

Pages 1-70

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3 \* V.D.M. PART NO. 92L0107-021J

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RELEASED 2-8-78

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620 MEMORY TEST PART 2

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THIS TEST PROGRAM IS A PART OF THE MAINTAIN TEST PROGRAM SYSTEM E

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43 \* THE MEMO TEST IS DESIGNED TO ASCERTAIN THE OPERATIONAL  
 44 \* STATUS OF THE COMPUTER MEMORY, ANY MEMORY SIZE (4K-32K, 16 OR 18  
 45 \* BIT) CAN BE CHECKED. READ-ONLY-MEMORY(ROM) IS NOT TESTED BY  
 46 \* THIS PROGRAM.  
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 56 \* \* \*  
 57 \* \* AREAS RESERVED BY EXECUTIVE \*  
 58 \* \*\*\*\*\*

59 \* ORG 0  
 60 \* JMP EXECUTIVE  
 61 \* ORG 040  
 62 \* JMPM POWER DOWN ROUTINE

63 \* JMP POWER UP ROUTINE  
 64 \* NOTE: THE TEST EXECUTIVE ALSO RESERVES LOCATIONS 0400 TO 0477  
 65 \* FOR A POINTER TABLE TO STANDARD ROUTINES, AND AS AN AREA  
 66 \* FOR EXECUTIVE DATA. ALL TEST PROGRAMS WORKING WITH THE  
 67 \* EXECUTIVE MUST PRESERVE THIS BLOCK.  
 68 \* STANDARD ROUTINES WILL BE CALLED INDIRECTLY THRU  
 69 \* THIS TABLE  
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000400	76	ORG	0400	
000400	77	OUTA	BSS	1 OUTPUT ONE CHAR ROUTINE
000401	78	OUTB	BSS	1 OUTPUT TWO CHAR ROUTINE
000402	79	OUTC	BSS	1 OUTPUT CR/LF ROUTINE
000403	80	OUTD	BSS	1 OUTPUT MESSAGE ROUTINE
000404	81	OUTE	BSS	1 OUTPUT OCTAL WORD ROUTINE
000405	82	OUTF	BSS	1 OUTPUT OCTAL ADDR ROUTINE
000406	83	OUTG	BSS	1 OUTPUT ERROR MSG ROUTINE
000407	84	OUTH	BSS	1 OUTPUT CONTROL CHAR TO TTY ROUTINE

000410		85	INPA	BSS	1	INPUT ONE CHAR	ROUTINE	
000411		86	INPB	BSS	1	INPUT AND PRINT ONE CHAR	ROUTINE	
000412		87	INPC	BSS	1	INPUT ONE CHAR EDITED	ROUTINE	
000413		88	INPD	BSS	1	INPUT ONE ALPHA CHAR	ROUTINE	
000414		89	INPE	BSS	1	INPUT TWO ALPHA CHAR	ROUTINE	
000415		90	INPF	BSS	1	INPUT COMMA/PERIOD TERMINATION	ROUTINE	
000416		91	INPG	BSS	1	INPUT OCTAL NUMBER	ROUTINE	
000417		92	TOUT	BSS	1	TIME-OUT	ROUTINE	
000420		93	TDLY	BSS	1	TIME DELAY	ROUTINE	
000421		94	SSWT	BSS	1	STANDARD SENSE SWITCH	ROUTINE	
000422		95	SLWE	BSS	1	LOWEST WORD USED BY EXEC		
000423		96	ESZC	BSS	1	MEMORY SIZE DETERMINATION	ROUTINE	
000424		97	SMSM	BSS	1	MEMORY SIZE MESSAGE		
		98	*					
		99	*					
000440		100		ORG	0440			
		101	*					
		102	*			EXECUTIVE DATA TABLE		
		103	*					
000440		104	SFLG	BSS	1	LOOP ON ERROR FLAG, 0=DON'T LOOP 1=LOOP		
000441		105	\$MEM	BSS	1	MEMORY SIZE (HIGHEST AVAIL CORE)		
000442		106	\$CON	BSS	1	0=CONSOLE MODE 1=TTY MODE		
000443		107		BSS	22			
000471		108	\$DCT	BSS	1	DIGIT COUNTER FOR INPG		
		109	*					
000040		110		ORG	040	POWER DOWN INTERRUPT		F
000040	001000	A 111		JMP	PRDN			F
000041	006756	A						
000042		112		ORG	042	POWER UP INTERRUPT		B
000042	001000	A 113		JMP	PRUP			B
000043	006762	A						
		114	*					
000100		115		ORG	0100			
000100	000000	A 116		ENTR	0	INSTRUCTION PARITY ERROR		
000101	001000	A 117		JMP	IPER			
000102	006446	A						
000104		118		ORG	0104			
000104	000000	A 119		ENTR	0	ADDRESS PARITY ERROR		
000105	001000	A 120		JMP	APER			
000106	006505	A						
000110		121		ORG	0110			
000110	000000	A 122		ENTR	0	OPERAND PARITY ERROR		

000111	001000	A	123	JMP	OPER			
000112	006544	A						
000114			124	ORG	0114			
000114	000000	A	125	ENTR	0	TRAP PARITY ERROR		
000115	001000	A	126	JMP	TPER			
000116	006603	A						
			127	*			C	
000500			128	ORG	0500			
			129	*****				
			130	*	MAIN ENTRY POINT		*	
			131	*****				
	000045	A	132	PRTY	SET	045	PARITY HARDWARE DEVICE ADDRESS	
000500	001000	A	133	JMP	STRT			
000501	003400	A						
			134	*****				
			135	*	DATA		*	
			136	*****				
			137	*				
			138	*	DATA TABLE			
			139	*				
000502			140	MTW1	BSS	1	SAVE VALID PATTERN	
000503			141	MTW2	BSS	1	SAVE PATTERN READ	
000504			142	TCYC	BSS	1	TOTLE CYCLES EXECUTED	
000505	000000	A	143	CYCL	DATA	0	CYCLES	
000506	000000	A	144	EMEM	DATA	0	PRINT END MEMO FLAG	
000507	000000	A	145	TEST	DATA	0	TEST NUMBER	
000510			146	TBAA	BSS	1		
000511	000000	A	147	PFK	DATA	0	COUNT OF POWER FAILURES	
000512			148	REP1	BSS	1	REP CTR	
000513			149	REP	BSS	1	REP CTR	
000514	000000	A	150	FRST	DATA	0	FIRST ADDRESS	
000515	000000	A	151	LAST	DATA	0	LAST ADDRESS	
000516			152	BITS	BSS	1	BIT SELECT PATTERN	
000517			153	PAT1	BSS	1	PATTERN 1	
000520			154	PAT2	BSS	1	PATTERN 2	
000521	000000	A	155	TERR	DATA	0	ERROR TOTAL	
000522	000000	A	156	SWCH	DATA	0	PRINT ERROR HDG FLG	
000523	000000	A	157	SAVB	DATA	0		
000524	000000	A	158	SAVX	DATA	0		
000525	000000	A	159	V70I	DATA	0		
000526	177777	A	160	EFLG	DATA	-1	EXTENDED ADDRESSING FLAG	
000527	177777	A	161	TEX	DATA	-1	TESTS TO EXECUTE	

A  
B

F  
F  
H



	162 *							
	163 *	TABLES HAVE THE FORM						
	164 *	NAME	BSS	1	TABLE NAME, INDEX PTR FOR TABLE			
	165 *		BSS	1	MAX LENGTH OR CURRENT LENGTH OF TABLE			
	166 *				(DEPENDING ON ROUTINE ACCESSING TABLE)			
	167 *		BSS	N	BODY OF TABLE, N=OCTAL MAX LENGTH			
000530	000000	A	169	TBLI	DATA	0,6	TABLE OF WORSE CASE PATTERNS	C
000531	000006	A						
000532	000203	A	170		DATA	0203	AMPEX	
000533	004001	A	171		DATA	04001	FABRI-TEK OR LITTON	
000534	000024	A	172		DATA	024,0144,044		B
000535	000144	A						
000536	000044	A						
000537	003000	A	173		DATA	03000		C
000540			174		BSS	2		H
	175 *							
	176 *	TBL0 = MEMORY LOCATIONS IN FIRST 4K TO BE TESTED						
	177 *							
000542	000000	A	178	TBL0	DATA	0,8		
000543	000010	A						
	179 *							B
	180 *	W A R N I N G						B
	181 *							B
	182 *	NUMBER PAIRS MUST REFERENCE AN EVEN NUMBER OF WORDS						B
	183 *	----						B
	184 *							B
000544	000002	A	185		DATA	2,037		B
000545	000037	A						
000546	000044	A	186		DATA	044,077		B
000547	000077	A						
000550	000120	A	187		DATA	0120,0367		C
000551	000367	A						
000552	000622	A	188		DATA	0622,((SM2/2)*2)-1		B
000553	003377	A						
	189 *							
	190 *	TBL CONTAINS BEGINNING AND ENDING ADDRS OF MEMORY SEGMENT TO BE TESTED						
	191 *							
000554			192	TBL	BSS	1	TBL INDEX	
000555			193		BSS	1	TBL LENGTH, VARIABLE UP TO 30	
000556			194		BSS	30	TBL DATA ITEMS	
	195	*****						

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196 *
197 *****
003400 198      ORG      03400      H
199 *****
      003400 A 200 SM2 EQU *      B
003400 013637 A 201 STRT LDA NL RESTORE HEADING B
003401 033425 A 202      LDX RM1      B
003402 055000 A 203      STA 0,1      B
003403 013421 A 204      LDA MTTM+1      H
003404 053431 A 205      STA 02K      H
003405 006010 A 206      LDAI INTI      H
003406 006133 A
003407 053432 A 207      STA 02K+1      H
003410 006010 A 208      LDAI MTOP RETURN TO MTOP B
003411 003415 A
003412 006030 A 209      LDXI PWRR ON POWER FAILURE B
003413 007000 A
003414 055000 A 210      STA 0,1
211 *****
212 * MEMO TOP = COMMON ENTRY POINT *
213 *****
003415 010442 A 214 MTOP LDA SCON CONSOLE MODE ?
003416 001010 A 215      JAZ MTCM YES
003417 003641 A
216 *****
217 * INPUT PARAMETERS (TTY MODE) *
218 *****
003420 033425 A 219 MTTM LDX RM1 'MEMORY TEST' B
003421 002000 A 220      CALL (OUTD)*
003422 100403 A
003423 005001 A 221      TZA PRINT HEADING ONCE
003424 006030 A 222      LDXI HDG1
003425 003630 A
      003425 A 223 RM1 EQU *-1 B
003426 055000 A 224      STA 0,1
003427 002000 A 225 MTT1 CALL (ESZC)* DETERMINE MEMORY SIZE
003430 100423 A
      003431 A 226 02K EQU * F
003431 002000 A 227      JMPM INTI GET INTERRUPT LOCATION F
003432 006133 A
003433 006010 A 228      LDAI 05000 NOP F
003434 005000 A

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1182T UTI - CORE BUSINESS FORMS, INC. F

003435	053431	A	229		STA	02K			F
003436	053432	A	230		STA	02K+1			F
003437	053427	A	231		STA	MTT1			F
003440	053430	A	232		STA	MTT1+1			F
003441	100445	A	233		EXC	0400+PRTY	ENABLE PARITY INTERRUPTS		
003442	030424	A	234		LDX	SMSM	PRINT MEMORY SIZE MESSAGE		
003443	002000	A	235		CALL	(OUTD)*			
003444	100403	A							
	003445	A	236	02K1	EQU	*			H
003445	006030	A	237		LDXI	HOG2	*4K MEMORY MODULE(S) TO BE TESTED =		
003446	007014	A							
003447	002000	A	238		CALL	(OUTD)*			
003450	100403	A							
003451	005001	A	239		TZA		INIT TBL		
003452	050554	A	240		STA	TBL			
003453	006010	A	241		LDAI	30			
003454	000036	A							
	003454	A	242	036	EQU	**1			B
003455	050555	A	243		STA	TBL+1			
003456	007400	A	244	MTT2	ROF		RESET COMMA INDICATOR		
003457	006010	A	245		LDAI	MTT2	RETURN TO MTT2		B
003460	003456	A							
003461	006030	A	246		LDXI	PWRR	ON POWER FAILURE		B
003462	007000	A							
003463	055000	A	247		STA	0,1			B
003464	002000	A	248		CALL	(INPG)*	INPUT N		
003465	100416	A							
003466	001000	A	249		JMP	MTOP	SS3		
003467	003415	A							
003470	001000	A	250		JMP	02K1	BACKSLASH		H
003471	003445	A							
003472	007401	A	251		SOF		COMMA		
003473	005011	A	252		MERG	011	NOP		
003474	020471	A	253		LDB	SDCT	TEST ALL OF MEMORY ?		
003475	001020	A	254		JBZ	MTT4	YES,GOTO MTT4		
003476	003560	A							
003477	002000	A	255		CALL	MTP2,TPR,TTR	PUT INTO TBL,PARAMETER ERROR,TBL SIZE ERR		
003500	004035	A							
003501	003622	A							
003502	003614	A							
003503	001001	A	256		JOE	MTT2	GET NEXT N IF COMMA IND SET		
003504	003456	A							

003505	010554	A	257	MTT3	LDA	TBL	FIX TBL LENGTH	
003506	050555	A	258		STA	TBL+1		
003507	006030	A	259	MTT3A	LXI	HDG16	TESTS TO EXECUTE*	H
003510	007335	A						
003511	002000	A	260		CALL*	OUTD		H
003512	100403	A						
003513	005001	A	261		TZA			H
003514	050527	A	262		STA	TEX		H
003515	007400	A	263	MTT3B	ROP			H
003516	002000	A	264		CALL*	INPG	GET TEST NO.	H
003517	100416	A						
003520	001000	A	265		JMP	MTOP	SS3	H
003521	003415	A						
003522	001000	A	266		JMP	MTT3A	SS3	H
003523	003507	A						
003524	007401	A	267		SOF		COMMA	H
003525	005000	A	268		NOP			H
003526	020471	A	269		LDB	SDCT	CORE TESTS/SC TESTS	H
003527	001020	A	270		JBZ	MTT3D		H
003530	003547	A						
003531	006150	A	271		ANAI	017		H
003532	000017	A						
003533	005311	A	272		DAR			H
003534	006120	A	273		ADDI	04240	BUILD SHIFT	H
003535	004240	A						
003536	053540	A	274		STA	MTT3C		H
003537	005101	A	275		INCR	1		H
003540	004240	A	276	MTT3C	LRLA	000		H
003541	110527	A	277		ORA	TEX		H
003542	050527	A	278		STA	TEX		H
003543	001001	A	279		JOF	MTT3B		H
003544	003515	A						
003545	001000	A	280		JMP	MTT5	GET CYCLES	H
003546	003565	A						
003547	006010	A	281	MTT3D	LDAI	077	CORE DEFAULT MASK	H
003550	000077	A						
003551	001001	A	282		JOF	**4		H
003552	003555	A						
003553	006010	A	283		LDAI	0135	SC DEFAULTMASK	H
003554	000135	A						
003555	050527	A	284		STA	TEX		H
003556	001000	A	285		JMP	MTT5		

003557	003565	A				
003560	002000	A	286	MTT4	CALL	MTP1,TTR TBL=ALL OF MEMORY
003561	003734	A				
003562	003614	A				
003563	001000	A	287		JMP	MTT3
003564	003505	A				
003565	006030	A	288	MTT5	LDXI	HDG6 CYCLES *
003566	007071	A				
003567	002000	A	289		CALL	(OUTD)*
003570	100403	A				
003571	002000	A	290		CALL	(INPG)* INPUT CYCLES
003572	100416	A				
003573	001000	A	291		JMP	MTTM SS3 TERMINATE
003574	003420	A				
003575	001000	A	292		JMP	MTT5 BACKSLASH
003576	003565	A				
003577	001000	A	293		JMP	MTT6 COMMA (PRINT 'END MEMO')
003600	003606	A				
003601	050505	A	294		STA	CYCL SAVE CYCLES
003602	005001	A	295		TZA	
003603	050506	A	296		STA	EMEM SET FLAG TO SUPPRESS END MEMO
003604	001000	A	297		JMP	MINT BRANCH TO TEST INITIALIZATION
003605	004163	A				
003606	050505	A	298	MTT6	STA	CYCL SAVE CYCLES
003607	005001	A	299		TZA	
003610	005211	A	300		CPA	
003611	050506	A	301		STA	EMEM SET FLAG TO PRINT END MEMO
003612	001000	A	302		JMP	MINT
003613	004163	A				
003614	006030	A	303	TTR	LDXI	HDG3 'TOO MANY PARAMETERS'
003615	007034	A				
003616	002000	A	304		CALL	(OUTD)*
003617	100403	A				
003620	001000	A	305		JMP	MTT1
003621	003427	A				
003622	006030	A	306	TPR	LDXI	HDG5 'MODULE NOT WITHIN MEMORY RANGE'
003623	007050	A				
003624	002000	A	307		CALL	(OUTD)*
003625	100403	A				
003626	001000	A	308		JMP	MTT1
003627	003427	A				
	106612	A	309	CRLF	SET	0106612 CARRIAGE RETURN / LINE FEED

003630	106612	A	310	HDG1	DATA	CRLF, 'MEMORY TEST', CRLF, 0		
003631	146705	A						
003632	146717	A						
003633	151331	A						
003634	120324	A						
003635	142723	A						
003636	152240	A						
003637	106612	A						
003640	000000	A						
	003637	A	311	NL	EQU	HDG1+7	B	
			312	*				
			313	*****				
			314	*	INPUT PARAMETERS (CONSOLE MODE)		*	
			315	*****				
003641	002000	A	316	MTCM	CALL	(ESZC)* X=ADDRS OF HIGHEST AVAILABLE CORE		
003642	100423	A						
003643	100445	A	317		EXC	0400+PRTY ENABLE PARITY INTERRUPTS		
003644	030441	A	318		LDX	\$MEM		
003645	005103	A	319		INCR	03 SET A REG FOR ALL MEM, CONTINUES EXECUTION		
003646	004541	A	320		LLSR	1 INIT TBL		
003647	050554	A	321		STA	TBL		
003650	013454	A	322		LDA	036	B	
003651	050555	A	323		STA	TBL+1		
003652	005021	A	324		TBA	A=10---0		
003653	001000	A	325		JMP	MTC1+1		
003654	003656	A						
003655	005001	A	326	MTC1	TZA			
003656	000037	A	327		HLT	037 INPUT PARAMETERS		
003657	001004	A	328		JAN	MTC4 INPUT CYCLES? YES, GOTO MTC4		
003660	003676	A						
003661	002000	A	329		CALL	MTC2, MTC3 PUT INTO TBL		
003662	004035	A						
003663	003667	A						
003664	003672	A						
003665	001000	A	330		JMP	MTC1		
003666	003655	A						
003667	005301	A	331	MTC2	DECR	01 PARAMETER EXCEEDS MEM A=-1		
003670	001000	A	332		JMP	MTC1+1		
003671	003656	A						
003672	013673	A	333	MTC3	LDA	*+1 TOO MANY PARAMETERS		
003673	000077	A	334		HLT	077		
003674	001000	A	335		JMP	MTCM		

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003675 003641 A
003676 006150 A 336 MTC4 ANAI 077777 STORE CYCLES
003677 077777 A
003700 050505 A 337 STA CYCL
003701 010554 A 338 LDA TBL TEST ALL OF MEMORY
003702 001010 A 339 JAZ MTC6
003703 003710 A
003704 010554 A 340 MTC5 LDA TBL FIX TBL LENGTH
003705 050555 A 341 STA TBL+1
003706 001000 A 342 JMP MINT
003707 004163 A
003710 002000 A 343 MTC6 CALL MTP1,MTC3 TBL=ALL OF MEMORY
003711 003734 A
003712 003672 A
003713 001000 A 344 JMP MTC5
003714 003704 A
345 *****
346 * PARAMETER INPUT SUBROUTINES *
347 *****
348 *
349 * TBL = ALL OF MEMORY
350 *
003715 005302 A 351 MTP3 DECR 02
003716 005123 A 352 INCR 023
003717 002000 A 353 CALL MTP2,MTP7,MTP5 TBL = MODULE (A)
003720 004035 A
003721 003732 A
003722 003725 A
003723 001000 A 354 JMP MTP3+1
003724 003716 A
003725 033734 A 355 MTP5 LDX MTP1 TOO MANY PARAMETERS
003726 035000 A 356 LDX 0,1
003727 073734 A 357 STX MTP1
003730 001000 A 358 JMP (MTP1)*
003731 103734 A
003732 043734 A 359 MTP7 INR MTP1 NORMAL EXIT
003733 001000 A 360 JMP 0
003734 000000 A
003734 361 MTP1 BES 0 ENTRY
003735 001000 A 362 JMP MTP3
003736 003715 A
363 *

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		364 *	TBL = MODULE (A)					
		365 *						
003737	001010	A	366	MTP4	JAZ	MTP8	TBL=1ST 4K? YES,GOTO MTP8	
003740	004011	A						
003741	004254	A	367		LRLA	12	PARAMETER EXCEEDS MEMORY ?	
003742	140441	A	368		SUB	SMEM	YES,GOTO MTP6	
003743	001002	A	369		JAP	MTP6		
003744	004004	A						
003745	120441	A	370		ADD	SMEM		
003746	002000	A	371		CALL	UADA,TBL,MTP0	PUT PARAMETERS INTO TBL	
003747	004103	A						
003750	000554	A						
003751	004025	A						
003752	005014	A	372		TAX		SAVE BLOCK	E
003753	010422	A	373		LDA	SLWE	LOWEST LOCATION USED BY EXEC	E
003754	153761	A	374		ANA	010K		E
003755	001010	A	375		JAZ	MPTB	MAINTAIN IT	E
003756	004040	A						
003757	005041	A	376		TXA		GET BLOCK	E
003760	006140	A	377		SUBI	010000		E
003761	010000	A						
	003761	A	378	010K	EGU	*-1		E
003762	001010	A	379		JAZ	*+4	LND 4K	E
003763	003766	A						
003764	001000	A	380		JMP	MPTB		E
003765	004040	A						
003766	006010	A	381		LDAI	013777	SKIP UNDER MAINTAIN III	E
003767	013777	A						
003770	001000	A	382		JMP	MPT9+2		E
003771	003774	A						
003772	006110	A	383	MPT9	GRAI	07777	FULL 4K	E
003773	007777	A						
003774	002000	A	384		CALL	UADA,TBL,MTP0		
003775	004103	A						
003776	000554	A						
003777	004025	A						
004000	044034	A	385		INR	MTP2	NORMAL EXIT	
004001	044033	A	386		INR	MTP2		
004002	001000	A	387		JMP	(MTP2)*		
004003	104035	A						
004004	034030	A	388	MTP6	LDX	MTP2	PARAMETER EXCEEDS MEM,EXIT	
004005	035000	A	389		LDX	0,1		

```

004006 074001 A 390 STX **2
004007 001000 A 391 JMP 0
004010 000000 A
004011 005001 A 392 MTP8 TZA TBL=1ST 4K
004012 050542 A 393 STA TBL0
004013 002000 A 394 CALL UACA,TBL0,MTPA TRANSFER TBL5
004014 004154 A
004015 000542 A
004016 004032 A
004017 002000 A 395 CALL UADA,TBL,MTP0
004020 004103 A
004021 000554 A
004022 004025 A
004023 001000 A 396 JMP MTP8+2
004024 004013 A
004025 034007 A 397 MTP0 LDX MTP2 TBL OVFL EXIT
004026 035001 A 398 LDX 1,1
004027 074001 A 399 STX **2
004030 001000 A 400 JMP 0
004031 000000 A
004032 044002 A 401 MTPA INR MTP2 NORMAL EXIT
004033 044001 A 402 INR MTP2
004034 001000 A 403 JMP 0
004035 000000 A
004035 404 MTP2 BES 0 ENTRY
004036 001000 A 405 JMP MTP4
004037 003737 A
004040 005041 A 406 MPTB TXA
004041 001000 A 407 JMP MPT9
004042 003772 A
408 *
409 *
410 *
411 *
412 * * PUT ITEM INTO TABLE *
413 *
414 *
415 * CALL UADA,TBLPTR,OVFLEXIT INCR ( )TBLPTR,IF.GT.( )TBLPTR+1
416 * GOTO OVFLEXIT,ELSE
417 * ( )TBLPTR+( )TBLPTR)=A
418 * TBL=INDEX,TBLSIZE,ITEM1,...,ITEMN
004043 034037 A 419 UA0B LDX UADA B=TBLPTR
    
```

E  
E

004044	025000	A	420		LDB	0,1		
004045	046000	A	421		INR	0,2	INCR ( )TBLPTR	
004046	016001	A	422		LDA	1,2	IF ( )TBLPTR .GT. ( )(TBLPTR+1),GOTO ENDEXIT	
004047	146000	A	423		SUB	0,2		
004050	001004	A	424		JAN	UADC		
004051	004074	A						
004052	005121	A	425		INCR	021		
004053	126000	A	426		ADD	0,2		
004054	005311	A	427		DAR			F
004055	005012	A	428		TAR			F
004056	016000	A	429		LDA	0,2	GET PREVIOUS ENTRY	F
004057	005111	A	430		IAR			F
004060	144040	A	431		SUB	UADD	SEE IF NEXT CONTIGUOUS	F
004061	001010	A	432		JAZ	UADE	YUP = NEXT	F
004062	004111	A						
004063	005122	A	433		ISR			F
004064	014034	A	434		LDA	UADD	RESTORE A,B,X	
004065	056000	A	435		STA	0,2		
004066	024033	A	436		LDB	UADD+1		
004067	034033	A	437		LDX	UADD+2		
004070	044012	A	438		INR	UADA	EXIT (RETURN+2)	
004071	044011	A	439		INR	UADA		
004072	001000	A	440		JMP	(UADA)*		
004073	104103	A						
004074	015001	A	441	UADC	LDA	1,1	SET EXIT	
004075	054004	A	442		STA	UADA=1	RESTORE A,B,X	
004076	014022	A	443		LDA	UADD		
004077	024022	A	444		LDB	UADD+1		
004100	034022	A	445		LDX	UADD+2		
004101	001000	A	446		JMP	*	OVFLEXIT (RETURN+1)*	
004102	004101	A						
004103	000000	A	447	UADA	ENTR		ENTRY POINT	
004104	054014	A	448		STA	UADD	SAVE A,B,X	
004105	064014	A	449		STB	UADD+1		
004106	074014	A	450		STX	UADD+2		
004107	001000	A	451		JMP	UADB	CONTINUE	
004110	004043	A						
004111	025000	A	452	UADE	LDB	0,1		F
004112	016000	A	453		LDA	0,2	GET NUMBER OF ENTRIES	F
004113	006140	A	454		SUBI	2	DECREMENT BY 2	F
004114	000002	A						
004115	056000	A	455		STA	0,2		F

004116	014002	A	456	LDA	UADD	RESTORE A	F
004117	001000	A	457	JMP	UADC=6	NORMAL EXIT	F
004120	004066	A					
004121			458	UADD	BSS	3	
			459	*			
			460	*			
			461	*	*****		
			462	*	*	*	
			463	*	* GET NEXT ITEM FROM TABLE *		
			464	*	*	*	
			465	*	*****		
			466	*	CALL	UACA,TBLPTR,ENDEXIT (A)=()(TBL+1+()(TBLPTR))	
			467	*			
			468	*	TBL=INDEX,TBLSIZE,ITEM1,...,ITEMN		
004124	034027	A	469	UACB	LDX	UACA (B)=TBLPTR	
004125	025000	A	470		LDB	0,1	
004126	046000	A	471		INR	0,2 INCR ()TBLPTR	
004127	016001	A	472		LDA	1,2 IF ()TBLPTR .GT. ()(TBLPTR+1),GOTO ENDEXIT	
004130	146000	A	473		SUB	0,2	
004131	001004	A	474		JAN	UACC	
004132	004145	A					
004133	005121	A	475		INCR	021 (A)=()(TBLPTR+1+()(TBLPTR))	
004134	126000	A	476		ADD	0,2	
004135	005012	A	477		TAB		
004136	016000	A	478		LDA	0,2	
004137	024021	A	479		LDB	UACD RESTORE B,X	
004140	034021	A	480		LDX	UACD+1	
004141	044012	A	481		INR	UACA EXIT (RETURN+2)	
004142	044011	A	482		INR	UACA	
004143	001000	A	483		JMP	(UACA)*	
004144	104154	A					
004145	016001	A	484	UACC	LDA	1,2 (A)=TBLSIZE	
004146	035001	A	485		LDX	1,1 SETEXIT	
004147	074003	A	486		STX	UACA-1	
004150	024010	A	487		LDB	UACD RESTORE B,X	
004151	034010	A	488		LDX	UACD+1	
004152	001000	A	489		JMP	0 EXIT (RETURN+1)* #GOTO ENDEXIT	
004153	000000	A					
004154	000000	A	490	UACA	ENTR	ENTRY POINT	
004155	064003	A	491		STB	UACD SAVE B,X	
004156	074003	A	492		STX	UACD+1	
004157	001000	A	493		JMP	UACB CONTINUE	

004160	004124	A	494	UACD	BSS	2	(B),(X)		
004161			495	*					
			496	*****					
			497	*	SUBTEST DRIVER, AND CYCLS COUNTER			*	
			498	*****					
004163	005001	A	499	MINT	TZA				
004164	050521	A	500		STA	TERR	INIT ERROR CTR		
004165	050522	A	501		STA	SWCH	SET TO PRINT ERROR TABLE HEADING		
004166	050504	A	502		STA	TCYC	TOTAL CYCLES EXECUTED = 0		
004167	050510	A	503		STA	TBAA		B	
004170	002000	A	504		JMPM	OTAC		C	
004171	006742	A							
004172	007400	A	505	MIN1	ROF		RESET ERROR INDICATOR		
004173	006010	A	506		LDAI	MIN1	RETURN TO MIN1	B	
004174	004172	A							
004175	006030	A	507		LDXI	PWRR	ON POWER FAILURE	B	
004176	007000	A							
004177	055000	A	508		STA	0,1		B	
004200	010527	A	509		LDA	TEX		H	
004201	006150	A	510		ANAI	1		H	
004202	000001	A							
004203	001010	A	511		JAZ	MIN2-2	SKIP UNIQUE ADDRESS	H	
004204	004207	A							
004205	002000	A	512		CALL	TUAT	UNIQUE ADDRS		
004206	004556	A							
004207	005001	A	513		TZA		INIT TBL		
004210	050554	A	514		STA	TBL			
004211	002000	A	515	MIN2	CALL	UACA,TBL,MIN3	GET FRST ADDRS		
004212	004154	A							
004213	000554	A							
004214	004324	A							
004215	050514	A	516		STA	FRST			
004216	002000	A	517		CALL	UACA,TBL,MIN3	GET LAST ADDRS		
004217	004154	A							
004220	000554	A							
004221	004324	A							
004222	050515	A	518		STA	LAST			
004223	006010	A	519		LDAI	2		H	
004224	000002	A							
004225	002000	A	520		JMPM	EXTT		H	
004226	004316	A							

004227	002000	A	521	JMPM	TBAT	BINARY ADDRESS	B
004230	005425	A					
004231	010504	A	522	LDA	TCYC	FIRST PASS	B
004232	001010	A	523	JAZ	*+4	YES	B
004233	004236	A					
004234	001000	A	524	JMP	**7	NO	B
004235	004243	A					
004236	010522	A	525	LDA	SWCH	ABORT IF ANY ERRORS	B
004237	001010	A	526	JAZ	*+4		B
004240	004243	A					
004241	001000	A	527	JMP	TERM		B
004242	004357	A					
004243	005001	A	528	TZA			B
004244	050510	A	529	STA	TBAA		B
004245	006010	A	530	LDAI	4		H
004246	000004	A					
004247	002000	A	531	JMPM	EXTT		H
004250	004316	A					
004251	002000	A	532	CALL	TAZT	ALL ZEROS	
004252	004715	A					
004253	006010	A	533	LDAI	010		H
004254	000010	A					
004255	002000	A	534	JMPM	EXTT		H
004256	004316	A					
004257	002000	A	535	CALL	TAOT	ALL ONES	
004260	004742	A					
004261	006010	A	536	LDAI	020		H
004262	000020	A					
004263	002000	A	537	JMPM	EXTT		H
004264	004316	A					
004265	002000	A	538	CALL	TCBT	CHECKERBOARD	
004266	004767	A					
004267	006010	A	539	LDAI	040		H
004270	000040	A					
004271	002000	A	540	JMPM	EXTT		H
004272	004316	A					
004273	002000	A	541	CALL	TBCT	BIT COMPLIMENT	B
004274	005145	A					
004275	006010	A	542	LDAI	0100		H
004276	000100	A					
004277	002000	A	543	JMPM	EXTT		H
004300	004316	A					

004301	002000	A	544	CALL	TACD	ADJACENT CELL DISTURB	H
004302	005536	A					
004303	006010	A	545	LDAI	0200		H
004304	000200	A					
004305	002000	A	546	JMPM	EXTT		H
004306	004316	A					
004307	002000	A	547	CALL	NSQR	N SQUARED	H
004310	005711	A					
004311	001000	A	548	JMP	MIN2	CONTINUE TO NEXT CASE	
004312	004211	A					
004313	044002	A	549	EXTT1	INR	EXTT	H
004314	044001	A	550		INR	EXTT	H
004315	001000	A	551		JMP	EXTT	H
004316	004316	A					
004316			552	EXTT	BES	0	EXECUTE THIS TEST?
004317	150527	A	553		ANA	TEX	H
004320	001010	A	554		JAZ	EXTT1	H
004321	004313	A					
004322	001000	A	555		JMP*	EXTT	H
004323	104316	A					
004324	002000	A	556	MIN3	CALL	DEM	DISPLAY 'END MEMO'
004325	004337	A					
004326	010505	A	557		LDA	CYCL	CONTINUES ?
004327	001010	A	558		JAZ	MIN1	YES,GOTO MIN1
004330	004172	A					
004331	005311	A	559		DAR		NO,DONE ?
004332	050505	A	560		STA	CYCL	
004333	001010	A	561		JAZ	TERM	YES,GOTO TERM
004334	004357	A					
004335	001000	A	562		JMP	MIN1	NO,CONTINUE TO MIN1
004336	004172	A					
004337	000000	A	563	DEM	ENTR	0	DISPLAY END MEMO
004340	040504	A	564		INR	TCYC	TCYC = TCYC+1
004341	002000	A	565		JMPM	OTAC	
004342	006742	A					
004343	010442	A	566		LDA	SCON	CONSOLE MODE? YES,RETURN
004344	001010	A	567		JAZ	(DEM)*	
004345	104337	A					
004346	010506	A	568		LDA	EMEM	SUPPRESS MESSAGE ? YES,RETURN
004347	001010	A	569		JAZ	(DEM)*	
004350	104337	A					
004351	006030	A	570		LDXI	HDBG	'END MEMO'

C



004352	007100	A							
004353	002000	A	571	CALL	(OUTD)*				
004354	100403	A							
004355	001000	A	572	JMP	(DEM)*	RETURN			
004356	104337	A							
			573	*****					
			574	*	TERMINATE TESTS			*	
			575	*****					
004357	100545	A	576	TERM	EXC	0500+PRTY	DISABLE PARITY INTERRUPTS		
004360	010442	A	577		LDA	SCON	TERMINATE TEST, REPORT TOTALS		
004361	001010	A	578		JAZ	TERN	MODE = CONSOLE ? YES, GO TO TERN		
004362	004421	A							
004363	006030	A	579		LDXI	H0G9	'ERROR TOTAL =', TERR		
004364	007106	A							
004365	002000	A	580		CALL	(OUTD)*			
004366	100403	A							
004367	010521	A	581		LDA	TERR			
004370	002000	A	582		CALL	(OUTE)*			
004371	100404	A							
004372	006030	A	583		LDXI	H011	'NO. CYCLES RUN ='		
004373	007145	A							
004374	002000	A	584		CALL	(OUTD)*			
004375	100403	A							
004376	010504	A	585		LDA	TCYC	TOTAL CYCLES EXECUTED		
004377	002000	A	586		CALL	(OUTE)*			
004400	100404	A							
004401	010511	A	587		LDA	PFK	ANY POWER FAILURES?	B	
004402	001010	A	588		JAZ	TERO	=NO=	B	
004403	004415	A							
004404	006030	A	589		LDXI	PFKM	'POWER FAILURES'	B	
004405	007253	A							
004406	002000	A	590		CALL	(OUTD)*		B	
004407	100403	A							
004410	005004	A	591		TZX			B	
004411	010511	A	592		LDA	PFK	COUNT	B	
004412	070511	A	593		STX	PFK	CLEAR COUNT	B	
004413	002000	A	594		CALL	(OUTE)*		B	
004414	100404	A							
	004415	A	595	TERO	EQU	*		B	
004415	002000	A	596		CALL	(OUTC)*			
004416	100402	A							
004417	001000	A	597		JMP	MTOP	CONTINUE		

004420	003415	A						
004421	010521	A	598	TERN	LDA	TERR	A = TOTAL ERRORS	
004422	020504	A	599		LDB	TCYC	B = NO. CYCLES	
004423	030507	A	600		LDX	TEST	X = CURRENT (OR LAST) TEST	
004424	000777	A	601		HLT	0777	DISPLAY TOTALS	
004425	001000	A	602		JMP	MTOP	CONTINUE	
004426	003415	A						

603 \*\*\*\*\*  
 604 \* ERROR REPORTING ROUTINE \*  
 605 \*\*\*\*\*

004427	000000	A	606	MERR	ENTR	0		
004430	007401	A	607		SOF			
004431	040521	A	608		INR	TERR	INCR ERR CTR	
004432	060523	A	609		STB	SAVB	SAVE B (#TEST CYCLES)	
004433	070524	A	610		STX	SAVX	ERROR ADDRESS	
004434	002000	A	611		JMPM	OTAC		C
004435	006742	A						
004436	010507	A	612		LDA	TEST		
004437	006150	A	613		ANAI	0777	SAVE HALT	B
004440	000777	A						
004441	054004	A	614		STA	ERR1+2	GET TEST NO.	
004442	010502	A	615		LDA	MTW1	EXPECTED	
004443	020503	A	616		LDB	MTW2	ACTUAL	
004444	002000	A	617	ERR1	CALL	(SSWT)*	CALL SENSE SWITCH ROUTINE	
004445	100421	A						
004446	000000	A	618		DATA	0	TEST#	
004447	104456	A	619		DATA	(ERPO)*	ERR PRINTOUT	
004450	004357	A	620		DATA	TERM	SS3 EXIT	
004451	004542	A	621		DATA	ELOP	LOOP ON ERROR	
004452	020523	A	622		LDB	SAVB	RESTORE B	
004453	030524	A	623		LDX	SAVX		
004454	001000	A	624		JMP*	MERR	PROCEED WITH TEST	
004455	104427	A						

625 \* ERROR PRINTOUT SUBROUTINE

004456	000000	A	626	ERPO	ENTR	0		
004457	002000	A	627		CALL	(OUTC)*		
004460	100402	A						
004461	010522	A	628		LDA	SWCH		
004462	001010	A	629		JAZ	**4		
004463	004466	A						
004464	001000	A	630		JMP	ERP1		
004465	004473	A						

004466	040522	A	631	INR	SWCH	SET TO BYPASS HEADING	
004467	006030	A	632	LDXI	HG10		
004470	007117	A					
004471	002000	A	633	CALL	(OUTD)*		
004472	100403	A					
004473	010507	A	634	ERP1 LDA	TEST	TEST NO.	
004474	002000	A	635	CALL	(OUTE)*		
004475	100404	A					
004476	010524	A	636	LDA	SAVX	ADDR	
004477	002000	A	637	CALL	(OUTE)*		
004500	100404	A					
004501	006010	A	638	LDAI	0120240		
004502	120240	A					
004503	002000	A	639	CALL	(OUTB)*		
004504	100401	A					
004505	010502	A	640	LDA	MTW1	EXP	
004506	002000	A	641	CALL	(OUTE)*		
004507	100404	A					
004510	006010	A	642	LDAI	0120240		
004511	120240	A					
004512	002000	A	643	CALL	(OUTB)*		
004513	100401	A					
004514	002000	A	644	CALL	(OUTA)*		
004515	100400	A					
004516	010503	A	645	LDA	MTW2	ACTUAL	
004517	002000	A	646	CALL	(OUTE)*		
004520	100404	A					
004521	006010	A	647	LDAI	' '		F
004522	120240	A					
004523	002000	A	648	CALL	(OUTA)*		F
004524	100400	A					
004525	010504	A	649	LDA	TCYC	GET TOTAL CYCLES PERFORMED	F
004526	005111	A	650	IAR		MAKE IT THE CURRENT CYCLE	F
004527	002000	A	651	CALL	(OUTE)*		F
004530	100404	A					
004531	010510	A	652	LDA	TBAA	TBCY TEST WORD	B
004532	001010	A	653	JAZ	**4		B
004533	004536	A					
004534	002000	A	654	CALL	(OUTE)*		B
004535	100404	A					
004536	001000	A	655	JMP*	ERPO	RETURN	
004537	104456	A					

			656	*****			
			657	*	LOOP ON ERROR		*
			658	*****			
004540	001200	A	659	JSS2	ERR1-2	SS2 EXIT FROM LOOPING	
004541	004442	A					
004542	001400	A	660	ELOP	JSS3	TERM	SS3 EXIT
004543	004357	A					
004544	010502	A	661	LDA	MTW1		
004545	055000	A	662	STA	0,1		B
004546	005000	A	663	NOP			
004547	135000	A	664	ERA	0,1	READ ERROR WORD	
004550	001010	A	665	JAZ	ELOP-2	ERROR AGAIN? NO, TRY AGAIN	
004551	004540	A					
004552	130502	A	666	ERA	MTW1	RESTORE	
004553	050503	A	667	STA	MTW2		
004554	001000	A	668	JMP	ERR1-2	REPORT	
004555	004442	A					
			669	*****			
			670	*	SUBTEST ROUTINES		*
			671	*****			
			672	*			
			673	*	UNIQUE ADDRS		
			674	*			
004556	000000	A	675	TUAT	ENTR	0	
004557	005101	A	676		INCR	1	TEST = 1
004560	050507	A	677		STA	TEST	B
004561	005001	A	678		TZA		INIT TBL
004562	050554	A	679		STA	TBL	
004563	002000	A	680	TUAA	CALL	UACA, TBL, TUAB	GET FRST
004564	004154	A					
004565	000554	A					
004566	004603	A					
004567	050514	A	681		STA	FRST	
004570	002000	A	682		CALL	UACA, TBL, TUAB	GET LAST
004571	004154	A					
004572	000554	A					
004573	004603	A					
004574	050515	A	683		STA	LAST	
004575	001400	A	684	JSS3	TERM	SS3 TERMINATE TESTS	
004576	004357	A					
004577	002000	A	685		CALL	IUA	INIT MEMORY
004600	004627	A					

004601	001000	A	686	JMP	TUAA	CONTINUE	
004602	004563	A					
004603	005001	A	687	TUAB	TZA	INIT TBL	
004604	050554	A	688		STA TBL		
004605	005101	A	689		INCR 1	REP = 1	B
004606	050513	A	690		STA REP		
004607	002000	A	691	TUAC	CALL	UACA, TBL, (TUAT)* GET FRST	
004610	004154	A					
004611	000554	A					
004612	104556	A					
004613	050514	A	692		STA FRST		
004614	002000	A	693		CALL	UACA, TBL, (TUAT)* GET LAST	
004615	004154	A					
004616	000554	A					
004617	104556	A					
004620	050515	A	694		STA LAST		
004621	001400	A	695		J993 TERM	993 TERMINATE TESTS	
004622	004357	A					
004623	002000	A	696		CALL TUA	TEST UNIQUE ADDRS	
004624	004641	A					
004625	001000	A	697		JMP TUAC	CONTINUE	
004626	004607	A					
			698 *			INIT UNIQUE ADDRS	
004627	000000	A	699	IUA	ENTR 0		
004630	030514	A	700		LDX FRST		
004631	005041	A	701	IUA1	TXA	( )X = X	
004632	055000	A	702		STA 0,1		
004633	005144	A	703		IXR	X = X+1	
004634	140515	A	704		SUB LAST	DONE ?	
004635	001004	A	705		JAN IUA1	NO, CONTINUE	
004636	004631	A					
004637	001000	A	706		JMP (IUA)*	RETURN	
004640	104627	A					
			707 *			TEST UNIQUE ADDRS	
004641	000000	A	708	TUA	ENTR 0		
004642	020513	A	709		LDB REP	B = REP	
004643	030514	A	710		LDX FRST	X = FRST	
004644	010526	A	711	TUA1	LDA EFLG		F
004645	001010	A	712		JAZ TUA2		F
004646	004655	A					
004647	005041	A	713		TXA		F
004650	074001	A	714		STX *+2		F

004651	006137	A	715	ERAE	000			
004652	000000	A						
004653	001000	A	716	JMP	TUA3		F	
004654	004657	A						
004655	005041	A	717	TUA2	TXA		F	
004656	135000	A	718	ERA	0,1		F	
004657	001010	A	719	TUA3	JAZ	**7	F	
004660	004666	A						
004661	070502	A	720	STX	MTW1	NO,CALL MERR		
004662	130502	A	721	ERA	MTW1			
004663	050503	A	722	STA	MTW2			
004664	002000	A	723	CALL	MERR			
004665	004427	A						
004666	005041	A	724	TXA		A = X		
004667	005211	A	725	CPA		COMPLEMENT ADDRESS	H	
004670	055000	A	726	STA	0,1		H	
004671	135000	A	727	ERA	0,1		H	
004672	001010	A	728	JAZ	**7		H	
004673	004701	A						
004674	070502	A	729	STX	MTW1		H	
004675	130502	A	730	ERA	MTW1		H	
004676	050503	A	731	STA	MTW2		H	
004677	002000	A	732	CALL	MERR		H	
004700	004427	A						
004701	005041	A	733	TXA			H	
004702	005144	A	734	IXR		X = X+1		
004703	140515	A	735	SUB	LAST	DONE ?		
004704	001004	A	736	JAN	TUA1	NO,CONTINUE		
004705	004644	A						
004706	001020	A	737	JBZ	TUA+1	CONTINUES ? YES		
004707	004642	A						
004710	005322	A	738	DBR		DONE ?		
004711	001020	A	739	JBZ	(TUA)*	YES,RETURN		
004712	104641	A						
004713	001000	A	740	JMP	TUA+1	NO,CONTINUE		
004714	004642	A						
	741	*****						
	742	*						
	743	* ALL ZEROS						
	744	*						
004715	000000	A	745	TAZT	ENTR	0	ENTRY/EXIT	
004716	002000	A	746	CALL	IAZ		INIT	

004717	004726	A							
004720	014231	A	747	LDA	03	REP = 3		B	
004721	050513	A	748	STA	REP				
004722	002000	A	749	CALL	TES	TEST PATTERN			
004723	006070	A							
004724	001000	A	750	JMP	(TAZT)*	RETURN			
004725	104715	A							
			751 *	INIT	ALL ZEROS				
004726	000000	A	752	IAZ	ENTR	0			
004727	006010	A	753	LDAI	2	TEST = 2			
004730	000002	A							
004731	050507	A	754	STA	TEST				
004732	005001	A	755	TZA		BITS = 0			
004733	050516	A	756	STA	BITS				
004734	050517	A	757	STA	PAT1	PATTERN1 = 0			
004735	050520	A	758	STA	PAT2			H	
004736	002000	A	759	CALL	SET	SET PATTERN INTO MEMORY			
004737	006053	A							
004740	001000	A	760	JMP	(IAZ)*				
004741	104726	A							
			761	*****					
			762	*					
			763	*	ALL ONES				
			764	*					
004742	000000	A	765	TAOT	ENTR	0	ENTRY/EXIT		
004743	002000	A	766	CALL	IAO		INIT		
004744	004753	A							
004745	014204	A	767	LDA	03	REP = 3		B	
004746	050513	A	768	STA	REP				
004747	002000	A	769	CALL	TES	TEST PATTERN			
004750	006070	A							
004751	001000	A	770	JMP	(TAOT)*	RETURN			
004752	104742	A							
			771 *	INIT	ALL ONES				
004753	000000	A	772	IAO	ENTR	0			
004754	014175	A	773	LDA	03	TEST = 3		B	
004755	050507	A	774	STA	TEST				
004756	005001	A	775	TZA		BITS = 0			
004757	050516	A	776	STA	BITS				
004760	005211	A	777	CPA		PATTERN1 = 1'S			
004761	050517	A	778	STA	PAT1	PATTERN1 = 1'S			
004762	050520	A	779	STA	PAT2			H	



004763	002000	A	780	CALL	SET	SET PATTERN INTO MEMORY	
004764	006053	A					
004765	001000	A	781	JMP	(IAO)*		
004766	104753	A					
			782	*****			
			783	*			
			784	*	CHECKER BOARD		
			785	*			
004767	000000	A	786	TCBT	ENTR	0	
004770	014161	A	787	LDA	03	REP = 3	B
004771	050513	A	788	STA	REP		
004772	002000	A	789	CALL	ICB	INIT CHECKER BOARD	
004773	005004	A					
004774	002000	A	790	CALL	TCB	TEST CHECKER BOARD	
004775	005053	A					
004776	002000	A	791	CALL	ICBC	INIT CHECKER BOARD COMPLIMENTED	
004777	005013	A					
005000	002000	A	792	CALL	TCB	TEST CHECKER BOARD	
005001	005053	A					
005002	001000	A	793	JMP	(TCBT)*		
005003	104767	A					
			794	*	INIT CHECKER BOARD		
005004	000000	A	795	ICB	ENTR	0	
005005	002000	A	796	CALL	ICB1	B = 0252525	
005006	005023	A					
005007	002000	A	797	CALL	ICB2	WRITE B AND NOT B INTO MEMORY	
005010	005035	A					
005011	001000	A	798	JMP	(ICB)*	RETURN	
005012	105004	A					
			799	*	INIT CHECKER BOARD COMPLIMENTED		
005013	000000	A	800	ICBC	ENTR	0	
005014	002000	A	801	CALL	ICB1	B = 0525252	
005015	005023	A					
005016	005222	A	802	CPB			
005017	002000	A	803	CALL	ICB2	WRITE B AND NOT B INTO MEMORY	
005020	005035	A					
005021	001000	A	804	JMP	(ICBC)*	RETURN	
005022	105013	A					
005023	000000	A	805	ICB1	ENTR		
005024	014073	A	806	LDA	04	TEST = 4	B
005025	050507	A	807	STA	TEST		
005026	014002	A	808	LDA	0525	B = 252525	B

005027	004250	A	809	LRLA	8	
005030	006110	A	810	ORAI	0525	
005031	000525	A				
	005031	A	811	0525	EQU	*-1
005032	005012	A	812	TAB		
005033	001000	A	813	JMP	(ICB1)*	RETURN
005034	105023	A				
			814	*		
005035	000000	A	815	ICB2	ENTR	
005036	030514	A	816	LDX	FRST	X = FRST
005037	005221	A	817	DATA	05221	A = NOT (B) , WRITE PATTERN
005040	065000	A	818	STB	0,1	
005041	005144	A	819	IXR		
005042	055000	A	820	STA	0,1	
005043	005144	A	821	IXR		
005044	005041	A	822	TXA		DONE?
005045	140515	A	823	SUB	LAST	
005046	005311	A	824	DAR		
005047	001010	A	825	JAZ	(ICB2)*	DONE ? YES, RETURN
005050	105035	A				
005051	001000	A	826	JMP	ICB2+2	CONTINUE
005052	005037	A				
			827	*	TEST CHECKER BOARD	
005053	000000	A	828	TCB	ENTR	0
005054	010513	A	829	LDA	REP	REP1 = REP
005055	050512	A	830	STA	REP1	
005056	030514	A	831	LDX	FRST	READ PATTERN , INIT
005057	060502	A	832	TCBB	STB	MTW1
						EXPECTED = PATTERN
005060	005021	A	833	TBA		TEST FIRST WORD
005061	135000	A	834	ERA	0,1	
005062	001010	A	835	JAZ	**6	
005063	005070	A				
005064	130502	A	836	ERA	MTW1	BAD, CALL MERR
005065	050503	A	837	STA	MTW2	
005066	002000	A	838	CALL	MERR	
005067	004427	A				
005070	005221	A	839	DATA	05221	OK,
005071	005144	A	840	IXR		TEST SECOND WORD
005072	050502	A	841	STA	MTW1	
005073	135000	A	842	ERA	0,1	
005074	001010	A	843	JAZ	**6	
005075	005102	A				

005076	130502	A	844	ERA	MTW1	BAD,CALL MERR
005077	050503	A	845	STA	MTW2	
005100	002000	A	846	CALL	MERR	
005101	004427	A				
005102	005041	A	847	TXA		DONE?
005103	005144	A	848	IXR		
005104	140515	A	849	SUB	LAST	
005105	001004	A	850	JAN	TCBB	NO,CONTINUE
005106	005057	A				
005107	010512	A	851	LDA	REP1	CONTINUES ?
005110	001010	A	852	JAZ	TCBB-1	YES,CONTINUE
005111	005056	A				
005112	005311	A	853	DAR		
005113	001010	A	854	JAZ	(TCB)*	DONE ? YES,RETURN
005114	105053	A				
005115	050512	A	855	STA	REP1	
005116	001000	A	856	JMP	TCBB-1	CONTINUE
005117	005056	A				
005120	000004	A	857 04	DATA	4	
			858 *	INIT	WORST CASE	
005121	000000	A	859 INC	ENTR	0	
005122	050516	A	860	STA	BITS	
005123	005001	A	861	TZA		PAT1 = 0
005124	050517	A	862	STA	PAT1	
005125	005211	A	863	CPA		PAT2 = 1
005126	050520	A	864	STA	PAT2	
005127	002000	A	865	CALL	SET	SET PATTERN INTO MEMORY
005130	006053	A				
005131	040507	A	866	INR	TEST	TEST = TEST + 1
005132	001000	A	867	JMP	(IWC)*	
005133	105121	A				
			868 *	INIT	WORST CASE COMPLIMENT	
005134	000000	A	869 IWCC	ENTR	0	
			870 *			
005135	005001	A	871	TZA		COMPLIMENT PAT1 AND PAT2
005136	050520	A	872	STA	PAT2	
005137	005211	A	873	CPA		
005140	050517	A	874	STA	PAT1	
005141	002000	A	875	CALL	SET	SET PATTERN INTO MEMORY
005142	006053	A				
005143	001000	A	876	JMP	(IWCC)*	
005144	105134	A				

C

			877	*****				
			878	*			B	
			879	*	BIT COMPLIMENT		B	
			880	*			B	
005145	000000	A	881	TBCT	ENTR 0	SELECT WORST CASE PATTERN TABLE	B	
005146	006010	A	882		LDAI 037	TEST = 037+N	B	
005147	000037	A						
005150	050507	A	883		STA TEST		B	
005151	006010	A	884		LDAI 03	REP=3	B	
005152	000003	A						
	005152	A	885	03	EQU *-1		B	
005153	050513	A	886		STA REP		B	
005154	006020	A	887		LDBI TBLI	TABLE OF WORSE CASE PATTERNS	B	
005155	000530	A						
005156	005001	A	888	TBCA	TZA	INIT TBL	B	
005157	056000	A	889		STA 0,2		B	
005160	064002	A	890		STB TBCB+2		B	
005161	002000	A	891	TBCB	CALL UACA,0,(TBCT)*	GET WORST CASE PATTERN FROM TABLE	B	
005162	004154	A						
005163	000000	A						
005164	105145	A						
005165	002000	A	892		CALL IWC	SET WORST CASE PATTERN INTO MEMORY	B	
005166	005121	A						
005167	002000	A	893		CALL TBC	TEST BIT COMPLIMENT	B	
005170	005177	A						
005171	002000	A	894		CALL IWCC	COMPLIMENT PATTERN	B	
005172	005134	A						
005173	002000	A	895		CALL TBC		B	
005174	005177	A						
005175	001000	A	896		JMP TBCB		B	
005176	005161	A						
			897	*			B	
005177	000000	A	898	TBC	ENTR 0		B	
005200	005103	A	899		INCR 03	B = REP	B	
005201	004541	A	900		LLSR 1	BITX = SIGN BIT ON	B	
005202	064221	A	901		STB BITX		B	
005203	020513	A	902		LDB REP		B	
005204	030514	A	903		LDX FRST	X = FRST	B	
005205	014216	A	904	TBC1	LDA BITX	INIT BITC	B	
005206	054214	A	905		STA BITC		B	
005207	005041	A	906		TXA	( )X = 1'S	B	
005210	002000	A	907		CALL DAP		B	

005211	006015	A							
005212	001004	A	908	JAN	TBC5		YES,GOTO		B
005213	005315	A							
005214	005001	A	909	TBC2	TZA		ZERO		B
005215	050502	A	910		STA	MTW1	EXPECTED		B
005216	015000	A	911		LDA	0,1			B
005217	050503	A	912		STA	MTW2	ACTUAL		B
005220	001010	A	913		JAZ	**4			B
005221	005224	A							
005222	001000	A	914		JMP	TBCC	-ERROR-		B
005223	005410	A							
005224	014176	A	915		LDA	BITC	()X = ()X XOR BITC		B
005225	135000	A	916		ERA	0,1			B
005226	055000	A	917		STA	0,1			B
005227	050502	A	918		STA	MTW1	SAVE S/B		C
005230	015000	A	919		LDA	0,1			C
005231	050503	A	920		STA	MTW2	SAVE WAS		C
005232	130502	A	921		ERA	MTW1			C
005233	001010	A	922		JAZ	**4	JUMP IF SAME		C
005234	005237	A							
005235	001000	A	923		JMP	TBCG			C
005236	005247	A							
005237	014163	A	924		LDA	BITC	()X = ()X XOR BITC		B
005240	135000	A	925		ERA	0,1			B
005241	055000	A	926		STA	0,1			B
005242	001010	A	927		JAZ	TBC3	ERROR ? NO,SKIP REPORT		B
005243	005253	A							
005244	050503	A	928		STA	MTW2	YES		B
005245	005001	A	929		TZA		SET MTW1 = EXP,MTW2 = ACT		B
005246	050502	A	930		STA	MTW1	CALL MERR		B
005247	002000	A	931	TBCG	CALL	TBC8	MODIFY TEST # TO INCLUDE BIT		C
005250	005366	A							
005251	002000	A	932		CALL	MERR			B
005252	004427	A							
005253	014147	A	933	TBC3	LDA	BITC	BITC = LOGICAL SHIFT RIGHT 1(BITC)		B
005254	004341	A	934		LSRA	1			B
005255	054145	A	935		STA	BITC	DONE ?		B
005256	001010	A	936		JAZ	TBC7	YES		B
005257	005262	A							
005260	001000	A	937		JMP	TBC2	NO,CONTINUE WITH SAME WORD		B
005261	005214	A							
005262	005041	A	938	TBC7	TXA		A = X		B

005263	006150	A	939		ANAI	060000	ABOVE FIRST 8K?	F
005264	060000	A						
005265	001010	A	940		JAZ	TBCH	-NO-	F
005266	005301	A						
005267	005041	A	941		TXA			F
005270	134002	A	942		ERA	04K	SWAP BIT 11	F
005271	005115	A	943		INCR	015	A+1 TO A &X	F
005272	006130	A	944		ERAI	04000	SWAP BIT 11	F
005273	004000	A						
	005273	A	945	04K	EQU	*-1		F
005274	140515	A	946		SUB	LAST	END?	F
005275	001004	A	947		JAN	TBC1	-NO-	F
005276	005205	A						
005277	001000	A	948		JMP	TBC4	-YES-	F
005300	005306	A						
005301	005041	A	949	TBCH	TXA		A = X	F
005302	005144	A	950		IXR		X = X+1	B
005303	140515	A	951		SUB	LAST	DONE ?	B
005304	001004	A	952		JAN	TBC1	NO,GET NEXT WORD	B
005305	005205	A						
005306	001020	A	953	TBC4	JBZ	TBC1-1	FINISHED ? NO,CONTINUES	B
005307	005204	A						
005310	005322	A	954		DBR			B
005311	001020	A	955		JBZ	(TBC)*	YES,RETURN	B
005312	105177	A						
005313	001000	A	956		JMP	TBC1-1	CONTINUE	B
005314	005204	A						
005315	005301	A	957	TBC5	DECR	1	ONES	B
005316	050502	A	958		STA	MTW1	EXPECTED	B
005317	015000	A	959		LDA	0,1		B
005320	050503	A	960		STA	MTW2	ACTUAL	B
005321	005211	A	961		CPA			B
005322	001010	A	962		JAZ	**+4		B
005323	005326	A						
005324	001000	A	963		JMP	TBCC	-ERROR-	B
005325	005410	A						
005326	014074	A	964		LDA	BITC	( )X = ( )X XOR BITC	B
005327	135000	A	965		ERA	0,1		B
005330	055000	A	966		STA	0,1		B
005331	050502	A	967		STA	MTW1	SAVE S/B	C
005332	015000	A	968		LDA	0,1		C
005333	050503	A	969		STA	MTW2	SAVE WAS	C

005334	130502	A	970	ERA	MTW1				
005335	001010	A	971	JAZ	++4	JUMP IF SAME			
005336	005341	A							
005337	001000	A	972	JMP	TBCF				
005340	005353	A							
005341	014061	A	973	LDA	BITC	( )X = ( )X XOR BITC			
005342	135000	A	974	ERA	0,1				
005343	055000	A	975	STA	0,1				
005344	005211	A	976	CPA		ERROR ?			
005345	001010	A	977	JAZ	TBC6	NO,SKIP REPORT			
005346	005357	A							
005347	005211	A	978	CPA					
005350	050503	A	979	STA	MTW2	MTW1 = EXP,MTW2 = ACT			
005351	005301	A	980	DECR	01				
005352	050502	A	981	STA	MTW1				
005353	002000	A	982	TBCF	CALL	TBC8	MODIFY TEST # TO INCLUDE BIT		
005354	005366	A							
005355	002000	A	983	CALL	MERR	CALL MERR			
005356	004427	A							
005357	014043	A	984	TBC6	LDA	BITC	BITC = LOGICAL SHIFT RIGHT 1(BITC)		
005360	004341	A	985	LSRA	1				
005361	054041	A	986	STA	BITC	DONE ?			
005362	001010	A	987	JAZ	TBC7	YES			
005363	005262	A							
005364	001000	A	988	JMP	TBC5	NO,CONTINUE WITH SAME WORD			
005365	005315	A							
			989	*		MODIFY TEST TO INDICATE BIT POSITION			
005366	000000	A	990	TBC8	ENTR	0			
005367	064032	A	991		STB	TBCF			
005370	014032	A	992		LDA	BITC	INIT		
005371	005302	A	993		DECR	02			
005372	001010	A	994	TBC9	JAZ	TBCD	DONE ? YES,GOTO TBCD		
005373	005400	A							
005374	004341	A	995		LSRA	1	SHIFT BITC		
005375	005122	A	996		IBR		INCR COUNT		
005376	001000	A	997		JMP	TBC9	CONTINUE		
005377	005372	A							
005400	010507	A	998	TBCD	LDA	TEST	MERGE BIT COUNT		
005401	154010	A	999		ANA	077	WITH TEST NUMBER		
005402	004046	A	1000		LRLB	6			
005403	005031	A	1001		MERG	031			
005404	050507	A	1002		STA	TEST			



005405	024014	A	1003	LDB	TBCE			B	
005406	001000	A	1004	JMP	(TBC8)*	RETURN		B	
005407	105366	A							
005410	010507	A	1005	TBCC	LDA	TEST	MERGE	B	
005411	006150	A	1006		ANAI	077	BIT 18	B	
005412	000077	A							
	005412	A	1007	077	EQU	*-1		B	
005413	006110	A	1008		ORAI	04000	WITH	B	
005414	004000	A							
005415	050507	A	1009		STA	TEST	TEST NO.	B	
005416	002000	A	1010		CALL	MERR		B	
005417	004427	A							
005420	001000	A	1011		JMP	TBC7	GOTO NEXT WORD	B	
005421	005262	A							
005422			1012	TBCE	BSS	1	SAVE R	B	
005423			1013	BITC	BSS	1	BIT COMPLIMENTED	B	
005424			1014	BITX	BSS	1	(=MAX)	B	
			1015	*				B	
			1016	*****					B
			1017	*				B	
			1018	*	BINARY ADDRESS			B	
			1019	*				B	
005425	000000	A	1020	TBAT	ENTR		BINARY ADDRESS TEST	B	
			1021	*				B	
			1022	*				B	
005426	010514	A	1023		LDA	FRST		B	
005427	006150	A	1024		ANAI	070000		B	
005430	070000	A							
005431	001010	A	1025		JAZ*	TBAT	JUMP IF IN 1ST 4K	B	
005432	105425	A							
005433	005111	A	1026		IAR			B	
005434	050510	A	1027		STA	TBAA	TEST ADDRESS	B	
005435	010515	A	1028		LDA	LAST		E	
005436	006150	A	1029		ANAI	07000		E	
005437	007000	A							
005440	054070	A	1030		STA	TBA8		E	
005441	002000	A	1031	TBA1	CALL	IAZ	INITIALIZE TO ALL ZEROS	B	
005442	004726	A							
005443	006010	A	1032		LDAI	050	TEST = 50	B	
005444	000050	A							
005445	050507	A	1033		STA	TEST		B	
005446	030510	A	1034		LDX	TBAA		B	

005447	005301	A	1035		DECR	1	SET TEST WORD	B
005450	055000	A	1036		STA	0,1	TO ONES	B
005451	030514	A	1037		LDX	FRST		B
005452	005041	A	1038	TBA2	TXA			B
005453	140510	A	1039		SUB	TBAA		B
005454	001010	A	1040		JAZ	TBA4	JUMP IF CHECK FOR ALL ONES	B
005455	005472	A						
005456	015000	A	1041		LDA	0,1	CHECK FOR ALL ZEROS	B
005457	001010	A	1042		JAZ	TBA3		B
005460	005463	A						
005461	001000	A	1043		JMP	TBAZ	ERROR NOT ALL ZEROS	B
005462	005523	A						
005463	005041	A	1044	TBA3	TXA			B
005464	005144	A	1045		IXR		STEP ADDRESS	B
005465	140515	A	1046		SUB	LAST		B
005466	001010	A	1047		JAZ	TBA5		B
005467	005500	A						
005470	001000	A	1048		JMP	TBA2		B
005471	005452	A						
005472	015000	A	1049	TBA4	LDA	0,1		B
005473	005211	A	1050		CPA			B
005474	001010	A	1051		JAZ	TBA3		B
005475	005463	A						
005476	001000	A	1052		JMP	TBA0	ERROR NOT ALL ONES	B
005477	005513	A						
005500	010510	A	1053	TBA5	LDA	TBAA		B
005501	006150	A	1054		ANAI	01777		B
005502	001777	A						
005503	120510	A	1055		ADD	TBAA		B
005504	050510	A	1056		STA	TBAA		B
005505	006150	A	1057		ANAI	01777		B
005506	001777	A						
005507	001010	A	1058		JAZ	TBA7		B
005510	005526	A						
005511	001000	A	1059		JMP	TBA1		B
005512	005441	A						
			1060 *					B
005513	005301	A	1061	TBA0	DECR	1	ONES	B
005514	050502	A	1062	TBA6	STA	MTW1	EXPECTED	B
005515	015000	A	1063		LDA	0,1		B
005516	050503	A	1064		STA	MTW2	ACTUAL	B
005517	002000	A	1065		CALL	MERR	ANNOUNCE ERROR	B

005520	004427	A							
005521	001000	A	1066	JMP	TBA3				B
005522	005463	A							
005523	005001	A	1067	TBAZ	TZA	ZEROS			B
005524	001000	A	1068	JMP	TBA6				B
005525	005514	A							
005526	040510	A	1069	TBA7	INR	TBAA			B
005527	010510	A	1070		LDA	TBAA			B
005530	006150	A	1071		ANAI	07000			B
005531	007000	A							
	005531	A	1072	TBA8	EQU	*=1			E
005532	001010	A	1073		JAZ*	TBAT			B
005533	105425	A							
005534	001000	A	1074	JMP	TBA1				B
005535	005441	A							
			1075	*					H
			1076	*	ADJACENT CELL DISTURB				H
			1077	*					H
005536	000000	A	1078	TACD	ENTR				H
005537	002000	A	1079		CALL	IAZ	SET IN 0 BACKGROUND		H
005540	004726	A							
005541	006010	A	1080		LDAI	060	TEST # TO 060		H
005542	000060	A							
005543	050507	A	1081		STA	TEST			H
005544	005301	A	1082		DECR	1			H
005545	050520	A	1083		STA	PAT2			H
005546	002000	A	1084		CALL	ACD			H
005547	005563	A							
005550	002000	A	1085		CALL	IA0	SET BACKGROUND TO 1		H
005551	004753	A							
005552	006010	A	1086		LDAI	061	SET TEST # TO 061		H
005553	000061	A							
005554	050507	A	1087		STA	TEST			H
005555	005001	A	1088		TZA				H
005556	050520	A	1089		STA	PAT2			H
005557	002000	A	1090		CALL	ACD			H
005560	005563	A							
005561	001000	A	1091		JMP*	TACD			H
005562	105536	A							
			1092	*					H
			1093	*	ADJACENT CELL DISTURB				H
			1094	*					H

005563	000000	A	1095	ACD	ENTR				
			1096	*					
005564	030514	A	1097		LDX	FRST			
005565	070510	A	1098	ACD1	STX	TBAA	X=N		
005566	010517	A	1099		LDA	PAT1			
005567	050502	A	1100		STA	MTW1			
005570	010520	A	1101		LDA	PAT2			
005571	055000	A	1102		STA	0,1			
005572	005142	A	1103		INCR	042	B=N+1		
005573	002000	A	1104		CALL	ACDT			
005574	005647	A							
005575	005342	A	1105		DECR	042	B=N-1		
005576	002000	A	1106		CALL	ACDT			
005577	005647	A							
005600	005041	A	1107		TXA				
005601	124044	A	1108		ADD	D64			
005602	005012	A	1109		TAB		B=N+64		
005603	002000	A	1110		CALL	ACDT			
005604	005647	A							
005605	005041	A	1111		TXA				
005606	144037	A	1112		SUB	D64			
005607	005012	A	1113		TAB		B=N-64		
005610	002000	A	1114		CALL	ACDT			
005611	005647	A							
005612	005041	A	1115		TXA				
005613	124032	A	1116		ADD	D64			
005614	005112	A	1117		INCR	012	B=N+65		
005615	002000	A	1118		CALL	ACDT			
005616	005647	A							
005617	005041	A	1119		TXA				
005620	144025	A	1120		SUB	D64			
005621	005112	A	1121		INCR	012	B=N-63		
005622	002000	A	1122		CALL	ACDT			
005623	005647	A							
005624	005041	A	1123		TXA				
005625	124020	A	1124		ADD	D64			
005626	005312	A	1125		DECR	012	B=N+63		
005627	002000	A	1126		CALL	ACDT			
005630	005647	A							
005631	005041	A	1127		TXA				
005632	144013	A	1128		SUB	D64			
005633	005312	A	1129		DECR	012	B=N-65		

005634	002000	A	1130	CALL	ACDT		H
005635	005647	A					
005636	010517	A	1131	LDA	PAT1		H
005637	055000	A	1132	STA	0,1	RESTORE BACKGROUND	H
005640	005145	A	1133	INCR	045	X&A=N+1	H
005641	140515	A	1134	SUB	LAST		H
005642	001010	A	1135	JAZ*	ACD	END OF THIS PASS	H
005643	105563	A					
005644	001000	A	1136	JMP	ACD1	LOOP	H
005645	005565	A					
005646	000100	A	1137	D64	DATA	64	H
			1138	*			H
005647	000000	A	1139	ACDT	ENTR	ADJACENT CELL DISTURB TEST	H
			1140	*			H
005650	005021	A	1141	TBA		RANGE TEST ON B	H
005651	140514	A	1142	SUB	FRST		H
005652	001004	A	1143	JAN*	ACDT	B.LT.FRST	H
005653	105647	A					
005654	005021	A	1144	TBA			H
005655	140515	A	1145	SUB	LAST		H
005656	005311	A	1146	DAR			H
005657	001002	A	1147	JAP*	ACDT	B.GT.FAST	H
005660	105647	A					
005661	016000	A	1148	LDA	0,2	ADJACENT CELL	H
005662	050503	A	1149	STA	MTW2		H
005663	140517	A	1150	SUB	PAT1		H
005664	001010	A	1151	JAZ	ACDT1	O.K.	H
005665	005676	A					
005666	010517	A	1152	LDA	PAT1		H
005667	050502	A	1153	STA	MTW1		H
005670	074004	A	1154	STX	ACDTX		H
005671	005024	A	1155	TBX			H
005672	002000	A	1156	CALL	MERR		H
005673	004427	A					
005674	006030	A	1157	LOXI	000		H
005675	000000	A					
	005675	A	1158	ACDTX	EQU	*-1	H
005676	015000	A	1159	ACDT1	LDA	0,1	H
						N	
005677	050503	A	1160	STA	MTW2		H
005700	140520	A	1161	SUB	PAT2		H
005701	001010	A	1162	JAZ*	ACDT		H
005702	105647	A					

005703	010520	A	1163	LDA	PAT2				
005704	050502	A	1164	STA	MTW1				
005705	002000	A	1165	CALL	MERR				
005706	004427	A							
005707	001000	A	1166	JMP*	ACDT				
005710	105647	A							
			1167	*					
			1168	*	N SQUARED				
			1169	*					
005711	000000	A	1170	NSQR	ENTR				
005712	002000	A	1171	JMPM	IAZ		BACKGROUND TO ZEROS		
005713	004726	A							
005714	002000	A	1172	JMPM	N2		TEST		
005715	005724	A							
005716	002000	A	1173	JMPM	IA0		BACKGROUND TO ONES		
005717	004753	A							
005720	002000	A	1174	JMPM	N2		TEST		
005721	005724	A							
005722	001000	A	1175	JMP*	NSQR		-EXIT-		
005723	105711	A							
005724	000000	A	1176	N2	ENTR				
005725	010070	A	1177	LDA	070		SET TEST NO. TO 070		
005726	050507	A	1178	STA	TEST				
005727	010517	A	1179	LDA	PAT1		SET PATTERNS		
005730	005211	A	1180	CPA					
005731	050520	A	1181	STA	PAT2				
005732	010514	A	1182	LDA	FRST				
005733	050510	A	1183	STA	N				
005734	030510	A	1184	N21	LDX	N	COMPLEMENT N		
005735	010520	A	1185	LDA	PAT2				
005736	055000	A	1186	STA	0,1				
005737	010514	A	1187	LDA	FRST				
005740	054053	A	1188	STA	T				
005741	034052	A	1189	N22	LDX	T			
005742	005041	A	1190	TXA					
005743	140510	A	1191	SUB	N				
005744	001010	A	1192	JAZ	N22C		T=N		
005745	005761	A							
005746	015000	A	1193	N22N	LDA	0,1			
005747	050503	A	1194	STA	MTW2				
005750	140517	A	1195	SUB	PAT1		CHECK FOR BACKGROUND		
005751	001010	A	1196	JAZ	N23				

005752	005772	A									
005753	010520	A	1197	LDA	PAT2					H	
005754	050502	A	1198	STA	MTW1					H	
005755	002000	A	1199	CALL	MERR					H	
005756	004427	A									
005757	001000	A	1200	JMP	N23					H	
005760	005772	A									
005761	015000	A	1201	N22C	LDA	0,1				H	
005762	050503	A	1202	STA	MTW2					H	
005763	140520	A	1203	SUB	PAT2			CHECK FOR COMPLEMENT B/G		H	
005764	001010	A	1204	JAZ	N23					H	
005765	005772	A									
005766	010520	A	1205	LDA	PAT2					H	
005767	050502	A	1206	STA	MTW1					H	
005770	002000	A	1207	CALL	MERR					H	
005771	004427	A									
005772	014021	A	1208	N23	LDA	T		STEP T TO END		H	
005773	044020	A	1209	INR	T					H	
005774	140515	A	1210	SUB	LAST					H	
005775	001010	A	1211	JAZ	N24					H	
005776	006001	A									
005777	001000	A	1212	JMP	N22					H	
006000	005741	A									
006001	030510	A	1213	N24	LDX	N				H	
006002	015000	A	1214	LDA	0,1					H	
006003	005211	A	1215	CPA						H	
006004	055000	A	1216	STA	0,1					H	
006005	005041	A	1217	TXA						H	
006006	040510	A	1218	INR	N					H	
006007	140515	A	1219	SUB	LAST					H	
006010	001010	A	1220	JAZ*	N2					H	
006011	105724	A									
006012	001000	A	1221	JMP	N21					H	
006013	005734	A									
	000510	A	1222	N	EQU	TBAA				H	
006014	000000	A	1223	T	DATA	0				H	
			1224	*****B							
			1225	*	MISC ROUTINES					*	
			1226	*****							
			1227	*	DERIVE ADDRS PARITY						
			1228	*							
			1229	*	ADDRS IN (A),RETURN PAT(0/1)						



			1230 *				
006015	000000	A	1231	DAP	ENTR	0	ENTRY/EXIT
006016	001400	A	1232		JSS3	TERM	SS3 TERMINATE TESTS
006017	004357	A					
006020	064030	A	1233		STB	DAP3	SAVE B
006021	074030	A	1234		STX	DAP3+1	SAVE X
006022	005006	A	1235		ZERO	06	ZERO B,X
006023	030514	A	1236		LDX	FRST	ATTEMPT TO MAKE CONSOLE LIGHTS MORE VISIBLE
006024	150516	A	1237		ANA	BITS	SELECT BITS
006025	001010	A	1238	DAP1	JAZ	DAP2	DONE ?
006026	006036	A					
006027	004541	A	1239		LLSR	1	NO,GET NEXT BIT
006030	001020	A	1240		JRZ	DAP1	EVEN PARITY?
006031	006025	A					
006032	005144	A	1241		IXR		NO
006033	005002	A	1242		TZB		RESET B
006034	001000	A	1243		JMP	DAP1	CONTINUE
006035	006025	A					
006036	005041	A	1244	DAP2	TXA		A#PAT1 IF EVEN
006037	006150	A	1245		ANAI	1	A#PAT2 IF ODD
006040	000001	A					
006041	006120	A	1246		ADDI	PAT1	
006042	000517	A					
006043	005014	A	1247		TAX		
006044	015000	A	1248		LDA	0,1	
006045	024003	A	1249		LDB	DAP3	RETURN
006046	034003	A	1250		LDX	DAP3+1	
006047	001000	A	1251		JMP	(DAP)*	
006050	106015	A					
006051			1252	DAP3	BSS	2	
			1253	*			
			1254	*	SET		
			1255	*			SET MEMORY TO TEST PATTERN
			1256	*			FRST, LAST, BITS, PAT1, PAT2
			1257	*			
006053	000000	A	1258	SET	ENTR	0	ENTRY/EXIT
006054	030514	A	1259		LDX	FRST	X#FIRST ADDR
006055	005041	A	1260	SET1	TXA		DERIVE ADDR PATTERN
006056	002000	A	1261		CALL	DAP	
006057	006015	A					
006060	055000	A	1262		STA	0,1	STORE PATTERN
006061	005041	A	1263		TXA		DONE?

006062	140515	A	1264		SUB	LAST		
006063	001010	A	1265		JAZ	(SET)*	YES, RETURN	
006064	106053	A						
006065	005144	A	1266		IXR		ADDRS = ADDRS+1	
006066	001000	A	1267		JMP	SET1	CONTINUE	
006067	006055	A						
			1268	*				
			1269	*	TES			
			1270	*				
			1271	*				
			1272	*				
006070	000000	A	1273	TES	ENTR	0	ENTRY/EXIT	
006071	020513	A	1274		LDB	REP	B = REPETITIONS	
006072	030514	A	1275		LDX	FRST	X = FIRST ADDRS	
006073	005041	A	1276	TES1	TXA		DERIVE ADDRS PATTERN	
006074	002000	A	1277		CALL	DAP		
006075	006015	A						
006076	050502	A	1278		STA	MTW1		
006077	015000	A	1279		LDA	0,1	GET ACTUAL PATTERN	
006100	050503	A	1280		STA	MTW2		
006101	130502	A	1281		ERA	MTW1	ERROR?	
006102	001010	A	1282		JAZ	*+4		
006103	006106	A						
006104	002000	A	1283		CALL	MERR	YES, CALL MERR	
006105	004427	A						
006106	001400	A	1284		JSS3	TERM	SS3 TERMINATE TESTS	
006107	004357	A						
006110	015000	A	1285		LDA	0,1		H
006111	005211	A	1286		CPA		COMPLEMENT THE DATA	H
006112	055000	A	1287		STA	0,1		H
006113	005041	A	1288		TXA		DONE?	
006114	140515	A	1289		SUB	LAST		
006115	001010	A	1290		JAZ	TES2	YES, JMP TES2	
006116	006122	A						
006117	005144	A	1291		IXR		ADVANCE X TO NEXT WORD	
006120	001000	A	1292		JMP	YES1	CONTINUE	
006121	006073	A						
006122	010517	A	1293	TES2	LDA	PAT1		H
006123	005211	A	1294		CPA		COMPLEMENT DATA PATTERN	H
006124	050517	A	1295		STA	PAT1		H
006125	050520	A	1296		STA	PAT2		H
006126	005322	A	1297		DBR		NO, DONE ?	

006127	001020	A	1298	JBZ	(TES)*	YES, RETURN	
006130	106070	A					
006131	001000	A	1299	JMP	TES+2	NO, CONTINUE	
006132	006072	A					
			1300 *				F
006133	000000	A	1301	INTI	ENTR		F
			1302 *				F
006134	006030	A	1303	LDXI	INTM	*V70 INTERRUPT LOC.*	F
006135	007266	A					
006136	002000	A	1304	CALL*	OUTD		F
006137	100403	A					
006140	002000	A	1305	CALL*	INPG		F
006141	100416	A					
006142	001000	A	1306	JMP	STRT	SS3	F
006143	003400	A					
006144	001000	A	1307	JMP	INTI+1	\	F
006145	006134	A					
006146	001000	A	1308	JMP	**+2	,	F
006147	006150	A					
006150	002000	A	1309	CALL*	OUTC		F
006151	100402	A					
006152	006020	A	1310	LDBI	TBL0		F
006153	000542	A					
006154	001010	A	1311	JAZ	V70N	. IF ZERO, ASSUME 620	F
006155	006417	A					
006156	050525	A	1312	STA	V70I		F
006157	005002	A	1313	TZB			F
006160	004541	A	1314	LLSR	1		F
006161	001020	A	1315	JBZ	**+6	JUMP IF EVEN	F
006162	006167	A					
006163	002000	A	1316	INTV	CALL*	OUTG	*INVALID*
006164	100406	A					
006165	001000	A	1317	JMP	INTI+1		F
006166	006134	A					
006167	006020	A	1318	LDBI	TBL0		F
006170	000542	A					
006171	010525	A	1319	LDA	V70I		F
006172	144237	A	1320	SUB	02		F
006173	001010	A	1321	JAZ	I1	.EQ. 2	F
006174	006377	A					
006175	001004	A	1322	JAN	INTV	.LT. 2	F
006176	006163	A					

006177	144234	A	1323		SUB	034			F
006200	001010	A	1324		JAZ	I2	.EQ, 36		F
006201	006361	A							
006202	001004	A	1325		JAN	I3	.LT, 36 + .GT, 4		F
006203	006341	A							
006204	144226	A	1326		SUB	08			F
006205	001010	A	1327		JAZ	I4	.EQ, 44		F
006206	006327	A							
006207	001004	A	1328		JAN	INTV	.LT, 44 + .GT, 36		F
006210	006163	A							
006211	144231	A	1329		SUB	0332			F
006212	001010	A	1330		JAZ	I5	.EQ, 376		F
006213	006314	A							
006214	001002	A	1331		JAP	INTV	.GT, 376		F
006215	006163	A							
006216	014226	A	1332	I6	LDA	0377	.LT, 376 + .GT, 44		F
006217	056007	A	1333		STA	7,2			F
006220	010525	A	1334		LDA	V70I			F
006221	124210	A	1335		ADD	02			F
006222	056006	A	1336		STA	6,2			F
006223	144127	A	1337		SUB	03A			F
006224	056005	A	1338		STA	5,2			F
006225	014211	A	1339		LDA	044			F
006226	056004	A	1340		STA	4,2			F
006227	014206	A	1341	IB	LDA	037			F
006230	056003	A	1342		STA	3,2			F
006231	014200	A	1343		LDA	02			F
006232	056002	A	1344		STA	2,2			F
	006233	A	1345	IA	EQU	*			I
006233	006030	A	1346	IWCA	LDXI	WCPM	'WORSE CASE PATTERNS'		H
006234	007320	A							
006235	002000	A	1347		CALL*	OUTD			H
006236	100403	A							
006237	005001	A	1348		TZA		INITIALIZE TABLE		H
006240	050530	A	1349		STA	TBLI			H
006241	006010	A	1350		LDAI	8			H
006242	000010	A							
006243	050534	A	1351		STA	TBLI+4			H
006244	007400	A	1352	IWCB	ROF		RESET COMMA INDICATOR		H
006245	002000	A	1353		CALL*	INPG	INPUT N		H
006246	100416	A							
006247	001000	A	1354		JMP	MTOP	553		H

006250	003415	A							
006251	001000	A	1355	JMP	IWCA				I
006252	006233	A							
006253	007401	A	1356	SOF					I
006254	005000	A	1357	NQP					I
006255	020471	A	1358	LDB	%DCT	USE WHAT'S IN?			I
006256	001020	A	1359	JBZ	IWCZ	-YES-			I
006257	006300	A							
006260	005012	A	1360	TAB					I
006261	010530	A	1361	LDA	TBLI	INDEX			I
006262	006120	A	1362	ADDI	TBLI+2	BASE			I
006263	000532	A							
006264	005014	A	1363	TAX					I
006265	065000	A	1364	STB	0,1	PUT WCP AWAY			I
006266	040530	A	1365	INR	TBLI				I
006267	010530	A	1366	LDA	TBLI	TAGLE FULL			I
006270	006140	A	1367	SUBI	8				I
006271	000010	A							
006272	001010	A	1368	JAZ	IWCX	-YES-			I
006273	006276	A							
006274	001001	A	1369	JOF	IWCB	LOOP ON COMMA			I
006275	006244	A							
006276	010530	A	1370	IWCX	LDA	TBLI			I
006277	050531	A	1371	STA	TBLI+1				I
006300	002000	A	1372	IWCZ	CALL*	OUTC			I
006301	100402	A							
006302	020525	A	1373	LDB	V70I				I
006303	001020	A	1374	JBZ*	INTI				I
006304	106133	A							
006305	013431	A	1375	LDA	02K				F
006306	056000	A	1376	STA	0,2				F
006307	006010	A	1377	LDAI	PER				F
006310	006734	A							
006311	056001	A	1378	STA	1,2				F
006312	001000	A	1379	JMP*	INTI				F
006313	106133	A							
006314	014127	A	1380	I5	LDA	0375	.EQ. 376		F
006315	056007	A	1381		STA	7,2			F
006316	014122	A	1382		LDA	0100			F
006317	056006	A	1383		STA	6,2			F
006320	006010	A	1384	IC	LDAI	077			F
006321	000077	A							

006322	056005	A	1385		STA	5,2		F
006323	014113	A	1386		LDA	044		F
006324	056004	A	1387		STA	4,2		F
006325	001000	A	1388		JMP	1B		F
006326	006227	A						
006327	014115	A	1389	I4	LDA	0377	.EQ. 44	F
006330	056007	A	1390		STA	7,2		F
006331	014107	A	1391		LDA	0100		F
006332	056006	A	1392		STA	6,2		F
006333	014050	A	1393		LDA	077A		F
006334	056005	A	1394		STA	5,2		F
006335	014102	A	1395		LDA	046		F
006336	056004	A	1396		STA	4,2		F
006337	001000	A	1397		JMP	1B		F
006340	006227	A						
006341	014103	A	1398	I3	LDA	0377	.LT. 36 + .GT. 2	F
006342	056007	A	1399		STA	7,2		F
006343	014073	A	1400		LDA	044		F
006344	056006	A	1401		STA	6,2		F
006345	014070	A	1402		LDA	037		F
006346	056005	A	1403		STA	5,2		F
006347	010525	A	1404		LDA	V70I		F
006350	124061	A	1405		ADD	02		G
006351	056004	A	1406		STA	4,2		F
006352	006140	A	1407		SUBI	3		F
006353	000003	A						
	006353	A	1408	03A	EQU	*-1		F
006354	056003	A	1409		STA	3,2		F
006355	014054	A	1410		LDA	02		F
006356	056002	A	1411		STA	2,2		F
006357	001000	A	1412		JMP	1A		F
006360	006233	A						
006361	014063	A	1413	I2	LDA	0377	.EQ. 36	F
006362	056007	A	1414		STA	7,2		F
006363	014055	A	1415		LDA	0100		F
006364	056006	A	1416		STA	6,2		F
006365	014016	A	1417		LDA	077A		F
006366	056005	A	1418		STA	5,2		F
006367	014047	A	1419		LDA	044		F
006370	056004	A	1420		STA	4,2		F
006371	014043	A	1421		LDA	035		F
006372	056003	A	1422		STA	3,2		F

006373	014036	A	1423	LDA	02		F
006374	056002	A	1424	STA	2,2		F
006375	001000	A	1425	JMP	IA		F
006376	006233	A					
006377	014045	A	1426 I1	LDA	0377	.EQ 2	F
006400	056007	A	1427	STA	7,2		F
006401	014037	A	1428	LDA	0100		F
006402	056006	A	1429	STA	6,2		F
006403	006010	A	1430	LDAI	077		F
006404	000077	A					
	006404	A	1431 077A	EQU	*-1		F
006405	056005	A	1432	STA	5,2		F
006406	014030	A	1433	LDA	044		F
006407	056004	A	1434	STA	4,2		F
006410	014025	A	1435	LDA	037		F
006411	056003	A	1436	STA	3,2		F
006412	006010	A	1437	LDAI	4		F
006413	000004	A					
006414	056002	A	1438	STA	2,2		F
006415	001000	A	1439	JMP	IA		F
006416	006233	A					
006417	014025	A	1440 V70N	LDA	0377		F
006420	056007	A	1441	STA	7,2		F
006421	014020	A	1442	LDA	0120		F
006422	056006	A	1443	STA	6,2		F
006423	005001	A	1444	TZA		ZERO TO EFLG	F
006424	050526	A	1445	STA	EFLG		F
006425	005311	A	1446	DAR		-1 TO EFLG IF EXTENDED ADDRESSING	F
006426	006057	A	1447	STAE	EFLG		F
006427	000526	A					
006430	001000	A	1448	JMP	IC		F
006431	006320	A					
006432	000002	A	1449 02	DATA	2		F
006433	000010	A	1450 08	DATA	8		F
006434	000034	A	1451 034	DATA	034		F
006435	000035	A	1452 035	DATA	035		F
006436	000037	A	1453 037	DATA	037		F
006437	000044	A	1454 044	DATA	044		F
006440	000046	A	1455 046	DATA	046		F
006441	000100	A	1456 0100	DATA	0100		F
006442	000120	A	1457 0120	DATA	0120		F
006443	000332	A	1458 0332	DATA	0332		F



006444	000375	A	1459	0375	DATA	0375		F	
006445	000377	A	1460	0377	DATA	0377		F	
			1461	*					
			1462	*****					
			1463	*	PARITY ERROR REPORTING ROUTINES			*	
			1464	*****					
006446			1465	IPE1	BSS	0	INSTRUCTION PARITY ERROR PROCESSOR		
006446	100545	A	1466		EXC	0500+PRTY	DISABLE PARITY INTERRUPTS		
006447	054032	A	1467		STA	IPEA	SAVE A		
006450	064032	A	1468		STB	IPEB	B		
006451	074032	A	1469		STX	IPEX	AND X		
006452	010100	A	1470		LDA	0100	A=ERROR ADDRESS		
006453	006020	A	1471		LDBI	0100	B=TRAP LOCATION		
006454	000100	A							
006455	002000	A	1472		CALL	(SSWT)*	CALL SENSE SWITCH ROUTINE		
006456	100421	A							
006457	005000	A	1473		DATA	05000	NOP		
006460	106466	A	1474		DATA	(IPE1)*	ERR PRINTOUT		
006461	004357	A	1475		DATA	TERM	SS3 EXIT		
006462	006463	A	1476		DATA	**+1			
006463	000020	A	1477		HLT	020			
006464	001000	A	1478		JMP	TERM			
006465	004357	A							
			1479	*					
006466	000000	A	1480	IPE1	DATA	0			
006467	006030	A	1481		LDXI	HG12			
006470	007162	A							
006471	002000	A	1482		CALL	(OUTD)*	OUTPUT ERR MESSAGE		
006472	100403	A							
006473	010100	A	1483		LDA	0100			
006474	002000	A	1484		CALL	(OUTE)*	AND PARITY ERROR ADDRESS		
006475	100404	A							
006476	002000	A	1485		CALL	(OUTC)*	CR/LF		
006477	100402	A							
006500	001000	A	1486		JMP*	IPE1			
006501	106466	A							
006502	000000	A	1487	IPEA	DATA	0	REGISTER		
006503	000000	A	1488	IPEB	DATA	0	SAVE		
006504	000000	A	1489	IPEX	DATA	0	AREA		
			1490	*					
006505			1491	APER	BSS	0	ADDRESS PARITY ERROR PROCESSOR		
006505	100545	A	1492		EXC	0500+PRTY	DISABLE PARITY INTERRUPTS		

006506	054032	A	1493	STA	APEA	SAVE A	
006507	064032	A	1494	STB	APEB	B	
006510	074032	A	1495	STX	APEX	AND X	
006511	010104	A	1496	LDA	0104	A=ERROR ADDRESS	
006512	006020	A	1497	LDBI	0104	B=TRAP LOCATION	
006513	000104	A					
006514	002000	A	1498	CALL	(SSWT)*	CALL SENSE SWITCH ROUTINE	
006515	100421	A					
006516	005000	A	1499	DATA	05000	NOP	
006517	106525	A	1500	DATA	(APE1)*	ERR PRINTOUT	
006520	004357	A	1501	DATA	TERM	SS3 EXIT	
006521	006522	A	1502	DATA	**+1		
006522	000021	A	1503	HLT	021		
006523	001000	A	1504	JMP	TERM		
006524	004357	A					
			1505 *				
006525	000000	A	1506	DATA	0		
006526	006030	A	1507	LDXI	HG13		
006527	007202	A					
006530	002000	A	1508	CALL	(OUTD)*	OUTPUT ERR MESSAGE	
006531	100403	A					
006532	010104	A	1509	LDA	0104		
006533	002000	A	1510	CALL	(OUTE)*	AND PARITY ERROR ADDRESS	
006534	100404	A					
006535	002000	A	1511	CALL	(OUTC)*	CR/LF	
006536	100402	A					
006537	001000	A	1512	JMP*	APE1		
006540	106525	A					
006541	000000	A	1513	DATA	0	REGISTER	
006542	000000	A	1514	DATA	0	SAVE	
006543	000000	A	1515	DATA	0	AREA	
			1516 *				
006544			1517	OPER	BSS	0	OPERAND PARITY ERROR PROCESSOR
006544	100545	A	1518	EXC	0500+PRTY		DISABLE PARITY INTERRUPTS
006545	054032	A	1519	STA	OPEA		SAVE A
006546	064032	A	1520	STB	OPEB		B
006547	074032	A	1521	STX	OPEX		AND X
006550	010110	A	1522	LDA	0110		A=ERROR ADDRESS
006551	006020	A	1523	LDBI	0110		B=TRAP LOCATION
006552	000110	A					
006553	002000	A	1524	CALL	(SSWT)*		CALL SENSE SWITCH ROUTINE
006554	100421	A					

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006555	005000	A	1525		DATA	05000	NOP
006556	106564	A	1526		DATA	(OPE1)*	ERR PRINTOUT
006557	004357	A	1527		DATA	TERM	SS3 EXIT
006560	006561	A	1528		DATA	*+1	
006561	000022	A	1529		HLT	022	
006562	001000	A	1530		JMP	TERM	
006563	004357	A					
			1531	*			
006564	000000	A	1532	OPE1	DATA	0	
006565	006030	A	1533		LDXI	HG14	
006566	007220	A					
006567	002000	A	1534		CALL	(OUTD)*	OUTPUT ERR MESSAGE
006570	100403	A					
006571	010110	A	1535		LDA	0110	
006572	002000	A	1536		CALL	(OUTE)*	AND PARITY ERROR ADDRESS
006573	100404	A					
006574	002000	A	1537		CALL	(OUTC)*	CR/LF
006575	100402	A					
006576	001000	A	1538		JMP*	OPE1	
006577	106564	A					
			1539	*			
006600	000000	A	1540	OPEA	DATA	0	REGISTER
006601	000000	A	1541	OPEB	DATA	0	SAVE
006602	000000	A	1542	OPEX	DATA	0	AREA
			1543	*			
006603			1544	TPER	BSS	0	TRAP PARITY ERROR PROCESSOR
006603	100545	A	1545		EXC	0500+PRTY	DISABLE PARITY INTERRUPTS
006604	054032	A	1546		STA	TPEA	SAVE A
006605	064032	A	1547		STB	TPEB	B
006606	074032	A	1548		STX	TPEX	AND X
006607	010114	A	1549		LDA	0114	A=ERROR ADDRESS
006610	006020	A	1550		LDBI	0114	B=TRAP LOCATION
006611	000114	A					
006612	002000	A	1551		CALL	(SSWT)*	CALL SENSE SWITCH ROUTINE
006613	100421	A					
006614	005000	A	1552		DATA	05000	NOP
006615	106623	A	1553		DATA	(TPE1)*	ERR PRINTOUT
006616	004357	A	1554		DATA	TERM	SS3 EXIT
006617	006620	A	1555		DATA	*+1	
006620	000023	A	1556		HLT	023	
006621	001000	A	1557		JMP	TERM	
006622	004357	A					

			1558 *						
006623	000000	A	1559	TPE1	DATA	0			
006624	006030	A	1560		LDXI	HG15			
006625	007236	A							
006626	002000	A	1561		CALL	(OUTD)*	OUTPUT ERR MESSAGE		
006627	100403	A							
006630	010114	A	1562		LDA	0114			
006631	002000	A	1563		CALL	(OUTE)*	AND PARITY ERROR ADDRESS		
006632	100404	A							
006633	002000	A	1564		CALL	(OUTC)*	CR/LF		
006634	100402	A							
006635	001000	A	1565		JMP*	TPE1			
006636	106623	A							
			1566 *						
006637	000000	A	1567	TPEA	DATA	0	REGISTER		
006640	000000	A	1568	TPEB	DATA	0	SAVE		
006641	000000	A	1569	TPEX	DATA	0	AREA		
			1570 *						
006642			1571	PER1	BSS	0			C
006642	100545	A	1572		EXC	0500+PRTY	DISABLE PARITY INTERRUPTS		F
006643	054073	A	1573		STA	PEA	SAVE A		C
006644	064073	A	1574		STB	PEB	B		C
006645	074073	A	1575		STX	PEX	AND X		C
006646	014065	A	1576		LDA	PER	ERROR ADDRESS		F
006647	020525	A	1577		LDB	V70I	TRAP ADDRESS		F
006650	002000	A	1578		CALL	(SSWT)*	CALL SENSE SWITCH ROUTINE		C
006651	100421	A							
006652	005000	A	1579		DATA	05000	NOP		C
006653	106660	A	1580		DATA	(PE1)*	ERR PRINTOUT		C
006654	004357	A	1581		DATA	TERM	553 EXIT		C
006655	006656	A	1582		DATA	*+1			C
006656	001000	A	1583		JMP*	EXTT	RESTART		J
006657	104316	A							
			1584 *						
006660	000000	A	1585	PE1	DATA	0			C
006661	002000	A	1586		CALL	(OUTC)*			C
006662	100402	A							
006663	006030	A	1587		LDXI	HG12+7			C
006664	007171	A							
006665	002000	A	1588		CALL	(OUTD)*	OUTPUT ERR MESSAGE		C
006666	100403	A							
006667	014044	A	1589		LDA	PER			F

006670	002000	A	1590	CALL	(OUTE)*	AND PARITY ERROR ADDRESS	C
006671	100404	A					
006672	002000	A	1591	CALL	(OUTC)*		C
006673	100402	A					
006674	006010	A	1592	LDAI	'X='	OUTPUT X INFORMATION	J
006675	154275	A					
006676	002000	A	1593	CALL*	OUTB		J
006677	100401	A					
006700	014040	A	1594	LDA	PEX		J
006701	002000	A	1595	CALL*	OUTF		J
006702	100405	A					
006703	034035	A	1596	LDX	PEX		J
006704	015000	A	1597	LDA	0,1		J
006705	002000	A	1598	CALL*	OUTE		J
006706	100404	A					
006707	006010	A	1599	LDAI	'B='	OUTPUT B INFORMATION	J
006710	141275	A					
006711	002000	A	1600	CALL*	OUTB		J
006712	100401	A					
006713	014024	A	1601	LDA	PEB		J
006714	002000	A	1602	CALL*	OUTF		J
006715	100405	A					
006716	024021	A	1603	LDB	PEB		J
006717	016000	A	1604	LDA	0,2		J
006720	002000	A	1605	CALL*	OUTE		J
006721	100404	A					
006722	006010	A	1606	LDAI	' '	OUTPUT MTW1	J
006723	120240	A					
006724	002000	A	1607	CALL*	OUTB		J
006725	100401	A					
006726	010502	A	1608	LDA	MTW1		J
006727	002000	A	1609	CALL*	OUTE		J
006730	100404	A					
006731	100445	A	1610	EXC	0400+PRTY	RE-ENABLE MEMORY ERROR	J
006732	001000	A	1611	JMP*	EXTT		J
006733	104316	A					
006734	000000	A	1612	ENTR		V70 PARITY ERROR	F
006735	001000	A	1613	JMP	PER1		F
006736	006642	A					
006737	000000	A	1614	PEA	0	REGISTER	C
006740	000000	A	1615	PEB	0	SAVE	C
006741	000000	A	1616	PEX	0	AREA	C

006742	000000	A	1617 *	OTAC	ENTR	0	OUTPUT ERROR AND CYCLE	C	
006743	005002	A	1618		TZB		CLEAR B	C	
006744	010521	A	1619		LDA	TERR	GET ERROR CNTR	C	
006745	001010	A	1620		JAZ	**4	JUMP IF NO ERRORS	C	
006746	006751	A							
006747	006020	A	1621		LDBI	0100000	SET SIGN OF B	C	
006750	100000	A							
006751	010504	A	1622		LDA	TCYC	TOTAL CYCLES	C	
006752	005031	A	1623		MERG	031	ERROR & CYCLE TO A	C	
006753	103177	A	1624		DAR	077	A TO DISPLAY	C	
006754	001000	A	1625		JMP*	OTAC	-EXIT	C	
006755	106742	A							
			1627	*****					
			1628	*****					B
006756	044022	A	1629	PRDN	INR	PFHF		F	
006757	000000	A	1630	PHLT	HLT			F	
006760	001000	A	1631		JMP	0		F	
006761	000000	A							
006762	006030	A	1632	PRUP	LDBI	PFMG	POWER RESTORED MESSAGE	B	
006763	007002	A							
006764	040511	A	1633		INR	PFK		B	
006765	024013	A	1634		LDB	PFHF		F	
006766	005001	A	1635		TZA			F	
006767	054011	A	1636		STA	PFHF		F	
006770	001020	A	1637		JBZ	PHLT		F	
006771	006757	A							
006772	010442	A	1638		LDA	SCON		B	
006773	001010	A	1639		JAZ*	PWRR		B	
006774	107000	A							
006775	002000	A	1640		CALL*	OUTD		B	
006776	100403	A							
006777	001000	A	1641		JMP	MIN1		B	
007000	004172	A							
	007000	A	1642	PWRR	EQU	*-1		B	
007001	000000	A	1643	PFHF	DATA	0		F	
			1644	*****					B
007002	106612	A	1645	PFMG	DATA	CRLF, 'POWER RESTORED', CRLF, 0		B	
007003	150317	A							
007004	153705	A							
007005	151240	A							
007006	151305	A							

007007 151724 A  
007010 147722 A  
007011 142704 A  
007012 106612 A  
007013 000000 A

1646 \*

1647 \*

MESSAGE TABLE

1648 \*

007014 106612 A 1649 HDG2 DATA CRLF, '4K MODULE(S) TO BE TESTED ', 0

007015 132313 A

007016 120315 A

007017 147704 A

007020 152714 A

007021 142650 A

007022 151651 A

007023 120324 A

007024 147640 A

007025 141305 A

007026 120324 A

007027 142723 A

007030 152305 A

007031 142240 A

007032 136640 A

007033 000000 A

007034 152317 A 1650 HDG3 DATA 'TOO MANY PARAMETERS', CRLF, 0

007035 147640 A

007036 146701 A

007037 147331 A

007040 120320 A

007041 140722 A

007042 140715 A

007043 142724 A

007044 142722 A

007045 151640 A

007046 106612 A

007047 000000 A

007050 146717 A 1651 HDG5 DATA 'MODULE NOT WITHIN MEMORY RANGE', CRLF, 0

007051 142325 A

007052 146305 A

007053 120316 A

007054 147724 A

007055 120327 A

007056 144724 A  
007057 144311 A  
007060 147240 A  
007061 146705 A  
007062 146717 A  
007063 151331 A  
007064 120322 A  
007065 140716 A  
007066 143705 A  
007067 106612 A  
007070 000000 A  
007071 106612 A 1652 HDG6 DATA CRLF, 'CYCLES = ', 0  
007072 141731 A  
007073 141714 A  
007074 142723 A  
007075 120275 A  
007076 120240 A  
007077 000000 A  
007100 106612 A 1653 HDG8 DATA CRLF, 'END MEMO', 0  
007101 142716 A  
007102 142240 A  
007103 146705 A  
007104 146717 A  
007105 000000 A  
007106 106612 A 1654 HDG9 DATA CRLF, 'ERROR TOTAL = ', 0  
007107 142722 A  
007110 151317 A  
007111 151240 A  
007112 152317 A  
007113 152301 A  
007114 146240 A  
007115 136640 A  
007116 000000 A  
007117 152305 A 1655 HG10 DATA 'TEST ADDRESS EXPECTED ACTUAL CYCLE', CRLF, 0 F  
007120 151724 A  
007121 120240 A  
007122 120301 A  
007123 142304 A  
007124 151305 A  
007125 151723 A  
007126 120240 A  
007127 142730 A



007130	150305	A			
007131	141724	A			
007132	142704	A			
007133	120240	A			
007134	140703	A			
007135	152325	A			
007136	140714	A			
007137	120240	A			
007140	141731	A			
007141	141714	A			
007142	142640	A			
007143	106612	A			
007144	000000	A			
007145	106612	A	1656 HG11	DATA	CRLF, *NUMBER OF CYCLES RUN = *,0
007146	147325	A			
007147	146702	A			
007150	142722	A			
007151	120317	A			
007152	143240	A			
007153	141731	A			
007154	141714	A			
007155	142723	A			
007156	120322	A			
007157	152716	A			
007160	120275	A			
007161	000000	A			
007162	106612	A	1657 HG12	DATA	CRLF, *INSTRUCTION PARITY ERROR AT *,0
007163	144716	A			
007164	151724	A			
007165	151325	A			
007166	141724	A			
007167	144717	A			
007170	147240	A			
007171	150301	A			
007172	151311	A			
007173	152331	A			
007174	120305	A			
007175	151322	A			
007176	147722	A			
007177	120301	A			
007200	152240	A			
007201	000000	A			

007202 106612 A 1658 HG13 DATA CRLF, ADDRESS PARITY ERROR AT \*,0  
007203 140704 A  
007204 142322 A  
007205 142723 A  
007206 151640 A  
007207 150301 A  
007210 151311 A  
007211 152331 A  
007212 120305 A  
007213 151322 A  
007214 147722 A  
007215 120301 A  
007216 152240 A  
007217 000000 A  
007220 106612 A 1659 HG14 DATA CRLF, OPERAND PARITY ERROR AT \*,0  
007221 147720 A  
007222 142722 A  
007223 140716 A  
007224 142240 A  
007225 150301 A  
007226 151311 A  
007227 152331 A  
007230 120305 A  
007231 151322 A  
007232 147722 A  
007233 120301 A  
007234 152240 A  
007235 000000 A  
007236 106612 A 1660 HG15 DATA CRLF, TRAP PARITY ERROR AT \*,0  
007237 152322 A  
007240 140720 A  
007241 120320 A  
007242 140722 A  
007243 144724 A  
007244 154640 A  
007245 142722 A  
007246 151317 A  
007247 151240 A  
007250 140724 A  
007251 120240 A  
007252 000000 A  
007253 106612 A 1661 PFKM DATA CRLF, POWER FAILURES = \*,0

007254	150317	A						
007255	153705	A						
007256	151240	A						
007257	143301	A						
007260	144714	A						
007261	152722	A						
007262	142723	A						
007263	120275	A						
007264	120240	A						
007265	000000	A						
007266	106612	A	1662	INTM	DATA	CRLF, 'V70 PARITY ERROR INTERRUPT LOCATION'		F
007267	153267	A						
007270	130240	A						
007271	150301	A						
007272	151311	A						
007273	152331	A						
007274	120305	A						
007275	151322	A						
007276	147722	A						
007277	120311	A						
007300	147324	A						
007301	142722	A						
007302	151325	A						
007303	150324	A						
007304	120314	A						
007305	147703	A						
007306	140724	A						
007307	144717	A						
007310	147240	A						
007311	124266	A	1663		DATA	'(620=0.)' # ',0		F
007312	131260	A						
007313	136660	A						
007314	127251	A						
007315	120275	A						
007316	120240	A						
007317	000000	A						
007320	106612	A	1664	WCPM	DATA	CRLF, 'WORSE CASE PATTERN(S)'		H
007321	153717	A						
007322	151323	A						
007323	142640	A						
007324	141701	A						
007325	151705	A						

007326 120320 A  
007327 140724 A  
007330 152305 A  
007331 151316 A  
007332 124323 A  
007333 124640 A  
007334 000000 A  
007335 106612 A 1665 HDG16 DATA CRLF, 'TESTS TO EXECUTE' ,0 H  
007336 152305 A  
007337 151724 A  
007340 151640 A  
007341 152317 A  
007342 120305 A  
007343 154305 A  
007344 141725 A  
007345 152305 A  
007346 136640 A  
007347 000000 A

1182TTL "OOORE BUS" "SS FORMS" "C. F.

			1667 *							B
			1668 *		MEMORY CHECKERBOARD DUMP					B
			1669 *							B
001000			1670	ORG	01000					B
			1671 *							B
001000	005041	A	1672	MDMP	TXA					B
001001	000001	A	1673		HLT	1		SET A=START ADDRESS		B
001002	001004	A	1674		JAN	MTOP				B
001003	003415	A								B
001004	151073	A	1675		ANA	070K		SAVE 4K START		B
001005	005014	A	1676		TAX			IN X		B
001006	002000	A	1677	MDM1	CALL*	OUTC		CR/LF		B
001007	100402	A								B
001010	005041	A	1678		TXA			OUTPUT		B
001011	151073	A	1679		ANA	070K		FIRST		B
001012	004354	A	1680		LSRA	12		THREE		B
001013	121076	A	1681		ADD	ZERO		OCTAL		B
001014	002000	A	1682		CALL*	OUTA		DIGITS		B
001015	100400	A								B
001016	005041	A	1683		TXA			OF		B
001017	151074	A	1684		ANA	07K		ADDRESS		B
001020	004351	A	1685		LSRA	9				B
001021	121076	A	1686		ADD	ZERO				B
001022	002000	A	1687		CALL*	OUTA				B
001023	100400	A								B
001024	005041	A	1688		TXA					B
001025	151075	A	1689		ANA	0700				B
001026	004346	A	1690		LSRA	6				B
001027	121076	A	1691		ADD	ZERO				B
001030	002000	A	1692		CALL*	OUTA				B
001031	100400	A								B
001032	011077	A	1693		LDA	SPCE				B
001033	002000	A	1694		CALL*	OUTA				B
001034	100400	A								B
001035	015000	A	1695	MDM2	LDA	0,1		GET WORD		B
001036	001010	A	1696		JAZ	A0		ZERO?		B
001037	001065	A								B
001040	005111	A	1697		IAR					B
001041	001010	A	1698		JAZ	A1		-1?		B
001042	001070	A								B
001043	011101	A	1699		LDA	N01		NOT ZERO OR MINUS ONE		B
001044	002000	A	1700	MDM3	CALL*	OUTA				B

1182T LTI-2 MOORE BUSINESS FORMS, INC. F

001045	100400	A								
001046	005145	A	1701	INCR	045	BVUMP X TO A				B
001047	151102	A	1702	ANA	EOB					B
001050	001010	A	1703	JAZ	MDM9	END OF 4K?				B
001051	001057	A								
001052	151103	A	1704	ANA	EOL					B
001053	001010	A	1705	JAZ	MDM1	END OF LINE?				B
001054	001006	A								
001055	001000	A	1706	JMP	MDM2					B
001056	001035	A								
001057	002000	A	1707	MDM9	CALL*	OUTC	CR/LF			B
001060	100402	A								
001061	002000	A	1708	CALL*	OUTC	CR/LF				B
001062	100402	A								
001063	001000	A	1709	JMP	MDMP					B
001064	001000	A								
001065	011076	A	1710	A0	LDA	ZERO				B
001066	001000	A	1711	JMP	MDM3					B
001067	001044	A								
001070	011100	A	1712	A1	LDA	ONE				B
001071	001000	A	1713	JMP	MDM3					B
001072	001044	A								
001073	070000	A	1714	070K	DATA	070000				B
001074	007000	A	1715	07K	DATA	07000				B
001075	000700	A	1716	0700	DATA	0700				B
001076	130260	A	1717	ZERO	DATA	'00'				B
001077	120240	A	1718	SPCE	DATA	' '				B
001100	130661	A	1719	ONE	DATA	'11'				B
001101	126655	A	1720	N01	DATA	'--'				B
001102	007777	A	1721	EOB	DATA	07777				B
001103	000077	A	1722	EOL	DATA	077				B
	003400	A	1723	END	STRT					

ENTRY NAMES  
EXTERNAL NAMES  
SYMBOLS

000442	A	SCON	000471	A	SDCT	000440	A	SFLG	000422	A	SLWE
000441	A	SMEM	000424	A	SMSM	001065	A	A0	001070	A	A1
005563	A	ACD	005565	A	ACD1	005647	A	ACDT	005676	A	ACDT1
005675	A	ACDTX	006525	A	APE1	006541	A	APEA	006542	A	APEB
006505	A	APER	006543	A	APEX	005423	A	BITC	000516	A	BITS
005424	A	BITX	106612	A	CRLF	000505	A	CYCL	005646	A	D64
006015	A	DAP	006025	A	DAP1	006036	A	DAP2	006051	A	DAP3

004337	A	DEM	000526	A	EFLG	004542	A	ELOP	000506	A	EMEM
001102	A	EOB	001103	A	EOL	004473	A	ERP1	004456	A	ERPO
004444	A	ERR1	000423	A	ESZC	004316	A	EXTT	004313	A	EXTT1
000514	A	FRST	003630	A	HDG1	007335	A	HDG16	007014	A	HDG2
007034	A	HDG3	007050	A	HDG5	007071	A	HDG6	007100	A	HDG8
007106	A	HDG9	007117	A	HG10	007145	A	HG11	007162	A	HG12
007202	A	HG13	007220	A	HG14	007236	A	HG15	006377	A	I1
006361	A	I2	006341	A	I3	006327	A	I4	006314	A	I5
006216	A	I6	006233	A	IA	004753	A	IAO	004726	A	IAZ
006227	A	IB	006320	A	IC	005004	A	ICB	005023	A	ICB1
005035	A	ICB2	005013	A	ICBC	000410	A	INPA	000411	A	INPB
000412	A	INPC	000413	A	INPD	000414	A	INPE	000415	A	INPF
000416	A	INPG	006133	A	INTI	007266	A	INTM	006163	A	INTV
006466	A	IPE1	006502	A	IPEA	006503	A	IPEB	006446	A	IPER
006504	A	IPEX	004627	A	IUA	004631	A	IUA1	005121	A	IWC
006233	A	IWCA	006244	A	IWCB	005134	A	IWCC	006276	A	IWCX
006300	A	IWCZ	000515	A	LAST	001006	A	MDM1	001035	A	MDM2
001044	A	MDM3	001057	A	MDM9	001000	A	MDMP	004427	A	MERR
004172	A	MIN1	004211	A	MIN2	004324	A	MIN3	004163	A	MINT
003772	A	MPT9	004040	A	MPTB	003655	A	MTC1	003667	A	MTC2
003672	A	MTC3	003676	A	MTC4	003704	A	MTC5	003710	A	MTC6
003641	A	MTCM	003415	A	MTOP	004025	A	MTP0	003734	A	MTP1
004035	A	MTP2	003715	A	MTP3	003737	A	MTP4	003725	A	MTP5
004004	A	MTP6	003732	A	MTP7	004011	A	MTP8	004032	A	MTPA
003427	A	MTT1	003456	A	MTT2	003505	A	MTT3	003507	A	MTT3A
003515	A	MTT3B	003540	A	MTT3C	003547	A	MTT3D	003560	A	MTT4
003565	A	MTT5	003606	A	MTT6	003420	A	MTTM	000502	A	MTW1
000503	A	MTW2	000510	A	N	001101	A	N01	005724	A	N2
005734	A	N21	005741	A	N22	005761	A	N22C	005746	A	N22N
005772	A	N23	006001	A	N24	003637	A	NL	005711	A	NSQR
006441	A	O100	003761	A	O10K	006442	A	O120	006432	A	O2
003431	A	O2K	003445	A	O2K1	005152	A	O3	006443	A	O332
006434	A	O34	006435	A	O35	003454	A	O36	006436	A	O37
006444	A	O375	006445	A	O377	006353	A	O3A	005120	A	O4
006437	A	O44	006440	A	O46	005273	A	O4K	005031	A	O525
001075	A	O700	001073	A	O70K	005412	A	O77	006404	A	O77A
001074	A	O7K	006433	A	O8	001100	A	ONE	006564	A	OPE1
006600	A	OPEA	006601	A	OPEB	006544	A	OPER	006602	A	OPEX
006742	A	OTAC	000400	A	OUTA	000401	A	OUTB	000402	A	OUTC
000403	A	OUTD	000404	A	OUTE	000405	A	OUTF	000406	A	OUTG
000407	A	OUTH	000517	A	PAT1	000520	A	PAT2	006660	A	PE1
006737	A	PEA	006740	A	PER	006734	A	PER	006642	A	PER1

006741	A	PEX	007001	A	PFHF	000511	A	PFK	007253	A	PFKM
007002	A	PFMG	006757	A	PHLT	006756	A	PRDN	000045	A	PRTY
006762	A	PRUP	007000	A	PWRR	000513	A	REP	000512	A	REP1
003425	A	RM1	000523	A	SAVB	000524	A	SAVX	006053	A	SET
006055	A	SET1	003400	A	SM2	001077	A	SPCE	000421	A	SSWT
003400	A	STRT	000522	A	SWCH	006014	A	T	005536	A	TACD
004742	A	TAOT	004715	A	TAZT	005441	A	TBA1	005452	A	TBA2
005463	A	TBA3	005472	A	TBA4	005500	A	TBA5	005514	A	TBA6
005526	A	TBA7	005531	A	TBA8	000510	A	TBAA	005513	A	TBAO
005425	A	TBAT	005523	A	TBAZ	005177	A	TBC	005205	A	TBC1
005214	A	TBC2	005253	A	TBC3	005306	A	TBC4	005315	A	TBC5
005357	A	TBC6	005262	A	TBC7	005366	A	TBC8	005372	A	TBC9
005156	A	TBCA	005161	A	TBCB	005410	A	TBCC	005400	A	TBCD
005422	A	TBCE	005353	A	TBCF	005247	A	TBCG	005301	A	TBCH
005145	A	TBCT	000554	A	TBL	000542	A	TBL0	000530	A	TBLI
005053	A	TCB	005057	A	TCBB	004767	A	TCBT	000504	A	TCYC
000420	A	TDLY	004357	A	TERM	004421	A	TERN	004415	A	TERO
000521	A	TERR	006070	A	TES	006073	A	TES1	006122	A	TES2
000507	A	TEST	000527	A	TEX	000417	A	TOUT	006623	A	TPE1
006637	A	TPEA	006640	A	TPEB	006603	A	TPER	006641	A	TPEX
003622	A	TPR	003614	A	TTR	004641	A	TUA	004644	A	TUA1
004655	A	TUA2	004657	A	TUA3	004563	A	TUAA	004603	A	TUAB
004607	A	TUAC	004556	A	TUAT	004154	A	UACA	004124	A	UACB
004145	A	UACC	004161	A	UACD	004103	A	UADA	004043	A	UADB
004074	A	UADC	004121	A	UADD	004111	A	UADE	000525	A	V70I
006417	A	V70N	007320	A	WCPM	001076	A	ZERO			

0 ERRORS ASSEMBLY COMPLETE



14:52:02 /PFILE,SS,,SS

14:52:05 /MEM,10

14:52:07 /CONC,L