

.TITLE RP15
/RP15 DISK PACK SYSTEM EXECISER MODULE.

/REV. DATE -- 4/15/71 -- (1)

.EBREL

/ UODSW 600024

00000 R 600024 A
00001 R 000000 A
00002 R 000000 A
00003 R 000000 A
00004 R 000106 R
00005 R 000063 R
00006 R 222061 A
00007 R 654040 A
00010 R 000400 A
00011 R A

0
0
0
.DSA RPSER
.DSA RPINT
.SIXBT "RP15 "

400 /MASK FOR CHAIN MODE
.BLOCK 7

00020 R 000000 A
00021 R 000000 A
00022 R 000000 A
00023 R A

/ SYSERR 0
ERWC 0
ERCODE 0
.BLOCK 7

005000 A
005000 A
000004 A
707764 A
707702 A

/ SECSIZ=5000
BUFSIZ=SECSIZ
TSTRUN=4
EBA=707764
EEM=707702

00032 R 706464 A
00033 R 706304 A
00034 R 706344 A
00035 R 706364 A

/ DPLF 706464
DPLA 706304
DPCA 706344
DPWC 706364

/LOAD FUNCTION AND EXECUTE.
/LOAD DISC - ADR. REGISTER.
/LOAD CURRENT ADR. REGISTER.
/LOAD WORD COUNT REGISTER.

00036 R 706301 A
00037 R 706321 A
00040 R 706341 A
00041 R 706361 A

/ DPSF 706301
DPSA 706321
DPSJ 706341
DPSE 706361

/SKIP ON JOB DONE, ER., OR ATTEN.
/SKIP ON ATTEN. FLAG.
/SKIP ON JOB DONE FLAG.
/SKIP ON ER. FLAG.

00042 R 706312 A
00043 R 706332 A
00044 R 706432 A

/ DPRSA 706312
DPRSB 706332
DPRA 706432

/READ STATUS A REG.
/READ STATUS B REG.
/READ ADDRESS REGISTER.

00045 R 706404 A
00046 R 706324 A

/ DPCF 706404
DPCS 706324

/CLEAR FUNCTION REG.
/CLEAR STATUS REG.

00047 R 000000 A
00050 R 025000 A
00051 R 015000 A
00052 R 031000 A

/ UNIT 0
WRTCMD 25000
RDCMD 15000
RCLCMD 31000
.EJECT

/UNIT NO. CURRENTLY UNDER TEST.
/WRITE COMMAND.
/READ COMMAND.
/RECALIBRATE COMMAND.

/BIT TABLE FOR ATTENTION BITS.

00053	R	400000	A	BITTAB	400000
00054	R	200000	A		200000
00055	R	100000	A		100000
00056	R	040000	A		40000
00057	R	020000	A		20000
00060	R	010000	A		10000
00061	R	004000	A		4000
00062	R	002000	A		2000

/INITIALIZATION ROUTINE. ENTERED FROM MONITOR.

00063	R	000000	A	RPINT	0
00064	R	707764	A		EBA
00065	R	707702	A		EEM
00066	R	200063	R	LAC	RPINT
00067	R	040106	R	DAC	RPSER
00070	R	146334	R	DZM	APIFLG#
00071	R	146335	R	DZM	BRKFLG#
00072	R	146401	R	DZM	SWIND#
00073	R	146356	R	DZM	RECFLG#
00074	R	140020	R	DZM	SYSERR
00075	R	140021	R	DZM	ERWC
00076	R	101314	R	JMS	RESBUF
00077	R	101276	R	JMS	BUFGEN
00100	R	777774	A	LAW	-TSTRUN
00101	R	046363	R	DAC	RUNLEN#

00102	R	100635	R	RPIN.1	JMS	TEST1
00103	R	446363	R		ISZ	RUNLEN
00104	R	600102	R		JMP	RPIN.1
00105	R	600125	R		JMP	TERMIN

/SERVICE ENTRANCE FROM THE MONITOR.

00106	R	000000	A	RPSER	0	/SERVICE ENTRANCE.
00107	R	707764	A		EBA	
00110	R	707702	A		EEM	
00111	R	100167	R		JMS	FLAG
00112	R	620113	R		JMP*	EXIT

/EXIT

00113	R	000000	A	EXIT	0	/ROUTINE FOR EXIT TO THE MONITOR.
00114	R	206334	R		LAC	APIFLG
00115	R	741200	A		SNA	
00116	R	600123	R		JMP	+.5
00117	R	146334	R		DZM	APIFLG
00120	R	206332	R		LAC	ACSAVE#
00121	R	703344	A		DBR	
00122	R	620106	R		JMP*	RPSER
00123	R	750000	A		CLA	
00124	R	600121	R		JMP	.-3
					.EJECT	

```

/TERMINATION ROUTINE.
00125 R 200020 R  TERMIN LAC  SYSERR
00126 R 741200 A           SNA
00127 R 140021 R           DZM  ERWC
00130 R 777774 A           LAW  -4
00131 R 040020 R           DAC  SYSERR
00132 R 146335 R           DZM  BRKFLG
00133 R 400046 R           XCT  DPCS
00134 R 400045 R           XCT  DPCF
00135 R 100113 R           JMS  EXIT
00136 R 740040 A           HLT

```

/TERMINATE ROUTINE.

/MONITOR EXIT ROUTINE - EXPECTS FLAG DRIVEN RETURN.

```

/
MONEXT 0
00137 R 000000 A           DZM  BRKFLG
00140 R 146335 R           JMS  EXIT
00141 R 100113 R           JMP* MONEXT
00142 R 620137 R

```

/BREAK EXIT TO THE MONITOR.

```

/
BRKEXT 0
00143 R 000000 A           LAC  SYSERR
00144 R 200020 R           SZA
00145 R 740200 A           JMP  .+4
00146 R 600152 R           DZM  ERWC
00147 R 140021 R           LAW  -5
00150 R 777773 A           SKP
00151 R 741000 A           LAW  -2
00152 R 777776 A           DAC  SYSERR
00153 R 040020 R           LAW  -1
00154 R 777777 A           DAC  BRKFLG
00155 R 046335 R           JMS  EXIT
00156 R 100113 R           JMP* BRKEXT
00157 R 620143 R

```

/HOLD SUBROUTINE, HOLD ON OPTION SWITCH SET.

```

/
HOLD 0
00160 R 000000 A           LAS
00161 R 750004 A           AND  UODSW+10
00162 R 500010 R           SNA
00163 R 741200 A           JMP* HOLD
00164 R 620160 R           JMS  BRKEXT
00165 R 100143 R           JMP  .-5
00166 R 600161 R           .EJECT

```

/FLAG CHECK ROUTINE USED ON RETURN FROM MONITOR.

```

00167 R 000000 A /FLAG 0
00170 R 046332 R DAC ACSAVE
00171 R 206405 R LAC (400000)
00172 R 705501 A SPI
00173 R 600223 R JMP APIOFF
00174 R 777777 A LAW -1
00175 R 046334 R DAC APIFLG
00176 R 400036 R XCT DPSF
00177 R 600631 R JMP ER1

/FLAG1
00200 R 400042 R XCT DPRSA
00201 R 046374 R DAC STATA#
00202 R 400043 R XCT DPRSB
00203 R 046375 R DAC STATB#
00204 R 400044 R XCT DPRA
00205 R 046333 R DAC ADDRREG#
00206 R 146335 R DZM BRKFLG
00207 R 206356 R LAC RECFLG
00210 R 740200 A SZA
00211 R 620167 R JMP* FLAG
00212 R 206401 R LAC SWIND
00213 R 740200 A SZA
00214 R 600376 R JMP ER4.2
00215 R 400041 R XCT DPSE
00216 R 741000 A SKP
00217 R 600264 R JMP ER4
00220 R 400046 R FLAG2 XCT DPCS
00221 R 400045 R XCT DPCF
00222 R 620167 R JMP* FLAG

/APIOFF
00223 R 400036 R XCT DPSF
00224 R 741000 A SKP
00225 R 600200 R JMP FLAG1
00226 R 206335 R LAC BRKFLG
00227 R 741200 A SNA
00230 R 600236 R JMP .+6
00231 R 200020 R LAC SYSERR
00232 R 740200 A SZA
00233 R 600236 R JMP .+3
00234 R 146335 R DZM BRKFLG
00235 R 620167 R JMP* FLAG
00236 R 750001 A CLC
00237 R 620106 R JMP* RPSER
.EJECT

```

/ERROR ROUTINES.
/ERROR 2, BLOCK NUMBER ERROR AFTER READ BACK FROM DISC.

```
ER2  
DAC ER2TMP#  
LAC (2)  
JMS RESPUT  
JMS STATUS  
LAC BUFFER  
JMS PUT  
LAC ER2TMP  
JMS PUT  
JMS ENDPUT  
JMP* CHKSUM
```

/ERROR 3, SUM CHECK ERROR AFTER READ BACK FROM DISC.

```
ER3  
DAC ER2TMP  
LAC (3)  
JMS RESPUT  
JMS STATUS  
LAC ER2TMP  
JMS PUT  
LAC BUFFER+BUFSIZ-1  
JMS PUT  
/ JMS ENDPUT  
JMP* CHKSUM  
.EJECT
```

/ERROR 4, ALL OTHER STATUS ERRORS FROM THE DISC AFTER AN OPERATION.

00264 R	400045 R	ER4	XCT	DPCF	
00265 R	400046 R		XCT	DPCS	
00266 R	206410 R		LAC	(4)	
00267 R	100575 R		JMS	RESPUT	
00270 R	206374 R		LAC	STATA	
00271 R	100615 R		JMS	PUT	
00272 R	206375 R		LAC	STATB	
00273 R	100615 R		JMS	PUT	
00274 R	206333 R		LAC	ADRREG	
00275 R	100615 R		JMS	PUT	
00276 R	100622 R		JMS	ENDPUT	
00277 R	206375 R		LAC	STATB	
00300 R	506411 R		AND	(1000)	/SELECTED UNIT UNSAFE?
00301 R	741200 A		SNA		
00302 R	600305 R		JMP	.+3	
00303 R	100544 R		JMS	DELUNT	/YES, DELETE UNIT
00304 R	620777 R		JMP*	TSTUNT	
00305 R	777777 A		LAW	-1	
00306 R	046373 R		DAC	STABFG#	/SET FLAG FOR STATUS 'A' OR 'B' IN ERROR DETECTION
00307 R	046353 R		DAC	PARIND#	
00310 R	206375 R		LAC	STATB	
00311 R	506412 R		AND	(40)	/FORMAT ERROR?
00312 R	740200 A		SZA		
00313 R	600327 R		JMP	ER4.1	
00314 R	206374 R		LAC	STATA	
00315 R	506413 R		AND	(20)	/HDR NOT FOUND?
00316 R	740200 A		SZA		
00317 R	600334 R		JMP	ER4.7	
00320 R	206375 R		LAC	STATB	
00321 R	506414 R		AND	(14)	/CHECK FOR PARITY ERRORS
00322 R	741200 A		SNA		
00323 R	600220 R		JMP	FLAG2	
			/		
00324 R	206414 R		LAC	(14)	
00325 R	046402 R		DAC	TRYMSK#	
00326 R	600337 R		JMP	ER4.6	
			/		
00327 R	206412 R	ER4.1	LAC	(40)	
00330 R	046402 R		DAC	TRYMSK	
00331 R	146373 R		DZM	STABFG	
00332 R	146353 R		DZM	PARIND	
00333 R	600337 R		JMP	ER4.6	
			/		
00334 R	206413 R	ER4.7	LAC	(20)	
00335 R	046402 R		DAC	TRYMSK	
00336 R	146353 R		DZM	PARIND	

.EJECT

00337	R	777773	A	ER4.6	LAW	-5
00340	R	046401	R		DAC	SWIND
00341	R	046345	R		DAC	FMTERC#
00342	R	140020	R		DZM	SYSERR
00343	R	146344	R		DZM	FMERCT#
00344	R	206374	R		LAC	STATA
00345	R	046371	R		DAC	SSTAT#
00346	R	206375	R		LAC	STATB
00347	R	046372	R		DAC	SSTATB#
00350	R	206333	R		LAC	ADRREG
00351	R	046364	R		DAC	SAVADR#
00352	R	200021	R		LAC	ERWC
00353	R	046365	R		DAC	SAVENC#
00354	R	200137	R		LAC	MONEXT
00355	R	046370	R		DAC	SMNEXT#
00356	R	200113	R		LAC	EXIT
00357	R	046400	R		DAC	SVEXIT#
00360	R	206353	R		LAC	PARIND
00361	R	740200	A		SZA	
00362	R	600457	R		JMP	ER4.13
00363	R	100502	R	ER4.3	JMS	RECAL
00364	R	206361	R	ER4.4	LAC	RED.1
00365	R	400033	R		XCT	DPLA
00366	R	206404	R		LAC	WC.1
00367	R	400035	R		XCT	DPWC
00370	R	206341	R		LAC	CA.1
00371	R	400034	R		XCT	DPCA
00372	R	206371	R		LAC	SSTAT
00373	R	506415	R		AND	(777000)
00374	R	400032	R		XCT	DPLF
00375	R	100137	R		JMS	MONEXT
00376	R	206353	R	ER4.2	LAC	PARIND
00377	R	400046	R		XCT	DPCS
00400	R	740200	A		SZA	
00401	R	600450	R		JMP	ER4.12
00402	R	206373	R		LAC	STABFG
00403	R	741200	A		SNA	
00404	R	600407	R		JMP	ER4.9
00405	R	206374	R		LAC	STATA
00406	R	741000	A		SKP	
00407	R	206375	R	ER4.9	LAC	STATB
00410	R	506402	R		AND	TRYMSK
00411	R	741200	A		SNA	
00412	R	600417	R		JMP	.+5
00413	R	446344	R		ISZ	FMERCT
00414	R	446345	R		ISZ	FMTERC
00415	R	600363	R		JMP	ER4.3
00416	R	600421	R		JMP	ER4.10

.EJECT

00417	R	446345	R		ISZ	FMTERC
00420	R	600364	R		JMP	ER4.4
					/	
00421	R	100502	R	ER4.10	JMS	RECAL
00422	R	206370	R		LAC	SMNEXT
00423	R	040137	R		DAC	MONEXT
00424	R	206400	R		LAC	SVEXIT
00425	R	040113	R		DAC	EXIT
00426	R	206365	R		LAC	SAVEWC
00427	R	040021	R		DAC	ERWC
00430	R	777777	A		LAW	-1
00431	R	040020	R		DAC	SYSERR
00432	R	206344	R		LAC	FMERCT
00433	R	744020	A		RCR	
00434	R	742020	A		RTR	
00435	R	740020	A		RAR	
00436	R	240022	R		XOR	ERCODE
00437	R	040022	R		DAC	ERCODE
00440	R	146401	R		DZM	SWIND
00441	R	600220	R		JMP	FLAG2
00442	R	100502	R	ER4.5	JMS	RECAL
00443	R	600220	R		JMP	FLAG2
					/	
00444	R	206371	R	ER4.11	LAC	SSTAT
00445	R	506415	R		AND	(777000)
00446	R	400032	R		XCT	DPLF
00447	R	100137	R		JMS	MONEXT
00450	R	206375	R	ER4.12	LAC	STATB
00451	R	506402	R		AND	TRYMSK
00452	R	740200	A		SZA	
00453	R	446344	R		ISZ	FMERCT
00454	R	446345	R		ISZ	FMTERC
00455	R	741000	A		SKP	
00456	R	600421	R		JMP	ER4.10
					/	
00457	R	206361	R	ER4.13	LAC	RED.1
00460	R	400033	R		XCT	DPLA
00461	R	206404	R		LAC	WC.1
00462	R	400035	R		XCT	DPWC
00463	R	206341	R		LAC	CA.1
00464	R	400034	R		XCT	DPCA
00465	R	600444	R		JMP	ER4.11

.EJECT

/
/ERROR 5, NO MORE UNITS LEFT FOR TEST.

00466 R 206416 R
00467 R 100575 R
00470 R 100622 R
00471 R 600125 R

ERS LAC (5)
JMS RESPUT
JMS ENDPUT
JMP TERMIN

/
/STATUS PUT AWAY ROUTINE FOR ERRORS.

00472 R 000000 A
00473 R 206374 R
00474 R 100615 R
00475 R 206375 R
00476 R 100615 R
00477 R 206333 R
00500 R 100615 R
00501 R 620472 R

STATUS 0
LAC STATA
JMS PUT
LAC STATB
JMS PUT
LAC ADDRREG
JMS PUT
JMP* STATUS
.EJECT

/RECALIBRATE ROUTINE AFTER A FORMAT ERROR, ETC.

/

00502	R	000000	A	RECAL	0	
00503	R	777777	A		LAW	-1
00504	R	046356	R		DAC	RECFLG
00505	R	400046	R		XCT	DPCS
00506	R	400045	R		XCT	DPCF
00507	R	206403	R		LAC	UNNUMB#
00510	R	346417	R		TAD	(BITTAB)
00511	R	046360	R		DAC	REC.2#
00512	R	760000	A		LAW	
00513	R	046357	R		DAC	REC.1#
00514	R	200052	R		LAC	RCLCMD
00515	R	340047	R		TAD	UNIT
00516	R	400032	R		XCT	DPLF
00517	R	100143	R	RECA.1	JMS	BRKEXT
00520	R	400042	R		XCT	DPRSA
00521	R	046374	R		DAC	STATA
00522	R	400044	R		XCT	DPRSA
00523	R	046333	R		DAC	ADRREG
00524	R	400043	R		XCT	DPRSB
00525	R	046375	R		DAC	STATB
00526	R	526360	R		AND*	REC.2
00527	R	740200	A		SZA	
00530	R	600534	R		JMP	,+4
00531	R	446357	R		ISZ	REC.1
00532	R	600517	R		JMP	RECA.1
00533	R	600540	R		JMP	,+5
00534	R	206375	R		LAC	STATB
00535	R	740020	A		RAR	
00536	R	740400	A		SNL	
00537	R	600542	R		JMP	RECA.2
00540	R	100544	R		JMS	DELUNT
00541	R	620777	R		JMP*	TSTUNT
					/	
00542	R	146356	R	RECA.2	DZM	RECFLG
00543	R	620502	R		JMP*	RECAL

/DELETE THIS UNIT BECAUSE OF UNRECOVERABLE ERROR SUCH AS,
/UNIT UNSAFE, ETC.

/

00544	R	000000	A	DELUNT	0	
00545	R	100560	R		JMS	ER6
00546	R	206403	R		LAC	UNNUMB
00547	R	346420	R		TAD	(ACTIVE)
00550	R	046342	R		DAC	DEL.1#
00551	R	166342	R		DZM*	DEL.1
00552	R	750001	A		CLC	
00553	R	346346	R		TAD	NUMUNT
00554	R	046346	R		DAC	NUMUNT
00555	R	741200	A		SNA	
00556	R	600466	R		JMP	ER5
00557	R	620544	R		JMP*	DELUNT

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.EJECT

/ERROR 6, THIS UNIT IS BEING DELETED.

```

/
ER6      0
00560 R 000000 A      LAC      (6)
00561 R 206421 R      JMS      RESPUT
00562 R 100575 R      LAC      UNNUMB
00563 R 206403 R      JMS      PUT
00564 R 100615 R      LAC      STATA
00565 R 206374 R      JMS      PUT
00566 R 100615 R      LAC      STATB
00567 R 206375 R      JMS      PUT
00570 R 100615 R      LAC      ADDRREG
00571 R 206333 R      JMS      PUT
00572 R 100615 R      JMS      ENDPUT
00573 R 100622 R      JMP*     ER6
00574 R 620560 R

```

/RESET ERROR PUT AWAY ROUTINE.

```

/
RESPUT  0
00575 R 000000 A      DAC      RESTMP#
00576 R 046362 R      LAC      SYSERR
00577 R 200020 R      SNA
00600 R 741200 A      JMP      RESP.2
00601 R 600605 R      SAD      (-1)
00602 R 546422 R      JMP      RESP.1
00603 R 600613 R      HLT
00604 R 740040 A

```

```

/
RESP.2  LAC      RESTMP
00605 R 206362 R      DAC      ERCODE
00606 R 040022 R      LAC      (ERCODE+1
00607 R 206423 R      DAC      PUT.1
00610 R 046354 R      DZN      PUT.2
00611 R 146355 R      JMP*     RESPUT
00612 R 620575 R

```

```

/
RESP.1  JMS      BRKEXT
00613 R 100143 R      JMP      RESP.2
00614 R 600605 R

```

/PUTAWAY ROUTINE FOR ERROR P RAMETERS.

```

/
PUT      0
00615 R 000000 A      DAC*     PUT.1#
00616 R 066354 R      ISZ      PUT.1
00617 R 446354 R      ISZ      PUT.2#
00620 R 446355 R      JMP*     PUT
00621 R 620615 R      .EJECT

```

/END PUT AWAY ROUTINE

```

/
ENDPUT 0
00622 R 000000 A          LAC      PUT.2
00623 R 206355 R          CMA
00624 R 740001 A          DAC      ERWC
00625 R 040021 R          LAW      -1
00626 R 777777 A          DAC      SYSERR
00627 R 040020 R          JMP*   ENDPUT
00630 R 620622 R

```

/ERROR 1 - ERROR ROUTINE FOR API ERROR.

```

/
ER1    LAC      (1)
00631 R 206424 R          JMS     RESPUT
00632 R 100575 R          JMS     ENDPUT
00633 R 100622 R          JMP     TERMIN
00634 R 600125 R

```

/TEST 1 - CHECK EACH OF THE MAJOR FUNCTIONAL ELEMENTS OF EACH UNIT.

```

/
TEST1 0
00635 R 000000 A          JMS     ONLIN
00636 R 100643 R          JMS     SETNXT
00637 R 100742 R          JMP*   TEST1
00640 R 620635 R          JMS     TSTUNT
00641 R 100777 R          JMP     .-3
00642 R 600637 R

```

/ON - LINE SUBROUTINE.

```

/
ONLIN 0
00643 R 000000 A          JMS     HOLD
00644 R 100160 R          XCT     DPCF
00645 R 400045 R          XCT     DPCS
00646 R 400046 R          DZM     ONL.1#
00647 R 146347 R          DZM     NUMUNT#
00650 R 146346 R          LAC     (ACTIVE)
00651 R 206420 R          DAC     ONL.2#
00652 R 046350 R          LAW     -10
00653 R 777770 A          DAC     ONL.3#
00654 R 046351 R          CLC
00655 R 750001 A          ONLI.1 DAC*   ONL.2
00656 R 066350 R          ISZ   ONL.2
00657 R 446350 R          ISZ   ONL.3
00660 R 446351 R          JMP   ONLI.1
00661 R 600656 R          LAC   (ACTIVE)
00662 R 206420 R          DAC   ONL.2
00663 R 046350 R          ONLI.2 LAC   ONL.1
00664 R 206347 R          JMP   ONL.4
00665 R 600714 R          .EJECT

```

00666	R	000000	A	CHKONL	0		
00667	R	400032	R		XCT	DPLF	
00670	R	777774	A		LAW	-4	
00671	R	046351	R		DAC	ONL.3	
00672	R	446351	R		ISZ	ONL.3	
00673	R	600672	R		JMP	.-1	
00674	R	400042	R		XCT	DPRSA	
00675	R	506425	R		AND	(10)	/WRITE PROTECTED?
00676	R	740200	A		SZA		
00677	R	620666	R		JMP*	CHKONL	/YES
00700	R	400043	R		XCT	DPRSB	/CHECK UNIT READY
00701	R	740020	A		RAR		
00702	R	741400	A		SZL		
00703	R	741000	A		SKP		
00704	R	600711	R		JMP	.+5	/YES
00705	R	740020	A		RAR		/NOT READY, CHECK FOR SEEK UNDERWAY
00706	R	741400	A		SZL		
00707	R	600711	R		JMP	.+2	/UNDERWAY SO OK TO PUT IN TABLE
00710	R	620666	R		JMP*	CHKONL	
00711	R	440666	R		ISZ	CHKONL	
00712	R	440666	R		ISZ	CHKONL	
00713	R	620666	R		JMP*	CHKONL	
				/			
00714	R	100666	R	ONL.4	JMS	CHKONL	
00715	R	166350	R		DZM*	ONL.2	/ELIMINATE UNIT
00716	R	741000	A		SKP		
00717	R	446346	R		ISZ	NUMUNT	
00720	R	446350	R		ISZ	ONL.2	
00721	R	206347	R		LAC	ONL.1	
00722	R	346426	R		TAD	(100000)	
00723	R	046347	R		DAC	ONL.1	
00724	R	740200	A		SZA		
00725	R	600714	R		JMP	ONL.4	
00726	R	206346	R		LAC	NUMUNT	
00727	R	741200	A		SNA		
00730	R	600466	R		JMP	ERS	/NO MORE UNITS
00731	R	777767	A		LAW	-11	
00732	R	046367	R		DAC	SET.2#	
00733	R	206427	R		LAC	(700000)	
00734	R	040047	R		DAC	UNIT	
00735	R	750001	A		CLC		
00736	R	046403	R		DAC	UNNUMB	
00737	R	206430	R		LAC	(ACTIVE-1)	
00740	R	046366	R		DAC	SET.1#	
00741	R	620643	R		JMP*	ONLIN	
					.EJECT		

/SET NEXT UNIT SUBROUTINE.

/

00742	R	000000	A	SETNXT	0	
00743	R	206346	R		LAC	NUMUNT
00744	R	741200	A		SNA	
00745	R	600466	R		JMP	ER5
00746	R	446367	R	SETN.1	ISZ	SET.2
00747	R	741000	A		SKP	
00750	R	620742	R		JMP*	SETNXT
00751	R	446366	R		ISZ	SET.1
00752	R	200047	R		LAC	UNIT
00753	R	346426	R		TAD	(100000)
00754	R	040047	R		DAC	UNIT
00755	R	446403	R		ISZ	UNNUMB
00756	R	740000	A		NOP	
00757	R	226366	R		LAC*	SET.1
00760	R	741200	A		SNA	
00761	R	600746	R		JMP	SETN.1
00762	R	200047	R		LAC	UNIT
00763	R	100666	R		JMS	CHKONL
00764	R	600767	R		JMP	.+3
00765	R	740000	A		NOP	
00766	R	600775	R		JMP	SETN.2
00767	R	166366	R		DZM*	SET.1
00770	R	100560	R		JMS	ER6
00771	R	750001	A		CLC	
00772	R	346346	R		TAD	NUMUNT
00773	R	046346	R		DAC	NUMUNT
00774	R	600744	R		JMP	SETNXT+2
00775	R	440742	R	SETN.2	ISZ	SETNXT
00776	R	620742	R		JMP*	SETNXT

/UNITS NO LONGER ON LINE

/TEST UNIT BY CYLINDER, HEAD AND SECTOR.

/

00777	R	000000	A	TSTUNT	0	
01000	R	101047	R		JMS	WRTSEC
01001	R	777770	A		LAW	-10
01002	R	046352	R		DAC	OPRCNT#
01003	R	101106	R		JMS	CHKSEC
01004	R	446352	R		ISZ	OPRCNT
01005	R	601003	R		JMP	.-2
01006	R	101033	R		JMS	WRTHD
01007	R	777770	A		LAW	-10
01010	R	046352	R		DAC	OPRCNT
01011	R	101072	R		JMS	CHKHD
01012	R	446352	R		ISZ	OPRCNT
01013	R	601011	R		JMP	.-2
01014	R	101017	R		JMS	WRTCYL
01015	R	101056	R		JMS	CHKCYL
01016	R	620777	R		JMP*	TSTUNT
					.EJECT	

/WRITE CYLINDER ROUTINE.

/

01017	R	000000	A	WRTCYL	0		
01020	R	141024	R		DZM	WRTC.1+3	
01021	R	101115	R	WRTC.1	JMS	WRITE	
01022	R	773000	A		-SECSIZ		
01023	R	001332	R		BUFFER		
01024	R	000000	A		0		
01025	R	201024	R		LAC	.-1	
01026	R	346431	R		TAD	(2000)	
01027	R	041024	R		DAC	.-3	
01030	R	546432	R		SAD	(626000)	
01031	R	621017	R		JMP*	WRTCYL	
01032	R	601021	R		JMP	WRTC.1	

/

/WRITE HEAD ROUTINE.

/

01033	R	000000	A	WRTHD	0		
01034	R	141040	R		DZM	WRTH.1+3	
01035	R	101115	R	WRTH.1	JMS	WRITE	
01036	R	773000	A		-SECSIZ		
01037	R	001332	R		BUFFER		
01040	R	000000	A		0		
01041	R	201040	R		LAC	.-1	
01042	R	346412	R		TAD	(40)	
01043	R	041040	R		DAC	.-3	
01044	R	546433	R		SAD	(1200)	
01045	R	621033	R		JMP*	WRTHD	
01046	R	601035	R		JMP	WRTH.1	

/

/WRITE SECTOR ROUTINE.

/

01047	R	000000	A	WRTSEC	0		
01050	R	141054	R		DZM	WRTS.1+3	
01051	R	101115	R	WRTS.1	JMS	WRITE	
01052	R	773000	A		-SECSIZ		
01053	R	001332	R		BUFFER		
01054	R	000000	A		0		
01055	R	621047	R		JMP*	WRTSEC	
					.EJECT		

/CHECK CYLINDER ROUTINE.

```

/
CHKCYL 0
01056 R 000000 A          DZM      CHKC.1+3
01057 R 141063 R          JMS      READ
01060 R 101142 R          -SECSIZ
01061 R 773000 A          BUFFER
01062 R 001332 R          0
01063 R 000000 A          LAC      .-1
01064 R 201063 R          TAD      (2000)
01065 R 346431 R          DAC      .-3
01066 R 041063 R          SAD      (626000)
01067 R 546432 R          JMP*    CHKCYL
01070 R 621056 R          JMP     CHKC.1
01071 R 601060 R

```

/CHECK HEAD ROUTINE.

```

/
CHKHD 0
01072 R 000000 A          DZM      CHKH.1+3
01073 R 141077 R          JMS      READ
01074 R 101142 R          -SECSIZ
01075 R 773000 A          BUFFER
01076 R 001332 R          0
01077 R 000000 A          LAC      .-1
01100 R 201077 R          TAD      (40)
01101 R 346412 R          DAC      .-3
01102 R 041077 R          SAD      (1200)
01103 R 546433 R          JMP*    CHKHD
01104 R 621072 R          JMP     CHKH.1
01105 R 601074 R

```

/CHECK SECTOR ROUTINE.

```

/
CHKSEC 0
01106 R 000000 A          DZM      CHKS.1+3
01107 R 141113 R          JMS      READ
01110 R 101142 R          -SECSIZ
01111 R 773000 A          BUFFER
01112 R 001332 R          0
01113 R 000000 A          JMP*    CHKSEC
01114 R 621106 R          .EJECT

```

/WRITE SUBROUTINE.

/

01115	R	000000	A	WRITE	0	
01116	R	101276	R		JMS	BUFGEN
01117	R	221115	R		LAC*	WRITE
01120	R	400035	R		XCT	DPWC
01121	R	046404	R		DAC	WC.1
01122	R	441115	R		ISZ	WRITE
01123	R	221115	R		LAC*	WRITE
01124	R	400034	R		XCT	DPCA
01125	R	046341	R		DAC	CA.1
01126	R	441115	R		ISZ	WRITE
01127	R	221115	R		LAC*	WRITE
01130	R	400033	R		XCT	DPLA
01131	R	046361	R		DAC	RED.1
01132	R	101236	R		JMS	SUMCHK
01133	R	441115	R		ISZ	WRITE
01134	R	100160	R		JMS	HOLD
01135	R	200050	R		LAC	WRTCMD
01136	R	340047	R		TAD	UNIT
01137	R	400032	R		XCT	DPLF
01140	R	100137	R		JMS	MONEXT
01141	R	621115	R		JMP*	WRITE

/

/

/READ SUBROUTINE.

/

01142	R	000000	A	READ	0	
01143	R	221142	R		LAC*	READ
01144	R	400035	R		XCT	DPWC
01145	R	046404	R		DAC	WC.1#
01146	R	441142	R		ISZ	READ
01147	R	221142	R		LAC*	READ
01150	R	400034	R		XCT	DPCA
01151	R	046341	R		DAC	CA.1#
01152	R	441142	R		ISZ	READ
01153	R	221142	R		LAC*	READ
01154	R	400033	R		XCT	DPLA
01155	R	046361	R		DAC	RED.1#
01156	R	441142	R		ISZ	READ
01157	R	100160	R		JMS	HOLD
01160	R	200051	R		LAC	RDCMD
01161	R	340047	R		TAD	UNIT
01162	R	400032	R		XCT	DPLF
01163	R	100137	R		JMS	MONEXT
01164	R	206361	R		LAC	RED.1
01165	R	101253	R		JMS	CHKSUM
01166	R	621142	R		JMP*	READ

.EJECT

/RANDOM NUMBER GENERATOR ROUTINE

01167	R	000000	A	/	RANGEN	0	
01170	R	201225	R		LAC	RANDEX	
01171	R	346434	R		TAD	(-RANTBL-10)	
01172	R	741100	A		SPA		
01173	R	601203	R		JMP	RANTAD-1	
01174	R	206435	R		LAC	(RANTBL)	
01175	R	041225	R		DAC	RANDEX	
01176	R	201224	R		LAC	RANCON	
01177	R	745100	A		SPA!CLL		
01200	R	744002	A		STL		
01201	R	740010	A		RAL		
01202	R	041224	R		DAC	RANCON	
01203	R	221225	R		LAC*	RANDEX	
/							
01204	R	341224	R	/	RANTAD	TAD	RANCON
01205	R	061225	R		DAC*	RANDEX	
01206	R	441223	R		ISZ	RANCNT	
01207	R	601214	R		JMP	+5	
01210	R	366436	R		TAD*	(0)	
01211	R	061225	R		DAC*	RANDEX	
01212	R	777000	A		LAW	-1000	
01213	R	041223	R		DAC	RANCNT	
01214	R	201222	R		LAC	RANSAV	
01215	R	740020	A		RAR		
01216	R	361225	R		TAD*	RANDEX	
01217	R	041222	R		DAC	RANSAV	
01220	R	441225	R		ISZ	RANDEX	
01221	R	621167	R		JMP*	RANGEN	
01222	R	000000	A		RANSAV	0	
01223	R	777000	A		RANCNT	-1000	
/							
01224	R	123456	A		RANCON	123456	
01225	R	001236	R		RANDEX	RANTBL+10	
01226	R	654321	A		RANTBL	654321	
01227	R	361416	A			361416	
01230	R	055363	A			055363	
01231	R	546060	A			546060	
01232	R	243035	A			243035	
01233	R	762572	A			762572	
01234	R	453237	A			453237	
01235	R	150214	A			150214	
						.EJECT	

/SUMCHECK GENERATION ROUTINE - ON WRITE.

```

/
SUMCHK 0
01236 R 000000 A DAC BUFFER
01237 R 041332 R LAW -SECSIZ+2
01240 R 773002 A DAC SUM.1#
01241 R 046376 R LAC (BUFFER+1)
01242 R 206437 R DAC SUM.2#
01243 R 046377 R LAC BUFFER
01244 R 201332 R TAD* SUM.2
01245 R 366377 R ISZ SUM.2
01246 R 446377 R ISZ SUM.1
01247 R 446376 R JMP .-3
01250 R 601245 R DAC* SUM.2
01251 R 066377 R JMP* SUMCHK
01252 R 621236 R

```

/CHECK SUM CHECKING ROUTINE - ON READ.

```

/
CHKSUM 0
01253 R 000000 A SAD BUFFER
01254 R 541332 R SKP
01255 R 741000 A JMP ER2
01256 R 600240 R LAW -SECSIZ+2
01257 R 773002 A DAC SUM.1
01260 R 046376 R LAC (BUFFER+1)
01261 R 206437 R DAC SUM.2
01262 R 046377 R LAC BUFFER
01263 R 201332 R TAD* SUM.2
01264 R 366377 R ISZ SUM.2
01265 R 446377 R ISZ SUM.1
01266 R 446376 R JMP .-3
01267 R 601264 R CMA
01270 R 740001 A TAD (1)
01271 R 346424 R TAD* SUM.2
01272 R 366377 R SZA
01273 R 740200 A JMP ER3
01274 R 600252 R JMP* CHKSUM
01275 R 621253 R .EJECT

```

/BUFFER RANDOM DATA GENERATION ROUTINE.

01276 R 000000 A
01277 R 777700 A
01300 R 046336 R
01301 R 101167 R
01302 R 741200 A
01303 R 601301 R
01304 R 066337 R
01305 R 446337 R
01306 R 446340 R
01307 R 741000 A
01310 R 101314 R
01311 R 446336 R
01312 R 601301 R
01313 R 621276 R

/
BUFGEN 0
LAW -100
DAC BUF.1#
BUFG.1 JMS RANGEN
SNA
JMP BUFG.1
DAC* BUF.2#
ISZ BUF.2
ISZ BUF.3#
SKP
JMS RESBUF
ISZ BUF.1
JMP BUFG.1
JMP* BUFGEN

01314 R 000000 A
01315 R 773000 A
01316 R 046340 R
01317 R 206440 R
01320 R 046337 R
01321 R 621314 R

/
RESBUF 0
LAW =BUFSIZ
DAC BUF.3
LAC (BUFFER)
DAC BUF.2
JMP* RESBUF

01322 R A
ACTIVE .BLOCK 10

01332 R A
/
BUFFER .BLOCK BUFSIZ
.EJECT

.END U00SW

000000 R
06405 R 400000 A *L
06406 R 000002 A *L
06407 R 000003 A *L
06410 R 000004 A *L
06411 R 001000 A *L
06412 R 000040 A *L
06413 R 000020 A *L
06414 R 000014 A *L
06415 R 777000 A *L
06416 R 000005 A *L
06417 R 000053 R *L
06420 R 001322 R *L
06421 R 000006 A *L
06422 R 777777 A *L
06423 R 000023 R *L
06424 R 000001 A *L
06425 R 000010 A *L
06426 R 100000 A *L
06427 R 700000 A *L
06430 R 001321 R *L
06431 R 002000 A *L
06432 R 626000 A *L
06433 R 001200 A *L
06434 R 776542 R *L
06435 R 001226 R *L
06436 R 000000 A *L
06437 R 001333 R *L
06440 R 001332 R *L

SIZE=06444

NO ERROR LINES

ACSAVE	06332	R	ACTIVE	01322	R	ADRREG	06333	R	APIFLG	06334	R
APIOFF	00223	R	BITTAB	00053	R	BRKEXT	00143	R	BRKFLG	06335	R
BUFFER	01332	R	BUFGEN	01276	R	BUFG.1	01301	R	BUFSIZ	005000	A
BUF.1	06336	R	BUF.2	06337	R	BUF.3	06340	R	CA.1	06341	R
CHKCYL	01056	R	CHKC.1	01060	R	CHKHD	01072	R	CHKH.1	01074	R
CHKONL	00666	R	CHKSEC	01106	R	CHKSUM	01253	R	CHKS.1	01110	R
DELUNT	00544	R	DEL.1	06342	R	DPCA	00034	R	DPCF	00045	R
DPCS	00046	R	DPLA	00033	R	DPLF	00032	R	DPRA	00044	R
DPRSA	00042	R	DPRSB	00043	R	DPSA	00037	R	DPSE	00041	R
DPSF	00036	R	DPSJ	00040	R	DPWC	00035	R	EBA	707764	A
EEM	707702	A	ENDPUT	00622	R	ERCODE	00022	R	ERWC	00021	R
ER1	00631	R	ER2	00240	R	ER2TMP	06343	R	ER3	00252	R
ER4	00264	R	ER4.1	00327	R	ER4.10	00421	R	ER4.11	00444	R
ER4.12	00450	R	ER4.13	00457	R	ER4.2	00376	R	ER4.3	00363	R
ER4.4	00364	R	ER4.5	00442	R	ER4.6	00337	R	ER4.7	00334	R
ER4.9	00407	R	ER5	00466	R	ER6	00560	R	EXIT	00113	R
FLAG	00167	R	FLAG1	00200	R	FLAG2	00220	R	FMERCT	06344	R
FMTERC	06345	R	HOLD	00160	R	MONEXT	00137	R	NUMUNT	06346	R
ONLIN	00643	R	ONLI.1	00656	R	ONLI.2	00664	R	ONL.1	06347	R
ONL.2	06350	R	ONL.3	06351	R	ONL.4	00714	R	OPRCNT	06352	R
PARIND	06353	R	PUT	00615	R	PUT.1	06354	R	PUT.2	06355	R
RANCNT	01223	R	RANCON	01224	R	RANDEX	01225	R	RANGEN	01167	R
RANSAV	01222	R	RANTAD	01204	R	RANTBL	01226	R	RCLCMD	00052	R
RDCMD	00051	R	READ	01142	R	RECAL	00502	R	RECA.1	00517	R
RECA.2	00542	R	RECFLG	06356	R	REC.1	06357	R	REC.2	06360	R
RED.1	06361	R	KESBUF	01314	R	RESPUT	00575	R	RESP.1	00613	R
RESP.2	00605	R	RESTMP	06362	R	RPINT	00063	R	RPIN.1	00102	R
RPSE	00106	R	RUNLEN	06363	R	SAVADR	06364	R	SAVEWC	06365	R
SECSIZ	005000	A	SETNXT	00742	R	SETN.1	00746	R	SETN.2	00775	R
SET.1	06366	R	SET.2	06367	R	SMNEXT	06370	R	SSTATB	06371	R
SSTATB	06372	R	STABFG	06373	R	STATA	06374	R	STATB	06375	R
STATUS	00472	R	SUMCHK	01236	R	SUM.1	06376	R	SUM.2	06377	R
SVEXIT	06400	R	SWIND	06401	R	SYSERR	00020	R	TERMIN	00125	R
TEST1	00635	R	TRYMSK	06402	R	TSTRUN	000004	A	TSTUNT	00777	R
UNIT	00047	R	UNNUMB	06403	R	UODSW	00000	R	WC.1	06404	R
WRITE	01115	R	WRTCMD	00050	R	WRTCYL	01017	R	WRTC.1	01021	R
WRTHD	01033	R	WRTH.1	01035	R	WRTSEC	01047	R	WRTS.1	01051	R

UODSW	00000	R	TSTRUN	000004	A	SYSERR	00020	R	ERWC	00021	R
ERCODE	00022	R	DPLF	00032	R	DPLA	00033	R	DPCA	00034	R
DPWC	00035	R	DPSF	00036	R	DPSA	00037	R	DPSJ	00040	R
DPSE	00041	R	DPRSA	00042	R	DPRSB	00043	R	DPRA	00044	R
DPCF	00045	R	DPCS	00046	R	UNIT	00047	R	WRTCMD	00050	R
RDCMD	00051	R	RCLCMD	00052	R	BITTAB	00053	R	RPINT	00063	R
RPIN.1	00102	R	RPSER	00106	R	EXIT	00113	R	TERMIN	00125	R
MONEXT	00137	R	BRKEXT	00143	R	HOLD	00160	R	FLAG	00167	R
FLAG1	00200	R	FLAG2	00220	R	APIOFF	00223	R	ER2	00240	R
ER3	00252	R	ER4	00264	R	ER4.1	00327	R	ER4.7	00334	R
ER4.6	00337	R	ER4.3	00363	R	ER4.4	00364	R	ER4.2	00376	R
ER4.9	00407	R	ER4.10	00421	R	ER4.5	00442	R	ER4.11	00444	R
ER4.12	00450	R	ER4.13	00457	R	ER5	00466	R	STATUS	00472	R
RECAL	00502	R	RECA.1	00517	R	RECA.2	00542	R	DELUNT	00544	R
ER6	00560	R	RESPUT	00575	R	RESP.2	00605	R	RESP.1	00613	R
PUT	00615	R	ENDPUT	00622	R	ER1	00631	R	TEST1	00635	R
ONLIN	00643	R	ONLI.1	00656	R	ONLI.2	00664	R	CHKONL	00666	R
ONL.4	00714	R	SETNXT	00742	R	SETN.1	00746	R	SETN.2	00775	R
TSTUNT	00777	R	WRTCYL	01017	R	WRTC.1	01021	R	WRTHD	01033	R
WRTH.1	01035	R	WRTSEC	01047	R	WRTS.1	01051	R	CHKCYL	01056	R
CHKC.1	01060	R	CHKHD	01072	R	CHKH.1	01074	R	CHKSEC	01106	R
CHKS.1	01110	R	WRITE	01115	R	READ	01142	R	RANGEN	01167	R
RANTAD	01204	R	RANSAV	01222	R	RANCNT	01223	R	RANCON	01224	R
RANDEX	01225	R	RANTBL	01226	R	SUMCHK	01236	R	CHKSUM	01253	R
BUFGEN	01276	R	BUFG.1	01301	R	RESBUF	01314	R	ACTIVE	01322	R
BUFFER	01332	R	BUFSIZ	005000	A	SECSIZ	005000	A	ACSAVE	06332	R
ADRREG	06333	R	APIFLG	06334	R	BRKFLG	06335	R	BUF.1	06336	R
BUF.2	06337	R	BUF.3	06340	R	CA.1	06341	R	DEL.1	06342	R
ER2TMP	06343	R	FMERCT	06344	R	FMTERC	06345	R	NUMUNT	06346	R
ONL.1	06347	R	ONL.2	06350	R	ONL.3	06351	R	OPRCNT	06352	R
PARIND	06353	R	PUT.1	06354	R	PUT.2	06355	R	RECFLG	06356	R
REC.1	06357	R	REC.2	06360	R	RED.1	06361	R	RESTMP	06362	R
RUNLEN	06363	R	SAVADR	06364	R	SAVEWC	06365	R	SET.1	06366	R
SET.2	06367	R	SMNEXT	06370	R	SSTATB	06371	R	SSTATB	06372	R
STABFG	06373	R	STATA	06374	R	STATB	06375	R	SUM.1	06376	R
SUM.2	06377	R	SVEXIT	06400	R	SWIND	06401	R	TRYMSK	06402	R
UNNUMB	06403	R	WC.1	06404	R	EEM	707702	A	EBA	707764	A