

CONTROL DATA® SMM17

Program Listings

DP1



CUSTOMER ENGINEERING MANUAL

0001	NAM	DP1008	10154 COPYRIGHT CONTROL DATA CORP 1974	00001
0002	*	*****		00002
0003	*			00003
0004	*	* * * * * REVISION RECORD * * * * *		00004
0005	*			00005
0006	*	MODAYR VERSION	WHAT DONE , WHY , AND WHO DID IT	00006
0007	*			00007
0008	*	032074 V 3.1	SYSTEM RELEASED	00008
0009	*	ADDED OPERATORE MESSAGE DURING AUTOLOAD SECTION		00009
0010	*			00010
0011	*	CHANGED SECTION 6 - SURFACE TEST - TO CHECK DATE FROM		00011
0012	*	START OF BUFFER TO END OF BUFFER	EJW	00012
0013	*	*****		00013
0014	*			00014
0015	*			00015
0016	*	1738/853/854 DISK PACK TEST		00016
0017	*			00017
0018	*			00018
0019	*			00019
0020	*			00020
0021	*	THIS TEST HAS BEEN MODIFIED TO RUN ON THE FOLLOWING CPUS -		00021
0022	*			00022
0023	*	1704 - 1774 - 1784A/B		00023
0024	*			00024
0025	*	VER 3.0.3 1. MADE MAX WAIT TIME IN SECTION 11 A SUBROUTINE		00025
0026	*	WITH ENTRY=SC11E. ADDED WAIT CALL TO THE		00026
0027	*	READ/WRITE SUBROUTINES TO ELIMINATE ERROR 42.		00027
0028	*	CAUSED BY THESE ROUTINES RETURNING CONTROL TO		00028
0029	*	THE TEST SECTION WHILE STILL BUSY.		00029
0030	*	2. DELETED EXT REJECT COUNTER FROM INPUT		00030
0031	*	ROUTINE BECAUSE THE HARDWARE SHOULD		00031
0032	*	NEVER REJECT STATUS.		00032
0034	*	*****		00034
0035	*			00035
0036	*	MINIMUM MEMORY REQUIREMENT IS 8K		00036
0037	*	*****		00037
0038	*			00038
0039	*	*****		00039

0041	*		1738 DIRECTOR FUNCTIONS	00041
0042	*		-----	00042
0044	*	A1 = 1	CLEAR INTERRUPTS	00044
0045	*	A2 = 1	NEXT READY AND NOT BUSY INTERRUPT REQUEST	00045
0046	*	A3 = 1	END OF OPERATION INTERRUPT REQUEST	00046
0047	*	A4 = 1	ALARM INTERRUPT REQUEST	00047
0048	*	A7 = 1	RELEASE (ALLOW CONTROL BY UNPROTECTED PROGRAM)	00048
0049	*	A8 = 1	UNIT SELECT	00049
0050	*	A9 = 1	UNIT SELECT CODE	00050
0052	*		1738 STATUS	00052
0053	*		-----	00053
0055	*	A0 = 1	READY	00055
0056	*	A1 = 1	BUSY	00056
0057	*	A2 = 1	INTERRUPT	00057
0058	*	A3 = 1	ON CYLINDER	00058
0059	*	A4 = 1	END OF OPERATION	00059
0060	*	A5 = 1	ALARM	00060
0061	*	A6 = 1	NO COMPARE	00061
0062	*	A7 = 1	PROTECTED	00062
0063	*	A8 = 1	CHECKWORD ERROR	00063
0064	*	A9 = 1	LOST DATA	00064
0065	*	A10 = 1	SEEK ERROR	00065
0066	*	A11 = 1	ADDRESS ERROR	00066
0067	*	A12 = 1	DEFECTIVE TRACK	00067
0068	*	A13 = 1	STORAGE PARITY ERROR	00068
0069	*	A14 = 1	PROTECT FAULT	00069

0071	0001	EQU	CONTROL(1)	RETURN SMM CONTROL ADDRESS.	00071
0072	0002	EQU	STOPX(CONTROL+1)	ALL STOPS AND ERROR TYPEOUTS	00072
0073	0003	EQU	EXIT(STOPX+1)	END OF TEST-PASS EXIT	00073
0074	0004	EQU	REQINT(EXIT+1)	REQUEST INTERRUPT ADDRESS	00074
0075	0005	EQU	FCLRINT(REQINT+1)	FAKE CLEAR INTERRUPT ROUTINE	00075
0076	0006	EQU	JUMP(REQINT+2)	CHECK SKIPSWITCH FOR PARAM ENTRY	00076
0077	0007	EQU	GENRAN(JUMP+1)	RANDOM NUMBER GENERATOR	00077
0078	0008	EQU	TYPEOUT(GENRAN+1)	MESSAGE TYPEOUT ROUTINE	00078
0079	0009	EQU	TTYBZY(TYPEOUT+1)	ROUTINE TO WAIT TTY NOT BUSY.	00079
0080	000A	EQU	HEXASC(TYPEOUT+2)	HEX TO ASCII CONVERSION	00080
0081	000B	EQU	OVRLAY(HEXASC+1)	OVERLAY CALL ROUTINE.	00081
0082	000C	EQU	RELPOS(OVRLAY+1)	A/Q RELATIVE POSITION TEST.	00082
0083	000D	EQU	MAINL(RELPOS+1)	MANUAL INTERRUPT ROUTINE.	00083
0084	0042	EQU	SETHASK(MAINL+53)	M REGISTER RESET VALUE.	00084
0085	0043	EQU	STJP(SETHASK+1)	STOP/JUMP PARAMETER WORD.	00085
0086	0044	EQU	LASTVALU(STJP+1)	MONITOR AREA LWA+1	00086
0087	0045	EQU	LASTAD(STJP+2)	AVAILABLE LOAD CORE FWA.	00087
0088	0047	EQU	LDLCORE(LASTAD+2)	BANK0 LAST ADDR	00088
0089	0048	EQU	LDL1COR(LDLCORE+1)	BANK1 LAST ADDR	00089
0090	0049	EQU	INFORM(LDL1COR+1)	BK0 SIZE, MASK SIZE, BUSY SWITCH	00090
0091	0056	EQU	SMMCNT(INFORM+13)	SMM PARAMETER WORD.	00091
0092	006B	EQU	BIT00(SMMCNT+21)	XXXXXXXX CONSTANT TABLE XXXXXXXX	00092
0093	006B	EQU	BIT0(BIT00)		00093
0094	006C	EQU	BIT1(BIT0+1)		00094
0095	006D	EQU	BIT2(BIT1+1)		00095
0096	006E	EQU	BIT3(BIT2+1)		00096
0097	006F	EQU	BIT4(BIT3+1)		00097
0098	0070	EQU	BIT5(BIT4+1)		00098
0099	0071	EQU	BIT6(BIT5+1)		00099
0100	0072	EQU	BIT7(BIT6+1)		00100
0101	0073	EQU	BIT8(BIT7+1)		00101
0102	0074	EQU	BIT9(BIT8+1)		00102
0103	0075	EQU	BIT10(BIT9+1)		00103
0104	0076	EQU	BIT11(BIT10+1)		00104
0105	0077	EQU	BIT12(BIT11+1)		00105
0106	0078	EQU	BIT13(BIT12+1)		00106
0107	0079	EQU	BIT14(BIT13+1)		00107
0108	007A	EQU	BIT15(BIT14+1)		00108
0109	007B	EQU	H0000(BIT15+1)		00109
0110	007C	EQU	HFFFF(H0000+1)		00110
0111	007D	EQU	H000F(HFFFF+1)		00111
0112	007E	EQU	H00F0(H000F+1)		00112
0113	007F	EQU	H0F00(H00F0+1)		00113
0114	0080	EQU	HF000(H0F00+1)		00114
0115	0081	EQU	H00FF(HF000+1)		00115
0116	0082	EQU	HFF00(H00FF+1)		00116
0117	0083	EQU	HFFF0(HFF00+1)		00117
0118	0084	EQU	H0FFF(HFFF0+1)		00118
0119	0085	EQU	HFF0F(H0FFF+1)		00119
0120	0086	EQU	HF0FF(HFF0F+1)		00120
0121	0087	EQU	H7FFF(HF0FF+1)		00121
0122	0088	EQU	H7F00(H7FFF+1)		00122
0123	0089	EQU	H0780(H7F00+1)		00123

0124 008A
0125 008B
0126 0091
0127 0092
0128 006B
0129 0056
0130 0043
0131 0007
0132 000A
0133 0008
0134 0004
0135 0005
0136 000A
0137 0004

EQU H007F(H0780+1)
EQU H2020(H007F+1)
EQU TSACTION(H2020+6)
EQU TSFREQ(TSACTION+1)
EQU CONST(BIT00)
EQU SMMPAR(SMMCNT)
EQU SJPAR(STJP)
EQU RANDOM(GENRAN)
EQU CONVERT(HEXASC)
EQU MESSAG(TYPEOUT)
EQU REQND(REQINT)
EQU CLRND(FCLRINT)
EQU CONVM(HEXASC)
EQU INFOBK(\$04)

TABLE INDEX TO TEST IN CONTROL.
TEST, FREQUENCY TABLE

00124
00125
00126
00127
00128
00129
00130
00131
00132
00133
00134
00135
00136
00137

0139	* ERROR CODES(HEXIDECIMAL)	00139
0141	* 01-INTERNAL REJECT OF INPUT TO A.	00141
0142	* A=BA0D	00142
0143	* Q=CONTENTS OF Q UPON INPUT TO A	00143
0144	* A= CONTENTS OF A UPON LAST OUTPUT FROM A.	00144
0145	* Q=CONTENTS OF Q UPON LAST OUTPUT FROM A.	00145
0146	* 02-INTERNAL REJECT ON OUTPUT FROM A.	00146
0147	* A=DIRECTOR STATUS	00147
0148	* Q=ADDRESS REGISTER STATUS	00148
0149	* A=CONTENTS OF A UPON OUTPUT FROM A	00149
0150	* Q=CONTENTS OF Q UPON OUTPUT FROM A.	00150
0151	* 03-INTERRUPT STATUS BIT NOT SET WHEN INTERRUPT OCCURRED.	00151
0152	* A=SELECTED INTERRUPTS	00152
0153	* 1-READY, NOT BUSY	00153
0154	* 2-END OF OPERATION	00154
0155	* 4-ALARM	00155
0156	* Q=STATUS UPON INTERRUPT	00156
0157	* A=CONTENTS OF A UPON LAST OUTPUT FROM A	00157
0158	* Q=CONTENTS OF Q UPON LAST OUTPUT FROM A	00158
0159	* 04-NON-SELECTED INTERRUPT OCCURRED (OR INTERRUPT OCCURRED	00159
0160	* TOO SOON)	00160
0161	* DISPLAY SAME AS FOR ERROR CODE 03	00161
0162	* 05-INTERRUPT STATUS BITS NOT CLEARED BY CLEAR INTERRUPT	00162
0163	* FUNCTION	00163
0164	* A=STATUS UPON INTERRUPT	00164
0165	* Q=STATUS AFTER ATTEMPTING TO CLEAR INTERRUPTS.	00165
0166	* A=CONTENTS OF A UPON LAST OUTPUT FROM A (OTHER THAN	00166
0167	* CLEAR INTERRUPT FUNCTION)	00167
0168	* Q=CONTENTS OF Q UPON LAST OUTPUT FROM A (OTHER THAN	00168
0169	* CLEAR INTERRUPT FUNCTION)	00169
0170	* 06-READY STATUS NOT PRESENT	00170
0171	* A=DIRECTOR STATUS	00171
0172	* Q=ADDRESS REGISTER STATUS	00172
0173	* A=CONTENTS OF A UPON LAST OUTPUT FROM A (OTHER THAN	00173
0174	* CLEAR INTERRUPT FUNCTION)	00174
0175	* Q=CONTENTS OF Q UPON LAST OUTPUT FROM A (OTHER THAN	00175
0176	* CLEAR INTERRUPT FUNCTION)	00176
0177	* 07-ON CYLINDER STATUS NOT PRESENT	00177
0178	* A=DIRECTOR STATUS	00178
0179	* Q=ADDRESS REGISTER STATUS	00179
0180	* 08-BUSY NOT PRESENT AFTER AN OUTPUT FROM A. DISPLAY	00180
0181	* SAME AS FOR ERROR CODE 06.	00181
0182	* 09-STORAGE PARITY ERROR	00182
0183	* DISPLAY SAME AS FOR ERROR CODE 06.	00183
0184	* 0A-DEFECTIVE TRACK	00184
0185	* DISPLAY SAME AS FOR ERROR CODE 06.	00185
0186	* 0B-ADDRESS ERROR	00186
0187	* DISPLAY SAME AS FOR ERROR CODE 06.	00187
0188	* 0C-SEEK ERROR	00188

0189	* DISPLAY SAME AS FOR ERROR CODE 06.	00189
0190	* 00-LOST DATA	00190
0191	* DISPLAY SAME AS FOR ERROR CODE 06.	00191
0192	* 0E-CHECKWORD ERROR	00192
0193	* DISPLAY SAME AS FOR ERROR CODE 06.	00193
0194	* 0F-PROTECT FAULT	00194
0195	* DISPLAY SAME AS FOR ERROR CODE 06.	00195
0196	* 10-ALARM CONDITION PRESENT BUT ALARM STATUS BIT NOT SET	00196
0197	* DISPLAY SAME AS FOR ERROR CODE 06.	00197
0198	* 11-ADDRESS REGISTER STATUS DOES NOT EQUAL LOADED ADDRESS	00198
0199	* AFTER LOADING ADDRESS AND WAITING FOR NOT BUSY	00199
0200	* A=BAOD	00200
0201	* Q=DIRECTOR STATUS	00201
0202	* A=ADDRESS REGISTER STATUS	00202
0203	* Q=LOADED ADDRESS	00203
0204	* 12-NOT USED	00204
0205	* 13-NOT USED	00205
0206	* 14-WORD WRITTEN DOES NOT EQUAL WORD READ. (THIS MAY OCCUR	00206
0207	* IN SECTIONS 3,4, 5 AND 8 OF THE TEST) SET BIT 11 IN	00207
0208	* THE STOP/JUMP PARAMETER TO IGNORE CHECKING FOR MORE	00208
0209	* ERRORS IN THIS SECTOR.	00209
0210	* A=ADDRESS REGISTER STATUS	00210
0211	* Q=NUMBER OF WORD IN ERROR	00211
0212	* A=WORD WRITTEN	00212
0213	* Q=WORD READ	00213
0214	* 15-NO COMPARE STATUS PRESENT	00214
0215	* A=DIRECTOR STATUS	00215
0216	* Q=ADDRESS REGISTER STATUS AFTER LOAD ADDRESS	00216
0217	* 16-ALARM INTERRUPT DID NOT OCCUR WHEN ATTEMPTING TO FORCE	00217
0218	* ADDRESS ERROR BY LOADING ILLEGAL ADDRESS	00218
0219	* A=LOADED ADDRESS	00219
0220	* Q=DIRECTOR STATUS	00220
0221	* A=INTERRUPT LINE	00221
0222	* Q=SELECTED INTERRUPTS (SEE ERROR CODE 03)	00222
0223	* 17-AN ADDRESS ERROR WAS FORCED BUT THE ADDRESS ERROR STATUS	00223
0224	* BIT WAS NOT SET	00224
0225	* A=LOADED ADDRESS	00225
0226	* Q=DIRECTOR STATUS	00226
0227	* 18-NO ALARM INTERRUPT OCCURRED WHEN ATTEMPTING TO FORCE	00227
0228	* ADDRESS ERROR BY INITIATING CHECKWORD CHECK WITH ILLEGAL	00228
0229	* ADDRESS.	00229
0230	* DISPLAY SAME AS FOR ERROR CODE 16.	00230
0231	* 19-ADDRESS ERROR STATUS NOT PRESENT WHEN WRITING OFF THE END	00231
0232	* OF DISK PACK	00232
0233	* DISPLAY SAME AS FOR ERROR CODE 17	00233
0234	* 1A-NOT USED	00234
0235	* 1B-UNEXPECTED DATA WAS READ DURING SURFACE TEST. SET BIT	00235
0236	* 11 IN THE STOP/JUMP PARAMETER TO IGNORE REST OF ERRORS	00236
0237	* IN THIS SECTOR OR TRACK	00237
0238	* A=SECTOR IN ERROR	00238
0239	* Q=NUMBER OF WORK IN ERROR	00239
0240	* A=DATA EXPECTED	00240
0241	* Q=DATA READ	00241

0242	* 10-MAXIMUM POSITIONING TIME OF 165 MILLISECONDS WAS	00242
0243	* EXCEEDED.	00243
0244	* A=TIME REQUIRED (MILLISECONDS, HEXADECIMAL)	00244
0245	* Q=LOAD ADDRESS	00245
0246	* 10-AUTOLOAD FAILED TO LOAD CORRECT DATA	00246
0247	* SET BIT SET BIT 11 IN THE STOP/JUMP PARAMETER TO IGNORE THE	00247
0248	* REST OF THE WORDS IN ERROR.	00248
0249	* A=BAD	00249
0250	* Q=NUMBER OF WORD IN ERROR	00250
0251	* A=WORD WRITTEN	00251
0252	* Q=WORD IN CORE AFTER AUTOLOAD	00252
0253	* 1E-END OF OPERATION STATUS NOT PRESENT	00253
0254	* DISPLAY SAME AS FOR ERROR CODE 16.	00254
0255	* 1F-STATUS OTHER THAN READY, ON CYLINDER IS PRESENT	00255
0256	* (IGNORING PROTECT STATUS) DURING STATIC STATUS CHECK.	00256
0257	* DISPLAY SAME AS FOR ERROR CODE 07.	00257
0258	* 20-ALARM INTERRUPT DID NOT OCCUR WHEN WRITING OFF THE END	00258
0259	* OF DISK PACK	00259
0260	* DISPLAY SAME AS FOR ERROR CODE 16.	00260
0261	* 21-NO INTERRUPT OCCURRED WHEN END OF OPERATION OR READY.	00261
0262	* NOT BUSY INTERRUPT WAS SELECTED.	00262
0263	* A=SELECTED INTERRUPTS (SEE ERROR CODE 03)	00263
0264	* Q=DIRECTOR STATUS	00264
0265	* A=CONTENTS OF A UPON LAST OUTPUT FROM A	00265
0266	* Q=CONTENTS OF Q UPON LAST OUTPUT FROM A	00266
0267	* 22-NOT USED	00267
0268	* 23-NOT USED	00268
0269	* 24-ALARM STATUS BIT SET, NO ALARM CONDITIONS.	00269
0270	* DISPLAY SAME AS FOR ERROR CODE 06.	00270
0271	* 25-NO COMPARE STATUS NOT SET AFTER ATTEMPTING TO FORCE	00271
0272	* NO COMPARE STATUS	00272
0273	* A=DIRECTOR STATUS	00273
0274	* Q=ADDRESS REGISTER STATUS	00274
0275	* 26-FIRST UNIT WENT TO INCORRECT ADDRESS DURING OVERLAP SEEK.	00275
0276	* A=BAD	00276
0277	* Q=DIRECTOR STATUS	00277
0278	* A=LOADED ADDRESS	00278
0279	* Q=ADDRESS REGISTER STATUS	00279
0280	* 27-SECOND UNIT WENT TO INCORRECT ADDRESS DURING OVERLAP	00280
0281	* SEEK.	00281
0282	* DISPLAY SAME AS FOR ERROR CODE 26	00282
0283	* 28	00283
0284	* THROUGH	00284
0285	* 2F-NOT USED	00285
0286	* 30-ADDRESS UPON COMPLETION OF A READ, WRITE, COMPARE OR	00286
0287	* CHECKWORD CHECK OPERATION IS NOT EQUAL TO THE EXPECTED	00287
0288	* ADDRESS	00288
0289	* A=CONTENTS OF Q UPON LAST OUTPUT FROM A (OTHER THAN	00289
0290	* CLEAR INTERRUPT FUNCTION)	00290
0291	* Q=DIRECTOR STATUS	00291
0292	* A=ADDRESS REGISTER STATUS	00292
0293	* Q=EXPECTED ADDRESS	00293
0294	* 31-RECOVERABLE ERROR OCCURRED DURING CHECKWORD CHECK (SECTION	00294

0295	* 13)	00295
0296	* A=ADDRESS OF TRACK CAUSING ERROR.	00296
0297	* Q=DIRECTOR STATUS WHEN LAST ERROR OCCURRED	00297
0298	* 32-NON-RECOVERABLE ERROR OCCURRED DURING CHECKWORD CHECK	00298
0299	* (SECTION 13)	00299
0300	* DISPLAY SAME AS FOR ERROR CODE 31.	00300
0301	* 33	00301
0302	* GHROUGH	00302
0303	* 3F-NOT USED	00303
0304	* 40-OPERATOR ERROR. INTERRUPT LINE OR EQUIPMENT ADDRESS	00304
0305	* IN ERROR. TEST MUST BE RELOADED.	00305
0306	* A= SELECTED EQUIPMENT ADDRESS.	00306
0307	* Q=SELECTED INTERRUPT LINE (IF ANY)	00307
0308	* 41 - EXT REJECT ON INPUT TO A	00308
0309	* A=BADD	00309
0310	* Q=EQUIP ADDR	00310
0311	* A=CONTENTS OF A (LAST OUTPUT)	00311
0312	* Q=CONTENTS OF Q (LAST OUTPUT)	00312
0313	* 42 - EXT REJECT ON OUTPUT FROM A	00313
0314	* A=STATUS	00314
0315	* Q= EQUIP ADDR	00315
0316	* A=LAST FUNCT CONTENTS OF A	00316
0317	* Q=LAST FUNCT CONTENTS OF Q	00317

0320	P0000	180C	DP1008	JMP*	START	
0321	P0001	4450		ALF	3,DP1008	
	P0002	3130				
	P0003	3038				
0322	P0004	0080	P	PARADR	ADC	PID
0323	P0005	000A	P	RETURN	ADC	BEGIN
0324	P0006	0401		EQADDR	NUM	\$401
0325				*		
0326	P0007	0000			NUM	0
0327	P0008	0008		ALARM	NUM	8
0328	P0009	0008		ENDOPER	NUM	8
0329	P000A	5800		BEGIN	RTJ	INIALIZE
	P000B	097A				

00320
00321

CONTROL RETURNED HERE

XXXX = CONTROLLER, EQUIPMENT NUMB

ALARM INTERRUPT LINE
END OF OPERATION INTERRUPT LINE
1802 IS STORED HERE FROM INIT.

00322
00323
00324
00325
00326
00327
00328
00329

0331	P000C 587A	START	RTJ*	PARAM	CHECK PARAMETERS	00331
0332	P000D C000		LDA	=XIBUFFER+96		00332
	P000E 0985 P					
0333	P000F 6800		STA	IBUFFER-1		00333
	P0010 0914					
0334	P0011 C000		LDA	=XOBUFFER+96		00334
	P0012 0924 P					
0335	P0013 6800		STA	OBUFFER-1		00335
	P0014 08AF					
0336	P0015 C000		LDA	=XIBUFFER-1		00336
	P0016 0924 P					
0337	P0017 6800		STA	T3+1		00337
	P0018 01FA					
0338	P0019 C800	REPEAT	LDA	ALM		00338
	P001A 0076					
0339	P001B E8EA		LDQ*	EQADDR		00339
0340	P001C 5404		RTJ-	(REQINT)		00340
0341	P001D 00E5 P REP		ADC	INTPROC		00341
0342	P001E C870		LDA*	UNITSECT		00342
0343	P001F A000		AND	=N\$1FFF		00343
	P0020 1FFF					
0344	P0021 6800		STA	SECTOTS	SECTIONS TO TEST	00344
	P0022 00A4					
0345	P0023 C078		LOA-	CONST+13		00345
0346	P0024 A86A		AND*	UNITSECT	CHECK FOR UNIT NUMBER	00346
0347	P0025 0F44		ARS	4		00347
0348	P0026 8073		ADD-	CONST+8		00348
0349	P0027 6800		STA	UNIT		00349
	P0028 0080					
0350	P0029 E806		LDQ*	NEXTSECT		00350
0351	P002A 0006		INQ	6		00351
0352	P002B 4800		STQ	SEC4Z		00352
	P002C 0408					
0353	P002D 4800		STQ	SEC6Z		00353
	P002E 0669					
0354	P002F 0C00	NEXTSECT	ENQ	0		00354
0355	P0030 C800	LOOK	LDA	SECTOTS		00355
	P0031 0095					
0356	P0032 A26B		AND-	CONST,Q		00356
0357	P0033 0117		SAN	TAG2--1		00357
0358	P0034 0001		INQ	1		00358
0359	P0035 4832		STQ*	Q		00359
0360	P0036 00F2		INQ	-13		00360
0361	P0037 0151		SQN	1		00361
0362	P0038 1810		JMP*	TAG3	ALL SECTIONS HAVE BEEN CHECKED	00362
0363	P0039 E82E		LDQ*	Q		00363
0364	P003A 18F5		JMP*	LOOK		00364
0365	P003B C800	TAG2	LDA	SECTOTS		00365
	P003C 008A					
0366	P003D B26B		EOR-	CONST,Q	CLEAR SECTION BIT	00366
0367	P003E 6800		STA	SECTOTS		00367
	P003F 0087					
0368	P0040 CA1A		LDA*	TEST+1,Q		00368

0369	P0041	6818		STA*	TEST		00369
0370	P0042	0D01		INQ	1		00370
0371	P0043	0FA8		QLS	8		00371
0372	P0044	4824		STQ*	SECTION		00372
0373	P0045	0A00		ENA	0		00373
0374	P0046	60FF		STA-	I	I=0	00374
0375	P0047	1C12		JMP*	(TEST)	GO DO TEST SECTION	00375
0376	P0048	4820	TAG3	STQ*	SECTION		00376
0377	P0049	D80F		RAO*	PASSCT		00377
0378	P004A	E80E		LDQ*	PASSCT		00378
0379	P004B	0A0C		ENA	SC		00379
0380	P004C	5800		RTJ	STOP	CHECK FOR END OF TEST STOP	00380
	P004D	028C					
0381	P004E	0A40		ENA	140		00381
0382	P004F	5406		RTJ-	(JUMP)	CHECK FOR REPEAT TEST	00382
0383	P0050	1804		JMP*	TAG4	REPEAT TEST	00383
0384	P0051	C800		LDA	BIAS		00384
	P0052	02D6					
0385	P0053	5403		RTJ-	(EXIT)		00385
0386	P0054	C075	TAG4	LDA-	CONST+10		00386
0387	P0055	5406		RTJ-	(JUMP)	CHECK FOR REPEAT PARAMETERS	00387
0388	P0056	18B5		JMP*	START	REPEAT TEST GOING THROUGH	00388
0389			*			PARAMETER STOP.	00389
0390	P0057	18C1		JMP*	REPEAT	REPEAT TEST NOT THROUGH	00390
0391			*			PARAMETER STOP.	00391
0392	P0058	0000	PASSCT	NUM	0		00392
0393	P0059	0000	TEST	NUM	0		00393
0394	P005A	0462 P		ADC	SEC1,SEC2,SEC3,SEC4,SEC5,SEC6,SEC7,SEC8,SEC9,SEC10		00394
	P005B	0490 P					
	P005C	04A3 P					
	P005D	04FA P					
	P005E	0543 P					
	P005F	0677 P					
	P0060	0726 P					
	P0061	077F P					
	P0062	0785 P					
	P0063	078C P					
0395	P0064	07B1 P		ADC	SEC11,SEC12		00395
	P0065	080C P					
0396	P0066	0871 P		ADC	SEC13		00396
0397	P0067	0000	Q	NUM	0		00397
0398	P0068	0000	SECTION	NUM	0	SECTION PRESENTLY BEING RUN	00398

0400	P0069	0000	FINSECT	NUM	0	FINISH SECTION SUB-ROUTINE	00400
0401	P006A	0A10		ENA	\$10	REPEAT CONDITION MASK	00401
0402	P006B	5406		RTJ-	(JUMP)		00402
0403	P006C	1CFC		JMP*	(FINSECT)	EXIT, REPEAT LAST CONDITION	00403
0404	P006D	C075		LDA-	CONST+10		00404
0405	P006E	5406		RTJ-	(JUMP)		00405
0406	P006F	5817		RTJ*	PARAM	CHECK PARAMETERS	00406
0407	P0070	D855		RAO*	SECTPASS		00407
0408	P0071	C854		LDA*	SECTPASS		00408
0409	P0072	0102		SAZ	2	A'0 GO DO NEXT PASS OF SECTION	00409
0410	P0073	D8F5	FIN3	RAO*	FINSECT		00410
0411	P0074	1CF4		JMP*	(FINSECT)		00411
0412	P0075	0A0A		ENA	\$A	BIT 8 IS SET TO CLEAR ERROR BIT	00412
0413	P0076	0C00		ENQ	0		00413
0414	P0077	5800		RTJ	STOP	STOP AT END OF SECTION	00414
	P0078	0291					
0415	P0079	0A20		ENA	\$20		00415
0416	P007A	5406		RTJ-	(JUMP)		00416
0417	P007B	1809		JMP*	FIN1		00417
0418	P007C	C858		LDA*	REQF	CHECK INTERRUPT REQUEST FLAG	00418
0419	P007D	0105		SAZ	FIN2-* -1	NEXT SECTION IF CLEAR	00419
0420	P007E	C800		LDA	REQ5A		00420
	P007F	0053					
0421	P0080	5405		RTJ-	(CLRND)	CLEAR INTERRUPT	00421
0422	P0081	0A00		ENA	0		00422
0423	P0082	6852		STA*	REQF	CLEAR INTERRUPT REQUEST FLAG	00423
0424	P0083	18AB	FIN2	JMP*	NEXTSECT	GO TO NEXT SECTION	00424
0425	P0084	D8E4	FIN1	RAO*	FINSECT	GO REPEAT SECTION	00425
0426	P0085	18ED		JMP*	FIN3		00426

0428	P0086	0000	PARAM	NUM	0	CHECK PARAMETERS	00428
0429	P0087	C043		LDA-	STJP		00429
0430	P0088	683F		STA*	REQUEST		00430
0431	P0089	C800		LDA	BIAS		00431
	P008A	029E					
0432	P008B	5402		RTJ-	(STOPX)		00432
0433	P008C	1806		JMP*	PARSET		00433
0434		008D P		ORG	*		00434
0435	P008D	0821	PID	NUM	\$821		00435
0436	P008E	109F	UNITSECT	NUM	\$109F	STANDARD RUN = SECTIONS 1, 2, 3	00436
0437		*				8, 13, AND 9 IF MORE THAN 4K OF	00437
0438		*				AVAILABLE.	00438
0439		*				UNITS AVAILABLE AND SECTIONS	00439
0440		*				SELECTED.	00440

0441	*									BIT 15=0 853	00441
0442	*									BIT 15=1 854	00442
0443	*									BIT 13=1 UNIT 1.	00443
0444	*									BIT 13= 0 UNIT 0	00444
0445	*									BIT 12= SECT. 13	00445
0446	*									BIT 11= SECT. 12	00446
0447	*									BIT 10= SECT. 11	00447
0448	*									BIT 9= SECT. 10	00448
0449	*									BIT 8= SECT. 9	00449
0450	*									BIT 7= SECT. 8	00450
0451	*									BIT 6= SECT. 7	00451
0452	*									BIT 5= SECT. 6	00452
0453	*									BIT 4= SECT. 5	00453
0454	*									BIT 3= SECT. 4	00454
0455	*									BIT 2= SECT. 3	00455
0456	*									BIT 1= SECT. 2	00456
0457	*									BIT 0= SECT. 1	00457
0458	P008F 2863	RANGE	NUM	\$2863					LOCATION =XXYY		00458
0459	*								XX= LOW ORDER CLYD.		00459
0460	*								YY = HIGH ORDER CYLINDER		00460
0461	*								MAX. NUM. OF CYLINERS		00461
0462	*								853 =64 HEX.		00462
0463	*								854 =CB HEX		00463
0464	P0090 0008	ALM	NUM	8							00464
0465	P0091 0008	ALM1	NUM	8							00465
0466	P0092 C835	PARSET	LDA*	REQUEST							00466
0467	P0093 A068		AND-	CONST							00467
0468	P0094 0118		SAN	PARSIT*-1							00468
0469	P0095 C8C2		LDA*	PASSCT							00469
0470	P0096 0109		SAZ	PARSIT*-1							00470
0471	P0097 C8F6		LDA*	UNITSECT							00471
0472	P0098 A073		AND-	CONST+8							00472
0473	P0099 0116		SAN	PARSIT*-1							00473
0474	P009A C8F3		LDA*	UNITSECT							00474
0475	P009B E800		LDQ	BUFFLAG							00475
	P009C 0825										
0476	P009D 0FA8		QLS	8							00476
0477	P009E 0874		EAQ	A							00477
0478	P009F 68EE		STA*	UNITSECT							00478
0479	P00A0 C8EE	PARSIT	LDA*	RANGE							00479
0480	P00A1 A081		AND-	H00FF	00FF						00480
0481	P00A2 6800		STA	RHIGH							00481
	P00A3 0186										
0482	P00A4 C8EA		LDA*	RANGE							00482
0483	P00A5 A082		AND-	HFF00	FF00						00483
0484	P00A6 0FC8		ALS	8							00484
0485	P00A7 6800		STA	RLOW							00485
	P00A8 0182										
0486	P00A9 C8E6		LDA*	ALM							00486
0487	P00AA 6800		STA	ENDOPER							00487
	P00AB FF5D										
0488	P00AC 7800		SPA	ALARM							00488
	P00AD FF5A										

0489	P00AE	0101		SAZ	PARS--1		00489
0490	P00AF	1807		JMP*	PARSLY	INTERRUPT LINE IN ERROR	00490
0491	P0080	C800	PARS	LDA	EQADDR		00491
	P0081	FF54					
0492	P0082	0103		SAZ	PARSLY--1	EQUIPMENT ADDRESS IN ERROR	00492
0493	P0083	A06B		AND-	CONST		00493
0494	P0084	0101		SAZ	PARSLY--1	EQUIPMENT ADDRESS INERROR	00494
0495	P0085	1C00		JMP*	(PARAM)		00495
0496	P0086	C800	PARSLY	LDA	EQADDR		00496
	P0087	FF4E					
0497	P0088	E800		LDA	ALARM		00497
	P0089	FF4E					
0498	P008A	6800		STA	DATA1		00498
	P008B	0261					
0499	P008C	4800		STQ	DATA2		00499
	P008D	0260					
0500	P008E	0A10		ENA	\$10		00500
0501	P008F	0C40		ENQ	\$40	INTERRUPT LINE OR EQUIPMENT	00501
0502	P00C0	5800		RTJ	STOP	ADDRESS IN ERROR	00502
	P00C1	0248					
0503	P00C2	1801		JMP*	PARSLEY		00503
0504	P00C3	0000	PARSLEY	SLS			00504
0505	P00C4	18FE		JMP*	PARSLEY	TEST MUST BE RELOADED	00505
0507	P00C5	0000	SECTPASS	NUM	0	NUMBER OF PASS LEFT(NEGATIVE)	00507
0508	P00C6	0000	SECTOTTS	NUM	0		00508

0511	P00C7	0000	REQUEST	NUM	0	REQUEST INTERRUPT	00511
0512			*			Q0 = READY AND NOT BUSY	00512
0513			*			Q1 = END OF OPERATION	00513
0514			*			Q2 = ALARM	00514
0515	P00C8	481A	STQ*	REQ4			00515
0516	P00C9	C80B	LDA*	REQF			00516
0517	P00CA	0101	SAZ	1			00517
0518	P00CB	1CFB	JMP*	(REQUEST)			00518
0519	P00CC	C800	LDA	ALARM		INTERRUPT LINE	00519
	P00CD	FF3A					
0520	P00CE	E800	LDQ	EQADDR		EQUIPMENT ADDRESS	00520
	P00CF	FF36					
0521	P00D0	0804	RAO*	REQF	SET INTERRUPT	REQUEST FLAG	00521
0522	P00D1	5404	RTJ-	(REQND)			00522
0523	P00D2	00E5	P REQ5A	ADC	INTPROC	***** BIAS *****	00523
0524	P00D3	1CF3	JMP*	(REQUEST)			00524
0525	P00D4	0000	REQF	NUM	0	INTERRUPT REQUEST FLAG	00525

0527	P00D5	0000	SELECT	NUM	0		00527
0528	P00D6	E800		LDQ	EQUIPDIR		00528
	P00D7	0249					
0529	P00D8	0A00		ENA	0		00529
0530	P00D9	680B		STA*	INTSTAT		00530
0531	P00DA	C80B		LDA*	REQ4		00531
0532	P00DB	0FC2		ALS	2	SET DIRECTOR FUNCTION BITS	00532
0533	P00DC	8807		EOR*	UNIT	SET UNIT SELECT CODE	00533
0534	P00DD	6800		STA	DATA2		00534
	P00DE	023F					
0535	P00DF	5800		RTJ	OUTPUT	OUTPUT FUNCTION	00535
	P00E0	00DF					
0536	P00E1	1CF3		JMP*	(SELECT)		00536
0537	P00E2	0000	REQ4	NUM	0		00537
0538	P00E3	0000	UNIT	NUM	0		00538
0539	P00E4	0000	INTSTAT	NUM	0		00539

0541	P00E5	0000	INTPROC	NUM	0	INTERRUPT PROCESSING ROUTINE	00541
0542	P00E6	4800		STQ	EXTVALUE	SAVE Q	00542
	P00E7	0240					
0543	P00E8	0A00		ENA	0		00543
0544	P00E9	6844		STA*	ERRZA	CLEAR ERROR FLAGS	00544
0545	P00EA	6844		STA*	ERRZB		00545
0546	P00EB	6844		STA*	ERRZC		00546
0547	P00EC	6844		STA*	ERRZD		00547
0548	P00ED	6844		STA*	ERRZE		00548
0549	P00EE	6844		STA*	ERRZF		00549
0550	P00EF	6844		STA*	ERRZG		00550
0551	P00F0	E800		LUQ	EQUIPOIR	EQUIPMENT-DIRECTOR	00551
	P00F1	022F					
0552	P00F2	0202	REQZZ	INP	REQZ*-1	INPUT STATUS	00552
0553	P00F3	1805		JMP*	REQZB	NO REJECT	00553
0554	P00F4	1802		JMP*	REQZA		00554
0555	P00F5	18FC	REQZ	JMP*	REQZZ	LOOP IF EXTERNAL REJECT	00555
0556	P00F6	D837	REQZA	RAO*	ERRZA	SET FLAG IF INTERNAL REJECT	00556
0557	P00F7	0AFF		ENA	-0		00557
0558	P00F8	68EB	REQZB	STA*	INTSTAT	STATUS AFTER INTERRUPT	00558
0559	P00F9	6800		STA	DATA1		00559
	P00FA	0222					
0560	P00FB	0A02		ENA	2		00560
0561	P00FC	0302	REQZX	OUT	REQZC*-1		00561
0562	P00FD	1804		JMP*	REQZE	NO REJECT	00562
0563	P00FE	1802		JMP*	REQZD		00563
0564	P00FF	18FC	REQZC	JMP*	REQZX	LOOP IF EXTERNAL REJECT	00564
0565	P0100	D82E	REQZD	RAO*	ERRZB	SET FLAG IF INTERNAL REJECT	00565
0566	P0101	C82C	REQZE	LDA*	ERRZA		00566
0567	P0102	0101		SAZ	REQZF*-1		00567
0568	P0103	1820		JMP*	REQ7	EXIT IF STATUS INPUT REJECT	00568
0569	P0104	C800	REQZF	LDA*	REQ4		00569
0570	P0105	0F41		ARS	1	DROP READY-NOT BUSY BIT	00570
0571	P0106	0FC4		ALS	4	SHIFT REQUEST TO STATUS POSITION	00571
0572	P0107	A8DC		AND*	INTSTAT		00572
0573	P0108	011B		SAN	REQ6*-1	JUMP IF SELECTED INTERRUPT OCCUR	00573
0574	P0109	C8D8		LDA*	REQ4		00574
0575	P010A	A06B		AND-	CONST		00575
0576	P010B	0112		SAN	REQ61*-1	CHECK FOR READY-NOT BUSY REQUEST	00576
0577	P010C	D823		RAO*	ERRZC	NON-SELECTED INTERRUPT OCCURRED	00577
0578	P010D	1807		JMP*	REQ6		00578
0579	P010E	C805	REQ61	LDA*	INTSTAT		00579
0580	P010F	B000		EOR	=N\$0009	EXPECT ON CYLINDER AND READY	00580
	P0110	0009					
0581	P0111	A000		AND	=N\$000B	BUSY SHOULD BE CLEAR	00581
	P0112	000B					
0582	P0113	681C		STA*	ERRZC	NONZERO IF NOT READY OR BUSY	00582
0583	P0114	C06D	REQ6	LDA-	CONST+2		00583
0584	P0115	A8CE		AND*	INTSTAT	CHECK FOR INTERRUPT BIT	00584
0585	P0116	0111		SAN	REQZG*-1		00585
0586	P0117	D819		RAO*	ERRZD	FLAG ERROR IF NOT SET	00586
0587	P0118	0202	REQZG	INP	REQZH*-1	INPUT STATUS	00587
0588	P0119	1805		JMP*	REQZJ	NO REJECT	00588

0589	P011A	1802		JMP*	REQZI		00589
0590	P011B	18FC	REQZH	JMP*	REQZJ	LOOP IF EXTERNAL REJECT	00590
0591	P011C	0815	REQZI	RAO*	ERRZE	SET FLAG IF INT. REJECT	00591
0592	P011D	0A00		ENA	0		00592
0593	P011E	6815	REQZJ	STA*	ERRZG	SAVE STATUS	00593
0594	P011F	A000		AND	=N\$34	MASK INTERRUPT BITS	00594
	P0120	0034					
0595	P0121	0101		SAZ	REQ7--*-1		00595
0596	P0122	0810		RAO*	ERRZF		00596
0597	P0123	C000	REQ7	LDA	=XREQ8	***** BIAS *****	00597
	P0124	012A					
0598	P0125	6800		STA	RETURN		00598
	P0126	FEDE					
0599	P0127	E800		LDQ	EXTVALUE		00599
	P0128	01FF					
0600	P0129	1CBB		JMP*	(INTPROC)	GO TO MONITOR TO EXIT INTP. STAT	00600
0601	P012A	E8B9	REQ8	LDQ*	INTSTAT	INTERRUPT STATUS	00601
0602	P012B	08A9		RAO*	SELECT		00602
0603	P012C	1CA8		JMP*	(SELECT)		00603
0604	P012D	0000	ERRZA	NUM	0		00604
0605	P012E	0000	ERRZB	NUM	0		00605
0606	P012F	0000	ERRZC	NUM	0		00606
0607	P0130	0000	ERRZD	NUM	0		00607
0608	P0131	0000	ERRZE	NUM	0		00608
0609	P0132	0000	ERRZF	NUM	0		00609
0610	P0133	0000	ERRZG	NUM	0		00610
0611			*	THE ROUTINE IS EXITED TO RETURN ADDRESS IF NO INTERRUPT IS			00611
0612			*	RECEIVED.			00612

0614	P0134	0000	CONALARM	NUM	0	CHECK ALARM CONDITIONS	00614
0615	P0135	5858		RTJ*	ADRINP		00615
0616	P0136	6800		STA	DATA2	ADDRESS REGISTER STATUS	00616
	P0137	01E6					
0617	P0138	585C		RTJ*	STD34	LAST FUNCTION	00617
0618	P0139	C853		LDA*	STATUS		00618
0619	P013A	6800		STA	DATA1	DIRECTOR STATUS	00619
	P013B	01E1					
0620	P013C	A06F		AND-	CONST+4	END OF OPERATION STATUS	00620
0621	P013D	0112		SAN	2		00621
0622	P013E	0C1E		ENQ	\$1E	END OF OPERATION NOT SET	00622
0623	P013F	5842		RTJ*	STP		00623
0624	P0140	C84C		LDA*	STATUS		00624
0625	P0141	806B		EOR-	CONST		00625
0626	P0142	A000		AND	=N\$7F01		00626
	P0143	7F01					

0627	P0144	0117		SAN	CON02--*-1		00627
0628	P0145	0A20		ENA	\$20	NO ALARM CONDITIONS	00628
0629	P0146	A846		AND*	STATUS		00629
0630	P0147	0111		SAN	CON01--*-1		00630
0631	P0148	1CEB		JMP*	(CONALARM)	ALARM BIT NOT SET, EXIT	00631
0632	P0149	0C24	CON01	ENQ	\$24	ALARM BIT SET, NO ALARM CONDITIONS	00632
0633	P014A	5837		RTJ*	STP		00633
0634	P014B	1CE8		JMP*	(CONALARM)		00634
0635	P014C	A000	CON02	AND	=NS1C00		00635
		P014D					
0636	P014E	692B		STA*	ALFLAG		00636
0637	P014F	0A20		ENA	\$20		00637
0638	P0150	A83C		AND*	STATUS		00638
0639	P0151	0112		SAN	CON0--*-1		00639
0640	P0152	0C10		ENQ	\$10	ERROR NUMBER, AN ALARM CONDITION	00640
0641			*			WAS PRESENT BUT THE ALARM BIT	00641
0642			*			WAS NOT SET.	00642
0643	P0153	582E		RTJ*	STP		00643
0644	P0154	C838	CON0	LDA*	STATUS		00644
0645	P0155	6831		STA*	TEMP		00645
0646	P0156	5824		RTJ*	CONCHECK		00646
0647	P0157	1803		JMP*	CON1		00647
0648	P0158	0C0F		ENQ	\$F	PROTECT FAULT	00648
0649	P0159	5828		RTJ*	STP		00649
0650	P015A	5820	CON1	RTJ*	CONCHECK		00650
0651	P015B	1803		JMP*	CON2		00651
0652	P015C	0C09		ENQ	9	STORAGE PARITY ERROR	00652
0653	P015D	5824		RTJ*	STP		00653
0654	P015E	581C	CON2	RTJ*	CONCHECK		00654
0655	P015F	1803		JMP*	CON3		00655
0656	P0160	0C0A		ENQ	\$A	DEFECTIVE TRACK	00656
0657	P0161	5820		RTJ*	STP		00657
0658	P0162	5818	CON3	RTJ*	CONCHECK		00658
0659	P0163	1803		JMP*	CON4		00659
0660	P0164	0C08		ENQ	\$B	ADDRESS ERROR	00660
0661	P0165	581C		RTJ*	STP		00661
0662	P0166	5814	CON4	RTJ*	CONCHECK		00662
0663	P0167	1803		JMP*	CON5		00663
0664	P0168	0C0C		ENQ	\$C	SEEK ERROR	00664
0665	P0169	5818		RTJ*	STP		00665
0666	P016A	5810	CON5	RTJ*	CONCHECK		00666
0667	P016B	1803		JMP*	CON6		00667
0668	P016C	0C0D		ENQ	\$D	LOST DATA	00668
0669	P016D	5814		RTJ*	STP		00669
0670	P016E	580C	CON6	RTJ*	CONCHECK		00670
0671	P016F	1803		JMP*	CON7		00671
0672	P0170	0C0E		ENQ	\$E	CHECKWORD ERROR	00672
0673	P0171	5810		RTJ*	STP		00673
0674	P0172	C814	CON7	LDA*	TEMP		00674
0675	P0173	0FC8		ALS	8		00675
0676	P0174	0121		SAP	CON8--*-1		00676
0677	P0175	1CBE		JMP*	(CONALARM)		00677
0678	P0176	0C06	CON8	ENQ	6	NOT READY	00678

0679 P0177 580A		RTJ*	STP	00679
0680 P0178 1C8B		JMP*	(CONALARM)	00680
0681 P0179 0000	ALFLAG	NUM	0	00681

0683 P017A 0000	CONCHECK	NUM	0	00683
0684 P017B C80B		LDA*	TEMP	00684
0685 P017C 0FC1		ALS	1	00685
0686 P017D 6809		STA*	TEMP	00686
0687 P017E 0121		SAP	1	00687
0688 P017F 08FA		RAO*	CONCHECK	00688
0689 P0180 1CF9		JMP*	(CONCHECK)	00689

0691 P0181 0000	STP	NUM	0	00691
0692 P0182 0A20		ENA	\$20	00692
0693 P0183 5800		RTJ	STOP	00693
0694 P0185 1CFB		JMP*	(STP)	00694
0695 P0186 0000	TEMP	NUM	0	00695

0697 P0187 0000	INPUT	NUM	0	00697
0698	*			00698
0699	*			00699
0700	*			00700
0701 P0188 E800		LDQ	EQUIPDIR	00701
0702 P018A 5812		RTJ*	INP	00702

INPUT STATUS
ERROR TYPE OUT WILL HAVE THE
EQUIPMENT ADDRESS IN DATA1
AND THE STATUS IN DATA2

0703	P018B	1CFB		JMP*	(INPUT)		00703
0704	P018C	0000	STATUS	NUM	0	DIRECTOR OR ADDRESS STATUS	00704
0706	P018D	0000	ADRINP	NUM	0		00706
0707	P018E	E800		LDQ	EQUIPADR		00707
	P018F	0192					
0708	P0190	580C		RTJ*	INP		00708
0709	P0191	1CFB		JMP*	(ADRINP)		00709
0710	P0192	0000	LP1	NUM	0		00710
0711	P0193	0000	EC1	NUM	0		00711
0713	P0194	0000	STD34	NUM	0		00713
0714	P0195	C828		LDA*	FUNCA	CONTENTS OF A AT LAST OUTPUT	00714
0715	P0196	6800		STA	DATA3		00715
	P0197	0187					
0716	P0198	E826		LDQ*	FUNCA	CONTENTS OF Q AT LAST OUTPUT	00716
0717	P0199	4800		STQ	DATA4		00717
	P019A	0185					
0718	P019B	1CF8		JMP*	(STD34)		00718
0719	P019C	0000	INP	NUM	0		00719
0720	P019D	4800		STQ	DATA2		00720
	P019E	017F					
0721	P019F	0844		CLR	A		00721
0722	P01A0	68F1		STA*	LP1		00722
0723			*			ROUTINE IS ENTERED.	00723
0724	P01A1	0208	I2	INP	I1-*--1		00724
0725	P01A2	0FAF		QLS	15		00725
0726	P01A3	0162		SQP	2		00726
0727	P01A4	68E7		STA*	STATUS	SAVE STATUS	00727
0728	P01A5	1CF6		JMP*	(INP)		00728
0729	P01A6	6800		STA	INADR		00729
	P01A7	0182					
0730	P01A8	1CF3		JMP*	(INP)		00730
0731	P01A9	1804		JMP*	I3	INTERNAL REJECT (P+DELTA)	00731
0732	P01AA	0C41	I1	ENQ	\$41	EXT REJECT (P+1+DELTA) INPUT	00732

0733	P01AB	48E7		STQ*	EC1	SAVE ERR CODE FOR EXT REJ	00733
0734	P01AC	1803		JMP*	I4		00734
0735	P01AD	0C01	I3	ENQ	1		00735
0736	P01AE	48E4		STQ*	EC1	STORE ERR CODE FOR INT. REJ	00736
0737	P01AF	C000	I4	LDA	=N\$BADD		00737
		P01B0					
0738	P01B1	6800		STA	DATA1		00738
		P01B2					
0739	P01B3	58E0		RTJ*	STD34		00739
0740	P01B4	0A20		ENA	\$20	GET APPROPRIATE ERR CODE	00740
0741	P01B5	E8DD		LDQ*	EC1		00741
0742	P01B6	5800		RTJ	STOP		00742
		P01B7					
0743	P01B8	E800	I5	LDQ	DATA2		00743
		P01B9					
0744	P01BA	18E6		JMP*	I2		00744
0745	P01BB	0000	LP2	NUM	0		00745
0746	P01BC	0000	EC2	NUM	0		00746

0748	P01BD	0000		FUNCA	NUM	0	00748
0749	P01BE	0000		FUNCC	NUM	0	00749
0750	P01BF	0000		OUTPUT	NUM	0	00750
0751	P01C0	68FC		STA*	FUNCA	OUTPUT FUNCTIONS ENTER WITH	00751
0752	P01C1	48FC		STQ*	FUNCC	FUNCTION, CONTENTS OF A	00752
0753	P01C2	4800		STQ	DATA4	FUNCTION, CONTENTS OF Q	00753
		P01C3					
0754	P01C4	6800		STA	DATA3		00754
		P01C5					
0755	P01C6	0844		CLR	A		00755
0756	P01C7	68F3		STA*	LP2		00756
0757	P01C8	C8F4		LDA*	FUNCA		00757
0758	P01C9	0302	02	OUT	01--*-1	EXIT	00758
0759	P01CA	1CF4		JMP*	(OUTPUT)	INTERNAL REJECT (P+DELTA)	00759
0760	P01CB	1808		JMP*	03	EXT REJ (P+1+DELTA) OUTPUT	00760
0761	P01CC	0C42	01	ENQ	\$42	STORE ERR CODE FOR EXT REJ	00761
0762	P01CD	48EE		STQ*	EC2	INCREMENT RETRY COUNTER	00762
0763	P01CE	D8EC		RAO*	LP2		00763
0764	P01CF	C8EB		LDA*	LP2		00764
0765	P01D0	B081		EOR-	H00FF	TIME OUT (256 ATTEMPTS)	00765
0766	P01D1	0103		SAZ	04--*-1	TIMED OUT GO REPORT ERROR	00766
0767	P01D2	1810		JMP*	05	RETRY AGAIN	00767
0768	P01D3	0C02	03	ENQ	2		00768
0769	P01D4	48E7		STQ*	EC2	STORE ERR CODE FOR INT. REJ	00769
0770	P01D5	5800	04	RTJ	INPUT		00770
		P01D6					

0771	P0107	58B5		RTJ*	ADRINP		00771
0772	P0108	6800		STA	DATA2		00772
	P0109	0144					
0773	P010A	C800		LDA	STATUS		00773
	P010B	FF80					
0774	P010C	6800		STA	DATA1		00774
	P010D	013F					
0775	P010E	0A20		ENA	\$20		00775
0776	P010F	E8DC		LDQ*	EC2		00776
0777	P01E0	5800		RTJ	STOP	GO TO ERROR STOP ROUTINE	00777
	P01E1	0128					
0778	P01E2	E800	05	LDQ	DATA4		00778
	P01E3	013C					
0779	P01E4	C800		LDA	DATA3		00779
	P01E5	0139					
0780	P01E6	18E2		JMP*	02		00780

0782	P01E7	0000	BUSYPRES	NUM	0	CHECK FOR THE PRESENTS OF BUSY.	00782
0783	P01E8	589E		RTJ*	INPUT	STATUS	00783
0784	P01E9	6800		STA	DATA1		00784
	P01EA	0132					
0785	P01EB	A06C		AND-	CONST+1	CHECK FOR PRESENTS OF BUSY	00785
0786	P01EC	0119		SAN	BUSY1--*-1		00786
0787	P01ED	C800		LDA	INADR		00787
	P01EE	013B					
0788	P01EF	6800		STA	DATA2		00788
	P01F0	012D					
0789	P01F1	58A2		RTJ*	STD34		00789
0790	P01F2	0A20		ENA	\$20		00790
0791	P01F3	0C08		ENQ	8	ERROR NUMBER, BUSY NOT PRESENT	00791
0792			*			AFTER AN I/O OPERATION	00792
0793	P01F4	5800		RTJ	STOP		00793
	P01F5	0114					
0794	P01F6	5869	BUSY1	RTJ*	RETCONT	RETURN CONTROL TO MONITOR	00794
0795	P01F7	1CEF		JMP*	(BUSYPRES)	EXIT	00795

0797	P01F8	0000	IOBUFFER	NUM	0		00797
0798	P01F9	68ED		STA*		BUSYPRES	00798
0799	P01FA	0A00		ENA	0		00799
0800	P01FB	6800		STA		INTSTAT	00800
	P01FC	FEE7					
0801	P01FD	C8E9		LDA*		BUSYPRES	00801
0802	P01FE	58C0		RTJ*		OUTPUT	00802
0803	P01FF	5800		RTJ		RETCONT	00803
	P0200	005F					
0804	P0201	E800		LDQ		INTSTAT	00804
	P0202	FEE1					
0805	P0203	0142		SQZ	2		00805
0806	P0204	1800		JMP		REQ8	00806
	P0205	FF24				INTERRUPT OCCURRED TOO SOON	
0807	P0206	1CF1		JMP*		(IOBUFFER)	00807
0808	P0207	0000	WAIT	NUM	0		00808
0809	P0208	5800		RTJ	INPUT	GET STATUS	00809
	P0209	FF7D					
0810	P020A	A06C		AND-		CONST+1	00810
0811	P020B	0101		SAZ	1		00811
0812	P020C	18FB		JMP*		WAIT+1	00812
0813	P020D	1CF9		JMP*		(WAIT)	00813
0815	P020E	0000	INBUF	NUM	0	SELECT READ AND INPUT BUFFER	00815
0816	P020F	E800		LDQ		EQREAD	00816
	P0210	0113					
0817	P0211	C000	T3	LDA		=XIBUFFER-1	00817
	P0212	0924	P			***** BIAS *****	
0818	P0213	58E4		RTJ*		IOBUFFER	00818
0819	P0214	1CF9		JMP*		(INBUF)	00819
0821	P0215	0000	LOADADR	NUM	0	LOAD ADDRESS,CHK. FOR PRESENTS	00821
0822		*				OF BUSY,AND TURN CONTROL OVER	00822
0823		*				TO THE MONITOR	00823
0824	P0216	5808		RTJ*		LIMIT	00824
						LIMIT CYLINDER NO. TO RANGE	

0825	P0217	C800		LDA	OBUFFER		00825
	P0218	06AC					
0826	P0219	E800		LDQ	EQUIPADR	EQUIPMENT ADDRESS	00826
	P021A	0107					
0827	P021B	58A3		RTJ*	OUTPUT	POSITION	00827
0828	P021C	5843		RTJ*	RETCONT		00828
0829	P021D	1CF7		JMP*	(LOADADR)		00829
0830	P021E	0000	LIMIT	NUM	0		00830
0831	P021F	0A00		ENA	0		00831
0832	P0220	E800		LDQ	OBUFFER	PACK ADDRESS	00832
	P0221	06A3					
0833	P0222	0FE8		LLS	8		00833
0834	P0223	6808		STA*	AHIGH		00834
0835	P0224	9806		SUB*	RLOW	CHK. LOW ORDER	00835
0836	P0225	0126		SAP	LD1-*--1		00836
0837	P0226	C803		LDA*	RHIGH		00837
0838	P0227	0FE8		LLS	8	PUT HIGH RANGE AND LOWER ORDER	00838
0839			*			BITS INTO PACK ADDRESS	00839
0840	P0228	1809		JMP*	LD2		00840
0841	P0229	0000	RHIGH	NUM	0	HIGH ORDER RANGE OF CYL.	00841
0842	P022A	0000	RLOW	NUM	0	LOW ORDER RANGE OF CYL.	00842
0843	P022B	0000	AHIGH	NUM	0	ADDRESS HIG ORDER	00843
0844	P022C	C8FC	LD1	LDA*	RHIGH		00844
0845	P022D	98FD		SUB*	AHIGH		00845
0846	P022E	0124		SAP	LD3-*--1		00846
0847	P022F	C8FA		LDA*	RLOW		00847
0848	P0230	0FE8		LLS	8	PUT LOW RANGE AND LOWER ORDER	00848
0849			*			BITS INTO PACK ADDRESS	00849
0850	P0231	6800	LD2	STA	OBUFFER		00850
	P0232	0692					
0851	P0233	1CEA	LD3	JMP*	(LIMIT)		00851
0853	P0234	0000	NOINTP	NUM	0		00853
0854	P0235	5800		RTJ	INPUT		00854
	P0236	FF50					
0855	P0237	6800		STA	DATA2		00855
	P0238	00E5					
0856	P0239	C800		LDA	ALARM	INTERRUPT LINE	00856
	P023A	FDCD					
0857	P023B	6800		STA	DATA3		00857
	P023C	00E2					
0858	P023D	C800		LDA	REQ4		00858
	P023E	FEA3					
0859	P023F	6800		STA	DATA4		00859
	P0240	00DF					

0860	P0241	0A20	ENA	\$20		00860	
0861	P0242	E800	LDQ	INTSTAT		00861	
	P0243	FEA0					
0862	P0244	1CEF	JMP*	(NOINTP)		00862	
0864	P0245	0000	ADRINTP	NUM	0	LOAD ADDRESS WITH END OF OPERATION	00864
0865			*			AND ALARM INTPS. SELECTED. THEN	00865
0866			*			RESELECT THE INTPS FOR THE I/O	00866
0867	P0246	C8FE	LOA*	ADRINTP			00867
0868	P0247	6800	STA	ADDRESS		SET UP RETURN ADDRESS	00868
	P0248	00ED					
0869	P0249	5800	RTJ	SELECT		SELECT END OF OPERATION AND	00869
	P024A	FE8A					
0870			*			ALARM INTPS.	00870
0871	P024B	1802	JMP*	ADR1			00871
0872	P024C	180C	JMP*	ADR2		INTERRUPT OCCURRED	00872
0873	P024D	58C7	ADR1	RTJ*	LOADADR	POSITION AND WAIT NOT BUSY	00873
0874	P024E	58E5		RTJ*	NOINTP		00874
0875	P024F	0158		SQN	ADR2-*-1		00875
0876	P0250	5800		RTJ	STD21		00876
	P0251	0094					
0877	P0252	0C21		ENQ	\$21		00877
0878	P0253	5800		RTJ	STOP		00878
	P0254	0085					
0879	P0255	5800		RTJ	RETSTAT		00879
	P0256	0102					
0880	P0257	1806		JMP*	ADR3		00880
0881	P0258	4800	ADR2	STQ	STATUS	STATUS WHEN INTERRUPT OCCURRED	00881
	P0259	FF32					
0882	P025A	581E		RTJ*	IECHK	CHECK FOR INTERRUPT ERRORS	00882
0883	P025B	5800		RTJ	CONALARM		00883
	P025C	FED7					
0884	P025D	1800	ADR3	JMP	CHKA3	GO CHECK ADDRESS REGISTER STATUS	00884
	P025E	0008					

0886	P025F	0000	RETCONT	NUM	0		00886
0887	P0260	C000		LDA	=XDECIDE		00887
	P0261	0265	P				
0888	P0262	6800		STA	RETURN		00888
	P0263	FDA1					
0889	P0264	5401		RTJ-	(CONTROL)		00889
0890	P0265	5800	DECIDE	RTJ	INPUT	GET STATUS	00890
	P0266	FF20					
0891	P0267	A06C		AND-	CONST+1		00891
0892	P0268	0101		SAZ	CKCONT--*-1		00892
0893	P0269	5401		RTJ-	(CONTROL)		00893
0894	P026A	1CF4	CKCONT	JMP*	(RETCONT)	EXIT	00894

0896	P026B	0000	MESS	NUM	0		00896
0897	P026C	C800		LDA	INTSTAT		00897
	P026D	FE76					
0898	P026E	6800		STA	DATA2		00898
	P026F	00AE					
0899	P0270	C800		LDA	REQ4		00899
	P0271	FE70					
0900	P0272	6800		STA	DATA1		00900
	P0273	00A9					
0901	P0274	5800		RTJ	STD34		00901
	P0275	FF1E					
0902	P0276	0A20		ENA	\$20		00902
0903	P0277	1CF3		JMP*	(MESS)		00903
0904	P0278	0000	IECHK	NUM	0	CHECK FOR ERRORS DURING INTERRUPT PROCESSING	00904
0905			*				00905
0906	P0279	C800		LDA	ERRZA		00906
	P027A	FEB2					
0907	P027B	0104		SAZ	IEA--*-1		00907
0908	P027C	0A00		ENA	0		00908
0909	P027D	0C01		ENQ	1	INTERNAL REJECT OF STATUS INPUT	00909
0910	P027E	5800		RTJ	STOP		00910
	P027F	008A					
0911	P0280	C800	IEA	LDA	INTSTAT	STATUS AFTER INTERRUPT	00911
	P0281	FE62					
0912	P0282	6800		STA	DATA1		00912
	P0283	0099					
0913	P0284	E800		LQ	EQUIPDIR		00913
	P0285	0098					
0914	P0286	4800		STQ	DATA4		00914
	P0287	0098					
0915	P0288	C800		LDA	ERRZB		00915
	P0289	FEA4					

0916	P028A 010A		SAZ	IEB--1		00916
0917	P028B 0C02		ENQ	2		00917
0918	P028C 4800		STQ	DATA3		00918
	P028D 0091					
0919	P028E C800		LDA	INADR		00919
	P028F 009A					
0920	P0290 6800		STA	DATA2		00920
	P0291 008C					
0921	P0292 0A20		ENA	\$20		00921
0922	P0293 5800		RTJ	STOP		00922
	P0294 0075					
0923	P0295 C800	IEB	LDA	ERRZC		00923
	P0296 FE98					
0924	P0297 E800		LDQ	REQ4		00924
	P0298 FE49					
0925	P0299 4800		STQ	DATA1		00925
	P029A 0082					
0926	P029B 0104		SAZ	IEC--1		00926
0927	P029C 58CE		RTJ*	MESS		00927
0928	P029D 0C04		ENO	4	NON-SELECTED INTERRUPT OCCURRED	00928
0929	P029E 5800		RTJ	STOP		00929
	P029F 006A					
0930	P02A0 C800	IEC	LDA	ERRZD		00930
	P02A1 FE8E					
0931	P02A2 0104		SAZ	IED--1		00931
0932	P02A3 58C7		RTJ*	MESS		00932
0933	P02A4 0C03		ENQ	3	INTERRUPT BIT NOT SET	00933
0934	P02A5 5800		RTJ	STOP		00934
	P02A6 0063					
0935	P02A7 C800	IED	LDA	ERRZE		00935
	P02A8 FE88					
0936	P02A9 E800		LDQ	EQUIPDIR		00936
	P02AA 0076					
0937	P02AB 4800		STQ	DATA2		00937
	P02AC 0071					
0938	P02AD 010A		SAZ	IEE--1		00938
0939	P02AE C000		LDA	=N\$BADD		00939
	P02AF 8ADD					
0940	P02B0 6800		STA	DATA1		00940
	P02B1 006B					
0941	P02B2 5800		RTJ	STD34		00941
	P02B3 FEE0					
0942	P02B4 0A20		ENA	\$20		00942
0943	P02B5 0C01		ENO	1	INT. REJECT OF STATUS INPUT	00943
0944	P02B6 5800		RTJ	STOP		00944
	P02B7 0052					
0945	P02B8 C800	IEE	LDA	ERRZF		00945
	P02B9 FE78					
0946	P02BA 010E		SAZ	IEF--1		00946
0947	P02BB C800		LDA	INTSTAT		00947
	P02BC FE27					
0948	P02BD 6800		STA	DATA1		00948
	P02BE 005E					

0977	P02EA 5800		RTJ	STD34		00977
	P02EB FEA8					
0978	P02EC 0A20		ENA	\$20		00978
0979	P02ED 1CF7		JMP*	(STD21)		00979
0980	P02EE 0000	READ	NUM	0	READ UNDER INTP. CONTROL	00980
0981	P02EF 5800		RTJ	ADRINTP		00981
	P02F0 FF54					
0982	P02F1 5800		RTJ	SC11E	WAIT 165MS MAX FOR NOT BUSY	00982
	P02F2 0500					
0983	P02F3 5800		RTJ	SELECT		00983
	P02F4 F0E0					
0984	P02F5 1802		JMP*	RD1		00984
0985	P02F6 180C		JMP*	RD2		00985
0986	P02F7 5800	RD1	RTJ	INBUF	READ ONE SECTOR	00986
	P02F8 FF15					
0987	P02F9 5800		RTJ	NOINTP		00987
	P02FA FF39					
0988	P02FB 58E9		RTJ*	STD21		00988
0989	P02FC 0C21		ENQ	\$21		00989
0990	P02FD 5800		RTJ	STOP		00990
	P02FE 0008					
0991	P02FF 5800		RTJ	RETSTAT		00991
	P0300 0058					
0992	P0301 1CEC		JMP*	(READ)		00992
0993	P0302 4800	RD2	STQ	STATUS	STATUS WHEN INTERRUPT OCCURRED	00993
	P0303 FE88					
0994	P0304 5800		RTJ	IECHK	CHECK FOR INTERRUPT ERRORS	00994
	P0305 FF72					
0995	P0306 5800		RTJ	CONALARM		00995
	P0307 FE2C					
0996	P0308 1CE5		JMP*	(READ)		00996

0998	P0309 0000	STOP	NUM	0	STOP SUB-ROUTINE	00998
0999	P030A 8000		EOR	=N\$808	MAKE IDENT WORD	00999
	P030B 0808					
1000	P030C 6800		STA*	ID		01000
1001	P030D F800		ADQ	SECTION		01001
	P030E F059					
1002	P030F 4808		STQ*	SECERR	SECTION AND ERROR	01002
1003	P0310 E043		LDQ-	STJP		01003
1004	P0311 C8F7		LDA*	STOP		01004
1005	P0312 0FA6		QLS	6		01005
1006	P0313 0171		SQM	1		01006
1007	P0314 9814		SUB*	BIAS		01007

1008	P0315	6806	STA*	RETADR		01008
1009	P0316	0A00	ENA	0		01009
1010	P0317	5402	RTJ-	(STOPX)		01010
1011	P0318	1CF0	JMP*	(STOP)		01011
1012	P0319	0000	ID	NUM	0	01012
1013	P031A	0000	SECERR	NUM	0	01013
1014	P031B	0000	RETADR	NUM	0	01014
1015	P031C	0000	DATA1	NUM	0	01015
1016	P031D	0000	DATA2	NUM	0	01016
1017	P031E	0000	DATA3	NUM	0	01017
1018	P031F	0000	DATA4	NUM	0	01018
1019	P0320	0000	EQUIPDIR	NUM	0	01019
1020	P0321	0000	EQUIPADP	NUM	0	01020
1021	P0322	0000	EQWRITE	NUM	0	01021
1022	P0323	0000	EQREAD	NUM	0	01022
1023	P0324	0000	EQCOMP	NUM	0	01023
1024	P0325	0000	EQCHKWD	NUM	0	01024
1025	P0326	0000	EQWRTADD	NUM	0	01025
1026	P0327	0000	EXTVALUE	NUM	0	01026
1027	P0328	0000	BIAS	NUM	0	01027
1028	P0329	0000	INADR	NUM	0	01028
					IDENT WORD	
					SECTION/ERROR	
					RETURN ADDRESS	
					DATA	
					DATA	
					DATA	
					DATA	
					DIRECTOR AND DIRECTOR STATUS FUNCTION	
					LOAD ADDRESS AND ADDRESS REGISTER STATUS	
					WRITE	
					READ	
					COMPARE	
					CHECKWORD CHECK	
					WRITE ADDRESS	
					ADDRESS REGISTER STATUS	

1030	P032A	0000	CLRCON	NUM	0	01030
1031	P032B	0A02	ENA	2		01031
1032	P032C	E8F3	LDQ*	EQUIPDIR		01032
1033	P032D	5800	RTJ	OUTPUT		01033
	P032E	FE90				
1034	P032F	C800	LDA	UNIT		01034
	P0330	F0B2				
1035	P0331	E8EE	LDQ*	EQUIPDIR		01035
1036	P0332	5800	RTJ	OUTPUT		01036
	P0333	FE88				
1037	P0334	1CF5	JMP*	(CLRCON)		01037

1039	P0335	0000	ADDRESS	NUM	0	01039
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1040	P0336 5800		RTJ	LOADADR		01040
	P0337 FEDD					
1041	P0338 5820		RTJ*	RETSTAT		01041
1042	P0339 5800	CHKA3	RTJ	ADRINP	ADDRESS REGISTER STATUS	01042
	P033A FE52					
1043	P033B 68E2		STA*	DATA3		01043
1044	P033C E800		LDQ	OBUFFER		01044
	P033D 0587					
1045	P033E 48E0		STQ*	DATA4		01045
1046	P033F 8800		EOR	OBUFFER	COMPARE ADDRESS	01046
	P0340 0584					
1047	P0341 0111		SAN	1		01047
1048	P0342 1CF2		JMP*	(ADDRESS)		01048
1049	P0343 D800		RAO	ALFLAG		01049
	P0344 FE34					
1050	P0345 C000		LDA	=NSBADD		01050
	P0346 BADD					
1051	P0347 68D4		STA*	DATA1		01051
1052	P0348 C800		LDA	STATUS		01052
	P0349 FE42					
1053	P034A 68D2		STA*	DATA2		01053
1054	P034B 0A20		ENA	\$20		01054
1055	P034C 0C11		ENQ	\$11	ERROR NUMBER,	01055
1056	P034D 58B8		RTJ*	STOP		01056
1057	P034E 1CE6		JMP*	(ADDRESS)	EXIT	01057

1059	P034F 0000	MOVEADR	NUM	0	MOVE THE NEXT ADDRESS UP	01059
1060	P0350 E800		LDQ	SECTPASS		01060
	P0351 FD73					
1061	P0352 0D60		INQ	96		01061
1062	P0353 CA00		LOA	OBUFFER,Q		01062
	P0354 0570					
1063	P0355 6800		STA	OBUFFER		01063
	P0356 056E					
1064	P0357 1CF7		JMP*	(MOVEADR)		01064

1066	P0358	0000	RETSTAT	NUM	0	CHK. ALARM CONDITIONS WITHOUT INTPS.	01066
1067	P0359	5800		RTJ	INPUT		01067
	P035A	FE2C					
1068	P035B	5800		RTJ	CONALARM		01068
	P035C	F007					
1069	P035D	1CFA		JMP*	(RETSTAT)		01069

1071	P035E	0000	SECGEN	NUM	0	SET SECTION COUNT TO 96 AND	01071
1072			*			GENERATE 96 RANDOM NUMBERS	01072
1073	P035F	0C9F		ENQ	-96		01073
1074	P0360	4800		STQ	SECTPASS		01074
	P0361	FD63					
1075	P0362	0852		TCQ	Q		01075
1076	P0363	C000	T1	LDA	=XOBUFFER	***** BIAS *****	01076
	P0364	08C4	P				
1077	P0365	5407		RTJ-	(GENRAN)	GENERATE RANDOM NUMBERS	01077
1078	P0366	1CF7		JMP*	(SECGEN)		01078

1080	P0367	0000	GENSEC	NUM	0	GEN. RANDOM DATA AND CONVERT FIRST WORD TO	01080
1081			*			LEGAL ADDRESS. ENTER WITH Q= NUMBER OF WORDS	01081
1082	P0368	C000	T2	LDA	=XOBUFFER	***** BIAS *****	01082
	P0369	08C4	P				
1083	P036A	5407		RTJ-	(GENRAN)		01083
1084	P036B	C000		LDA	=XOBUFFER		01084
	P036C	08C4	P				
1085	P036D	E000		LQ	=XOBUFFER+1		01085
	P036E	08C5	P				
1086	P036F	5800		RTJ	CONV	MAKE LEGAL ADDRESS	01086
	P0370	00CE					
1087	P0371	1CF5		JMP*	(GENSEC)		01087

1089	P0372	0000	OUTBUF	NUM	0	SELECT WRITE AND OUTPUT BUFFER	01089
1090	P0373	E8AE		LDQ*	EQWRITE		01090
1091	P0374	C000	T10	LDA	=XOBUFFER-1	***** BIAS *****	01091
		08C3	P				
1092	P0376	5800		RTJ	IOBUFFER		01092
		FE80					
1093	P0378	1CF9		JMP*	(OUTBUF)		01093

1095	P0379	0000	COMBUF	NUM	0	COMPARE BUFFER	01095
1096	P037A	E8A9		LDQ*	EQCOMP		01096
1097	P037B	C000	T11	LDA	=XOBUFFER-1	***** BIAS *****	01097
		08C3	P				
1098	P037D	5800		RTJ	IOBUFFER		01098
		FE79					
1099	P037F	5800		RTJ	INPUT	GET STATUS	01099
		FE06					
1100	P0381	6800		STA	DATA1	STATUS	01100
		FF99					
1101	P0383	E8A5		LDQ*	INADR		01101
1102	P0384	4800		STQ	DATA2		01102
		FF97					
1103	P0386	A071		AND-	CONST+6	CHECK NO COMPARE BIT	01103
1104	P0387	0104		SAZ	COMB-* -1		01104
1105	P0388	0A10		ENA	\$10		01105
1106	P0389	0C15		ENQ	\$15	ERRCODE	01106
1107	P038A	5800		RTJ	STOP		01107
		FF70					
1108	P038C	5800	COMB	RTJ	CONALARM	CHECK ALARM CONDITIONS	01108
		FDA6					
1109	P038E	1CEA		JMP*	(COMBUF)		01109

1111	P038F	0000	CHKWORD	NUM	0	CHECKWORD CHECK	01111
1112	P0390	E800		LDQ	EQCHKWD		01112
		P0391					
1113	P0392	C800		LDA	OBUFFER		01113
		P0393					
1114	P0394	5800		RTJ	IOBUFFER		01114
		P0395					
1115	P0396	5800		RTJ	RETSTAT		01115
		P0397					
1116	P0398	1CF6		JMP*	(CHKWORD)		01116
1118	P0399	0000	COMPARE	NUM	0	COMPARE UNDER INTP. CONTROL	01118
1119	P039A	C88E		LDA*	INADR	ADDRESS REGISTER	01119
1120	P039B	6880		STA*	DATA1		01120
1121	P039C	0C00		ENQ	0		01121
1122	P039D	4829		STQ*	WORDCNT	WORD COUNT	01122
1123	P039E	CA00	COM4	LDA	OBUFFER,Q		01123
		P039F					
1124	P03A0	6800		STA	DATA3	WORD WRITTEN	01124
		P03A1					
1125	P03A2	8A00		EOR	IBUFFER,Q	WORD READ	01125
		P03A3					
1126	P03A4	0111		SAN	1		01126
1127	P03A5	180F		JMP*	COM1		01127
1128	P03A6	CA00		LDA	IBUFFER,Q	WORD READ	01128
		P03A7					
1129	P03A8	6800		STA	DATA4		01129
		P03A9					
1130	P03AA	4800		STQ	DATA2	WORD IN SECTOR THAT IS IN ERROR	01130
		P03AB					
1131	P03AC	0A20		ENA	\$20		01131
1132	P03AD	0C14		ENQ	\$14	ERROR NUMBER, DATA COMPARE ERROR	01132
1133	P03AE	5800		RTJ	STOP		01133
		P03AF					
1134	P03B0	C043	COM3	LDA-	STJP		01134
1135	P03B1	A076		AND-	CONST+11	SHOULD THE REST OF THE ERRORS	01135
1136			*			BE SKIP IN THIS SECTOR	01136
1137	P03B2	0101		SAZ	1		01137
1138	P03B3	1810		JMP*	COM1A	EXIT	01138
1139	P03B4	D812	COM1	RAO*	WORDCNT		01139
1140	P03B5	0A9F		ENA	-96		01140
1141	P03B6	8810		ADD*	WORDCNT		01141
1142	P03B7	011C		SAN	COM1A-*	CONTINUE COMPARING	01142
1143	P03B8	0C00		ENQ	0		01143

1144	P03B9	GA00	ENA	0		01144
1145	P03BA	6A00	COM1A1 STA	IBUFFER,Q.	CLEAR BUFFER AREA	01145
	P03BB	056A				
1146	P03BC	0D01	INR	1		01146
1147	P03BD	F000	ADQ	=N-96		01147
	P03BE	FF9F				
1148	P03BF	0143	SQZ	COM1A--1	EXIT	01148
1149	P03C0	F000	ADQ	=N96		01149
	P03C1	0060				
1150	P03C2	18F7	JMP*	COM1A1		01150
1151	P03C3	1CD5	COM1A JMP*	(COMPARE)		01151
1152	P03C4	E802	LDQ*	WORDCNT		01152
1153	P03C5	1808	JMP*	COM4		01153
1154	P03C6	0000	WORDCNT NUM	0		01154

1156	P03C7	0000	CHINTP NUM	0	CHECKWORD CHECK, INTERRUPT MODE	01156
1157	P03C8	5800	RTJ	SELECT		01157
	P03C9	FD0B				
1158	P03CA	1802	JMP*	CW1		01158
1159	P03CB	180B	JMP*	CW2	INTERRUPT OCCURRED	01159
1160	P03CC	5800	CW1 RTJ	CHKWORD		01160
	P03CD	FFC1				
1161	P03CE	5800	RTJ	NOINTP	NO INTERRUPT	01161
	P03CF	FE64				
1162	P03D0	5800	RTJ	STD21		01162
	P03D1	FF13				
1163	P03D2	0C21	ENQ	\$21		01163
1164	P03D3	5800	RTJ	STOP		01164
	P03D4	FF34				
1165	P03D5	1CF1	JMP*	(CHINTP)	EXIT	01165
1166	P03D6	4800	CW2 STQ	STATUS	STATUS WHEN INTERRUPT OCCURRED	01166
	P03D7	FD84				
1167	P03D8	5800	RTJ	IECHK	CHECK FOR INTERRUPT ERRORS	01167
	P03D9	FE9E				
1168	P03DA	5800	RTJ	CONALARM	CHECK ALARM CONDITIONS	01168
	P03DB	FD58				
1169	P03DC	1CEA	JMP*	(CHINTP)		01169
1170	P03DD	0000	CBINTP NUM	0	COMPARE INTERRUPT MODE	01170
1171	P03DE	5800	RTJ	SELECT		01171
	P03DF	FCF5				
1172	P03E0	1802	JMP*	CB1		01172
1173	P03E1	180B	JMP*	CB2	INTERRUPT OCCURRED	01173
1174	P03E2	5800	CB1 RTJ	COMBUF		01174
	P03E3	FF95				

1175	P03E4 5800		RTJ	NOINTP	NO INTERRUPT	01175
	P03E5 FE4E					
1176	P03E6 5800		RTJ	STD21		01176
	P03E7 FEFD					
1177	P03E8 0C21		ENQ	\$21		01177
1178	P03E9 5800		RTJ	STOP		01178
	P03EA FF1E					
1179	P03EB 1CF1		JMP*	(CBINTP)		01179
1180	P03EC 4800	CB2	STQ	STATUS	STATUS WHEN INTERRUPT OCCURRED	01180
	P03ED F09E					
1181	P03EE 5800		RTJ	IECHK	CHECK FOR INTERRUPT ERRORS	01181
	P03EF FE88					
1182	P03F0 C800		LDA	STATUS		01182
	P03F1 F09A					
1183	P03F2 6800		STA	DATA1		01183
	P03F3 FF28					
1184	P03F4 E800		LQ	INADR		01184
	P03F5 FF33					
1185	P03F6 4800		STQ	DATA2		01185
	P03F7 FF25					
1186	P03F8 A071		AND-	CONST+6	CHECK NO COMPARE BIT	01186
1187	P03F9 0104		SAZ	CB3*-1		01187
1188	P03FA 0A10		ENA	\$10		01188
1189	P03FB 0C15		ENQ	\$15	ERRCODE	01189
1190	P03FC 5800		RTJ	STOP		01190
	P03FD FF08					
1191	P03FE 5800	CB3	RTJ	CONALARM	CHECK ALARM CONDITIONS	01191
	P03FF F034					
1192	P0400 1C0C		JMP*	(CBINTP)		01192
1193	P0401 0800	CHKTRK	NUM	0		01193
1194	P0402 5800		RTJ	ADRINP		01194
	P0403 F089					
1195	P0404 6800		STA	DATA3	CURRENT ADDRESS	01195
	P0405 FF18					
1196	P0406 C800		LDA	OBUFFER		01196
	P0407 0480					
1197	P0408 A07E		AND-	H00F0	00F0	01197
1198	P0409 9000		SUB	=N\$90		01198
	P040A 0090					
1199	P040B 0115		SAN	TRK*-1	JUMP IF NOT TRACK 9	01199
1200	P040C C800	TRK1	LDA	OBUFFER		01200
	P040D 0487					
1201	P040E A082		AND-	HFF00	FF00	01201
1202	P040F 8073		ADD-	CONST+8	FORM EXPECTED ADDRESS	01202
1203	P0410 1807		JMP*	TRK2		01203
1204	P0411 C800	TRK	LDA	OBUFFER		01204
	P0412 0482					
1205	P0413 0C00		ENQ	0		01205
1206	P0414 0F44		ARS	4		01206
1207	P0415 0FE4		LLS	4	IGNORE SECTOR BITS	01207
1208	P0416 0910		INA	\$10		01208
1209	P0417 6800	TRK2	STA	DATA4	STORE EXPECTED ADDRESS	01209
	P0418 FF06					

1210	P0419 8800		EOR	DATA3	COMPARE WITH ACTUAL ADDRESS	01210
	P041A FF03					
1211	P041B 0111		SAN	1	ERROR IF NOT EQUAL	01211
1212	P041C 1CE4		JMP*	(CHKTRK)	EXIT IF OKAY	01212
1213	P041D 0800		RAO	ALFLAG	SET ALARM FLAG FOR NO COMPARISON	01213
	P041E FD5A					
1214	P041F E800		LDQ	FUNCQ		01214
	P0420 F09D					
1215	P0421 4800		STQ	DATA1		01215
	P0422 FEF9					
1216	P0423 C800		LDA	STATUS		01216
	P0424 FD67					
1217	P0425 6800		STA	DATA2		01217
	P0426 FEF6					
1218	P0427 0C30		ENQ	\$30		01218
1219	P0428 0A20		ENA	\$20		01219
1220	P0429 5800		RTJ	STOP		01220
	P042A FEDE					
1221	P042B 1CD5		JMP*	(CHKTRK)	EXIT	01221
1222	P042C 0000	CHKSEC	NUM	0		01222
1223	P042D C8FE		LDA*	CHKSEC		01223
1224	P042E 6802		STA*	CHKTRK	FORM COMMON RETURN ADDRESS	01224
1225	P042F 5800		RTJ	ADRINP		01225
	P0430 FD5C					
1226	P0431 6800		STA	DATA3	CURRENT ADDRESS	01226
	P0432 FEED					
1227	P0433 C800		LDA	OBUFFER		01227
	P0434 0490					
1228	P0435 A081		AND-	H00FF	00FF	01228
1229	P0436 9000		SUB	=N\$9F		01229
	P0437 009F					
1230	P0438 0111		SAN	SEC-*--1	JUMP IF NOT TRACK 9, SECTOR F	01230
1231	P0439 18D2		JMP*	TRK1		01231
1232	P043A C800	SEC	LDA	OBUFFER		01232
	P043B 0489					
1233	P043C 0901		INA	1	FORM EXPECTED ADDRESS	01233
1234	P043D 18D9		JMP*	TRK2		01234
1235	P043E 0000	CONV	NUM	0	CONVERT LOCATIONS TO DISK ADDRS.	01235
1236	P043F 6821		STA*	CONV1		01236
1237	P0440 4821		STQ*	CONV2		01237
1238	P0441 CC1F	CONV6	LDA*	(CONV1)		01238
1239	P0442 A081		AND-	H00FF	00FF	01239
1240	P0443 9000		SUB	=N\$A0	9F + 1	01240
	P0444 00A0					
1241	P0445 0133		SAN	CONV3-*--1	OKAY	01241
1242	P0446 CC1A		LDA*	(CONV1)		01242
1243	P0447 B072		EOR-	CONST+7	CLEAR BIT 7	01243
1244	P0448 6C18		STA*	(CONV1)		01244
1245	P0449 CC17	CONV3	LDA*	(CONV1)		01245
1246	P044A A082		AND-	HFF00	FF00	01246
1247	P044B 0FC8		ALS	8		01247
1248	P044C EA00		LDO	UNITSECT		01248
	P044D FC40					

1249	P044E	0165	SQP	CONV4--*-1	853	01249
1250	P044F	9000	SUB	=N203	854	01250
	P0450	00CB				
1251	P0451	0138	SAM	CONV7--*-1		01251
1252	P0452	C087	LDA-	H7FFF	MASK OFF SIGN BIT	01252
1253	P0453	1805	JMP*	CONV5		01253
1254	P0454	099B	CONV4	INA	-100	01254
1255	P0455	0134	SAM	CONV7--*-1		01255
1256	P0456	C000	LDA	=N\$3FFF		01256
	P0457	3FFF				
1257	P0458	AC08	CONV5	AND*	(CONV1)	01257
1258	P0459	6C07	STA*	(CONV1)	STORE LEGAL ADDRESS	01258
1259	P045A	D806	CONV7	RAO*	CONV1	01259
1260	P045B	C806		LDA*	CONV2	01260
1261	P045C	B804		EOR*	CONV1	01261
1262	P045D	0101		SAZ	1	01262
1263	P045E	18E2		JMP*	CONV6	01263
1264	P045F	1CDE		JMP*	(CONV)	EXIT
1265	P0460	0000	CONV1	NUM	0	01265
1266	P0461	0000	CONV2	NUM	0	01266

1268	P0462 C000	SEC1	LDA	=N-\$500	NUMBER OF PASSES FOR SECTION	01268
	P0463 FAFF					
1269	P0464 6800		STA	SECTPASS		01269
	P0465 FC5F					
1270	P0466 5800	SEC10	RTJ	CLRCON	CLEAR CONTROLLER AND CONNECT	01270
	P0467 FEC2					
1271	P0468 5800		RTJ	ADRINP	ADDRESS REGISTER STATUS	01271
	P0469 FD23					
1272	P046A 5800		RTJ	INPUT	INPUT STATUS	01272
	P046B FD18					
1273	P046C 6800		STA	DATA1		01273
	P046D FEAE					
1274	P046E E800		LDR	INADR		01274
	P046F FEB9					
1275	P0470 4800		STQ	DATA2		01275
	P0471 FEAB					
1276	P0472 A06B		AND-	CONST	IS READY BIT SET	01276
1277	P0473 0114		SAN	SEC1A-*-1		01277
1278	P0474 0C06		ENQ	6	ERROR NUMBER, READY NOT SET	01278
1279	P0475 0A10		ENA	\$10		01279
1280	P0476 5800		RTJ	STOP		01280
	P0477 FE91					
1281	P0478 0A08	SEC1A	ENA	8	CHECK FOR ON CYLINDER	01281
1282	P0479 A800		AND	STATUS		01282
	P047A FD11					
1283	P047B 0114		SAN	SEC1B-*-1		01283
1284	P047C 0C07		ENQ	7	ERROR NUMBER, ON CYLINDER NOT SE	01284
1285	P047D 0A10		ENA	\$10		01285
1286	P047E 5800		RTJ	STOP		01286
	P047F FE89					
1287	P0480 C800	SEC1B	LDA	STATUS		01287
	P0481 FDOA					
1288	P0482 A000		AND	=\$FFF7F	IGNORE PROTECT BIT	01288
	P0483 FF7F					
1289	P0484 B000		EOR	=N9	EXPECTED STATUS = ON CYLINDER, READY	01289
	P0485 0009					
1290	P0486 0104		SAZ	SEC1E-*-1		01290
1291	P0487 0A10		ENA	\$10		01291
1292	P0488 0C1F		ENQ	\$1F		01292
1293	P0489 5800		RTJ	STOP		01293
	P048A FE7E					
1294	P048B 5800	SEC1E	RTJ	FINSECT		01294
	P048C FBDC					
1295	P048D 1808		JMP*	SEC1C	REPEAT CONDITIONS	01295
1296	P048E 1807		JMP*	SEC1C	NEXT ITERATIONS	01296
1297	P048F 1802		JMP*	SEC1	REPEAT SECTION	01297

1299	P0490 5800	SEC2	RTJ	SECGEN	SET ITERATIONS, GENERATE NUMBERS	01299
	P0491 FECC					
1300	P0492 C000		LDA	=X0BUFFER		01300
	P0493 08C4	P				
1301	P0494 E000		LDQ	=X0BUFFER+96		01301
	P0495 0924	P				
1302	P0496 5800		RTJ	CONV	CONVERT TO LEGAL ADDRESS	01302
	P0497 FFA6					
1303	P0498 5800	SEC2A	RTJ	CLRCON	CLR. CONTROLLER AND CONNECT	01303
	P0499 FE90					
1304	P049A 5800		RTJ	ADDRESS		01304
	P049B FE99					
1305	P049C 5800		RTJ	MOVEADR	MOVE THE NEXT ADDRESS UP	01305
	P049D FEB1					
1306	P049E 5800		RTJ	FINSECT		01306
	P049F FBC9					
1307	P04A0 18F7		JMP*	SEC2A	REPEAT CONDITIONS	01307
1308	P04A1 18F6		JMP*	SEC2A	NEXT ITERATION	01308
1309	P04A2 18ED		JMP*	SEC2	REPEAT SECTION	01309

1311	P04A3 0C9F	SEC3	ENQ	-96	WRITE,READ AND COMPARE	01311
1312	P04A4 4800		STQ	SECTPASS		01312
	P04A5 FC1F					
1313	P04A6 C000	T4	LDA	=XOBUFFER+96	***** BIAS *****	01313
	P04A7 0924 P					
1314	P04A8 6800		STA	OBUFFER-1		01314
	P04A9 041A					
1315	P04AA 0961		INA	97		01315
1316	P04AB 6800		STA	IBUFFER-1		01316
	P04AC 0478					
1317	P04AD C000	T8	LDA	=XIBUFFER-1	***** BIAS *****	01317
	P04AE 0924 P					
1318	P04AF 6800		STA	T3+1		01318
	P0480 FD61					
1319	P0481 0C60	SEC3A	ENQ	96		01319
1320	P0482 0A00		ENA	0		01320
1321	P0483 6800		STA	ALFLAG	CLEAR ALARM FLAG	01321
	P0484 FCC4					
1322	P0485 5800		RTJ	GENSEC		01322
	P0486 FEB0					
1323	P0487 5800	SEC3B	RTJ	CLRCON	CLEAR CONTROLLER AND CONNECT	01323
	P0488 FE71					
1324	P0489 5800		RTJ	ADDRESS		01324
	P048A FE7A					
1325	P048B 5800		RTJ	OUTBUF	WRITE ONE SECTOR	01325
	P048C FEB5					
1326	P048D 5800		RTJ	CHKSEC	CHECK ADDRESS WHEN NOT BUSY	01326
	P048E FF6D					
1327	P048F 5800		RTJ	RETSTAT	CHECK ALARM CONDITIONS	01327
	P04C0 FE97					
1328	P04C1 0A10		ENA	\$10		01328
1329	P04C2 5406		RTJ-	(JUMP)		01329
1330	P04C3 18F3		JMP*	SEC3B	REPEAT CONDITIONS	01330
1331	P04C4 582A	SEC3C	RTJ*	SEC3RD		01331
1332	P04C5 0A10		ENA	\$10		01332
1333	P04C6 5406		RTJ-	(JUMP)		01333
1334	P04C7 18FC		JMP*	SEC3C	REPEAT CONDITIONS	01334
1335	P04C8 5800	SEC3D	RTJ	CLRCON	CLEAR CONTROLLER AND CONNECT	01335
	P04C9 FE60					
1336	P04CA 5800		RTJ	CHKWORD	CHECKWORD CHECK	01336
	P04CB FEC3					
1337	P04CC 5800		RTJ	CHKTRK		01337
	P04CD FF33					
1338	P04CE 0A10		ENA	\$10		01338
1339	P04CF 5406		RTJ-	(JUMP)		01339
1340	P04D0 18F7		JMP*	SEC3D	REPEAT CONDITIONS	01340
1341	P04D1 C800	SEC3E	LDA	ALFLAG	CHECK ALARM CONDITIONS	01341
	P04D2 FCA6					
1342	P04D3 0118		SAN	SEC3F*-1		01342
1343	P04D4 5800		RTJ	CLRCON		01343
	P04D5 FE54					
1344	P04D6 5800		RTJ	ADDRESS		01344
	P04D7 FE5D					

1345	P0408 5800		RTJ	COMBUF	COMPARE BUFFER	01345
	P0409 FE9F					
1346	P040A 5800		RTJ	CHKSEC		01346
	P040B FF50					
1347	P040C 0A10		ENA	\$10		01347
1348	P040D 5406		RTJ-	(JUMP)		01348
1349	P040E 18F2		JMP*	SEC3E	REPEAT CONDITION	01349
1350	P040F C800	SEC3F	LDA	ALFLAG	CHECK ALARM FLAG	01350
	P04E0 FG98					
1351	P04E1 0112		SAN	2		01351
1352	P04E2 5800		RTJ	COMPARE	COMPARE INPUT BUFFER WITH OUTPUT BUFFER	01352
	P04E3 FEB5					
1353	P04E4 5800		RTJ	FINSECT		01353
	P04E5 FB83					
1354	P04E6 1803		JMP*	SEC3G	REPEAT CONDITION	01354
1355	P04E7 18C9		JMP*	SEC3A	NEXT ITERATION	01355
1356	P04E8 18BA		JMP*	SEC3	REPEAT SECTION	01356
1357	P04E9 0844	SEC3G	CLR	A		01357
1358	P04EA 6800		STA	ALFLAG		01358
	P04EB FC80					
1359	P04EC 5802		RTJ*	SEC3RD		01359
1360	P04ED 18F1		JMP*	SEC3F		01360
1362	P04EE 0000	SEC3RD	NUM	0		01362
1363	P04EF 5800		RTJ	CLRCON	CLEAR CONTROLLER AND CONNECT	01363
	P04F0 FE39					
1364	P04F1 5800		RTJ	ADDRESS		01364
	P04F2 FE42					
1365	P04F3 5800		RTJ	INBUF	READ ONE SECTOR	01365
	P04F4 FD19					
1366	P04F5 5800		RTJ	CHKSEC	CHECK ADDRESS WHEN NOT BUSY	01366
	P04F6 FF35					
1367	P04F7 5800		RTJ	RETSTAT	CHECK ALARM CONDITIONS	01367
	P04F8 FE5F					
1368	P04F9 1CF4		JMP*	(SEC3RD)		01368

1370	P04FA 0C9F	SEC4	ENQ	-96	WRITE,READ,AND COMPARE	01370
1371		*			UNDER INTERRUPT CONTROL	01371
1372	P04FB 4800		STQ	SECTPASS		01372
	P04FC F8C8					
1373	P04FD C8A9		LDA*	T4+1		01373
1374	P04FE 6800		STA	OBUFFER-1		01374
	P04FF 03C4					
1375	P0500 0961		INA	97		01375
1376	P0501 6800		STA	IBUFFER-1		01376
	P0502 0422					
1377	P0503 C800		LDA	T8+1		01377
	P0504 FFA9					
1378	P0505 6800		STA	T3+1		01378
	P0506 F008					
1379	P0507 0C06	SEC4Z	ENQ	6		01379
1380	P0508 5800		RTJ	REQUEST		01380
	P0509 FBBD					
1381	P050A 0C60	SEC4D	ENQ	96		01381
1382	P050B 0A00		ENA	0		01382
1383	P050C 6800		STA	ALFLAG	CLEAR ALARM FLAG	01383
	P050D FC68					
1384	P050E 5800		RTJ	GENSEC		01384
	P050F FE57					
1385	P0510 5800	SEC4A	RTJ	CLRCON	CLEAR CONTROLLER AND CONNECT	01385
	P0511 FE18					
1386	P0512 5800		RTJ	WRITE	WRITE UNDER INTP. CONTROL	01386
	P0513 FDB6					
1387	P0514 5800		RTJ	CHKSEC		01387
	P0515 FF16					
1388	P0516 0A10		ENA	\$10		01388
1389	P0517 5406		RTJ-	(JUMP)		01389
1390	P0518 18F7		JMP*	SEC4A	REPEAT CONDITIONS	01390
1391	P0519 5800	SEC4R	RTJ	CLRCON	CLEAR CONTROLLER AND CONNECT	01391
	P051A FE0F					
1392	P051B 5800		RTJ	READ	READ UNDER INTP CONTROL	01392
	P051C FDD1					
1393	P051D 5800		RTJ	CHKSEC		01393
	P051E FF0D					
1394	P051F 0A10		ENA	\$10		01394
1395	P0520 5406		RTJ-	(JUMP)		01395
1396	P0521 18F7		JMP*	SEC4B	REPEAT CONDITIONS	01396
1397	P0522 5800	SEC4C	RTJ	CLRCON	CLEAR CONTROLLER AND CONNECT	01397
	P0523 FE06					
1398	P0524 5800		RTJ	CHINTP		01398
	P0525 FEA1					
1399	P0526 5800		RTJ	CHKTRK		01399
	P0527 FE09					
1400	P0528 0A10		ENA	\$10		01400
1401	P0529 5406		RTJ-	(JUMP)		01401
1402	P052A 18F7		JMP*	SEC4C	REPEAT CONDITIONS	01402
1403	P052B C800	SEC4E	LDA	ALFLAG	CHECK FOR ALARM	01403
	P052C FC4C					
1404	P052D 011D		SAN	SEC4F-**+1	YES ALARM-NO DATA TO DISPLAY	01404

1405	P052E 5800		RTJ	CLRCON		01405
	P052F FDFA					
1406	P0530 5800		RTJ	ADRINTP	ADDRESS	01406
	P0531 FD13					
1407	P0532 5800		RTJ	CBINTP		01407
	P0533 FEA9					
1408	P0534 5800		RTJ	CHKSEC		01408
	P0535 FEF6					
1409	P0536 0A10		ENA	\$10		01409
1410	P0537 5406		RTJ-	(JUMP)		01410
1411	P0538 18F2		JMP*	SEC4E		01411
1412	P0539 C800	SEC4F	LDA	ALFLAG	CHECK ALARM FLAG	01412
	P053A FC3E					
1413	P053B 0112		SAN	2		01413
1414	P053C 5800		RTJ	COMPARE	COMPARE INPUT BUFFER WITH OUTPUT BUFFER	01414
	P053D FE5B					
1415	P053E 5800		RTJ	FINSECT		01415
	P053F FB29					
1416	P0540 18F8		JMP*	SEC4F	REPEAT CONDITIONS	01416
1417	P0541 18C8		JMP*	SEC4D	NEXT ITERATION	01417
1418	P0542 18B7		JMP*	SEC4	REPEAT SECTION	01418

1420	P0543	0C9F	SEC5	ENQ	-96		01420
1421	P0544	4800		STQ	SECTPASS		01421
	P0545	F87F					
1422	P0546	C000	SEC5A	LDA	=NSFO	ILLEGAL ADDRESS	01422
	P0547	00F0					
1423	P0548	6800		STA	OBUFFER		01423
	P0549	037B					
1424	P054A	0C04		ENQ	4		01424
1425	P054B	5800		RTJ	REQUEST	REQUEST ALARM INTP.	01425
	P054C	F87A					
1426	P054D	5800		RTJ	CLRCOIN		01426
	P054E	F008					
1427	P054F	5800	SEC5F	RTJ	SELECT	SELECT INTERRUPT	01427
	P0550	F884					
1428	P0551	1802		JMP*	SEC5B		01428
1429	P0552	1812		JMP*	SEC5D	INTERRUPT OCCURRED	01429
1430	P0553	C800	SEC5B	LDA	OBUFFER	ILLEGAL ADDRESS	01430
	P0554	0370					
1431	P0555	E800		LDQ	EQUIPADR		01431
	P0556	FDCA					
1432	P0557	5800		RTJ	OUTPUT	FORCE ALARM INTERRUPT	01432
	P0558	FC66					
1433	P0559	5800		RTJ	NOINTP		01433
	P055A	FGD9					
1434	P055B	0158		SQN	SEC5D--1		01434
1435	P055C	E800		LDQ	OBUFFER		01435
	P055D	0367					
1436	P055E	4800		STQ	DATA1		01436
	P055F	F0BC					
1437	P0560	0C16		ENQ	\$16	NO ALARM INTERRUPT OCCURRED	01437
1438			*			WHEN ATTEMPTING TO FORCE ADDRESS	01438
1439			*			ERROR	01439
1440	P0561	5800		RTJ	STOP		01440
	P0562	FDA6					
1441	P0563	1811		JMP*	SEC5C		01441
1442	P0564	5800	SEC5D	RTJ	IECHK		01442
	P0565	FD12					
1443	P0566	C800		LDA	INTSTAT		01443
	P0567	F87C					
1444	P0568	6800		STA	DATA2		01444
	P0569	F0B3					
1445	P056A	E800		LDQ	OBUFFER		01445
	P056B	0359					
1446	P056C	4800		STQ	DATA1		01446
	P056D	FDAE					
1447	P056E	A076		AND-	CONST+11	CHECK ADDRESS ERROR BIT	01447
1448	P056F	0114		SAN	SEC5C--1		01448
1449	P0570	0A10		ENA	\$10		01449
1450	P0571	0C17		ENQ	\$17	ERROR NUMBER, AN ADDRESS ERROR	01450
1451			*			WAS FORCED BUT THE STATUS BIT	01451
1452			*			WAS NOT SET.	01452
1453	P0572	5800		RTJ	STOP		01453
	P0573	FD95					

1454	P0574	0A10	SEC5C	ENA	\$10		01454
1455	P0575	5406		RTJ-	(JUMP)		01455
1456	P0576	1808		JMP*	SEC5F	REPEAT CONDITIONS	01456
1457	P0577	5800	SEC5T	RTJ	SELECT	INTERRUPT ON ALARM	01457
	P0578	F85C					
1458	P0579	1802		JMP*	SEC5U		01458
1459	P057A	1812		JMP*	SEC5V	INTERRUPT OCCURRED	01459
1460	P057B	C800	SEC5U	LDA	OBUFFER	ILLEGAL ADDRESS	01460
	P057C	0348					
1461	P057D	E800		LDQ	EQCHKWD		01461
	P057E	F0A6					
1462	P057F	5800		RTJ	OUTPUT	CHECKWORD CHECK	01462
	P0580	FC3E					
1463	P0581	5800		RTJ	NOINTP	INTERRUPT STATUS ZERO, NO INTERRUPT OCCU	01463
	P0582	FCB1					
1464	P0583	0158		SON	SEC5V--1		01464
1465	P0584	E800		LDQ	OBUFFER		01465
	P0585	033F					
1466	P0586	4800		STQ	DATA1		01466
	P0587	FD94					
1467	P0588	0C18		ENQ	\$18	ERRCODE. NO ALARM INTERRUPT	01467
1468			*			WHEN INITIATING CHECKWORD CHECK	01468
1469			*			WITH ILLEGAL ADDRESS	01469
1470	P0589	5800		RTJ	STOP		01470
	P058A	FD7E					
1471	P058B	1811		JMP*	SEC5W		01471
1472	P058C	5800	SEC5V	RTJ	IECHK	CHECK WHETHER CORRECT INTERRUPT OCCUR	01472
	P058D	FCEA					
1473	P058E	C800		LDA	INTSTAT		01473
	P058F	F854					
1474	P0590	6800		STA	DATA2		01474
	P0591	FD88					
1475	P0592	E800		LDQ	OBUFFER		01475
	P0593	0331					
1476	P0594	4800		STQ	DATA1		01476
	P0595	F086					
1477	P0596	A076		AND-	CONST+11	CHECK ADDRESS ERROR BIT	01477
1478	P0597	0114		SAN	SEC5W--1		01478
1479	P0598	0A10		ENA	\$10		01479
1480	P0599	0C17		ENQ	\$17	ADDRESS ERROR STATUS NOT SET	01480
1481	P059A	5800		RTJ	STOP		01481
	P059B	FD6D					
1482	P059C	0A10	SEC5W	ENA	\$10		01482
1483	P059D	5406		RTJ-	(JUMP)		01483
1484	P059E	1808		JMP*	SEC5T	REPEAT CONDITIONS	01484
1485	P059F	C8A7		LDA*	SEC5A+1		01485
1486	P05A0	E082		LDQ-	HFF00		01486
1487	P05A1	0874		EAQ	A		01487
1488	P05A2	0102		SAZ	2		01488
1489	P05A3	48A3		STQ*	SEC5A+1		01489
1490	P05A4	18A1		JMP*	SEC5A	FORCE ALARM WITH ILLEGAL CYLINDER	01490
1491	P05A5	C07E		LDA-	H00F0	00F0	01491
1492	P05A6	68A0		STA*	SEC5A+1		01492

1493	P05A7 C800	LDA	UNITSECT		01493
	P05A8 FAE5				
1494	P05A9 0123	SAP	SEC5G*-1		01494
1495	P05AA C000	LDA	=N\$CA9F	854 LAST ADDRESS	01495
	P05AB CA9F				
1496	P05AC 1803	JMP*	SEC5H		01496
1497	P05AD C000	SEC5G LDA	=N\$639F	853 LAST ADDRESS	01497
	P05AE 639F				
1498	P05AF 6800	SEC5H STA	OBUFFER		01498
	P05B0 0314				
1499	P05B1 A082	AND-	HFF00	FF00	01499
1500	P05B2 0822	TRA	Q		01500
1501	P05B3 C000	T5 LDA	=XOBUFFER+97	***** BIAS *****	01501
	P05B4 0925 P				
1502	P05B5 6800	STA	OBUFFER-1		01502
	P05B6 0300				
1503	P05B7 0961	INA	97		01503
1504	P05B8 6800	STA	IBUFFER-1	ADJUST LWA OF OUTPUT BUFFER	01504
	P05B9 0368				
1505	P05BA C800	LDA	RANGE		01505
	P05BB FAD3				
1506	P05BC 0FC8	ALS	8		01506
1507	P05BD A082	AND-	HFF00		01507
1508	P05BE 6820	STA*	SEC5M+1		01508
1509	P05BF 0874	EAQ	A		01509
1510	P05C0 0101	SAZ	1		01510
1511	P05C1 1829	JMP*	SEC5H		01511
1512	P05C2 5800	SEC5L RTJ	ADDRESS		01512
	P05C3 FD71				
1513	P05C4 0C04	ENQ	4	REQUEST ALARM INTP.	01513
1514	P05C5 5800	RTJ	REQUEST		01514
	P05C6 FB00				
1515	P05C7 5800	RTJ	SELECT		01515
	P05C8 FB0C				
1516	P05C9 1802	JMP*	SEC5X		01516
1517	P05CA 1800	JMP*	SEC5I		01517
1518	P05CB 5800	SEC5X RTJ	OUTBUF	WRITE	01518
	P05CC FDA5				
1519	P05CD 5800	RTJ	NOINTP		01519
	P05CE FC65				
1520	P05CF E800	LDQ	OBUFFER		01520
	P05D0 02F4				
1521	P05D1 4800	STQ	DATA1		01521
	P05D2 FD49				
1522	P05D3 0C20	ENQ	\$20	ALARM INTP DID NOT OCCUR WHEN	01522
1523		*		WRITING OF THE END OF PACK.	01523
1524	P05D4 5800	RTJ	STOP		01524
	P05D5 FD33				
1525	P05D6 1811	JMP*	SEC5J		01525
1526	P05D7 5800	SEC5I RTJ	IECHK	CHECK FOR CORRECT INTERRUPT	01526
	P05D8 FC9F				
1527	P05D9 C800	LDA	INTSTAT		01527
	P05DA FB09				

1528	P050B 6800 P050C FD40	STA	DATA2		01528
1529	P050D A076	AND-	CONST+11	CHECK WHETHER ADDRESS ERROR STATUS WAS SET.	01529
1530		*			01530
1531	P050E 0118	SAN	SEC5J--1		01531
1532	P050F C800	LDA	OBUFFER		01532
1533	P05E0 02E4 P05E1 6800 P05E2 FD39	STA	DATA1		01533
1534	P05E3 0A10	ENA	\$10		01534
1535	P05E4 0C19	ENQ	\$19	ERROR NUMBER	01535
1536	P05E5 5800 P05E6 FD22	RTJ	STOP		01536
1537	P05E7 0A10	SEC5J	ENA	\$10	01537
1538	P05E8 5406	RTJ-	(JUMP)		01538
1539	P05E9 1808	JMP*	SEC5L	REPEAT CONDITIONS	01539
1540	P05EA C000 P05E8 008F P	SEC5M	LDA	=XRANGE	01540
1541	P05EC 6800 P05ED 0207	STA	OBUFFER		01541
1542	P05EE 5800 P05EF FD45	RTJ	ADDRESS		01542
1543	P05F0 5800 P05F1 FD80	RTJ	OUTBUF	WRITE A SECTOR	01543
1544	P05F2 5800 P05F3 FD41	RTJ	ADDRESS		01544
1545	P05F4 0800 P05F5 0200	RAO	OBUFFER+1	CHANGE BUFFER AREA	01545
1546	P05F6 E800 P05F7 FD20	LDQ	EQCOMP		01546
1547	P05F8 C000 P05F9 08C3 P	T7	LDA	=XOBUFFER-1	01547
1548	P05FA 5800 P05FB FBFC	RTJ	IOBUFFER	DO COMPARE FUNCTION	01548
1549	P05FC 5800 P05FD FB89	RTJ	INPUT	GET STATUS	01549
1550	P05FE 6800 P05FF FD1C	STA	DATA1		01550
1551	P0600 E800 P0601 FD27	LDQ	INADR		01551
1552	P0602 4800 P0603 F019	STQ	DATA2		01552
1553	P0604 A071	AND-	CONST+6	CHECK NO COMPARE STATUS	01553
1554	P0605 0114	SAN	SEC5N--1	OKAY IF SET	01554
1555	P0606 0A10	ENA	\$10		01555
1556	P0607 0C25	ENQ	\$25	NO COMPARE STATUS NOT SET	01556
1557	P0608 5800 P0609 FCFF	RTJ	STOP		01557
1558	P060A 0A10	SEC5N	ENA	\$10	01558
1559	P060B 5406	RTJ-	(JUMP)		01559
1560	P060C 1800	JMP*	SEC5M	REPEAT CONDITIONS	01560
1561	P060D C800 P060E 02B6	LDA	OBUFFER		01561

1562	P060F	099E		INA	-\$61				
1563	P0610	6800		STA	OBUFFER		XX9F, LAST SECTOR OF CYLINDER		01562
	P0611	02B3							01563
1564	P0612	0A00		ENA	0				01564
1565	P0613	6800		STA	ALFLAG				01565
	P0614	F864							
1566	P0615	5800	SEC5NA	RTJ	ADDRESS				01566
	P0616	FD1E							
1567	P0617	5800		RTJ	OUTBUF		WRITE INTO NEXT CYLINDER		01567
	P0618	FD59							
1568	P0619	5800		RTJ	RETSTAT		CHECK ALARM CONDITIONS		01568
	P061A	F03D							
1569	P061B	0A10		ENA	\$10				01569
1570	P061C	5406		RTJ-	(JUMP)				01570
1571	P061D	18F7		JMP*	SEC5NA		REPEAT CONDITIONS		01571
1572	P061E	5800	SEC5NB	RTJ	ADDRESS				01572
	P061F	FD15							
1573	P0620	5800		RTJ	COMBUF		COMPARE BUFFER		01573
	P0621	FD57							
1574	P0622	0A10		ENA	\$10				01574
1575	P0623	5406		RTJ-	(JUMP)				01575
1576	P0624	18F9		JMP*	SEC5NB		REPEAT CONDITIONS		01576
1577	P0625	5800	SEC5NC	RTJ	ADDRESS				01577
	P0626	FD0E							
1578	P0627	C800		LDA	T0+1				01578
	P0628	FE05							
1579	P0629	6800		STA	T3+1				01579
	P062A	F8E7							
1580	P062B	C888		LDA*	T5+1				01580
1581	P062C	0961		INA	97				01581
1582	P062D	6800		STA	IBUFFER-1				01582
	P062E	02F6							
1583	P062F	5800		RTJ	INBUF		READ INTO NEXT CYLINDER		01583
	P0630	F8DD							
1584	P0631	5800		RTJ	RETSTAT		CHECK ALARM CONDITIONS		01584
	P0632	FD25							
1585	P0633	0A10		ENA	\$10				01585
1586	P0634	5406		RTJ-	(JUMP)				01586
1587	P0635	18EF		JMP*	SEC5NC		REPEAT CONDITIONS		01587
1588	P0636	C000	SEC5NN	LDA	=NSA9E				01588
	P0637	0A9E							
1589	P0638	6800		STA	COM1+1				01589
	P0639	FD7B							
1590	P063A	C800		LDA	ALFLAG				01590
	P063B	F83D							
1591	P063C	0112		SAN	2				01591
1592	P063D	5800		RTJ	COMPARE				01592
	P063E	FD5A							
1593	P063F	D800		RAO	COM1+1				01593
	P0640	FD74							
1594	P0641	5800		RTJ	FINSECT				01594
	P0642	FA26							
1595	P0643	18E1		JMP*	SEC5NC		REPEAT CONDITIONS		01595

1596 P0644 1803
1597 P0645 1800
P0646 FEFC
1598 P0647 1800
P0648 FEFD

JMP*
JMP
SEC5R
SEC5
SEC5R
JMP
SEC5A

REPEAT SECTION
NEXT ITERATION

01596
01597
01598

1600	P0649	0000	INCREMEN	NUM	0		01600
1601	P064A	0C00		ENQ	0		01601
1602	P064B	C82B		LDA*	CURAD		01602
1603	P064C	0FE8		LLS	8		01603
1604	P064D	4828		STQ*	SAVE2	CYLINDER COUNT	01604
1605	P064E	0FC8		ALS	8		01605
1606	P064F	6825		STA*	SAVE1	TRACK AND SECTOR COUNT	01606
1607	P0650	C800		LDA	BUFFLAG		01607
	P0651	0270					
1608	P0652	0101		SAZ	W96-*--1	HOW MANY WORDS ARE IN THE BUFFER	01608
1609	P0653	1818		JMP*	W1536		01609
1610	P0654	C820	W96	LDA*	SAVE1		01610
1611	P0655	9000		SUB	=N\$9F	HAVE TRACK AND SECTOR REACHED MAX	01611
	P0656	009F					
1612	P0657	0102		SAZ	CHKHIGH-*--1		01612
1613	P0658	081C		RAO*	SAVE1	UPDATE SECTOR	01613
1614	P0659	180B		JMP*	COMBINE		01614
1615	P065A	681A	CHKHIGH	STA*	SAVE1		01615
1616	P065B	C800		LDA	RANGE		01616
	P065C	FA32					
1617	P065D	A081		AND-	H00FF	00FF	01617
1618	P065E	0862		TCA	Q		01618
1619	P065F	C816		LDA*	SAVE2		01619
1620	P0660	0834		AAQ	A		01620
1621	P0661	0111		SAN	HIGH-*--1		01621
1622	P0662	1CE6		JMP*	(INCREMEN)		01622
1623	P0663	0812	HIGH	RAO*	SAVE2	UPDATE CYLINDER	01623
1624	P0664	C811	COMBINE	LDA*	SAVE2		01624
1625	P0665	0FC8		ALS	8		01625
1626	P0666	880E		ADD*	SAVE1		01626
1627	P0667	6800		STA	OBUFFER		01627
	P0668	025C					
1628	P0669	6800		STA*	CURAD		01628
1629	P066A	1CDE		JMP*	(INCREMEN)		01629
1630	P066B	C809	W1536	LDA*	SAVE1		01630
1631	P066C	9000		SUB	=N\$90		01631
	P066D	0090					
1632	P066E	0104		SAZ	HIGH1-*--1	HAS TRACK ADDRESS REACHED MAX.	01632
1633	P066F	0A10		ENA	\$10		01633
1634	P0670	8804		ADD*	SAVE1	UPDATE TRACK ADDRESS	01634
1635	P0671	6803		STA*	SAVE1		01635
1636	P0672	18F1		JMP*	COMBINE		01636
1637	P0673	18E6	HIGH1	JMP*	CHKHIGH		01637
1638	P0674	0000	SAVE1	NUM	0		01638
1639	P0675	0000	SAVE2	NUM	0		01639
1640	P0676	0000	CURAD	NUM	0		01640

1642	P0677	0CFD	SEC6	ENQ	-2		01642
1643	P0678	4800		STQ	SECTPASS		01643
	P0679	FA4B					
1644	P067A	E800		LDQ	T4+1		01644
	P067B	FE2B					
1645	P067C	C800		LDA	BUFFLAG		01645
	P067D	0244					
1646	P067E	0102		SAZ	2		01646
1647	P067F	E800		LDQ	SURFACE		01647
	P0680	0242					
1648	P0681	4800		STQ	OBUFFER-1		01648
	P0682	0241					
1649	P0683	C800		LDA	T10+1	USE SAME BUFFER AREA FOR READ + WRITE	01649
	P0684	FCF0					
1650	P0685	6800		STA	T3+1		01650
	P0686	FB8B					
1651	P0687	C800	SEC6H	LDA	RANGE		01651
	P0688	FA06					
1652	P0689	A082		AND-	HFF00	FF00	01652
1653	P068A	6800		STA	OBUFFER		01653
	P0688	0239					
1654	P068C	68E9		STA*	CURAD	CURRENT ADDRESS	01654
1655	P068D	C800		LDA	SECTPASS		01655
	P068E	FA36					
1656	P068F	A06C		AND-	CONST+1		01656
1657	P0690	E000		LDQ	=NSCECE		01657
	P0691	CECE					
1658	P0692	0112		SAN	2		01658
1659	P0693	E000		LDQ	=NS6161		01659
	P0694	6161					
1660	P0695	4800		STQ	PATTERN		01660
	P0696	008F					
1661	P0697	0C06	SEC6Z	ENQ	6		01661
1662	P0698	5800		RTJ	REQUEST	ALARM AND END OF OPERATION INTERRUPTS	01662
	P0699	FA20					
1663	P069A	E000	SEC6A	LDQ	=N1535	ONE TRACK	01663
	P069B	05FF					
1664	P069C	C800		LDA	BUFFLAG		01664
	P069D	0224					
1665	P069E	0111		SAN	1		01665
1666	P069F	0C5F		ENQ	95	ONE SECTOR	01666
1667	P06A0	C800		LDA	PATTERN		01667
	P06A1	0084					
1668	P06A2	6A00	SEC6C	STA	OBUFFER,Q		01668
	P06A3	0221					
1669	P06A4	0864		TCA	A		01669
1670	P06A5	0DFE		INQ	-1		01670
1671	P06A6	0146		SQZ	SEC6B--1		01671
1672	P06A7	6A00		STA	OBUFFER,Q		01672
	P06A8	021C					
1673	P06A9	0864		TCA	A		01673

1674	P06AA	0DFE		INQ	-1		01674
1675	P06AB	0141		SQZ	1		01675
1676	P06AC	18F5		JMP*	SEC6C		01676
1677	P06AD	5800	SEC6B	RTJ	CLRCON	CLEAR CONTROLLER AND CONNECT	01677
	P06AE	FC7B					
1678	P06AF	5800	SEC6X	RTJ	WRITE	WRITE ONE TRACK OR SECTOR	01678
	P06B0	FC19					
1679	P06B1	C800		LDA	BUFFLAG		01679
	P06B2	020F					
1680	P06B3	0113		SAN	3		01680
1681	P06B4	5800		RTJ	CHKSEC		01681
	P06B5	FD76					
1682	P06B6	1803		JMP*	**3		01682
1683	P06B7	5800		RTJ	CHKTRK		01683
	P06B8	FD48					
1684	P06B9	0A10		ENA	\$10		01684
1685	P06BA	5406		RTJ-	(JUMP)		01685
1686	P06BB	18F1		JMP*	SEC6B	REPEAT CONDITIONS (WRITE)	01686
1687	P06BC	5800		RTJ	INCREMEN	UPDATE ONE TRACK OR SECTOR	01687
	P06BD	FF8B					
1688	P06BE	0101		SAZ	1		01688
1689	P06BF	18EF		JMP*	SEC6X		01689
1690	P06C0	C800		LDA	RANGE		01690
	P06C1	F9CD					
1691	P06C2	A082		AND-	HFF00	FF00	01691
1692	P06C3	6800		STA	OBUFFER		01692
	P06C4	0200					
1693	P06C5	6880		STA*	CURAD		01693
1694	P06C6	5800	SEC6D	RTJ	CLRCON	CLEAR CONTROLLER AND CONNECT	01694
	P06C7	FC62					
1695	P06C8	0A00	SEC6Y	ENA	0		01695
1696	P06C9	6800		STA	ALFLAG	CLEAR ALARM FLAG	01696
	P06CA	FAAE					
1697	P06CB	5800		RTJ	READ	READ ONE TRACK OR SECTOR	01697
	P06CC	FC21					
1698	P06CD	C8A8		LDA*	CURAD		01698
1699	P06CE	6800		STA	OBUFFER		01699
	P06CF	01F5					
1700	P06D0	C800		LDA	BUFFLAG		01700
	P06D1	01F0					
1701	P06D2	0113		SAN	3		01701
1702	P06D3	5800		RTJ	CHKSEC		01702
	P06D4	FD57					
1703	P06D5	1803		JMP*	**3		01703
1704	P06D6	5800		RTJ	CHKTRK		01704
	P06D7	FD29					
1705	P06D8	C800		LOA	ALFLAG		01705
	P06D9	FA9F					
1706	P06DA	0101		SAZ	1		01706
1707	P06DB	181F		JMP*	SEC6E		01707
1708	P06DC	0A01		ENA	1		01708
1709	P06DD	60FF		STA-	I	INITIALIZE BUFFER INDEX	01709
1710	P06DE	E000		LDQ	=N1535		01710
	P06DF	05FF					

1711	P06E0 C800		LDA	BUFLAG		01711
	P06E1 01E0					
1712	P06E2 0111		SAN	1		01712
1713	P06E3 0C5F		ENQ	95		01713
1714	P06E4 C841	SEC6F	LDA*	PATTERN		01714
1715	P06E5 6800		STA	DATA3		01715
	P06E6 FC37					
1716	P06E7 8900		EOR	OBUFFER,I	BIT FOR BIT COMPARE	01716
	P06E8 8100					
1717	P06E9 0101		SAZ	1		01717
1718	P06EA 581D		RTJ*	ERROR	ERROR	01718
1719	P06EB 0DFE		INQ	-1		01719
1720	P06EC 014D		SQZ	SEC6E*-1		01720
1721	P06ED D0FF		RAQ-	I	INCREMENT BUFFER INDEX	01721
1722	P06EE C837		LDA*	PATTERN		01722
1723	P06EF 0864		TCA	A		01723
1724	P06F0 6800		STA	DATA3		01724
	P06F1 FC2C					
1725	P06F2 8900		EOR	OBUFFER,I	BIT FOR BIT COMPARE	01725
	P06F3 01D1					
1726	P06F4 0101		SAZ	1		01726
1727	P06F5 5812		RTJ*	ERROR	ERROR	01727
1728	P06F6 0DFE		INQ	-1		01728
1729	P06F7 D0FF		RAQ-	I	INCREMENT BUFFER INDEX	01729
1730	P06F8 0141		SQZ	SEC6E		01730
1731	P06F9 18EA		JMP*	SEC6F		01731
1732	P06FA 8A18	SEC6F	ENA	\$10		01732
1733	P06FB 5406		RTJ-	{JUMP}		01733
1734	P06FC 18C9		JMP*	SEC6D	REPEAT CONDITIONS (READ)	01734
1735	P06FD 5800		RTJ	INCREMENT		01735
	P06FE FFAA					
1736	P06FF 0101		SAZ	1		01736
1737	P0700 18C7		JMP*	SEC6Y		01737
1738	P0701 5800		RTJ	FINSECT		01738
	P0702 F966					
1739	P0703 18C2		JMP*	SEC6D	REPEAT CONDITIONS - READ RECORD	01739
1740					OVER AGAIN	01740
1741	P0704 1882		JMP*	SEC6H	NEXT ITERATION	01741
1742	P0705 1800		JMP	SEC6	REPEAT SECTION	01742
	P0706 FF70					
1743	P0707 0000	ERROR	NUM	0		01743
1744	P0708 4818		STQ*	QSAVE	SAVE INDEX	01744
1745	P0709 E0FF		LDQ-	I		01745
1746	P070A 481A		STQ*	ISAVE	SAVE BUFFER INDEX	01746
1747	P070B CA00		LOA	OBUFFER,Q		01747
	P070C 0188					
1748	P070D 6800		STA	DATA4		01748
	P070E FC10					
1749	P070F 0814		TRQ	A		01749
1750	P0710 0C00		ENQ	0		01750
1751	P0711 3000		DVI	=N96	DETERMINE SECTOR	01751
	P0712 0060					
1752	P0713 8800		ADD	CURAD		01752
	P0714 FF61					

Address	Code	Label	Op	Op2	Description	Hex
1753	P0715	6800	STA	DATA1	ADDRESS OF SECTOR IN ERROR	01753
	P0716	FC05				
1754	P0717	4800	STQ	DATA2		01754
	P0718	FC04				
1755	P0719	0A20	ENA	\$20		01755
1756	P071A	0C18	ENQ	\$18		01756
1757	P071B	5800	RTJ	STOP		01757
	P071C	FBEC				
1758	P071D	C043	LDA-	STJP		01758
1759	P071E	A076	AND-	CONST+11		01759
1760	P071F	E804	LDQ*	QSAVE		01760
1761	P0720	0101	SAZ	1		01761
1762	P0721	18D8	JMP*	SEC6E		01762
1763	P0722	1CE4	JMP*	(ERROR)	WRITE AND READ RECOVERABLE CAN BE CHECKED HERE.	01763
1764			*			01764
1765	P0723	0000	QSAVE	NUM	0	01765
1766	P0724	0000	ISAVE	NUM	0	01766
1767	P0725	0000	PATTERN	NUM	0	01767

1769			*			01769
1770			*		SECTION 7	01770
1771			*			01771
1772			*		CHECK OVERLAP SEEK	01772
1773			*		TWO DISLPACKS ARE NEEDED	01773
1774	P0726	5800	SEC7	RTJ	SECGEN	01774
	P0727	FC36			GENERATE RANDOM NUMBERS	
1775	P0728	C000	LDA	=XOBUFFER		01775
	P0729	08C4	P			
1776	P072A	E000	LDQ	=XOBUFFER+96		01776
	P072B	0924	P			
1777	P072C	5800	RTJ	CONV	CONVERT TO LEGAL ADDRESSES	01777
	P072D	FD10				
1778	P072E	5800	SEC7A	RTJ	MOVEADR	01778
	P072F	FC1F			MOVE ADDRESS UP	
1779	P0730	5800	SEC7AA	RTJ	CLRCON	01779
	P0731	FBF8			SELECT FIRST UNOIT	
1780	P0732	E800	LDQ	EQUIPADR		01780
	P0733	FBED				
1781	P0734	C800	LDA	OBUFFER		01781
	P0735	018F				
1782	P0736	5800	RTJ	OUTPUT	LOAD ADDRESS	01782
	P0737	FA87				
1783	P0738	5800	SEC7B	RTJ	INPUT	01783
	P0739	FA40			GERT STATUS	

1784	P073A	A06F	AND-	CONST+4		01784
1785	P073B	0111	SAN	1		01785
1786	P073C	18FB	JMP*	SEC7B	WAIT FOR END OF OPERATION STATUS	01786
1787	P073D	C800	LDA	UNIT		01787
	P073E	F9A4				
1788	P073F	0074	EOR-	CONST+9		01788
1789	P0740	684A	STA*	TEMPLOC		01789
1790	P0741	E800	LDQ	EQUIPDIR		01790
	P0742	F800				
1791	P0743	5800	RTJ	OUTPUT	SELECT OTHER UNIT	01791
	P0744	FA7A				
1792	P0745	E800	LDQ	EQUIPADR		01792
	P0746	F8DA				
1793	P0747	C800	LDA	OBUFFER		01793
	P0748	0170				
1794	P0749	5800	RTJ	OUTPUT	LOAD ADDRESS	01794
	P074A	FA74				
1795	P074B	5800	SEC7C RTJ	INPUT		01795
	P074C	FA3A				
1796	P074D	A06F	AND-	CONST+4		01796
1797	P074E	0111	SAN	1		01797
1798	P074F	18FB	JMP*	SEC7C	WAIT FOR END OF OPERATION STATUS	01798
1799	P0750	0C26	ENQ	\$26		01799
1800	P0751	483A	STQ*	TEMPLOC+1		01800
1801	P0752	5800	RTJ	CLRCON	SELECT FIRST UNIT	01801
	P0753	F8D6				
1802	P0754	5800	SEC7E RTJ	RETCONT	WAIT NOT BUSY	01802
	P0755	F809				
1803	P0756	5800	RTJ	ADRINP	GET ADDRESS REGISTER STATUS	01803
	P0757	FA35				
1804	P0758	8800	EOR	OBUFFER		01804
	P0759	0168				
1805	P075A	0111	SAN	1		01805
1806	P075B	1815	JMP*	SEC7D	JUMP IF OKAY	01806
1807	P075C	5800	RTJ	INPUT		01807
	P075D	FA29				
1808	P075E	8800	STA	DATA2	DIRECTOR STATUS	01808
	P075F	F88D				
1809	P0760	C800	LDA	OBUFFER		01809
	P0761	0163				
1810	P0762	6800	STA	DATA3	EXPECTED ADDRESS	01810
	P0763	F88A				
1811	P0764	C800	LDA	INADR		01811
	P0765	F8C3				
1812	P0766	6800	STA	DATA4		01812
	P0767	F8B7				
1813	P0768	C000	LDA	=N\$BADD		01813
	P0769	BADD				
1814	P076A	6800	STA	DATA1		01814
	P076B	F8B0				
1815	P076C	0A20	ENA	\$20		01815
1816	P076D	E81E	LDQ*	TEMPLOC+1	PACK WENT TO WRONG ADDRESS	01816
1817	P076E	5800	RTJ	STOP		01817
	P076F	F899				

1818	P0770	E818	SEC7D	LDQ*	TEMPLOC+1		01818
1819	P0771	0D09		INQ	-826		01819
1820	P0772	0157		SQN	SEC7F*-1		01820
1821	P0773	D818		RAO*	TEMPLOC+1		01821
1822	P0774	C816		LDA*	TEMPLOC		01822
1823	P0775	E800		LDQ	EQUIPDIR		01823
	P0776	F8A9					
1824	P0777	5800		RTJ	OUTPUT	SELECT OTHER UNIT	01824
	P0778	FA46					
1825	P0779	18DA		JMP*	SEC7E		01825
1826	P077A	5800	SEC7F	RTJ	FINSECT		01826
	P077B	F8ED					
1827	P077C	18B3		JMP*	SEC7AA	REPEAT CONDITION	01827
1828	P077D	18B0		JMP*	SEC7A	NEXT PASS	01828
1829	P077E	18A7		JMP*	SEC7	REPEAT SECTION	01829

1831	P077F	C805	SEC8	LDA*	SECCH		01831
1832	P0780	6800		STA	SEC4Z	RUN SECTION 4 WITH READY AND NOT BUSY	01832
	P0781	F085					
1833			*			INTERRUPT INSTEAD OF END OF OPERATION	01833
1834	P0782	1800		JMP	SEC4		01834
	P0783	F076					
1835	P0784	0C05	SECCH	ENQ	5		01835
1836	P0785	C8FE	SEC9	LDA*	SECCH		01836
1837	P0786	6800		STA	SEC6Z		01837
	P0787	FF0F					
1838	P0788	1800		JMP	SEC6		01838
	P0789	FEED					

1840	P078A	0002	TEMPLOC	BSS	TEMPLOC(2)		01840
1841	P078C	0CFE	SEC10	ENQ	-1		01841
1842	P078D	4800		STQ	SECTPASS		01842
	P078E	F936					
1843	P078F	0C00		ENQ	0		01843
1844	P0790	C800		LDA	RANGE		01844
	P0791	F8FD					

1845	P0792	0FE8	LLS	8		01845
1846	P0793	8000	ADD	=N\$90		01846
	P0794	0090				
1847	P0795	68F4	STA*	TEMPLOC	LAST CYLINDER	01847
1848	P0796	0FA8	QLS	8		01848
1849	P0797	48F3	STQ*	TEMPLOC+1	FIRST CYLINDER	01849
1850	P0798	5800	RTJ	CLRCON		01850
	P0799	F890				
1851	P079A	C8F0	S10A LDA*	TEMPLOC+1		01851
1852	P079B	E800	LOQ	EQWRTADD		01852
	P079C	F889				
1853	P079D	5800	RTJ	OUTPUT	WRITE ADDRESSES ON TRACK	01853
	P079E	FA20				
1854	P079F	5800	RTJ	RETCONT	RETURN CONTROL TO MONITOR	01854
	P07A0	FABE				
1855	P07A1	0A10	ENA	\$10		01855
1856	P07A2	5406	RTJ-	(JUMP)		01856
1857	P07A3	18F6	JMP*	S10A		01857
1858	P07A4	C8E6	LDA*	TEMPLOC+1		01858
1859	P07A5	B8E4	EOR*	TEMPLOC		01859
1860	P07A6	8104	SAZ	S108-* -1		01860
1861	P07A7	C8E3	LDA*	TEMPLOC+1		01861
1862	P07A8	0910	INA	\$10	INCREMENT TRACK NO.	01862
1863	P07A9	68E1	STA*	TEMPLOC+1		01863
1864	P07AA	18EF	JMP*	S10A		01864
1865	P07AB	5800	S10B RTJ	FINSECT		01865
	P07AC	F88C				
1866	P07AD	18EC	JMP*	S10A	REPEAT CONDITIONS	01866
1867	P07AE	0800	NOP	0		01867
1868	P07AF	18DC	JMP*	SEC10	REPEAT SECTION	01868

1870	P07B0	0000	MSEC	NUM	0		01870
1871	P07B1	5800	SEC11	RTJ	SECGEN	POSITIONING TIME CHECK	01871
	P07B2	F8AB					
1872	P07B3	C000		LDA	=X0BUFFER		01872
	P07B4	08C4	F				
1873	P07B5	E000		LQD	=X0BUFFER+96		01873
	P07B6	0924	F				
1874	P07B7	5800		RTJ	CONV	CONVERT TO LEGAL ADDRESS	01874
	P07B8	FC85					
1875	P07B9	0A00		ENA	0		01875
1876	P07BA	6800		STA	0BUFFER+10		01876
	P07BB	0113					
1877	P07BC	6800		STA	0BUFFER+12		01877
	P07BD	0113					
1878	P07BE	6800		STA	0BUFFER+25		01878
	P07BF	011E					
1879	P07C0	6800		STA	0BUFFER+27		01879
	P07C1	011E					
1880	P07C2	6800		STA	0BUFFER+50		01880
	P07C3	0133					
1881	P07C4	6800		STA	0BUFFER+52		01881
	P07C5	0133					
1882	P07C6	C000		LDA	=N\$CA9F	8KJ LAST ADDRESS	01882
	P07C7	CA9F					
1883	P07C8	E800		LQD	UNITSECT		01883
	P07C9	F8C4					
1884	P07CA	0172		SQM	2		01884
1885	P07CB	C000		LDA	=N\$639F	853 LAST ADDRESS	01885
	P07CC	639F					
1886	P07CD	6800		STA	0BUFFER+11		01886
	P07CE	0101					
1887	P07CF	6800		STA	0BUFFER+13		01887
	P07D0	0101					
1888	P07D1	6800		STA	0BUFFER+26		01888
	P07D2	010C					
1889	P07D3	6800		STA	0BUFFER+28		01889
	P07D4	010C					
1890	P07D5	6800		STA	0BUFFER+51		01890
	P07D6	0121					
1891	P07D7	6800		STA	0BUFFER+53		01891
	P07D8	0121					
1892	P07D9	5800		RTJ	CLRCON		01892
	P07DA	F84F					
1893	P07DB	5800	SC11A	RTJ	MOVEADR	MOVE THE NEXT ADDRESS UP	01893
	P07DC	F872					
1894	P07DD	5800		RTJ	RETCONT		01894
	P07DE	FA80					
1895	P07DF	E800	SC11B	LQD	EQUIPADP		01895
	P07E0	F840					
1896	P07E1	C800		LDA	0BUFFER	PACK ADDRESS	01896
	P07E2	00E2					
1897	P07E3	5800		RTJ	OUTPUT	OUTPUT ADDRESS	01897
	P07E4	F9DA					

1898	P07E5	5800	RTJ*	SC11E	WAIT 165MS MAX FOR NOT BUSY	01898	
1899	P07E6	5800	RTJ	FINSECT		01899	
	P07E7	F881					
1900	P07E8	18F6	JMP*	SC110	REPEAT CONDITION	01900	
1901	P07E9	18F1	JMP*	SC11A	NEXT ITERATION	01901	
1902	P07EA	18C6	JMP*	SEC11	REPEAT SECTION	01902	
1903	P07EB	0000	TIME	NUM	0	MSEC TIMER	01903
1904			*				01904
1905			*		THE FOLLOWING TWO WORDS SET UP THE NUMBER OF CYCLES NEEDED		01905
1906			*		TO ESTABLISH A 1 MILLISECOND LOOP		01906
1907			*				01907
1908			*		THE CONSTANT TIMCON WILL BE OVERLAYED ACCORDING TO THE		01908
1909			*		TYPE OF CPU		01909
1910			*				01910
1911	P07EC	C000	LDA-	0	SET UP MILLISECOND COUNT		01911
1912	P07ED	FED6	TIMCON	NUM -297	FOR 1704		01912
1913	P07EE	0901	TIME1	INA	1		01913
1914	P07EF	0101		SAZ	1		01914
1915	P07F0	18FD		JMP*	TIME1		01915
1916	P07F1	1CF9		JMP*	(TIME)	EXIT	01916
1918	P07F2	0000	SC11E	NUM	*		01918
1919	P07F3	0844		CLR	A	INITIALIZE THE	01919
1920	P07F4	68BB		STA*	MSEC	COUNTER	01920
1921	P07F5	58F5	SC11B	RTJ*	TIME	WAIT 1 MILLISECOND	01921
1922	P07F6	0889		RAO*	MSEC		01922
1923	P07F7	5800		RTJ	INPUT	GET DIRECTOR STATUS	01923
	P07F8	F98E					
1924	P07F9	0FCE		ALS	14		01924
1925	P07FA	0121		SAP	1		01925
1926	P07FB	18F9		JMP*	SC11B	GO AGAIN	01926
1927	P07FC	C000		LDA	=N165	MAX WAIT TIME	01927
	P07FD	00A5					
1928	P07FE	9881		SUB*	MSEC		01928
1929	P07FF	012B		SAP	SC11C--*-1		01929
1930	P0800	C8AF		LDA*	MSEC		01930
1931	P0801	6800		STA	DATA1	MSEC WAIT TIME	01931
	P0802	FB19					
1932	P0803	C800		LDA	OBUFFER		01932
	P0804	00C0					
1933	P0805	6800		STA	DATA2	LAST CYL ADDR OUTPUT	01933
	P0806	FB16					
1934	P0807	0A10		ENA	\$10		01934
1935	P0808	0C1C		ENQ	\$1C	REPORT MAX POSITION TIME	01935
1936	P0809	5800		RTJ	STOP	EXCEEDED	01936
	P080A	FAFE					
1937	P080B	1CE6	SC11C	JMP*	(SC11E)	EXIT	01937

1939	P080C	DAFE	SEC12	ENA	-1			01939
1940	P080D	6800		STA	SECTPASS			01940
		P080E						
1941	P080F	C000		LDA	=N\$1234			01941
		P0810						
1942	P0811	6402		STA-	(STOPX)			01942
1943	P0812	E000		LDQ	=N\$600		PTC2	01943
		P0813						
1944	P0814	C600	S12A	LDA-	(0),Q		PTC2	01944
1945	P0815	0000		NUM	0		PTC2	01945
1946	P0816	6A00		STA	0BUFFER,Q	MOVE COPY OF MONITOR TO BUFFER		01946
		P0817						
1947	P0818	0DFE		INQ	-1	AREA.		01947
1948	P0819	0171		SQM	1			01948
1949	P081A	18F9		JMP*	S12A			01949
1950	P081B	C000	T6	LDA	=X0BUFFER+1536	***** BIAS *****		01950
		P081C						
1951	P081D	6800		STA	0BUFFER-1			01951
		P081E						
1952	P081F	5800		RTJ	CLRCON			01952
		P0820						
1953	P0821	0A00		ENA	0			01953
1954	P0822	E800		LDQ	EQUIPADR			01954
		P0823						
1955	P0824	5800		RTJ	OUTPUT	OUTPUT ADDRESS		01955
		P0825						
1956	P0826	5800	S12B	RTJ	INPUT			01956
		P0827						
1957	P0828	A06C		AND-	CONST+1	CHECK FOR BUSY		01957
1958	P0829	0101		SAZ	1			01958
1959	P082A	18FB		JMP*	S12B			01959
1960	P082B	5800		RTJ	OUTBUF	WRITE ONE TRACK		01960
		P082C						
1961	P082D	C000		LDA	=N\$5678			01961
		P082E						
1962	P082F	6402		STA-	(STOPX)			01962
1963	P0830	C073		LDA-	BIT8	IS OMIT TTY SET		01963
1964	P0831	5406		RTJ-	(JUMP)			01964
1965	P0832	1806		JMP*	S12B1	YES		01965
1966	P0833	C000		LDA	=XAUTOMSG	NO		01966
		P0834						
1967	P0835	E000		LDQ	=XAUTOEND-AUTOMSG+1			01967
		P0836						
1968	P0837	5408		RTJ-	(MESSAGE)	TELL OPERATOR TO AUTOLOAD		01968
1969	P0838	0806	S12B1	SET	A,Q			01969
1970	P0839	0001		SLS	1			01970
1971	P083A	0000		SLS	0	START AT THIS ADDRESS PLUS ONE		01971
1972			*			AFTER AUTOLOADING FROM DISK PACK		01972
1973	P083B	E000		LDQ	=N\$600		PTC2	01973
		P083C						
1974	P083D	C600	S12D	LDA-	(0),Q		PTC2	01974
1975	P083E	0000		NUM	0		PTC2	01975
1976	P083F	8A00		EOR	0BUFFER,Q			01976
		P0840						

1977	P0841	0111		SAN	1			01977
1978	P0842	1821		JMP*	S12C			01978
1979	P0843	4800		STQ	DATA2	WORD NO. IN ERROR		01979
		P0844	FA08					
1980	P0845	C600		LDA-	(0),Q		PTC2	01980
1981	P0846	0000		NUM	0		PTC2	01981
1982	P0847	6800		STA	DATA4	DATA READ		01982
		P0848	FAD6					
1983	P0849	E000		LDQ	=N\$600		PTC2	01983
		P084A	0600					
1984	P084B	CA00	S12A1	LDA	OBUFFER,Q		PTC2	01984
		P084C	0078					
1985	P084D	6600		STA-	(0),Q		PTC2	01985
1986	P084E	0000		NUM	0		PTC2	01986
1987	P084F	0142		SQZ	2		PTC2	01987
1988	P0850	0DFE		INQ	-1		PTC2	01988
1989	P0851	18F9		JMP*	S12A1		PTC2	01989
1990	P0852	C000		LDA	=N\$8A00			01990
		P0853	BADD					
1991	P0854	6800		STA	DATA1			01991
		P0855	FAC6					
1992	P0856	CA00		LDA	OBUFFER,Q			01992
		P0857	0060					
1993	P0858	6800		STA	DATA3			01993
		P0859	FAC4					
1994	P085A	0A20		ENA	\$20			01994
1995	P085B	8C1D		ENQ	\$10	ERRCODE		01995
1996	P085C	5800		RTJ	STOP			01996
		P085D	FAA8					
1997	P085E	1808		JMP*	S12E		PTC2	01997
1998	P085F	A076		AND-	CONST+11	IGNORE REST OF ERRORS IF BIT 11 SET		01998
1999	P0860	0115		SAN	S12E--1			01999
2000	P0861	E800		LDQ	DATA2			02000
		P0862	FABA					
2001	P0863	0DFE	S12C	INQ	-1			02001
2002	P0864	0171		SQM	1			02002
2003	P0865	18D7		JMP*	S12D	COMPARE ANOTHER LOCATION		02003
2004	P0866	5800	S12E	RTJ	FINSECT			02004
		P0867	F801					
2005	P0868	08D1		NOP	1	REPEAT CONDITION		02005
2006	P0869	0801		NOP	1	NEXT ITERATION		02006
2007	P086A	18A1		JMP*	SEC12	REPEAT SECTION		02007
2008	P086B	0006	PUTZ	BSS	PUTZ(6)			02008
2009	P0871	0CFE	SEC13	ENQ	-1			02009
2010	P0872	4800		STQ	SECTPASS			02010
		P0873	F851					
2011	P0874	C000		LDA	=N\$CA90	854 LAST TRACK		02011
		P0875	CA90					
2012	P0876	E800		LDQ	UNITSECT			02012
		P0877	F816					
2013	P0878	0172		SQM	2			02013
2014	P0879	C000		LDA	=N\$6390	853 LAST TRACK		02014
		P087A	6390					

2015	P0878	68EF		STA*	PUTZ		LAST ADDRESS	02015
2016	P087C	0C00		ENQ	0			02016
2017	P087D	48EE		STQ*	PUTZ+1		FIRST ADDRESS	02017
2018	P087E	5800		RTJ	CLRCON			02018
		P087F						
2019	P0880	0AF5	S13F	ENA	-10			02019
2020	P0881	68EC		STA*	PUTZ+3		ATTEMPT COUNTER	02020
2021	P0882	0C31		ENQ	\$31			02021
2022	P0883	48EB		STQ*	PUTZ+4		ERRCODE FOR RECOVERABLE CHECKWORD ERROR	02022
2023	P0884	C8E7	S13A	LDA*	PUTZ+1		ADDRESS	02023
2024	P0885	E800		LDQ	EQCHKWD			02024
		P0886						
2025	P0887	5800		RTJ	OUTPUT		INITIATE CHECKWORD CHECK	02025
		P0888						
2026	P0889	5800		RTJ	RETCON		WAIT NOT BUSY	02026
		P088A						
2027	P0889	5800		RTJ	INPUT		GET STATUS	02027
		P088C						
2028	P088D	68E2		STA*	PUTZ+5		CURRENT STATUS	02028
2029	P088E	A000		AND	=NS3700		CHECKWORD, LOST DATA, SEEK,	02029
		P088F						
2030							STORAGE PARITY, DEFECTIVE TRACK	02030
2031							ARE RECOVERABLE ERRORS	02031
2032	P0890	0111		SAN	1			02032
2033	P0891	1813		JMP*	S13G		JUMP IF NO CHECKWORD ERROR	02033
2034	P0892	C8DD		LDA*	PUTZ+5			02034
2035	P0893	68D9		STA*	PUTZ+2		STATUS AT LAST ERROR	02035
2036	P0894	08D9		RAO*	PUTZ+3		ATTEMPT COUNTER	02036
2037	P0895	C808		LDA*	PUTZ+3			02037
2038	P0896	0101		SAZ	1			02038
2039	P0897	18EC		JMP*	S13A		MAKE 10 ATTEMPTS	02039
2040	P0898	D8D6		RAO*	PUTZ+4		\$32 = ERRCODE FOR NON-RECOVERABL	02040
2041	P0899	C8D2	S13J	LDA*	PUTZ+1		CURRENT TRACK	02041
2042	P089A	6800		STA	DATA1			02042
		P089B						
2043	P089C	C8D0		LDA*	PUTZ+2			02043
2044	P089D	6800		STA	DATA2		ERROR STATUS	02044
		P089E						
2045	P089F	0A10		ENA	\$10			02045
2046	P08A0	88CE		LDQ*	PUTZ+4		ERRCODE = \$31 OR \$32	02046
2047	P08A1	5800		RTJ	STOP			02047
		P08A2						
2048	P08A3	18D5		JMP*	S13H			02048
2049	P08A4	C8C9	S13G	LDA*	PUTZ+3			02049
2050	P08A5	090A		INA	10			02050
2051	P08A6	0101		SA7	S13H-*--1		NO CHECKWORD ERROR	02051
2052	P08A7	18F1		JMP*	S13J		RECOVERABLE ERROR	02052
2053	P08A8	0A10	S13H	ENA	\$10			02053
2054	P08A9	5406		RTJ-	(JUMP)			02054
2055	P08AA	18D5		JMP*	S13F		REPEAT CONDITIONS	02055
2056	P08AB	C8C0		LDA*	PUTZ+1			02056
2057	P08AC	A87E		AND-	H00F0			02057
2058	P08AD	9000		SUB	=NS90			02058
		P08AE						

2059	P08AF	0104		SAZ	S13Y-*--1		02059
2060	P0880	C888		LDA*	PUTZ+1		02060
2061	P0881	0910		INA	\$10	INCREMENT TRACK	02061
2062	P0882	6889		STA*	PUTZ+1		02062
2063	P0883	18CC		JMP*	S13F		02063
2064	P0884	C887	S13Y	LDA*	PUTZ+1		02064
2065	P0885	8885		EOR*	PUTZ		02065
2066	P0886	0105		SAZ	S13X-*--1		02066
2067	P0887	C884		LDA*	PUTZ+1		02067
2068	P0888	A082		AND-	HFF00	FF00	02068
2069	P0889	8073		ADD-	CONST+8	INCREMENT CYLINDER	02069
2070	P088A	6881		STA*	PUTZ+1		02070
2071	P088B	18C4		JMP*	S13F		02071
2072	P088C	5800	S13X	RTJ	FINSECT		02072
	P088D	F7AB					
2073	P088E	18C1		JMP*	S13F	REPEAT LAST CONDITION	02073
2074	P088F	0800		NOP	0		02074
2075	P08C0	1880		JMP*	SEC13	REPEAT SECTION	02075

2077	P08C1	0000	BUFLAG	NUM	0	SIZE-OF-BUFFER FLAG A=0,853		02077
2078			*				A=1,854	02078
2079	P08C2	0000	SURFACE	NUM	0			02079
2080	P08C3	0924	P	ADC	OBUFFER+96			02080
2081	P08C4	0060	OBUFFER	BSS	OBUFFER(96)			02081
2082	P0924	0985	P	ADC	IBUFFER+96			02082
2083	P0925	0060	IBUFFER	BSS	IBUFFER(96)			02083

2085	P0985	0000	INIALIZE	NUM	0	THIS ROUTINE WILL BE DESTROYED	02085
2086	P0986	C000		LDA	=XDP1008		02086
	P0987	0000	P				
2087	P0988	6800		STA	BIAS		02087
	P0989	F99E					
2088	P098A	540A		RTJ-	(CONVM)	CONVERT	02088
2089	P098B	4836		STQ*	TYPE1		02089
2090	P098C	6836		STA*	TYPE1+1		02090
2091	P098D	E091		LDQ-	TSACTV		02091
2092	P098E	C291		LDA-	TSFREQ-1,Q		02092
2093	P098F	540A		RTJ-	(HEXASC)		02093
2094	P0990	6837		STA*	TYPEE-1		02094
2095	P0991	C000		LDA	=XTYPE	FWA	02095
	P0992	09A4	P				
2096	P0993	0C25		ENQ	TYPEE-TYPE+1		02096
2097	P0994	5408		RTJ-	(MESSAG)		02097
2098	P0995	1834		JMP*	IN1		02098
2099	P0996	8D0A	AUTOMSG	NUM	\$8D0A		02099
2100	P0997	5D52		ALF	X,PRESS AUTOLOAD FOR DISK X		02100
	P0998	4553					
	P0999	5320					
	P099A	4155					
	P099B	544F					
	P099C	4C4F					
	P099D	4144					
	P099E	2046					
	P099F	4F52					
	P09A0	2044					
	P09A1	4953					
	P09A2	4820					
2101	P09A3	8D0A	AUTOEND	NUM	\$8D0A		02101
2102	P09A4	8D0A	TYPE	NUM	\$8D0A	CARRIAGE RETURN	02102
2103	P09A5	4450		ALF	X,DP1008, 1738 DISK PACK TEST.X		02103
	P09A6	3130					
	P09A7	3038					
	P09A8	2C20					
	P09A9	3137					
	P09AA	3338					
	P09AB	2044					
	P09AC	4953					
	P09AD	4820					
	P09AE	5041					
	P09AF	434B					
	P09B0	2054					
	P09B1	4553					
	P09B2	542E					
2104	P09B3	8D0A		NUM	\$8D0A		02104
2105	P09B4	4350		ALF	X,CP2F, VER. 3.1-1 X		02105
	P09B5	3246					
	P09B6	2C20					
	P09B7	5645					
	P09B8	522E					
	P09B9	2033					
	P09BA	2E31					

	P098B 2031					
	P098C 2020					
2106	P098D 8D0A	NUM	\$800A			02106
2107	P098E 2049	ALF	3, IA =			02107
	P098F 4120					
	P09C0 3D20					
2108	P09C1 0000	TYPE1 NUM	0,0			02108
	P09C2 0000					
2109	P09C3 2C20	NUM	\$2C20			02109
2110	P09C4 2046	ALF	4, FC =			02110
	P09C5 4320					
	P09C6 3D20					
	P09C7 2020					
2111	P09C8 8D0A	TYPEE NUM	\$800A			02111
2112	P09C9 C800	INI LDA	EQADDR	MAKE FUNCTION CODES		02112
	P09CA F638					
2113	P09CB 6800	STA	EQUIPDIR			02113
	P09CC F953					
2114	P09CD 0901	INA	1			02114
2115	P09CE 6800	STA	EQUIPADR			02115
	P09CF F951					
2116	P09D0 0901	INA	1			02116
2117	P09D1 6800	STA	EQWRITE			02117
	P09D2 F94F					
2118	P09D3 0901	INA	1			02118
2119	P09D4 6800	STA	EQREAD			02119
	P09D5 F94D					
2120	P09D6 0901	INA	1			02120
2121	P09D7 6800	STA	EQCOMP			02121
	P09D8 F948					
2122	P09D9 0901	INA	1			02122
2123	P09DA 6800	STA	EQCHKWD			02123
	P09DB F949					
2124	P09DC 0901	INA	1			02124
2125	P09DD 6800	STA	EQWRTADD			02125
	P09DE F947					
2126	P09DF C000	LDA	=XSTART+1			02126
	P09E0 0000 P					
2127	P09E1 6800	STA	RETURN			02127
	P09E2 F622					
2128	P09E3 C000	LDA	=XBUFFER+1536			02128
	P09E4 0EC4 P					
2129	P09E5 6800	STA	SURFACE			02129
	P09E6 FEDB					
2130	P09E7 8A00	ENA	0			02130
2131	P09E8 6800	STA	BUFFLAG			02131
	P09E9 FED7					
2132	P09EA C049	LDA	INFORM			02132
2133	P09EB A080	AND	HF000	F000		02133
2134						02134
2135		*	*****			02135
2136		*	DETERMINE IF THERE IS ENOUGH REMAINING CORE FOR A			02136
2137	P09EC 0111		LONG OR SHORT BUFFER			02137
			SAN 1			

2138	P09E0	181C		JMP*	TTT			02138
2139	P09EE	C800	BUFCK	LDA	BIAS			02139
	P09EF	F938						
2140	P09F0	E800		LDQ	SURFACE			02140
	P09F1	FED0						
2141	P09F2	017B		SQM	BUFCK2-*--1			02141
2142	P09F3	0121		SAP	1			02142
2143	P09F4	1815		JMP*	TTT			02143
2144	P09F5	C049		LDA-	INFORM			02144
2145	P09F6	A080		AND-	HF000			02145
2146	P09F7	8000		ADD	=NSFFF			02146
	P09F8	0FFF						
2147	P09F9	9800	BUFCK1	SUB	SURFACE			02147
	P09FA	FEC7						
2148	P09FB	0131		SAM	1			02148
2149	P09FC	1818		JMP*	AAA			02149
2150	P09FD	180C		JMP*	TTT			02150
2151	P09FE	0124	BUFCK2	SAP	BUFCK3-*--1			02151
2152	P09FF	C0D4		LDA-	INFOBK			02152
2153	POA00	A080		AND-	HF000	F000		02153
2154	POA01	88F6		ADD*	BUFCK1-1			02154
2155	POA02	18F6		JMP*	BUFCK1			02155
2156	POA03	C049	BUFCK3	LDA-	INFORM			02156
2157	POA04	A080		AND-	HF000	F000		02157
2158	POA05	88F2		ADD*	BUFCK1-1			02158
2159	POA06	0901		INA	1			02159
2160	POA07	0131		SAM	1			02160
2161				*****				02161
2162	POA08	180C		JMP*	AAA			02162
2163	POA09	0B00	TTT	NOP	0			02163
2164	POA0A	5800	TTT1	RTJ	PARAM			02164
	POA0B	F67A						
2165	POA0C	C056		LDA- SMMPAR	GET SMH PARAMETER WORD			02165
2166	POA0D	0F42		ARS 2	STRIP			02166
2167	POA0E	0C03		ENQ 3	OUT			02167
2168	POA0F	08B2		LAQ Q	CPU INDEX			02168
2169	POA10	CA0A		LDA* TIMVAL,Q	GET CPU MILLISECOND COUNT			02169
2170	POA11	6800		STA TIMCON	STORE IT IN TIME LOOP			02170
	POA12	F0DA						
2171	POA13	5401		RTJ-	(CONTROL)			02171
2172	POA14	C800	AAA	LDA	SURFACE			02172
	POA15	FEAC						
2173	POA16	0901		INA	1			02173
2174	POA17	D800		RAO	BUFLAG			02174
	POA18	FEA8						
2175	POA19	18F0		JMP*	TTT1			02175
2176				*				02176
2177				*	TIME COUNT TABLE			02177
2178				*				02178
2179	POA1A	FED6	TIMVAL	NUM -297	1704			02179
2180	POA1B	FF25		NUM -218	1774			02180
2181	POA1C	FE94		NUM -363	1784 - 900 NSEC			02181
2182	POA1D	FDDF		NUM -544	1784 - 600 NSEC			02182

2183	POA1E	04C4		BZS	SURBUF(1344-124)
2184	POEE2	0000	TAGBUF	NUM	0
2185	POEE3	0000		NUM	0
2186				END	

02183
02184
02185
02186

PGM= 0EE4 (3812) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(000255) , 0374, 1709, 1721, 1729, 1745
0071	CONTRO	0001	(000001) , 0072, 0889, 0893, 2171
0072	STOPX	0002	(000002) , 0073, 0432, 1010, 1942, 1962
0073	EXIT	0003	(000003) , 0074, 0385
0074	REQINT	0004	(000004) , 0075, 0076, 0134, 0340
0075	FCLRIN	0005	(000005) , 0135
0076	JUMP	0006	(000006) , 0077, 0382, 0387, 0402, 0405, 0416 , 1329, 1333, 1339, 1348, 1389, 1395 , 1401, 1410, 1455, 1483, 1538, 1559 , 1570, 1575, 1586, 1685, 1733, 1856 , 1964, 2054
0077	GENRAN	0007	(000007) , 0078, 0131, 1077, 1083
0078	TYPEOU	0008	(000008) , 0079, 0080, 0133
0079	TTYBZY	0009	(000009)
0080	HEXASC	000A	(000010) , 0081, 0132, 0136, 2093
0081	OVLAY	000B	(000011) , 0082
0082	RELPOS	000C	(000012) , 0083
0083	MAINL	000D	(000013) , 0084
0084	SETMAS	0042	(000066) , 0085
0085	STJP	0043	(000067) , 0086, 0087, 0130, 0429, 1003, 1134 , 1758
0086	LASTVA	0044	(000068)
0087	LASTAD	0045	(000069) , 0088
0088	LDLCOR	0047	(000071) , 0089
0089	LDL1CO	0048	(000072) , 0090
0090	INFORM	0049	(000073) , 0091, 2132, 2144, 2156
0091	SMMCNT	0056	(000086) , 0092, 0129
0092	BIT00	0068	(000107) , 0093, 0128
0093	BIT0	006B	(000107) , 0094
0094	BIT1	006C	(000108) , 0095
0095	BIT2	006D	(000109) , 0096
0096	BIT3	006E	(000110) , 0097
0097	BIT4	006F	(000111) , 0098
0098	BIT5	0070	(000112) , 0099
0099	BIT6	0071	(000113) , 0100
0100	BIT7	0072	(000114) , 0101
0101	BIT8	0073	(000115) , 0102, 1963
0102	BIT9	0074	(000116) , 0103

0103	BIT10	0075	(000117)	, 0104
0104	BIT11	0076	(000118)	, 0105
0105	BIT12	0077	(000119)	, 0106
0106	BIT13	0078	(000120)	, 0107
0107	BIT14	0079	(000121)	, 0108
0108	BIT15	007A	(000122)	, 0109
0109	H0000	007B	(000123)	, 0110
0110	HFFFF	007C	(000124)	, 0111
0111	H000F	007D	(000125)	, 0112
0112	H00F0	007E	(000126)	, 0113, 1197, 1491, 2057
0113	H0F00	007F	(000127)	, 0114
0114	HF000	0080	(000128)	, 0115, 2133, 2145, 2153, 2157
0115	H00FF	0081	(000129)	, 0116, 0480, 0765, 1228, 1239, 1617
0116	HFF00	0082	(000130)	, 0117, 0483, 1201, 1246, 1486, 1499
				, 1507, 1652, 1691, 2068
0117	HFFF0	0083	(000131)	, 0118
0118	H0FFF	0084	(000132)	, 0119
0119	HFF0F	0085	(000133)	, 0120
0120	HF0FF	0086	(000134)	, 0121
0121	H7FFF	0087	(000135)	, 0122, 1252
0122	H7F00	0088	(000136)	, 0123
0123	H0780	0089	(000137)	, 0124
0124	H007F	008A	(000138)	, 0125
0125	H2020	008B	(000139)	, 0126
0126	TSACTV	0091	(000145)	, 0127, 2091
0127	TSFREQ	0092	(000146)	, 2092
0128	CONST	006B	(000107)	, 0345, 0348, 0356, 0366, 0386, 0404
				, 0467, 0472, 0493, 0575, 0583, 0620
				, 0625, 0785, 0810, 0891, 1103, 1135
				, 1186, 1202, 1243, 1276, 1447, 1477
				, 1529, 1553, 1656, 1759, 1784, 1788
				, 1796, 1957, 1998, 2069
0129	SMMPAR	0056	(000086)	, 2165
0130	SJPAR	0043	(000067)	
0131	RANDOM	0007	(000007)	
0132	CONVER	000A	(000010)	
0133	MESSAG	0008	(000008)	, 1968, 2097
0134	REQND	0004	(000004)	, 0522
0135	CLRND	0005	(000005)	, 0421
0136	CONVM	000A	(000010)	, 2088
0137	INFOBK	0004	(000212)	, 2152

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0320	DP1008	0000	, 2086
0322	PARADR	0004	
0323	RETURN	0005	, 0598, 0888, 2127
0324	EQADDR	0006	, 0339, 0491, 0496, 0520, 2112
0327	ALARM	0008	, 0488, 0497, 0519, 0856
0328	ENDOPE	0009	, 0487
0329	BEGIN	000A	, 0323
0331	START	000C	, 0320, 0388, 2126
0338	REPEAT	0019	, 0390
0341	REP	001D	
0354	NEXTSE	002F	, 0350, 0424
0355	LOOK	0030	, 0364
0365	TAG2	0038	, 0357
0376	TAG3	0048	, 0362
0386	TAG4	0054	, 0383
0392	PASSCT	0058	, 0377, 0378, 0469
0393	TEST	0059	, 0368, 0369, 0375
0397	Q	0067	, 0359, 0363
0398	SECTIO	0068	, 0372, 0376, 1001
0400	FINSEC	0069	, 0403, 0410, 0411, 0425, 1294, 1306 , 1353, 1415, 1594, 1738, 1826, 1865 , 1899, 2004, 2072
0410	FIN3	0073	, 0426
0424	FIN2	0083	, 0419
0425	FIN1	0084	, 0417
0428	PARAM	0086	, 0331, 0406, 0495, 2164
0435	PIO	008D	, 0322
0436	UNIISE	008E	, 0342, 0346, 0471, 0474, 0478, 1248 , 1493, 1883, 2012
0458	RANGE	008F	, 0479, 0482, 1505, 1540, 1616, 1651 , 1690, 1844 , 0338, 0486
0464	ALM	0090	
0465	ALM1	0091	
0466	PARSET	0092	, 0433
0479	PARSIT	00A0	, 0468, 0470, 0473
0491	PARS	00B0	, 0489
0496	PARSLY	00B6	, 0490, 0492, 0494
0504	PARSLE	00C3	, 0503, 0505
0507	SECTPA	00C5	, 0407, 0408, 1060, 1074, 1269, 1312 , 1372, 1421, 1643, 1655, 1842, 1940 , 2010

0508	SECTOT	00C6	, 0344, 0355, 0365, 0367
0511	REQUES	00C7	, 0430, 0466, 0518, 0524, 1380, 1425
			, 1514, 1662
0523	REQ5A	00D2	, 0420
0525	REQF	00D4	, 0418, 0423, 0516, 0521
0527	SELECT	00D5	, 0536, 0602, 0603, 0869, 0959, 0983
			, 1157, 1171, 1427, 1457, 1515
0537	REQ4	00E2	, 0515, 0531, 0569, 0574, 0858, 0899
			, 0924, 0975
0538	UNIT	00E3	, 0349, 0533, 1034, 1787
0539	INTSTA	00E4	, 0530, 0558, 0572, 0579, 0584, 0601
			, 0800, 0804, 0861, 0897, 0911, 0947
			, 1443, 1473, 1527
0541	INTPRO	00E5	, 0341, 0523, 0600
0552	REQZZ	00F2	, 0555
0555	REQZ	00F5	, 0552
0556	REQZA	00F6	, 0554
0558	REQZB	00F8	, 0553
0561	REQZX	00FC	, 0564
0564	REQZC	00FF	, 0561
0565	REQZD	0100	, 0563
0566	REQZE	0101	, 0562
0569	REQZF	0104	, 0567
0579	REQ61	010E	, 0576
0583	REQ6	0114	, 0573, 0578
0587	REQZG	0118	, 0585, 0590
0590	REQZH	0118	, 0587
0591	REQZI	011C	, 0589
0593	REQZJ	011E	, 0588
0597	REQ7	0123	, 0568, 0595
0601	REQ8	012A	, 0597, 0806
0604	ERRZA	012D	, 0544, 0556, 0566, 0906
0605	ERRZB	012E	, 0545, 0565, 0915
0606	ERRZC	012F	, 0546, 0577, 0582, 0923
0607	ERRZD	0130	, 0547, 0586, 0930
0608	ERRZE	0131	, 0548, 0591, 0935
0609	ERRZF	0132	, 0549, 0596, 0945
0610	ERRZG	0133	, 0550, 0593, 0949
0614	CONALA	0134	, 0631, 0634, 0677, 0680, 0883, 0971
			, 0995, 1068, 1108, 1168, 1191
0632	CON01	0149	, 0630
0635	CON02	014C	, 0627
0644	CON0	0154	, 0639
0650	CON1	015A	, 0647
0654	CON2	015E	, 0651
0658	CON3	0162	, 0655
0662	CON4	0166	, 0659
0666	CON5	016A	, 0663
0670	CON6	016E	, 0667
0674	CON7	0172	, 0671
0678	CON8	0176	, 0676
0681	ALFLAG	0179	, 0636, 1049, 1213, 1321, 1341, 1350
			, 1358, 1383, 1403, 1412, 1565, 1590

0683	CONCHE	017A	, 1696, 1705
			, 0646, 0650, 0654, 0658, 0662, 0666
0691	STP	0181	, 0670, 0688, 0689
			, 0623, 0633, 0643, 0649, 0653, 0657
			, 0661, 0665, 0669, 0673, 0679, 0694
0695	TEMP	0186	, 0645, 0674, 0684, 0686
0697	INPUT	0187	, 0703, 0770, 0783, 0809, 0854, 0890
			, 1067, 1099, 1272, 1549, 1783, 1795
			, 1807, 1923, 1956, 2027
0704	STATUS	018C	, 0618, 0624, 0629, 0638, 0644, 0727
			, 0773, 0881, 0969, 0993, 1052, 1166
			, 1180, 1182, 1216, 1282, 1287
0706	ADRINP	018D	, 0615, 0709, 0771, 1042, 1194, 1225
			, 1271, 1803
0710	LP1	0192	, 0722
0711	EC1	0193	, 0733, 0736, 0741
0713	STD34	0194	, 0617, 0718, 0739, 0789, 0901, 0941
			, 0951, 0977
0719	INP	019C	, 0702, 0708, 0728, 0730
0724	I2	01A1	, 0744
0732	I1	01AA	, 0724
0735	I3	01AD	, 0731
0737	I4	01AF	, 0734
0743	I5	01B8	
0745	LP2	01BB	, 0756, 0763, 0764
0746	EC2	01BC	, 0762, 0769, 0776
0748	FUNCA	01BD	, 0714, 0751, 0757
0749	FUNCG	01BE	, 0716, 0752, 1214
0750	OUTPUT	01BF	, 0535, 0759, 0802, 0827, 1033, 1036
			, 1432, 1462, 1782, 1791, 1794, 1824
			, 1853, 1897, 1955, 2025
0758	02	01C9	, 0780
0761	01	01CC	, 0758
0768	03	01D3	, 0760
0770	04	01D5	, 0766
0778	05	01E2	, 0767
0782	BUSYPR	01E7	, 0795, 0798, 0801
0794	BUSY1	01F6	, 0786
0797	IOBUFF	01F8	, 0807, 0818, 1092, 1098, 1114, 1548
0808	WAIT	0207	, 0812, 0813
0815	INBUF	020E	, 0819, 0986, 1365, 1583
0817	T3	0211	, 0337, 1318, 1378, 1579, 1650
0821	LOADAO	0215	, 0829, 0873, 1040
0830	LIMIT	021E	, 0824, 0851
0841	RHIGH	0229	, 0481, 0837, 0844
0842	RLOW	022A	, 0485, 0835, 0847
0843	AHIGH	022B	, 0834, 0845
0844	LD1	022C	, 0836
0850	LD2	0231	, 0840
0851	LD3	0233	, 0846
0853	NOINTP	0234	, 0862, 0874, 0963, 0987, 1161, 1175

0864	ADRINT	0245	, 1433, 1463, 1519
0873	ADR1	0240	, 0867, 0957, 0981, 1406
0881	ADR2	0258	, 0871
0884	ADR3	0250	, 0872, 0875
0886	RETCON	025F	, 0880
			, 0794, 0803, 0828, 0894, 1802, 1854
			, 1894, 2026
0890	DECIDE	0265	, 0887
0894	CKCONT	026A	, 0892
0896	MESS	0268	, 0903, 0927, 0932
0904	IECHK	0278	, 0882, 0955, 0970, 0994, 1167, 1181
			, 1442, 1472, 1526
0911	IEA	0280	, 0907
0923	IEB	0295	, 0916
0930	IEC	02A0	, 0926
0935	IED	02A7	, 0931
0945	IEE	02B8	, 0938
0955	IEF	02C9	, 0946
0956	WRITE	02CA	, 0968, 0972, 1386, 1678
0962	WRT1	02D3	, 0960
0969	WRT2	02DE	, 0961
0974	STD21	02E5	, 0876, 0964, 0979, 0988, 1162, 1176
0980	READ	02EE	, 0992, 0996, 1392, 1697
0986	RD1	02F7	, 0984
0993	RD2	0302	, 0985
0998	STOP	0309	, 0380, 0414, 0502, 0693, 0742, 0777
			, 0793, 0878, 0910, 0922, 0929, 0934
			, 0944, 0954, 0966, 0990, 1004, 1011
			, 1056, 1107, 1133, 1164, 1178, 1190
			, 1220, 1280, 1286, 1293, 1440, 1453
			, 1470, 1481, 1524, 1536, 1557, 1757
			, 1817, 1936, 1996, 2047
1012	ID	0319	, 1000
1013	SECERR	031A	, 1002
1014	RETADR	031B	, 1008
1015	DATA1	031C	, 0498, 0559, 0619, 0738, 0774, 0784
			, 0900, 0912, 0925, 0940, 0948, 0976
			, 1051, 1100, 1120, 1183, 1215, 1273
			, 1436, 1446, 1466, 1476, 1521, 1533
			, 1550, 1753, 1814, 1931, 1991, 2042
1016	DATA2	031D	, 0499, 0534, 0616, 0720, 0743, 0772
			, 0788, 0855, 0898, 0920, 0937, 0950
			, 1053, 1102, 1130, 1185, 1217, 1275
			, 1444, 1474, 1528, 1552, 1754, 1808
			, 1933, 1979, 2000, 2044
1017	DATA3	031E	, 0715, 0754, 0779, 0857, 0918, 1043
			, 1124, 1195, 1210, 1226, 1715, 1724
			, 1810, 1993
1018	DATA4	031F	, 0717, 0753, 0778, 0859, 0914, 1045
			, 1129, 1209, 1748, 1812, 1982
1019	EQUIPD	0320	, 0528, 0551, 0701, 0913, 0936, 1032

1020	EQUIPA	0321	, 1035, 1790, 1823, 2113
			, 0707, 0826, 1431, 1780, 1792, 1895
			, 1954, 2115
1021	EQWRIT	0322	, 1090, 2117
1022	EQREAD	0323	, 0816, 2119
1023	EQCOMP	0324	, 1096, 1546, 2121
1024	EQCHKW	0325	, 1112, 1461, 2024, 2123
1025	EQMRTA	0326	, 1852, 2125
1026	EXTVAL	0327	, 0542, 0599
1027	BIAS	0328	, 0384, 0431, 1007, 2087, 2139
1028	INADR	0329	, 0729, 0787, 0919, 1101, 1119, 1184
			, 1274, 1551, 1811
1030	CLRCON	032A	, 1037, 1270, 1303, 1323, 1335, 1343
			, 1363, 1385, 1391, 1397, 1405, 1426
			, 1677, 1694, 1779, 1801, 1850, 1892
			, 1952, 2018
1039	ADDRES	0335	, 0868, 1048, 1057, 1304, 1324, 1344
			, 1364, 1512, 1542, 1544, 1566, 1572
			, 1577
			, 0884
1042	CHKA3	0339	, 1064, 1305, 1778, 1893
1059	MOVEAD	034F	, 0879, 0967, 0991, 1041, 1069, 1115
1066	RETSTA	0358	, 1327, 1367, 1568, 1584
			, 1078, 1299, 1774, 1871
1071	SECGEN	035E	
1076	T1	0363	
1080	GENSEC	0367	, 1087, 1322, 1384
1082	T2	0368	
1089	OUTBUF	0372	, 0962, 1093, 1325, 1518, 1543, 1567
			, 1960
			, 1649
1091	T10	0374	
1095	COMBUF	0379	, 1109, 1174, 1345, 1573
1097	T11	0378	
1108	COMB	038C	, 1104
1111	CHKHOR	038F	, 1116, 1160, 1336
1118	COMPAR	0399	, 1151, 1352, 1414, 1592
1123	COM4	039E	, 1153
1134	COM3	0380	
1139	COM1	0384	, 1127, 1589, 1593
1145	COM1A1	038A	, 1150
1151	COM1A	03C3	, 1138, 1142, 1148
1154	WORDCN	03C6	, 1122, 1139, 1141, 1152
1156	CWINTP	03C7	, 1165, 1169, 1398
1160	CW1	03CC	, 1158
1166	CW2	03D6	, 1159
1170	CBINTP	03DD	, 1179, 1192, 1407
1174	CB1	03E2	, 1172
1180	CB2	03EC	, 1173
1191	CB3	03FE	, 1187
1193	CHKTRK	0401	, 1212, 1221, 1224, 1337, 1399, 1683
			, 1704
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1204	TRK	0411	, 1199
1209	TRK2	0417	, 1203, 1234

1222	CHKSEC	042C	, 1223, 1326, 1346, 1366, 1387, 1393
			, 1408, 1681, 1702
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1235	CONV	043E	, 1086, 1264, 1302, 1777, 1874
1238	CONV6	0441	, 1263
1245	CONV3	0449	, 1241
1254	CONV4	0454	, 1249
1257	CONV5	0458	, 1253
1259	CONV7	045A	, 1251, 1255
1265	CONV1	0460	, 1236, 1238, 1242, 1244, 1245, 1257
			, 1258, 1259, 1261
1266	CONV2	0461	, 1237, 1260
1268	SEC1	0462	, 0394, 1297
1270	SEC1C	0466	, 1295, 1296
1281	SEC1A	0478	, 1277
1287	SEC1B	0480	, 1283
1294	SEC1E	0488	, 1290
1299	SEC2	0490	, 0394, 1309
1303	SEC2A	0498	, 1307, 1308
1311	SEC3	04A3	, 0394, 1356
1313	T4	04A6	, 1373, 1544
1317	T8	04AD	, 1377, 1578
1319	SEC3A	04B1	, 1355
1323	SEC3B	04B7	, 1330
1331	SEC3C	04C4	, 1334
1335	SEC3D	04C8	, 1340
1341	SEC3E	04D1	, 1349
1350	SEC3F	04DF	, 1342, 1360
1357	SEC3G	04E9	, 1354
1362	SEC3RD	04EE	, 1331, 1359, 1368
1370	SEC4	04FA	, 0394, 1418, 1834
1379	SEC4Z	0507	, 0352, 1832
1381	SEC4D	050A	, 1417
1385	SEC4A	0510	, 1390
1391	SEC4B	0519	, 1396
1397	SEC4C	0522	, 1402
1403	SEC4E	052B	, 1411
1412	SEC4F	0539	, 1404, 1416
1428	SEC5	0543	, 0394, 1597
1422	SEC5A	0546	, 1485, 1489, 1490, 1492, 1598
1427	SEC5F	054F	, 1456
1430	SEC5B	0553	, 1428
1442	SEC5D	0564	, 1429, 1434
1454	SEC5C	0574	, 1441, 1448
1457	SEC5T	0577	, 1484
1460	SEC5U	057B	, 1458
1472	SEC5V	058C	, 1459, 1464
1482	SEC5H	059C	, 1471, 1478
1497	SEC5G	05AD	, 1494
1498	SEC5H	05AF	, 1496
1501	T5	05B3	, 1580
1512	SEC5L	05C2	, 1539
1518	SEC5X	05CB	, 1516

1526	SEC5I	05D7	, 1517
1537	SEC5J	05E7	, 1525, 1531
1540	SEC5M	05EA	, 1508, 1511, 1560
1547	T7	05FA	
1558	SEC5N	060A	, 1554
1566	SEC5NA	0615	, 1571
1572	SEC5NB	061E	, 1576
1577	SEC5NC	0625	, 1587, 1595
1588	SEC5NN	0636	
1598	SEC5R	0647	, 1596
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1615	CHKHIG	065A	, 1612, 1637
1623	HIGH	0663	, 1621
1624	COMBIN	0664	, 1614, 1636
1630	W1536	0668	, 1609
1637	HIGH1	0673	, 1632
1638	SAVE1	0674	, 1606, 1610, 1613, 1615, 1626, 1630
			, 1634, 1635
1639	SAVE2	0675	, 1604, 1619, 1623, 1624
1640	CURAD	0676	, 1602, 1628, 1654, 1693, 1698, 1752
1642	SEC6	0677	, 0394, 1742, 1838
1651	SEC6H	0687	, 1741
1661	SEC6Z	0697	, 0353, 1837
1663	SEC6A	069A	
1668	SEC6C	06A2	, 1676
1677	SEC6B	06AD	, 1671, 1686
1678	SEC6X	06AF	, 1689
1694	SEC6D	06C6	, 1734, 1739
1695	SEC6Y	06C8	, 1737
1714	SEC6F	06E4	, 1731
1732	SEC6E	06FA	, 1707, 1720, 1730, 1762
1743	ERROR	0707	, 1718, 1727, 1763
1765	QSAVE	0723	, 1744, 1760
1766	ISAVE	0724	, 1746
1767	PATTER	0725	, 1660, 1667, 1714, 1722
1774	SEC7	0726	, 0394, 1829
1778	SEC7A	072E	, 1828
1779	SEC7AA	0730	, 1827
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1795	SEC7C	074B	, 1798
1802	SEC7E	0754	, 1825
1818	SEC7D	0770	, 1806
1826	SEC7F	077A	, 1820
1831	SEC8	077F	, 0394
1835	SECCH	0784	, 1831, 1836
1836	SEC9	0785	, 0394
1840	TEMPL0	078A	, 1789, 1800, 1816, 1818, 1821, 1822
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			, 1863
1841	SEC10	078C	, 0394, 1868
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1865	S10B	07AB	, 1860
1870	MSEC	07B0	, 1920, 1922, 1928, 1930
1871	SEC11	07B1	, 0395, 1902
1893	SC11A	070B	, 1901
1895	SC11D	070F	, 1900
1903	TIME	07EB	, 1916, 1921
1912	TIMCON	07ED	, 2170
1913	TIME1	07EE	, 1915
1918	SC11E	07F2	, 0958, 0982, 1898, 1937
1921	SC11B	07F5	, 1926
1937	SC11C	080B	, 1929
1939	SEC12	080C	, 0395, 2007
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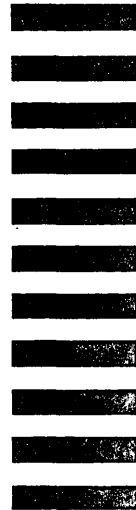
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