

.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.
/

```

```

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

```

```

/
/BREAK EXIT TO THE MONITOR.
/

```

```

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

```

```

/
/HOLD SUBROUTINE, HOLD ON OPTION SWITCH SET.
/

```

```

00160 R 000000 A  HOLD 0
00161 R 750004 A           LAS
00162 R 500010 R           AND   UODSW+10
00163 R 741200 A           SNA
00164 R 620160 R           JMP*  HOLD
00165 R 100143 R           JMS   BRKEXT
00166 R 600161 R           JMP   .-5
           .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
/						
00200	R	400042	R	FLAG1	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	ADRREG#
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
/						
00223	R	400036	R	APIOFF	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.

```

/
ER4      XCT      DPCF
00264 R 400045 R
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      ADDRREG
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	SAVEWC#
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	ER5	LAC	(5)
00467	R	100575	R		JMS	RESPUT
00470	R	100622	R		JMS	ENDPUT
00471	R	600125	R		JMP	TERMIN

/
/STATUS PUT AWAY ROUTINE FOR ERRORS.
/

00472	R	000000	A	STATUS	0	
00473	R	206374	R		LAC	STATA
00474	R	100615	R		JMS	PUT
00475	R	206375	R		LAC	STATB
00476	R	100615	R		JMS	PUT
00477	R	206333	R		LAC	ADRREG
00500	R	100615	R		JMS	PUT
00501	R	620472	R		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	DPRS8
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

PAGE 11 RP15 SRC RP15

.EJECT

/ERROR 6, THIS UNIT IS BEING DELETED.

```

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

```

/RESET ERROR PUT AWAY ROUTINE.

```

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

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```

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

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```

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

```

/PUTAWAY ROUTINE FOR ERROR P RAMETERS.

```

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

```

/END PUT AWAY ROUTINE

00622 R 000000 A
 00623 R 206355 R
 00624 R 740001 A
 00625 R 040021 R
 00626 R 777777 A
 00627 R 040020 R
 00630 R 620622 R

ENDPUT 0
 LAC PUT.2
 CMA
 DAC ERWC
 LAW -1
 DAC SYSERR
 JMP* ENDPUT

/ERROR 1 - ERROR ROUTINE FOR API ERROR.

00631 R 206424 R
 00632 R 100575 R
 00633 R 100622 R
 00634 R 600125 R

ER1 LAC (1)
 JMS RESPUT
 JMS ENDPUT
 JMP TERMIN

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

00635 R 000000 A
 00636 R 100643 R
 00637 R 100742 R
 00640 R 620635 R
 00641 R 100777 R
 00642 R 600637 R

TEST1 0
 JMS ONLIN
 JMS SETNXT
 JMP* TEST1
 JMS TSTUNT
 JMP .-3

/ON - LINE SUBROUTINE.

00643 R 000000 A
 00644 R 100160 R
 00645 R 400045 R
 00646 R 400046 R
 00647 R 146347 R
 00650 R 146346 R
 00651 R 206420 R
 00652 R 046350 R
 00653 R 777770 A
 00654 R 046351 R
 00655 R 750001 A
 00656 R 066350 R
 00657 R 446350 R
 00660 R 446351 R
 00661 R 600656 R
 00662 R 206420 R
 00663 R 046350 R
 00664 R 206347 R
 00665 R 600714 R

ONLIN 0
 JMS HOLD
 XCT DPCF
 XCT DPCS
 DZM ONL.1#
 DZM NUMUNT#
 LAC (ACTIVE)
 DAC ONL.2#
 LAW -10
 DAC ONL.3#
 CLC
 ONLI.1 DAC* ONL.2
 ISZ ONL.2
 ISZ ONL.3
 JMP ONLI.1
 LAC (ACTIVE)
 DAC ONL.2
 ONLI.2 LAC ONL.1
 JMP ONL.4
 .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	/	JMS	CHKONL	
00715	R	166350	R	ONL.4	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	ER5	/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	045341	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
01170 R 201225 R
01171 R 346434 R
01172 R 741100 A
01173 R 601203 R
01174 R 206435 R
01175 R 041225 R
01176 R 201224 R
01177 R 745100 A
01200 R 744002 A
01201 R 740010 A
01202 R 041224 R
01203 R 221225 R

01204 R 341224 R
01205 R 061225 R
01206 R 441223 R
01207 R 601214 R
01210 R 366436 R
01211 R 061225 R
01212 R 777000 A
01213 R 041223 R
01214 R 201222 R
01215 R 740020 A
01216 R 361225 R
01217 R 041222 R
01220 R 441225 R
01221 R 621167 R
01222 R 000000 A
01223 R 777000 A

01224 R 123456 A
01225 R 001236 R
01226 R 654321 A
01227 R 361416 A
01230 R 055363 A
01231 R 546060 A
01232 R 243035 A
01233 R 762572 A
01234 R 453237 A
01235 R 150214 A

```

```

/
RANGEN 0
      LAC      RANDEX
      TAD      (-RANTBL-10)
      SPA
      JMP      RANTAD-1
      LAC      (RANTBL)
      DAC      RANDEX
      LAC      RANCON
      SPAICLL
      STL
      RAL
      DAC      RANCON
      LAC*     RANDEX

/
RANTAD TAD      RANCON
      DAC*     RANDEX
      ISZ      RANCNT
      JMP      .+5
      TAD*     (0)
      DAC*     RANDEX
      LAW      -1000
      DAC      RANCNT
      LAC      RANSAV
      RAR
      TAD*     RANDEX
      DAC      RANSAV
      ISZ      RANDEX
      JMP*     RANGEN

RANSAV 0
RANCNT -1000

/
RANCON 123456
RANDEX RANTBL+10
RANTBL 654321
      361416
      055363
      546060
      243035
      762572
      453237
      150214
      .EJECT

```

/SUMCHECK GENERATION ROUTINE - ON WRITE.

/

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

/

/CHECK SUM CHECKING ROUTINE - ON READ.

/

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

.EJECT

/BUFFER RANDOM DATA GENERATION ROUTINE.

```

/
01276 R 000000 A   BUFGEN  0
01277 R 777700 A     LAW      -100
01300 R 046336 R     DAC      BUF.1#
01301 R 101167 R   BUFG.1  JMS     RANGEN
01302 R 741200 A     SNA
01303 R 601301 R     JMP      BUFG.1
01304 R 066337 R     DAC*     BUF.2#
01305 R 446337 R     ISZ      BUF.2
01306 R 446340 R     ISZ      BUF.3#
01307 R 741000 A     SKP
01310 R 101314 R     JMS      RESBUF
01311 R 446336 R     ISZ      BUF.1
01312 R 601301 R     JMP      BUFG.1
01313 R 621276 R     JMP*     BUFGEN

/
01314 R 000000 A   RESBUF  0
01315 R 773000 A     LAW      =BUFSIZ
01316 R 046340 R     DAC      BUF.3
01317 R 206440 R     LAC      (BUFFER)
01320 R 046337 R     DAC      BUF.2
01321 R 621314 R     JMP*     RESBUF

/
01322 R          A   ACTIVE  .BLOCK 10

/
01332 R          A   BUFFER  .BLOCK BUFSIZ
                        .EJECT

```

.END UODSW

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	RESBUF	01314	R	RESPUT	00575	R	RESP.1	00613	R
RESP.2	00605	R	RESTMP	06362	R	RPINT	00063	R	RPIN.1	00102	R
RPSER	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