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2 *
3 * V.D.M. PART NO. 92L0107-021F

RELEASED 6-16-75

620 MEMORY TEST PART 2

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12 *      * * * * *
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29 *      * * * * *
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32 *      * * * * *
33 *      * * * * *
34 *      * * * * *
35 *      * * * * *
36 *
37 *

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

THE MEMO TEST IS DESIGNED TO ASCERTAIN THE OPERATIONAL STATUS OF THE COMPUTER MEMORY. ANY MEMORY SIZE (4K-32K, 16 OR 18 BIT) CAN BE CHECKED. READ-ONLY-MEMORY (ROM) IS NOT TESTED BY THIS PROGRAM.

* AREAS RESERVED BY EXECUTIVE *

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58 * ORG 0
59 * JMP EXECUTIVE
60 * ORG 040
61 * JMP POWER DOWN ROUTINE
62 * JMP POWER UP ROUTINE
63 *
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	ORG	0400	
000400	OUTA	BSS	1
000401	OUTB	BSS	1
000402	OUTC	BSS	1
000403	OUTD	BSS	1
000404	OUTE	BSS	1
000405	OUTF	BSS	1
000406	OUTG	BSS	1
000407	OUTH	BSS	1
000410	INPA	BSS	1
000411	INPB	BSS	1
000412	INPC	BSS	1
000413	INPD	BSS	1
000414	INPE	BSS	1
000415	INPF	BSS	1
000416	INPG	BSS	1
000417	TOUT	BSS	1
000420	TDLY	BSS	1
000421	SSWT	BSS	1
000422	SLWE	BSS	1
			OUTPUT ONE CHAR ROUTINE
			OUTPUT TWO CHAR ROUTINE
			OUTPUT CR/LF ROUTINE
			OUTPUT MESSAGE ROUTINE
			OUTPUT OCTAL WORD ROUTINE
			OUTPUT OCTAL ADDR ROUTINE
			OUTPUT ERROR MSG ROUTINE
			OUTPUT CONTROL CHAR TO TTY ROUTINE
			INPUT ONE CHAR ROUTINE
			INPUT AND PRINT ONE CHAR ROUTINE
			INPUT ONE CHAR EDITED ROUTINE
			INPUT ONE ALPHA CHAR ROUTINE
			INPUT TWO ALPHA CHAR ROUTINE
			INPUT COMMA/PERIOD TERMINATION ROUTINE
			INPUT OCTAL NUMBER ROUTINE
			TIME-OUT ROUTINE
			TIME DELAY ROUTINE
			STANDARD SENSE SWITCH ROUTINE
			LOWEST WORD USED BY EXEC

PAGE	2	MAINTAIN III	MEMPT2		
000423		96 ESZC BSS 1	MEMORY SIZE DETERMINATION ROUTINE	04	00096
000424		97 \$MSM BSS 1	MEMORY SIZE MESSAGE	04	00097
		98 *		04	00098
		99 *		04	00099
000440		100 * ORG 0440		04	00100
		101 *		04	00101
		102 * EXECUTIVE DATA TABLE		04	00102
		103 *		04	00103
000440		104 \$FLG BSS 1	LOOP ON ERROR FLAG, 0=DON'T LOOP 1=LOOP	04	00104
000441		105 \$MEM BSS 1	MEMORY SIZE (HIGHEST AVAIL CORE)	04	00105
000442		106 \$CDN BSS 1	0=CONSOLE MODE 1=TTY MODE	04	00106
000443		107 BSS 22		04	00107
000471		108 \$DCT BSS 1	DIGIT COUNTER FOR INPG	04	00108
		109 *		04	00109
000040		110 * ORG 040	POWER DOWN INTERRUPT		
000040	001000 A	111 JMP PRDN		F	04 00110
000041	003617 A			F	04 00111
000042		112 * ORG 042	POWER UP INTERRUPT	B	04 00112
000042	001000 A	113 JMP PRUP		B	04 00113
000043	005623 A				
		114 *			04 00114
000100		115 * ORG 0100			04 00115
000100	000000 A	116 ENTR 0	INSTRUCTION PARITY ERROR		04 00116
000101	001000 A	117 JMP IPER			04 00117
000102	005344 A				
000104		118 * ORG 0104			04 00118
000104	000000 A	119 ENTR 0	ADDRESS PARITY ERROR		04 00119
000105	001000 A	120 JMP APER			04 00120
000106	005403 A				
000110		121 * ORG 0110			04 00121
000110	000000 A	122 ENTR 0	OPERAND PARITY ERROR		04 00122
000111	001000 A	123 JMP UPER			04 00123
000112	005442 A				
000114		124 * ORG 0114			04 00124
000114	000000 A	125 ENTR 0	TRAP PARITY ERROR		04 00125
000115	001000 A	126 JMP TPER			04 00126
000116	005501 A				
		127 *		C	04 00127
000500		128 * ORG 0500			04 00128
		129 *****			04 00129
		130 * MAIN ENTRY POINT			04 00130
		131 *****			04 00131
000045 A		132 PRTY SET 045	PARITY HARDWARE DEVICE ADDRESS		04 00132
000500	001000 A	133 JMP STRT			04 00133
000501	003000 A				
		134 *****			04 00134
		135 * DATA			04 00135
		136 *****			04 00136
		137 *			04 00137
		138 * DATA TABLE			04 00138
		139 *			04 00139
000502		140 MTW1 BSS 1	SAVE VALID PATTERN		04 00140
000503		141 MTW2 BSS 1	SAVE PATTERN READ		04 00141
000504		142 TCYC BSS 1	TOTLE CYCLES EXECUTED		04 00142
000505	000000 A	143 CYCL DATA 0	CYCLES		04 00143
000506	000000 A	144 EMEM DATA 0	PRINT END MEMO FLAG		04 00144
000507	000000 A	145 TEST DATA 0	TEST NUMBER		04 00145
000510		146 TBAA BSS 1		B	04 00146
000511	000000 A	147 PFK DATA 0	CDUNT OF POWER FAILURES	B	04 00147
000512		148 REP1 BSS 1	REP CTR		04 00148
000513		149 REP BSS 1	REP CTR		04 00149
000514	000000 A	150 FRST DATA 0	FIRST ADDRESS		04 00150
000515	000000 A	151 LAST DATA 0	LAST ADDRESS		04 00151
000516		152 BITS BSS 1	BIT SELECT PATTERN		04 00152
000517		153 PAT1 BSS 1	PATTERN 1		04 00153
000520		154 PAT2 BSS 1	PATTERN 2		04 00154
000521	000000 A	155 TERR DATA 0	ERROR TOTAL		04 00155
000522	000000 A	156 SWCH DATA 0	PRINT ERROR HDG FLG		04 00156
000523	000000 A	157 SAVB DATA 0			04 00157
000524	000000 A	158 SAVX DATA 0			04 00158
000525	000000 A	159 V701 DATA 0		F	04 00159
000526	177777 A	160 EFLG DATA -1	EXTENDED ADDRESSING FLAG	F	04 00160
		161 *			04 00161
		162 * TABLES HAVE THE FORM			04 00162
		163 * NAME BSS 1	TABLE NAME, INDEX PTR FOR TABLE		04 00163
		164 * BSS 1	MAX LENGTH OR CURRENT LENGTH OF TABLE		04 00164
		165 * (DEPENDING ON ROUTINE ACCESSING TABLE)			04 00165
		166 * BSS N	BODY OF TABLE, N=OCTAL MAX LENGTH		04 00166
		167 *			04 00167
000527	000000 A	168 TBLI DATA 0,6	TABLE OF WORSE CASE PATTERNS	C	04 00168
000530	000006 A				
000531	000203 A	169 DATA 0203	AMPEX		04 00169
000532	004001 A	170 DATA 04001	FABRI-TEK OR LITTON		04 00170
000533	000024 A	171 DATA 024,0144,044		B	04 00171
000534	000144 A				
000535	000044 A				
000536	003000 A	172 DATA 03000		C	04 00172
		173 *			04 00173
		174 * TBL0 = MEMORY LOCATIONS IN FIRST 4K TO BE TESTED			04 00174
		175 *			04 00175
000537	000000 A	176 TBL0 DATA 0,8			04 00176
000540	000010 A				
		177 *		B	04 00177
		178 *	W A R N I N G	B	04 00178
		179 *		B	04 00179

MAINTAIN III

MEMPT2

Address	Label	Operation	Parameters	Description	Page
180	*			NUMBER PAIRS MUST REFERENCE AN EVEN NUMBER OF WORDS	B 04 00180
181	*				B 04 00181
182	*				B 04 00182
000541	000002	A			E 04 00183
000542	000037	A			
000543	000044	A	184	DATA 044,077	B 04 00184
000544	000077	A			
000545	000120	A	185	DATA 0120,0367	C 04 00185
000546	000367	A			
000547	000622	A	186	DATA 0622,((SM2/2)*2)-1	B 04 00186
000550	002777	A			
187	*				04 00187
188	*			TBL CONTAINS BEGINNING AND ENDING ADDR OF MEMORY SEGMENT TO BE TESTED	04 00188
189	*				04 00189
000551	190	TBL	BSS 1	TBL INDEX	04 00190
000552	191	BSS	1	TBL LENGTH, VARIABLE UP TO 30	04 00191
000553	192	BSS	30	TBL DATA ITEMS	04 00192
193	*****			*****	04 00193
194	*				04 00194
195	*****			*****	04 00195
003000	196	ORG	03000		F 04 00196
	197	*****		*****	04 00197
003000	198	SM2	EQU *		B 04 00198
003001	013163	A	199	STRT LDA NL RESTORE HEADING	B 04 00199
003002	033020	A	200	LDX RM1	B 04 00200
003003	055000	A	201	STA 0,1	B 04 00201
003004	006010	A	202	LDAI HTOP RETURN TO MTOP	B 04 00202
003005	003010	A			
003006	006030	A	203	LDXI PWRR ON POWER FAILURE	B 04 00203
003007	005641	A			
003007	055000	A	204	STA 0,1	04 00204
205	*****			*****	04 00205
206	*			MEMO TOP - COMMON ENTRY POINT	04 00206
207	*****			*****	04 00207
003010	010442	A	208	MTOP LDA SCON CONSOLE MODE ?	04 00208
003011	001010	A	209	JAZ MTCM YES	04 00209
003012	003163	A			
210	*****			*****	04 00210
211	*			INPUT PARAMETERS (TTY MODE)	04 00211
212	*****			*****	04 00212
003013	033020	A	213	MTTM LDX RM1 'MEMORY TEST'	B 04 00213
003014	002000	A	214	CALL (DUTD)*	04 00214
003015	100403	A			
003016	005001	A	215	TZA PRINT HEADING ONCE	04 00215
003017	006030	A	216	LDXI HDG1	04 00216
003020	003154	A			
003021	003020	A	217	RM1 EQU *-1	B 04 00217
003022	055000	A	218	STA 0,1	04 00218
003023	002000	A	219	MTT1 CALL (EASZC)* DETERMINE MEMORY SIZE	04 00219
003023	100423	A			
003024	003024	A	220	D2K EQU * GET INTERRUPT LOCATION	F 04 00220
003025	002000	A	221	JMPM INT1	F 04 00221
003026	005100	A			
003027	006010	A	222	LDAI 05000 NOP	F 04 00222
003027	005000	A			
003030	053024	A	223	STA D2K	F 04 00223
003031	053025	A	224	STA D2K+1	F 04 00224
003032	053022	A	225	STA MTT1	F 04 00225
003033	053023	A	226	STA MTT1+1	F 04 00226
003034	100445	A	227	EXC 0400+PRTY ENABLE PARITY INTERRUPTS	04 00227
003035	030424	A	228	LDX SMSM PRINT MEMORY SIZE MESSAGE	04 00228
003036	002000	A	229	CALL (DUTD)*	04 00229
003037	100403	A			
003040	006030	A	230	LDXI HDG2 '4K MEMORY MODULE(S) TO BE TESTED ='	04 00230
003041	005655	A			
003042	002000	A	231	CALL (DUTD)*	04 00231
003043	100403	A			
003044	005001	A	232	TZA INIT TBL	04 00232
003045	050551	A	233	STA TBL	04 00233
003046	006010	A	234	LDAI 30	04 00234
003047	000030	A			
003050	003047	A	235	D36 EQU *-1	B 04 00235
003051	050552	A	236	STA TBL+1	04 00236
003051	007400	A	237	MTT2 RUF RESET COMMA INDICATOR	04 00237
003052	006010	A	238	LDAI MTT2 RETURN TO MTT2	B 04 00238
003053	003051	A			
003054	006030	A	239	LDXI PWRR ON POWER FAILURE	B 04 00239
003055	005641	A			
003056	055000	A	240	STA 0,1	B 04 00240
003057	002000	A	241	CALL (INPG)* INPUT N	04 00241
003060	100416	A			
003061	001000	A	242	JMP MTOP SS3	04 00242
003062	003010	A			
003063	001000	A	243	JMP MTT1+5 BACKSLASH	04 00243
003064	003027	A			
003065	007401	A	244	SDF COMMA	04 00244
003066	005011	A	245	MERG HOP	04 00245
003067	020471	A	246	LDB \$DCT TEST ALL OF MEMORY ?	04 00246
003070	001020	A	247	JBZ MTT4 YES,GOTO MTT4	04 00247
003071	003104	A			
003072	002000	A	248	CALL MTP2,TPR,TTR PUT INTO TBL,PARAMETER ERROR,TBL SIZE ERR	04 00248
003073	003361	A			
003074	003146	A			
003075	003140	A			
003076	001001	A	249	JDF MTT2 GET NEXT N IF COMMA IND SET	04 00249

PAGE	4	MAINTAIN III	MEMPT2		
003077	003051	A			
003100	010551	A	250 MTT3	LDA TBL	FIX TBL LENGTH
003101	050552	A	251	STA TBL+1	
003102	001000	A	252	JMP MTT5	
003103	003111	A			
003104	002000	A	253 MTT4	CALL MTP1,TTR	TBL=ALL OF MEMORY
003105	003260	P			
003106	003140	A			
003107	001000	A	254	JMP MTT3	
003110	003100	A			
003111	006030	A	255 MTT5	LDXI HDG6	CYCLES =
003112	005732	A			
003113	002000	A	256	CALL (DUTD)*	
003114	100403	A			
003115	002000	A	257	CALL (INPG)*	INPUT CYCLES
003116	100416	A			
003117	001000	A	258	JMP MTTM	SS3 TERMINATE
003120	003013	A			
003121	001000	A	259	JMP MTT5	BACKSLASH
003122	003111	A			
003123	001000	A	260	JMP MTT6	COMMA (PRINT 'END MEMO')
003124	003132	A			
003125	050505	A	261	STA CYCL	SAVE CYCLES
003126	005001	A	262	TZA	
003127	050506	A	263	STA ENEM	SET FLAG TO SUPPRESS END MEMO
003130	001000	A	264	JMP MINT	BRANCH TO TEST INITIALIZATION
003131	003507	A			
003132	050505	A	265 MTT6	STA CYCL	SAVE CYCLES
003133	005001	A	266	TZA	
003134	005211	A	267	CPA	
003135	050506	A	268	STA ENEM	SET FLAG TO PRINT END MEMO
003136	001000	A	269	JMP MINT	
003137	003507	A			
003140	006030	A	270 TTR	LDXI HDG3	'TOO MANY PARAMETERS'
003141	005675	A			
003142	002000	A	271	CALL (DUTD)*	
003143	100403	A			
003144	001000	A	272	JMP MTT1	
003145	003022	S			
003146	006030	A	273 TPR	LDXI HDG5	'MODULE NOT WITHIN MEMORY RANGE'
003147	005711	A			
003150	002000	A	274	CALL (DUTD)*	
003151	100403	A			
003152	001000	A	275	JMP MTT1	
003153	003022	A			
003154	106612	A	276 CRLF	SET 0106612	CARRIAGE RETURN / LINE FEED
003155	146705	A	277 HDG1	DATA CRLF,'MEMORY TEST',CRLF,0	
003156	146717	A			
003157	151331	A			
003160	120324	A			
003161	142723	A			
003162	152240	A			
003163	106612	A			
003164	000000	A			
	003163	A	278 NL	EQU HDG1+7	
			279 *		B 04 00278
			280 *****		04 00279
			281 * INPUT PARAMETERS (CONSOLE MODE)		04 00280
			282 *****		04 00281
			283 MTCM	CALL (ESZC)* X=ADDRS OF HIGHEST AVAILABLE CORE	04 00282
003165	002000	A			
003166	100423	A			
003167	100445	A	284	EXC 0400+PRTY	ENABLE PARIITY INTERRUPTS
003170	030441	A	285	LDX SMEM	
003171	005103	A	286	INCR 03	SET A REG FOR ALL MEM,CONTINUES EXECUTION
003172	004541	A	287	LLSR 1	INIT TBL
003173	050551	A	288	STA TBL	
003174	013047	A	289	LDA U36	
003175	050552	A	290	STA TBL+1	B 04 00288
003176	005021	A	291	TPA	A=10---0
003177	001000	A	292	JMP MTC1+1	04 00289
003200	003202	A			
003201	005001	A	293 MTC1	TZA	04 00290
003202	000037	A	294	HLT 037	INPUT PARAMETERS
003203	001004	A	295	JAN MTC4	INPUT CYCLES? YES,GOTO MTC4
003204	003222	A			04 00295
003205	002000	A	296	CALL MTP2,MTC2,MTC3	PUT INTO TBL
003206	003361	A			04 00296
003207	003213	A			
003210	003216	A			
003211	001000	A	297	JMP MTC1	
003212	003201	A			
003213	005301	A	298 MTC2	DECR 01	PARAMETER EXCEEDS MEM A=-1
003214	001000	A	299	JMP MTC1+1	
003215	003202	A			04 00299
003216	013217	A	300 MTC3	LDA *+1	TOO MANY PARAMETERS
003217	000077	A	301	HLT 077	
003220	001000	A	302	JMP MTCM	
003221	003165	A			04 00300
003222	006150	A	303 MTC4	ANAI 077777	STORE CYCLES
003223	077777	A			04 00303
003224	050505	A	304	STA CYCL	
003225	010551	A	305	LDA TBL	TEST ALL OF MEMORY
003226	001010	A	306	JAZ MTC6	
003227	003234	A			04 00306

		MAINTAIN III	MEMPT2	PAGE	5
003230	010531	A 307	MTC5 LDA TBL	04	00307
003231	050532	A 308	STA TBL+1	04	00308
003232	001000	A 309	JMP MINT	04	00309
003233	003507	A			
003234	002000	A 310	MTC6 CALL MTP1,MTC3	04	00310
003235	003260	A			
003236	003216	A			
003237	001000	A 311	JMP MTC5	04	00311
003240	003230	A			
		312	*****	04	00312
		313	* PARAMETER INPUT SUBROUTINES *	04	00313
		314	*****	04	00314
		315	*	04	00315
		316	* TBL = ALL OF MEMORY	04	00316
		317	*	04	00317
003241	005302	A 318	MTP3 DECR 02	04	00318
003242	005123	A 319	INCR 023	04	00319
003243	002000	A 320	CALL MTP2,MTP7,MTP5	04	00320
003244	003361	A	TBL = MODULE (A)		
003245	003236	A			
003246	003231	A			
003247	001000	A 321	JMP MTP3+1	04	00321
003250	003242	A			
003251	033230	A 322	MTP5 LDX MTP1	04	00322
003252	035000	A 323	LDX 0,1	04	00323
003253	073260	A 324	STX MTP1	04	00324
003254	001000	A 325	JMP (MTP1)*	04	00325
003255	103260	A			
003256	043260	A 326	MTP7 INR MTP1	04	00326
003257	001000	A 327	JMP 0	04	00327
003260	000000	A			
003260	000000	A 328	MTP1 BEQ 0	04	00328
003261	001000	A 329	JMP MTP3	04	00329
003262	003241	A			
		330	*	04	00330
		331	* TBL = MODULE (A)	04	00331
		332	*	04	00332
003263	001010	A 333	MTP4 JAZ MTP8	04	00333
003264	003335	A	TBL=1ST 4K? YES,GOTO MTP8		
003265	004234	A 334	LRLA 12	04	00334
003266	140411	A 335	SUB MEM	04	00335
003267	001000	A 336	JAP MTP6	04	00336
003270	003330	A			
003271	120441	A 337	ADD MEM	04	00337
003272	002000	A 338	CALL UADA,TBL,MTP0	04	00338
003273	003427	A	PUT PARAMETERS INTO TBL		
003274	000551	A			
003275	003351	A			
003276	005014	A 339	TAX	E 04	00339
003277	010422	A 340	LDA \$LWE	E 04	00340
003300	153305	A 341	ANA D10K	E 04	00341
003301	001010	A 342	JAZ MPTB	E 04	00342
003302	003364	A			
003303	005041	A 343	TXR	E 04	00343
003304	006110	A 344	SURI 010000	E 04	00344
003305	010000	A			
003306	003305	A 345	D10K EQU *-1	E 04	00345
003307	003312	A 346	JAZ *-4	E 04	00346
003310	001000	A			
003311	003364	A 347	JMP MPTB	E 04	00347
003312	006010	A 348	LDAI 013777	E 04	00348
003313	013777	A			
003314	001000	A 349	JMP MPT9+2	E 04	00349
003315	003320	A			
003316	006110	A 350	MPT9 BRAI 07777	E 04	00350
003317	007777	A			
003320	002000	A 351	CALL UADA,TBL,MTP0	04	00351
003321	003427	A			
003322	000551	A			
003323	003351	A			
003324	043260	A 352	INR MTP2	04	00352
003325	043260	A 353	INR MTP2	04	00353
003326	001000	A 354	JMP (MTP2)*	04	00354
003327	103301	A			
003330	033361	A 355	MTP6 LDX MTP2	04	00355
003331	035000	A 356	LDX 0,1	04	00356
003332	073334	A 357	STX *-2	04	00357
003333	001000	A 358	JMP 0	04	00358
003334	000000	A			
003335	005001	A 359	MTP8 TZA	04	00359
003336	050537	A 360	STA TBL0	04	00360
003337	002000	A 361	CALL UADA,TBL0,MTPA	04	00361
003340	003500	A	TRANSFER TBLS		
003341	000537	A			
003342	003356	A			
003343	002000	A 362	CALL UADA,TBL,MTP0	04	00362
003344	003427	A			
003345	000551	A			
003346	003351	A			
003347	001000	A 363	JMP MTP8+2	04	00363
003350	003337	A			
003351	033361	A 364	MTP0 LDX MTP2	04	00364
003352	035001	A 365	LDX 1,1	04	00365
003353	073355	A 366	STX *-2	04	00366

PAGE	S	MAINTAIN III	MEMPT2					
003354	001000	A	367	JMP	0	04 00367		
003355	000000	A						
003356	043361	A	368	MTPA	INR	MTP2	NORMAL EXIT	04 00368
003357	043361	A	369		INR	MTP2		04 00369
003360	001000	A	370		JMP	0		04 00370
003361	000000	A						
003362	001000	A	371	MTP2	BES	0	ENTRY	04 00371
003363	003263	A	372		JMP	MTP4		04 00372
003364	005041	A	373	MPTB	TXA			E 04 00373
003365	001000	A	374		JMP	MPT9		E 04 00374
003366	003316	A						
			375	*				04 00375
			376	*				04 00376
			377	*	*****			04 00377
			378	*	* * * * *			04 00378
			379	*	* PUT ITEM INTO TABLE *			04 00379
			380	*	* * * * *			04 00380
			381	*	*****			04 00381
			382	*	CALL	UADA,TBLPTR,OVFLEXIT	INCR ()TBLPTR,IF.GT.()TBLPTR+1	04 00382
			383	*			GOTO OVFLEXIT,ELSE	04 00383
			384	*			()TBLPTR+()TBLPTR)=A	04 00384
			385	*	TBL=INDEX,TBLSIZE,ITEM1,...,ITEMN			04 00385
003367	033427	A	386	UADB	LIX	UADA	B=TBLPTR	04 00386
003370	025000	A	387		LDB	0,1		04 00387
003371	046000	A	388		INR	0,2	INCR ()TBLPTR	04 00388
003372	016001	A	389		LDA	1,2	IF ()TBLPTR .GT. ()TBLPTR+1),GOTO ENDEXIT	04 00389
003373	146000	A	390		SUB	0,2		04 00390
003374	001000	A	391		JAN	UADC		04 00391
003375	003420	A						
003376	005121	A	392		INCR	021		04 00392
003377	126000	A	393		ADD	0,2		04 00393
003400	005311	A	394		DAR			F 04 00394
003401	005012	A	395		TAB			F 04 00395
003402	016000	A	396		LDA	0,2	GET PREVIOUS ENTRY	F 04 00396
003403	005111	A	397		IAR			F 04 00397
003404	143445	A	398		SUB	UADD	SEE IF NEXT CONTIGUOUS	F 04 00398
003405	001010	A	399		JAZ	UADB	YUP - NEXT	F 04 00399
003406	003435	A						
003407	005122	A	400		IBR			F 04 00400
003410	013415	A	401		LDA	UADD	RESTORE A,B,X	04 00401
003411	056000	A	402		STA	0,2		04 00402
003412	023446	A	403		LDB	UADD+1		04 00403
003413	033447	A	404		LIX	UADD+2		04 00404
003414	043427	A	405		INR	UADA	EXIT (RETURN+2)	04 00405
003415	043427	A	406		INR	UADA		04 00406
003416	001000	A	407		JMP	(UADA)*		04 00407
003417	103427	A						
003420	015001	A	408	UADC	LDA	1,1	SET EXIT	04 00408
003421	053420	A	409		STA	UADA-1	RESTORE A,B,X	04 00409
003422	013445	A	410		LDA	UADD		04 00410
003423	023446	A	411		LDB	UADD+1		04 00411
003424	033447	A	412		LIX	UADD+2		04 00412
003425	001000	A	413		JMP	*	OVFLEXIT (RETURN+1)*	04 00413
003426	003425	A						
003427	000000	A	414	UADA	ENTR		ENTRY POINT	04 00414
003430	053445	A	415		STA	UADD	SAVE A,B,X	04 00415
003431	063446	A	416		STB	UADD+1		04 00416
003432	073447	A	417		STX	UADD+2		04 00417
003433	001000	A	418		JMP	UADB	CONTINUE	04 00418
003434	003367	A						
003435	025000	A	419	UADE	LDB	0,1		F 04 00419
003436	016000	A	420		LDA	0,2	GET NUMBER OF ENTRIES	F 04 00420
003437	006140	A	421		SUBI	2	DECREMENT BY 2	F 04 00421
003440	000000	A						
003441	056000	A	422		STA	0,2	RESTORE A	F 04 00422
003442	013445	A	423		LDA	UADD	NORMAL EXIT	F 04 00423
003443	001000	A	424		JMP	UADC-6		F 04 00424
003444	003412	A						
003445		A	425	UADD	BSS	3		04 00425
			426	*				04 00426
			427	*				04 00427
			428	*	*****			04 00428
			429	*	* * * * *			04 00429
			430	*	* GET NEXT ITEM FROM TABLE *			04 00430
			431	*	* * * * *			04 00431
			432	*	*****			04 00432
			433	*	CALL	UACA,TBLPTR,ENDEXIT	(A)=()TBL+1+()TBLPTR	04 00433
			434	*				04 00434
			435	*	TBL=INDEX,TBLSIZE,ITEM1,...,ITEMN			04 00435
003450	033500	A	436	UACB	LIX	UACA	(B)=TBLPTR	04 00436
003451	025000	A	437		LDB	0,1		04 00437
003452	046000	A	438		INR	0,2	INCR ()TBLPTR	04 00438
003453	016001	A	439		LDA	1,2	IF ()TBLPTR .GT. ()TBLPTR+1),GOTO ENDEXIT	04 00439
003454	146000	A	440		SUB	0,2		04 00440
003455	001004	A	441		JAN	UACC		04 00441
003456	003471	A						
003457	005121	A	442		INCR	021	(A)=()TBLPTR+1+()TBLPTR	04 00442
003460	126000	A	443		ADD	0,2		04 00443
003461	005012	A	444		TAB			04 00444
003462	016000	A	445		LDA	0,2	RESTORE B,X	04 00445
003463	023505	A	446		LDB	UACD		04 00446
003464	033506	A	447		LIX	UACD+1		04 00447
003465	043500	A	448		INR	UACA	EXIT (RETURN+2)	04 00448
003466	043500	A	449		INR	UACA		04 00449

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003467	001000	A	450	JMP	(UACA)*			04	00450
003470	103500	A							
003471	015001	A	451	UACC	LDA	1,2	(A)=TBL SIZE	04	00451
003472	035001	A	452		LDX	1,1	SETEXIT	04	00452
003473	073477	A	453		STX	UACA-1		04	00453
003474	023505	A	454		LDX	UACB	RESTORE B,X	04	00454
003475	033506	A	455		LDX	UACB+1		04	00455
003476	001000	A	456		JMP	0	EXIT (RETURN+1)* =GOTO ENDEXIT	04	00456
003477	000000	A							
003500	000000	A	457	UACA	ENTR		ENTRY POINT	04	00457
003501	063505	A	458		STB	UACB	SAVE B,X	04	00458
003502	073506	A	459		STX	UACB+1		04	00459
003503	001000	A	460		JMP	UACB	CONTINUE	04	00460
003504	003450	A							
003505		A	461	UACB	BSS	2	(B),(X)	04	00461
			462	*				04	00462
			463	*****				04	00463
			464	*	SUBTEST DRIVER, AND CYCLS COUNTER			04	00464
			465	*****				04	00465
003507	005001	A	466	MINT	TZA			04	00466
003510	050521	A	467		STA	TERR	INIT ERROR CTR	04	00467
003511	050522	A	468		STA	SWCH	SET TO PRINT ERROR TABLE HEADING	04	00468
003512	050504	A	469		STA	TCYC	TOTAL CYCLES EXECUTED = 0	04	00469
003513	050510	A	470		STA	TBA4		B	04 00470
003514	002000	A	471		JMPM	DTAC		C	04 00471
003515	005603	A							
003516	007400	A	472	MIN1	RDF		RESET ERROR INDICATOR	04	00472
003517	006010	A	473		LDRI	MIN1	RETURN TO MIN1	B	04 00473
003520	003516	A							
003521	006030	A	474		LDXI	PWRP	ON POWER FAILURE	B	04 00474
003522	005641	A							
003523	055000	A	475		STA	0,1		B	04 00475
003524	002000	A	476		CALL	TUAT	UNIQUE ADDR	04	00476
003525	004024	A							
003526	005001	A	477		TZA		INIT TBL	04	00477
003527	000551	A	478		STA	TBL		04	00478
003530	002000	A	479	MIN2	CALL	UACA,TBL,MIN3	GET FRST ADDR	04	00479
003531	003500	A							
003532	000531	A							
003533	003577	A							
003534	050514	A	480		STA	FRST		04	00480
003535	002000	A	481		CALL	UACA,TBL,MIN3	GET LAST ADDR	04	00481
003536	003500	A							
003537	000531	A							
003540	003572	A							
003541	050515	A	482		STA	LAST		04	00482
003542	002000	A	483		JMPM	TBAT	BINARY ADDRESS	B	04 00483
003543	004656	A							
003544	010514	A	484		LDA	TCYC	FIRST PASS	B	04 00484
003545	001010	A	485		JAZ	*14	YES	B	04 00485
003546	003551	A							
003547	001000	A	486		JMP	*17	NO	B	04 00486
003550	003556	A							
003551	010522	A	487		LDA	SWCH	ABORT IF ANY ERRORS	B	04 00487
003552	001010	A	488		JAZ	*+4		B	04 00488
003553	003556	A							
003554	001010	A	489		JMP	TERM		B	04 00489
003555	003625	A							
003556	005001	A	490		TZA			B	04 00490
003557	050514	A	491		STA	TBA4		B	04 00491
003560	002000	A	492		CALL	TBAT	ALL ZEROS	04	00492
003561	004150	A							
003562	002000	A	493		CALL	TBAT	ALL ONES	04	00493
003563	004174	A							
003564	002000	A	494		CALL	TBAT	CHECKERBOARD	04	00494
003565	004220	A							
003566	002000	A	495		CALL	TBAT	BIT COMPLIMENT	B	04 00495
003567	004476	A							
003570	001000	A	496		JMP	MIN2	CONTINUE TO NEXT CASE	04	00496
003571	003500	A							
003572	002000	A	497	MIN3	CALL	DEM	DISPLAY *END MEMO*	04	00497
003573	003610	A							
003574	010514	A	498		LDA	CYCL	CONTINUES ?	04	00498
003575	001010	A	499		JAZ	MIN1	YES,GOTO MIN1	04	00499
003576	003514	A							
003577	005001	A	500		DAR		NO,DORE ?	04	00500
003580	050505	A	501		STA	CYCL		04	00501
003601	001010	A	502		JAZ	TERM	YES,GOTO TERM	04	00502
003602	003625	A							
003603	001000	A	503		JMP	MIN1	NO,CONTINUE TO MIN1	04	00503
003604	003516	A							
003605	000000	A	504	DEM	ENTR	0	DISPLAY END MEMO	04	00504
003606	040504	A	505		INR	TCYC	TCYC = TCYC+1	04	00505
003607	002000	A	506		JMPM	DTAC		C	04 00506
003610	005603	A							
003611	010440	A	507		LDA	SCON	CONSOLE MODE? YES,RETURN	04	00507
003612	001010	A	508		JAZ	(MEM)*		04	00508
003613	103605	A							
003614	010506	A	509		LDA	ENEM	SUPPRESS MESSAGE ? YES,RETURN	04	00509
003615	001010	A	510		JAZ	(DEM)*		04	00510
003616	103617	A							
003617	006030	A	511		LDXI	H008	*END MEMO*	04	00511
003620	005701	A							
003621	002000	A	512		CALL	(CONTD)*		04	00512
003622	103400	A							

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003623	001000	A	513	JMP	(DEM)* RETURN	04	00513
003624	103605	A					
			514	*****04 00514			
			515	* TERMINATE TESTS			*04 00515
			516	*****04 00516			
003625	100545	A	517	TERM	EXC 0500+PRTY	DISABLE PARITY INTERRUPTS	04 00517
003626	010442	A	518	LDA	SCON	TERMINATE TEST, REPORT TOTALS	04 00518
003627	001010	A	519	JAZ	TERN	MODE = CONSOLE ? YES, GO TO TERN	04 00519
003630	003667	A					
003631	006030	A	520	LDXI	HG09	'ERROR TOTAL =', TERR	04 00520
003632	005747	A					
003633	002000	A	521	CALL	(OUTD)*		04 00521
003634	100403	A					
003635	010521	A	522	LDA	TERR		04 00522
003636	002000	A	523	CALL	(OUTE)*		04 00523
003637	100404	A					
003640	006030	A	524	LDXI	HG11	'NO. CYCLES RUN ='	04 00524
003641	006006	A					
003642	002000	A	525	CALL	(OUTD)*		04 00525
003643	100403	A					
003644	010504	A	526	LDA	TCYC	TOTAL CYCLES EXECUTED	04 00526
003645	002000	A	527	CALL	(OUTE)*		04 00527
003646	100404	A					
003647	010511	A	528	LDA	PFK	ANY POWER FAILURES?	B 04 00528
003650	001010	A	529	JAZ	TERD	-NO-	B 04 00529
003651	003663	A					
003652	006030	A	530	LDXI	PFKM	'POWER FAILURES'	B 04 00530
003653	006114	A					
003654	002000	A	531	CALL	(OUTD)*		B 04 00531
003655	100403	A					
003656	005004	A	532	TXZ			B 04 00532
003657	010511	A	533	LDA	PFK	COUNT	B 04 00533
003660	070511	A	534	STX	PFK	CLEAR COUNT	B 04 00534
003661	002000	A	535	CALL	(OUTE)*		B 04 00535
003662	100404	A					
	003663	A	536	TERD	EQU *		B 04 00536
003663	002000	A	537	CALL	(OUTC)*		04 00537
003664	100402	A					
003665	001000	A	538	JMP	MTDP	CONTINUE	04 00538
003666	003010	A					
003667	010521	A	539	TERN	LDA TERR	A = TOTAL ERRORS	04 00539
003670	020504	A	540	LDB	TCYC	B = NO. CYCLES	04 00540
003671	030507	A	541	LDX	TEST	X = CURRENT (OR LAST) TEST	04 00541
003672	000777	A	542	HLT	0777	DISPLAY TOTALS	04 00542
003673	001000	A	543	JMP	MTDP	CONTINUE	04 00543
003674	003010	A					
			544	*****04 00544			
			545	* ERROR REPORTING ROUTINE			*04 00545
			546	*****04 00546			
003675	000000	A	547	MERR	ENTR 0		04 00547
003676	007401	A	548	SDF			04 00548
003677	040521	A	549	INR	TERR	INCR ERR CTR	04 00549
003700	060523	A	550	STR	SAVB	SAVE B (#TEST CYCLES)	04 00550
003701	070524	A	551	STX	SAVX	ERROR ADDRESS	04 00551
003702	002000	A	552	JMPM	UTAC		C 04 00552
003703	005603	A					
003704	010507	A	553	LDA	TEST		04 00553
003705	006150	A	554	ANAI	0777	SAVE HALT	B 04 00554
003706	000777	A					
003707	053714	A	555	STA	ERR1+2	GET TEST NO.	04 00555
003710	010502	A	556	LDA	MTW1	EXPECTED	04 00556
003711	020503	A	557	LDB	MTW2	ACTUAL	04 00557
003712	002000	A	558	ERR1	CALL (SSWT)*	CALL SENSE SWITCH ROUTINE	04 00558
003713	100421	A					
003714	000000	A	559	DATA	0	TEST#	04 00559
003715	103724	A	560	DATA	(ERPD)*	ERR PRINTOUT	04 00560
003716	003625	A	561	DATA	TERM	SSB EXIT	04 00561
003717	004010	A	562	DATA	ELDP	LOOP ON ERROR	04 00562
003720	020523	A	563	LDB	SAVB	RESTORE B	04 00563
003721	030524	A	564	LDX	SAVX		04 00564
003722	001000	A	565	JMP*	MERR	PROCEED WITH TEST	04 00565
003723	103675	A					
			566	* ERROR PRINTOUT SUBROUTINE			04 00566
003724	000000	A	567	ERPD	ENTR 0		04 00567
003725	002000	A	568	CALL	(OUTC)*		04 00568
003726	100402	A					
003727	010522	A	569	LDA	SWCH		04 00569
003730	001010	A	570	JAZ	*+4		04 00570
003731	003734	A					
003732	001000	A	571	JMP	ERP1		04 00571
003733	003741	A					
003734	040522	A	572	INR	SWCH	SET TO BYPASS HEADING	04 00572
003735	006030	A	573	LDXI	HG10		04 00573
003736	005760	A					
003737	002000	A	574	CALL	(OUTD)*		04 00574
003740	100403	A					
003741	010507	A	575	ERP1	LDA TEST	TEST NO.	04 00575
003742	002000	A	576	CALL	(OUTE)*		04 00576
003743	100404	A					
003744	010524	A	577	LDA	SAVX	ADDR	04 00577
003745	002000	A	578	CALL	(OUTE)*		04 00578
003746	100404	A					
003747	006010	A	579	LDAI	0120240		04 00579
003750	120240	A					
003751	002000	A	580	CALL	(OUTB)*		04 00580

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003752	100401	A									
003753	010502	A	581	LDA	MTW1	EXP				04	00581
003754	002000	A	582	CALL	(OUTE)*					04	00582
003755	100404	A									
003756	006010	A	583	LDAI	0120240					04	00583
003757	120240	A									
003760	002000	A	584	CALL	(OUTB)*					04	00584
003761	100401	A									
003762	002000	A	585	CALL	(OUTA)*					04	00585
003763	100400	A									
003764	010500	A	586	LDA	MTW2	ACTUAL				04	00586
003765	002000	A	587	CALL	(OUTE)*					04	00587
003766	100404	A									
003767	006010	A	588	LDAI	' '				F	04	00588
003770	120240	A									
003771	002000	A	589	CALL	(OUTA)*				F	04	00589
003772	100400	A									
003773	010504	A	590	LDA	TCYC	GET TOTAL CYCLES PERFORMED			F	04	00590
003774	003111	A	591	IAR		MAKE IT THE CURRENT CYCLE			F	04	00591
003775	002000	A	592	CALL	(OUTE)*				F	04	00592
003776	100404	A									
003777	010510	A	593	LDA	TBAR	TEST TEST WORD			B	04	00593
004000	001010	A	594	JAZ	*+4				B	04	00594
004001	004004	A									
004002	002000	A	595	CALL	(OUTE)*				B	04	00595
004003	100404	A									
004004	001000	A	596	JMP*	ESPD	RETURN				04	00596
004005	103724	A									
597				*****						04	00597
598				* LOOP ON ERROR						*04	00598
599				*****						04	00599
600	001200	A	600	JSS2	ERR1-2	SS2 EXIT FROM LOOPING				04	00600
004007	003710	A									
004010	001400	A	601	ELDP	JSS3	TERM	SS3 EXIT			04	00601
004011	003620	A									
004012	010502	A	602	LDA	MTW1					04	00602
004013	055000	A	603	STA	0:1			B		04	00603
004014	005000	A	604	NOP						04	00604
004015	135000	A	605	ERA	0:1	READ ERROR WORD				04	00605
004016	001010	A	606	JAZ	ELDP-2	ERROR AGAIN? NO, TRY AGAIN				04	00606
004017	004006	A									
004020	130502	A	607	ERA	MTW1	RESTORE				04	00607
004021	050503	A	608	STA	MTW2					04	00608
004022	001000	A	609	JMP	ERR1-2	REPORT				04	00609
004023	003710	A									
610				*****						04	00610
611				* SUBTEST ROUTINES						*04	00611
612				*****						04	00612
613				*						04	00613
614				* UNIQUE ADDRS						04	00614
615				*						04	00615
004024	000000	A	616	TUAT	ENTR	0				04	00616
004025	005101	A	617		INCR	1	TEST = 1	B		04	00617
004026	050507	A	618		STA	TEST				04	00618
004027	005001	A	619		TZA		INIT TBL			04	00619
004030	050551	A	620		STA	TBL				04	00620
004031	002000	A	621	TUAA	CALL	UACA, TBL, TUAB	GET FRST			04	00621
004032	003500	A									
004033	000551	A									
004034	004051	A									
004035	050514	A	622		STA	FRST				04	00622
004036	002000	A	623		CALL	UACA, TBL, TUAB	GET LAST			04	00623
004037	003500	A									
004040	000551	A									
004041	004051	A									
004042	050510	A	624		STA	LAST				04	00624
004043	001400	A	625		JSS3	TERM	SS3 TERMINATE TESTS			04	00625
004044	003500	A									
004045	002000	A	626		CALL	INA	INIT MEMORY			04	00626
004046	004075	A									
004047	001000	A	627		JMP	TUAA	CONTINUE			04	00627
004050	004001	A									
004051	005001	A	628	TUAB	TZA		INIT TBL			04	00628
004052	050551	A	629		STA	TBL				04	00629
004053	065101	A	630		INCR	1	REP = 1	B		04	00630
004054	050513	A	631		STA	REP				04	00631
004055	002000	A	632	TUAC	CALL	UACA, TBL, (TUAT)*	GET FRST			04	00632
004056	000500	A									
004057	000501	A									
004060	104024	A									
004061	050514	A	633		STA	FRST				04	00633
004062	002000	A	634		CALL	UACA, TBL, (TUAT)*	GET LAST			04	00634
004063	003500	A									
004064	000551	A									
004065	104024	A									
004066	050515	A	635		STA	LAST				04	00635
004067	001400	A	636		JSS3	TERM	SS3 TERMINATE TESTS			04	00636
004070	003620	A									
004071	002000	A	637		CALL	TUAA	TEST UNIQUE ADDRS			04	00637
004072	004107	A									
004073	001000	A	638		JMP	TUAC	CONTINUE			04	00638
004074	004055	A									
639				* INIT UNIQUE ADDRS						04	00639
004075	000000	A	640	IUA	ENTR	0				04	00640
004076	030514	A	641		LDB	FRST				04	00641

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004077	005041	A 642 IUA1	TXA	(X)X = X	04 00642
004100	055000	A 643	STA 0,1		04 00643
004101	005144	A 644	IXR	X = X+1	04 00644
004102	140515	A 645	SUB LAST	DONE ?	04 00645
004103	001004	A 646	JAN IUA1	NO,CONTINUE	04 00646
004104	004077	A			
004105	001000	A 647	JMP (IUA)*	RETURN	04 00647
004106	104075	A			
004107	000000	A 648 *	TEST UNIQUE ADDRS		04 00648
004110	020513	A 649 TUA	ENTR 0		04 00649
004111	030514	A 650	LDB REP	B * REP	04 00650
004112	010526	A 651	LDBX FRST	X = FRST	04 00651
004113	001010	A 652 TUA1	LDA EFLG		F 04 00652
004114	004123	A 653	JAZ TUA2		F 04 00653
004115	005041	A			
004116	074001	A 654	TXA		F 04 00654
004117	006137	A 655	STX *+2		F 04 00655
004120	000000	A 656	ERAE 000		F 04 00656
004121	001000	A 657	JMP TUA3		F 04 00657
004122	004125	A			
004123	005041	A 658 TUA2	TXA		F 04 00658
004124	135000	A 659	ERA 0,1		F 04 00659
004125	001010	A 660 TUA3	JAZ *+7		F 04 00660
004126	004134	A			
004127	070502	A 661	STX MTW1	NO, CALL MERR	04 00661
004130	130502	A 662	ERA MTW1		04 00662
004131	050503	A 663	STA MTW2		04 00663
004132	002000	A 664	CALL MERR		04 00664
004133	003675	A			
004134	005041	A 665	TXA	A = X	04 00665
004135	005144	A 666	IXR	X = X+1	04 00666
004136	140515	A 667	SUB LAST	DONE ?	04 00667
004137	001004	A 668	JAN TUA1	NO,CONTINUE	04 00668
004140	004112	A			
004141	001020	A 669	JBZ TUA+1	CONTINUES ? YES	04 00669
004142	004110	A			
004143	005322	A 670	DBR	DONE ?	04 00670
004144	001000	A 671	JBZ (TUA)*	YES,RETURN	04 00671
004145	104107	A			
004146	001000	A 672	JMP TUA+1	NO,CONTINUE	04 00672
004147	004110	A			
004150	000000	A 673	*****		04 00673
004151	002000	A 674 *			04 00674
004152	004161	A 675 *	ALL ZEROS		04 00675
004153	014207	A 676 *			04 00676
004154	050513	A 677 TAZT	ENTR 0	ENTRY/EXIT	04 00677
004155	002000	A 678	CALL IAZ	INIT	04 00678
004156	005042	A			
004157	001000	A 679	LDA 03	REP = 3	B 04 00679
004160	104150	A 680	STA REP		04 00680
004161	000000	A 681	CALL TES	TEST PATTERN	04 00681
004162	006010	A 682	JMP (TAZT)*	RETURN	04 00682
004163	000002	A			
004164	050507	A 683 *	INIT ALL ZERUS		04 00683
004165	005001	A 684 IAZ	ENTR 0		04 00684
004166	050516	A 685	LDAI 2	TEST = 2	04 00685
004167	050517	A			
004170	002000	A 686	STA TEST		04 00686
004171	005000	A 687	TZA	BITS = 0	04 00687
004172	001000	A 688	STA BITS		04 00688
004173	104161	A 689	STA PAT1	PATTERN1 = 0	04 00689
004174	000000	A 690	CALL SET	SET PATTERN INTO MEMORY	04 00690
004175	002000	A 691	JMP (IAZ)*		04 00691
004176	004203	A			
004177	014203	A 692	*****		04 00692
004200	050513	A 693 *			04 00693
004201	002000	A 694 *	ALL ONES		04 00694
004202	005042	A 695 *			04 00695
004203	001000	A 696 TAOI	ENTR 0	ENTRY/EXIT	04 00696
004204	104174	A 697	CALL IAS	INIT	04 00697
004205	000000	A 698	LDA 03	REP = 3	B 04 00698
004206	014174	A 699	STA REP		04 00699
004207	050507	A 700	CALL TES	TEST PATTERN	04 00700
004210	005001	A 701	JMP (TAOI)*	RETURN	04 00701
004211	050516	A			
004212	005211	A 702 *	INIT ALL ONES		04 00702
004213	050517	A 703 IAO	ENTR 0		04 00703
004214	002000	A 704	LDA 03	TEST = 3	B 04 00704
004215	005025	A 705	STA TEST		04 00705
004216	001000	A 706	TZA	BITS = 0	04 00706
004217	104263	A 707	STA BITS		04 00707
		A 708	STA PAT1	PATTERN1 = 1'S	04 00708
		A 709	STA PAT1	PATTERN1 = 1'S	04 00709
		A 710	CALL SET	SET PATTERN INTO MEMORY	04 00710
		A 711	JMP (IAO)*		04 00711
712		A 712	*****		04 00712
713		A 713 *			04 00713
714		A 714 *	CHECKER BOARD		04 00714

004351	000004	A	787	D4	DATA	4				C	04	00787	
			788	*	INIT	WORST CASE					04	00788	
004352	000000	A	789	IWC	ENTR	0					04	00789	
004353	050516	A	790		STA	BITS					04	00790	
004354	005001	A	791		TZA			PAT1 = 0			04	00791	
004355	050517	A	792		STA	PAT1					04	00792	
004356	005211	A	793		CPA			PAT2 = 1			04	00793	
004357	050520	A	794		STA	PAT2					04	00794	
004360	002000	A	795		CALL	SET		SET PATTERN INTO MEMORY			04	00795	
004361	005027	A											
004362	040507	A	796		JMP	TEST		TEST = TEST + 1			04	00796	
004363	001000	A	797		JMP	(IWC)*					04	00797	
004364	104352	A											
004365	000000	A	798	*	INIT	WORST CASE COMPLIMENT					04	00798	
			799	IWCC	ENTR	0					04	00799	
			800	*							04	00800	
004366	005001	A	801		TZA			COMPLIMENT PAT1 AND PAT2			04	00801	
004367	050520	A	802		STA	PAT2					04	00802	
004370	005211	A	803		CPA						04	00803	
004371	050517	A	804		STA	PAT1					04	00804	
004372	002000	A	805		CALL	SET		SET PATTERN INTO MEMORY			04	00805	
004373	005025	A											
004374	001000	A	806		JMP	(IWCC)*					04	00806	
004375	104365	A											
			807	*	*****							04	00807
			808	*							B	04 00808	
			809	*	BIT	COMPLIMENT					B	04 00809	
			810	*							B	04 00810	
004376	000000	A	811	TBCT	ENTR	0		SELECT WORST CASE PATTERN TABLE			B	04 00811	
004377	006010	A	812		LDAI	037		TEST = 037+N			B	04 00812	
004400	000037	A											
004401	050507	A	813		STA	TEST					B	04 00813	
004402	006010	A	814		LDAI	03		REP=3			B	04 00814	
004403	000003	A											
004404	004403	A	815	D3	EQU	*-1					B	04 00815	
004405	050513	A	816		STA	REP					B	04 00816	
004406	006020	A	817		LDBI	TBL1		TABLE OF WORSE CASE PATTERNS			B	04 00817	
004407	005001	A	818	TBCA	TZA			INIT TBL			B	04 00818	
004410	056000	A	819		STA	0,2					B	04 00819	
004411	064002	A	820		STB	TBCB+2					B	04 00820	
004412	002000	A	821	TBCB	CALL	UACA,0,(TBCT)*		GET WORST CASE PATTERN FROM TABLE			B	04 00821	
004413	003500	A											
004414	000000	A											
004415	104376	A											
004416	002000	A	822		CALL	IWC		SET WORST CASE PATTERN INTO MEMORY			B	04 00822	
004417	004302	A											
004420	002000	A	823		CALL	TBC		TEST BIT COMPLIMENT			B	04 00823	
004421	004430	A											
004422	002000	A	824		CALL	IWCC		COMPLIMENT PATTERN			B	04 00824	
004423	004355	A											
004424	002000	A	825		CALL	TBC					B	04 00825	
004425	004430	A											
004426	001000	A	826		JMP	TBCB					B	04 00826	
004427	004412	A											
			827	*							B	04 00827	
004430	000000	A	828	TBC	ENTR	0					B	04 00828	
004431	005103	A	829		INCR	03		B = REP			B	04 00829	
004432	004541	A	830		LLSR	1		BITX = SIGN BIT ON			B	04 00830	
004433	064221	A	831		STB	BITX					B	04 00831	
004434	020513	A	832		LDB	REP					B	04 00832	
004435	030514	A	833		LDB	FRST		X = FRST			B	04 00833	
004436	014216	A	834	TBC1	LDA	BITX		INIT BITC			B	04 00834	
004437	054214	A	835		STA	BITC					B	04 00835	
004440	005041	A	836		TXA			(>X = 1'S			B	04 00836	
004441	002000	A	837		CALL	MAP					B	04 00837	
004442	004767	A											
004443	001004	A	838		JAN	TBC5		YES,GOTO			B	04 00838	
004444	004000	A											
004445	005001	A	839	TBC2	TZA			ZERO			B	04 00839	
004446	050502	A	840		STA	MTW1		EXPECTED			B	04 00840	
004447	015000	A	841		LDA	0,1					B	04 00841	
004450	050503	A	842		STA	MTW2		ACTUAL			B	04 00842	
004451	001010	A	843		JAZ	*+4					B	04 00843	
004452	004455	A											
004453	001000	A	844		JMP	TBC0		-ERROR-			B	04 00844	
004454	004641	A											
004455	014176	A	845		LDA	BITC		(>X = (>X XOR BITC			B	04 00845	
004456	135000	A	846		ERA	0,1					B	04 00846	
004457	055000	A	847		STA	0,1					B	04 00847	
004460	050502	A	848		STA	MTW1		SAVE S/B			C	04 00848	
004461	015000	A	849		LDA	0,1					C	04 00849	
004462	050503	A	850		STA	MTW2		SAVE WAS			C	04 00850	
004463	130502	A	851		ERA	MTW1					C	04 00851	
004464	001010	A	852		JAZ	*+4		JUMP IF SAME			C	04 00852	
004465	004470	A											
004466	001000	A	853		JMP	TBCG					C	04 00853	
004467	004500	A											
004470	014163	A	854		LDA	BITC		(>X = (>X XOR BITC			B	04 00854	
004471	135000	A	855		ERA	0,1					B	04 00855	
004472	055000	A	856		STA	0,1					B	04 00856	
004473	001010	A	857		JAZ	TBC3		ERROR ? NO,SKIP REPORT			B	04 00857	
004474	004504	A											
004475	050503	A	858		STA	MTW2		YES			B	04 00858	
004476	005001	A	859		TZA			SET MTW1 = EXP,MTW2 = ACT			B	04 00859	

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004477	050502	A	860	STA	MTW1	CALL MERR	B	04	00860
004500	002000	A	861	TBC6	CALL	MODIFY TEST # TO INCLUDE BIT	C	04	00861
004501	004617	A							
004502	002000	A	862	CALL	MERR		B	04	00862
004503	003675	A							
004504	014147	A	863	TBC3	LDA	BITC = LOGICAL SHIFT RIGHT 1(BITC)	B	04	00863
004505	004341	A	864	LSRA	1		B	04	00864
004506	054145	A	865	STA	BITC	DONE ?	B	04	00865
004507	001010	A	866	JAZ	TBC7	YES	B	04	00866
004510	004513	A							
004511	001000	A	867	JMP	TBC2	NO, CONTINUE WITH SAME WORD	B	04	00867
004512	004445	A							
004513	005041	A	868	TBC7	TXA	A = X	B	04	00868
004514	006150	A	869	ANAI	060000	ABOVE FIRST 8K?	F	04	00869
004515	060000	A							
004516	001010	A	870	JAZ	TBC8	-NO-	F	04	00870
004517	004532	A							
004520	005041	A	871	TXA			F	04	00871
004521	134002	A	872	ERA	04K	SWAP BIT 11	F	04	00872
004522	005115	A	873	INCR	015	A+1 TO A &X	F	04	00873
004523	006130	A	874	ERAI	04000	SWAP BIT 11	F	04	00874
004524	004000	A							
004525	004524	A	875	04K	EQU	*-1	F	04	00875
004526	140515	A	876	SUB	LAST	END?	F	04	00876
004527	001004	A	877	JAN	TBC1	-NO-	F	04	00877
004528	004436	A							
004530	001000	A	878	JMP	TBC4	-YES-	F	04	00878
004531	004537	A							
004532	005041	A	879	TBC8	TXA	A = X	F	04	00879
004533	005144	A	880	IXR		X = X+1	B	04	00880
004534	140515	A	881	SUB	LAST	DONE ?	B	04	00881
004535	001004	A	882	JAN	TBC1	NO, GET NEXT WORD	B	04	00882
004536	004436	A							
004537	001020	A	883	TBC4	JBZ	FINISHED ? NO, CONTINUES	B	04	00883
004540	004435	A							
004541	005322	A	884	DBR			B	04	00884
004542	001020	A	885	JBZ	(TBC)*	YES, RETURN	B	04	00885
004543	104436	A							
004544	001000	A	886	JMP	TBC1-1	CONTINUE	B	04	00886
004545	004435	A							
004546	005301	A	887	TBC5	DECR	1	B	04	00887
004547	050502	A	888	STA	MTW1	DNES	B	04	00888
004550	015000	A	889	LDA	0+1	EXPECTED	B	04	00889
004551	050503	A	890	STA	MTW2	ACTUAL	B	04	00890
004552	005211	A	891	CPA			B	04	00891
004553	001010	A	892	JAZ	**4		B	04	00892
004554	004557	A							
004555	001000	A	893	JMP	TBC0	-ERROR-	B	04	00893
004556	004641	A							
004557	014074	A	894	LDA	BITC	(X) = (X) XOR BITC	B	04	00894
004560	135000	A	895	ERA	0+1		B	04	00895
004561	055000	A	896	STA	0+1		B	04	00896
004562	050532	A	897	STA	MTW1	SAVE S/B	C	04	00897
004563	015000	A	898	LDA	0+1		C	04	00898
004564	050503	A	899	STA	MTW2	SAVE WAS	C	04	00899
004565	130502	A	900	TRA	MTW1		C	04	00900
004566	001010	A	901	JAZ	**4	JUMP IF SAME	C	04	00901
004567	004572	A							
004570	001000	A	902	JMP	TBCF		C	04	00902
004571	004604	A							
004572	014001	A	903	LDA	BITC	(X) = (X) XOR BITC	B	04	00903
004573	135000	A	904	ERA	0+1		B	04	00904
004574	055000	A	905	STA	0+1		B	04	00905
004575	005211	A	906	CPA		ERROR ?	B	04	00906
004576	001010	A	907	JAZ	TBC6	NO, SKIP REPORT	B	04	00907
004577	004610	A							
004600	005211	A	908	CPA			B	04	00908
004601	050503	A	909	STA	MTW2	MTW1 = EXP, MTW2 = ACT	B	04	00909
004602	005301	A	910	DECR	01		B	04	00910
004603	050502	A	911	STA	MTW1		B	04	00911
004604	002000	A	912	TBCF	CALL	MODIFY TEST # TO INCLUDE BIT	C	04	00912
004605	003675	A							
004606	002000	A	913	CALL	MERR	CALL MERR	B	04	00913
004607	003675	A							
004610	014040	A	914	TBC6	LDA	BITC = LOGICAL SHIFT RIGHT 1(BITC)	B	04	00914
004611	004341	A	915	LSRA	1		B	04	00915
004612	054041	A	916	STA	BITC	DONE ?	B	04	00916
004613	001010	A	917	JAZ	TBC7	YES	B	04	00917
004614	004513	A							
004615	001000	A	918	JMP	TBC5	NO, CONTINUE WITH SAME WORD	B	04	00918
004616	004546	A							
004617	000000	A	919	*	MODIFY TEST TO INDICATE BIT POSITION		B	04	00919
004620	054032	A	920	TBC8	ENTR	0	B	04	00920
004621	014032	A	921	STB	TBC0		B	04	00921
004622	005302	A	922	LDA	BITC	INIT	B	04	00922
004623	001010	A	923	DECR	02		B	04	00923
004624	004601	A	924	TBC9	JAZ	DONE ? YES, GOTO TBCD	B	04	00924
004625	004341	A	925	LSRA	1	SHIFT BITC	B	04	00925
004626	005122	A	926	IXR		INCR COUNT	B	04	00926
004627	001000	A	927	JMP	TBC9	CONTINUE	B	04	00927
004630	004623	A							
004631	010507	A	928	TBCD	LDA	MERGE BIT COUNT	B	04	00928
004632	154010	A	929	ANA	0+7	WITH TEST NUMBER	B	04	00929
004633	004046	A	930	LRLB	0		B	04	00930

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004634	005001	A	931	MERG	031		B	04	00931
004635	050507	A	932	STA	TEST		B	04	00932
004636	024014	A	933	LDE	TBCE		B	04	00933
004637	001000	A	934	JMP	(TBCE)*	RETURN	B	04	00934
004640	104617	A							
004641	010507	A	935	TBCC	LDA	TEST	B	04	00935
004642	006150	A	936	ANAI	077	MERGE BIT 18	B	04	00936
004643	000077	A							
	004643	A	937	077	EQU	*-1	B	04	00937
004644	006110	A	938	ORAI	04000	WITH	B	04	00938
004645	004000	A							
004646	050507	A	939	STA	TEST	TEST NO.	B	04	00939
004647	002000	A	940	CALL	MERR		B	04	00940
004650	003675	A							
004651	001000	A	941	JMP	TBC7	GOTO NEXT WORD	B	04	00941
004652	004513	A							
004653			942	TBCE	BSS	1	B	04	00942
004654			943	BITC	BSS	1	B	04	00943
004655			944	BITX	BSS	1	B	04	00944
			945	*		(-MAX)	B	04	00945
			946	*****			B	04	00946
			947	*			B	04	00947
			948	*	BINARY ADDRESS		B	04	00948
			949	*			B	04	00949
004656	000000	A	950	TBAT	ENTR	BINARY ADDRESS TEST	B	04	00950
			951	*			B	04	00951
			952	*			B	04	00952
004657	010514	A	953	LDA	FRST		B	04	00953
004660	006150	A	954	ANAI	070000		B	04	00954
004661	070000	A							
004662	001010	A	955	JAZ*	TBAT	JUMP IF IN 1ST 4K	B	04	00955
004663	104656	A							
004664	005111	A	956	JAR			B	04	00956
004665	050510	A	957	STA	TBAA	TEST ADDRESS	B	04	00957
004666	010515	A	958	LDA	LAST		E	04	00958
004667	006150	A	959	ANAI	07000		E	04	00959
004670	007000	A							
004671	054070	A	960	STA	TBA8		E	04	00960
004672	002000	A	961	TBA1	CALL	INITIALIZE TO ALL ZEROS	B	04	00961
004673	004161	A							
004674	006010	A	962	LDAI	050	TEST = 50	B	04	00962
004675	000050	A							
004676	050507	A	963	STA	TEST		B	04	00963
004677	030510	A	964	LDX	TBAA		B	04	00964
004700	005301	A	965	DECR	1	SET TEST WORD TO ONES	B	04	00965
004701	055000	A	966	STA	0,1		B	04	00966
004702	030514	A	967	LDX	FRST		B	04	00967
004703	005041	A	968	TBA2	TXA		B	04	00968
004704	140310	A	969	SUB	TBAA		B	04	00969
004705	001010	A	970	JAZ	TBA4	JUMP IF CHECK FOR ALL ONES	B	04	00970
004706	004723	A							
004707	015000	A	971	LDA	0,1	CHECK FOR ALL ZEROS	B	04	00971
004710	001010	A	972	JAZ	TBA3		B	04	00972
004711	004714	A							
004712	001000	A	973	JMP	TBAZ	ERROR NOT ALL ZEROS	B	04	00973
004713	004754	A							
004714	005041	A	974	TBA3	TXA		B	04	00974
004715	005144	A	975	IXR		STEP ADDRESS	B	04	00975
004716	140515	A	976	SUB	LAST		B	04	00976
004717	001010	A	977	JAZ	TBA5		B	04	00977
004720	004731	A							
004721	001000	A	978	JMP	TBA2		B	04	00978
004722	004703	A							
004723	015000	A	979	TBA4	LDA	0,1	B	04	00979
004724	005211	A	980	CPA			B	04	00980
004725	001010	A	981	JAZ	TBA3		B	04	00981
004726	004714	A							
004727	001000	A	982	JMP	TBA0	ERROR NOT ALL ONES	B	04	00982
004730	004744	A							
004731	010510	A	983	TBA5	LDA	TBAA	B	04	00983
004732	000130	A	984	ANAI	01777		B	04	00984
004733	001777	A							
004734	120510	A	985	ADD	TBAA		B	04	00985
004735	050510	A	986	STA	TBAA		B	04	00986
004736	006150	A	987	ANAI	01777		B	04	00987
004737	001777	A							
004740	001010	A	988	JAZ	TBA7		B	04	00988
004741	004707	A							
004742	001000	A	989	JMP	TBA1		B	04	00989
004743	004672	A							
			990	*			B	04	00990
004744	005301	A	991	TBA0	DECR	1	B	04	00991
004745	050507	A	992	TBA6	STA	MTW1	B	04	00992
004746	015000	A	993	LDA	0,1		B	04	00993
004747	050503	A	994	STA	MTW2	ACTUAL	B	04	00994
004750	002000	A	995	CALL	MERR	ANNOUNCE ERROR	B	04	00995
004751	003675	A							
004752	001000	A	996	JMP	TBA3		B	04	00996
004753	004714	A							
004754	005001	A	997	TBAZ	TZA	ZEROS	B	04	00997
004755	001000	A	998	JMP	TBA6		B	04	00998
004756	004745	A							
004757	040510	A	999	TBA7	INR	TBAA	B	04	00999
004760	010510	A	1000	LDA	TBAA		B	04	01000
004761	006150	A	1001	ANAI	07000		B	04	01001

005100	000000	A	1075	*				F	04	01075
			1076	INTI	ENTR			F	04	01076
			1077	*				F	04	01077
			1078		LXI	INTM	'V70 INTERRUPT LOC.'	F	04	01078
005101	006030	A								
005102	006127	A								
005103	002000	A	1079		CALL*	OUTD		F	04	01079
005104	100403	A								
005105	002000	A	1080		CALL*	INPG		F	04	01080
005106	100416	A								
005107	001000	A	1081		JMP	STRT	SS3	F	04	01081
005110	003000	A								
005111	001000	A	1082		JMP	INTI+1	\	F	04	01082
005112	005101	A								
005113	001000	A	1083		JMP	*+2	,	F	04	01083
005114	005115	A								
005115	002000	A	1084		CALL*	OUTC		F	04	01084
005116	100402	A								
005117	006020	A	1085		LDBI	TBL0		F	04	01085
005120	000537	A								
005121	001010	A	1086		JAZ	V70N	. IF ZERO, ASSUME 620	F	04	01086
005122	005315	A								
005123	050525	A	1087		STA	V70I		F	04	01087
005124	005002	A	1088		TZB			F	04	01088
005125	004541	A	1089		LLSR	1		F	04	01089
005126	001020	A	1090		JBZ	*+6	JUMP IF EVEN	F	04	01090
005127	005134	A								
005130	002000	A	1091	INTV	CALL*	OUTG	'INVALID'	F	04	01091
005131	100406	A								
005132	001000	A	1092		JMP	INTI+1		F	04	01092
005133	005101	A								
005134	006020	A	1093		LDBI	T2L0		F	04	01093
005135	000537	A								
005136	010525	A	1094		LDA	V70I		F	04	01094
005137	144170	A	1095		SUB	02		F	04	01095
005140	001010	A	1096		JAZ	I1	.EQ. 2	F	04	01096
005141	005275	A								
005142	001004	A	1097		JAN	INTV	.LT. 2	F	04	01097
005143	005130	A								
005144	144160	A	1098		SUB	034		F	04	01098
005145	001010	A	1099		JAZ	I2	.EQ. 36	F	04	01099
005146	005207	A								
005147	001004	A	1100		JAN	I3	.LT. 36 + .GT. 4	F	04	01100
005150	005237	A								
005151	144157	A	1101		SUB	08		F	04	01101
005152	001010	A	1102		JAZ	I4	.EQ. 44	F	04	01102
005153	005225	A								
005154	001004	A	1103		JAN	INTV	.LI. 44 + .GT. 36	F	04	01103
005155	005130	A								
005156	144162	A	1104		SUB	0332		F	04	01104
005157	001010	A	1105		JAZ	I5	.EQ. 376	F	04	01105
005158	005212	A								
005161	001002	A	1106		JAN	INTV	.GT. 376	F	04	01106
005162	005130	A								
005163	014157	A	1107	I6	LDA	0377	.LT. 376 + .GT. 44	F	04	01107
005164	056007	A	1108		STA	7,2		F	04	01108
005165	010525	A	1109		LDA	V70I		F	04	01109
005166	124141	A	1110		ADD	02		F	04	01110
005167	056006	A	1111		STA	6,2		F	04	01111
005170	144060	A	1112		SUB	03A		F	04	01112
005171	056005	A	1113		STA	5,2		F	04	01113
005172	014142	A	1114		LDA	044		F	04	01114
005173	056004	A	1115		STA	4,2		F	04	01115
005174	014137	A	1116	I8	LDA	037		F	04	01116
005175	056003	A	1117		STA	3,2		F	04	01117
005176	014131	A	1118		LDA	02		F	04	01118
005177	056002	A	1119		STA	2,2		F	04	01119
005200	020525	A	1120	I8	LDA	V70I		F	04	01120
005201	001020	A	1121		JBZ*	INTI		F	04	01121
005202	105100	A								
005203	013024	A	1122		LDA	02K		F	04	01122
005204	056000	A	1123		STA	0,2		F	04	01123
005205	006010	A	1124		LDAI	PER		F	04	01124
005206	005075	A								
005207	056001	A	1125		STA	1,2		F	04	01125
005210	001000	A	1126		JMP*	INTI		F	04	01126
005211	105100	A								
005212	014127	A	1127	I5	LDA	0375	.EQ. 376	F	04	01127
005213	056007	A	1128		STA	7,2		F	04	01128
005214	014122	A	1129		LDA	0100		F	04	01129
005215	056006	A	1130		STA	6,2		F	04	01130
005216	006010	A	1131	IC	LDAI	077		F	04	01131
005217	000077	A								
005220	056005	A	1132		STA	5,2		F	04	01132
005221	014113	A	1133		LDA	044		F	04	01133
005222	056004	A	1134		STA	4,2		F	04	01134
005223	001000	A	1135		JMP	I8		F	04	01135
005224	005174	A								
005225	014115	A	1136	I4	LDA	0377	.EQ. 44	F	04	01136
005226	056007	A	1137		STA	7,2		F	04	01137
005227	014107	A	1138		LDA	0100		F	04	01138
005230	056006	A	1139		STA	6,2		F	04	01139
005231	014050	A	1140		LDA	077A		F	04	01140
005232	056005	A	1141		STA	5,2		F	04	01141
005233	014102	A	1142		LDA	046		F	04	01142
005234	056004	A	1143		STA	4,2		F	04	01143

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005235	001000	A	1144		JMP	IB		F	04	01144
005236	005174	A								
005237	014103	A	1145	I3	LDA	0377	.LT. 36 + .GT. 2	F	04	01145
005240	056007	A	1146		STA	7:2		F	04	01146
005241	014073	A	1147		LDA	044		F	04	01147
005242	056001	A	1148		STA	6:2		F	04	01148
005243	014070	A	1149		LDA	037		F	04	01149
005244	056005	A	1150		STA	5:2		F	04	01150
005245	010585	A	1151		LDA	V70I		F	04	01151
005246	005111	A	1152		IAR			F	04	01152
005247	056004	A	1153		STA	4:2		F	04	01153
005250	006140	A	1154		SUBI	3		F	04	01154
005251	000003	A								
	005251	A	1155	D3A	EOU	*-1		F	04	01155
005252	056003	A	1156		STA	3:2		F	04	01156
005253	014054	A	1157		LDA	02		F	04	01157
005254	056002	A	1158		STA	2:2		F	04	01158
005255	001000	A	1159		JMP	IA		F	04	01159
005256	005200	A								
005257	014003	A	1160	I2	LDA	0377	.EQ. 36	F	04	01160
005260	056007	A	1161		STA	7:2		F	04	01161
005261	014055	A	1162		LDA	0100		F	04	01162
005262	056006	A	1163		STA	6:2		F	04	01163
005263	014016	A	1164		LDA	077A		F	04	01164
005264	056005	A	1165		STA	5:2		F	04	01165
005265	014047	A	1166		LDA	044		F	04	01166
005266	056004	A	1167		STA	4:2		F	04	01167
005267	014043	A	1168		LDA	035		F	04	01168
005270	056003	A	1169		STA	3:2		F	04	01169
005271	014036	A	1170		LDA	02		F	04	01170
005272	056002	A	1171		STA	2:2		F	04	01171
005273	001000	A	1172		JMP	IA		F	04	01172
005274	005200	A								
005275	014045	A	1173	I1	LDA	0377	.EQ 2	F	04	01173
005276	056007	A	1174		STA	7:2		F	04	01174
005277	014037	A	1175		LDA	0100		F	04	01175
005300	056006	A	1176		STA	6:2		F	04	01176
005301	006010	A	1177		LDAI	077		F	04	01177
005302	000077	A								
	005302	A	1178	D77A	EOU	*-1		F	04	01178
005303	056005	A	1179		STA	5:2		F	04	01179
005304	014030	A	1180		LDA	044		F	04	01180
005305	056004	A	1181		STA	4:2		F	04	01181
005306	014025	A	1182		LDA	037		F	04	01182
005307	056003	A	1183		STA	3:2		F	04	01183
005310	006010	A	1184		LDAI	4		F	04	01184
005311	000504	A								
005312	056002	A	1185		STA	2:2		F	04	01185
005313	001000	A	1186		JMP	IA		F	04	01186
005314	005200	A								
005315	014025	A	1187	V70N	LDA	0377		F	04	01187
005316	056007	A	1188		STA	7:2		F	04	01188
005317	014020	A	1189		LDA	0120		F	04	01189
005320	056006	A	1190		STA	6:2		F	04	01190
005321	005001	A	1191		TZA		ZERO TO EFLG	F	04	01191
005322	050526	A	1192		STA	EFLG		F	04	01192
005323	005311	A	1193		BAR		-1 TO EFLG IF EXTENDED ADDRESSING	F	04	01193
005324	006057	A	1194		STAE	EFLG		F	04	01194
005325	000526	A								
005326	001000	A	1195		JMP	IC		F	04	01195
005327	005210	A								
005330	000002	A	1196	D2	DATA	2		F	04	01196
005331	000010	A	1197	D8	DATA	8		F	04	01197
005332	000034	A	1198	D34	DATA	034		F	04	01198
005333	000035	A	1199	D35	DATA	035		F	04	01199
005334	000037	A	1200	D37	DATA	037		F	04	01200
005335	000044	A	1201	D44	DATA	044		F	04	01201
005336	000046	A	1202	D46	DATA	046		F	04	01202
005337	000100	A	1203	D100	DATA	0100		F	04	01203
005340	000120	A	1204	D120	DATA	0120		F	04	01204
005341	000332	A	1205	D332	DATA	0332		F	04	01205
005342	000375	A	1206	D375	DATA	0375		F	04	01206
005343	000377	A	1207	D377	DATA	0377		F	04	01207
1208	*									
1209	*									
1210	*									
1211	*									
1212	IPER	BSS	0				INSTRUCTION PARITY ERROR PROCESSOR		04	01212
005344	100545	A	1213		EXC	0500+PRTY	DISABLE PARITY INTERRUPTS		04	01213
005345	054037	A	1214		STA	IPEA	SAVE A		04	01214
005346	064032	A	1215		STB	IPEB	B		04	01215
005347	074032	A	1216		STX	IPEX	AND X		04	01216
005350	010100	A	1217		LDA	0100	A=ERROR ADDRESS		04	01217
005351	006020	A	1218		LDAI	0100	B=TRAP LOCATION		04	01218
005352	000100	A								
005353	002000	A	1219		CALL	(SSWT)*	CALL SENSE SWITCH ROUTINE		04	01219
005354	100421	A								
005355	005000	A	1220		DATA	05000	NOP		04	01220
005356	105364	A	1221		DATA	(1PE1)*	ERR PRINTOUT		04	01221
005357	003625	A	1222		DATA	TERM	SS3 EXIT		04	01222
005360	005361	A	1223		DATA	*+1			04	01223
005361	000020	A	1224		HLT	020			04	01224
005362	001000	A	1225		JMP	TERM			04	01225
005363	003625	A								
1226	*								04	01226

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005364	000000	A	1227	IPE1	DATA	0	04	01227
005365	006030	A	1228		LDXI	HG12	04	01228
005366	006023	A						
005367	002000	A	1229		CALL	(OUTD)*	04	01229
005370	100403	A				OUTPUT ERR MESSAGE		
005371	010100	A	1230		LDA	0100	04	01230
005372	002000	A	1231		CALL	(OUTE)*	04	01231
005373	100404	A				AND PARITY ERROR ADDRESS		
005374	002000	A	1232		CALL	(OUTC)*	04	01232
005375	100402	A				CR/LF		
005376	001000	A	1233		JMP*	IPE1	04	01233
005377	105364	A						
005400	000000	A	1234	IPEA	DATA	0	04	01234
005401	000000	A	1235	IPEB	DATA	0	04	01235
005402	000000	A	1236	IPEX	DATA	0	04	01236
			1237	*			04	01237
005403			1238	APER	BSS	0	04	01238
005403	100545	A	1239		EXC	0500+PRTY	04	01239
005404	054032	A	1240		STA	APEA	04	01240
005405	064032	A	1241		STB	APEB	04	01241
005406	074032	A	1242		STX	APEX	04	01242
005407	010104	A	1243		LDA	0104	04	01243
005410	006020	A	1244		LDBI	0104	04	01244
005411	000104	A				B=TRAP LOCATION		
005412	002000	A	1245		CALL	(SSWT)*	04	01245
005413	100421	A				CALL SENSE SWITCH ROUTINE		
005414	005000	A	1246		DATA	05000	04	01246
005415	105423	A	1247		DATA	(APE1)*	04	01247
005416	003625	A	1248		DATA	TERM	04	01248
005417	005420	A	1249		DATA	*+1	04	01249
005420	000021	A	1250		HLT	021	04	01250
005421	001000	A	1251		JMP	TERM	04	01251
			1252	*			04	01252
005423	000000	A	1253	APE1	DATA	0	04	01253
005424	006030	A	1254		LDXI	HG13	04	01254
005425	006043	A						
005426	002000	A	1255		CALL	(OUTD)*	04	01255
005427	100403	A				OUTPUT ERR MESSAGE		
005430	010104	A	1256		LDA	0104	04	01256
005431	002000	A	1257		CALL	(OUTE)*	04	01257
005432	100404	A				AND PARITY ERROR ADDRESS		
005433	002000	A	1258		CALL	(OUTC)*	04	01258
005434	100402	A				CR/LF		
005435	001000	A	1259		JMP*	APE1	04	01259
005436	105423	A						
005437	000000	A	1260	APEA	DATA	0	04	01260
005440	000000	A	1261	APEB	DATA	0	04	01261
005441	000000	A	1262	APEX	DATA	0	04	01262
			1263	*			04	01263
005442			1264	OPER	BSS	0	04	01264
005442	100545	A	1265		EXC	0500+PRTY	04	01265
005443	054032	A	1266		STA	OPEA	04	01266
005444	064032	A	1267		STB	OPEB	04	01267
005445	074032	A	1268		STX	OPEX	04	01268
005446	010110	A	1269		LDA	0110	04	01269
005447	006020	A	1270		LDXI	0110	04	01270
005450	000110	A				B=TRAP LOCATION		
005451	002000	A	1271		CALL	(SSWT)*	04	01271
005452	100421	A				CALL SENSE SWITCH ROUTINE		
005453	005000	A	1272		DATA	05000	04	01272
005454	105423	A	1273		DATA	(OPE1)*	04	01273
005455	003625	A	1274		DATA	TERM	04	01274
005456	005457	A	1275		DATA	*+1	04	01275
005457	000022	A	1276		HLT	022	04	01276
005460	001000	A	1277		JMP	TERM	04	01277
			1278	*			04	01278
005462	000000	A	1279	OPE1	DATA	0	04	01279
005463	006030	A	1280		LDXI	HG14	04	01280
005464	006061	A						
005465	002000	A	1281		CALL	(OUTD)*	04	01281
005466	100403	A				OUTPUT ERR MESSAGE		
005467	010110	A	1282		LDA	0110	04	01282
005470	002000	A	1283		CALL	(OUTE)*	04	01283
005471	100404	A				AND PARITY ERROR ADDRESS		
005472	002000	A	1284		CALL	(OUTC)*	04	01284
005473	100402	A				CR/LF		
005474	001000	A	1285		JMP*	OPE1	04	01285
005475	105462	A						
			1286	*			04	01286
005476	000000	A	1287	OPEA	DATA	0	04	01287
005477	000000	A	1288	OPEB	DATA	0	04	01288
005500	000000	A	1289	OPEX	DATA	0	04	01289
			1290	*			04	01290
005501			1291	TPER	BSS	0	04	01291
005501	100545	A	1292		EXC	0500+PRTY	04	01292
005502	054032	A	1293		STA	IPEA	04	01293
005503	064032	A	1294		STB	IPEB	04	01294
005504	074032	A	1295		STX	IPEX	04	01295
005505	010114	A	1296		LDA	0114	04	01296
005506	006020	A	1297		LDBI	0114	04	01297
005507	000114	A				B=TRAP LOCATION		
005510	002000	A	1298		CALL	(SSWT)*	04	01298
005511	100421	A				CALL SENSE SWITCH ROUTINE		

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005512	005000	A	1299	DATA	05000	NOP		04	01299
005513	105521	A	1300	DATA	(TPE1)*	ERR PRINTOUT		04	01300
005514	003625	A	1301	DATA	TERM	SS3 EXIT		04	01301
005515	005516	A	1302	DATA	*+1			04	01302
005516	000003	A	1303	HLT	023			04	01303
005517	001000	A	1304	JMP	TERM			04	01304
			1305	*					
005521	000000	A	1306	TPE1	DATA	0		04	01305
005522	006000	A	1307	LDXI	HG15			04	01306
005523	006077	A						04	01307
005524	002000	A	1308	CALL	(OUTD)*	OUTPUT ERR MESSAGE		04	01308
005525	100403	A							
005526	010114	A	1309	LDA	0114			04	01309
005527	002000	A	1310	CALL	(OUTE)*	AND PARITY ERROR ADDRESS		04	01310
005530	100404	A							
005531	002000	A	1311	CALL	(OUTC)*	CR/LF		04	01311
005532	100402	A							
005533	001000	P	1312	JMP*	TPE1			04	01312
005534	105521	A							
			1313	*					
005535	000000	A	1314	TPEA	DATA	0	REGISTER	04	01313
005536	000000	A	1315	TPEB	DATA	0	SAVE	04	01314
005537	000000	A	1316	TPEX	DATA	0	AREA	04	01315
			1317	*					
005540			1318	PER1	BSS	0		C	04 01317
005540	100545	A	1319	FXC	0500+PRTY	DISABLE PARITY INTERRUPTS		F	04 01318
005541	054936	A	1320	STA	PEA	SAVE A		C	04 01319
005542	064036	A	1321	STB	PEB	B		C	04 01320
005543	074036	A	1322	STX	PEX	AND X		C	04 01321
005544	014036	A	1323	LDA	PER	ERROR ADDRESS		C	04 01322
005545	020525	A	1324	LDR	V701	TRAP ADDRESS		F	04 01323
005546	002030	A	1325	CALL	(SSWT)*	CALL SENSE SWITCH ROUTINE		F	04 01324
005547	100421	A						C	04 01325
005550	005000	A	1326	DATA	05000	NOP		C	04 01326
005551	105521	A	1327	DATA	(PE1)*	ERR PRINTOUT		C	04 01327
005552	003625	A	1328	DATA	TERM	553 EXIT		C	04 01328
005553	005554	A	1329	DATA	*+1			C	04 01329
005554	000004	A	1330	HLT	024			C	04 01330
005555	001000	A	1331	JMP	TERM			C	04 01331
005556	002625	A							
			1332	*					
005557	000000	A	1333	PE1	DATA	0		C	04 01332
005560	002000	A	1334	CALL	(OUTC)*			C	04 01333
005561	100402	A						C	04 01334
005562	006030	A	1335	LDXI	HG12+7			C	04 01335
005563	006030	A							
005564	002000	A	1336	CALL	(OUTD)*	OUTPUT ERR MESSAGE		C	04 01336
005565	100403	A							
005566	014006	A	1337	LDA	PER			F	04 01337
005567	002000	A	1338	CALL	(OUTE)*	AND PARITY ERROR ADDRESS		C	04 01338
005570	100404	A							
005571	002000	A	1339	CALL	(OUTC)*			C	04 01339
005572	100402	A							
005573	001000	A	1340	JMP*	PE1			C	04 01340
005574	105521	A							
005575	000000	A	1341	PER	ENTR	V70 PARITY ERROR		F	04 01341
005576	001000	A	1342	JMP	PER1			F	04 01342
005577	005540	A							
005600	000000	A	1343	PEA	DATA	0	REGISTER	C	04 01343
005601	000000	A	1344	PEB	DATA	0	SAVE	C	04 01344
005602	000000	A	1345	PEX	DATA	0	AREA	C	04 01345
			1346	*					
005603	000000	A	1347	BTAC	ENTR	0	OUTPUT ERROR AND CYCLE	C	04 01346
005604	005002	A	1348	LDZ			CLEAR B	C	04 01347
005605	010501	A	1349	LDL	TERM		GET ERROR CNTR	C	04 01348
005606	001000	A	1350	JAZ	*+1		JUMP IF NO ERRORS	C	04 01349
005607	005610	A							
005610	006000	A	1351	JRZ	0100000	SET SIGN OF V		C	04 01351
005611	100030	A							
005612	010500	A	1352	LDA	TCYC	TOTAL CYCLES		C	04 01352
005613	005131	A	1353	TRG	031	ERROR & CYCLE TO A		C	04 01353
005614	103107	A	1354	DDZ	077	A TO DISPLAY		C	04 01354
005615	001000	A	1355	JMP*	BTAC	-EXIT		C	04 01355
005616	105603	A							
			1356	*****					
			1357	*					
005617	044022	A	1358	PRDN	INR	PEHF		B	04 01357
005620	000000	A	1359	PHLT	HLT			F	04 01358
005621	001000	A	1360	JMP	0			F	04 01359
005622	000000	A						F	04 01360
005623	006030	A	1361	PRUP	LDXI	PFMG	POWER RESTORED MESSAGE	B	04 01361
005624	005643	A							
005625	040511	A	1362	INR	PEK			B	04 01362
005626	024013	A	1363	LDA	PEHF			F	04 01363
005627	005001	A	1364	TZA				F	04 01364
005630	054011	A	1365	STA	PEHF			F	04 01365
005631	001020	A	1366	JRZ	PHLT			F	04 01366
005632	005620	A							
005633	010442	A	1367	LDA	\$CON			B	04 01367
005634	001010	A	1368	JAZ*	PWRP			B	04 01368
005635	105641	A							
005636	002000	A	1369	CALL*	OUTD			B	04 01369
005637	100403	A							
005640	001000	A	1370	JMP	MIH1			B	04 01370

005641	003516	A							
005642	000000	A	1371	PWRR	EQU	*-1		B	04 01371
			1372	PFHF	DATA	0		F	04 01372
			1373	*				B	04 01373
005643	106612	A	1374	PFMG	DATA	CRLF,'POWER RESTORED',CRLF,0		B	04 01374
005644	150317	A							
005645	153705	A							
005646	151240	A							
005647	151305	A							
005650	151724	A							
005651	147722	A							
005652	142704	A							
005653	106612	A							
005654	000000	A							
			1375	*					04 01375
			1376	*	MESSAGE TABLE				04 01376
			1377	*					04 01377
005655	106612	A	1378	H0G2	DATA	CRLF,'4K MODULE(S) TO BE TESTED =',0			04 01378
005656	132313	A							
005657	120313	A							
005660	147704	A							
005661	152714	A							
005662	142650	A							
005663	151651	A							
005664	120324	A							
005665	147640	A							
005666	141305	A							
005667	120324	A							
005670	142723	A							
005671	152305	A							
005672	142240	A							
005673	136640	A							
005674	000000	A							
005675	152317	A	1379	H0G3	DATA	'TOO MANY PARAMETERS',CRLF,0			04 01379
005676	147640	A							
005677	146701	A							
005700	147331	A							
005701	120320	A							
005702	140722	A							
005703	140715	A							
005704	142704	A							
005705	142722	A							
005706	151640	A							
005707	106612	A							
005710	000000	A							
005711	146717	A	1380	H0G5	DATA	'MODULE NOT WITHIN MEMORY RANGE',CRLF,0			04 01380
005712	142325	A							
005713	146305	A							
005714	120316	A							
005715	147724	A							
005716	120327	A							
005717	144724	A							
005720	144311	A							
005721	147240	A							
005722	146705	A							
005723	146717	A							
005724	151331	A							
005725	120322	A							
005726	140716	A							
005727	143705	A							
005730	106612	A							
005731	000000	A							
005732	106612	A	1381	H0G6	DATA	CRLF,'CYCLES = ',0			04 01381
005733	141731	A							
005734	141714	A							
005735	142723	A							
005736	120275	A							
005737	120240	A							
005740	000000	A							
005741	106612	A	1382	H0G8	DATA	CRLF,'END MEMD',0			04 01382
005742	142716	A							
005743	142240	A							
005744	146705	A							
005745	146717	A							
005746	000000	A							
005747	106612	A	1383	H0G9	DATA	CRLF,'ERROR TOTAL = ',0			04 01383
005750	142722	A							
005751	151317	A							
005752	151240	A							
005753	152317	A							
005754	152301	A							
005755	146240	A							
005756	136640	A							
005757	000000	A							
005760	152305	A	1384	H010	DATA	'TEST ADDRESS EXPECTED ACTUAL CYCLE',CRLF,0		F	04 01384
005761	151724	A							
005762	120240	A							
005763	120301	A							
005764	142304	A							
005765	151305	A							
005766	151723	A							
005767	120240	A							
005770	142730	A							
005771	150305	A							
005772	141724	A							

005773	142704	A				
005774	120240	A				
005775	140703	A				
005776	152320	A				
005777	140714	A				
006000	120240	A				
006001	141701	A				
006002	141714	A				
006003	142640	A				
006004	106612	A				
006005	000000	A				
006006	106612	A	1385	HG11	DATA	CRLF,'NUMBER OF CYCLES RUN =',0
006007	147323	A				
006010	145702	A				
006011	142722	A				
006012	120317	A				
006013	143240	A				
006014	141731	A				
006015	141714	A				
006016	142700	A				
006017	120322	A				
006020	152716	A				
006021	120275	A				
006022	000000	A				
006023	106612	A	1386	HG12	DATA	CRLF,'INSTRUCTION PARITY ERROR AT ',0
006024	144716	A				
006025	151724	A				
006026	151325	A				
006027	141721	A				
006030	144717	A				
006031	147240	A				
006032	150301	A				
006033	151311	A				
006034	152331	A				
006035	120305	A				
006036	151302	A				
006037	147722	A				
006040	120301	A				
006041	152210	A				
006042	000000	A				
006043	106612	A	1387	HG13	DATA	CRLF,'ADDRESS PARITY ERROR AT ',0
006044	140704	A				
006045	142322	A				
006046	142723	A				
006047	151640	A				
006050	150301	A				
006051	151311	A				
006052	152331	A				
006053	120305	A				
006054	151322	A				
006055	147722	A				
006056	120301	A				
006057	152240	A				
006060	000000	A				
006061	106612	A	1388	HG14	DATA	CRLF,'OPERAND PARITY ERROR AT ',0
006062	147720	A				
006063	142722	A				
006064	140716	A				
006065	142240	A				
006066	150301	A				
006067	151311	A				
006070	152331	A				
006071	120305	A				
006072	151322	A				
006073	147722	A				
006075	120301	A				
006075	152240	A				
006076	000000	A				
006077	106612	A	1389	HG15	DATA	CRLF,'TRAP PARITY ERROR AT ',0
006100	152332	A				
006101	143720	A				
006102	120310	A				
006103	140702	A				
006104	144704	A				
006105	154640	A				
006106	142723	A				
006107	151317	A				
006110	151240	A				
006111	140704	A				
006112	120240	A				
006113	000000	A				
006114	106612	A	1390	PFKM	DATA	CRLF,'POWER FAILURES = ',0
006115	150317	A				
006116	153705	A				
006117	151240	A				
006120	143301	A				
006121	144714	A				
006122	152722	A				
006123	142723	A				
006124	120275	A				
006125	120240	A				
006126	000000	A				
006127	106612	A	1391	INTM	DATA	CRLF,'V70 PARITY ERROR INTERRUPT LOCATION '
006130	153267	A				
006131	130240	A				

04 01385

04 01386

04 01387

04 01388

04 01389

B 04 01390

F 04 01391

MAINTAIN III

MEMPT2

001102 007777 P 1448 EDB DATA 07777
 001103 000077 A 1449 EDL DATA 077
 003000 A 1450 END STRT

B 04 01448
 B 04 01449
 04 01450

ENTRY NAMES
 EXTERNAL NAMES
 SYMBOLS

004412	A	\$CDM	000471	A	\$DCT	000440	A	\$FLG	000422	A	\$LWE
000441	A	\$MEM	000424	A	\$MSM	001065	A	AO	001070	A	A1
005423	A	APE1	005437	A	APEA	005440	A	APEB	005403	A	APER
005441	A	APEX	004654	A	BITC	000516	A	BITS	004655	A	BITX
106612	A	CRLF	000505	A	CYCL	004767	A	DAP	004777	A	DAP1
005010	A	DAP2	005023	A	DAP3	003605	A	DEM	000526	A	EFLG
004010	A	ELDP	000506	A	EMEM	001102	A	EOB	001103	A	EDL
003741	A	ERF1	003724	A	ERPD	003712	A	ERR1	000423	A	ESZC
000514	A	FRST	003134	A	HG1	005655	A	HG2	005675	A	HG3
005711	A	HG5	005732	A	HG6	005741	A	HG8	005747	A	HG9
005760	A	HG10	006006	A	HG11	006023	A	HG12	006043	A	HG13
006061	A	HG14	006077	A	HG15	005275	A	I1	005257	A	I2
005237	A	I3	005725	A	I4	005212	A	IS	005163	A	I6
005200	A	IA	004205	A	IA0	004161	A	IAZ	005174	A	IE
005216	A	IC	004235	A	IC2	004254	A	ICB1	004266	A	ICB2
004244	A	ICBC	000410	A	INPA	000411	A	INPB	000412	A	INPC
000413	A	INPD	000414	A	INPE	000415	A	INPF	000416	A	INPG
005100	A	INT1	006127	A	INTM	005130	A	INTV	005364	A	IPE1
005400	A	IPEA	005401	A	IPEB	005344	A	IPER	005402	A	IPEX
004075	A	IUA	004077	A	IUA1	004352	A	IWC	004365	A	IWCC
000515	A	LAST	001006	A	MDM1	001035	A	MDM2	001044	A	MDM3
001057	A	MDA9	001000	A	MDMP	003675	A	MERR	003516	A	MIN1
003530	A	MIN2	003572	A	MIN3	003507	A	MINT	003316	A	MFT9
003364	A	MPT8	003201	A	MTC1	003213	A	MTC2	003215	A	MTC3
003222	A	MTC4	003230	A	MTC5	003234	A	MTC6	003165	A	MTCM
002010	A	MTP0	003351	A	MTP1	003260	A	MTP2	003361	A	MTP2
003241	A	MTP3	003263	A	MTP4	003251	A	MTP5	003330	A	MTP6
003256	A	MTP7	003335	A	MTP8	003356	A	MTPA	003022	A	MTT1
003051	A	MTT2	003100	A	MTT3	003104	A	MTT4	003111	A	MTT5
003132	A	MTT6	003013	A	MTTM	000502	A	MTW1	000503	A	MTW2
001101	A	N01	003163	A	NL	005337	A	O100	003305	A	O10K
005340	A	O120	005330	A	O2	003024	A	O2K	004403	A	O3
005341	A	O332	005332	A	O34	005333	A	O35	003047	A	O36
005334	A	O37	005342	A	O375	005343	A	O377	005251	A	O3A
004351	A	O4	005335	A	O44	005336	A	O46	004524	A	O4K
004262	A	O525	001075	A	O700	001073	A	O70K	004643	A	O77
005302	A	O77A	001074	A	O7K	005331	A	O8	001100	A	ONE
005462	A	OPE1	005476	A	OPEA	005477	A	OPEB	005442	A	OPER
005500	A	OPEX	005603	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
005557	A	PE1	005600	A	PEA	005601	A	PEB	005575	A	PER
005540	A	PER1	005602	A	PEX	005642	A	PFHF	000511	A	PFK
006114	A	PFKM	005643	A	PFNG	005620	A	PHLT	005617	A	PRDN
000045	A	PRTY	005623	A	PRUP	005641	A	PHRR	000513	A	REP
000512	A	REP1	000020	A	RM1	000023	A	SAVE	000024	A	SAVX
005023	A	SET	005027	A	SET1	003000	A	SM2	001677	A	SPACE
000421	A	SSMT	003000	A	STRT	000522	A	SWCH	004174	A	TAD1
001130	A	TAD1	004372	A	TBA1	004703	A	TBA2	004714	A	TBA3
004723	A	TBA4	004731	A	TBA5	004743	A	TBA6	004757	A	TBA7
004762	A	TBA8	000510	A	TBAR	004744	A	TPAD	004656	A	TBAT
004754	A	TBA2	004430	A	TBC	004436	A	TBC1	004445	A	TBC2
004504	A	TBC3	004537	A	TBC4	004546	A	TBC5	004610	A	TBC6
004513	A	TBC7	004617	A	TBC8	004623	A	TBC9	004407	A	TBCA
004412	A	TBC2	004641	A	TBC0	004631	A	TBCD	004653	A	TBCE
004604	A	TBCF	004500	A	TBC5	004032	A	TBCN	004375	A	TBCI
000551	A	TBL	000537	A	TBL0	000527	A	TBL1	004304	A	TCE
004310	A	TCEB	004020	A	TCEI	000504	A	TCYC	000400	A	TCLY
000625	A	TERM	003607	A	TERM	003563	A	TERD	000501	A	TERE
000042	A	TES	000345	A	TES1	005071	A	TES2	000507	A	TEST
000017	A	TOUT	005721	A	TPA1	005020	A	TPA2	005524	A	TPCB
000531	A	TPER	005037	A	TPEX	000116	A	TPR	000110	A	TTR
004107	A	TUR	004112	A	TUA1	004123	A	TUG2	004125	A	TUAG
004031	A	TUAG	004001	A	TUAG	004035	A	TUAC	004024	A	TUAT
000000	A	UAD0	000000	A	UAD0	000001	A	UADC	000005	A	UAC0
003427	A	UADA	000002	A	UAD1	000003	A	UADC	000005	A	UAD0
000400	A	UAD5	000005	A	V701	005313	A	V70N	001076	A	ZERO

C ERRORS ASSEMBLY COMPLETE

LITERALS

106	\$CDM	208	507	518	1367					
103	\$DCT	246								
104	\$FLG									
05	\$LWE	340								
105	\$MEM	285	335	337						
97	\$MSM	228								
1437	AO	1423								
1439	A1	1425								
1253	APE1	1247	1259							
1260	APEA	1240								
1261	APEB	1241								
1238	APER	120								
1262	APEX	1242								
943	BITC	835	845	854	863	865	894	903	914	916
		922								
152	BITS	688	707	790	1013					
944	BITX	831	834							
276	CRLF	277	277	1374	1374	1378	1379	1380	1381	1382
		1383	1384	1385	1386	1387	1388	1389	1390	1391

992	TBA6	990								
999	TBA7	988								
1002	TBA8	960								
146	TBA9	470	491	593	957	964	969	983	985	986
		999	1000							
991	TBA0	982								
950	TBA1	483	955	1003						
997	TBAZ	973								
828	TBC	823	825	885						
834	TBC1	877	882	883	886					
839	TBC2	867								
863	TBC3	857								
883	TBC4	878								
887	TBC5	838	918							
914	TBC6	907								
868	TBC7	866	917	941						
920	TBC8	861	912	934						
924	TBC9	927								
818	TBCA	*								
821	TBCB	820	826							
935	TBCC	844	893							
928	TBCD	924								
942	TBCE	921	933							
912	TBCF	902								
861	TBCG	853								
879	TBCH	870								
811	TBCT	495	821							
190	TBL	233	236	250	251	288	290	305	307	308
		338	351	362	478	479	481	620	621	623
		629	632	634						
176	TBL0	360	361	1085	1093					
168	TBL1	817								
758	TCB	720	722	784						
762	TCBB	780	782	786						
716	TCBT	494	723							
142	TCYC	469	484	505	526	540	590	1352		
93	TDLY	*								
517	TERM	489	502	561	601	625	636	1013	1065	1222
		1225	1248	1251	1274	1277	1301	1304	1328	1331
539	TERN	519								
536	TERD	529								
155	TERR	467	522	539	549	1349				
1054	TES	681	700	1071	1073	1074				
1057	TES1	1070								
1071	TES2	1068								
145	TEST	541	553	575	618	686	705	737	796	813
		928	932	935	939	963				
90	TOUT	*								
1306	TPE1	1300	1312							
1016	TPEA	1293								
1315	TPEB	1294								
1291	TPER	126								
1016	TPEX	1295								
273	TPR	248								
270	TTR	248	253							
649	TUA	637	669	671	672					
657	TUA1	668								
658	TUA2	653								
660	TUA3	657								
681	TUA4	627								
628	TUAB	621	623							
630	TUAC	638								
616	TUAT	476	632	634						
457	UACA	361	436	448	449	450	453	479	481	621
		620	632	634	821					
436	UACB	460								
451	UACC	441								
461	UACD	440	447	454	455	458	459			
414	UADA	388	351	352	386	405	406	407	409	
386	UADB	418								
408	UADC	391	424							
625	UADF	398	401	403	404	410	411	412	415	416
		417	423							
419	UADE	379								
159	V701	1087	1094	1109	1120	1151	1324			
1187	V70N	1086								
1444	ZERD	1408	1413	1418	1437					