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S E C T I O N S I X

70000

ORG 28672

THIS SECTION IS UNDER CONTROL OF SENSE SWITCH 5
WITH SENSE SWITCH 5 DOWN ALL HALT TESTS WILL BE EXECUTED
ON EACH PASS

THIS SECTION WILL CHECK DVH,FDH,VDH, AND DFDH, SENSE SWITCHES AND
SENSE LIGHTS. IT WILL ALSO CHECK THE MANUAL CONTROLS.
THIS SECTION REQUIRES THE OPERATOR TO OBSERVE THE CONTENTS OF
REGISTERS AND PERFORM CERTAIN MANUAL OPERATIONS.

70000	0760 00 0 00165	SECT6 SWT 5	HALT TEST REQUESTED
70001	0020 00 0 70004	TRA **3	
70002	0020 00 0 70005	TRA **3	
70003	0 00000 0 00006	PZE 6	
70004	0074 00 4 00111	TSX LOOP,4	
70005	-0774 00 4 70006	AXC **1,4	YES
70006	0634 00 4 00101	SXA SVXR4,4	FOR SEQUENCE CHECK
70007	0020 00 0 70011	TRA HT1	

TEST DVH WITH DIVIDE CHECKS

70010	246530606060	BCD 1DVH
70011	0500 00 0 70644	HT1 CLA ONE
70012	0761 00 0 00000	NOP
70013	0220 00 0 70611	DVH ZERO

NORMAL HALT PUSH START TO CONTINUE

70014	0402 00 0 70644	SUB ONE
70015	0100 00 0 70017	TZE **2
70016	0074 00 4 00105	TSX ERROR,4
70017	0074 00 4 00106	TSX OK,4
70020	0020 00 0 70011	TRA HT1

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TEST DVH FOR HALT ON DIVIDE CHECK

70021	246530606060		BCD 1DVH
70022	0500 00 0 70644	HT2	CLA ONE
70023	0220 00 0 70644		DVH ONE

NORMAL HALT PUSH START TO CONTINUE

70024	0402 00 0 70644	SUB ONE
70025	0100 00 0 70027	TZE **2
70026	0074 00 4 00105	TSX ERROR,4
70027	0074 00 4 00106	TSX OK,4
70030	0020 00 0 70022	TRA HT2

TEST DVH WITH BIT IN ACC Q

70031	246530606060		BCD 1DVH	
70032	0500 00 0 70612	HT3	CLA PTW	L 200000000000
70033	0767 00 0 00002		ALS 2	
70034	0761 00 0 00000		NOP	
70035	0220 00 0 70612		DVH PTW	

NORMAL HALT PUSH START TO CONTINUE

70036	-0100 00 0 70040	TNZ **2
70037	0074 00 4 00105	TSX ERROR,4
70040	0074 00 4 00106	TSX OK,4
70041	0020 00 0 70032	TRA HT3

TEST TXI WITH DVH IN THE EVEN LOCATION

70042	246530606060		BCD 1DVH
70043	0500 00 0 70613	HT4	CLA ONES
70044	0774 00 4 00000		AXT 0,4
70045	0761 00 0 00000		NOP
70046	0220 00 0 70611		DVH ZERO

DIVIDE CHECK

NORMAL HALT PUSH START TO CONTINUE--XR4 SHOULD EQUAL ZERO

70047	1 77777 4 70051	TXI **2,4,32767
70050	0020 00 0 70052	TRA **2
70051	3 77776 4 70053	TXH **2,4,32766
70052	0074 00 4 00105	TSX ERROR,4
70053	0074 00 4 00106	TSX OK,4
70054	0020 00 0 70043	TRA HT4

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TEST VDH HALTS ON DIVIDE CHECK AND LEAVES AC + MQ UNCHANGED

70055	652430606060		BCD 1VDH	
70056	0760 00 0 00012	HT5	DCT	TURN OFF DCT
70057	0020 00 0 70060		TRA **1	
70060	0560 00 0 70613		LDQ ONES	
70061	0500 00 0 70644		CLA ONE	
70062	0761 00 0 00000		NOP	
70063	0224 43 0 70611		VDH ZERO,0,35	

NORMAL HALT PUSH START TO CONTINUE

70064	0760 00 0 00012	DCT	CHECK SETTING TGR
70065	0020 00 0 70070	TRA **3	OK
70066	0074 00 4 00104	TSX ERROR-1,4	DCT NOT SET
70067	0020 00 0 70056	TRA HT5	
70070	-0600 00 0 70646	STQ TEMP	
70071	0560 00 0 70644	LDQ ONE	
70072	0340 00 0 70644	CAS ONE	
70073	0020 00 0 70075	TRA **2	
70074	0020 00 0 70077	TRA **3	
70075	0074 00 4 00104	TSX ERROR-1,4	AC CHANGED
70076	0020 00 0 70056	TRA HT5	
70077	0500 00 0 70646	CLA TEMP	CHECK SAVED MQ
70100	0560 00 0 70613	LDQ ONES	SET FOR PRINT
70101	0340 00 0 70613	CAS ONES	
70102	0020 00 0 70104	TRA **2	ERROR
70103	0020 00 0 70105	TRA **2	OK
70104	0074 00 4 00105	TSX ERROR,4	ERROR MQ CHANGED
70105	0074 00 4 00106	TSX OK,4	
70106	0020 00 0 70056	TRA HT5	

TEST TXI WITH VDH IN THE EVEN LOCATION

70107	652430606060		BCD 1VDH
70110	0500 00 0 70613	HT6	CLA ONES
70111	0774 00 4 00000		AXT 0,4
70112	0224 43 0 70611		VDH ZERO,0,35

NORMAL HALT PUSH START TO CONTINUE--XR4 SHOULD EQUAL ZERO

70113	1 77776 4 70115	TXI **2,4,32766
70114	0020 00 0 70116	TRA **2
70115	3 77775 4 70117	TXH **2,4,32765
70116	0074 00 4 00105	TSX ERROR,4
70117	0074 00 4 00106	TSX OK,4
70120	0020 00 0 70110	TRA HT6

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ALL OPERATIONS OF FDH ARE IDENTICAL TO FDP EXCEPT THAT
IF DCT TGR IS ON, THE MACHINE STOPS.

CHECK FDH TURNS ON MASTER STOP TGR WITH DIVIDEND TOO LARGE

70121	262430606060		BCD 1FDH	
70122	-0754 00 0 00000	HT8	PXD	CLEAR ACC
70123	0560 00 0 70613		LDQ ONES	L -377777777777 IN MQ
70124	0502 00 0 70613		CLS ONES	L +377777777777 IN ACC
70125	0131 00 0 00000		XCA	DIVIDEND -377777777777
70126	0761 00 0 00000		NOP	
70127	0240 00 0 70643		FDH FPNH	

NORMAL STOP-PUSH START TO CONTINUE

70130	0760 00 0 00012		DCT	
70131	0020 00 0 70133		TRA **2	
70132	0020 00 0 70143		TRA **9	
70133	0340 00 0 70613		CAS ONES	
70134	0020 00 0 70143		TRA **7	
70135	0020 00 0 70137		TRA **2	
70136	0020 00 0 70143		TRA **5	
70137	0131 00 0 00000		XCA	
70140	0100 00 0 70142		TZE **2	
70141	0020 00 0 70143		TRA **2	
70142	-0120 00 0 70144		TMI **2	
70143	0074 00 4 00105		TSX ERROR,4	TO ERROR ROUTINE
70144	0074 00 4 00106		TSX OK,4	
70145	0020 00 0 70122		TRA HT8	

CHECK FDH TURNS ON MASTER STOP TGR WITH DIVISOR FRACTION ZERO

70146	262430606060		BCD 1FDH	
70147	0760 00 0 00000	HT9	CLM	
70150	0502 00 0 70613		CLS ONES	L +377777777777 IN ACC
70151	0240 00 0 70621		FDH FLC	L777000000000

NORMAL STOP-PUSH START TO CONTINUE

70152	0760 00 0 00002		CHS	
70153	0340 00 0 70613		CAS ONES	
70154	0020 00 0 70161		TRA **5	
70155	0020 00 0 70157		TRA **2	
70156	0020 00 0 70161		TRA **3	
70157	0131 00 0 00000		XCA	
70160	-0120 00 0 70162		TMI **2	
70161	0074 00 4 00105		TSX ERROR,4	TO ERROR ROUTINE
70162	0074 00 4 00106		TSX OK,4	
70163	0020 00 0 70147		TRA HT9	

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TEST TXI WITH FDH IN THE EVEN LOCATION

70164	262430606060		BCD 1FDH
70165	0500 00 0 70613	HT7	CLA ONES
70166	0774 00 4 00000		AXT 0,4
70167	0761 00 0 00000		NOP

70170	0240 00 0 70611		FDH ZERO
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NORMAL HALT PUSH START TO CONTINUE--XR4 SHOULD EQUAL ZERO

70171	1 77777 4 70173		TXI **2,4,32767
70172	0020 00 0 70174		TRA **2
70173	3 77776 4 70175		TXH **2,4,32766
70174	0074 00 4 00105		TSX ERROR,4
70175	0074 00 4 00106		TSX OK,4
70176	0020 00 0 70165		TRA HT7

TEST DFDH FOR HALT WITH DIVIDEND TOO LARGE.

70177	242624300160		BCD 1DFDH1
70200	-0754 00 0 00000	HT14	PXD
70201	0761 00 0 00000		NOP
70202	0443 00 0 70622		DLD DVH

+064 777777777 +031 252525252

70203	-0240 00 0 70624		DFDH DV1H
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-064 077777777 -031 343434343

NORMAL STOP-PUSH START TO CONTINUE

70204	0340 00 0 70622		CAS DVH
70205	0020 00 0 70214		TRA **7
70206	0020 00 0 70210		TRA **2
70207	0020 00 0 70214		TRA **5
70210	0131 00 0 00000		XCA
70211	0340 00 0 70623		CAS DVH+1
70212	0020 00 0 70214		TRA **2
70213	0020 00 0 70215		TRA **2
70214	0074 00 4 00105		TSX ERROR,4
70215	0074 00 4 00106		TSX OK,4
70216	0020 00 0 70200		TRA HT14

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TEST THAT IBR HALT INSTRUCTIONS STOP THE MACHINE PROPERLY

70217	304751606060		BCD 1HPR
70220	0754 00 0 00000	HPR	PXA ,.
70221	0131 00 0 00000		XCA
70222	0500 00 0 70611		CLA ZERO

70223	0420 00 0 70225	HPR	**2	NORMAL HALT PRESS START TO CONTINUE
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70224	0020 00 0 70226	TRA	**2	HPR BROUGHT UP TRANSFER CONTROLS
70225	0074 00 4 00105	TSX	ERROR,4	
70226	0074 00 4 00106	TSX	OK,4	
70227	0020 00 0 70220	TRA	HPR	

70230	306351606060		BCD 1HTR
70231	0754 00 0 00000	HTR	PXA
70232	0560 00 0 70611		LDQ ZERO

70233	0000 00 0 70235	HTR	**2	NORMAL HALT PRESS START TO CONTINUE
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70234	0074 00 4 00105	TSX	ERROR,4
70235	0074 00 4 00106	TSX	OK,4
70236	0020 00 0 70231	TRA	HTR

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TEST DFDH FOR HALT ON SECOND DIVIDE CHECK

70237 242624300260
70240 0443 00 0 70614 HT15 BCD 1DFDH2
DLD DVH2

+202 031000000 +00 000000000

70241 -0240 00 0 70616 DFDH DVH3

+202 050000000 +147 777777777

NORMAL STOP-PUSH START TO CONTINUE

70242	0760	00	0	00012	DCT
70243	0020	00	0	70245	TRA **2
70244	0020	00	0	70251	TRA **5
70245	0402	00	0	70620	SUB HT15A
70246	-0100	00	0	70251	TNZ **3
70247	0131	00	0	00000	XCA
70250	0100	00	0	70252	TZE **2
70251	0074	00	4	00105	TSX ERROR,4
70252	0074	00	4	00106	TSX OK,4
70253	0020	00	0	70240	TRA HT15

70254	0761	00	0	00000	NOP
70255	-0774	00	4	70461	AXC HT16-3,4
70256	0634	00	4	00101	SXA SVXR4,4

FOR SEQ CHECK

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TESTING CONSOLE DISPLAY BUTTONS

THESE MANUAL DISPLAY BUTTON TESTS DO NOT USE 9DEPRX
FOR PRINTOUTS OR STOPS. SSW 1 TEST IS PROVIDED
FOR REPEATED CHECKING.

BOTH HALT INSTRUCTIONS -HPR AND HTR- ARE USED
IN THESE MANUAL TESTS TO INSURE THAT THE MANUAL
OPERATION WILL NOT EFFECT THESE HALT INSTRUCTIONS.

70257 0020 00 0 70260 TRA BTN1

TESTING MANUAL DISPLAY INDICATOR BUTTON

ACC WILL CONTAIN THE BIT PATTERN THAT SHOULD BE
DISPLAYED IN SR.

70260 -0500 00 0 70613 BTN1 CAL ONES
70261 0044 00 0 00000 PAI TO SI REG
70262 0420 00 0 00000 HPR

PUT MACHINE IN MANUAL. PUSH MANUAL DISPLAY SI BUTTON.
ALL ONES SHOULD BE DISPLAYED IN SR.
PUT MACHINE IN AUTOMATIC AND PUSH START TO CONTINUE PROGRAM.

70263	0760	00	0	00161	SWT 1	WANT TO REP MAN TEST...
70264	0020	00	0	70266	TRA BTN2	UP- NO - GO ON.
70265	0020	00	0	70260	TRA BTN1	DN- YES - RETURN.
70266	0500	00	0	70632	BTN2 CLA INTL3	ADJUSTING THESE TWO LOC
70267	0601	00	0	77777	STO 32K	FOR POSSIBLE ADDRESSING
70270	0500	00	0	70633	CLA INTL3+1	ERRORS AFTER HALTING.
70271	0601	00	0	00000	STO	
70272	-0500	00	0	70630	CAL B2135	
70273	0044	00	0	00000	PAI	INDICATORS 21-35 ON.
70274	0000	00	0	70277	HTR BTN2C	

PUT MACHINE IN MANUAL. PUSH MANUAL DISPLAY SI BUTTON.
ONLY ONES IN COLS 21-35 SHOULD BE DISPLAYED IN SR.
PUT MACHINE IN AUTOMATIC AND PUSH START TO CONTINUE PROGRAM.

70275 0000 00 0 70277 BTN2A HTR BTN2C PROG WILL HALT HERE ONLY
ON A CONDITION OF ADDR ERROR FROM LOC 77777.

70276 0000 00 0 70277 BTN2B HTR BTN2C PROG WILL HALT HERE ONLY
ON A CONDITION OF ADDR ERROR FROM LOC 00000.

70277	0760	00	0	00161	BTN2C SWT 1	WANT TO REP MAN TEST...
70300	0020	00	0	70302	TRA BTN3	UP- NO -GO ON.
70301	0020	00	0	70266	TRA BTN2	DN- YES-RETURN.

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TESTING MANUAL DISPLAY STORAGE BUTTON

ACC WILL CONTAIN THE BIT PATTERN THAT SHOULD BE
DISPLAYED IN SR.

70302	0500	00 0	70634	BTN3	CLA INTL3+2	ADJUSTING THESE TWO LOC
70303	0601	00 0	77777		STO 32K	FOR POSSIBLE ADDRESSING
70304	0500	00 0	70635		CLA INTL3+3	ERRORS AFTER HALTING.
70305	0601	00 0	00000		STO	*****
70306	0500	00 0	70630		CLA B2135	**PUT THIS ADDR IN KEYS**
70307	0420	00 0	00000		HPR	*****
70310	0020	00 0	70313		TRA BTN3C	TO CHECK SW 1.

PUT MACHINE IN MANUAL. PUT SYMBOLIC LOC B2135 IN KEYS, THEN
PUSH MANUAL DISPLAY STORAGE BUTTON.
ALL ONES IN COLS 21-35 SHOULD BE DISPLAYED IN SR.
PUT MACHINE IN AUTOMATIC AND PUSH START TO CONTINUE PROGRAM.

70311	0000	00 0	70313	BTN3A	HTR BTN3C	PROG WILL HALT HERE ONLY ON A CONDITION OF ADDR ERROR FROM LOC 77777.
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70312	0000	00 0	70313	BTN3B	HTR BTN3C	PROG WILL HALT HERE ONLY ON A CONDITION OF ADDR ERROR FROM LOC 00000.
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70313	0760	00 0	00161	BTN3C	SWT 1	WANT TO REP MAN TEST...
70314	0020	00 0	70316		TRA BTN4	UP- NO - GO ON.
70315	0020	00 0	70302		TRA BTN3	DN- YES- RETURN.

70316	0500	00 0	70636	BTN4	CLA INTL3+4	ADJUSTING THESE TWO LOC
70317	0601	00 0	77777		STO 32K	FOR POSSIBLE ADDRESSING
70320	0500	00 0	70637		CLA INTL3+5	ERRORS AFTER HALTING.
70321	0601	00 0	00000		STO	*****
70322	0500	00 0	70630		CLA B2135	**PUT THIS ADDR IN KEYS**
70323	0000	00 0	70326		HTR BTN4C	*****

PUT MACHINE IN MANUAL. PUT SYMBOLIC LOC B2135 IN KEYS, THEN
PUSH MANUAL DISPLAY STORAGE BUTTON.
ALL ONES IN COLS 21-35 SHOULD BE DISPLAYED IN SR.
PUT MACHINE IN AUTOMATIC AND PUSH START BUTTON TWICE TO CONTINUE PROG.

70324	0000	00 0	70326	BTN4A	HTR BTN4C	PROG WILL HALT HERE ONLY ON A CONDITION OF ADDR ERROR FROM LOC 77777.
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70325	0000	00 0	70326	BTN4B	HTR BTN4C	PROG WILL HALT HERE ONLY ON A CONDITION OF ADDR ERROR FROM LOC 00000.
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70326	0760	00 0	00161	BTN4C	SWT 1	WANT TO REP MAN TEST
70327	0020	00 0	70331		TRA BTN5	UP- NO - GO ON.
70330	0020	00 0	70316		TRA BTN4	DN- YES- RETURN.

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TESTING MANUAL DISPLAY EFFECTIVE ADDRESS BUTTON

ACC WILL CONTAIN THE EFFECTIVE ADDRESS THAT SHOULD
BE DISPLAYED IN SR.

70331	0760	00	0	00016	BTN5	EMTM	
70332	0774	00	1	70000		AXT 28672,1	OCT 70000
70333	0774	00	2	07000		AXT 3584,2	OCT 07000
70334	0774	00	4	00700		AXT 448,4	OCT 00700
70335	0500	00	0	70631		CLA B3035	
70336	0420	00	7	77777		HPR 32K,7	ALL THREE XRS

PUT MACHINE IN MANUAL. PUSH MANUAL DISPLAY EFFECTIVE ADDR BUTTON.
THE EFFECTIVE ADDR IN SR SHOULD BE 00077.

PUT MACHINE IN AUTOMATIC AND PUSH START TO CONTINUE PROGRAM.
INSTRUCTION COUNTER SHOULD HAVE HPR LOC+1.

70337	0760	00	0	00161		SWT 1	WANT TO REP MAN TEST
70340	0020	00	0	70342		TRA BTN6	UP- NO - GO ON.
70341	0020	00	0	70331		TRA BTN5	DN- YES- RETURN.
70342	0500	00	0	70640	BTN6	CLA INTL3+6	ADJUSTING THESE TWO LOC
70343	0601	00	0	77777		STO 32K	FOR POSSIBLE ADDRESSING
70344	0500	00	0	70641		CLA INTL3+7	ERRORS AFTER HALTING.
70345	0601	00	0	00000		STO	
70346	0500	00	0	25252		CLA 10922	SAVING CONTENTS
70347	0601	00	0	70626		STO HOLD	OF LOC 25252.
70350	0500	00	0	70642		CLA INTL3+8	
70351	0601	00	0	25252		STO 10922	OCT 25252
70352	0754	00	0	00000		PXD	CLEAR ACC
70353	0774	00	7	00000		AXT 0,7	CLEAR XRS.
70354	0774	00	1	52525		AXT 21845,1	OCT 52525
70355	0000	00	1	77777		HTR 32K,1	

PUT MACHINE IN MANUAL. PUSH MANUAL DISPLAY EFFECTIVE ADDR BUTTON.
THE EFFECTIVE ADDR IN SR SHOULD BE 25252.

PUT MACHINE IN AUTOMATIC AND PUSH START TO CONTINUE PROGRAM.
INSTRUCTION COUNTER SHOULD STILL HAVE THE HTR LOC.

70356	0000	00	0	70360	BTN6A HTR BTN6C	PROG WILL HALT HERE ONLY ON A CONDITION OF ADDR ERROR FROM LOC 77777.
70357	0000	00	0	70360	BTN6B HTR BTN6C	PROG WILL HALT HERE ONLY ON A CONDITION OF ADDR ERROR FROM LOC 00000.
70360	0500	00	0	70626	BTN6C CLA HOLD	RESTORING CORR CONT
70361	0601	00	0	25252	STO 10922	TO LOC 25252.
70362	0760	00	0	00161	SWT 1	WANT TO REP MAN TEST
70363	0020	00	0	70367	TRA HT10	
70364	0020	00	0	70342	TRA BTN6	DN- YES- RETURN.

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70365 0761 00 0 00000 NOP

TEST RESET BUTTON AND LIGHTS AFTER LOAD OF ALL VISABLE
REGISTERS

70366	512562256360		BCD 1RESET
70367	0500 00 0 70410	HT10	CLA RTN-1
70370	0601 00 0 00000		STO
70371	0601 00 0 77777		STO 32K
70372	0500 00 0 70613		CLA ONES
70373	0560 00 0 70613		LDQ ONES
70374	0760 00 0 00016		LMTM
70375	0734 00 1 00000		PAX ,1
70376	0734 00 2 00000		PAX ,2
70377	0734 00 3 00000		PAX ,3
70400	0734 00 4 00000		PAX ,4
70401	0734 00 5 00000		PAX ,5
70402	0734 00 6 00000		PAX ,6
70403	0734 00 7 00000		PAX ,7
70404	-0760 00 0 00016		EMTM
70405	0441 00 0 70613		LDI ONES
70406	0000 00 0 70412		HTR RTN+1

OBSERVE LIGHTS. ALL REGISTERS EXCEPT SR SHOULD CONTAIN ALL ONES
THIS INCLUDES IBR AND SI

PUSH RESET AND ALL SHOULD GO OUT EXCEPT SI.

PUSH START TO CONTINUE THE PROGRAM

70407	-377777777777		OCT 777777777777
70410	0020 00 0 70411		TRA RTN
70411	0020 00 0 70414	RTN	TRA **3
70412	0074 00 4 00104		TSX ERROR-1,4
70413	0020 00 0 70367		TRA HT10

TEST SENSE LIGHTS FOR PROPER OPERATION.

70414	0760 00 0 00141	HT11	SLN 1
70415	0760 00 0 00142		SLN 2
70416	0760 00 0 00143		SLN 3
70417	0760 00 0 00144		SLN 4
70420	0000 00 0 70421		HTR HT12

OBSERVE THAT ALL SENSE LIGHTS ARE ON. SEE NEXT TEST FOR SETUP.

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PUT SENSE SWITCHES 1,3,5 DOWN ONLY AND PUSH START

70421	0760	00	0	00161	HT12	SWT	1
70422	0020	00	0	70437		TRA	++13
70423	0760	00	0	00163		SWT	3
70424	0020	00	0	70437		TRA	++11
70425	0760	00	0	00165		SWT	5
70426	0020	00	0	70437		TRA	++9
70427	0760	00	0	00162		SWT	2
70430	0020	00	0	70432		TRA	++2
70431	0020	00	0	70437		TRA	++6
70432	0760	00	0	00164		SWT	4
70433	0020	00	0	70435		TRA	++2
70434	0020	00	0	70437		TRA	++3
70435	0760	00	0	00166		SWT	6
70436	0020	00	0	70440		TRA	++2
70437	0420	00	0	00000		HPR	
70440	0761	00	0	70421		NOP	HT12
70441	0420	00	0	00000	HT13	HPR	

ERROR HALT SSW 1,3,OR 5

PUT SENSE SWITCHS 2,4,6 DOWN ONLY AND PUSH START

70442	0760	00	0	00162		SWT	2
70443	0020	00	0	70460		TRA	++13
70444	0760	00	0	00164		SWT	4
70445	0020	00	0	70460		TRA	++11
70446	0760	00	0	00166		SWT	6
70447	0020	00	0	70460		TRA	++9
70450	0760	00	0	00161		SWT	1
70451	0020	00	0	70453		TRA	++2
70452	0020	00	0	70460		TRA	++6
70453	0760	00	0	00163		SWT	3
70454	0020	00	0	70456		TRA	++2
70455	0020	00	0	70460		TRA	++3
70456	0760	00	0	00165		SWT	5
70457	0020	00	0	70461		TRA	++2
70460	0420	00	0	00000		HPR	
70461	0020	00	0	70464		TRA	++3
70462	0020	00	0	70442		TRA	HT13+1

ERROR HALT SSW 2,4,OR 6

FOR LOOPING

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S E C T I O N S I X

TEST ABILITY TO ENTER KEYS

70463	254542606060		BCD 1ENK	
70464	0000 00 0 70465	HT16	HTR **1	RESET SENSE SWITCHES FOR
	PROGRAM CONTROL AND PUT ALL ONES IN THE KEYS AND PUSH START .			
70465	0760 00 0 00004		ENK	
70466	0131 00 0 00000		XCA	
70467	0340 00 0 70613		CAS ONES	
70470	0020 00 0 70472		TRA **2	
70471	0020 00 0 70474		TRA **3	
70472	0074 00 4 00104		TSX ERROR-1,4	
70473	0020 00 0 70464		TRA HT16	
70474	0000 00 0 70475		HTR HT17	

PUT ALL ZEROS IN THE KEYS AND PUSH START

70475	0760 00 0 00004	HT17	ENK	ZEROS IN MQ FROM KEYS
70476	-0130 00 0 00000		XCL	
70477	0100 00 0 70502		TZE **3	OK
70500	0074 00 4 00104		TSX ERROR-1,4	
70501	0020 00 0 70464		TRA HT16	
70502	0761 00 0 00000		NOP	
70503	0500 00 0 70645		CLA LOCO	
70504	0601 00 0 00000		STO	
70505	0074 00 4 00106		TSX OK,4	
70506	0020 00 0 70464		TRA HT16	

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* THE FOLLOWING THREE ROUTINES PROVIDE A CHECK OF THE MACHINE CYCLE
* KEY IN A MPY , A DVP AND A FAD.

* MACHINE CYCLE THRU A MULTIPLY

70507	306344477060		BCD 1HTMPY	
70510	-0754 00 0 00000	HT18	PXD ,,	CLEAR AC
70511	0560 00 0 70573		LDQ MPM	-347474747454
70512	0420 00 0 00000		HPR	MACHINE CYCLE MPY
70513	0200 00 0 70574		MPY MPMD	-236363636362

AFTER FIRST DEPRESSING THE MACHINE CYCLE KEY TWICE,
THE FOLLOWING ARE THE RESULTS THAT SHOULD BE OBSERVED IN THE AC,
MQ, AND THE SC AFTER EACH DEPRESSION OF THE MACHINE CYCLE KEY.

AC	S	Q	P	1-35	MQ	S	1-35	SC	TIME
+ 0 0	000000000000	+ 347474747454	43	L					
+ 0 0	000000000000	+ 071717171713	41	L					
+ 0 1	330303030303	+ 216363636362	37	L					
+ 0 1	316363636364	+ 143474747474	35	L					
+ 0 0	033171717171	+ 230717171717	33	L					
+ 0 1	337141414141	+ 346163636363	31	L					
+ 0 1	367630303030	+ 171434747474	27	L					
+ 0 0	045443030302	+ 236307171717	25	L					
+ 0 1	341613636364	+ 047461636363	23	L					
+ 0 1	370342747475	+ 011714347474	21	L					
+ 0 0	045565541413	+ 302363071717	17	L					
+ 0 1	341640360606	+ 160474616363	15	L					
+ 0 1	370350074141	+ 234117143474	13	L					
+ 0 0	045566766524	+ 347023630717	11	L					
+ 0 1	341640626030	+ 271604746163	7	L					
+ 0 1	370350145406	+ 056341171434	5	L					
+ 0 0	045567000776	+ 013470236307	3	L					
+ 0 1	341640630503	+ 002716047461	1	L					
+ 0 0	217304152623	+ 201347023630	0	I					

PLACE IN AUTOMATIC AND PUSH START.

70514	0340 00 0 70575	CAS	MPHA	CHECK AC PORTION
70515	0020 00 0 70517	TRA	**2	
70516	0020 00 0 70521	TRA	**3	
70517	0074 00 4 00104	TSX	ERROR-1,4	
70520	0761 00 0 70510	NOP	HT18	
70521	0131 00 0 00000	XCA		
70522	0340 00 0 70576	CAS	MPHA+1	CHECK MQ
70523	0020 00 0 70525	TRA	**2	
70524	0020 00 0 70526	TRA	**2	
70525	0074 00 4 00105	TSX	ERROR, 4	
70526	0074 00 4 00106	TSX	OK, 4	
70527	0020 00 0 70510	TRA	HT18	

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MACHINE CYCLE THRU A FAD INSTRUCTION

70551	306326212460	BCD 1HTFAD	
70552	0500 00 0 70603	HT20 CLA FADN	-040146723524
70553	0420 00 0 00000	HPR	MACHINE CYCLE FAD
70554	0300 00 0 70604	FAD FADN+1	+036311675061

AFTER FIRST DEPRESSING THE MACHINE CYCLE KEY ONCE, THE FOLLOWING RESULTS SHOULD BE OBSERVED UPON EACH SUBSEQUENT DEPRESSION.

AC S	1-35	MQ S	1-35	FACT TIME
-	040146723524	+	000000000000	0 E
+	036311675061	+	000000000000	1 L
+	036062357214	+	000200000000	2 L
+	040064344307	+	000200000000	6 L
+	040064344307	+	000200000000	7 L
+	040064344307	+	000600000000	4 L
+	036321621437	+	000000000000	4 L
+	035643443076	+	000000000000	5 I
-	035643443076	-	002000000000	0 E

PLACE MACHINE IN AUTOMATIC AND PUSH START.

70555	0340 00 0 70605	CAS	FADP
70556	0020 00 0 70560	TRA	**2
70557	0020 00 0 70562	TRA	**3
70560	0074 00 4 00104	TSX	ERROR-1,4
70561	0761 00 0 70552	NOP	HT20
70562	0131 00 0 00000	XCA	
70563	0340 00 0 70606	CAS	FADP+1
70564	0020 00 0 70566	TRA	**2
70565	0020 00 0 70567	TRA	**2
70566	0074 00 4 00105	TSX	ERROR,4
70567	0074 00 4 00106	TSX	OK,4
70570	0020 00 0 70552	TRA	HT20
70571	0 00000 0 00006	PZE	6
70572	0074 00 4 00111	TSX	LOOP,4

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00101	SVXR4	DEFINE	00101
00105	ERROR	DEFINE	00105
00106	OK	DEFINE	00106
00111	LOOP	DEFINE	00111
70646	TEMP	BSS	2
77777	32K	EQU	32767
70000		END	SECT6