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1 * THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1971 BY VARIAN DATA MACHINES00 00001
2 * 00 00002
3 * V.D.M. PART NO. 92L0107-001D *****
4 * 00 00004
5 * RELEASED 07-10-74 00 00005
6 * 00 00006
7 * MAINTAIN II TEST EXECUTIVE 00 00007
8 * 00 00008
9 * *** ** ** 00 00009
10 * * * * * 00 00010
11 * * * * * 00 00011
12 * **** ** * * 00 00012
13 * * * * * 00 00013
14 * * * * * 00 00014
15 * *** ***** ** 00 00015
16 * 00 00016
17 * 00 00017
18 * ***** ***** ** ***** 00 00018
19 * * * * * 00 00019
20 * * * * * 00 00020
21 * * *** * * 00 00021
22 * * * * * 00 00022
23 * * * * * 00 00023
24 * * ***** ** * 00 00024
25 * 00 00025
26 * 00 00026
27 * ***** * * ***** ** * * ***** 00 00027
28 * * * * * * * * * * * * * * 00 00028
29 * * * * * * * * * * * * * * 00 00029
30 * *** * *** * * * * * * * * * 00 00030
31 * * * * * * * * * * * * * * 00 00031
32 * * * * * * * * * * * * * * 00 00032
33 * ***** * * ***** ** * * ***** 00 00033
34 * 00 00034
35 * 00 00035
36 * *** * * *** ***** ***** * * 00 00036
37 * * * * * * * * * * * * * * 00 00037
38 * * * * * * * * * * * * * * 00 00038
39 * * * * * * * * * * * * * * 00 00039
40 * * * * * * * * * * * * * * 00 00040
41 * * * * * * * * * * * * * * 00 00041
42 * *** * * *** * ***** * * 00 00042
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	43 *				00 00043
	44 *				00 00044
	45 *				00 00045
	46 *				00 00046
	47 *				00 00047
	48 *				00 00048
	49 *				00 00049
	50 *				00 00050
	51 *				00 00051
	52 *				00 00052
	53 *	*****			00 00053
	54 *	*			00 00054
	55 *	* AREAS RESERVED BY EXECUTIVE *			00 00055
	56 *	*****			00 00056
	57 *	ORG 0			00 00057
	58 *	JMP EXECUTIVE			00 00058
	59 *	ORG 040			00 00059
	60 *	JMPM POWER DOWN ROUTINE			00 00060
	61 *	JMP POWER UP ROUTINE			00 00061
	62 *	NOTE: THE TEST EXECUTIVE ALSO RESERVES LOCATIONS 0400 TO 0477			00 00062
	63 *	FOR A POINTER TABLE TO STANDARD ROUTINES, AND AS AN AREA			00 00063
	64 *	FOR EXECUTIVE DATA, ALL TEST PROGRAMS WORKING WITH THE			00 00064
	65 *	EXECUTIVE MUST PRESERVE THIS BLOCK.			00 00065
	66 *	STANDARD ROUTINES WILL BE CALLED INDIRECTLY THRU			00 00066
	67 *	THIS TABLE			00 00067
	68 *				00 00068
	69 *	*****			00 00069
	70 *				*00 00070
	71 *	*****			00 00071
	72 *				00 00072
	73 *	THE STARTING ADDRESS OF THE EXECUTIVE IS 07000			00 00073
	74 *				00 00074
	75 *	*****			00 00075
000000	76	ORG 0			00 00076
000000 001000 A	77	JMP ETOP	620/P CONSOLE INTERRUPT ENTRANCE		00 00077
000001 006221 A					
000040	78	ORG 040			00 00078
000040 002000 A	79	JMPM PWDN	POWER DOWN		00 00079
000041 006356 A					
000042 001000 A	80	JMP PWRU	POWER UP		00 00080
000043 006370 A					
	81 *				00 00081



000400		82		ORG	0400			00 00082
		83	*					00 00083
		84	*	POINTER TABLE FOR EXEC STANDARD ROUTINES AND DATA				00 00084
		85	*	TEST PROGRAMS USING EXECUTIVE ROUTINES WILL CALL THEM				00 00085
		86	*	INDIRECTLY THRU THIS TABLE				00 00086
		87	*					00 00087
		88	*					00 00088
		89	*					00 00089
000400	007334	A	90	EX00	DATA	OUTA	OUTPUT ONE CHAR ROUTINE	00 00090
000401	007371	A	91	EX01	DATA	OUTB	OUTPUT TWO CHAR ROUTINE	00 00091
000402	007404	A	92	EX02	DATA	OUTC	OUTPUT CR & LD ROUTINE	00 00092
000403	007445	A	93	EX03	DATA	OUTD	OUTPUT MESSAGE ROUTINE	00 00093
000404	007416	A	94	EX04	DATA	OUTE	OUTPUT OCTAL WORD ROUTINE	00 00094
000405	007456	A	95	EX05	DATA	OUTF	OUTPUT OCTAL ADDRESS ROUTINE	00 00095
000406	007475	A	96	EX06	DATA	OUTG	OUTPUT ERROR MSG ROUTINE	00 00096
000407	007522	A	97	EX07	DATA	OUTH	OUTPUT CONTROL CHAR TO TTY	00 00097
000410	006737	A	98	EX10	DATA	INPA	INPUT ONE CHAR ROUTINE	00 00098
000411	006753	A	99	EX11	DATA	INPB	INPUT AND PRINT ONE CHAR ROUTINE	00 00099
000412	007033	A	100	EX12	DATA	INPC	INPUT ONE CHAR EDITED ROUTINE	00 00100
000413	007067	A	101	EX13	DATA	INPD	INPUT ONE ALPHA CHAR ROUTINE	00 00101
000414	007130	A	102	EX14	DATA	INPE	INPUT TWO ALPHA CHAR ROUTINE	00 00102
000415	007170	A	103	EX15	DATA	INPF	INPUT COMMA/PERIOD TERMINATOR ROUTINE	00 00103
000416	007250	A	104	EX16	DATA	INPG	INPUT OCTAL NUMBER ROUTINE	00 00104
000417	007543	A	105	EX17	DATA	TOUT	TIME-OUT ROUTINE	00 00105
000420	007527	A	106	EX20	DATA	TDLY	TIME DELAY ROUTINE	00 00106
000421	006720	A	107	EX21	DATA	SSWT	STANDARD SENSE SWITCH ROUTINE	00 00107
000422	005100	A	108	EX26	DATA	ELOC	LOWEST CORE LOCATION USED BY THE EXEC	00 00108
000423	006161	A	109	EX27	DATA	ESZC	DETERMINE MEMORY SIZE	00 00109
000424	006447	A	110	EX30	DATA	MCS3	MEMORY SIZE IS ... MESSAGE	00 00110
000425	007317	A	111	EX31	DATA	INPH	SENSE TTY BFR RDY	00 00111
000426	007331	A	112	EX32	DATA	INP:	INIT TTY (INPUT CHAR W/DUT SENSE BFR RDY)	00 00112
			113	*				00 00113
			114	*				00 00114
			115	*				00 00115
000440			116		ORG	0440		00 00116
			117	*				00 00117
			118	*	EXECUTIVE DATA TABLE			00 00118
			119	*				00 00119
000440	000000	A	120	SFLG	DATA	0	LOOP ON ERROR FLAG, 0=DON'T LOOP 1=LOOP	00 00120
000441	000000	A	121	SMEM	DATA	0	MEMORY SIZE (HIGHEST AVAIL CORE)	00 00121
000442	000000	A	122	SCON	DATA	0	0=CONSOLE MODE 1=TTY MODE	00 00122
			123	*				00 00123

000443	000000	A	124	EAR1	DATA	0	PSEUDO A REG	00	00124
000444	000000	A	125	EBR1	DATA	0	PSEUDO B REG	00	00125
000445	000000	A	126	EXR1	DATA	0	PSEUDO X REG	00	00126
000446			127	ETS1	BSS	8	TEMPORARY STORAGE	00	00127
000454	000240	A	128	EK00	DATA	0240	ASCII BLANK(SPACE)	00	00128
000455	000215	A	129	EK01	DATA	0215	ASCII CARRIAGE RETURN	00	00129
000456	000212	A	130	EK02	DATA	0212	ASCII LINE FEED	00	00130
000457	000040	A	131	K40	DATA	040		00	00131
000460	000100	A	132	K100	DATA	0100		00	00132
000461	000200	A	133	K200	DATA	0200		00	00133
000462			134	FRST	BSS	1	INITIAL PUNCH ADDRESS	00	00134
000463			135	LAST	BSS	1	LAST PUNCH ADDRESS	00	00135
000464	000000	A	136	CKSM	DATA	0	CHECKSUM	00	00136
000465	000000	A	137	EXEC	DATA	0	EXECUTION ADDRESS	00	00137
000466	000224	A	138	TAPN	DATA	0224	PUNCH OFF CODE	00	00138
000467	000222	A	139	TAPE	DATA	0222	PUNCH ON CODE	00	00139
000470	007630	A	140	LOAD	DATA	07630	ADDRS FOR BINARY LOADER	00	00140
000471	000000	A	141	TS04	DATA	0	DIGIT COUNTER FOR INPG	00	00141
000472	000000	A	142	PWRK	DATA	0	POWER FAIL COUNTER	D	*****
			143	*				00	00142
			144	*				00	00143
			145	*				00	00144
			146	*				00	00145
			147	*****				00	00146
			148	*				00	00147
005100			149		ORG	05100		00	00148
			150	*				00	00149
			151	*****				00	00150
			152	*				00	00151
			153	*				00	00152
			154	*				00	00153
			155	*				00	00154
005100	A		156	ELOC	EQU	*	LOWEST CORE LOCATION USED BY THE EXEC	00	00155
			157	*				00	00156
			158	*	EPUN=PUNCH	A PROGRAM TAPE ON THE TTY PUNCH		00	00157
			159	*	BEGINNING, ENDING, AND EXECUTION ADDRESSES			00	00158
			160	*	ARE SPECIFIED BY USER			00	00159
			161	*				00	00160
			162	*				00	00161
			163	*				00	00162
007577	A		164	BLSA	SET	07577	BINARY LOADER START ADDR	00	00163
007555	A		165	BLEA	SET	07555	BINARY LOADER END ADDR	00	00164

005100	005304	A	166 *						00 00165
			167	EPUN	DECR	04		PRESET EXEC ADDRS TO -1	00 00166
005101	070450	A	168		STX	ETS1+2			00 00167
005102	006020	A	169		LOBI	ETS1		ADDRS FOR STORING INPUT PARAMETERS	00 00168
005103	000446	A							
005104	002000	A	170		CALL	INPG		INPUT OCTAL PARAMETER	00 00169
005105	007250	A							
005106	001000	A	171		JMP	ETOP		TERMINATION EXIT VIA SS3	00 00170
005107	006221	A							
005110	001000	A	172		JMP	ETOP		ABORT	00 00171
005111	006221	A							
005112	001000	A	173		JMP	EPU1		COMMA EXIT--GET NEXT PARAMETER	00 00172
005113	005125	A							
			174 *					NORMAL RETURN FROM INPG	00 00173
005114	056000	A	175		STA	0,2			00 00174
005115	010446	A	176		LDA	ETS1		BEGINNING PUNCH ADDRESS	00 00175
005116	020447	A	177		LDB	ETS1+1		ENDING PUNCH ADDRESS	00 00176
005117	030450	A	178		LOX	ETS1+2		EXEC ADDRS	00 00177
005120	007401	A	179		SOP				00 00178
005121	002000	A	180		CALL	DUMP			00 00179
005122	005237	A							
005123	001000	A	181		JMP	ETOP		RETURN TO EXEC SUPERVISOR	00 00180
005124	006221	A							
			182 *						00 00181
005125	056000	A	183	EPU1	STA	0,2			00 00182
005126	005021	A	184		TBA				00 00183
005127	006140	A	185		SUBI	ETS1+2			00 00184
005130	000450	A							
005131	001010	A	186		JAZ	EXIT		ERRQR==TOO MANY INPUTS	00 00185
005132	006323	A							
005133	005122	A	187		IBR				00 00186
005134	001000	A	188		JMP	EPUN+4		GET NEXT PARAMETER	00 00187
005135	005104	A							
			189 *						00 00188
005136	006010	A	190	EBPN	LDAI	BLSA		FRST = BIN LOAD START ADDRS (PRESET)	00 00189
005137	007577	A							
005140	050446	A	191		STA	ETS1			00 00190
005141	006010	A	192		LDAI	BLEA		LAST = BIN LOAD END ADDRS (PRESET)	00 00191
005142	007755	A							
005143	050447	A	193		STA	ETS1+1			00 00192
005144	006020	A	194		LOBI	ETS1		ADDRS FOR STORING INPUT PARAMETERS	00 00193
005145	000446	A							00 00194

005146	002000	A	195	CALL	INPG	INPUT OCTAL PARAMETERS	00	00194	
005147	007250	A							
005150	001000	A	196	JMP	ETOP	S83 EXIT	00	00195	
005151	006221	A							
005152	001000	A	197	JMP	ETOP	ABORT EXIT	00	00196	
005153	006221	A							
005154	001000	A	198	JMP	EBP1	, EXIT	00	00197	
005155	005172	A							
005156	005014	A	199	TAX		SAVE INPUT (, EXIT)	00	00198	
005157	010471	A	200	LOA	T804	NUMBER INPUTED?	00	00199	
005158	001010	A	201	JAZ	**3	NO	00	00200	
005159	005153	A							
005162	076000	A	202	STX	0,2	YES, PUT INTO PARAMETER LIST	00	00201	
005163	010446	A	203	LOA	ETS1	BINARY START ADDRS	00	00202	
005164	020447	A	204	LOB	ETS1+1	BINARY END ADDRS	00	00203	
005165	007400	A	205	R0F		SET BINARY DUMP INDICATOR	00	00204	
005166	002000	A	206	CALL	DUMP	DUMP	00	00205	
005167	005237	A							
005170	001000	A	207	JMP	ETOP	RETURN TO EXEC SUPERVISOR	00	00206	
005171	006221	A							
005172	056000	A	208	EBP1 STA	0,2	STORE PARAMETER	00	00207	
005173	005021	A	209	T8A		TOO MANY ?	00	00208	
005174	006140	A	210	SUBI	ETS1+1		00	00209	
005175	000447	A							
005176	001010	A	211	JAZ	EXIT	YES	00	00210	
005177	006323	A							
005200	005122	A	212	ISR		NO	00	00211	
005201	001000	A	213	JMP	EBPN+8	GET NEXT	00	00212	
005202	005146	A							
			214 *				00	00213	
			215 *				00	00214	
			216 *				00	00215	
			217 *	CONSOLE BOOTSTRAP DUMP DRIVER				00	00216
			218 *				00	00217	
005203	007400	A	219	R0F		SET BOOTSTRAP FLAG	00	00218	
005204	002000	A	220	CALL	DUMP	DUMP BOOTSTRAP	00	00219	
005205	005237	A							
			221 *				00	00220	
			222 *	CONSOLE PROGRAM DUMP DRIVER				00	00221
			223 *				00	00222	
005206	000007	A	224	DHLT	HLT	7	00	00223	
005207	007401	A	225	R0F		SET PROGRAM FLAG	00	00224	

005210	002000	A	226	CALL	DUMP	DUMP PRPGRAM TAPE	00	00225
005211	005237	A						
005212	001000	A	227	JMP	DHLT	HALT FOR OPERATOR	00	00226
005213	005205	A						
			228	*			00	00227
			229	*	BINARY DUMP ROUTINE		00	00228
			230	*			00	00229
005214	010463	A	231	RDR	LDA	LAST *END OF RCD	00	00230
005215	001010	A	232		JAZ	PQFF=2 (BOOTSTRAP DUMP)	00	00231
005216	005224	A						
005217	010464	A	233		LDA	CKSM	00	00232
005220	002000	A	234		CALL	PWRD PUNCH CHECKSUM	00	00233
005221	005342	A						
005222	001001	A	235		JOP	PRCD (NOT EXEC RCD)	00	00234
005223	005270	A						
005224	002000	A	236		CALL	PLDR PUNCH TRAILER	00	00235
005225	005370	A						
005226	002000	A	237	PQFF	CALL	OUTH,0224 TURN PUNCH OFF	00	00236
005227	007522	A						
005230	000224	A						
005231	002000	A	238		CALL	OUTH,0201 PRINT ENABLE	00	00237
005232	007522	A						
005233	000201	A						
005234	010462	A	239		LDA	FRST RESTORE REGISTERS	00	00238
005235	020463	A	240		LDB	LAST	00	00239
005236	001000	A	241		JMP	* RETURN	00	00240
005237	005236	A						
005237			242	DUMP	BEB	0 *ENTRY POINT	00	00241
005240	050462	A	243		STA	FRST SAVE REGISTERS	00	00242
005241	060463	A	244		STB	LAST	00	00243
005242	070465	A	245		STX	EXEC	00	00244
005243	005014	A	246		TAX	SET LOAD ADDR	00	00245
005244	002000	A	247		CALL	OUTH,0203 PRINT OFF	00	00246
005245	007522	A						
005246	000203	A						
005247	002000	A	248		CALL	OUTH,0222 TURN PUNCH ON	00	00247
005250	007522	A						
005251	000222	A						
005252	002000	A	249		CALL	PLDR PUNCH LEADER	00	00248
005253	005370	A						
005254	060464	A	250		STB	CKSM RESET CHECKSUM	00	00249
005255	001001	A	251		JOP	PRCD (PROGRAM DUMP)	00	00250



005256	005270	A								
005257	030462	A	252	LDX	FRST	SET BEGINNING			00	00251
005260	010463	A	253	LDA	LAST	AND ENDING			00	00252
005261	140462	A	254	SUB	FRST	ADDRS			00	00253
005262	005012	A	255	TAB					00	00254
005263	005001	A	256	TZA		SET BOOT FLAG			00	00255
005264	050463	A	257	STA	LAST				00	00256
005265	001000	A	258	JMP	PBOOT				00	00257
005266	005334	A								
005267	005000	A	259	NDP					00	00258
005270	007401	A	260	PRCD	SOP	*PUNCH A RCD			00	00259
005271	070446	A	261	STX	ETS1	CALC RECORD LENGTH			00	00260
005272	010463	A	262	LDA	LAST				00	00261
005273	140446	A	263	SUB	ETS1				00	00262
005274	005112	A	264	INCR	012				00	00263
005275	001002	A	265	JAP	DRCD	(DATA RECORD)			00	00264
005276	005305	A								
005277	030465	A	266	LDX	EXEC	SET EXEC ADDR			00	00265
005300	005041	A	267	TXA					00	00266
005301	001004	A	268	JAN	POFF	(NO EXEC RCD)			00	00267
005302	005226	A								
005303	007400	A	269	RDF					00	00268
005304	005001	A	270	TZA		SET RCD LENGTH = 0			00	00269
005305	140460	A	271	DRCD	SUB	K100			00	00270
005306	001004	A	272	JAN	**3	(SHORT RCD)			00	00271
005307	005311	A								
005310	020460	A	273	LOB	K100	SET FOR MAX RCD			00	00272
005311	005301	A	274	DECR	1				00	00273
005312	002000	A	275	CALL	OUTA	OUTPUT ONE CHAR			00	00274
005313	007334	A								
005314	002000	A	276	CALL	OUTA	OUTPUT ONE CHAR			00	00275
005315	007334	A								
005316	002000	A	277	CALL	OUTA	OUTPUT ONE CHAR			00	00276
005317	007334	A								
005320	005001	A	278	TZA					00	00277
005321	002000	A	279	CALL	OUTA	OUTPUT ONE CHAR			00	00278
005322	007334	A								
005323	005021	A	280	TBA					00	00279
005324	002000	A	281	CALL	PWRD	PUNCH RCD LENGTH			00	00280
005325	005342	A								
005326	005041	A	282	TXA						
005327	002000	A	283	PDATA	CALL	PUNCH ADDR/DATA			00	00283

005330	005342	A									
005331	001020	A	284		JBZ	EOR		(END OF RCD)			00 00283
005332	005214	A									
005333	005322	A	285			DBR		COUNT DOWN			00 00284
005334	015000	A	286	PBOOT	LOA	0,1		GET DATA			00 00285
005335	005144	A	287		IXR			SET NEXT ADDR			00 00286
005336	001000	A	288		JMP	PDATA					00 00287
005337	005327	A									
			289	*							00 00288
			290	*	CHECKSUM AND PUNCH BINARY WORD						00 00289
			291	*							00 00290
005340	020448	A	292	PWR1	LDB	ETS1					00 00291
005341	001000	A	293		JMP	*		RETURN			00 00292
005342	005341	A									
	005342	A	294	PWRD	EQU	**1		ENTRY POINT			00 00293
005343	060448	A	295		STB	ETS1					00 00294
005344	005012	A	296		TAB						00 00295
005345	130464	A	297		ERA	CKSM		CALCULATE CHECKSUM			00 00296
005346	050464	A	298		STA	CKSM					00 00297
005347	005021	A	299		TBA						00 00298
005350	005302	A	300		DECR	2					00 00299
005351	004022	A	301		ASLB	18		B = MAX NEGATIVE NUMBER			00 00300
005352	004594	A	302		LLSR	12		SHIFT IN FIRST SIX BITS			00 00301
005353	130457	A	303	PWR2	ERA	K40		ENDOCE			00 00302
005354	120457	A	304		ADD	K40					00 00303
005355	001400	A	305		JSS3	ETOP		SS3 EXIT			00 00304
005356	006221	A									
005357	002000	A	306		CALL	OUTA		OUTPUT ONE CHAR			00 00305
005360	007334	A									
005361	005001	A	307		TZA						00 00306
005362	004448	A	308		LLRL	6		SHIFT IN NEXT SIX BITS			00 00307
005363	001020	A	309		JBZ	PWR1		ALL FINISHED			00 00308
005364	005340	A									
005365	001000	A	310		JMP	PWR2					00 00309
005366	005353	A									
005367	005000	A	311		NOP						00 00310
			312	*							00 00311
			313	*	PUNCH LEADER/TRAILER NULLS						00 00312
			314	*							00 00313
005370	000000	A	315	PLDR	ENTR	0					00 00314
005371	020461	A	316		LDB	K200		SET FOR APPROX 12 INCHES			00 00315
005372	010461	A	317		LOA	K200		ASCII NULL			00 00316



005373	002000	A	318	PLD1	CALL	OUTA	PUNCH ONE CHAR	00	00317
005374	007334	A							
005375	001020	A	319		JBZ*	PLDR		00	00318
005376	105370	A							
005377	005322	A	320		DBR		COUNT	00	00319
005400	001400	A	321		JSB3	ETOP	SS3 EXIT	00	00320
005401	006221	A							
005402	001000	A	322		JMP	PLD1		00	00321
005403	005373	A							
			323	*				00	00322
			324	*				00	00323
			325	*				00	00324
			326	*				00	00325
			327	*	INIT--INITIALIZE MEMORY.			00	00326
			328	*	X=START ADDRESS			00	00327
			329	*	Y=FINAL ADDRESS			00	00328
			330	*	Z=INITIALIZING VALUE			00	00329
			331	*				00	00330
			332	*	FORMAT: IX,Y,Z.			00	00331
			333	*				00	00332
			334	*				00	00333
005404	006020	A	335	INIT	LOBI	ETS1	ADDRESS FOR STORING INPUT PARAMETERS	00	00334
005405	000446	A							
005406	002000	A	336		CALL	INPG	GET OCTAL PARAMETER	00	00335
005407	007250	A							
005410	001000	A	337		JMP	ETOP	TERMINATION EXIT VIA SS3	00	00336
005411	006221	A							
005412	001000	A	338		JMP	ETOP	ABORT	00	00337
005413	006221	A							
005414	001000	A	339		JMP	IN33	COMMA EXIT--GET NEXT PARAMETER	00	00338
005415	005444	A							
			340	*	NORMAL RETURN FROM INPG--A REG CONTAINS THIRD PARAMETER			00	00339
005416	030446	A	341		LOX	ETS1	START ADDRESS	00	00340
005417	050452	A	342		STA	ETS1+4	SAVE INITIALIZING VALUE	00	00341
005420	005021	A	343		TBA		TEST NO. PARAMETERS	00	00342
005421	005140	A	344		SUBI	ETS1+2	*	00	00343
005422	000450	A							
005423	001010	A	345		JAZ	**4	*	00	00344
005424	005427	A							
005425	001000	A	346		JMP	EXIT	*	00	00345
005426	006323	A							
005427	010447	A	347		LOA	ETS1+1	TEST PARAMETER	00	00346



005430	140446	A	348		SUB	ETS1	RANGE	00	00347
005431	001004	A	349		JAN	EXIT	***	00	00348
005432	006323	A							
005433	010452	A	350	INI2	LOA	ETS1+4	STORE VALUE Z	00	00349
005434	055000	A	351		STA	0,1		00	00350
005435	005041	A	352		TXA			00	00351
005436	140447	A	353		SUB	ETS1+1	FINAL ADDRESS	00	00352
005437	001010	A	354		JAZ	ETOP	YES	00	00353
005440	006221	A							
005441	005144	A	355		IXR			00	00354
005442	001000	A	356		JMP	INI2	STORE Z AT NEXT LOCATION	00	00355
005443	005433	A							
			357	*				00	00356
005444	055000	A	358	INI3	STA	0,2	SAVE INPUT PARAMETER	00	00357
005445	005122	A	359		IBR			00	00358
005446	001000	A	360		JMP	INIT+2	GET NEXT PARAMETER	00	00359
005447	005406	A							
			361	*				00	00360
			362	*				00	00361
			363	*				00	00362
			364	*				00	00363
			365	*	ETRP--TRAP TO LOCATION X STARTING FROM LOCATION Y.			00	00364
			366	*	IF LOCATION X IS REACHED; RESTORE LOCATIONS X & X+1, PRINT			00	00365
			367	*	THE CURRENT VALUES OF REGISTERS A,B,X, AND RETURN TO THE			00	00366
			368	*	EXEC SUPERVISOR			00	00367
			369	*				00	00368
			370	*	NOTE: CONTENTS OF LOCATIONS X AND X+1 MUST BE RESTORED BY			00	00369
			371	*	USER IF TRAP IS NOT REACHED BY THIS ROUTINE			00	00370
			372	*				00	00371
			373	*	FORMAT: TX,Y.			00	00372
			374	*				00	00373
			375	*				00	00374
005450	006020	A	376	ETRP	LOBI	ETS1	(B) POINTS TO PARAMETER TBL	00	00375
005451	000446	A							
005452	010446	A	377		LOA	ETS1	X = PREVIOUS Y	00	00376
005453	050447	A	378		STA	ETS1+1		00	00377
005454	002000	A	379		CALL	INPG	INPUT OCTAL NUMBER	00	00378
005455	007250	A							
005456	001000	A	380		JMP	ETOP	TERMINATION EXIT VIA SS3	00	00379
005457	006221	A							
005460	001000	A	381		JMP	ETOP	ABORT		
005461	006221	A							



005462	001000	A	382	JMP	ETR1	COMMA EXIT--GET SECOND PARAMETER	00	00381	
005463	005536	A							
			383 *	NORMAL RETURN FROM INPG				00	00382
005464	056000	A	384	STA	0,2	STORE PARAMETER	00	00383	
005465	006030	A	385	LOXI	ETS1+2	TEMP STORE ADDRESS	00	00384	
005466	000450	A							
005467	020446	A	386	LOB	ETS1	X PARAMETER(TRAP LOCATION)	00	00385	
005470	016000	A	387	LDA	0,2		00	00386	
005471	055000	A	388	STA	0,1	SAVE CONTENTS OF LOCATION X AT TS02	00	00387	
005472	016001	A	389	LDA	1,2		00	00388	
005473	055001	A	390	STA	1,1	SAVE CONTENTS OF LOC. X+1 AT TS03	00	00389	
005474	006010	A	391	LDAI	02000	OP CODE FOR JMPH	00	00390	
005475	002000	A							
005476	056000	A	392	STA	0,2	STORE JMPH AT LOC X	00	00391	
005477	006010	A	393	LDAI	ETR2		00	00392	
005500	005546	A							
005501	056001	A	394	STA	1,2	STORE TRAP RETURN ADDRESS AT X+1	00	00393	
005502	001000	A	395	JMP	EG01	LOAD PSEUDO REGISTERS AND GOTO LOC Y	00	00394	
005503	005754	A							
			396 *						
005504	050443	A	397	ETR3	STA	EAR1	00	00395	
							00	00396	
005505	060444	A	398		STB	EPR1	00	00397	
							00	00398	
005506	070445	A	399		STX	EXR1	00	00399	
							00	00400	
005507	034036	A	400		LOX	ETR2	00	00401	
							00	00402	
005510	005344	A	401		DXR		00	00403	
							00	00404	
005511	005344	A	402		DXR		00	00405	
						SET X REG TO TRAP LOCATION ADDRESS	00	00406	
005512	010450	A	403		LDA	ETS1+2	00	00407	
							00	00408	
005513	020451	A	404		LOB	ETS1+3	00	00409	
							00	00410	
005514	055000	A	405		STA	0,1	00	00411	
							00	00412	
005515	063001	A	406		STB	1,1	00	00413	
							00	00414	
005516	002000	A	407		CALL	OUTC	00	00415	
							00	00416	
005517	007404	A							
005520	005041	A	408		TXA		00	00417	
							00	00418	
005521	008000	A	409		CALL	OUTP	00	00419	
							00	00420	
005522	007456	A							
005523	010443	A	410		LDA	EAR1	00	00421	
							00	00422	
005524	002000	A	411		CALL	OUTE	00	00423	
						PRINT CONTENTS OF PSEUDO A	00	00424	
005525	007416	A							
005526	010444	A	412		LDA	EPR1	00	00425	
							00	00426	
005527	002000	A	413		CALL	OUTE	00	00427	
						PRINT CONTENTS OF PSEUDO B	00	00428	
005530	007416	A							
005531	010445	A	414		LDA	EXR1	00	00429	



005532	002000	A	415	CALL	OUTE	PRINT CONTENTS OF PSEUDO X	00 00414
005533	007416	A					
005534	001000	A	416	JMP	ETOP	RETURN TO EXEC SUPERVISOR	00 00415
005535	006221	A					
			417 *				00 00416
005536	056000	A	418	ETR1	STA 0,2	STORE PARAMETER X	00 00417
005537	005123	A	419		INCR 023	INC PARAMETER PTR	00 00418
005540	006140	A	420		SUBI ETS1+1	MORE THAN 1 X PARAMETER ?	00 00419
005541	000447	A					
005542	001010	A	421		JAZ ETRP+4	NO CONTINUE	00 00420
005543	005454	A					
005544	001000	A	422		JMP EXIT	YES PRINT INVALID AND GO TO ETOP	00 00421
005545	006323	A					
			423 *				00 00422
005546	000000	A	424	ETR2	ENTR 0		00 00423
005547	001000	A	425		JMP ETR3	PROCESS TRAP RETURN	00 00424
005550	005504	A					
			426 *				00 00425
			427 *				00 00426
			428 *				00 00427
			429 *		ESRC--SEARCH MEMORY FOR SPECIFIED VALUE.		00 00428
			430 *		PRINT LOCATION AND CONTENTS WHENR MATCH IS FOUND		00 00429
			431 *				00 00430
			432 *		X=START ADDRESS		00 00431
			433 *		Y=FINAL ADDRESS		00 00432
			434 *		Z=SEARCH VALUE		00 00433
			435 *		M=MASK WORD		00 00434
			436 *				00 00435
			437 *		FORMAT: SX,Y,Z,M.		00 00436
			438 *				00 00437
			439 *				00 00438
005551	006020	A	440	ESRC	LOBI ETS1	ADDRESS FOR STORING INPUT PARAMETERS	00 00439
005552	000446	A					
005553	002000	A	441		CALL INPG	GET OCTAL PARAMETER	00 00440
005554	007250	A					
005555	001000	A	442		JMP ETOP	TERMINATION EXIT VIA S93	00 00441
005556	006221	A					
005557	001000	A	443		JMP ETOP	ABORT	00 00442
005560	006221	A					
005561	001000	A	444		JMP ESR5	COMMA EXIT--GET NEXT PARAMETER	00 00443
005562	005632	A					
			445 *		NORMAL RETURN FROM INPG--A REG CONTAINS FOURTH PARAMETER		00 00444



005563	050451	A	446		STA	ETS1+3	SAVE MASK WORD	00	00445
005564	150450	A	447		ANA	ETS1+2	MASK SEARCH VALUE	00	00446
005565	050452	A	448		STA	ETS1+4	MASKED SEARCH VALUE	00	00447
005566	005021	A	449		T8A		TEST NO. OF PARAMETERS	00	00448
005567	006140	A	450		SUBI	ETS1+3	*	00	00449
005570	000451	A							
005571	001010	A	451		JAZ	**4	*	00	00450
005572	005575	A							
005573	001000	A	452		JMP	EXIT	***	00	00451
005574	006323	A							
005575	030446	A	453	ESR4	LOX	ETS1	START ADDRESS	00	00452
005576	015000	A	454		LDA	0,1		00	00453
005577	150451	A	455		ANA	ETS1+3	MASK IT	00	00454
005600	140452	A	456		SUB	ETS1+4		00	00455
005601	001010	A	457		JAZ	ESR2	GOOD COMPARE	00	00456
005602	005614	A							
005603	040446	A	458	ESR1	INR	ETS1	START ADDRESS	00	00457
005604	001400	A	459		JSS3	ETOP	RETURN TO SUPERVISOR	00	00458
005605	006221	A							
005606	005041	A	460		TXA			00	00459
005607	140447	A	461		SUB	ETS1+1	END ADDRESS	00	00460
005610	001002	A	462		JAP	ETOP	RETURN TO SUPERVISOR	00	00461
005611	006221	A							
005612	001000	A	463		JMP	ESR4	GET NEXT WORD	00	00462
005613	005575	A							
005614	002000	A	464	ESR2	CALL	OUTC	CR/LF	00	00463
005615	007404	A							
005616	010446	A	465		LDA	ETS1	ADDRS OF WORD	00	00464
005617	002000	A	466		CALL	OUTF	PRINT MEMORY ADDRESS	00	00465
005620	007456	A							
005621	006010	A	467		LDAI	1=1	EQUAL SIGN	00	00466
005622	000275	A							
005623	002000	A	468		CALL	OUTA		00	00467
005624	007334	A							
005625	015000	A	469		LDA	0,1	CONTENTS OF ADDRESS	00	00468
005626	002000	A	470		CALL	OUTE	PRINT CONTENTS	00	00469
005627	007416	A							
005630	001000	A	471		JMP	ESR1	CONTINUE	00	00470
005631	005603	A							
005632	056000	A	472	ESR5	STA	0,2		00	00471
005633	005128	A	473		IBR			00	00472
005634	001000	A	474		JMP	ESRC+2	GET NEXT PARAMETER	00	00473



005635	005553	A	475	*					00	00474
			476	*					00	00475
			477	*					00	00476
			478	*					00	00477
			479	*	DISPLAY/CHANGE THE PSEUDO A REGISTER				00	00478
			480	*					00	00479
005636	006010	A	481		EARG	LDAI	0240	ASCII SPACE	00	00480
005637	000240	A								
005640	002000	A	482		CALL	OUTA			00	00481
005641	007334	A								
005642	010443	A	483		LDA	EAR1		LOAD PSEUDO A	00	00482
005643	002000	A	484		CALL	OUTE		PRINT CONTENTS	00	00483
005644	007416	A								
005645	002000	A	485		CALL	INPG		INPUT OCTAL AND/OR PERIOD	00	00484
005646	007850	A								
005647	001000	A	486		JMP	ETOP		TERMINATION EXIT VIA SS3	00	00485
005650	006221	A								
005651	001000	A	487		JMP	ETOP		ABORT EXIT	00	00486
005652	006221	A								
005653	001000	A	488		JMP	*+2		COMMA EXIT--ACCEPT IT	00	00487
005654	005655	A								
			489	*	NORMAL RETURN FROM INPG				00	00488
005655	050446	A	490		STA	ETS1		SAVE INPUT	00	00489
005656	010471	A	491		LDA	TS04		TS04=DIGIT COUNTER FOR INPG	00	00490
005657	001010	A	492		JAZ	ETOP		0=NO OCTAL INPUT, RETURN TO SUPERVISOR	00	00491
005660	006221	A								
005661	010446	A	493		LDA	ETS1			00	00492
005662	050446	A	494		STA	EAR1		STORE NEW VALUE IN PSEUDO A	00	00493
005663	001000	A	495		JMP	ZTOP		RETURN TO SUPERVISOR	00	00494
005664	006221	A								
			496	*					00	00495
			497	*					00	00496
			498	*	DISPLAY/CHANGE THE PSEUDO B REGISTER				00	00497
			499	*					00	00498
			500	*					00	00499
005665	010454	A	501		EBRG	LDA	EK00	ASCII BLANK(SPACE)	00	00500
005666	002000	A	502		CALL	OUTA			00	00501
005667	007334	A								
005670	010444	A	503		LDA	EBR1		LOAD PSEUDO B	00	00502
005671	002000	A	504		CALL	OUTE		PRINT CONTENTS	00	00503
005672	007416	A								

005673	002000	A	505	CALL	INPG	INPUT OCTAL AND/OR PERIOD	00	00504
005674	007250	A						
005675	001000	A	506	JMP	ETOP	TERMINATION EXIT VIA SS3	00	00505
005676	006221	A						
005677	001000	A	507	JMP	ETOP	ABORT EXIT	00	00506
005700	006221	A						
005701	001000	A	508	JMP	**2	COMMA EXIT--ACCEPT IT	00	00507
005702	005703	A						
			509 *	NORMAL RETURN FROM INPG				00 00508
005703	050446	A	510	STA	ETS1	SAVE INPUT	00	00509
005704	010471	A	511	LDA	TS04	TS04=DIGIT COUNTER FOR INPG	00	00510
005705	001010	A	512	JAZ	ETOP	0=NO OCTAL INPUT, RETURN TO SUPERVISOR	00	00511
005706	006221	A						
005707	010446	A	513	LDA	ETS1		00	00512
005710	050444	A	514	STA	EBR1	STORE NEW VALUE IN PSEUDO 6	00	00513
005711	001000	A	515	JMP	ETOP	RETURN TO SUPERVISOR	00	00514
005712	006221	A						
			516 *					00 00515
			517 *					00 00516
			518 *	DISPLAY/CHANGE THE PSEUDO X REGISTER				00 00517
			519 *					00 00518
			520 *					00 00519
005713	010454	A	521	EXRG	LDA	EK00		00 00520
005714	008000	A	522	CALL	OUTA	ASCII BLANK(SPACE)	00	00521
005715	007334	A						
005716	010445	A	523	LDA	EXR1	LOAD PSEUDO X	00	00522
005717	008000	A	524	CALL	OUTE	PRINT CONTENTS	00	00523
005720	007416	A						
005721	002000	A	525	CALL	INPG	INPUT OCTAL AND/OR PERIOD	00	00524
005722	007250	A						
005723	001000	A	526	JMP	ETOP	TERMINATION EXIT VIA SS3	00	00525
005724	006221	A						
005725	001000	A	527	JMP	ETOP	ABORT	00	00526
005726	006221	A						
005727	001000	A	528	JMP	**2	COMA EXIT--ACCEPT IT	00	00527
005730	005731	A						
			529 *	NORMAL RETURN FROM INPG				00 00528
005731	050446	A	530	STA	ETS1	SAVE INPUT	00	00529
005732	010471	A	531	LDA	TS04	TS04=DIGIT COUNTER FOR INPG	00	00530
005733	001010	A	532	JAZ	ETOP	0=NO OCTAL INPUT, RETURN TO SUPERVISOR	00	00531
005734	006221	A						
005735	010446	A	533	LDA	ETS1		00	00532



005736	050445	A	534	STA	EXR1	STORE NEW VALUE IN PSEUDO X	00	00533
005737	001000	A	535	JMP	ETOP	RETURN TO SUPERVISOR	00	00534
005740	006221	A						
			536	*			00	00535
			537	*			00	00536
			538	*			00	00537
			539	*			00	00538
			540	*			00	00539
			541	*	EGOT=	LOAD PSEUDO REGISTERS INTO A,B,X AND TRANSFER TO	00	00540
			542	*		LOCATION SPECIFIED BY USER,	00	00541
			543	*		THE PSEUDO REGISTERS CAN BE PRESET WITH THE A,B,X	00	00542
			544	*		UTILITY FUNCTIONS,	00	00543
			545	*			00	00544
			546	*			00	00545
005741	002000	A	547	EGOT	CALL	INPG	00	00546
						INPUT OCTAL NUMBER		
005742	007250	A						
005743	001000	A	548	JMP	ETOP	TERMINATION EXIT VIA S53	00	00547
005744	006221	A						
005745	001000	A	549	JMP	ETOP	ABORT	00	00548
005746	006221	A						
005747	001000	A	550	JMP	**2	COMMA EXIT=ACCEPT IT	00	00549
005750	005751	A						
			551	*		NORMAL RETURN FROM INPG	00	00550
005751	050447	A	552	STA	ETS1+1		00	00551
005752	002000	A	553	CALL	OUTC	DO A CR + LF	00	00552
005753	007404	A						
005754	010443	A	554	EGO1	LOA	EAR1	00	00553
						LOAD PSEUDO A REG.		
005755	020444	A	555		LOB	EBR1	00	00554
						LOAD PSEUDO B REG.		
005756	030445	A	556		LGX	EXR1	00	00555
						LOAD PSEUDO X REG.		
005757	001000	A	557	JMP*	ETS1+1		00	00556
005760	100447	A						
			558	*		DUMP CORE MEMORY TO TTY PRINTER	00	00557
			559	*			00	00558
005761	002000	A	560	EDUM	CALL	INPG	00	00559
						INPUT START LOCATION (OCTAL)		
005762	007250	A						
005763	001000	A	561	JMP	ETOP	TERMINATION EXIT VIA S53	00	00560
005764	006221	A						
005765	001000	A	562	JMP	ETOP	ABORT	00	00561
005766	006221	A						
005767	001000	A	563	JMP	**2	COMMA EXIT=ACCEPT IT	00	00562
005770	005771	A						
			564	*		NORMAL RETURN FROM INPG	00	00563



005771	050446	A	566		STA	ETS1		00	00564
005772	002000	A	566		CALL	OUTC	OUTPUT CR & LF	00	00565
005773	007404	A							
005774	010446	A	567		LDA	ETS1		00	00566
005775	005014	A	566		TAX			00	00567
005776	002000	A	569	EDU1	CALL	OUTF	OUTPUT MEMORY ADDRESS	00	00568
005777	007456	A							
006000	010454	A	570		LDA	EK00	ASCII BLANK(SPACE)	00	00569
006001	002000	A	571		CALL	OUTA		00	00570
006002	007334	A							
006003	015000	A	572	EDU2	LDA	0,1		00	00571
006004	002000	A	573		CALL	OUTE	PRINT LOCATION CONTENTS	00	00572
006005	007416	A							
006006	001400	A	574		JSS3	ETOP		00	00573
006007	006221	A							
006010	005146	A	575		INCR	045	INCREMENT X AND PUT INTO A&X	00	00574
006011	005002	A	576		TZB			00	00575
006012	004543	A	577		LLSR	3	LINE LENGTH IS 8 LOCATIONS	00	00576
006013	001020	A	578		JBZ	EDU4	NEXT LINE	00	00577
006014	005017	A							
006015	001000	A	579		JMP	EDU2	NEXT WORD	00	00578
006016	006003	A							
			580 *					00	00579
006017	002000	A	581	EDU4	CALL	OUTC	OUTPUT CR & LF	00	00580
006020	007404	A							
006021	005041	A	582		TXA			00	00581
006022	001000	A	583		JMP	EDU1		00	00582
006023	005776	A							
			584 *					00	00583
			585 *					00	00584
			586 *					00	00585
			587 *					00	00586
			588 *					00	00587
			589 *				PRINT/CHANGE CONTENTS OF MEMORY LOCATION SPECIFIED BY USER	00	00588
			590 *					00	00589
			591 *					00	00590
006024	002000	A	592	ECNG	CALL	INPG	INPUT OCTAL MEMORY ADDRESS	00	00591
006025	007250	A							
006026	001000	A	593		JMP	ETOP	TERMINATION EXIT VIA S33	00	00592
006027	006221	A							
006030	001000	A	594		JMP	ETOP	ABORT		
006031	006221	A							



006032	001000	A	595	JMP	**2	COMMA EXIT--ACCEPT IT	00	00594	
006033	006034	A							
			596 *	NORMAL RETURN FROM INPG				00	00595
006034	005014	A	597	TAX			00	00596	
006035	006010	A	598	ECN3	LDAI	1=1	00	00597	
006036	000275	A							
006037	002000	A	599	CALL	OUTA		00	00598	
006040	007334	A							
006041	015000	A	600	LDA	0,1		00	00599	
006042	002000	A	601	CALL	OUTE	OUTPUT OCTAL WORD	00	00600	
006043	007416	A							
006044	002000	A	602	CALL	INPG	INPUT OCTAL WORD	00	00601	
006045	007250	A							
006046	001000	A	603	JMP	ETOP	TERMINATION EXIT VIA SS3	00	00602	
006047	006221	A							
006050	001000	A	604	JMP	ETOP	ABORT	00	00603	
006051	006221	A							
006052	001000	A	605	JMP	ECN2	COMMA EXIT--PRINT NEXT LOCATION & CONTENTS	00	00604	
006053	006064	A							
			606 *	NORMAL RETURN FROM INPG WITH PERIOD				00	00605
006054	050446	A	607	STA	ETS1	SAVE INPUT	00	00606	
006055	010471	A	608	LDA	TS04	TS04=DIGIT COUNTER FOR INPG	00	00607	
006056	001010	A	609	JAZ	**4		00	00608	
006057	006062	A							
006060	010446	A	610	LDA	ETS1	GET LAST INPUT	00	00609	
006061	055000	A	611	STA	0,1		00	00610	
006062	001000	A	612	JMP	ETOP		00	00611	
006063	006221	A							
			613 *					00	00612
006064	050446	A	614	ECN2	STA	ETS1	00	00613	
						SAVE INPUT			
006065	010471	A	615	LDA	TS04	TS04=DIGIT COUNTER FOR INPG	00	00614	
006066	001010	A	616	JAZ	**4		00	00615	
006067	006072	A							
006070	010446	A	617	LDA	ETS1	GET LAST INPUT	00	00616	
006071	055000	A	618	STA	0,1	STORE NEW VALUE IN LOCATION	00	00617	
006072	002000	A	619	CALL	OUTC	CR & LF	00	00618	
006073	007404	A							
006074	005145	A	620	INCR	045	INCREMENT X AND PUT INTO A AND X	00	00619	
006075	002000	A	621	CALL	OUTF	PRINT NEXT MEMORY ADDRESS	00	00620	
006076	007456	A							
006077	001000	A	622	JMP	ECN3	PRINT CONTENTS	00	00621	
006100	006035	A							



```

        623 *
        624 *
        625 *
        626 *
        627 *
        628 *****
006150 629 *
        630 ORG 06150
        631 *
        632 *****
        633 *
006150 001000 A 634 EBG1 JMP EBG1 TTY ENTRY
006151 006171 A
006152 005001 A 635 TZA CONSOLE ENTRY
006153 050442 A 636 STA SCGN * SCGN = 0
006154 002000 A 637 CALL ESZC *
006155 006161 A
006156 000000 A 638 HLT *
006157 001000 A 639 JMP *-1 *****
006160 006156 A
006161 000000 A 640 ESZC ENTR 0 DETERMINE MEMORY SIZE
006162 002000 A 641 CALL ESZA *
006163 006471 A
006164 050441 A 642 STA SMEM *
006165 002000 A 643 CALL ESZB *
006166 006522 A
006167 001000 A 644 JMP (ESZC)* ***** EXIT
006170 106161 A
006171 006101 A 645 EBG1 INCR 01 TTY MODE
006172 050442 A 646 STA SCGN * SCGN = 01
006173 002000 A 647 CALL ESZC * STTY = 01, UNLESS SET
006174 006161 A
006175 005101 A 648 INCR 01 * BY
006176 000000 A 649 HLT * OPERATOR
006177 006030 A 650 LOXI STTY
006200 007370 A
006201 055000 A 651 STA 0,1
006202 001004 A 652 JAN 06152 CONSOLE MODE IF TTY DA =
006203 006152 A
        653 * USER MUST LOAD AND EXECUTE TESTS FROM CPU CONSOLE
006204 002000 A 654 EBG2 CALL OUTH,0201 PRINT ENABLE
006205 007522 A
    
```

006206	000201	A							
006207	002000	A	655	CALL	OUTC	OUTPUT CR&LF		00	00654
006210	007404	A							
006211	006030	A	656	LOXI	MSG1	THIS IS THE 620 TEST EXECUTIVE		00	00655
006212	006413	A							
006213	002000	A	657	CALL	OUTD	OUTPUT MESSAGE		00	00656
006214	007445	A							
006215	006030	A	658	LOXI	MSG3	MESSAGE: MEMORY SIZE IS --K		00	00657
006216	006447	A							
006217	002000	A	659	CALL	OUTD	OUTPUT MESSAGE		00	00658
006220	007445	A							
			660 *					00	00659
			661 *					00	00660
			662 *					00	00661
			663 *	TEST EXECUTIVE SUPERVISOR				00	00662
			664 *					00	00663
006221	006010	A	665	ETOP	LOAI	0207	TTY BELL	00	00664
006222	000207	A							
006223	002000	A	666	CALL	OUTA	OUTPUT		00	00665
006224	007334	A							
006225	002000	A	667	CALL	OUTH,0201	PRINT ENABLE		00	00666
006226	007522	A							
006227	000201	A							
006230	002000	A	668	CALL	INPI	INIT TTY		00	00667
006231	007331	A							
006232	002000	A	669	CALL	OUTC			00	00668
006233	007404	A							
006234	002000	A	670	CALL	INPB	INPUT ONE CHARACTER		00	00669
006235	006755	A							
006236	001000	A	671	JMP	ETOP	ABORT EXIT		00	00670
006237	006221	A							
006240	054011	A	672	STA	ETD4+1	SAVE INPUT		00	00671
006241	006140	A	673	SUBI	0212	LINE FEED CODE		00	00672
006242	000212	A							
006243	001010	A	674	JAZ	ETOP	YES		00	00673
006244	006221	A							
006245	006140	A	675	SUBI	3	CARRIAGE RETURN(0215)		00	00674
006246	000003	A							
006247	001010	A	676	JAZ	ETOP	YES		00	00675
006250	006221	A							
006251	006010	A	677	ETD4	LOAI	0	GET ORIGINAL INPUT		
006252	000000	A							



006253	006140	A	678	SUBI	IAI			00	00677
006254	000301	A							
006255	001004	A	679	JAN	EXIT	INVALID INPUT		00	00678
006256	006323	A							
006257	006140	A	680	SUBI	032	Z CHAR		00	00679
006260	000032	A							
006261	001002	A	681	JAP	EXIT	INVALID INPUT		00	00680
006262	006323	A							
006263	006120	A	682	AODI	(ETBL+032)*	INDIRECT ADDRESS POINTER FOR UTILITY TABLE		00	00681
006264	106323	A							
006265	054002	A	683	STA	**3			00	00682
006266	005007	A	684	ZERO	7	CLEAR REGISTERS A,B,X		00	00683
006267	001000	A	685	JMP	*			00	00684
006270	006267	A							
006271	005636	A	686	ETBL	DATA	EARG	A PRINT/CHANGE PSEUDO A REG	00	00685
006272	005665	A	687		DATA	ESRG	B PRINT/CHANGE PSEUDO B REG	00	00686
006273	006024	A	688		DATA	ECNG	C PRINT/CHANGE MEMORY LOCATION	00	00687
006274	005761	A	689		DATA	EDUM	D DUMP CORE TO TTY PRINTER	00	00688
006275	005136	A	690		DATA	EBPN	E BINARY DUMP	00	00689
006276	006323	A	691		DATA	EXIT	F NOT USED	00	00690
006277	005741	A	692		DATA	EGOT	G TRANSFER TO SPECIFIED LOCATION	00	00691
006300	006323	A	693		DATA	EXIT	H NOT USED	00	00692
006301	008404	A	694		DATA	INIT	I INITIALIZE CORE	00	00693
006302	006323	A	695		DATA	EXIT	J NOT USED	00	00694
006303	006323	A	696		DATA	EXIT	K NOT USED	00	00695
006304	006327	A	697		DATA	ELOD	L LOAD OBJECT TAPE AND TRANSFER TO PROGRAM	00	00696
006305	006323	A	698		DATA	EXIT	M NOT USED	00	00697
006306	006323	A	699		DATA	EXIT	N NOT USED	00	00698
006307	006323	A	700		DATA	EXIT	O NOT USED	00	00699
006310	005100	A	701		DATA	SPUN	P PUNCH A PAPER TAPE ON TTY PUNCH	00	00700
006311	006323	A	702		DATA	EXIT	Q NOT USED	00	00701
006312	006323	A	703		DATA	EXIT	R NOT USED	00	00702
006313	005551	A	704		DATA	ESRC	S SEARCH MEMORY	00	00703
006314	008450	A	705		DATA	ETRP	T TRAP	00	00704
006315	006323	A	706		DATA	EXIT	U NOT USED	00	00705
006316	006323	A	707		DATA	EXIT	V NOT USED	00	00706
006317	006323	A	708		DATA	EXIT	W NOT USED	00	00707
006320	005713	A	709		DATA	EXRG	X PRINT/CHANGE PSEUDO X REG	00	00708
006321	006323	A	710		DATA	EXIT	Y NOT USED	00	00709
006322	006323	A	711		DATA	EXIT	Z NOT USED	00	00710
			712	*				00	00711
			713	*				00	00712

			714 *				00 00713
			715 *				00 00714
006323	002000	A	716	EXIT	CALL	OUTG	PRINT INVALID & CR/LF
							00 00715
006324	007475	A					
006325	001000	A	717		JMP	ETOP	RETURN TO TOP OF SUPERVISOR
							00 00716
006326	006221	A					
			718 *				00 00717
			719 *				00 00718
			720 *				00 00719
			721 *				00 00720
			722 *	ELOD==LOAD OBJECT TAPE AND TRANSFER TO TEST PROGRAM			00 00721
			723 *				00 00722
			724 *				00 00723
006327	002000	A	725	ELOD	CALL	INPF	INPUT PERIOD
							00 00724
006330	007170	A					
006331	001000	A	726		JMP	ETOP	TERMINATE EXIT
							00 00725
006332	006221	A					
006333	001000	A	727		JMP	ETOP	ABORT EXIT
							00 00726
006334	006221	A					
006335	001000	A	728		JMP	ETOP	DELETE PREVIOUS CHAR EXIT
							00 00727
006336	006221	A					
006337	001000	A	729		JMP	**2	COMMA RETURN==ACCEPT IT
							00 00728
006340	006341	A					
			730 *	NDEAL RETURN FROM INPF WITH PERIOD			00 00729
006341	005101	A	731	INCR		01	SET A/O FOR LOAD AND EXECUTE
							00 00730
006342	002000	A	732	JMPM*		LOAD	GO TO BINARY LOADER
							00 00731
006343	100470	A					
006344	005042	A	733	TXB			SAVE X
							00 00732
006345	006030	A	734	LDXI		MSG2	MESSAGE: CHECKSUM ERROR
							00 00733
006346	006434	A					
006347	002000	A	735	CALL		OUTD	PRINT MESSAGE
							00 00734
006350	007445	A					
006351	005021	A	736	TBA			OUTPUT X
							00 00735
006352	002000	A	737	CALL		OUTE	
							00 00736
006353	007416	A					
006354	001000	A	738	JMP		ETOP	EXEC SUPERVISOR
							00 00737
006355	006221	A					
			739 *				00 00738
			740 *				00 00739
			741 *				00 00740
			742 *				00 00741
			743 *				00 00742

			744 *		TYPICAL POWER UP/DOWN SUBROUTINE		00 00743
			745 *		POWER DOWN INTERRUPT ADDRESS 040		00 00744
			746 *		POWER UP INTERRUPT ADDRESS 042		00 00745
			747 *				00 00746
			748 *		POWER DOWN PROCESSOR		00 00747
			749 *				00 00748
006356	000000	A	750	PWON	ENTR	0	00 00749
006357	054026	A	751		STA	SAVA	00 00750
						SAVE A, B AND X REGISTERS	
006360	064026	A	752		STB	SAVB	00 00751
006361	074026	A	753		STX	SAVX	00 00752
006362	005001	A	754		TZA		00 00753
						CHECK AND SAVE OVER-FLOW CONDITION	
006363	005511	A	755		DATA	005511	00 00754
						INCREMENT A IF OVERFLOW SET	
006364	054024	A	756		STA	SAVO	00 00755
006365	044024	A	757		INR	HLTF	00 00756
						SET POWER FAIL/RESTRY FLAG,	
006366	040472	A	758		INR	PWRK	00 00756
						STEP POWER FAIL COUNTER	D *****
006367	000000	A	759	PHLT	HLT		00 00757
			760 *				00 00758
			761 *		POWER UP PROCESSOR		00 00759
			762 *				00 00760
006370	014021	A	763	PWRU	LDA	HLTF	00 00761
						CHECK IF POWERING UP FROM RUN CONDITION	
006371	001010	A	764		JAZ	PHLT	00 00761
006372	006367	A					00 00762
006373	005001	A	765		TZA		00 00763
						CLEAR POWER FAIL/RESTRY FLAG	
006374	054015	A	766		STA	HLTF	00 00764
			767 *				00 00765
			768 *			CODING TO REINSTATE 620/F OPTIONAL HARDWARE AFTER A	00 00766
			769 *			POWER FAILURE, MUST BE DEFINED HERE. THE TOTAL EXECUTION	00 00767
			770 *			TIME NOT TO EXCEED A SPECIFIED TIME PERIOD, SEE PPS	00 00768
			771 *			FOR TIMING CONSTRAINTS.	00 00769
006375	014013	A	772		LDA	SAVO	00 00770
						SETUP OVERFLOW FLAG	
006376	001010	A	773		JAZ	*+3	00 00771
006377	006401	A					
006400	007401	A	774		SDF		00 00772
006401	014004	A	775		LDA	SAVA	00 00773
						RETURN A, B AND X REGISTERS	
006402	024004	A	776		LDB	SAVB	00 00774
006403	034004	A	777		LDX	SAVX	00 00775
006404	001000	A	778		JMP*	PWON	00 00776
						RETURN TO LOCATION INTERRUPTED FROM	
006405	106356	A					00 00777
			779 *				00 00778
006406	000000	A	780	SAVA	DATA	0	00 00779
006407	000000	A	781	SAVB	DATA	0	00 00780
006410	000000	A	782	SAVX	DATA	0	00 00781

006411	000000	A	783	SAVD	DATA	0		00	00781
006412	000000	A	784	HLTF	DATA	0		00	00782
			785	*				00	00783
			786	*				00	00784
			787	*				00	00785
			788	*				00	00786
			789	*				00	00787
			790	*	MESSAGE TABLE			00	00788
			791	*				00	00789
006413	152310	A	792	MSG1	DATA	'THIS IS THE 620 TEST EXECUTIVE',0106612,0		00	00790
006414	144723	A							
006415	120311	A							
006416	151640	A							
006417	152310	A							
006420	142640	A							
006421	133262	A							
006422	130240	A							
006423	152305	A							
006424	151724	A							
006425	120305	A							
006426	154305	A							
006427	141725	A							
006430	152311	A							
006431	153305	A							
006432	106612	A							
006433	000000	A							
006434	141710	A	793	MSG2	DATA	'CHECKSUM ERROR X = ',0		00	00791
006435	142703	A							
006436	145723	A							
006437	152715	A							
006440	120305	A							
006441	151322	A							
006442	147722	A							
006443	120240	A							
006444	154240	A							
006445	136640	A							
006446	000000	A							
006447	146705	A	794	MSG3	DATA	'MEMORY SIZE IS '		00	00792
006450	146717	A							
006451	151331	A							
006452	120323	A							
006453	144732	A							



006454	142640	A							
006455	144723	A							
006456	120240	A							
006457	126655	A	795	MSG4	DATA	'--K',0106612,0			00 00793
006460	145640	A							
006461	106612	A							
006462	000000	A							
006463	120240	A	796	MSG5	DATA	' INVALID',0			00 00794
006464	144716	A							
006465	153301	A							
006466	146311	A							
006467	142240	A							
006470	000000	A							
			797	*					00 00795
			798	*					00 00796
			799	*	ROUTINE FOR DETERMINING CORE SIZE				00 00797
			800	*					00 00798
006471	000000	A	801	ESZA	ENTR	0			00 00799
006472	100545	A	802		EXC	0545	DISABLE MEMORY PARITY INT,		00 00800
006473	010000	A	803		LOA	0			00 00801
006474	050002	A	804		STA	2	SAVE CONTENTS OF LOCATION ZERO		00 00802
006475	005001	A	805		TZA				00 00803
006476	050000	A	806		STA	0			00 00804
006477	005311	A	807		DAR		Ass=1		00 00805
006500	006120	A	808	ESZ1	ADDI	4096	NEXT 4K MEMORY ADDRESS		00 00806
006501	010000	A							
006502	005014	A	809		TAX				00 00807
006503	025001	A	810		LDB	1,1	SAVE MEMORY CELL IN B REG		00 00808
006504	055001	A	811		STA	1,1			00 00809
006505	015001	A	812		LOA	1,1			00 00810
006506	130000	A	813		ERA	0			00 00811
006507	001010	A	814		JAZ	ESZ2	JUMP IF END OF MEMORY		00 00812
006510	006515	A							
006511	068001	A	815		STB	1,1	RESTORE MEMORY CELL		00 00813
006512	005041	A	816		TXA				00 00814
006513	001000	A	817		JMP	ESZ1			00 00815
006514	006500	A							
006515	010002	A	818	ESZ2	LDA	2	RESTORE CONTENTS OF		00 00816
006516	050000	A	819		STA	0	LOCATION ZERO		00 00817
006517	005041	A	820		TXA				00 00818
006520	001000	A	821		JMP*	ESZA			00 00819
006521	1471	A							

			822 *				00 00820
			823 *				00 00821
			824 *				00 00822
			825 *	CONVERT MEMORY SIZE FOR ASCII PRINTOUT			00 00823
			826 *				00 00824
006522	000000	A	827	ESZB	ENTR	0	00 00825
006523	010441	A	828		LDA	SMEM	00 00826
						GET CORE SIZE(X7777)	
006524	004354	A	829		LSRA	12	00 00827
						TRUNCATE 7777	
006525	006120	A	830		ADDI	ETAB	00 00828
						ADDRESS OF THE ASCII EQUIV TABLE	
006526	006536	A					
006527	005014	A	831		TAX		00 00829
006530	015000	A	832		LDA	0,1	00 00830
						GET ASCII EQUIV FROM TABLE ETAB	
006531	006020	A	833		LOBI	MSG4	00 00831
						SET MEMORY SIZE(04,08,ETC) INTO MSG4	
006532	006457	A					
006533	056000	A	834		STA	0,2	00 00832
006534	001000	A	835		JMP*	ESZB	00 00833
						RETURN	
006535	106522	A					
006536	120264	A	836	ETAB	DATA	0120264	00 00834
						ASCII 04	
006537	120270	A	837		DATA	0120270	00 00835
006540	130662	A	838		DATA	0130662	00 00836
006541	130666	A	839		DATA	0130666	00 00837
006542	131260	A	840		DATA	0131260	00 00838
006543	131264	A	841		DATA	0131264	00 00839
006544	131270	A	842		DATA	0131270	00 00840
006545	131662	A	843		DATA	0131662	00 00841
			844 *				00 00842
			845 *				00 00843
			846 *				00 00844
			847 *				00 00845
			848 *				00 00846
			849 *				00 00847
			850 *	*****			00 00848
			851 *				*00 00849
			852 *	SENSE SWITCH SUBROUTINE			*00 00850
			853 *	THIS SUBROUTINE PROVIDES A STANDARD SENSE SWITCH INTERFACE,			*00 00851
			854 *	THE CALLING SEQUENCE IS AS FOLLOWS			*00 00852
			855 *	THE A, B, AND X REGISTERS CONTAIN ERROR HALT VALUES.			*00 00853
			856 *	CALL SSWT			*00 00854
			857 *	DATA	(U REGISTER VALUE)		*00 00855
			858 *	DATA	(ERROR MESSAGE ADDRESS) (IF NEG, ERROR SUB.)		*00 00856
			859 *	DATA	(TERMINATION EXIT)		*00 00857
			860 *	DATA	(LOOP ON ERROR EXIT)		*00 00858



		861 *	*		NORMAL EXIT RETURN	*00	00859
		862 *				*00	00860
		863 *			STANDARD SENSE SWITCH SETTINGS	*00	00861
		864 *		SS1	(SET) SUPPRESS ERROR PRINTOUT	*00	00862
		865 *			(RESET) ALLOW ERROR PRINTOUTS	*00	00863
		866 *		SS2	(SET) HALT ON ERROR	*00	00864
		867 *			(IF SET AFTER HALT = CONTINUE)	*00	00865
		868 *			(RESET) DO NOT HALT ON ERROR	*00	00866
		869 *			(IF HALT ON ERROR SET FIRST THEN RESET ON	*00	00867
		870 *			HALT CONDITION = LOOP UNTIL SET)	*00	00868
		871 *		SS3	(SET) TERMINATE TEST = RETURN TO BEGINING OF TEST	*00	00869
		872 *			(RESET) CONTINUE TEST	*00	00870
		873 *			*****	00	00871
		874 *				00	00872
006546	054135	A	875	SSW ²	STA	SSWS	SAVE VOLATILE REGISTERS
006547	064135	A	876		STB	SSWS+1	
006550	074135	A	877		STX	SSWS+2	
006551	001400	A	878		JS83	SSWE	IF SS3 SET RETURN THROUGH TERMINATION EXIT00
006552	006707	A					
006553	010442	A	879		LDA	SCON	CHECK IF CONSOLE OR TTY MODE
006554	001010	A	880		JAZ	SSWN	
006555	006642	A					
006556	001100	A	881		JS81	SSW1	TELETYPE MODE = CHECK IF TTY SUPPRESSED
006557	006601	A					
006560	024137	A	882		LDB	SSWT	GET 2ND PARAMETER
006561	005122	A	883		ISR		
006562	016000	A	884		LDA	0,2	
006563	001010	A	885		JAZ	SSW1	
006564	006601	A					
006565	005012	A	886		TAB		CHECK IF BIT 13 SET
006566	006150	A	887		ANAI	010000C	
006567	100000	A					
006570	005014	A	888		TAX		
006571	006021	A	889		TBA		
006572	001040	A	890		JXZ	**4	
006573	006676	A					
006574	001000	A	891		JMP	SSWR	CALL ERROR SUBROUTINE
006575	006672	A					
006576	005014	A	892		TAX		PRINT ERROR MESSAGE
006577	002000	A	893		CALL	OUTD	
006600	007445	A					
006601	1400	A	894	SSW1	JS83	SSWE	SS3 SET = RETURN THROUGH TERMINATION EX



006602	006707	A								
006603	010440	A	895	LDA	SFLG		CHECK IF LOOPING		00	00893
006604	001010	A	896	JAZ	SSW4				00	00894
006605	006636	A								
006606	001200	A	897	SSW2	JSS2	SSW3	LOOPING = CHECK IF TERMINATE LOOPING.		00	00895
006607	006623	A								
006610	024107	A	898	SSWL	LDB	SSWT	RETURN THROUGH LOOP EXIT		00	00896
006611	005122	A	899		ISR				00	00897
006612	005122	A	900		ISR				00	00898
006613	005122	A	901		ISR				00	00899
006614	016000	A	902	LDA	0,2				00	00900
006615	054004	A	903	STA	**5				00	00901
006616	014065	A	904	LDA	SSWS		RETURN VOLATILE REGISTERS,		00	00902
006617	024065	A	905	LDB	SSWS+1				00	00903
006620	034065	A	906	LDX	SSWS+2				00	00904
006621	001000	A	907	JMP	*				00	00905
006622	006621	A								
006623	005001	A	908	SSW3	TZA		RETURN TO NORMAL EXIT (CONTINUATION EXIT)		00	00906
006624	050440	A	909	STA	SFLG		CLEAR LOOP FLAG,		00	00907
006625	014072	A	910	LDA	SSWT				00	00908
006626	006120	A	911	ADDI	4				00	00909
006627	000004	A								
006630	054004	A	912	STA	**5				00	00910
006631	014052	A	913	LDA	SSWS		RETURN VOLATILE REGISTERS,		00	00911
006632	024052	A	914	LDB	SSWS+1				00	00912
006633	034052	A	915	LDX	SSWS+2				00	00913
006634	001000	A	916	JMP	*				00	00914
006635	006634	A								
006636	001200	A	917	SSW4	JSS2	SSW5	CHECK IF HALT ON ERROR		00	00915
006637	006647	A								
006640	001000	A	918	JMP	SSW3		RETURN TO NORMAL EXIT LOC,		00	00916
006641	006623	A								
006642	010440	A	919	SSWN	LDA	SFLG	CHECK IF LOOP FLAG ZERO		00	00917
006643	001010	A	920	JAZ	SSW4				00	00918
006644	006636	A								
006645	001100	A	921	JSS1	SSW6				00	00919
006646	006656	A								
006647	024050	A	922	SSW5	LDB	SSWT	GET FIRST PARAMETER		00	00920
006650	016000	A	923	LDA	0,2				00	00921
006651	054003	A	924	STA	**4				00	00922
006652	014031	A	925	LDA	SSWS		RETURNED SAVED PARAMETERS,		00	00923
006653	024031	A	926	LDB	SSWS+1				00	00924



006654	034031	A	927		LDX	SSWS+2		00	00925
006655	005000	A	928		NOP		1ST PARAMETER STORED HERE AND EXECUTED,	00	00926
006656	001400	A	929	SSW6	JSS3	SSWE	IF S33 SET RETURN THROUGH TERMINATION EXIT	00	00927
006657	006707	A							
006660	010440	A	930		LDA	SFLG	CHECK IF LOOPING	00	00928
006661	001010	A	931		JAZ	**4		00	00929
006662	006665	A							
006663	001000	A	932		JMP	SSW2		00	00930
006664	006606	A							
006665	001200	A	933		JSS2	SSW3	LOOP FLAG ZERO - CHECK IF LOOP REQUEST	00	00931
006666	006623	A							
006667	040440	A	934		INR	SFLG	INCREMENT LOOP FLAG	00	00932
006670	001000	A	935		JMP	SSWL	JUMP THROUGH LOOP EXIT	00	00933
006671	006510	A							
006672	008150	A	936	SSWR	ANAI	077777	ERROR SUBROUTINE MASK OUT BIT 15	00	00934
006673	077777	A							
006674	054004	A	937		STA	**5		00	00935
006675	014006	A	938		LDA	SSWS		00	00936
006676	024006	A	939		LDB	SSWS+1		00	00937
006677	034006	A	940		LOX	SSWS+2		00	00938
006700	002000	A	941		JMPM	*	CALL ERROR SUBROUTINE	00	00939
006701	006700	A							
006702	001000	A	942		JMP	SSW1		00	00940
006703	006601	A							
006704			943	SSWS	BSS	3		00	00941
006707	005001	A	944	SSWE	TZA		JUMP THROUGH TERMINATION EXIT,	00	00942
006710	050440	A	945		STA	SFLG	CLEAR LOOP FLAG,	00	00943
006711	024006	A	946		LDB	SSWT		00	00944
006712	005122	A	947		ISR		SET UP TERMINATION EXIT	00	00945
006713	005122	A	948		ISR			00	00946
006714	016000	A	949		LDA	0,2		00	00947
006715	054001	A	950		STA	**2		00	00948
006716	001000	A	951		JMP	*		00	00949
006717	006716	A							
006720	000000	A	952	SSWT	ENTR		SENSE SWITCH SUBROUTINE ENTRANCE	00	00950
006721	001000	A	953		JMP	SSWP		00	00951
006722	006546	A							
			954	*				00	00952
			955	*			INPUT ONE CHARACTER FROM TTY TO (A) REGISTER	00	00953
			956	*				00	00954
006723	02000	A	957	INAI	CALL	INPH, INAR	SENSE BFR RDY	00	00955
006724	7317	A						00	00956

006725	006732	A							
006726	001400	A	958	JSS3*	INPA				00 00956
006727	106737	A							
006730	001000	A	959	JMP	INA1				00 00957
006731	006723	A							
006732	002000	A	960	INA2	CALL	INPI	INPUT CHARACTER		00 00958
006733	007331	A							
006734	044002	A	961	INR	INPA		NORMAL EXIT		00 00959
006735	044001	A	962	INR	INPA				00 00960
006736	001000	A	963	JMP	0				00 00961
006737	000000	A							
006737			964	INPA	BES	0	ENTER		00 00962
006740	001000	A	965	JMP	INA1				00 00963
006741	006723	A							
			966 *						00 00964
			967 *				INPUT ONE CHARACTER + PRINT FROM TTY TO A REGISTER		00 00965
			968 *						00 00966
006742	002000	A	969	INB1	CALL	INPA	INPUT ONE CHARACTER		00 00967
006743	006737	A							
006744	001000	A	970	JMP*	INPB		TERMINATE EXIT		00 00968
006745	106753	A							
006746	002000	A	971	CALL	OUTA		OUTPUT ONE CHARACTER		00 00969
006747	007334	A							
006750	044002	A	972	INR	INPB				00 00970
006751	044001	A	973	INR	INPB				00 00971
006752	001000	A	974	JMP*	0		EXIT		00 00972
006753	100000	A							
006753			975	INPB	BES	0			00 00973
006754	001000	A	976	JMP	INB1				00 00974
006755	006742	A							
			977 *						00 00975
007000			978	DRG	07000				00 00976
007000	001000	A	979	EBGX	JMP	EBGN	COMMON ENTRY POINT (TTY), (CONSOLE IF DA=*)		00 00977
007001	006150	A							
007002	001000	A	980	JMP	EBGN+2		(CONSOLE)		00 00978
007003	006152	A							
			981 *						00 00979
			982 *						00 00980
			983 *				INPUT ONE CHARACTER (EDITED)		00 00981
			984 *						00 00982
007004	002000	A	985	INCS	CALL	INPB			00 00983
007005	006753	A							00 00984



007006	001000	A	986	JMP*	INPC	TERMINATE EXIT	00	00984
007007	107033	A						
007010	006130	A	987	ERAI	\ /	BACKSLASH	00	00985
007011	000334	A						
007012	001010	A	988	JAZ	INC2	ABORT INPUT EXIT	00	00986
007013	007030	A						
007014	006130	A	989	ERAI	\ /	RESTORE A	00	00987
007015	000334	A						
007016	006130	A	990	ERAI	0337	BACKARROW	00	00988
007017	000337	A						
007020	001010	A	991	JAZ	INC1	DELETE ONE CHARACTER EXIT	00	00989
007021	007026	A						
007022	006130	A	992	ERAI	0337	RESTORE A	00	00990
007023	000337	A						
007024	044006	A	993	INR	INPC		00	00991
007025	044005	A	994	INR	INPC		00	00992
007026	044004	A	995	INC1	INR	INPC	00	00993
007027	044003	A	996	INR	INPC		00	00994
007030	044002	A	997	INC2	INR	INPC	00	00995
007031	044001	A	998	INR	INPC		00	00996
007032	001000	A	999	JMP*	0	EXIT	00	00997
007033	100000	A						
007033			1000	INPC	BES	0	00	00998
007034	001000	A	1001	JMP	INC3		00	00999
007035	007004	A						
			1002	*			00	01000
			1003	*	INPUT ONE ALPHA CHARACTER FROM TTY KEYBOARD TO A REG		00	01001
			1004	*			00	01002
007036	008000	A	1005	IND4	CALL	INPC	00	01003
007037	007033	A						
007040	001000	A	1006	JMP*	INPD	TERMINATE EXIT	00	01004
007041	107067	A						
007042	001000	A	1007	JMP	IND2	ABORT INPUT EXIT	00	01005
007043	007064	A						
007044	001000	A	1008	JMP	IND1	DELETE PREVIDS CHARACTER EXIT	00	01006
007045	007062	A						
007046	006140	A	1009	SUBI	0301	CHAR A	00	01007
007047	000301	A						
007050	001004	A	1010	JAN	IND3	INVALID INPUT	00	01008
007051	007072	A						
007052	006140	A	1011	SUBI	032	CHAR Z		
007053	007032	A						



007054	001002	A	1012	JAP	IND3	INVALID INPUT	00	01010
007055	007072	A						
007056	006120	A	1013	ADDI	0333	RESTORE A	00	01011
007057	000333	A						
007060	044006	A	1014	INR	INPD	NORMAL EXIT	00	01012
007061	044005	A	1015	INR	INPD		00	01013
007062	044004	A	1016	IND1	INR	INPD		00 01014
007063	044003	A	1017	INR	INPD	DELETE PREVIOUS CHARACTER EXIT	00	01015
007064	044002	A	1018	IND2	INR	INPD		00 01016
007065	044001	A	1019	INR	INPD	ABORT INPUT EXIT	00	01017
007066	001000	A	1020	JMP*	0	EXIT	00	01018
007067	100000	A						
007067			1021	INPD	BES	0	00	01019
007070	001000	A	1022	JMP	IND4		00	01020
007071	007036	A						
007072	002000	A	1023	IND3	CALL	OUTG		00 01021
007073	007475	A						
007074	001000	A	1024	JMP	IND2	ABORT	00	01022
007075	007064	A						
			1025	*			00	01023
			1026	*			00	01024
			1027	*	INPUT TWO LETTER CHARACTERS FROM TTY		00	01025
			1028	*			00	01026
007076	002000	A	1029	INES	CALL	INPD		00 01027
007077	007067	A						
007100	001000	A	1030	JMP*	INPE	TERMINATE EXIT	00	01028
007101	107130	A						
007102	001000	A	1031	JMP	INER	ABORT INPUT EXIT	00	01029
007103	007125	A						
007104	001000	A	1032	JMP	INE1	DELETE PREVIOUS CHARACTER EXIT	00	01030
007105	007123	A						
007106	004250	A	1033	LRLA	8		00	01031
007107	054441	A	1034	STA	T802		00	01032
007110	002000	A	1035	CALL	INPD	INPUT ALPHA CHAR	00	01033
007111	007067	A						
007112	001000	A	1036	JMP*	INPE	TERMINATE EXIT	00	01034
007113	107130	A						
007114	001000	A	1037	JMP	INE2	ABORT INPUT EXIT	00	01035
007115	007125	A						
007116	001000	A	1038	JMP	INES	DELETE PREVIOUS CHARACTER EXIT	00	01036
007117	007076	A						
007120	114430	A	1039	ORA	T802		00	01037



007121	044005	A	1040		INR	INPE	NORMAL EXIT	00	01038
007122	044005	A	1041		INR	INPE		00	01039
007123	044004	A	1042	INE1	INR	INPE	DELETE PREVIOS CHARACTER EXIT	00	01040
007124	044003	A	1043		INR	INPE		00	01041
007125	044002	A	1044	INE2	INR	INPE	ABORT INPUT EXIT	00	01042
007126	044001	A	1045		INR	INPE		00	01043
007127	001000	A	1046		JMP*	0	EXIT	00	01044
007130	100000	A							
007130			1047	INPE	BES	0		00	01045
007131	001000	A	1048		JMP	INES		00	01048
007132	007078	A							
			1049	*				00	01047
			1050	*	INPUT PERIOD,COMMA FOR MESSAGE TERMINATOR			00	01048
			1051	*				00	01049
007133	002000	A	1052	INF5	CALL	INPC	INPUT ONE CHARACTER	00	01050
007134	007033	A							
007135	001000	A	1053		JMP*	INPF	TERMINATE EXIT	00	01051
007136	107170	A							
007137	001000	A	1054		JMP	INF2	ABORT INPUT EXIT	00	01052
007140	007155	A							
007141	001000	A	1055		JMP	INF1	DELETE PREVIOS CHARACTER EXIT	00	01053
007142	007163	A							
007143	006140	A	1056		SUBI	0254	COMMA	00	01054
007144	000254	A							
007145	001010	A	1057		JAZ	INF3	COMMA EXIT	00	01055
007146	007161	A							
007147	006140	A	1058		SUBI	02	PERIOD	00	01056
007150	000002	A							
007151	001010	A	1059		JAZ	INF4	PERIOD EXIT	00	01057
007152	007157	A							
007153	002000	A	1060		CALL	OUTG	PRINT INVALID MESSAGE	00	01058
007154	007475	A							
007155	001000	A	1061		JMP	INF2	ABORT	00	01059
007156	007155	A							
007157	044010	A	1062	INF4	INR	INPF	NORMAL EXIT	00	01060
007160	044007	A	1063		INR	INPF		00	01061
007161	044006	A	1064	INF3	INR	INPF	COMMA EXIT	00	01062
007162	044005	A	1065		INR	INPF		00	01063
007163	044004	A	1066	INF1	INR	INPF	DELETE PREVIOS CHARACTER EXIT	00	01064
007164	044003	A	1067		INR	INPF		00	01065
007165	044002	A	1068	INF2	INR	INPF	ABORT INPUT EXIT	00	01066
007166	044001	A	1069		INR	INPF		00	01067

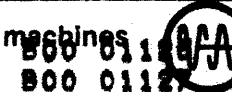
007167	001000	A	1070	JMP*	0	EXIT	00	01068
007170	100000	A						
007170			1071	INPF	BES	0	00	01069
007171	001000	A	1072	JMP	INFB		00	01070
007172	007133	A						
			1073	*			00	01071
			1074	*	INPUT OCTAL NUMBER FROM TTY KEYBOARD		00	01072
			1075	*	ASSEMBLE AS 16 BIT NUMBER IN A REG		00	01073
			1076	*	ONLY OCTAL NUMBERS ACCEPTED		00	01074
			1077	*			00	01075
007173	005001	A	1078	ING7	TZA		00	01076
007174	054354	A	1079		STA	TS02	00	01077
						TEMP STORAGE FOR OCTAL NUMBER		
007175	050471	A	1080		STA	TS04	00	01078
						TEMP STORAGE FOR DIGIT COUNTER		
007176	054356	A	1081		STB	TS07	00	01079
007177	005002	A	1082		TZB		00	01080
007200	002000	A	1083	ING5	CALL	INPC	00	01081
						INPUT ONE CHARACTER		
007201	007033	A						
007202	001000	A	1084	JMP*	INPB		00	01082
						TERMINATE EXIT		
007203	107250	A						
007204	001000	A	1085	JMP	ING2		00	01083
						ABORT INPUT EXIT		
007205	007243	A						
007206	001000	A	1086	JMP	ING1		00	01084
						DELETE PREVIOUS CHARACTER EXIT		
007207	007272	A						
007210	054342	A	1087		STA	TS05	00	01085
						SAVE INPUT		
007211	006140	A	1088		SUBI	0260	00	01086
007212	000260	A						
007213	001004	A	1089		JAN	ING6	00	01087
						INVALID IF NOT OCTAL NUMBER		
007214	007255	A						
007215	006140	A	1090		SUBI	010	00	01088
007216	000010	A						
007217	001002	A	1091		JAN	ING6	00	01089
						INVALID IF NOT OCTAL NUMBER		
007220	007255	A						
007221	006120	A	1092		ADDI	010	00	01090
						RESTORE DIGIT		
007222	000010	A						
007223	054326	A	1093		STA	TS03	00	01091
						SAVE CHARACTER		
007224	014324	A	1094		LDA	TS02	00	01092
						INSERT CHARACTER		
007225	004443	A	1095		LLRL	3	00	01093
						INTO		
007226	114323	A	1096		DRA	TS03	00	01094
						OCTAL NUMBER		
007227	001020	A	1097		JBZ	**+4	00	01095
						TOO MANY BITS ?		
007230	007233	A						
007231	001000	A	1098	JMP	ING8	YES	00	01096
007232	007266	A						



007233	054315	A	1099		STA	T802	NO	00	01097
007234	040471	A	1100		INR	T804	INCR # DIGITS	00	01098
007235	001000	A	1101		JMP	ING5	GET NEXT DIGIT	00	01099
007236	007200	A							
007237	044010	A	1102	ING3	INR	INPG	NORMAL EXIT	00	01100
007240	044007	A	1103		INR	INPG		00	01101
007241	044006	A	1104	ING4	INR	INPG	COMMA EXIT	00	01102
007242	044005	A	1105		INR	INPG		00	01103
007243	044004	A	1106	ING2	INR	INPG	ABORT INPUT EXIT	00	01104
007244	044003	A	1107		INR	INPG		00	01105
007245	024307	A	1108		LOB	T807		00	01106
007246	014302	A	1109		LDA	T802	GET ASSEMBLED OCTAL NUMBER	00	01107
007247	001000	A	1110		JMP	0	EXIT	00	01108
007250	000000	A							
007250			1111	INPG	BES	0		00	01109
007251	002000	A	1112		CALL	INPI	INIT TTY BFR	00	01110
007252	007331	A							
007253	001000	A	1113		JMP	ING7		00	01111
007254	007173	A							
007255	014275	A	1114	ING5	LDA	T805	GET LAST INPUT	00	01112
007256	006140	A	1115		SUBI	0254	IS IT A COMMA	00	01113
007257	000254	A							
007260	001010	A	1116		JAZ	ING4	YES	00	01114
007261	007241	A							
007262	006140	A	1117		SUBI	02	IS IT A PERIOD	00	01115
007263	000002	A							
007264	001010	A	1118		JAZ	ING3	YES	00	01116
007265	007237	A							
007266	002000	A	1119	ING8	CALL	OUTS	PRINT INVALID MESSAGE	00	01117
007267	007475	A							
007270	001000	A	1120		JMP	ING2	ABORT	00	01118
007271	007243	A							
			1121	*				00	01119
007272	014266	A	1122	ING1	LDA	T802	DELETE LAST CHARACTER	00	01120
007273	004343	A	1123		LSRA	3		00	01121
007274	054254	A	1124		STA	T802		00	01122
007275	010471	A	1125		LDA	T804		00	01123
007276	005311	A	1126		OAR		REDUCE DIGIT COUNT	00	01124
007277	001000	A	1127		JMP	ING5		000	01125
007300	007200	A							

1128 *
1129 *

SENSE TTY BFR RDY



007301	054020	A	1130 *						B00 01128
			1131	INH1	STA	INH2	SAVE A		B00 01129
007302	014014	A	1132		LDA	INPH	MODIFY RETURN		B00 01130
007303	006110	A	1133		DRAI	0100000			B00 01131
007304	100000	A							
007305	054008	A	1134		STA	INH3+1			B00 01132
007306	014061	A	1135		LDA	STTY	ADJ SBR		B00 01133
007307	006110	A	1136		DRAI	0101200			B00 01134
007310	101200	A							
007311	054001	A	1137		STA	**2			B00 01135
007312	014007	A	1138		LDA	INH2	RESTORE A		B00 01136
007313	101000	A	1139	INH3	SEN	0,*			B00 01137
007314	007313	A							
007315	044001	A	1140		INR	INPH			00 01138
007316	001000	A	1141		JMP	0			00 01139
007317	000000	A							
007317			1142	INPH	BES	0	ENTER		00 01140
007320	001000	A	1143		JMP	INH1			00 01141
007321	007301	A							
007322	000000	A	1144	INH2	DATA	0			00 01142
			1145	*					00 01143
			1146	*	INPUT CHARACTER FROM TTY W/OUT SENSING BFR RDY				00 01144
			1147	*					00 01145
007323	014044	A	1148	INI1	LDA	STTY	ADJ, CIA		00 01146
007324	006110	A	1149		DRAI	0102500			00 01147
007325	102500	A							
007326	054000	A	1150		STA	**1			00 01148
007327	102500	A	1151		CIA	0	INPUT		00 01149
007330	001000	A	1152		JMP	0			00 01150
007331	000000	A							
007331			1153	INP1	BES	0	ENTER		00 01151
007332	001000	A	1154		JMP	INI1			00 01152
007333	007323	A							
			1155	*					00 01153
			1156	*	OUTPUT ONE CHARACTER FROM A REG TO TTY				00 01154
			1157	*					00 01155
007334	000000	A	1158	OUTA	ENTR	0			00 01156
007335	074212	A	1159		STX	TS01	SAVE X		00 01157
007336	005014	A	1160		TAX				00 01158
007337	014030	A	1161		LDA	STTY			00 01159
007340	006110	A	1162		DRAI	0101100	ADJUST TTY DA		00 01160
007341	101100	A							



007342	054006	A	1163	STA	**7			00	01161
007343	006120	A	1164	ADDI	002000			00	01162
007344	002000	A							
007345	054013	A	1165	STA	OUT1			00	01163
007346	005041	A	1166	TXA				00	01164
007347	006030	A	1167	LDXI	32767	TIME=OUT CONSTANT	D	*****	
007350	077777	A							
007351	101000	A	1168	SEN	0,OUT1	WRITE REGISTER READY		00	01166
007352	007361	A							
007353	002000	A	1169	CALL	TOUT			00	01167
007354	007543	A							
007355	005011	A	1170	MERG	011			00	01168
007356	000115	A	1171	HLT	77			00	01169
007357	001000	A	1172	JMP	**6			00	01170
007360	007351	A							
007361	103100	A	1173	OUT1	OAR	0		00	01171
007362	034165	A	1174	LDX	TS01	RESTORE X		00	01172
007363	001000	A	1175	JMP*	OUTA	RETURN		00	01173
007364	107334	A							
			1176 *					00	01174
			1177 *					00	01175
007370			1178	ORG	07370			00	01176
007370	000001	A	1179	STTY	DATA	01		00	01177
			1180 *					00	01178
			1181 *					00	01179
			1182 *					00	01180
			1183 *	OUTPUT TWO CHARACTERS FROM A REG TO TTY (HIGH ORDER FIRST)				00	01181
			1184 *	ENTER WITH CHARACTERS IN A REG				00	01182
			1185 *					00	01183
007371	000000	A	1186	OUTB	ENTR	0		00	01184
007372	064161	A	1187	STB	TS06	SAVE B		00	01185
007373	004550	A	1188	LLSR	8			00	01186
007374	002000	A	1189	CALL	OUTA	OUTPUT FIRST CHAR		00	01187
007375	007334	A							
007376	004450	A	1190	LLRL	8			00	01188
007377	002000	A	1191	CALL	OUTA	OUTPUT SECOND CHAR		00	01189
007400	007334	A							
007401	024152	A	1192	LOB	TS06	RESTORE B		00	01190
007402	001000	A	1193	JMP*	OUTB	RETURN		00	01191
007403	107371	A							
			1194 *					00	01192
			1195 *	OUTPUT CARRIAGE RETURN AND LINE FEED TO TTY				00	01193



007404	000000	A	1196 *						00	01194	
			1197	OUTC	ENTR	0			00	01195	
007405	054005	A	1198		STA	**6	SAVE A		00	01196	
007406	006010	A	1199		LOAI	0106612	CR AND LF		00	01197	
007407	106612	A									
007410	002000	A	1200		CALL	OUTB	OUTPUT 2 CHAR		00	01198	
007411	007371	A									
007412	006010	A	1201		LOAI	0	RESTORE A		00	01199	
007413	000000	A									
007414	001000	A	1202		JMP*	OUTC	RETURN		00	01200	
007415	107404	A									
			1203 *						00	01201	
			1204 *	OUTPUT OCTAL WORD AND A SPACE TO TTY						00	01202
			1205 *						00	01203	
007416	000000	A	1206	OUTE	ENTR	0			00	01204	
007417	054022	A	1207		STB	**19	SAVE B		00	01205	
007420	005002	A	1208		TZB				00	01206	
007421	004557	A	1209		LLBR	15			00	01207	
007422	005122	A	1210		IBR				00	01208	
007423	006110	A	1211	OUT2	ORAI	101	MAKE DIGIT		00	01209	
007424	000260	A									
007425	002000	A	1212		CALL	OUTA	OUTPUT ONE DIGIT		00	01210	
007426	007334	A									
007427	005001	A	1213		TZA				00	01211	
007430	004443	A	1214		LLRL	3			00	01212	
007431	001020	A	1215		JBZ	**4	OCTAL OUTPUT COMPLETE		00	01213	
007432	007435	A									
007433	001000	A	1216		JMP	OUT2			00	01214	
007434	007423	A									
007435	006010	A	1217		LOAI	0249	ASCII BLANK CODE		00	01215	
007436	000240	A									
007437	002000	A	1218		CALL	OUTA	OUTPUT SPACE		00	01216	
007440	007334	A									
007441	006020	A	1219		LOBI	0	RESTORE B		00	01217	
007442	000000	A									
007443	001000	A	1220		JMP*	OUTE	RETURN		00	01218	
007444	107416	A									
			1221 *						00	01219	
			1222 *	OUTPUT MESSAGE TO TTY (X REG CONTAINS ADDRESS OF MESSAGE)						00	01220
			1223 *						00	01221	
007445	000000	A	1224	OUTD	ENTR	0			00	01222	
007446	015000	A	1225		LDA	0.1			00	01223	

007447	001010	A	1226	JAZ*	OUTD			00	01224	
007450	107445	A								
007451	002000	A	1227	CALL	OUTB			00	01225	
007452	007371	A								
007453	005144	A	1228	IXR				00	01226	
007454	001000	A	1229	JMP	OUTD+1			00	01227	
007455	007446	A								
			1230	*				00	01228	
			1231	*	OUTPUT OCTAL MEMORY ADDRESS TO TTY PRINTER				00	01229
			1232	*				00	01230	
007456	000000	A	1233	OUTF	ENTR	0		00	01231	
007457	054071	A	1234		STA	T802	SAVE WORD	00	01232	
007460	006010	A	1235		LDAI	'('	PAREN SPACE	00	01233	
007461	124240	A								
007462	002000	A	1236	CALL	OUTB		PRINT CHAR	00	01234	
007463	007371	A								
007464	014064	A	1237		LDA	T802		00	01235	
007465	002000	A	1238		JMPH	OUTE	OUTPUT OCTAL WORD	00	01236	
007466	007416	A								
007467	006010	A	1239		LDAI))	RIGHT PARENTHESIS AND SPACE	00	01237	
007470	124640	A								
007471	002000	A	1240	CALL	OUTB			00	01238	
007472	007371	A								
007473	001000	A	1241	JMP*	OUTF			00	01239	
007474	107456	A								
			1242	*				00	01240	
			1243	*	INVALID INPUT PRINT MESSAGE				00	01241
			1244	*				00	01242	
007475	000000	A	1245	OUTG	ENTR	0		00	01243	
007476	008030	A	1246		LDAI	M888	INVALID MESSAGE	00	01244	
007477	006463	A								
007500	002000	A	1247	CALL	OUTD		OUTPUT MESSAGE	00	01245	
007501	007445	A								
007502	001000	A	1248	JMP*	OUTG			00	01246	
007503	107475	A								
			1249	*				00	01247	
			1250	*	OUTPUT CONTROL CHARACTER SUBROUTINE				00	01248
			1251	*				00	01249	
007504	054020	A	1252	OUT3	STA	OUTH+3	SAVE A	00	01250	
007505	074020	A	1253		STX	OUTH+4	SAVE X	00	01251	
007506	034013	A	1254		LOX	OUTH	A=CONTROL CHARACTER	00	01252	
007507	15000	A	1255		LDA	0,1		00	01253	



007510	002000	A	1256	CALL	OUTA	OUTPUT CHARACTER	00	01254
007511	007334	A						
007512	006030	A	1257	LOXI	077777	INIT	00	01255
007513	077777	A						
007514	002000	A	1258	CALL	TDLY	TIME DELAY	00	01256
007515	007527	A						
007516	044003	A	1259	INR	OUTH	SET RETURN	00	01257
007517	014005	A	1260	LDA	OUTH+3	RESTORE A	00	01258
007520	034005	A	1261	LUX	OUTH+4	RESTORE X	00	01259
007521	001000	A	1262	JMP	0	RETURN	00	01260
007522	000000	A						
007522			1263	OUTH	BES	0	00	01261
007523	001000	A	1264	JMP	OUT3	LOOP	00	01262
007524	007504	A						
007525			1265	BSS	2	STORAGE FOR A + X	00	01263
			1266	*			00	01264
			1267	*	TIME DELAY SUBROUTINE		00	01265
			1268	*			00	01266
007527	000000	A	1269	TDLY	ENTR	0	00	01267
007530	005344	A	1270		DXR		00	01268
007531	001040	A	1271	JXZ*	TDLY	RETURN	00	01269
007532	107527	A						
007533	001000	A	1272	JMP	*=3		00	01270
007534	007530	A						
			1273	*			00	01271
			1274	*	I/O TIME-OUT SUBROUTINE		00	01272
			1275	*			00	01273
007535	005344	A	1276	TDU1	DXR		00	01274
007536	001040	A	1277	JXZ*	TOUT	TIME-OUT RETURN	00	01275
007537	107545	A						
007540	044002	A	1278	INR	TOUT	SET UP FOR	00	01276
007541	044001	A	1279	INR	TOUT	NORMAL EXIT	00	01277
007542	001000	A	1280	JMP	0		00	01278
007543	000000	A						
007543			1281	TOUT	BES	0	00	01279
007544	001000	A	1282	JMP	TDU1		00	01280
007545	007535	A						
			1283	*			00	01281
			1284	*	DATA TABLE		00	01282
			1285	*			00	01283
007546	000002	A	1286	D2	DATA	2	00	01284
007547	000254	A	1287	D254	DATA	0254	00	01285

			1288 *							00 01286
007550	000000	A	1289	TS01	DATA	0		TEMPORARY STORAGE		00 01287
007551	000000	A	1290	TS02	DATA	0		TEMPORARY STORAGE		00 01288
007552	000000	A	1291	TS03	DATA	0		TEMPORARY STORAGE		00 01289
007553	000000	A	1292	TS05	DATA	0		TEMPORARY STORAGE		00 01290
007554	000000	A	1293	TS05	DATA	0		TEMPORARY STORAGE		00 01291
007555	000000	A	1294	TS07	DATA	0		TEMPORARY STORAGE		00 01292
			1295 *							00 01293
	007000	A	1296		END		EBGX			00 01294

ENTRY NAMES

EXTERNAL NAMES

SYMBOLS

000442	A	SCON	000440	A	SFLG	000441	A	SMEM	007370	A	STTY
007755	A	BLEA	007577	A	BLSA	000464	A	CKSM	007546	A	D2
007547	A	D254	005206	A	DHLT	005305	A	DRCD	005237	A	DUMP
000443	A	EAR1	005636	A	EARG	006171	A	EBG1	006204	A	EBG2
006150	A	EBGN	007000	A	EBGX	005172	A	EBP1	005136	A	EBPN
000444	A	EBR1	005665	A	EBRG	006064	A	ECN2	006035	A	ECN3
006024	A	ECNG	005776	A	EDU1	006003	A	EDU2	006017	A	EDU4
005761	A	EDUM	005754	A	EG01	005741	A	EGOT	000454	A	EK00
000455	A	EK01	000456	A	EK02	005100	A	ELDC	006327	A	ELDD
005214	A	EOR	005125	A	EPU1	005100	A	EPUN	005603	A	ESR1
005614	A	ESR2	005575	A	ESR4	005632	A	ESR5	005551	A	ESRC
006500	A	ESZ1	006515	A	ESZ2	006471	A	ESZA	006522	A	ESZB
006161	A	ESZC	006536	A	ETAB	006271	A	ETBL	006251	A	ETD4
006221	A	ETOP	005536	A	ETR1	005546	A	ETR2	005504	A	ETR3
005450	A	ETRP	000446	A	ETS1	000400	A	EX00	000401	A	EX01
000402	A	EX02	000403	A	EX03	000404	A	EX04	000405	A	EX05
000406	A	EX06	000407	A	EX07	000410	A	EX10	000411	A	EX11
000412	A	EX12	000413	A	EX13	000414	A	EX14	000415	A	EX15
000416	A	EX16	000417	A	EX17	000420	A	EX20	000421	A	EX21
000422	A	EX26	000423	A	EX27	000424	A	EX30	000425	A	EX31
000426	A	EX32	000465	A	EXEC	006323	A	EXIT	000445	A	EXR1
005713	A	EXRG	000462	A	FRST	006412	A	HLTF	006723	A	INA1
006732	A	INA2	006742	A	INB1	007086	A	INC1	007030	A	INC2
007004	A	INC3	007062	A	IND1	007064	A	IND2	007072	A	IND3
007036	A	IND4	007123	A	INE1	007125	A	INE2	007076	A	INE3
007163	A	INF1	007165	A	INF2	007161	A	INF3	007157	A	INF4
007133	A	INFS	007272	A	ING1	007243	A	ING2	007237	A	ING3
007241	A	ING4	007200	A	ING5	007255	A	ING6	007173	A	ING7
007266	A	ING8	007301	A	INH1	007322	A	INH2	007313	A	INH3
007323	A	INI1	005433	A	INI2	005444	A	INI3	005404	A	INIT



006737	A	INPA	006753	A	INPB	007033	A	INPC	007067	A	INPD
007130	A	INPE	007170	A	INPF	007250	A	INPG	007317	A	INPH
007331	A	INPI	000460	A	K100	000461	A	K200	000457	A	K40
000463	A	LAST	000470	A	LOAD	006413	A	MSG1	006434	A	MSG2
006447	A	MSG3	006457	A	MSG4	006463	A	MSG5	007361	A	OUT1
007423	A	OUT2	007504	A	OUT3	007334	A	OUTA	007371	A	OUTB
007404	A	OUTC	007445	A	OUTD	007416	A	OUTE	007456	A	OUTF
007475	A	OUTG	007522	A	OUTH	005334	A	PBOOT	005327	A	PDATA
006367	A	PHLT	005373	A	PLD1	005370	A	PLDR	005226	A	POFF
005270	A	PRCD	006356	A	PWON	005340	A	PWR1	005353	A	PWR2
005342	A	PWRD	000472	A	PWRK	006370	A	PWRU	006406	A	SAVA
006407	A	SAYB	006411	A	SAVD	006410	A	SAVX	006601	A	SSW1
006606	A	SSW2	006623	A	SSW3	006636	A	SSW4	006647	A	SSW5
006656	A	SSW6	006707	A	SSWE	006610	A	SSWL	006642	A	SSWN
006546	A	SSWF	006672	A	SSWR	006704	A	SSWS	006720	A	SSWT
000467	A	TAPE	000466	A	TAPN	007527	A	TDLY	007535	A	TDU1
007543	A	TOUT	007550	A	TS01	007551	A	TS02	007552	A	TS03
000471	A	TS04	007553	A	TS05	007554	A	TS06	007555	A	TS07

0 ERRORS ASSEMBLY COMPLETE

