	001545.00
	LX,\$X13,DINT+35	2144.32 10	001545.40
	SX,\$X13,INT+35	1416.33 10	001546.00
	LX,\$X13,DINT+36	2145.32 10	001546.40
	SX,\$X13,INT+36	1417.33 10	001547.00
	LX,\$X13,DINT+37	2146.32 10	001547.40
	SX,\$X13,INT+37	1420.33 10	001550.00
	LX,\$X13,DINT+38	2147.32 10	001550.40
	SX,\$X13,INT+38	1421.33 10	001551.00
	LX,\$X13,DINT+39	2150.32 10	001551.40
	SX,\$X13,INT+39	1422.33 10	001552.00
	LX,\$X13,DINT+40	2151.32 10	001552.40
	SX,\$X13,INT+40	1423.33 10	001553.00
	LX,\$X13,DINT+41	2152.32 10	001553.40
12	SX,\$X13,INT+41	1424.33 10	001554.00
	LX,\$X13,DINT+42	2153.32 10	001554.40
11	SX,\$X13,INT+42	1425.33 10	001555.00
10	LX,\$X13,DINT+43	2154.32 10	001555.40
9	SX,\$X13,INT+43	1426.33 10	001556.00
8	LX,\$X13,DINT+44	2155.32 10	001556.40
7	SX,\$X13,INT+44	1427.33 10	001557.00
6	LX,\$X13,DINT+45	2156.32 10	001557.40
5	SX,\$X13,INT+45	1430.33 10	001560.00
4	LX,\$X13,DINT+46	2157.32 10	001560.40
3	SX,\$X13,INT+46	1431.33 10	001561.00
2	LX,\$X13,DINT+47	2160.32 10	001561.40

	SX,\$X13,INT+47		1432.33 10	001562.00
	BD,SIP15	-DISABLE BEFORE RESET OF PROTECTED AREA	1563.04 00	001562.40
SIP15	LV,\$X13,12.0	-RESET BEFORE STARTING TEST	14.32 30	001563.00
	SV,\$X13,1.0	-RESET INTERVAL TIMER	1.33 30	001563.40
	LX,\$X13,DSIP31		2060.32 10	001564.00
	SX,\$X13,12.0	-RESET MASK	14.33 10	001564.40
SIP16	LX,\$X13,0.0		0.32 10	001565.00
	SX,\$X13,3.0	-RESET BOUNDARIES AND CONTROL BIT	3.33 10	001565.40
	LVI,\$X13,INT		1353.33 01	001566.00
	SV,\$X13,2.0	-RESET INTERRUPT ADDRESS	2.33 30	001566.40
	LV,\$X13,DSIP1	-RESET SWITCHES A AND B	2025.32 30	001567.00
	SV,\$X13,DSIP20		2046.33 30	001567.40
	SV,\$X13,DSIP21		2046.73 30	001570.00
	LV,\$X13,DSIP22	-TEST THAT SWITCH C IS NOT ON	2047.32 30	001570.40
SIP17	BXVLZ,\$	- * ERROR MADE IN SSIP	1571.30 C2	001571.00
	LX,\$X13,0.0		0.32 10	001571.40
	BMKZ,\$+.32		1572.40.46	001572.00
	BIKZ,\$+.32	-RESET INDICATORS	1573.00 C6	001572.40
	BIJZ,\$+.32		1573.41 46	001573.00
	BEKZ,\$+.32		1574.01 C6	001573.40
	BTSZ,\$+.32		1574.42 46	001574.00
12	BCPUZ,\$+.32		1575.02 C6	001574.40
11	BEKJZ,\$+.32		1575.43 46	001575.00
10	BUNRJZ,\$+.32		1576.03 C6	001575.40
9	BCBJZ,\$+.32		1576.44 46	001576.00
8	BEPGKZ,\$+.32		1577.04 C6	001576.40
7	BUKZ,\$+.32		1577.45 46	001577.00
6	BEEZ,\$+.32		1600.05 C6	001577.40
5	BEOPZ,\$+.32		1600.46 46	001600.00
4	BCSZ,\$+.32		1601.06 C6	001600.40
3	B,\$.32		1601.50 00	001601.00
2	BOPZ,\$+.32		1602.07 C6	001601.40
	BADZ,\$+.32		1602.50 46	001602.00

		BUSAZ,\$+.32		1603.10 C6	001602.40
		BEXEZ,\$+.32		1603.51 46	001603.00
		BDSZ,\$+.32		1604.11 C6	001603.40
		SX,\$X13,11.0	-RESET REST OF IND.	13.33 10	001604.00
		B,RET1		1307.10 00	001604.40
		-			
	SIP20	LV,\$X13,DSEN	-STORE IC VALUE FOR PRINT	1351.32 30	001605.00
		SV,\$X13,DPET		2066.73 30	001605.40
		LV,\$X13,ERCT	-ADD ONE TO ERROR COUNT	1433.32 30	001606.00
		V+,\$X13,DSIP1		2025.32 B0	001606.40
		SV,\$X13,ERCT		1433.33 30	001607.00
		LV,\$X13,DSIP10	-TEST SW 0	2035.32 30	001607.40
		BXVLZ,SIP21		1612.70 C2	001610.00
		LV,\$X13,DPET16+.32		1442.72 30	001610.40
		SV,\$X13,DPET9		2077.33 30	001611.00
		SIC,RET		1306.40 80	001611.40
		B,PET	-GO TO PRINT ROUTINE	1674.50 00	001612.00
	SIP21	LV,\$X13,DSIP11	-TEST SW 1	2036.32 30	001612.40
		BZXVLZ,SIP8	-DO NOT STOP, GO TO SW 2A	1466.70 C0	001613.00
		K%BU,64,8□,DSEN		1351.00 80 000000.21 10	001613.40
		B,0.0		0.10 00	001614.40
12		BADZ,SIP8	- * HANG UP HERE WITH SW 33 DOWN *****	1466.50 46	001615.00
11		B,SIP8		1466.50 00	001615.40
10	SIP25	LV,\$X13,DSIP32+.32	-PICKUP PASS COUNT	2061.72 30	001616.00
9		V+,\$X13,DSIP32		2061.32 B0	001616.40
8		BXVZ,SIP33	-100TH PASS	1644.71 42	001617.00
7		BXVGZ,\$	-PROGRAM GOOF, COUNT OVER 100	1617.71 C2	001617.40
6	SIP25A	LV,\$X13,DSIP20	-TEST SWA	2046.32 30	001620.00
5		BXVLZ,SIP30	-TO ADD ONE TO PASS COUNT	1634.70 C2	001620.40
4		LX,\$X12,DSIP34	-ADD ONE TO ERROR COUNT	2064.30 10	001621.00
3	SIP26	LV,\$X13,DSIP2		2025.72 30	001621.40
2		SV,\$X13,DSIP37		2066.33 30	001622.00
		LV,\$X13,DSIP33%\$X12□		2062.32 3C	001622.40

	V+,\$X13,DSIP1		2025.32 B0	001623.00
	SV,\$X13,DSIP33%\$X12		2062.33 3C	001623.40
	V+,\$X13,DSIP35	--10	2065.32 B0	001624.00
	BXVLZ,SIP27	-NO CARRY	1626.70 C2	001624.40
	SV,\$X13,DSIP33%\$X12		2062.33 3C	001625.00
	CBH,\$X12,SIP26		1621.70 C8	001625.40
	BD,\$	-ERROR COUNT EXCEEDED 9,999	1626.04 00	001626.00
SIP27	LV,\$X13,DSIP21	-TEST SW B	2046.72 30	001626.40
	BXVLZ,SIP30	-TO ADD ONE TO PASS COUNT	1634.70 C2	001627.00
SIP28	LX,\$X12,DSIP24	-RESTORE X11 AND X12	2051.30 10	001627.40
	LX,\$X11,DSIP28		2055.26 10	001630.00
	LV,\$X13,DSIP36	-SET UP RETURN TO NEXT INSTRUCTION	2065.72 30	001630.40
	V+,\$X13,DSEN		1351.32 B0	001631.00
	SV,\$X13,RET2	-STORE ADDRESS AND OP CODE	1307.73 30	001631.40
	LV,\$X13,DSIP1	-RESET SW C	2025.32 30	001632.00
	SV,\$X13,DSIP22		2047.33 30	001632.40
	LX,\$X13,DSIP23	-RESTORE INDICATORS	2050.32 10	001633.00
	SX,\$X13,11.0		13.33 10	001633.40
	B,RET2		1307.50 00	001634.00
SIP30	LV,\$X13,DSIP32+.32	-GET PASS COUNT	2061.72 30	001634.40
12	V+,\$X13,DSIP1	-ADD ONE	2025.32 B0	001635.00
11	SV,\$X13,DSIP32+.32		2061.73 30	001635.40
10	SIP31 LV,\$X12,DSEN	-PREPARE RETURN TO START OF SAME TEST	1351.30 30	001636.00
9	LC,\$X12,DSEN1		1351.70 50	001636.40
8	B,SIPEND		2540.10 00	001637.00
7	SIP32 LV,\$X13,0.0	-START 100X LOOP	0.32 30	001637.40
6	SV,\$X13,DSIP32+.32	-RESET PASS COUNT	2061.73 30	001640.00
5	SV,\$X13,DSIP33	-RESET ERROR COUNT	2062.33 30	001640.40
4	SV,\$X13,DSIP33+.32		2062.73 30	001641.00
3	SV,\$X13,DSIP33+1.0		2063.33 30	001641.40
2	SV,\$X13,DSIP33+1.32		2063.73 30	001642.00
	SV,\$X13,DSIP37		2066.33 30	001642.40

	LV,\$X13,DSIP2	-SET SW 2A ON	2025.72 30	001643.00
	SV,\$X13,DSIP25		2052.33 30	001643.40
	B,SIP25A		1620.10 00	001644.00
SIP33	LV,\$X13,DSIP22	-TEST SW C ON 100TH PASS	2047.32 30	001644.40
	BXVLZ,SIP25A		1620.30 C2	001645.00
	LV,\$X13,DSIP21	-TEST SW B	2046.72 30	001645.40
	BZXVLZ,SIP35	-DO NOT ADD ONE TO ERROR COUNT	1653.30 C0	001646.00
	LX,\$X12,DSIP34	-ADD ONE TO ERROR COUNT	2064.30 10	001646.40
SIP34	LV,\$X13,DSIP33%\$X12□		2062.32 3C	001647.00
	V+,\$X13,DSIP1		2025.32 B0	001647.40
	SV,\$X13,DSIP33%\$X12□		2062.33 3C	001650.00
	V+,\$X13,DSIP35		2065.32 B0	001650.40
	BXVGZ,SIP35		1653.31 C2	001651.00
	SV,\$X13,DSIP33%\$X12□		2062.33 3C	001651.40
	CBH,\$X12,SIP34		1647.30 C8	001652.00
	BD,\$	-ERROR COUNT EXCEEDED 9,999	1652.44 00	001652.40
SIP35	LV,\$X13,DSIP1	-TURN SW2A OFF	2025.32 30	001653.00
	SV,\$X13,DSIP25		2052.33 30	001653.40
	LV,\$X13,DSIP37		2066.32 30	001654.00
	BZXVLZ,SIP10	-NO ERRORS	1473.30 C0	001654.40
	LV,\$X13,DSIP33+1.32	-PREPARE PRINT, ERROR COUNT	2063.72 30	001655.00
12	V+,\$X13,\$X13		35.32 B0	001655.40
11	V+,\$X13,DPET3+.32		2072.32 B0	001656.00
10	LCI,\$X13,8		10.33 02	001656.40
9	CNOP			
8	SIP36 V+,\$X13,\$X13	-LEFT SHIFT 8	35.32 B0	001657.00
7	CB,\$X13,SIP36		1657.32 48	001657.40
6	LV,\$X12,DSIP33+1.0		2063.30 30	001660.00
5	V+,\$X12,\$12		34.30 B0	001660.40
4	SV,\$X12,DSIP33+1.0		2063.31 30	001661.00
3	V+,\$X13,DSIP33+1.0		2063.32 B0	001661.40
2	V+,\$X13,DPET3+.32		2072.32 B0	001662.00
	SV,\$X13,DPET9	-TWO HI ORDER DIGITS IN IQS CODE	2077.33 30	001662.40

	LV,\$X13,DSIP33+.32	-PREPARE TENS POSITION	2062.72 30	001663.00
	V+,\$X13,\$X13		35.32 B0	001663.40
	V+,\$X13,DPET3+.32		2072.32 B0	001664.00
	LCI,\$X13,8		10.33 02	001664.40
	CNOP			
SIP37	V+,\$X13,\$X13	-LEFT SHIFT 8	35.32 B0	001665.00
	CB,\$X13,SIP37		1665.32 48	001665.40
	LV,\$X12,DSIP33		2062.30 30	001666.00
	V+,\$X12,\$X12		34.30 B0	001666.40
	SV,\$X12,DSIP33		2062.31 30	001667.00
	V+,\$X13,DSIP33	-PREPARE UNITS POSITION	2062.32 B0	001667.40
	V+,\$X13,DPET3+.32		2072.32 B0	001670.00
	V+,\$X13,\$X13	-LEFT SHIFT 2	35.32 B0	001670.40
	V+,\$X13,\$X13		35.32 B0	001671.00
	SV,\$X13,DPET9+.32	-STORE LO ORDER DIGITS	2077.73 30	001671.40
	LV,\$X13,DPET16	-MARK END OF LINE	1442.32 30	001672.00
	SV,\$X13,DPET15+.32		1441.73 30	001672.40
	SIC,RET		1306.40 80	001673.00
	B,PET		1674.50 00	001673.40
	B,SIP10	-GO TO SW C	1473.10 00	001674.00
PET	LX,\$X13,0.0	-RESET PRINT AREA	0.32 10	001674.40
12	SV,\$X13,DPET13+.32	-DOES NOT RESET ID	1437.73 30	001675.00
11	SX,\$X13,DPET14	-RESET WORD 2	1440.33 10	001675.40
10	SV,\$X13,DPET15	-RESET HALF WORD 3	1441.33 30	001676.00
9	LV,\$X13,DPET	-PICKUP 18 BITS OF IC	2066.72 30	001676.40
8	LX,\$X12,0.0		0.30 10	001677.00
7	SV,\$X13,\$X12+.32	-GET 3 HI ORDER BITS	34.73 30	001677.40
6	SC,\$X12,\$X13	-RIGHT SHIFT 4	35.31 50	001700.00
5	SV,\$X13,\$X12+.32		34.73 30	001700.40
4	SC,\$X12,\$X13	-RIGHT SHIFT 4	35.31 50	001701.00
3	SV,\$X13,\$X12+.32		34.73 30	001701.40
2	SC,\$X12,\$X13	-RIGHT SHIFT 4	35.31 50	001702.00
	V+,\$X13,\$X13		35.32 B0	001702.40

		SV,\$X13,\$X12+.32		34.73 30	001703.00
		SC,\$X12,\$X13	-RIGHT SHIFT 4	35.31 50	001703.40
		V+,\$X13,\$X13		35.32 B0	001704.00
		V+,\$X13,\$X13	-LEFT SHIFT 2	35.32 B0	001704.40
		V+,\$X13,\$X13	-LEFT SHIFT 2	35.32 B0	001705.00
		V+,\$X13,DPET1+.32		2070.32 B0	001705.40
		SV,\$X13,DPET1	-3 HI BITS POSITIONED IN IQS CODE	2067.73 30	001706.00
		LV,\$X13,DPET	-PICKUP 18 BITS OF IC	2066.72 30	001706.40
		SV,\$X13,\$X12+.32		34.73 30	001707.00
		SC,\$X12,\$X13		35.31 50	001707.40
		SV,\$X13,\$X12+.32		34.73 30	001710.00
		SC,\$X12,\$X13		35.31 50	001710.40
		SV,\$X13,\$X12+.32		34.73 30	001711.00
		SC,\$X12,\$X13		35.31 50	001711.40
		LCI,\$X12,15		17.31 02	001712.00
		CNOP		0.30 00	001712.40
	PET1	V+,\$X13,\$X13		35.32 B0	001713.00
		CB,\$X12,PET1		1713.30 48	001713.40
		SV,\$X13,\$X12+.32		34.73 30	001714.00
		SC,\$X12,\$X13		35.31 50	001714.40
		SV,\$X13,\$X12+.32		34.73 30	001715.00
12		SC,\$X12,\$X13		35.31 50	001715.40
11		V+,\$X13,\$X13		35.32 B0	001716.00
10		V+,\$X13,\$X13		35.32 B0	001716.40
9		LX,\$X12,0.0		0.30 10	001717.00
8		LR,\$X12,\$X13		35.30 70	001717.40
7		LV,\$X13,\$X12+.32	-PROPERLY POSITIONED DIGIT	34.72 30	001720.00
6	PET3	V+,\$X13,DPET2+.32		2071.32 B0	001720.40
5		SV,\$X13,DPET2	-2ND DIGIT IN IQS CODE	2070.73 30	001721.00
4		LV,\$X13,DPET	-PROCESS 3RD DIGIT	2066.72 30	001721.40
3		LCI,\$X13,6		6.33 02	001722.00
2		CNOP		0.30 00	001722.40
	PET4	V+,\$X13,\$X13	-LEFT SHIFT 6	35.32 B0	001723.00

	CB,\$X13,PET4		1723.32 48	001723.40
	LX,\$X12,0.0		0.30 10	001724.00
	LCI,\$X13,3	-RIGHT SHIFT 12	3.33 02	001724.40
PET5	SV,\$X13,\$X12+.32		34.73 30	001725.00
	SC,\$X12,\$X13		35.31 50	001725.40
	CB,\$X13,PET5		1725.32 48	001726.00
	V+,\$X13,\$X13	-LEFT 1	35.32 B0	001726.40
	SV,\$X13,\$X12+.32	-RIGHT 4	34.73 30	001727.00
	SC,\$X12,\$X13		35.31 50	001727.40
	V+,\$X13,\$X13		35.32 B0	001730.00
	V+,\$X13,DPET3+.32		2072.32 B0	001730.40
	SV,\$X13,DPET3	-3RD DIGIT, POSITIONED, CODED	2071.73 30	001731.00
	LV,\$X13,DPET	-PROCESS 4TH DIGIT	2066.72 30	001731.40
	SV,\$X13,\$X12+.32		34.73 30	001732.00
	SC,\$X12,\$X13	-RIGHT 4	35.31 50	001732.40
	V+,\$X13,\$X13		35.32 B0	001733.00
	V+,\$X13,\$X13	-LEFT 2	35.32 B0	001733.40
	SV,\$X13,\$X12+.32		34.73 30	001734.00
	SC,\$X12,\$X13	-RIGHT 4	35.31 50	001734.40
	LCI,\$X13,15		17.33 02	001735.00
	CNOP		0.30 00	001735.40
12	PET6	V+,\$X13,\$X13	35.32 B0	001736.00
11		CB,\$X13,PET6	-LEFT 15	1736.32 48
10		SV,\$X13,\$X12+.32	34.73 30	001737.00
9		SC,\$X12,\$X13	-RIGHT 4	35.31 50
8		V+,\$X13,DPET4+.32	2073.32 B0	001740.00
7		SV,\$X13,DPET4	-4TH DIGIT, POSITIONED, CODED	2072.73 30
6		LV,\$X13,DPET	-PROCESS 5TH DIGIT	2066.72 30
5		V+,\$X13,\$X13	35.32 B0	001741.40
4		SV,\$X13,\$X12+.32	34.73 30	001742.00
3		SC,\$X12,\$X13	35.31 50	001742.40
2		V+,\$X13,\$X13	35.32 B0	001743.00
		LV,\$X12,0.0	0.30 30	001743.40

	SV,\$X13,\$X12+.32		34.73 30	001744.00
	SR,\$X12,\$X13		35.31 70	001744.40
	LX,\$X12,0.0		0.30 10	001745.00
	LR,\$X12,\$X13		35.30 70	001745.40
	LV,\$X13,\$X12+.32		34.72 30	001746.00
	V+,\$X13,\$X13		35.32 80	001746.40
	V+,\$X13,\$X13		35.32 80	001747.00
	V+,\$X13,DPET1+.32		2070.32 80	001747.40
	SV,\$X13,DPET5		2073.73 30	001750.00
	LC,\$X12,DPET	-PROCESS 6TH DIGIT	2066.70 50	001750.40
	SC,\$X12,\$X13		35.31 50	001751.00
	LX,\$X12,0.0		0.30 10	001751.40
	V+,\$X13,\$X13		35.32 80	001752.00
	SV,\$X13,\$X12+.32		34.73 30	001752.40
	SR,\$X12,\$X13		35.31 70	001753.00
	LX,\$X12,0.0		0.30 10	001753.40
	SV,\$X13,\$X12+.32		34.73 30	001754.00
	SC,\$X12,\$X13		35.31 50	001754.40
	V+,\$X13,\$X13		35.32 80	001755.00
	SV,\$X13,\$X12+.32		34.73 30	001755.40
	SC,\$X12,\$X13		35.31 50	001756.00
12	V+,\$X13,\$X13	-LEFT SHIFT ONE	35.32 80	001756.40
	LX,\$X12,0.0		0.30 10	001757.00
11	LR,\$X12,\$X13		35.30 70	001757.40
10	LV,\$X13,\$X12+.32		34.72 30	001760.00
9	V+,\$X13,DPET2+.32		2071.32 80	001760.40
8	SV,\$X13,DPET6	-6TH DIGIT CODED	2074.33 30	001761.00
7	LV,\$X13,DPET	-PROCESS LAST DIGIT	2066.72 30	001761.40
6	LCI,\$X13,4		4.33 02	001762.00
5	PET7 V+,\$X13,\$X13		35.32 80	001762.40
4	CB,\$X13,PET7		1762.72 48	001763.00
3	LX,\$X12,0.0		0.30 10	001763.40
2	SV,\$X13,\$X12+.32		34.73 30	001764.00

		SR,\$X12,\$X13		35.31 70	001764.40
		SV,\$X13,\$X12+.32		34.73 30	001765.00
		SC,\$X12,\$X13		35.31 50	001765.40
		V+,\$X13,DPET4+.32		2073.32 B0	001766.00
		SV,\$X13,DPET7		2074.73 30	001766.40
		LV,\$X13,DPET0	-ASSEMBLE CODED IC VALUE, 1ST WORD	2067.32 30	001767.00
		V+,\$X13,DPET1		2067.72 B0	001767.40
		V+,\$X13,DPET2		2070.72 B0	001770.00
		LX,\$X12,DPET13		1437.30 10	001770.40
		LR,\$X12,DPET3	-PICKUP 4TH DIGIT OF IC	2071.70 70	001771.00
		SX,\$X12,DPET13	-PUT DOWN 4TH DIGIT	1437.31 10	001771.40
		SV,\$X13,DPET13+.32	-PUT DOWN 1ST, 2ND, + 3RD DIGITS	1437.73 30	001772.00
		LX,\$X12,DPETP	-ASSEMBLE 2ND MESSAGE WORD	2075.30 10	001772.40
		V+,\$X12,DPET4		2072.70 B0	001773.00
		V+,\$X12,DPET5		2073.70 B0	001773.40
		V+,\$X12,DPET6		2074.30 B0	001774.00
		LV,\$X13,DPET7		2074.72 30	001774.40
		SV,\$X13,\$X12+.32		34.73 30	001775.00
		LR,\$X12,DPET9		2077.30 70	001775.40
		SX,\$X12,DPET14	-STORE 2ND MESSAGE WORD	1440.31 10	001776.00
		LV,\$X12,DPET9+.32	-STORE 3RD MESSAGE WORD	2077.70 30	001776.40
12		SV,\$X12,DPET15		1441.31 30	001777.00
11		LV,\$X12,0.0	-RESET DPET9.32	0.30 30	001777.40
10		SV,\$X12,DPET9+.32		2077.71 30	002000.00
9	PET25A	CCW,19.32,DPET8		23.40 80 002076.21 00	002000.40
8		LV,\$X13,DPET8		2076.32 30	002001.40
7		V+,\$X13,\$X13	-LEFT SHIFT ONE, TO GET UNIT READY BIT	35.32 B0	002002.00
6		LC,\$X12,\$X13		35.30 50	002002.40
5		SC,\$X12,\$X13		35.31 50	002003.00
4		LCI,\$X13,6		6.33 02	002003.40
3		CNOP			
2	PET26	V+,\$X13,\$X13	-LEFT SHIFT 6	35.32 B0	002004.00
		CB,\$X13,PET26		2004.32 48	002004.40

	LC,\$X12,\$X13		35.30 50	002005.00
	SC,\$X12,\$X13		35.31 50	002005.40
	LCI,\$X13,6		6.33 02	002006.00
	CNOP		0.30 00	002006.40
PET27	V+,\$X13,\$X13	-SHIFT 6	35.32 B0	002007.00
	CB,\$X13,PET27		2007.32 48	002007.40
	LC,\$X12,\$X13		35.30 50	002010.00
	SC,\$X12,\$X13		35.31 50	002010.40
	LCI,\$X13,5		5.33 02	002011.00
PET28	V+,\$X13,\$X13	-SHIFT 5	35.32 B0	002011.40
	CB,\$X13,PET28		2011.72 48	002012.00
	LC,\$X12,\$X13		35.30 50	002012.40
	SC,\$X12,\$X13		35.31 50	002013.00
	V+,\$X13,0.0		0.32 B0	002013.40
	BXVZ,RET		1306.71 42	002014.00
	REL%SEOP□,19.32		23.40 80 000000.33 00	002014.40
PET28A	CCW,19.32,DPET8	-HANG UP INTIL FINISHED RELEASING	23.40 80 002076.21 00	002015.40
	LV,\$X13,DPET8		2076.32 30	002016.40
	SV,\$X13,DPET8		2076.33 30	002017.00
	BXVLZ,PET28A		2015.70 C2	002017.40
	W%SEOP□,19.32,DPET17		23.40 80 002100.13 00	002020.00
12	PET29	LCI,\$X12,8. -HANG UP UNTIL FINESHED WRITING	10.31 02	002021.00
11		CCW,19.32,DPET8 -	23.40 80 002076.21 00	002021.40
10		LV,\$X13,DPET8	2076.32 30	002022.40
9		BZXVLZ,RET	1306.70 C0	002023.00
8		CB,\$X12,\$	2023.70 48	002023.40
7		B,PET29	2021.10 00	002024.00
6		CNOP	0.30 00	002024.40
5	DSIP1	VF,1.0	1.00+	002025.00
4	DSIP2	VF,-1.0	1.00-	002025.40
3	DSIP3	VF,%8□400000.00 -SWITCH DECODING	400000.00+	002026.00
2		VF,%8□-400000.00	400000.00-	002026.40
	DSIP4	VF,%8□200000.00	200000.00+	002027.00

		VF,%8□-200000.00		200000.00-	002027.40
	DSIP5	VF,%8□100000.00		100000.00+	002030.00
		VF,%8□-100000.00		100000.00-	002030.40
	DSIP6	VF,%8□040000.00		40000.00+	002031.00
		VF,%8□-040000.00		40000.00-	002031.40
	DSIP7	VF,%8□020000.00		20000.00+	002032.00
		VF,%8□-020000.00		20000.00-	002032.40
	DSIP8	VF,%8□010000.00		10000.00+	002033.00
		VF,%8□-010000.00		10000.00-	002033.40
	DSIP9	VF,%8□004000.00		4000.00+	002034.00
		VF,%8□-004000.00		4000.00-	002034.40
	DSIP10	VF,0	-ENCODED SWITCH 0	0.00+	002035.00
		VF,0	-	0.00+	002035.40
	DSIP11	VF,0	-SW.1	0.00+	002036.00
		VF,0		0.00+	002036.40
	DSIP12	VF,0	-SW.2	0.00+	002037.00
		VF,0		0.00+	002037.40
	DSIP13	VF,0	-SW.3	0.00+	002040.00
		CNOP		0.30 00	002040.40
	DSIP14	VF,-2.0	-SW.4 SET ON	2.00-	002041.00
		VF,0		0.00+	002041.40
12	DSIP15	VF,0	-SW.5	0.00+	002042.00
		VF,0		0.00+	002042.40
11					
10	DSIP16	VF,0	-SW.6	0.00+	002043.00
		VF,0		0.00+	002043.40
9					
8	DSIP17	VF,0	-SW.7	0.00+	002044.00
		VF,0		0.00+	002044.40
7					
6		VF,0		0.00+	002045.00
		VF,0		0.00+	002045.40
5					
4	DSIP20	VF,0	-SW.A	0.00+	002046.00
		VF,0		0.00+	002046.40
3	DSIP21	VF,0	-SW.B	0.00+	002046.40
		VF,0		0.00+	002047.00
2	DSIP22	VF,0	-SW.C	0.00+	002047.00
		VF,0		0.00+	002047.40
	DSIP23	XW,0	-SAVE INDICATORS	0.00 00 000000.00 00	002050.00

	DSIP24	XW,0	-SAVE X12	0.00 00 000000.00 00	002051.00
	DSIP25	VF,0	-SW.2A	0.00+	002052.00
	DSIP26	XW,0,%8#77,0	-PARTIAL COMPLEMENT N COUNT RESET	0.00 00 001760.00 00	002053.00
	DSIP27	VF,0	-VF WORK AREA	0.00+	002054.00
	DSIP28	XW,0,0,0	-SAVE X11	0.00 00 000000.00 00	002055.00
	DSIP29	XW,0,8,0		0.00 00 000200.00 00	002056.00
	DSIP30	VF,%2#0.000100	-OP CODE FOR BD	0.04+	002057.00
	DSIP31	XW,%8#-777777.77,%8#414000,0,4	-MASK RESET WORD	777777.77 C8 300000.00 00	002060.00
	DSIP32	VF,%8#-144.0	-PASS COUNT TEST	144.00-	002061.00
		VF,0	-PASS COUNT	0.00+	002061.40
	DSIP33	VF,0	-IQS CODED ERROR COUNT, UNITS, TENS, ET	0.00+	002062.00
		VF,0		0.00+	002062.40
		VF,0		0.00+	002063.00
		VF,0		0.00+	002063.40
	DSIP34	XW,0,4,0		0.00 00 000100.00 00	002064.00
	DSIP35	VF,%8#-12.0		12.00-	002065.00
	DSIP36	VF,%8#0.10	-OP CODE FOR BRANCH	0.10+	002065.40
	DSIP37	VF,0		0.00+	002066.00
	DPET	VF,0	-IC VALUE STORED FOR PRINT	0.00+	002066.40
	DPET0	VF,0	-CONSTANT BLANK	0.00+	002067.00
	DPET1	VF,0	-DEVELOP ONE 8 BIT IC VALUE DIGIT	0.00+	002067.40
12		VF,%12,2#0000000001100	-DEVELOP ONE 8 BIT IC VALUE DIGIT	600.00+	002070.00
11	DPET2	VF,0	-8 BIT CHAR. ZONE MASK	0.00+	002070.40
10		VF,%2#00000000000000000001100000	-8 BIT CHAR. ZONE MASK	1.00+	002071.00
9	DPET3	VF,0		0.00+	002071.40
8		VF,%14,2#00000000000001100		140.00+	002072.00
7	DPET4	VF,0		0.00+	002072.40
6		VF,%7,2#01100000		300000.00+	002073.00
5	DPET5	VF,0	-USES ZONE MASK DPET 1	0.00+	002073.40
4	DPET6	VF,0	-USES ZONE MASK DPET 2	0.00+	002074.00
3	DPET7	VF,0	-USES ZONE MASK DPET 4	0.00+	002074.40
2	DPET8	XW,0,%8#200000,0,7	-8 BIT CODE IN BITS 24-31	0.00 74 000000.00 00	002075.00
	DPET9	XW,0	-PET WORK AREA	0.00 00 000000.00 00	002075.40

	DPET9	VF,0	-BITS 2-17, FIRST 2 CHAR	0.00+	002077.00
		VF,0	-0-15 2ND 2 CHARS OF 3RD FIELD	0.00+	002077.40
	DPET17	CW%CR,DPET10,6,0		1434.00 00 000140.00 00	002100.00
		CNOP			
	DINT	SIC,INTZ		2504.40 80	002101.00
			BD,INT0 -INTERRUPT TABLE RESET	2162.04 00	002101.40
		SIC,INTZ		2504.40 80	002102.00
			BD,INT1	2163.04 00	002102.40
		SIC,INTZ		2504.40 80	002103.00
			BD,INT2	2164.04 00	002103.40
		SIC,INTZ		2504.40 80	002104.00
			BD,INT3	2165.04 00	002104.40
		SIC,INTZ		2504.40 80	002105.00
			BD,INT4	2166.04 00	002105.40
		SIC,INTZ		2504.40 80	002106.00
			BD,INT5	2167.04 00	002106.40
		SIC,INTZ		2504.40 80	002107.00
			BD,INT6	2170.04 00	002107.40
		SIC,INTZ		2504.40 80	002110.00
			BD,INT7	2171.04 00	002110.40
		SIC,INTZ		2504.40 80	002111.00
12			BD,INT8	2172.04 00	002111.40
		SIC,INTZ		2504.40 80	002112.00
11			BD,INT9	2173.04 00	002112.40
		SIC,INTZ		2504.40 80	002113.00
9			BD,INT10	2174.04 00	002113.40
		SIC,INTZ		2504.40 80	002114.00
7			BD,INT11	2175.04 00	002114.40
		SIC,INTZ		2504.40 80	002115.00
5			BD,INT12	2176.04 00	002115.40
		SIC,INTZ		2504.40 80	002116.00
3			BD,INT13	2177.04 00	002116.40
		SIC,INTZ		2504.40 80	002117.00

	BD, INT14	2200.04 00	002117.40
	SIC, INTZ	2504.40 80	002120.00
	BD, INT15	2201.04 00	002120.40
	SIC, INTZ	2504.40 80	002121.00
	BD, INT16	2202.04 00	002121.40
	SIC, INTZ	2504.40 80	002122.00
	BD, INT17	2203.04 00	002122.40
	SIC, INTZ	2504.40 80	002123.00
	BD, INT18	2204.04 00	002123.40
	SIC, INTZ	2504.40 80	002124.00
	BD, INT19	2205.04 00	002124.40
	SIC, INTZ	2504.40 80	002125.00
	BD, INT20	2206.04 00	002125.40
	SIC, INTZ	2504.40 80	002126.00
	BD, INT21	2207.04 00	002126.40
	SIC, INTZ	2504.40 80	002127.00
	BD, INT22	2210.04 00	002127.40
	SIC, INTZ	2504.40 80	002130.00
	BD, INT23	2211.04 00	002130.40
	SIC, INTZ	2504.40 80	002131.00
	BD, INT24	2212.04 00	002131.40
	SIC, INTZ	2504.40 80	002132.00
12	BD, INT25	2213.04 00	002132.40
11	SIC, INTZ	2504.40 80	002133.00
10	BD, INT26	2214.04 00	002133.40
9	SIC, INTZ	2504.40 80	002134.00
8	BD, INT27	2215.04 00	002134.40
7	SIC, INTZ	2504.40 80	002135.00
6	BD, INT28	2216.04 00	002135.40
5	SIC, INTZ	2504.40 80	002136.00
4	BD, INT29	2217.04 00	002136.40
3	SIC, INTZ	2504.40 80	002137.00
2	BD, INT30	2220.04 00	002137.40

	SIC, INTZ	2504.40 80	002140.00
	BD, INT31	2221.04 00	002140.40
	SIC, INTZ	2504.40 80	002141.00
	BD, INT32	2222.04 00	002141.40
	SIC, INTZ	2504.40 80	002142.00
	BD, INT33	2223.04 00	002142.40
	SIC, INTZ	2504.40 80	002143.00
	BD, INT34	2224.04 00	002143.40
	SIC, INTZ	2504.40 80	002144.00
	BD, INT35	2225.04 00	002144.40
	SIC, INTZ	2504.40 80	002145.00
	BD, INT36	2226.04 00	002145.40
	SIC, INTZ	2504.40 80	002146.00
	BD, INT37	2227.04 00	002146.40
	SIC, INTZ	2504.40 80	002147.00
	BD, INT38	2230.04 00	002147.40
	SIC, INTZ	2504.40 80	002150.00
	BD, INT39	2231.04 00	002150.40
	SIC, INTZ	2504.40 80	002151.00
	BD, INT40	2232.04 00	002151.40
	SIC, INTZ	2504.40 80	002152.00
12	BD, INT41	2233.04 00	002152.40
11	SIC, INTZ	2504.40 80	002153.00
10	BD, INT42	2234.04 00	002153.40
9	SIC, INTZ	2504.40 80	002154.00
8	BD, INT43	2235.04 00	002154.40
7	SIC, INTZ	2504.40 80	002155.00
6	BD, INT44	2236.04 00	002155.40
5	SIC, INTZ	2504.40 80	002156.00
4	BD, INT45	2237.04 00	002156.40
3	SIC, INTZ	2504.40 80	002157.00
2	BD, INT46	2240.04 00	002157.40
	SIC, INTZ	2504.40 80	002160.00

		BD,INT47	2241.04 00	002160.40
		SIC,INTZ	2504.40 80	002161.00
		BD,INT	1353.04 00	002161.40
	INT0	LX,\$X13,DINT1+00.	2242.32 10	002162.00
		B,INT50 -GET INDICATOR NAME	2322.50 00	002162.40
	INT1	LX,\$X13,DINT1+01.	2243.32 10	002163.00
		B,INT50	2322.50 00	002163.40
	INT2	LX,\$X13,DINT1+02.	2244.32 10	002164.00
		B,INT50	2322.50 00	002164.40
	INT3	LX,\$X13,DINT1+03.	2245.32 10	002165.00
		B,INT50	2322.50 00	002165.40
	INT4	LX,\$X13,DINT1+04.	2246.32 10	002166.00
		B,INT50	2322.50 00	002166.40
	INT5	LX,\$X13,DINT1+05.	2247.32 10	002167.00
		B,INT50	2322.50 00	002167.40
	INT6	LX,\$X13,DINT1+06.	2250.32 10	002170.00
		B,INT50	2322.50 00	002170.40
	INT7	LX,\$X13,DINT1+07.	2251.32 10	002171.00
		B,INT50	2322.50 00	002171.40
	INT8	LX,\$X13,DINT1+08.	2252.32 10	002172.00
		B,INT50	2322.50 00	002172.40
12	INT9	LX,\$X13,DINT1+09.	2253.32 10	002173.00
		B,INT50	2322.50 00	002173.40
11	INT10	LX,\$X13,DINT1+10.	2254.32 10	002174.00
		B,INT50	2322.50 00	002174.40
9	INT11	LX,\$X13,DINT1+11.	2255.32 10	002175.00
		B,INT50	2322.50 00	002175.40
8	INT12	LX,\$X13,DINT1+12.	2256.32 10	002176.00
		B,INT50	2322.50 00	002176.40
7	INT13	LX,\$X13,DINT1+13.	2257.32 10	002177.00
		B,INT50	2322.50 00	002177.40
6	INT14	LX,\$X13,DINT1+14.	2260.32 10	002200.00
		B,INT50	2322.50 00	002200.40

	INT15	LX,\$X13,DINT1+15.	2261.32 10	002201.00
		B,INT50	2322.50 00	002201.40
	INT16	LX,\$X13,DINT1+16.	2262.32 10	002202.00
		B,INT50	2322.50 00	002202.40
	INT17	LX,\$X13,DINT1+17.	2263.32 10	002203.00
		B,INT50	2322.50 00	002203.40
	INT18	LX,\$X13,DINT1+18.	2264.32 10	002204.00
		B,INT50	2322.50 00	002204.40
	INT19	LX,\$X13,DINT1+19.	2265.32 10	002205.00
		B,INT50	2322.50 00	002205.40
	INT20	LX,\$X13,DINT1+20.	2266.32 10	002206.00
		B,INT50	2322.50 00	002206.40
	INT21	LX,\$X13,DINT1+21.	2267.32 10	002207.00
		B,INT50	2322.50 00	002207.40
	INT22	LX,\$X13,DINT1+22.	2270.32 10	002210.00
		B,INT50	2322.50 00	002210.40
	INT23	LX,\$X13,DINT1+23.	2271.32 10	002211.00
		B,INT50	2322.50 00	002211.40
	INT24	LX,\$X13,DINT1+24.	2272.32 10	002212.00
		B,INT50	2322.50 00	002212.40
	INT25	LX,\$X13,DINT1+25.	2273.32 10	002213.00
12		B,INT50	2322.50 00	002213.40
11	INT26	LX,\$X13,DINT1+26.	2274.32 10	002214.00
10		B,INT50	2322.50 00	002214.40
9	INT27	LX,\$X13,DINT1+27.	2275.32 10	002215.00
8		B,INT50	2322.50 00	002215.40
7	INT28	LX,\$X13,DINT1+28.	2276.32 10	002216.00
6		B,INT50	2322.50 00	002216.40
5	INT29	LX,\$X13,DINT1+29.	2277.32 10	002217.00
4		B,INT50	2322.50 00	002217.40
3	INT30	LX,\$X13,DINT1+30.	2300.32 10	002220.00
2		B,INT50	2322.50 00	002220.40
	INT31	LX,\$X13,DINT1+31.	2301.32 10	002221.00

		B,INT50	2322.50 00	002221.40
	INT32	LX,\$X13,DINT1+32.	2302.32 10	002222.00
		B,INT50	2322.50 00	002222.40
	INT33	LX,\$X13,DINT1+33.	2303.32 10	002223.00
		B,INT50	2322.50 00	002223.40
	INT34	LX,\$X13,DINT1+34.	2304.32 10	002224.00
		B,INT50	2322.50 00	002224.40
	INT35	LX,\$X13,DINT1+35.	2305.32 10	002225.00
		B,INT50	2322.50 00	002225.40
	INT36	LX,\$X13,DINT1+36.	2306.32 10	002226.00
		B,INT50	2322.50 00	002226.40
	INT37	LX,\$X13,DINT1+37.	2307.32 10	002227.00
		B,INT50	2322.50 00	002227.40
	INT38	LX,\$X13,DINT1+38.	2310.32 10	002230.00
		B,INT50	2322.50 00	002230.40
	INT39	LX,\$X13,DINT1+39.	2311.32 10	002231.00
		B,INT50	2322.50 00	002231.40
	INT40	LX,\$X13,DINT1+40.	2312.32 10	002232.00
		B,INT50	2322.50 00	002232.40
	INT41	LX,\$X13,DINT1+41.	2313.32 10	002233.00
		B,INT50	2322.50 00	002233.40
12	INT42	LX,\$X13,DINT1+42.	2314.32 10	002234.00
		B,INT50	2322.50 00	002234.40
11	INT43	LX,\$X13,DINT1+43.	2315.32 10	002235.00
10		B,INT50	2322.50 00	002235.40
9	INT44	LX,\$X13,DINT1+44.	2316.32 10	002236.00
8		B,INT50	2322.50 00	002236.40
7	INT45	LX,\$X13,DINT1+45.	2317.32 10	002237.00
6		B,INT50	2322.50 00	002237.40
5	INT46	LX,\$X13,DINT1+46.	2320.32 10	002240.00
4		B,INT50	2322.50 00	002240.40
3	INT47	LX,\$X13,DINT1+47.	2321.32 10	002241.00
2		B,INT50	2322.50 00	002241.40

CNOP

			000000000000	002242.00
	DINT1	DD%BU,32,8□,0		
		%IQSZ□DD%BU,8,8□,MK	Z	002242.40
		%IQSZ□DD%BU,8,8□,IK	Z	002243.40
		%IQSZ□DD%BU,8,8□,IJ	Z	002244.40
		%IQSZ□DD%BU,8,8□,EK	Z	002245.40
		%IQSZ□DD%BU,8,8□,TS	Z	002246.40
		%IQSZ□DD%BU,8,8□,CPUS	Z	002247.40
		%IQSZ□DD%BU,8,8□,EKJ	Z	002250.40
		%IQSZ□DD%BU,8,8□,UNRJ	Z	002251.40
		%IQSZ□DD%BU,8,8□,CBJ	Z	002252.40
		%IQSZ□DD%BU,8,8□,EPGK	Z	002253.40
		%IQSZ□DD%BU,8,8□,UK	Z	002254.40
		%IQSZ□DD%BU,8,8□,EE	Z	002255.40
		%IQSZ□DD%BU,8,8□,EOP	Z	002256.40
		%IQSZ□DD%BU,8,8□,CS	Z	002257.40
		%IQSZ□DD%BU,8,8□,RSRV	Z	002260.40
		%IQSZ□DD%BU,8,8□,OP	Z	002261.40
		%IQSZ□DD%BU,8,8□,AD	Z	002262.40
		%IQSZ□DD%BU,8,8□,USA	Z	002263.40
		%IQSZ□DD%BU,8,8□,EXE	Z	002264.40
12		%IQSZ□DD%BU,8,8□,DS	Z	002265.40
11		%IQSZ□DD%BU,8,8□,DF	Z	002266.40
10		%IQSZ□DD%BU,8,8□,IF	Z	002267.40
9		%IQSZ□DD%BU,8,8□,LC	Z	002270.40
8		%IQSZ□DD%BU,8,8□,PF	Z	002271.40
7		%IQSX□DD%BU,8,8□,ZD	X	002272.40
6		%IQSZ□DD%BU,8,8□,IR	Z	002273.40
5		%IQSZ□DD%BU,8,8□,LS	Z	002274.40
4		%IQSZ□DD%BU,8,8□,PSH	Z	002275.40
3		%IQSZ□DD%BU,8,8□,XPFP	Z	002276.40
2		%IQSZ□DD%BU,8,8□,XPO	Z	002277.40
		%IQSZ□DD%BU,8,8□,XPH	Z	002300.40

	%IQSZDD%BU,8,8,XPL	Z		002301.40
	%IQSZDD%BU,8,8,XPU	Z		002302.40
	%IQSXDD%BU,8,8,ZM	X		002303.40
	%IQSZDD%BU,8,8,RU	Z		002304.40
	%IQSZDD%BU,8,8,TF	Z		002305.40
	%IQSZDD%BU,8,8,UF	Z		002306.40
	%IQSZDD%BU,8,8,VF	Z		002307.40
	%IQSZDD%BU,8,8,XF	Z		002310.40
	%IQSZDD%BU,8,8,BTR	Z		002311.40
	%IQSZDD%BU,8,8,DTR	Z		002312.40
	%IQSZDD%BU,8,8,PGO	Z		002313.40
	%IQSZDD%BU,8,8,PG1	Z		002314.40
	%IQSZDD%BU,8,8,PG2	Z		002315.40
	%IQSZDD%BU,8,8,PG3	Z		002316.40
	%IQSZDD%BU,8,8,PG4	Z		002317.40
	%IQSZDD%BU,8,8,PG5	Z		002320.40
	%IQSZDD%BU,8,8,PG6	Z		002321.40
	INT50 SX,\$X13,DINT2	-STORE INDICATOR NAME	2515.33 10	002322.40
	LV,\$X13,DSIP20	-TEST SWA IN SSIP	2046.32 30	002323.00
	BXVLZ,INT51		2327.70 C2	002323.40
	LV,\$X13,DSIP21	-TEST SWB	2046.72 30	002324.00
12	BXVLZ,INT51		2327.70 C2	002324.40
11	LV,\$X13,DSIP22	-TEST SWC	2047.32 30	002325.00
10	BXVLZ,INT51		2327.70 C2	002325.40
9	LX,\$X13,DPET13	-ID OF CURRENT TEST	1437.32 10	002326.00
8	SX,\$X13,DINT3		2516.33 10	002326.40
7	B,INT52		2330.50 00	002327.00
6	INT51 LX,\$X13,DINT4		2517.32 10	002327.40
5	SX,\$X13,DINT3		2516.33 10	002330.00
4	INT52 SX,\$X12,DINT15	-PREPARE IC VALUE FOR PRINT	2526.31 10	002330.40
3	LX,\$X12,0.0	-HI ORDER POSITION	0.30 10	002331.00
2	LC,\$X12,INTZ		2504.70 50	002331.40
	LV,\$X13,0.0		0.32 30	002332.00

	SV,\$X13,\$X12+.32	-BLOTS OUT ALL BUT FOUR HI BITS	34.73 30	002332.40
	SC,\$X12,\$X13		35.31 50	002333.00
	LX,\$X12,0.0		0.30 10	002333.40
	SV,\$X13,\$X12+.32		34.73 30	002334.00
	SC,\$X12,\$X13		35.31 50	002334.40
	V+,\$X13,\$X13		35.32 B0	002335.00
	V+,\$X13,\$X13		35.32 B0	002335.40
	V+,\$X13,\$X13		35.32 B0	002336.00
	LC,\$X12,\$X13		35.30 50	002336.40
	LX,\$X13,0.0		0.32 10	002337.00
	SV,\$X13,\$X12+.32		34.73 30	002337.40
	SC,\$X12,\$X13		35.31 50	002340.00
	LX,\$X12,0.0		0.30 10	002340.40
	SV,\$X13,\$X12+.32		34.73 30	002341.00
	SC,\$X12,\$X13		35.31 50	002341.40
	SV,\$X13,\$X12+.32		34.73 30	002342.00
	SC,\$X12,\$X13		35.31 50	002342.40
	V+,\$X13,\$X13		35.32 B0	002343.00
	V+,\$X13,\$X13		35.32 B0	002343.40
	V+,\$X13,\$X13		35.32 B0	002344.00
	LX,\$X12,0.0		0.30 10	002344.40
12	LR,\$X12,\$X13		35.30 70	002345.00
11	LV,\$X13,\$X12+.32		34.72 30	002345.40
10	V+,\$X13,DINT5	-CONVERT TO NUMERIC IQS CODE	2520.32 B0	002346.00
9	SV,\$X13,DINT6		2520.73 30	002346.40
8	LX,\$X12,0.0	-PREPARE 2ND DIGIT	0.30 10	002347.00
7	LX,\$X13,0.0		0.32 10	002347.40
6	LV,\$X13,INTZ		2504.72 30	002350.00
5	V+,\$X13,\$X13	-LEFT SHIFT 2	35.32 B0	002350.40
4	V+,\$X13,\$X13		35.32 B0	002351.00
3	LC,\$X12,\$X13		35.30 50	002351.40
2	SR,\$X13,\$X12+.32		34.73 70	002352.00
	SC,\$X12,\$X13		35.31 50	002352.40

	V+,\$X13,\$X13	-LEFT SHIFT ONE	35.32 B0	002353.00
	LX,\$X12,0.0		0.30 10	002353.40
	SV,\$X13,\$X12+.32		34.73 30	002354.00
	SC,\$X12,\$X13		35.31 50	002354.40
	SV,\$X13,\$X12+.32		34.73 30	002355.00
	SC,\$X12,\$X13		35.31 50	002355.40
	V+,\$X13,\$X13		35.32 B0	002356.00
	V+,\$X13,\$X13		35.32 B0	002356.40
	LX,\$X12,0.0		0.30 10	002357.00
	LR,\$X12,\$X13		35.30 70	002357.40
	LV,\$X13,\$X12+.32		34.72 30	002360.00
	V+,\$X13,DINT5	-ADD IN IQS CODE MASK	2520.32 B0	002360.40
	SV,\$X13,DINT7		2521.33 30	002361.00
	LV,\$X13,INTZ	-PREPARE 3RD DIGIT	2504.72 30	002361.40
	LCI,\$X13,6	-LEFT SHIFT 6+ UNOCCOFF	6.33 02	002362.00
	INT55 V+,\$X13,\$X13		35.32 B0	002362.40
	CB,\$X13,INT55		2362.72 48	002363.00
	LX,\$X12,0.0		0.30 10	002363.40
	SV,\$X13,\$X12+.32		34.73 30	002364.00
	SC,\$X12,\$X13		35.31 50	002364.40
	V+,\$X13,\$X13		35.32 B0	002365.00
12	V+,\$X13,\$X13		35.32 B0	002365.40
11	V+,\$X13,\$X13		35.32 B0	002366.00
10	LC,\$X12,\$X13		35.30 50	002366.40
9	LX,\$X13,0.0		0.32 10	002367.00
8	SV,\$X13,\$X12+.32		34.73 30	002367.40
7	SC,\$X12,\$X13		35.31 50	002370.00
6	LX,\$X12,0.0		0.30 10	002370.40
5	SV,\$X13,\$X12+.32		34.73 30	002371.00
4	SC,\$X12,\$X13		35.31 50	002371.40
3	SV,\$X13,\$X12+.32		34.73 30	002372.00
2	SC,\$X12,\$X13		35.31 50	002372.40
	V+,\$X13,\$X13		35.32 B0	002373.00

	V+,\$X13,\$X13		35.32 B0	002373.40
	V+,\$X13,\$X13		35.32 B0	002374.00
	LX,\$X12,0.0		0.30 10	002374.40
	LR,\$X12,\$X13		35.30 70	002375.00
	LV,\$X13,\$X12+.32		34.72 30	002375.40
	V+,\$X13,DINT5		2520.32 B0	002376.00
	SV,\$X13,DINT8		2521.73 30	002376.40
	LR,\$X12,0.0		0.30 70	002377.00
	LV,\$X13,INTZ	-PREPARE 4TH DIGIT	2504.72 30	002377.40
	LCI,\$X13,9		11.33 02	002400.00
INT58	V+,\$X13,\$X13	-RIGHT SHIFT 6	35.32 B0	002400.40
	CB,\$X13,INT58		2400.72 48	002401.00
	LX,\$X12,0.0		0.30 10	002401.40
	SV,\$X13,\$X12+.32		34.73 30	002402.00
	SC,\$X12,\$X13		35.31 50	002402.40
	V+,\$X13,\$X13		35.32 B0	002403.00
	V+,\$X13,\$X13		35.32 B0	002403.40
	V+,\$X13,\$X13		35.32 B0	002404.00
	LC,\$X12,\$X13		35.30 50	002404.40
	LX,\$X13,0.0		0.32 10	002405.00
	SV,\$X13,\$X12+.32		34.73 30	002405.40
12	SC,\$X12,\$X13		35.31 50	002406.00
11	LX,\$X12,0.0		0.30 10	002406.40
10	SV,\$X13,\$X12+.32		34.73 30	002407.00
9	SC,\$X12,\$X13		35.31 50	002407.40
8	SV,\$X13,\$X12+.32		34.73 30	002410.00
7	SC,\$X12,\$X13		35.31 50	002410.40
6	V+,\$X13,\$X13		35.32 B0	002411.00
5	V+,\$X13,\$X13		35.32 B0	002411.40
4	V+,\$X13,\$X13		35.32 B0	002412.00
3	LX,\$X12,0.0		0.30 10	002412.40
2	LR,\$X12,\$X13		35.30 70	002413.00
	LV,\$X13,\$X12+.32		34.72 30	002413.40

	V+,\$X13,DINT5		2520.32 B0	002414.00
	SV,\$X13,DINT9		2522.33 30	002414.40
	LV,\$X13,INTZ	-PREPARE 5TH DIGIT	2504.72 30	002415.00
	LCI,\$X13,12		14.33 02	002415.40
	CNOP,0			
INT56	V+,\$X13,\$X13		35.32 B0	002416.00
	CB,\$X13,INT56		2416.32 48	002416.40
	LX,\$X12,0.0		0.30 10	002417.00
	SV,\$X13,\$X12+.32		34.73 30	002417.40
	SC,\$X12,\$X13		35.31 50	002420.00
	V+,\$X13,\$X13		35.32 B0	002420.40
	V+,\$X13,\$X13		35.32 B0	002421.00
	V+,\$X13,\$X13		35.32 B0	002421.40
	LC,\$X12,\$X13		35.30 50	002422.00
	LX,\$X13,0.0		0.32 10	002422.40
	SV,\$X13,\$X12+.32		34.73 30	002423.00
	SC,\$X12,\$X13		35.31 50	002423.40
	LX,\$X12,0.0		0.30 10	002424.00
	SV,\$X13,\$X12+.32		34.73 30	002424.40
	SC,\$X12,\$X13		35.31 50	002425.00
	SV,\$X13,\$X12+.32		34.73 30	002425.40
	SC,\$X12,\$X13		35.31 50	002426.00
12	V+,\$X13,\$X13		35.32 B0	002426.40
11	V+,\$X13,\$X13		35.32 B0	002427.00
10	V+,\$X13,\$X13		35.32 B0	002427.40
9	V+,\$X13,\$X13		35.32 B0	002427.40
8	LX,\$X12,0.0		0.30 10	002430.00
7	LR,\$X12,\$X13		35.30 70	002430.40
6	LV,\$X13,\$X12+.32		34.72 30	002431.00
5	V+,\$X13,DINT5		2520.32 B0	002431.40
4	SV,\$X13,DINT10		2522.73 30	002432.00
3	LC,\$X12,INTZ		2504.70 50	002432.40
2	SC,\$X12,\$X13	-PREPARE 6TH DIGIT	35.31 50	002433.00
	LX,\$X12,0.0		0.30 10	002433.40

	SV,\$X13,\$X12+.32		34.73 30	002434.00
	SR,\$X12,\$X13		35.31 70	002434.40
	V+,\$X13,\$X13		35.32 80	002435.00
	LX,\$X12,0.0		0.30 10	002435.40
	SV,\$X13,\$X12+.32		34.73 30	002436.00
	SC,\$X12,\$X13		35.31 50	002436.40
	SV,\$X13,\$X12+.32		34.73 30	002437.00
	SC,\$X12,\$X13		35.31 50	002437.40
	V+,\$X13,\$X13		35.32 80	002440.00
	V+,\$X13,\$X13		35.32 80	002440.40
	LX,\$X12,0.0		0.30 10	002441.00
	LR,\$X12,\$X13		35.30 70	002441.40
	LV,\$X13,\$X12+.32		34.72 30	002442.00
	V+,\$X13,DINT5		2520.32 80	002442.40
	SV,\$X13,DINT11		2523.33 30	002443.00
	LV,\$X13,INTZ	-PREPARE 7TH DIGIT	2504.72 30	002443.40
	LCI,\$X13,4		4.33 02	002444.00
	INT60 V+,\$X13,\$X13		35.32 80	002444.40
	CB,\$X13,INT60		2444.72 48	002445.00
	LX,\$X12,0.0		0.30 10	002445.40
	SV,\$X13,\$X12+.32		34.73 30	002446.00
	SR,\$X12,\$X13		35.31 70	002446.40
12	LX,\$X12,0.0		0.30 10	002447.00
11	SV,\$X13,\$X12+.32		34.73 30	002447.40
10	SC,\$X12,\$X13		35.31 50	002450.00
9	SV,\$X13,\$X12+.32		34.73 30	002450.40
8	SC,\$X12,\$X13		35.31 50	002451.00
7	V+,\$X13,\$X13		35.32 80	002451.40
6	V+,\$X13,\$X13		35.32 80	002452.00
5	LX,\$X12,0.0		0.30 10	002452.40
4	LR,\$X12,\$X13		35.30 70	002453.00
3	LV,\$X13,\$X12+.32		34.72 30	002453.40
2	V+,\$X13,DINT5		2520.32 80	002454.00

	SV,\$X13,DINT12		2523.73 30	002454.40
	LX,\$X13,DINT3	-SET UP PRINT WORDS	2516.32 10	002455.00
	LV,\$X12,DINT8		2521.70 30	002455.40
	LCI,\$X12,6		6.31 02	002456.00
INT62	V+,\$X12,\$X12		34.30 B0	002456.40
	CB,\$X12,INT62		2456.70 48	002457.00
	LR,\$X13,\$X12		34.32 70	002457.40
	LV,\$X12,DINT6		2520.70 30	002460.00
	LCI,\$X12,8		10.31 02	002460.40
INT63	V+,\$X12,\$X12		34.30 B0	002461.00
	CB,\$X12,INT63		2461.30 48	002461.40
	V+,\$X12,DINT7		2521.30 B0	002462.00
	SV,\$X12,\$X13+.32		35.71 30	002462.40
	SX,\$X13,DINT19	-PLACE 1ST WORD	2532.33 10	002463.00
	LV,\$X12,DINT9	-GET 3 DIGITS	2522.30 30	002463.40
	LCI,\$X12,8		10.31 02	002464.00
INT64	V+,\$X12,\$X12		34.30 B0	002464.40
	CB,\$X12,INT64		2464.70 48	002465.00
	V+,\$X12,DINT10		2522.70 B0	002465.40
	LCI,\$X12,8		10.31 02	002466.00
INT65	V+,\$X12,\$X12		34.30 B0	002466.40
	CB,\$X12,INT65		2466.70 48	002467.00
	V+,\$X12,DINT11		2523.30 B0	002467.40
	LX,\$X13,DINT13	-GET POINT	2524.32 10	002470.00
	SV,\$X12,\$X13		35.31 30	002470.40
	LV,\$X12,DINT12	-GET FRACTION DIGIT	2523.70 30	002471.00
	LCI,\$X12,16		20.31 02	002471.40
INT66	V+,\$X12,\$X12		34.30 B0	002472.00
	CB,\$X12,INT66		2472.30 48	002472.40
	SV,\$X12,\$X13+.32		35.71 30	002473.00
	LR,\$X13,0.0		0.32 70	002473.40
	SX,\$X13,DINT20		2533.33 10	002474.00
	LV,\$X12,DINT2.32		2515.70 30	002474.40

	SV,\$X12,DINT21		2534.31 30	002475.00
	CCW,19.32,DINT23		23.40 80 002536.21 00	002475.40
	LV,\$X12,DINT23		2536.30 30	002476.40
	LR,\$X13,0.0		0.32 70	002477.00
	SV,\$X12,\$X13+.32		35.71 30	002477.40
	SR,\$X13,\$X12		34.33 70	002500.00
	V+,\$X12,\$X12		34.30 B0	002500.40
	V+,\$X12,\$X12		34.30 B0	002501.00
	V+,\$X12,\$X12		34.30 B0	002501.40
	LC,\$X13,\$X12		34.32 50	002502.00
	SC,\$X13,\$X12		34.33 50	002502.40
	V+,\$X12,\$X12		34.30 B0	002503.00
	BZXVZ,INT70	-THERE IS A UNIT ON C39	2505.31 40	002503.40
	INT69 LX,\$X12,DINT15		2526.30 10	002504.00
	INTZ BE,0.0	-RETURN FROM INTERRUPTS	0.00 00	002504.40
	INT70 REL%SEOP□,19.32		23.40 80 000000.33 00	002505.00
	INT70A CCW,19.32,DINT23		23.40 80 002536.21 00	002506.00
	LV,\$X12,DINT23		2536.30 30	002507.00
	SV,\$X12,DINT23		2536.31 30	002507.40
	BXVLZ,INT70A		2506.30 C2	002510.00
12	W%SEOP□,19.32,DINT14		23.40 80 002525.13 00	002510.40
11	INT71 LCI,\$X12,8		10.31 02	002511.40
10	CB,\$X12,\$	-DELAY	2512.30 48	002512.00
9	CCW,19.32,DINT23		23.40 80 002536.21 00	002512.40
8	LV,\$X12,DINT23		2536.30 30	002513.40
7	BXVLZ,INT71		2511.70 C2	002514.00
6	B,INT69		2504.10 00	002514.40
5	DINT2 XW,0	-INDICATOR NAME, UP TO 32 BITS	0.00 00 000000.00 00	002515.00
4	DINT3 XW,0	-ID OF TEST, UP TO 32 BITS	0.00 00 000000.00 00	002516.00
3	DINT4 %IQSZ□DD%BU,8,8□,SSIP Z			002517.00
2	DINT5 VF,%2□01.100000	-IQS CODE BIT MASK	1.40+	002520.00
	DINT6 VF,0	-HI ORDER IC VALUE	0.00+	002520.40

DINT7	VF,0	-NEXT ORDER IC VALUE	0.00+	002521.00
DINT8	VF,0	-NEXT ORDER IC VALUE	0.00+	002521.40
DINT9	VF,0	-NEXT ORDER IC VALUE	0.00+	002522.00
DINT10	VF,0	-NEXT ORDER IC VALUE	0.00+	002522.40
DINT11	VF,0	-NEXT ORDER IC VALUE	0.00+	002523.00
DINT12	VF,0	-LO ORDER VALUE OF IC	0.00+	002523.40
DINT13	XW,0.0,%8=200000,0,7	-IQS CODE PERIOD	0.00 74 000000.00 00	002524.00
DINT14	XW,DINT16,6,0	-PRINT CONTROL WORD	2527.00 00 000140.00 00	002525.00
DINT15	XW,0	-SAVE X 12	0.00 00 000000.00 00	002526.00
DINT16	XW,0	-FIRST DUMMY WORD	0.00 00 000000.00 00	002527.00
DINT17	XW,0	-SECOND DUMMY WOERD	0.00 00 000000.00 00	002530.00
DINT18	XW,0	-THIRD DUMMY WORD	0.00 00 000000.00 00	002531.00
DINT19	XW,0	-FIRST PRINT WORD	0.00 00 000000.00 00	002532.00
DINT20	XW,0	-SECOND PRINT WORD	0.00 00 000000.00 00	002533.00
DINT21	XW,0,%8=037577,%8=400000	-THIRD PRINT WORD WITH END	0.00 00 773770.00 00	002534.00
DINT22	XW,0	-SAVE X11	0.00 00 000000.00 00	002535.00
DINT23	XW,0	-CCW WORD SPACE	0.00 00 000000.00 00	002536.00
DINT24	XW,0		0.00 00 000000.00 00	002537.00
SIPEND	V-l,\$X12,.32		0.71 0D	002540.00
	CB,\$X12,SIPEND		2540.30 48	002540.40
	B,SIP13		1500.50 00	002541.00

- 12 - OPERATING INSTRUCTIONS FOR MONITOR
- 11 -
- 10 -1. TO ENABLE ADDRESS MONITORING SET THE
- 9 -FIRST BRANCH BELOW TO A NOP.
- 8 -
- 7 -2. PRINT SUPPRESS AND STOP ON ERROR SWITCHES
- 6 -HAVE NO EFFECT ON MONITOR.
- 5 -
- 4 -3. AFTER A SEQUENCE ERROR MONITOR RETURNS
- 3 -CONTROL TO THE PREVIOUS IN SEQUENCE POINT.
- 2 -
- 4. SSW AND ERS BUT NOT SERS EXITS FROM

-THE TESTS ARE MONITORED.

-5. MANUAL BRANCHES TO THE FIRST INSTRUCTION

-OF A TEST MAY BE MADE FROM EITHER

-HALF WORD OF THE KEYS WITHOUT CAUSING

-A MONITOR ERROR IF THE BRANCH IS LEFT IN

-THE KEYS.

-6. MONITOR ONLY REQUIRES AGREEMENT

-BETWEEN CALCULATED AND ACTUAL ADDRESSES

-PLUS OR MINUS TWO.

-7. THE SECOND ADDRESS IS USED IN A BRANCH TO A BRANCH

	SIPM	LV,\$X13,DSIPM8	-SETUP SAVE OF OLD RET1	2732.32 30	002541.40
		SV,\$X12,RET1		1307.31 30	002542.00
		CNOP	-MAKE THIS BRANCH A NOP	0.30 00	002542.40
		B,SIP14A		1502.50 00	002543.00
		NOP	-TO ENABLE MONITOR.	0.30 00	002543.40
		SV,\$X12,DSIPM8		2732.31 30	002544.00
		LC,\$X12,\$X13		35.30 50	002544.40
12		BXCZ,SIP14A	-DO NOT MONITOR FIRST TIME THRU	1502.70 42	002545.00
11		KV,\$X13,DSIPM8		2732.32 90	002545.40
10		BXE,SIP14A	-LOOP 0. K.	1502.72 C2	002546.00
9		SVA,\$X13,SRET		2710.33 D0	002546.40
8		SVA,\$X13,SRETB		2711.33 D0	002547.00
7		SV,\$X13,SRETC		2711.73 30	002547.40
6			-CALCULATE BEGINNING OF		
5			-THIS TEST.		
4		LC,\$X12,DSEN1		1351.70 50	002550.00
3		BXCZ,SIP14A	-DO NOT MONITOR WHEN THERE IS	1502.70 42	002550.40
2			-NO LOOP ADDRESS IN DSEN1		
		LV,\$X12,DSEN		1351.30 30	002551.00

	SIPM1	V-1,\$X12,.32		0.71 0D	002551.40
		CB,\$X12,SIPM1		2551.70 48	002552.00
		SVA,\$X12,SIPM2		2554.71 D0	002552.40
		-			
		-			
		LV,\$X13,DSIPM1		2713.32 30	002553.00
		SV,\$X13,DSIPM3	-RESET BR SWITH	2714.33 30	002553.40
		SVA,\$X12,CRET	-TEST BEGINNING IF NOT A BRANCH	2707.71 D0	002554.00
	SIPM2	LV,\$X13,0.0	-IS THIS A BRANCH	0.32 30	002554.40
		BXVLZ,SIPMA1+.32	-BIT 24 OF THIS HALF WD IS ONE	2577.30 C2	002555.00
		SVA,\$X13,SIPM7		2574.33 D0	002555.40
		SVA,\$X13,SIPM3		2561.33 D0	002556.00
		LV,\$X12,SIPM7		2574.30 30	002556.40
		V+,\$X12,DSIPM9		2732.70 B0	002557.00
		SVA,\$X12,\$+.32		2560.31 D0	002557.40
		BB,0,SIPMA1+.32		0.00 80 002577.34 02	002560.00
	SIPM3	V-1,\$X13,0.0	-TEST BITS 22 AND 23	0.33 0D	002561.00
		BXVZ,SIPM4	-THIS MAY BE A BRANCH	2567.71 42	002561.40
		V+,\$X13,DSIPM1		2713.32 B0	002562.00
		BXVZ,SIPM4	-THIS MAY BE A BRANCH	2567.71 42	002562.40
		V+,\$X13,DSIPM1		2713.32 B0	002563.00
12		BXVZ,SIPM4		2567.71 42	002563.40
11		V+,\$X13,DSIPM1		2713.32 B0	002564.00
10		BXVZ,SIPMA		2566.71 42	002564.40
9		LV,\$X13,DSIPM1		2713.32 30	002565.00
8		SV,\$X13,DSIPM3		2714.33 30	002565.40
7		B,SIPMA1+.32		2577.10 00	002566.00
6	SIPMA	LV,\$X13,DSIPM2	-THIS IS NOT A BRANCH	2713.72 30	002566.40
5		SV,\$X13,DSIPM3		2714.33 30	002567.00
4	SIPM4	LV,\$X13,SIPM2	-TEST BITS 26 AND 27	2554.72 30	002567.40
3		SVA,\$X13,SIPM5		2570.73 D0	002570.00
2	SIPM5	BB,0,SIPMA1+.32	-BIT 26 IS A ONE	0.00 80 002577.34 02	002570.40
		V+,\$X13,DSIPM2		2713.72 B0	002571.40

		SVA,\$X13,SIPM6		2572.73 D0	002572.00
	SIPM6	BB,0,SIPMA1+.32	-BIT 27 A ONE	0.00 80 002577.34 02	002572.40
		B,SIPM8		2574.50 00	002573.40
	SIPM7	LX,\$X0,0.	-STORE LOC. FOR BRANCH ADDRESS	0.00 10	002574.00
	SIPM8	LV,\$X13,SIPM7		2574.32 30	002574.40
		LV,\$X12,DSIPM3	-THE SUPPOSED FIRST INSTRUCTION	2714.30 30	002575.00
		BXVLZ,SIPMA1	-IS BRANCH, STORE ITS ADDRESS	2576.70 C2	002575.40
		V+,\$X13,CRET		2707.72 B0	002576.00
	SIPMA1	SV,\$X13,CRET	-FIND THE ACTUAL TEST	2707.73 30	002576.40
		SIC,SIPMR		2636.40 80	002577.00
		B,SIPM9		2600.50 00	002577.40
		B,SIPMRA	-BEGINNING BASED ON SRET	2637.10 00	002600.00
	SIPM9	LV,\$X12,SRET		2710.30 30	002600.40
		SV,\$X12,SRETA	-TEST BEGINNING IF NOT A BRANCH	2710.71 30	002601.00
		SVA,\$12,SIPM12		2603.31 D0	002601.40
		LV,\$X13,DSIPM1		2713.32 30	002602.00
		SV,\$X13,DSIPM3		2714.33 30	002602.40
	SIPM12	LV,\$X13,0.0	-IS THIS A BRANCH	0.32 30	002603.00
		BXVLZ,SIPM19	-BIT 24 OF THIS HALF WD IS ONE	2624.70 C2	002603.40
		SVA,\$X13,SIPM17		2621.73 D0	002604.00
		SVA,\$X13,SIPM13		2607.73 D0	002604.40
12		LV,\$X12,SIPM17		2621.70 30	002605.00
11		V+,\$X12,DSIPM9		2732.70 B0	002605.40
10		SVA,\$X12,\$+.32		2606.71 D0	002606.00
9		BB,0,SIPM19		0.00 80 002624.74 02	002606.40
8	SIPM13	V-1,\$X13,0.	-TEST BITS 22 AND 23	0.33 0D	002607.40
7		BXVZ,SIPM14	-THIS MAY BE A BRANCH	2615.31 42	002610.00
6		V+,\$X13,DSIPM1		2713.32 B0	002610.40
5		BXVZ,SIPM14	-THIS MAY IBE A BRANCH	2615.31 42	002611.00
4		V+,\$X13,DSIPM1		2713.32 B0	002611.40
3		BXVZ,SIPM14		2615.31 42	002612.00
2		V+,\$X13,DSIPM1		2713.32 B0	002612.40
		BXVZ,SIPMB		2614.31 42	002613.00

	B,SIPM19	-NOT BRANCH	2624.50 00	002613.40
	SIPMB LV,\$X13,DSIPM2	-THIS MAY BE A BR	2713.72 30	002614.00
	SV,\$X13,DSIPM3		2714.33 30	002614.40
	SIPM14 LV,\$X13,SIPM12	-TEST BITS 26 AND 27	2603.32 30	002615.00
	SVA,\$X13,SIPM15		2616.33 D0	002615.40
	SIPM15 BB,0,SIPM19	-BIT 26 IS A ONE	0.00 80 002624.74 02	002616.00
	V+,\$X13,DSIPM2		2713.72 B0	002617.00
	SVA,\$X13,SIPM16		2620.33 D0	002617.40
	SIPM16 BB,0,SIPM19	-BIT 27 IS A ONE	0.00 80 002624.74 02	002620.00
	B,SIPM18		2622.10 00	002621.00
	SIPM17 LX,\$X0,0.	-STORE LOCATION OF BRANCH	0.00 10	002621.40
	SIPM18 LV,\$X13,SIPM17	-STORE ADDRESS OF FIRST	2621.72 30	002622.00
	LV,\$X12,DSIPM3		2714.30 30	002622.40
	BXVLZ,SIPMB1	-ADD IT TO LOCATION OF	2624.30 C2	002623.00
	V+,\$X13,SRET	-RELATIVE BRANCH.	2710.32 B0	002623.40
	SIPMB1 SV,\$X13,SRETA		2710.73 30	002624.00
		-		
	SIPM19 LX,\$X13,0.0		0.32 10	002624.40
	LX,\$X12,0.0	-RESET INDEX REGS	0.30 10	002625.00
	LV,\$X12,SRETA	-ROUND OFF THE THREE LOW ORDER	2710.70 30	002625.40
	V+,\$X12,\$X12	-WORD ADDRESS BITS OF SRETA.	34.30 B0	002626.00
12	V+l,\$X12,8.0		10.31 05	002626.40
11	SV,\$X12,\$X12+.32		34.71 30	002627.00
10	SC,\$X12,\$X12		34.31 50	002627.40
		-		
9				
8	LV,\$X13,CRET	-ROUND OFF THE THREE LOW ORDER	2707.72 30	002630.00
7	V+,\$X13,\$X13	-WORD ADDRESS BITS OF CRET.	35.32 B0	002630.40
6	V+l,\$X13,8.0		10.33 05	002631.00
5	SV,\$X13,\$X13+.32		35.73 30	002631.40
4	SC,\$X13,\$X13		35.33 50	002632.00
3		-		
2	V+,\$X13,\$X12	-ADD THE ROUNDED VALUES OF SRETA	34.32 B0	002632.40
	V+,\$X12,\$X12	-AND CRET. COMPARE THE SUM WITH TWICE	34.30 B0	002633.00

	KV,\$X12,\$X13	-THE VALUE OF THE ROUNDED SRETA.	35.30 90	002633.40
	BXE,SIP14A	-MONITOR CORRECT EXIT IF EQUAL.	1502.72 C2	002634.00
	SC,\$X13,\$X12		34.33 50	002634.40
	V+,\$X12,\$X12	-COMPARE THE SUM WITH TWICE THE	34.30 B0	002635.00
	KV,\$X12,\$X13	-VALUE OF THE ROUNDED CRET.	35.30 90	002635.40
	BXE,SIP14A	-MONITOR CORRECT EXIT IF EQUAL.	1502.72 C2	002636.00
	SIPMR B,0.0		0.10 00	002636.40
		-FAILING ABOVE A MANUAL		
		-TRANSFER MAY HAVE BEEN MADE		
		-TO THE FIRST INST. OF A TEST		
	SIPMRA LX,\$X13,4.0	-IS ANYTHING IN THE	4.32 10	002637.00
	BZXVZ,SIPM22	-KEYS	2640.71 40	002637.40
	B,SIPM30	-TO SEQUENCE ERROR PRINT	2664.10 00	002640.00
	SIPM22 BXVLZ,SIPM24	-IS LEFT HALF WORD A BRANCH	2647.30 C2	002640.40
	BXF,SIPM24		2647.23 42	002641.00
	BB,\$X13+.26,SIPM24		35.32 80 002647.34 02	002641.40
	BB,\$X13+.27,SIPM24		35.33 80 002647.34 02	002642.40
	SVA,\$X13,SIPM23		2644.33 D0	002643.40
	SIPM23 V-1,\$X13,0.0		0.33 0D	002644.00
12	BXVZ,SIPM26	-IT IS BE IN LEFT HALF	2657.31 42	002644.40
11	V+,\$X13,DSIPM1		2713.32 B0	002645.00
10	BXVZ,SIPM26	-IT IS BD IN LEFT HALF	2657.31 42	002645.40
9	V+,\$X13,DSIPM1		2713.32 B0	002646.00
8	BXVZ,SIPM26	-IT IS BD IN LEFT HALF	2657.31 42	002646.40
7				
6	SIPM24 LV,\$X13,4.32	-TEST RIGHT HALF	4.72 30	002647.00
5	BZXVGZ,SIPM30	-TO SEQUENCE ERROR	2664.31 C0	002647.40
4	BB,4.57,SIPM30	-TO SEQUENCE ERROR	4.71 80 002664.34 02	002650.00
3	BB,\$X13+.26,SIPM30	-TO SEQ ERR	35.32 80 002664.34 02	002651.00
2	BB,\$X13+.27,SIPM30	-TO SEQ ERR	35.33 80 002664.34 02	002652.00
	SVA,\$X13,SIPM25		2653.73 D0	002653.00

	SIPM25	V-1,\$X13,0.0		0.33 0D	002653.40
		BXVZ,SIPM27	-IT IS BE IN RIGHT HALF	2660.31 42	002654.00
		V+,\$X13,DSIPM1		2713.32 80	002654.40
		BXVZ,SIPM27	-IT IS BD IN RIGHT HALF	2660.31 42	002655.00
		V+,\$X13,DSIPM1		2713.32 80	002655.40
		BXVZ,SIPM27	-IT IS B IN RIGHT HALF	2660.31 42	002656.00
		B,SIPM30	-TO SEQ ERROR	2664.10 00	002656.40
	SIPM26	LV,\$X13,4.0	-FETCH LEFT HALF ADDRESS	4.32 30	002657.00
		B,SIPM28		2660.50 00	002657.40
	SIPM27	LV,\$X13,4.32	-FETCH RIGHT HALF ADDRESS	4.72 30	002660.00
	SIPM28	SVA,\$X13,\$+1.0		2661.73 D0	002660.40
		B,\$+1.0		2662.10 00	002661.00
	SIPM29	LX,\$X0,0.	-STORAGE AREA FOR ADDRESS	0.00 10	002661.40
		LV,\$X13,SIPM29		2661.72 30	002662.00
		SV,\$X13,SRET		2710.33 30	002662.40
		SIC,SIPMR		2636.40 80	002663.00
		B,SIPM9		2600.50 00	002663.40
			-BEGIN ERROR PRINT ROUTINE		
	SIPM30	REL%SEOP□,19.32	-WRITE IN SEQ AT	23.40 80 000000.33 00	002664.00
		W%SEOP□,19.32,DSIPM5	-ON THE TYPEWRITER	23.40 80 002722.13 00	002665.00
	SIPM31	CCW,19.32,DSIPM6		23.40 80 002723.21 00	002666.00
12		LV,\$X13,DSIPM6		2723.32 30	002667.00
11		SV,\$X13,DSIPM6		2723.33 30	002667.40
10		BXVLZ,SIPM31		2666.30 C2	002670.00
9		LV,\$X13,SRETB	-SEND IC AND ENDMARK TO	2711.32 30	002670.40
8		SVA,\$X13,DPET	-THE PRINT ROUTINE TO	2066.73 D0	002671.00
7		LV,\$X13,DSIPM4	-PRINT IN SEQUENCE ADDRESS	2714.72 30	002671.40
6		SV,\$X13,DPET9		2077.33 30	002672.00
5		SIC,RET		1306.40 80	002672.40
4		B,PET	-PRINT SEQ ADDRESS	1674.50 00	002673.00
3		REL%SEOP□,19.32	-WRITE OUT OF SEQ AT	23.40 80 000000.33 00	002673.40
2		W%SEOP□,19.32,DSIPM7	-ON THE TYPEWRITER	23.40 80 002731.13 00	002674.40
	SIPM32	CCW,19.32,DSIPM6		23.40 80 002723.21 00	002675.40

	LV,\$X13,DSIPM6		2723.32 30	002676.40
	SV,\$X13,DSIPM6		2723.33 30	002677.00
	BXVLZ,SIPM32		2675.70 C2	002677.40
	-			
	LX,\$X13,DPET13	-SAVE ID	1437.32 10	002700.00
	SX,\$X13,SDPET		2712.33 10	002700.40
	LX,\$X13,0.0		0.32 10	002701.00
	SX,\$X13,DPET13	-KILL SECOND ID PRINT	1437.33 10	002701.40
	LV,\$X13,CRET		2707.72 30	002702.00
	SVA,\$X13,DPET		2066.73 D0	002702.40
	LV,\$X13,DPET16+.32	-SET CARRIAGE RETURN	1442.72 30	002703.00
	SV,\$X13,DPET9	-AND END MARK	2077.33 30	002703.40
	-			
	SIC,RET		1306.40 80	002704.00
	B,PET	-PRINT OUT OF SEQ ADDRESS	1674.50 00	002704.40
	-			
	LX,\$X13,SDPET	-RESTORE ID	2712.32 10	002705.00
	SX,\$X13,DPET13		1437.33 10	002705.40
	LV,\$X13,SRETC	-SETUP RET1	2711.72 30	002706.00
	SV,\$X13,RET1		1307.33 30	002706.40
	B,SIP14A	-TO BEGINNING OF TEST RESETS	1502.50 00	002707.00
	-			
12				
11	CRET	VF,0.	-CALULATED TEST BEGINNING	0.00+ 002707.40
10	SRET	VF,0.	-OLD RETURN ADDRESS	0.00+ 002710.00
9	SRETA	VF,0.	-TEST BEGINNING BASED ON SRET	0.00+ 002710.40
8	SRETB	VF,0.	-SRETA VALUE FOR PRINT	0.00+ 002711.00
7	SRETC	VF,0.	-OLD RETURN ADDRESS AND OP CODE	0.00+ 002711.40
6	SDPET	XW,0.		0.00 00 000000.00 00 002712.00
5	DSIPM1	VF,-.4		0.04- 002713.00
4	DSIPM2	VF,.1		0.01+ 002713.40
3	DSIPM3	VF,0	-SW FOR POSSIBLE BRANCH REL.	0.00+ 002714.00
2	DSIPM4	VF,%8#177000.	-END MARK	177000.00+ 002714.40

CNOP

MONERR	DD%BU,64,0,0,0	000000000000000000000000	002715.00
		000000000000000000000000	002716.00
		000000000000000000000000	002717.00
	DD%BU,%8,0 000 000 000 000 000 036 507 -IQS IN	000000000000000000000036507	002720.00
	DD%BU,%8,0 001 211 524 640 013 251 400 -IQS SEQ AT	0001211524640013251400	002721.00
DSIPM5	CW,MONERR,5	2715.00 00 000120.00 00	002722.00
DSIPM6	DD%BU,0 -CCW AREA	000000000000000000000000	002723.00
MONER2	DD%BU,64,0,0,0	000000000000000000000000	002724.00
		000000000000000000000000	002725.00
		000000000000000000000000	002726.00
	DD%BU,%8,0 000 002 225 252 300 044 467 -IQS OUT OF	0000002225252300044467	002727.00
	DD%BU,%8,0 001 211 524 640 013 251 400 -IQS SEQ AT	0001211524640013251400	002730.00
DSIPM7	CW,MONER2,5	2724.00 00 000120.00 00	002731.00
DSIPM8	VF,0 -	0.00+	002732.00
DSIPM9	VF,.25	0.31+	002732.40
	END,%8,100.	100.00	002732.71
12			
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