

/MAGNETIC TAPE EXERCISER MODULE AVAILABLE IN 2 SIZES
 /MAGTAP OR MAGTPS (4000 OR 400 WORD BUFFERS)
 /REV. DATE - 4/15/71 --- (1)

/
 .EBREL

/ASSEMBLY PARAMETERS-----

004000 A	BUFSIZ=4000	/SIZE OF BUFFERS. ***** (400 FOR MAGTPS)
000010 A	NUMHAN=10	/NUMBER OF HANDLERS ALLOWED.
002000 A	TSTRUN=2000	
000020 A	NUMPAR=20	/NUMBER OF HANDLER PARAMETERS.
707341 A	MTSF=707341	/SKIP ON MAG. TAPE FLAG.
707321 A	MTCR=707321	/SKIP ON CONTROLLER READY.
707301 A	MTTR=707301	/SKIP ON TRANSPORT READY.
707322 A	MTAF=707322	/CLEAR STATUS AND COMMAND REGS.
707324 A	MTCM=707324	/OR AC TO COMMAND REG.
707326 A	MTLC=707326	/LOAD AC TO COMMAND REG.
707352 A	MTRS=707352	/READ STATUS REGISTER
707312 A	MTRC=707312	/READ COMMAND REGISTER
707304 A	MTGO=707304	/SET GO FLIP-FLOP IN CONTROLLER
707702 A	EEM=707702	
707764 A	EBA=707764	
00000 R 603005 A	UODSW 603005	
00001 R 000000 A	0	/PATTERN WORD FOR PARAMETER MODE
00002 R 000000 A	0	/RECORD LENGTH FOR PARAMETER MODE
00003 R 000000 A	0	/RUN LENGTH, 0=2000
00004 R 000301 R	.DSA MSERV	/SERVICE ENTRANCE
00005 R 000205 R	.DSA MINIT	/INITIATION ENTRANCE
00006 R 150107 A	.SIXBT "MAGTAP"	/PROGRAM TITLE ***** (MAGTPS)
00007 R 240120 A		
00010 R 000001 A	1	/MASK FOR CHAIN MODE
00011 R A	.BLOCK 7	
/		
00020 R 000000 A	SYSERR 0	/ERROR IND. TO MON.,=-1 FIRST ER.,=-2 SECOND ER.
00021 R 000000 A	0	/WORD COUNT FOR DATA WORDS.
00022 R 000000 A	ERCODE 0	/ERROR CODE.
00023 R 000000 A	0	/HANDLER NO.
00024 R 000000 A	0	/COMMAND
00025 R 000000 A	0	/STATUS RETURN
00026 R 000000 A	0	/STARTING WC
00027 R 000000 A	0	/FINAL WC
00030 R 000000 A	0	/STARTING CA
00031 R 000000 A	0	/FINAL CA

/MAGNETIC TAPE SYSTEMS TEST.
 /TEST 0---RUN ALL AVAILABLE HANDLERS SELECTING HANDLERS AND
 / OPERATIONS ON A RANDOM BASIS.
 /TEST 1---WRITE 100,1000 WORD RECORDS, EACH RECORD ALL ONES, DENSITY
 / 800 BPI, ODD PARITY. THEN REWIND AND REPEAT.
 /TEST 2---PERFORM TEST 1, AFTER WRITE SEQUENCE AND REWIND, READ
 / ALL RECORDS, REWIND, AND REPEAT READ CYCLE.
 /TEST 3---SIMULATED COPY OPERATION, WRITE 1000 RECORDS OF RANDOM LENGTH MADE
 / UP OF RANDOM DATA, REWIND AND COPY DATA FROM ONE HANDLER TO

THE NEXT, AT END OF FILE REWIND BOTH TAPES AND REPEAT.
.EJECT

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/COMMAND SKELETON TABLE - CONTAINS COMMAND CODE FOR EACH COMMAND.
/
00032 R 000000 A NOOP 000000 /WITH INTERRUPT ENABLE BIT SET.
00033 R 001000 A REWIND 001000 /NO OP COMMAND. (0)
00034 R 002400 A READ 002400 /REWIND COMMAND. (1)
00035 R 000000 A RDCOMP 0 /READ DATA COMMAND. (2)
00036 R 004400 A WRITE 004400 /READ AND COMPARE COMMAND. (3)
00037 R 005400 A WRTEOF 005400 /WRITE COMMAND. (4)
00040 R 006400 A SPCFWD 006400 /WRITE EOF COMMAND. (5)
00041 R 007400 A SPCREV 007400 /SPACE FORWARD COMMAND. (6)
00042 R 014400 A WRTEXT 014400 /SPACE REVERSE COMMAND. (7)
00043 R 000400 A NOOP1 000400 /WRITE EXTENDED CMD.
00044 R 001400 A REWND1 001400

/
000032 R CMDSKL=NOOP /EQUATE FOR START OF COMMAND TABLE.

/
00045 R 000000 A HANDNM 000000 /HANDLER NOS. POSITIONED FOR DIRECT
00046 R 100000 A 100000 /INSERTION IN COMMANDS.
00047 R 200000 A 200000
00050 R 300000 A 300000
00051 R 400000 A 400000
00052 R 500000 A 500000
00053 R 600000 A 600000
00054 R 700000 A 700000

/
/CHECK ROUTINE POINTERS ASSOCIATED WITH EACH COMMAND.
/
00055 R 000000 A CKNOOP 0 /CHECK NO-OP (0)
00056 R 000000 A CKRWND 0 /CHECK REWIND (1)
00057 R 000666 R CKREAD CKSR2 /CHECK READ DATA (2)
00060 R 000000 A CKRDCM 0 /CHECK READ COMPARE (3)
00061 R 001000 R CKWRT CKSR4 /CHECK WRITE DATA (4)
00062 R 001015 R CKWTEF CKSR5 /CHECK WRITE EOF (5)
00063 R 001024 R CKSPFD CKSR6 /CHECK SPACE FORWARD (6)
00064 R 001027 R CKSPBK CKSR7 /CHECK SPACE BACKWARD. (7)

/
000055 R CHKTAB=CKNOOP /EQUATE FOR START OF CHECK TAB.
.EJECT

```

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/THIS HANDLER AND NEXT HANDLER NUMBERS.
/
00065 R 000000 A THSHAN 0 /THIS HANDLER.
00066 R 000000 A CURHAN 0 /CURRENT HANDLER.
/
/POINTER LOCATIONS FOR VARIOUS PARAMETERS AND CONSTANTS STORED IN OPRTAB.
/
00067 R 000000 A CMD 0 /CURRENT COMMAND.
00070 R 000000 A CA 0 /CURRENT ADR. USED.
00071 R 000000 A WC 0 /WORD COUNT USED.
00072 R 000000 A CHKPTR 0 /POINTER TO OPER. CHECK ROUTINE.
00073 R 000000 A CNTR 0 /CURRENT POSITION COUNTER.
00074 R 000000 A CNTW 0 /NO. OF RECORDS WRITTEN COUNTER.
00075 R 000000 A DENPAR 0 /CURRENT DENSITY AND PARITY.
00076 R 000000 A NONSEN 0 /NONSENSE STATUS BITS FOR THIS CMD
00077 R 000000 A HANNUM 0 /HANDLER NUMBER FOR INSERTION IN CMD.
00100 R 000000 A CMDCNT 0 /COMMAND COUNT.
00101 R 000000 A EOFcnt 0 /END OF FILE COUNT.
00102 R 000000 A RDCNT 0 /READ COUNT.
00103 R 000000 A WRTCNT 0 /WRITE COUNT.
00104 R 000000 A SPFCNT 0 /SPACE FORWARD COUNT.
00105 R 000000 A SPBCNT 0 /SPACE BACKWARD COUNT.
00106 R 000000 A 0
/
000067 R PARTAB=CMD
/
/SAVE STORAGE CELLS FOR END OF OPERATION
/
00107 R 000000 A SVCMD 0
00110 R 000000 A SVSTAT 0
00111 R 000000 A SVCA 0 /SAVE FINAL CA.
00112 R 000000 A SVWC 0 /SAVE FINAL WC.
00113 R 000033 A SYSCA 33 /POINTERS FOR SYSTEM CA
00114 R 000032 A SYSWC 32 /AND WC
/
00115 R 000000 A DISTSW 0 /TEST DISTRIBUTION SW. AT SERVICE ENTRANCE.
.EJECT

```

/NONSENSE STATUS BITS ASSOCIATED WITH EACH COMMAND.

00116	R	037600	A	NONTAB	037600	/FOR NOOP(0)
00117	R	037600	A		037600	/FOR REWIND(1)
00120	R	302000	A		302000	/FOR READ(2)
00121	R	000000	A		0	/FOR READ-COMPARE(3)
00122	R	313000	A		313000	/FOR WRITE(4)
00123	R	303400	A		303400	/FOR WRITE EOF(5)
00124	R	303400	A		303400	/FOR SPACE FORWARD(6)
00125	R	207400	A		207400	/FOR SPACE REVERSE(7)

/CONSTANTS FOR COMMAND DISTRIBUTIONS.

00126	R	000400	A	EOFCON	400	/WRITE EOF
00127	R	000200	A	SPFCON	200	/SPACE FORWARD
00130	R	000200	A	SPBCON	200	/SPACE BACKWARD.

/MASK TABLE USED FOR SETTING UP STATUS MASKS FOR SELECTABLE HANDLERS.

00131	R	377777	A	MSKTAB	377777	/BIT 0 CORRESPONDS TO HANDLER
00132	R	577777	A		577777	/ZERO WHILE BIT 7 CORRESPONDS
00133	R	677777	A		677777	/TO HANDLE SEVEN.
00134	R	737777	A		737777	/NOTE: THAT MASK TABLE IS IN
00135	R	757777	A		757777	/COMPLEMENTARY FORM.
00136	R	767777	A		767777	
00137	R	773777	A		773777	
00140	R	775777	A		775777	

/STATUS WORDS FOR ESTABLISHING CURRENT STATUS OF HANDLERS.

/RECORD LENGTH TABLE

00141	R	004000	A	RECTAB	BUFSIZ
00142	R	002000	A		BUFSIZ/2
00143	R	001000	A		BUFSIZ/4
00144	R	004000	A		BUFSIZ/1
00145	R	002000	A		BUFSIZ/2
00146	R	001000	A		BUFSIZ/4
00147	R	000400	A		BUFSIZ/10
00150	R	000200	A		BUFSIZ/20

/TRACK TABLE FOR SEVEN AND NINE TRACK TRANSPORTS.

00151	R		A	TRKTAB	.BLOCK 10
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00161	R	000000	A	ACTIVE	0	/0=NOT ACTIVE, 1=ACTIVE
00162	R	777777	A	ANRWD	LAW -1	/0=REWINDING, 1=NOT REWINDING

00163	R	774000	A	MAXBUF	-BUFSIZ
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/SPECIAL TABLE FOR DETERMINING WHICH HANDLERS ARE ACTUALLY AVAILABLE.

00164	R		A	SELHAN	.BLOCK 10
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/SECOND ERROR SAVE TABLE.

00174	R	000000	A		0
00175	R		A	SAVERR	.BLOCK 10
					.EJECT

/*
 /MAGNETIC TAPE INITIALIZATION ROUTINE.
 /

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00205 R 000000 A MINIT 0
00206 R 707764 A EBA
00207 R 707702 A EEM
00210 R 200001 R LAC UODSW+1
00211 R 047460 R DAC PATTEN#
00212 R 773777 A LAW -BUFSIZ-1
00213 R 340002 R TAD UODSW+2
00214 R 740100 A SMA
00215 R 600224 R JMP MINIT1
00216 R 750001 A CLC
00217 R 340002 R TAD UODSW+2
00220 R 740001 A CMA
00221 R 047466 R DAC RECLLEN#
00222 R 741100 A SPA
00223 R 600226 R JMP .+3
00224 R 774000 A MINIT1 LAW -BUFSIZ
00225 R 600221 R JMP .-4
00226 R 200003 R LAC UODSW+3
00227 R 507520 R AND (377777)
00230 R 740200 A SZA
00231 R 600235 R JMP .+4
00232 R 776000 A LAW -TSTRUN
00233 R 047465 R DAC RANLEN#
00234 R 600240 R JMP .+4
00235 R 740001 A CMA
00236 R 347521 R TAD (1)
00237 R 047465 R DAC RANLEN
00240 R 200205 R LAC MINIT
00241 R 040301 R DAC MSERV
00242 R 147442 R DZM DSTSW1#
00243 R 147457 R DZM MOVERR#
00244 R 147416 R DZM APIFLG#
00245 R 140020 R DZM SYSERR
00246 R 140021 R DZM ERCODE-1
00247 R 147441 R DZM DONE#
.EJECT
  
```

/SET LINK IN MSERV IN CASE
 /OF ERROR.

/CLEAR SECOND ERROR FLAG.
 /CLEAR API FLAG.
 /CLEAR SYSERR.

```
00250 R 707322 A      MTAF          /RESET MAG TAPE FLAGS.
00251 R 707321 A      MTCR          /CHECK CONTROLLER RDY.
00252 R 602646 R      JMP          ER01      /NOT READY, TERMINATE.
00253 R 100627 R      JMS          CLOPTB    /READY, CLEAR HANDLER TABLE.
00254 R 140110 R      DZM          SVSTAT     /CLEAR STATUS
00255 R 140161 R      DZM          ACTIVE    /RESET ACTIVE, AND
00256 R 102617 R      JMS          RESBUF
00257 R 102601 R      JMS          BUFGEN
00260 R 750001 A      CLC          /REWIND MASKS.
00261 R 040162 R      DAC          ANRWD
00262 R 200000 R      LAC          UODSW     /GET UODSW FOR TEST NO.
00263 R 507522 R      AND          (100000)
00264 R 741200 A      SNA
00265 R 600457 R      JMP          RANINT+1
00266 R 200000 R      LAC          UODSW
00267 R 507523 R      AND          (300
00270 R 547524 R      SAD          (0)        /TEST ZERO, RANDOM HANDLER
00271 R 600457 R      JMP          RANINT+1 /TEST.
00272 R 547525 R      SAD          (100)    /TEST ONE, WRITE TEST.
00273 R 602317 R      JMP          TEST1+1
00274 R 547526 R      SAD          (200)    /TEST TWO, WRITE THEN READ
00275 R 602324 R      JMP          TEST2+1 /TEST.
00276 R 547523 R      SAD          (300)    /TEST 3, COPY TEST.
00277 R 602372 R      JMP          TEST3+1
00300 R 600367 R      JMP          TERMIN
      .EJECT
```

```

/*****
/SERVICE ENTRANCE FOR MAGNETIC TAPE EXERCISER.
/
MSERV  0
      EBA
      EEM
      JMS      TSTFLG      /TEST FLAGS
      JMS*    DISTSW     /TEST DISTRIBUTION SWITCH.
EXIT   JMP      ENDOPR    /END OPERATION, EXIT.

```

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/*****
/TEST FLAGS FOR TYPE OF ENTRY.
/

```

```

00307 R 000000 A  TSTFLG  0
00310 R 047415 R      DAC      ACSAVE#      /SAVE AC INCASE API IS ON.
00311 R 707312 A      MTRC
00312 R 040107 R      DAC      SVCMO
00313 R 707352 A      MTRS
00314 R 040110 R      DAC      SVSTAT
00315 R 200020 R      LAC      SYSERR      /CHECK SYSERR FLAG. IF ZERO
00316 R 741200 A      SNA      /MIGHT BE AN ARTIFICIAL ENTRY.
00317 R 600332 R      JMP      TSTF.1      /ZERO, SO CHECK MOVE FLAG.

/
00320 R 207527 R  TSTF.4  LAC      (400000)  /NOT ZERO CHECK API.
00321 R 705501 A      SPI
00322 R 741000 A      SKP
00323 R 600344 R      JMP      TSTF.2      /API IS ON, GO SET API FLAG.
00324 R 147416 R      DZM      APIFLG     /API NOT ON, CLEAR API FLAG.
00325 R 707341 A      MTSF     /CHECK MAG. TAPE FLAG
00326 R 600353 R      JMP      TSTF.3      /NOT ON, EXIT, NOT MAG. TAPE.
00327 R 100653 R      JMS      SAVEOP     /ON, SAVE STATUS, WC AND CA FROM
00330 R 707322 A      MTAF     /PREVIOUS OPER. CLEAR MAG TAPE FLAGS.
00331 R 620307 R      JMP*    TSTFLG     / GO PROC. THIS INTERRUPT.

/
00332 R 207457 R  TSTF.1  LAC      MOVERR     /CHECK MOVE ERROR FLAG.
00333 R 740200 A      SZA
00334 R 103172 R      JMS      MOVPUT     /ON RETURN MOVE ERROR FROM ERROR SAVE THEN,

/
00335 R 207442 R      LAC      DSTSW1
00336 R 740200 A      SZA
00337 R 600451 R      JMP      BREAK1
00340 R 207441 R      LAC      DONE
00341 R 740200 A      SZA
00342 R 603154 R      JMP      DON.1
00343 R 600320 R      JMP      TSTF.4

/
00344 R 777777 A  TSTF.2  LAW      -1      /MAGTAPE FLAGS.
00345 R 047416 R      DAC      APIFLG     /SET API FLAG
00346 R 707341 A      MTSF     /CHECK MAG. TAPE FLAG
00347 R 602663 R      JMP      ER16      /API IS ON BUT MAG. TAPE FLAG OFF.
00350 R 100653 R      JMS      SAVEOP
00351 R 707322 A      MTAF
00352 R 620307 R      JMP*    TSTFLG     /ON, GO PROC. INTERRUPT.

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.EJECT

00353	R	750001	A	TSTF.3	CLC		/NOT MAG. TAPE = EXIT TO MONITOR
00354	R	703344	A		DBR		
00355	R	620301	R		JMP*	MSERV	/WITH AC= -1.
/							
00356	R	207416	R	ENDOPR	LAC	APIFLG	/END OPERATION EXIT., CHECK API
00357	R	741200	A		SNA		/FLAG FOR RESTORING ACCUMULATOR
00360	R	600364	R		JMP	TSTF.5	/FLAG OFF.
00361	R	207415	R		LAC	ACSAVE	/ON, RESTORE AC, DEBREAK,
00362	R	703344	A		DBR		/AND EXIT.
00363	R	620301	R		JMP*	MSERV	
/							
00364	R	750000	A	TSTF.5	CLA		/CLEAR ACCUM. AND EXIT.
00365	R	703344	A		DBR		
00366	R	620301	R		JMP*	MSERV	
/							
00367	R	200033	R	TERMIN	LAC	REWIND	/REWIND ALL HANDLERS
00370	R	047505	R		DAC	TER.1#	/THEN EXIT.
00371	R	777770	A		LAW	-10	
00372	R	047506	R		DAC	TER.2#	
00373	R	207530	R	TERM.1	LAC	(-1200)	
00374	R	047507	R		DAC	TER.3#	
00375	R	707321	A		MTCR		
00376	R	741000	A		SKP		
00377	R	600407	R		JMP	+.10	
00400	R	100433	R		JMS	BREAK	
00401	R	447507	R		ISZ	TER.3	
00402	R	600375	R		JMP	.-5	
00403	R	207531	R	TERM.2	LAC	(-4)	
00404	R	040020	R		DAC	SYSERR	
00405	R	140021	R		DZM	ERCODE-1	
00406	R	600356	R		JMP	ENDOPR	
00407	R	207530	R		LAC	(-1200)	
00410	R	047507	R		DAC	TER.3	
00411	R	207505	R		LAC	TER.1	
00412	R	707326	A		MTLC		
00413	R	707301	A		MTTR		
00414	R	741000	A		SKP		
00415	R	600422	R		JMP	+.5	
00416	R	100433	R		JMS	BREAK	
00417	R	447507	R		ISZ	TER.3	
00420	R	600413	R		JMP	.-5	
00421	R	741000	A		SKP		
00422	R	707304	A		MTGO		
00423	R	347522	R		TAD	(100000)	
00424	R	047505	R		DAC	TER.1	
00425	R	447506	R		ISZ	TER.2	
00426	R	600373	R		JMP	TERM.1	
00427	R	707321	A		MTCR		
00430	R	600427	R		JMP	.-1	
00431	R	707322	A		MTAF		
00432	R	600403	R		JMP	TERM.2	
					.EJECT		

00433	R	000000	A	BREAK	0	
00434	R	047417	R		DAC	BRKAC#
00435	R	750010	A		GLK	
00436	R	047456	R		DAC	LINK#
00437	R	200020	R		LAC	SYSERR
00440	R	741200	A		SNA	
00441	R	600444	R		JMP	.+3
00442	R	777776	A		LAW	-2
00443	R	600445	R		JMP	.+2
00444	R	777773	A		LAW	-5
00445	R	040020	R		DAC	SYSERR
00446	R	777777	A		LAW	-1
00447	R	047442	R		DAC	DSTSW1
00450	R	600306	R		JMP	EXIT
				/		
00451	R	147442	R	BREAK1	DZM	DSTSW1
00452	R	207456	R		LAC	LINK
00453	R	740020	A		RAR	
00454	R	207417	R		LAC	BRKAC
00455	R	620433	R		JMP*	BREAK
					.EJECT	

/*
 /MAGNETIC TAPE EXCERSISER INITIATION ROUTINE.
 /

00456 R 000000 A	RANINT 0		/SET TEST NO. TO 0 FOR RANTST
00457 R 750000 A	CLA		/SET CYCLE COUNT FOR END OF PASS.
00460 R 047514 R	DAC	TSTNO#	/SET TEST DISTRIBUTION SWITCH IN
00461 R 207532 R	LAC	(RANTST)	/MSERV TO RAN TST.
00462 R 040115 R	DAC	DISTSW	/CLEAR NUMBER OF AVAILABLE
00463 R 147446 R	DZM	HANCNT#	/HANDLERS, GO TO POLLING INITIALIZE.
00464 R 100513 R	JMS	POLINT	
/			
00465 R 100525 R	MINI.1	JMS	POLHAN
00466 R 600507 R		JMP	MINI.2
00467 R 447446 R		ISZ	HANCNT
00470 R 101242 R		JMS	SETNXT
00471 R 100621 R		JMS	GET
00472 R 000131 R		.DSA	MSKTAB
00473 R 740001 A		CMA	
00474 R 340161 R		TAD	ACTIVE
00475 R 040161 R		DAC	ACTIVE
00476 R 101513 R		JMS	CLRDIS
00477 R 101344 R		JMS	SLNXOP
00500 R 207446 R		LAC	HANCNT
00501 R 547521 R		SAD	(1)
00502 R 741000 A		SKP	
00503 R 600465 R		JMP	MINI.1
00504 R 207451 R		LAC	HNDNUM#
00505 R 040065 R		DAC	THSHAN
00506 R 600465 R		JMP	MINI.1
/			
00507 R 207446 R	MINI.2	LAC	HANCNT
00510 R 547524 R		SAD	(0)
00511 R 602665 R		JMP	ER20
00512 R 600651 R		JMP	RANTS5
		.EJECT	

/HANDLER POLLING INITIATION ROUTINE

```

/
POLINT 0
00513 R 000000 A          LAC      NOOP          /SET TEST COMMAND AS NOOP.
00514 R 200032 R          DAC      TSTCMD#
00515 R 047513 R          LAW      -11          /SET POLLING COUNT,
00516 R 777767 A          DAC      POLDON#
00517 R 047461 R          CLC
00520 R 750001 A          DAC      HNDNUM      /CLEAR CURRENT HANDLER
00521 R 047451 R          LAC      (TRKTAB)    /NUMBER
00522 R 207533 R          DAC      TKTBP#
00523 R 047510 R          JMP*    POLINT
00524 R 620513 R

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/HANDLER POLLING ROUTINE

```

/
POLHAN 0
00525 R 000000 A          ISZ      POLDON
00526 R 447461 R          SKP
00527 R 741000 A          JMP*    POLHAN
00530 R 620525 R          POLH.7 LAC      TSTCMD      /PICK UP TEST COMMAND (NOOP)
00531 R 207513 R          MTLC      /LOAD IT AND CHECK THAT THIS
00532 R 707326 A          MTRR      /IS READY.
00533 R 707301 A          JMP      POLH.5
00534 R 600570 R          POLH.9 MTRS      / CHECK HANDLER
00535 R 707352 A          DAC      SVSTAT      /STATUS
00536 R 040110 R          AND      (100000)    /ON BOT.
00537 R 507522 R          SNA
00540 R 741200 A          JMP      POLH.4      /HANDLER NOT ON BOT.
00541 R 600562 R          LAC      SVSTAT      /CHECK HANDLER INDICATOR FOR
00542 R 200110 R          AND      (10)      /SEVEN OR NINE TRACK.
00543 R 507534 R          SNA
00544 R 741200 A          JMP      .+3
00545 R 600550 R          CLC
00546 R 750001 A          SKP
00547 R 741000 A          LAC      (177777)
00550 R 207535 R          DAC*    TKTBP#
00551 R 067510 R          JMS      INCRE      /INCREMENT TEST COMMAND.
00552 R 100604 R          ISZ      POLHAN      /NOT END, EXIT +1 TO LOG ANOTHER
00553 R 440525 R          JMP*    POLHAN      /HANDLER ON LINE.
00554 R 620525 R

/
POLH.2 LAC      DISTSW      /SAVE DISTRIBUTION SW
00555 R 200115 R          DAC      SAVDIS#    /UNTIL AFTER REWIND.
00556 R 047470 R          LAC      (POLH.6)
00557 R 207536 R          DAC      DISTSW
00560 R 040115 R          JMP      EXIT      /END OF REWIND
00561 R 600306 R          /RETURN TO MONITOR VIA EXIT, I/O STARTED.

/
POLH.4 LAC      TSTCMD      /HANDLER NOT AT BEGINNING OF
00562 R 207513 R          AND      (700000)    /TAPE, MAKE UP REWIND COMMAND,
00563 R 507537 R          TAD      REWND1     /TRANSMIT IT AND WAIT FOR
00564 R 340044 R          MTLC      /COMPLETION.
00565 R 707326 A          MTGO      /TRANSMIT GO.
00566 R 707304 A          JMP      POLH.2
00567 R 600555 R          .EJECT

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00570 R 707352 A POLH.5 MTRS
00571 R 040110 R DAC SVSTAT
00572 R 507540 R AND (200000)
00573 R 740200 A SZA
00574 R 600577 R JMP POLH.8
00575 R 100604 R JMS INCRE /INCREMENT TEST COMMAND
00576 R 600526 R JMP POLHAN+1 /NOT DONE, LOOK AT NEXT HANDLER.

/
00577 R 100433 R POLH.8 JMS BREAK
00600 R 707301 A MTR
00601 R 741000 A SKP
00602 R 600535 R JMP POLH.9
00603 R 600577 R JMP .-4

/
00604 R 000000 A INCRE 0
00605 R 447510 R ISZ TKTBP
00606 R 207513 R LAC TSTCMD /INCRE. TEST COMMAND.
00607 R 347522 R TAD (100000) /AND PULLING COUNTER AND CHECK
00610 R 047513 R DAC TSTCMD
00611 R 447451 R ISZ HNDNUM /FOR END
00612 R 740000 A NOP
00613 R 207451 R LAC HNDNUM
00614 R 620604 R JMP* INCRE /SET HANDLER NO. IN AC.

/
00615 R 000000 A POLH.6 0 /RETURN FROM REWIND, RESTORE
00616 R 207470 R LAC SAVDIS /DISTRIBUTION SW., RETURN TO
00617 R 040115 R DAC DISTSW /RETEST HANDLER.
00620 R 600531 R JMP POLH.7

/
/GET SUBROUTINE
/
00621 R 000000 A GET 0 /USED TO GET A VALUE FROM
00622 R 360621 R TAD* GET /A TABLE. ENTRY WITH INDEX,
00623 R 047445 R DAC GET.1# /BASE IS +1 ON CALL.
00624 R 227445 R LAC* GET.1 /RETURN WITH VALUE.
00625 R 440621 R ISZ GET
00626 R 620621 R JMP* GET

/
/CLEAR HANDLER OPERATION TABLE.
/
00627 R 000000 A CLOPTB 0
00630 R 207541 R LAC (-NUMHAN*NUMPAR) /SET OPP TAB LENGTH.
00631 R 047436 R DAC CLO.1#
00632 R 207542 R LAC (OPRTAB) /SET START OF OPP TAB.
00633 R 047437 R DAC CLO.2#
00634 R 167437 R CLOP.1 DZM* CLO.2 /ZERO OPR TAB
00635 R 447437 R ISZ CLO.2
00636 R 447436 R ISZ CLO.1
00637 R 600634 R JMP CLOP.1
00640 R 620627 R JMP* CLOPTB
.EJECT

```

```

/*****
/RANDOM HANDLER EXERCISER - TEST0.
/
00641 R 000000 A RANTST 0
00642 R 447465 R ISZ RANLEN /INCREMENT PASS COUNTER.
00643 R 741000 A SKP
00644 R 600367 R JMP TERMIN /DONE WITH TEST.
00645 R 100661 R JMS CHKOPR /CHECK PREVIOUS OPERATION
00646 R 101270 R RANTS2 JMS UPDTCT /UPDATE COUNTERS.
00647 R 101344 R RANTS6 JMS SLNXOP /SELECT NEXT OPER. FOR THIS HANDLER.
00650 R 102104 R RANTS3 JMS SLNXHN /SELECT NEW NEXT HANDLER.
00651 R 101673 R RANTS5 JMS INTOPR /INITIATE OPERATION ON NEXT HANDLER.
00652 R 600306 R JMP EXIT /EXIT.
/*****
/SAVE TERMINATION PARAMETERS FOR THIS HANDLER AFTER OPERATION COMPLETE.
/
00653 R 000000 A SAVEOP 0
00654 R 220113 R LAC* SYSCA /AND WORD COUNT AND SAVE.
00655 R 040111 R DAC SVCA
00656 R 220114 R LAC* SYSWC
00657 R 040112 R DAC SVWC
00660 R 620653 R JMP* SAVEOP
/*****
/CHECK OPERATION OF PREVIOUS COMMAND--
/
00661 R 000000 A CHKOPR 0
00662 R 220072 R LAC* CHKPTR /GET CHECK ROUTINE POINTER FOR
00663 R 047424 R DAC CK0.1# /PREVIOUS COMMAND THEN CHECK.
00664 R 127424 R JMS* CK0.1 /RESULTS OF THE LAST OPERATION.
00665 R 620661 R JMP* CHKOPR /EXIT.
/
/CHECK READ COMMAND TERMINATION FOR ERRORS
CKSR2 0 /CHECK COMMON ERROR, THEN
00666 R 000000 A JMS CHKCOM /CHECK FOR CORRECT VALUES OF
00667 R 101032 R LAC SYSTAT
00670 R 200110 R AND (10000)
00671 R 507543 R SZA
00672 R 740200 A JMP CKSR.4 /END OF FILE
00673 R 600717 R LAC THSHAN
00674 R 200065 R TAD (TRKTAB)
00675 R 347533 R DAC CKS.3#
00676 R 047427 R CLC
00677 R 750001 A TAD BUF1
00700 R 343414 R CMA
00701 R 740001 A TAD* CNTR
00702 R 360073 R AND* CKS.3
00703 R 527427 R SZA
00704 R 740200 A JMP ER23
00705 R 602670 R CLC
00706 R 750001 A TAD SVWC
00707 R 340112 R CMA
00710 R 740001 A TAD (-BUFSIZ)
00711 R 347544 R DAC CKS.2#
00712 R 047426 R

```

00713	R	343415	R	TAD	BUF1+1	
00714	R	527427	R	AND*	CKS.3	
00715	R	740200	A	SZA		
00716	R	602666	R	JMP	ER21	
00717	R	750001	A	CLC		/WC AND CA AT TERMINATION.
00720	R	340163	R	TAD	MAXBUF	/FORM (CA+MAXBUF) AND SAVE.
00721	R	740001	A	CMA		
00722	R	360070	R	TAD*	CA	
00723	R	047430	R	DAC	CKS2.1#	
00724	R	340112	R	TAD	SVWC	/FORM (CA+MAXBUF-WC) AND CHECK
00725	R	540111	R	SAD	SVCA	/FOR MATCH WITH FINAL CA.
00726	R	741000	A	SKP		
00727	R	602656	R	JMP	ER11	/MISMATCH, WC/CA ERROR 11.
00730	R	200111	R	LAC	SVCA	/CHECK FOR MATCH OF (CA+MAXBUF)
00731	R	547430	R	SAD	CKS2.1	/WITH FINAL CA.
00732	R	600743	R	JMP	CKS2.2	/MATCH, CHECK WC AND INCOR. REC. LEN.
00733	R	200112	R	LAC	SVWC	/MISMATCH, WC SHOULD NOT EQUAL ZERO,
00734	R	741200	A	SNA		/AND INCORRECT RECORD LENGTH BIT
00735	R	602657	R	JMP	ER12	/SHOULD BE SET.
00736	R	200110	R	LAC	SVSTAT	
00737	R	507545	R	AND	(1000)	
00740	R	741200	A	SNA		
00741	R	602657	R	JMP	ER12	/INCORRECT REC. LENGTH BIT NOT SET.
00742	R	600752	R	JMP	CKS2.3	
/						
00743	R	200112	R	LAC	SVWC	/WC SHOULD BE ZERO, AND
00744	R	740200	A	SZA		/INCORRECT RECORD LENGTH SHOULD
00745	R	602657	R	JMP	ER12	/NOT BE SET
00746	R	200110	R	LAC	SVSTAT	
00747	R	507545	R	AND	(1000)	/RECORD LENGTH INCORRECT
00750	R	740200	A	SZA		
00751	R	602657	R	JMP	ER12	/IS SET, ERROR.
00752	R	200110	R	LAC	SVSTAT	
00753	R	507543	R	AND	(10000)	
00754	R	740200	A	SZA		
00755	R	620666	R	JMP*	CKSR2	/END OF FILE
00756	R	207546	R	LAC	(BUF1+1)	
00757	R	047425	R	DAC	CKS.1#	
00760	R	207426	R	LAC	CKS.2	
00761	R	347547	R	TAD	(2)	
00762	R	047426	R	DAC	CKS.2	
00763	R	203414	R	LAC	BUF1	
00764	R	367425	R	TAD*	CKS.1	
00765	R	447425	R	ISZ	CKS.1	
00766	R	447426	R	ISZ	CKS.2	
00767	R	600764	R	JMP	.-3	
00770	R	740001	A	CMA		
00771	R	347521	R	TAD	(1)	
00772	R	367425	R	TAD*	CKS.1	
00773	R	527427	R	AND*	CKS.3	
00774	R	047444	R	DAC	ERR.22#	
00775	R	740200	A	SZA		
00776	R	602667	R	JMP	ER22	/CHECK SUM ERROR

00777 R 620666 R

JMP* CKSR2
.EJECT

/NOT SET, NO ERROR EXIT.

/CHECK WRITE COMMAND TERMINATION FOR ERRORS.

```

/
CKSR4  0
        JMS      CHKCOM      /CHECK COMMON ERRORS THEN
        CLC
        TAD*    WC           /CHECK FOR CORRECT VALUES OF
        CMA
        TAD*    CA           /FORM (CA+WC) AND MATCH AGAINST
        SAD     SVCA        /FINAL CA.
        SKP
        JMP     ER13        /MISMATCH, WC/CA ERROR 4.
        LAC     SVWC        /MATCH, CHECK FOR WC=0.
        SZA
        JMP     ER14        /WC NOT=0. ERROR 5.
        JMP*    CKSR4       /NO ERROR, EXIT.
    
```

/CHECK WRITE END OF FILE COMMAND TERMINATION FOR ERRORS.

```

/
CKSR5  0
        JMS      CHKCOM      /CHECK COMMON ERRORS THEN,
        LAC     SVSTAT      /GET STATUS REGISTER AND CHECK
        AND     (010000)    /THAT END OF FILE BIT WAS SET.
        SNA
        JMP     ER15        /EOF BIT NOT SET, ERROR 5.
        JMP*    CKSR5       /NO ERROR EXIT.
    
```

/CHECK SPACE FORWARD COMMAND TERMINATION FOR ERRORS.

```

/
CKSR6  0
        JMS      CHKCOM      /CHECK COMMON ERRORS THEN.
        JMP*    CKSR6       /EXIT.
    
```

/CHECK SPACE REVERSE COMMAND FOR TERMINATION ERRORS.

```

/
CKSR7  0
        JMS      CHKCOM      /CHECK COMMON ERRORS THEN
        JMP*    CKSR7       /EXIT
    
```

/CHECK OPERATION FOR COMMON ERROR ITEMS

```

/
CHKCOM 0
        LAC     SVSTAT      /GET SAVED STATUS AND
        SMA
        JMP     CHKC.1
        AND     (40000)     /CHECK FOR ILLEGAL COMMAND.
        SNA
        JMP     CHKC.1     /NOT ILLEGAL
        LAC     SVSTAT
        AND     (137600)
        SNA
        JMP     ER03       /NOT FIRST COMMAND, ILLEGAL.
/
CHKC.1 LAC     SVSTAT
    
```

```

01046 R 520076 R      AND*  NONSEN      /CHECK NONSENSE BITS FOR THIS
01047 R 740200 A      SZA      /COMMAND.
01050 R 602652 R      JMP      ER05      /SOME ON, ERROR 5.
01051 R 200110 R      LAC      SVSTAT      /CHECK ERROR FLAG. IF NOT
01052 R 740100 A      SMA
01053 R 601057 R      JMP      CHKC.2
01054 R 507551 R      AND      (137600)      /IF ON CHECK THAT SOME CAUSE
01055 R 741200 A      SNA      /BITS ARE ON.
01056 R 602651 R      JMP      ER04      /NONE ON, ERROR 4.

/
01057 R 101064 R      CHKC.2 JMS      PARDRL      /SOME ON, CHECK BAD TAPE, ETC.
01060 R 601105 R      JMP      ER10.1    /DATA REQUEST LATE ERROR
01061 R 602653 R      JMP      ER06      /BAD TAPE ERROR
01062 R 602654 R      JMP      ER07      /PARITY ERROR
01063 R 621032 R      JMP*     CHKCOM    /NO ERROR, EXIT.

/
/PARITY ERROR, DATA REQUEST LATE, AND BAD TAPE ERRORS.
/
01064 R 000000 A      PARDRL  0          /CHECKS SAVE STATUS REGISTER ERROR
01065 R 200110 R      LAC      SVSTAT    /BITS AND IF BAD TAPE ERROR
01066 R 507552 R      AND      (400)     /RETURNS CALL+2; IF PARITY
01067 R 740200 A      SZA      /ERROR, CALL+3; IF DATA
01070 R 621064 R      JMP*     PARDRL    /REQUEST LATE ERROR, CALL
01071 R 200110 R      LAC      SVSTAT
01072 R 507526 R      AND      (200)     /+1 AND IF NO ERROR, CALL
01073 R 740200 A      SZA      /+4.
01074 R 601103 R      JMP      PARD.2
01075 R 200110 R      LAC      SVSTAT
01076 R 507553 R      AND      (20000)
01077 R 740200 A      SZA
01100 R 741000 A      SKP
01101 R 441064 R      ISZ      PARDRL
01102 R 441064 R      ISZ      PARDRL
01103 R 441064 R      ISZ      PARDRL
01104 R 621064 R      JMP*     PARDRL
      .EJECT

```

01105	R	200003	R	ER10.1	LAC	UODSN+3
01106	R	740100	A		SMA	
/						
01107	R	602655	R		JMP	ER10
/						
01110	R	101126	R		JMS	SAVOLD
01111	R	207554	R		LAC	(DOOVER)
01112	R	040115	R		DAC	DISTSW
01113	R	102543	R		JMS	TRNCMD
01114	R	603044	R		JMP	BDTAP3
01115	R	600306	R		JMP	EXIT
/						
01116	R	000000	A	DOOVER	0	
01117	R	207467	R		LAC	SAVCMD#
01120	R	060067	R		DAC*	CMD
01121	R	207471	R		LAC	SAVWC#
01122	R	060071	R		DAC*	WC
01123	R	207470	R		LAC	SAVDIS
01124	R	040115	R		DAC	DISTSW
01125	R	600651	R		JMP	RANTS5
/						
01126	R	000000	A	SAVOLD	0	
01127	R	220067	R		LAC*	CMD
01130	R	047467	R		DAC	SAVCMD
01131	R	220071	R		LAC*	WC
01132	R	047471	R		DAC	SAVWC
01133	R	200041	R		LAC	SPCREV
01134	R	360075	R		TAD*	DENPAR
01135	R	360077	R		TAD*	HANNUM
01136	R	060067	R		DAC*	CMD
01137	R	777777	A		LAW	-1
01140	R	060071	R		DAC*	WC
01141	R	200115	R		LAC	DISTSW
01142	R	047470	R		DAC	SAVDIS
01143	R	621126	R		JMP*	SAVOLD

/CHECK TO SEE IF OPERATOR WANTS TO
 /IGNORE DATA LATE ERRORS BY SPACE REVERSE ONE
 /RECORD AND THEN TRY THE FAILING OPERATION AGAIN.

/DON'T RETRY, JUST REPORT THE ERROR.

.EJECT

01144	R	101126	R	ER07.1	JMS	SAVOLD
01145	R	147511	R		DZM	TOTPAR#
01146	R	200110	R		LAC	SVSTAT
01147	R	047503	R		DAC	SSVTAT#
01150	R	777773	A		LAW	-5
01151	R	047512	R		DAC	TOTRTY#
01152	R	207555	R		LAC	(FIVTRY)
01153	R	040115	R		DAC	DISTSW
01154	R	102543	R		JMS	TRNCMD
01155	R	740000	A		NOP	
01156	R	600306	R		JMP	EXIT
					/	
01157	R	000000	A	FIVTRY	0	
01160	R	207556	R		LAC	(FIV.1)
01161	R	040115	R		DAC	DISTSW
01162	R	207467	R		LAC	SAVCMD
01163	R	060067	R		DAC*	CMD
01164	R	207471	R		LAC	SAVWC
01165	R	060071	R		DAC*	WC
01166	R	102543	R		JMS	TRNCMD
01167	R	740000	A		NOP	
01170	R	600306	R		JMP	EXIT
					/	
01171	R	000000	A	FIV.1	0	
01172	R	200110	R		LAC	SVSTAT
01173	R	507552	R		AND	(400)
01174	R	740200	A		SZA	
01175	R	601224	R		JMP	DLRETY
01176	R	200110	R		LAC	SVSTAT
01177	R	507526	R		AND	(200)
01200	R	740200	A		SZA	
01201	R	602653	R		JMP	ER06
01202	R	200110	R		LAC	SVSTAT
01203	R	507553	R		AND	(20000)
01204	R	740200	A		SZA	
01205	R	447511	R		ISZ	TOTPAR
01206	R	447512	R		ISZ	TOTRTY
01207	R	741000	A		SKP	
01210	R	601230	R		JMP	RPTER7
01211	R	200041	R	FIV.2	LAC	SPCREV
01212	R	360075	R		TAD*	DENPAR
01213	R	360077	R		TAD*	HANNUM
01214	R	060067	R		DAC*	CMD
01215	R	777777	A		LAW	-1
01216	R	060071	R		DAC*	WC
01217	R	207555	R		LAC	(FIVTRY)
01220	R	040115	R		DAC	DISTSW
01221	R	102543	R		JMS	TRNCMD
01222	R	740000	A		NOP	
01223	R	600306	R		JMP	EXIT

.EJECT

```

01224 R 200003 R DLRETY LAC UODSW+3
01225 R 740100 A SMA
01226 R 602655 R JMP ER10
01227 R 601211 R JMP FIV.2
/
01230 R 207511 R RPTER7 LAC TOTPAR
01231 R 744020 A RCR
01232 R 742020 A RTR
01233 R 740020 A RAR
01234 R 247557 R XOR (7)
01235 R 047443 R DAC ERN.1
01236 R 207470 R LAC SAVDIS
01237 R 040115 R DAC DISTSW
01240 R 103112 R JMS RESPUT
01241 R 602725 R JMP ERR2.1
/

```

/SET NEXT OPERATION TABLE POINTERS

```

/SETNXT 0 /ENTRY WITH HANDLER NUMBER.
DAC CURHAN
JMS MPY /MULTIPLY HANDLER NO. BY NO.
TAD (OPRTAB) /OF ENTRIES PER HANDLER AND
DAC PARTAB /SET FIRST POINTER.
LAC (PARTAB+1) /GET NXT P.A. LOC. AND SET.
DAC SET.1#
LAW -NUMPAR+2 /GET NUM. OF PARAMETERS
DAC SET.2#
LAC PARTAB /PICK UP FIRST POINTER, INCREMENT
/
SETN.1 TAD (1) /FOR NEXT ENTRY
DAC* SET.1 /AND P.A.
ISZ SET.1
ISZ SET.2 /CONTINUE UNTIL DONE.
JMP SETN.1
LAC CURHAN /RESTORE INBOUND HANDLER NO.
JMP* SETNXT /EXIT.
/

```

/MULTIPLY BY 16 UTILITY ROUTINE.

```

/MPY 0 /ENTRY WITH ARGUMENT IN AC.
CLL /EXIT WITH PRODUCT IN AC.
RTL
RTL
JMP* MPY
.EJECT

```

/******

/UPDATE POSITION COUNTERS BASED ON PREVIOUS COMMAND EXECUTED.

/

01270 R 000000 A	UPDTCT 0		
01271 R 220067 R	LAC*	CMD	/GET PREVIOUS COMMAND AND
01272 R 507561 R	AND	(7000)	/CHECK FOR TYPE.
01273 R 547561 R	SAD	(7000)	
01274 R 601306 R	JMP	UPDT.1	/WAS A BACK SPACE.
01275 R 547562 R	SAD	(6000)	
01276 R 601321 R	JMP	UPDT.2	/WAS A FORWARD SPACE.
01277 R 547563 R	SAD	(2000)	
01300 R 741000 A	SKP		
01301 R 601337 R	JMP	UPDT.3	/WAS A WRITE OR WRITE EOF.
01302 R 460073 R	ISZ*	CNTR	/WAS A READ(CNTR+1=CNTR)
01303 R 740000 A	NOP		
01304 R 220073 R	LAC*	CNTR	
01305 R 601331 R	JMP	UPDT.4	
/			
01306 R 750001 A	UPDT.1	CLC	/WAS A BACK SPACE.
01307 R 340112 R	TAD	SVWC	/FORM(CNTR-(INIT. WC-FINAL WC.))
01310 R 740001 A	CMA		/SET IN CNTR.
01311 R 360071 R	TAD*	WC	
01312 R 740300 A	SZA!SMA		
01313 R 740040 A	HLT		
01314 R 360073 R	TAD*	CNTR	
01315 R 060073 R	DAC*	CNTR	
01316 R 741100 A	SPA		
01317 R 740040 A	HLT		
01320 R 621270 R	JMP*	UPDTCT	/EXIT
/			
01321 R 750001 A	UPDT.2	CLC	/WAS A FORWARD SPACE.
01322 R 360071 R	TAD*	WC	/FORM CNTR+(INIT. WC-FINAL WC)
01323 R 740001 A	CMA		/SET IN CNTR.
01324 R 340112 R	TAD	SVWC	
01325 R 741100 A	SPA		
01326 R 740040 A	HLT		
01327 R 360073 R	TAD*	CNTR	
01330 R 060073 R	DAC*	CNTR	
01331 R 740001 A	UPDT.4	CMA	
01332 R 347521 R	TAD	(1)	
01333 R 360074 R	TAD*	CNTW	
01334 R 741100 A	SPA		
01335 R 740040 A	HLT		
01336 R 621270 R	JMP*	UPDTCT	
/			
01337 R 220073 R	UPDT.3	LAC*	CNTR
01340 R 347521 R	TAD	(1)	/WAS A WRITE OR WRITE END OF FILE.
01341 R 060073 R	DAC*	CNTR	/INCREMENT CNTR AND SET
01342 R 060074 R	DAC*	CNTW	/IN BOTH CNTR AND CNTW.
01343 R 621270 R	JMP*	UPDTCT	
		.EJECT	

/SELECT NEXT OPERATION FOR THIS HANDLER TO PERFORM.

/

01344 R 000000 A	SLNXOP 0		
01345 R 200110 R	LAC	SVSTAT	/CHECK FOR HANDLER AT
01346 R 507564 R	AND	(4000)	/END OF TAPE.
01347 R 741200 A	SNA		
01350 R 601353 R	JMP	SLNO.0	/NO, NORMAL SELECTION.
01351 R 101505 R	JMS	GENRWD	/YES, GENERATE REWIND COMMAND.
01352 R 621344 R	JMP*	SLNXOP	/EXIT.
/			
01353 R 200110 R	SLNO.0	LAC	SVSTAT
01354 R 507522 R		AND	(100000)
01355 R 740200 A		SZA	
01356 R 601467 R		JMP	SLNO.8
01357 R 220073 R		LAC*	CNTR
01360 R 741200 A		SNA	/CHECK POSITION COUNTER FOR 0.
01361 R 601467 R		JMP	SLNO.8
01362 R 560074 R		SAD*	CNTW
01363 R 601473 R		JMP	SLNO.9
			/0 MEANS BOT.
			/IS ZERO.
			/NOT ZERO, CHECK CNTR=CNTRW.
			/ARE EQUAL.
/			
01364 R 101624 R	SLNO.1	JMS	RANGEN
01365 R 507557 R		AND	(7)
01366 R 047476 R		DAC	SLN.1#
01367 R 547565 R		SAD	(4)
01370 R 601364 R		JMP	SLNO.1
01371 R 547566 R		SAD	(5)
01372 R 601364 R		JMP	SLNO.1
01373 R 101537 R		JMS	CMDDIS
01374 R 601364 R		JMP	SLNO.1
01375 R 100621 R	SLNO.7	JMS	GET
01376 R 000032 R		.DSA	CMDSKL
01377 R 047477 R		DAC	SLN.2#
01400 R 207476 R		LAC	SLN.1
01401 R 547521 R		SAD	(1)
01402 R 741000 A		SKP	
01403 R 601406 R		JMP	SLNO.2
01404 R 101505 R		JMS	GENRWD
01405 R 621344 R		JMP*	SLNXOP
			/CHECK IF DISTRIBUTION OK.
			/NOT OR, GET ANOTHER NUMBER.
			/OK, GET COMMAND SKELETON
			/FOR THIS ONE AND
			/SAVE IT.
			/GET COMMAND NO. AGAIN
			/DOES FIT, CHECK FOR REWIND.
			/IS REWIND, GEN. COMMAND AND EXIT.
/			
01406 R 207477 R	SLNO.2	LAC	SLN.2
01407 R 360077 R		TAD*	HANNUM
01410 R 360075 R		TAD*	DENPAR
01411 R 060067 R		DAC*	CMD
			/NOT REWIND, GET COMD. SKELETON.
			/OR IN HANDLER NUMBER AND
			/CURRENT DESITY AND PARITY.
			/SAVE IN COMMAND
/			
01412 R 101624 R	SLNO.3	JMS	RANGEN
01413 R 507567 R		AND	(77)
01414 R 741200 A		SNA	
01415 R 601412 R		JMP	.-3
01416 R 047500 R		DAC	SLN.3#
01417 R 207476 R		LAC	SLN.1
01420 R 547570 R		SAD	(6)
01421 R 601434 R		JMP	SLNO10
			/GET RANDOM NUMBER FOR
			/POSSIBLE WC.
			/ZERO, DON'T USE.
			/SAVE.
			/GET COMMAND NUMBER
			/AND CHECK FOR SPACE FORWARD
			/OR REVERSE.

01422	R	547557	R	SAD	(7)	
01423	R	741000	A	SKP		
01424	R	601456	R	JMP	SLNO.6	/NEITHER CONTINUE.
01425	R	750001	A	CLC		/SPACE BACKWARD.
01426	R	347500	R	TAD	SLN.3	/CHECK THAT WC DOES NOT
01427	R	740001	A	CMA		/EXCEED CNTR.
01430	R	360073	R	TAD*	CNTR	
01431	R	741100	A	SPA		
01432	R	601412	R	JMP	SLNO.3	/EXCEEDS CNTR, GET ANOTHER WC.
01433	R	601451	R	JMP	SLNO.4	/OK, CONTINUE.
01434	R	207500	R	SLNO10 LAC	SLN.3	/SET WC MOD 8
01435	R	507557	R	AND	(7)	
01436	R	347521	R	TAD	(1)	
01437	R	047500	R	DAC	SLN.3	
01440	R	750001	A	CLC		/SPACE FORWARD. MAKE SURE
01441	R	360074	R	TAD*	CNTW	/WC DOES NOT EXCEED:
01442	R	740001	A	CMA		/(CNTW=CNTR)
01443	R	360073	R	TAD*	CNTR	
01444	R	347500	R	TAD	SLN.3	
01445	R	740001	A	CMA		
01446	R	347521	R	TAD	(1)	
01447	R	741100	A	SPA		
01450	R	601412	R	JMP	SLNO.3	/IT DOES, GET ANOTHER.
01451	R	750001	A	SLNO.4 CLC		/OK, GET WC, COMPLIMENT
01452	R	347500	R	TAD	SLN.3	
01453	R	740001	A	CMA		
01454	R	060071	R	DAC*	WC	/AND SET IN WORD COUNT.
01455	R	160070	R	DZM*	CA	/CLEAR CA.
/						
01456	R	207476	R	SLNO.6 LAC	SLN.1	/GET CHECK POINTER FOR
01457	R	100621	R	JMS	GET	/THIS COMMAND.
01460	R	000055	R	.DSA	CHKTAB	
01461	R	060072	R	DAC*	CHKPTR	
01462	R	207476	R	LAC	SLN.1	/GET NONSENSE BIT MASK.
01463	R	100621	R	JMS	GET	/AND PUT AWAY FOR THIS COMMAND.
01464	R	000116	R	.DSA	NONTAB	
01465	R	060076	R	DAC*	NONSEN	
01466	R	621344	R	JMP*	SLNXOP	/EXIT.
/CNTR=ZERO-----TAPE AT BOT.						
01467	R	740000	A	SLNO.8 NOP		/CHECK BOT FLAG, SHOULD
01470	R	101513	R	JMS	CLRDIS	/CLEAR COMMAND DISTRIBUTION CNTRS.
01471	R	102255	R	JMS	GENWRT	/GENERATE A WRITE
01472	R	621344	R	JMP*	SLNXOP	
/CNTR=CNTR-----TAPE AT END OF WRITTEN RECORDS.						
01473	R	101624	R	SLNO.9 JMS	RANGEN	/GET NEXT COMMAND AND
01474	R	507557	R	AND	(7)	/CHECK FOR READ OR SPACE
01475	R	047476	R	DAC	SLN.1	/FORWARD. ELIMINATE THESE.
01476	R	547570	R	SAD	(6)	
01477	R	601473	R	JMP	SLNO.9	/SPACE FORWARD, REJECT
01500	R	547547	R	SAD	(2)	
01501	R	601473	R	JMP	SLNO.9	/READ, REJECT.
01502	R	101537	R	JMS	CMDDIS	/CHECK DISTRIBUTION OF COMMANDS.
01503	R	601473	R	JMP	SLNO.9	/NOT OK.

01504 R 601375 R

JMP
.EJECT

SLNO.7

/OK

```

/GENERATE A REWIND COMMAND EITHER AT END OF TAPE OR BY SELECTION
01505 R 000000 A GENRWD 0
01506 R 200033 R LAC REWIND /SET REWIND COMMAND AS NEXT
01507 R 360077 R TAD* HANNUM /COMMAND WHEN THIS HANDLER SELECTED.
01510 R 060067 R DAC* CMD /CLEAN UP OPR TAB FOR THIS HANDLER
01511 R 101513 R JMS CLRDIS
01512 R 621505 R JMP* GENRWD

```

/CLEAR HANDLER PARAMETERS, OCCURS ON REWIND AND AT BOT.

```

/CLRDIS 0 /CLEAR HANDLER PARAMETERS.
01513 R 000000 A DZM* CA
01514 R 160070 R DZM* WC
01515 R 160071 R DZM* CNTR
01516 R 160073 R DZM* CNTW
01517 R 160074 R LAC (40300)
01520 R 207571 R DAC* DENPAR
01521 R 060075 R DZM* NONSEN
01522 R 160076 R DZM* CMDCNT /CLEAR COMMAND COUNT.
01523 R 160100 R LAC EOFCON /SET NEW EOF DISTRIBUTION COUNTER.
01524 R 200126 R DAC* EOFcnt
01525 R 060101 R LAC (1000)
01526 R 207545 R DAC* SPFCNT
01527 R 060104 R LAC (1000)
01530 R 207545 R DAC* SPBCNT
01531 R 060105 R LAC CURHAN
01532 R 200066 R JMS GET
01533 R 100621 R .DSA HANDNM
01534 R 000045 R DAC* HANNUM
01535 R 060077 R JMP* CLRDIS
01536 R 621513 R

```

/CHECK SELECTED COMMAND FOR PROPER DISTRIBUTION.

```

/CMDDIS 0
01537 R 000000 A DAC CMD.1# /SAVE COMMAND NUMBER.
01540 R 047440 R SAD (1) /CHECK FOR REWIND
01541 R 547521 R JMP CMDD.1
01542 R 601556 R SAD (2) /READ
01543 R 547547 R JMP CMDD.2
01544 R 601562 R SAD (4) /WRITE
01545 R 547565 R JMP CMDD.2
01546 R 601562 R SAD (5) /WRITE EOF
01547 R 547566 R JMP CMDD.5
01550 R 601566 R SAD (6) /FORWARD SPACE
01551 R 547570 R JMP CMDD.6
01552 R 601600 R SAD (7) /BACKWARD SPACE
01553 R 547557 R JMP CMDD.7
01554 R 601612 R JMP* CMDDIS
01555 R 621537 R

```

```

/CMDD.1 LAC* CMDCNT /CHECK REWIND COUNT. ALLOWS
01556 R 220100 R TAD (-10000) /REWIND ONLY AFTER 4K WRITTEN
01557 R 347572 R SPA /RECORDS ARE ON TAPE.
01560 R 741100 A JMP* CMDDIS /NOT ENOUGH-EXIT
01561 R 621537 R

```

01562 R 460100 R	/	CMDD.2	ISZ*	CMDCNT	/ENOUGH-EXIT
01563 R 207440 R			LAC	CMD.1	
01564 R 441537 R			ISZ	CMDDIS	
01565 R 621537 R			JMP*	CMDDIS	
/					
/					
01566 R 750001 A	/	CMDD.5	CLC		/WRITE EOF, CHECK END OF FILE
01567 R 360100 R			TAD*	CMDCNT	/COUNTER AGAINST COMMAND
01570 R 740001 A			CMA		/COUNT.
01571 R 360101 R			TAD*	EOFCNT	
01572 R 740100 A			SMA		
01573 R 621537 R			JMP*	CMDDIS	/EXIT-NOT ENOUGH
01574 R 220101 R			LAC*	EOFCNT	/ENOUGH-SET NEW COUNT.
01575 R 340126 R			TAD	EOFCNT	
01576 R 060101 R			DAC*	EOFCNT	
01577 R 601562 R			JMP	CMDD.2	
/					
01600 R 750001 A	/	CMDD.6	CLC		/SPACE FORWARD, CHECK SPACE
01601 R 360100 R			TAD*	CMDCNT	/FORWARD COUNTER AGAINST
01602 R 740001 A			CMA		/COMMAND COUNT.
01603 R 360104 R			TAD*	SPFCNT	
01604 R 740100 A			SMA		
01605 R 621537 R			JMP*	CMDDIS	/EXIT, NOT ENOUGH.
01606 R 220104 R			LAC*	SPFCNT	/ENOUGH-SET NEW COUNT.
01607 R 340127 R			TAD	SPFCNT	
01610 R 060104 R			DAC*	SPFCNT	
01611 R 601562 R			JMP	CMDD.2	
/					
01612 R 750001 A	/	CMDD.7	CLC		/SPACE BACKWARD, CHECK SPACE
01613 R 360100 R			TAD*	CMDCNT	/BACKWARD COUNTER AGAINST
01614 R 740001 A			CMA		/COMMAND COUNT.
01615 R 360105 R			TAD*	SPBCNT	
01616 R 740100 A			SMA		
01617 R 621537 R			JMP*	CMDDIS	/EXIT, NOT ENOUGH.
01620 R 220105 R			LAC*	SPBCNT	/ENOUGH-SET NEW COUNT
01621 R 340130 R			TAD	SPBCNT	
01622 R 060105 R			DAC*	SPBCNT	
01623 R 601562 R			JMP	CMDD.2	
			.EJECT		

/RANDOM NUMBER GENERATOR=FROM TAPE EXERCISER EXEC.

```

/
01624 R 000000 A   RANGEN  0
01625 R 201662 R   LAC      RANDEX   /GET RANDOM TABLE INDEX AND
01626 R 547573 R   SAD      (RANTBL+10) /CHECK FOR END OF TABLE.
01627 R 741000 A   SKP
01630 R 601640 R   JMP      RANTAD-1   /NO, CONTINUE.
01631 R 207574 R   LAC      (RANTBL)   /YES, RESET INDEX TO START OF
01632 R 041662 R   DAC      RANDEX   /TABLE.
01633 R 201661 R   LAC      RANCON   /DO A ROTATE ON RANCON
01634 R 745100 A   SPA!CLL  /AND REPLACE.
01635 R 744002 A   STL
01636 R 740010 A   RAL
01637 R 041661 R   DAC      RANCON
01640 R 221662 R   LAC*     RANDEX   /PICK UP TABLE ENTRY AND

/
01641 R 341661 R   RANTAD  TAD      RANCON   /ADD CONSTANT, REPLACING IN
01642 R 061662 R   DAC*     RANDEX   /ENTRY.
01643 R 441660 R   ISZ      RANCNT
01644 R 601651 R   JMP      .+5
01645 R 367524 R   TAD*     (0)
01646 R 061662 R   DAC*     RANDEX
01647 R 777400 A   LAW      -400
01650 R 041660 R   DAC      RANCNT
01651 R 201657 R   LAC      RANSAV   /PICK UP PREVIOUS RANDOM NUMBER
01652 R 740020 A   RAR
01653 R 361662 R   TAD*     RANDEX   /ROTATE IT ON RIGHT AND ADD
01654 R 041657 R   DAC      RANSAV   /IT TO THIS TABLE ENTRY.
01655 R 441662 R   ISZ      RANDEX   /SAVE THE NUMBER.
01656 R 621624 R   JMP*     RANGEN   /INCREMENT RANDEX FOR NEXT
01657 R 000000 A   RANSAV  0          /CYCLE AND EXIT WITH NUMBER INAC.
01660 R 777400 A   RANCNT  -400     /CURRENT RANDOM NUMBER.

/
01661 R 123456 A   RANCON  123456   /RANDOM CONSTANT.
01662 R 001673 R   RANDEX  RANTBL+10 /RANTBL INDEX
01663 R 654321 A   RANTBL  654321   /RANDOM VALUE TABLE.
01664 R 361416 A   361416
01665 R 055363 A   055363
01666 R 546060 A   546060
01667 R 243035 A   243035
01670 R 762572 A   762572
01671 R 453237 A   453237
01672 R 150214 A   150214
                        .EJECT

```

/******
 /INITIATE NEXT OPERATION ON NEXT HANDLER.
 /

01673 R 000000 A	INTOPR 0		
01674 R 102601 R	JMS	BUFGEN	
01675 R 102307 R	JMS	HOLD	
01676 R 147452 R	DZM	INT.3#	/RESET REPEAT FLAG
01677 R 207575 R	LAC	(-12000)	/WAIT FOR TRANSPORT READY.
01700 R 047453 R	DAC	INT.4#	
01701 R 707321 A	MTCR		
01702 R 741000 A	SKP		
01703 R 601707 R	JMP	+.4	
01704 R 447453 R	ISZ	INT.4	
01705 R 601701 R	JMP	.-4	
01706 R 602646 R	JMP	ER01	
01707 R 102023 R	JMS	CKRWD	/READY, CHECK ANY HANDLERS DONE REWIND.
01710 R 200065 R	LAC	THSHAN	
01711 R 101242 R	JMS	SETNXT	
01712 R 220067 R	LAC*	CMD	/CHECK NEXT COMMAND FOR READ,
01713 R 507561 R	AND	(7000)	/WRITE, OR REWIND.
01714 R 547563 R	SAD	(2000)	
01715 R 601757 R	JMP	INTO.3	/READ COMMAND NEXT.
01716 R 547564 R	SAD	(4000)	
01717 R 601731 R	JMP	INTO.4	/WRITE COMMAND NEXT
01720 R 547545 R	SAD	(1000)	
01721 R 601764 R	JMP	INTO.5	/REWIND COMMAND NEXT.
01722 R 102543 R	INTO.1 JMS	TRNCMD	/TRANSMIT CURRENT COMMAND
01723 R 601727 R	JMP	INTO.6	/HANDLER NOT RDY, RETURN
01724 R 207452 R	LAC	INT.3	/CHECK REPEAT FLAG. IF ON JUST
01725 R 741200 A	SNA		/ISSUED A REWIND,
01726 R 621673 R	JMP*	INTOPR	/NOT ON, EXIT.
01727 R 102104 R	INTO.6 JMS	SLNXHN	/ON SELECT NEW HANDLER AND
01730 R 601674 R	JMP	INTOPR+1	/REPEAT. IF NO MORE HANDLERS SEE SLNXHN.
01731 R 207576 R	INTO.4 LAC	(BUF1-1)	/GENERATE DATA AND SET UP PARAMETERS TO INITIATE A WRITE, /INITIATE A WRITE-GET /NEXT BUFFER AND SAVE IN /OPRTAB AND IN SYSTEM CA.
01732 R 060070 R	DAC*	CA	
01733 R 101624 R	JMS	RANGEN	/GET RECORD LENGTH FROM RANGEN
01734 R 507557 R	AND	(7)	/USING REC TAB.
01735 R 100621 R	JMS	GET	
01736 R 000141 R	.DSA	RECTAB	
01737 R 043415 R	DAC	BUF1+1	
01740 R 740001 A	CMA		
01741 R 347521 R	TAD	(1)	
01742 R 060071 R	DAC*	WC	/SET THE VALUE IN OPRTAB AND
01743 R 347547 R	TAD	(2)	
01744 R 047454 R	DAC	INT.5#	
01745 R 207546 R	LAC	(BUF1+1)	
01746 R 047455 R	DAC	INT.6#	
01747 R 220073 R	LAC*	CNTR	
01750 R 043414 R	DAC	BUF1	
01751 R 367455 R	TAD*	INT.6	
01752 R 447455 R	ISZ	INT.6	

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01753 R 447454 R      ISZ      INT.5
01754 R 601751 R      JMP      .-3
01755 R 067455 R      DAC*     INT.6
01756 R 601722 R      JMP      INTO.1      /RETURN TO START OPERATION.
/SET UP PARAMETERS TO INITIATE A READ.
01757 R 207576 R      INTO.3  LAC      (BUF1-1)  /GET NEXT BUFFER AND SAVE
01760 R 060070 R      DAC*     CA          /IN OPRTAB AND SYSTEM CA.
01761 R 200163 R      LAC      MAXBUF    /SET SYSTEM WORD COUNT TO
01762 R 060071 R      DAC*     WC          /MAXIMUM BUFFER SIZE AND
01763 R 601722 R      JMP      INTO.1      /RETURN TO INITIATE COMMAND.
/SET REWIND OPERATION
01764 R 101772 R      INTO.5  JMS      SETRWD    /GO SET REWINDING LOCK OUT.
01765 R 547524 R      SAD      (0)      /THIS IS LAST HANDLER
01766 R 601771 R      JMP      .+3      /DON'T REPEAT.
01767 R 777777 A      LAW      -1       /ESSENTIALLY TERMINATES
01770 R 047452 R      DAC      INT.3    /CYCLE ON THIS HANDLER. SET REPEAT
01771 R 601722 R      JMP      INTO.1    /INITIATION FLAG AND INITIATE REWIND.
/
/SET REWIND BITS FOR HANDLER REWINDING.
/
01772 R 000000 A      SETRWD  0
01773 R 200066 R      LAC      CURHAN
01774 R 100621 R      JMS      GET
01775 R 000131 R      .DSA     MSKTAB
01776 R 500162 R      AND      ANRWD
01777 R 040162 R      DAC      ANRWD
02000 R 777777 A      LAW      -1
02001 R 347446 R      TAD      HANCNT
02002 R 047446 R      DAC      HANCNT
02003 R 740200 A      SZA
02004 R 621772 R      JMP*     SETRWD    /EXIT.
02005 R 200044 R      LAC      REWND1
02006 R 360077 R      TAD*    HANNUM
02007 R 060067 R      DAC*    CMD
02010 R 207577 R      LAC      (SETR.1)
02011 R 040115 R      DAC      DISTSW
02012 R 750000 A      CLA
02013 R 621772 R      JMP*    SETRWD
02014 R 000000 A      SETR.1  0
02015 R 200065 R      LAC      THSHAN
02016 R 102057 R      JMS      CLRRWD
02017 R 207532 R      LAC      (RANTST)
02020 R 040115 R      DAC      DISTSW
02021 R 101513 R      JMS      CLRDIS
02022 R 600647 R      JMP      RANTS6
/
/TEST FOR ANY HANDLERS REWINDING AND IF SO, IS THE OPERATION COMPLETE.
/
02023 R 000000 A      CKRWD   0
02024 R 147433 R      DZM     CKW.3#
02025 R 200162 R      LAC     ANRWD      /GET HANDLER REWINDING FLAG
02026 R 740001 A      CMA
02027 R 047431 R      DAC     CKW.1#    /MORE, COMPLIMENT IT AND SAVE.

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02030 R 741200 A          SNA          /ARE ANY REWINDING.
02031 R 622023 R          JMP*       CKRWD       /NO,EXIT.
02032 R 200032 R          LAC        NOOP       /YES, SET UP NOOP COMMAND FOR
02033 R 047432 R          DAC        CKW.2#    /REWINDING UNIT SELECTION.
02034 R 207431 R          LAC        CKW.1    /GET REWINDING FLAG WORD AND
02035 R 740100 A          SMA          /CHECK FOR THIS ONE REWINDING.
02036 R 602045 R          JMP        CKRW.1
02037 R 207432 R          LAC        CKW.2    /TRANSMIT NOOP (UNIT NO.) TO CONTROL

/
02040 R 707326 A          MTLG
02041 R 707301 A          MTR
02042 R 602045 R          JMP        CKRW.1
02043 R 207433 R          LAC        CKW.3    /CHECK FOR TRANSPORT READY.
02044 R 102057 R          JMS       CLRRWD   /READY, CLEAR REWINDING.

/
02045 R 447433 R          CKRW.1 ISZ       CKW.3
02046 R 207431 R          LAC        CKW.1    /GET REWINDING FLAG AGAIN AND
02047 R 744010 A          RCL
02050 R 047431 R          DAC        CKW.1    /CHECK THE NEXT HANDLER.
02051 R 741200 A          SNA          /ANY MORE?
02052 R 622023 R          JMP*       CKRWD       /NO, EXIT.
02053 R 207432 R          LAC        CKW.2    /YES, STEP THE NOOP
02054 R 347522 R          TAD       (100000) /AND GO AROUND AGAIN.
02055 R 047432 R          DAC        CKW.2
02056 R 602034 R          JMP        CKRW.2

/
/CLEAR REWINDING HANDLER ROUTINE
/
02057 R 000000 A          CLRRWD 0          /GET MASK POSITIONED FOR THIS
02060 R 101242 R          JMS       SETNXT
02061 R 101344 R          JMS       SLNXOP
02062 R 200066 R          LAC        CURHAN
02063 R 100621 R          JMS       GET
02064 R 000131 R          .DSA     MSKTAB
02065 R 740001 A          CMA
02066 R 340162 R          TAD       ANRWD
02067 R 040162 R          DAC        ANRWD
02070 R 447446 R          ISZ       HANCNT
02071 R 622057 R          JMP*     CLRRWD

/
02072 R 000000 A          CHKHAN 0          /WAIT FOR HANDLER
02073 R 207575 R          LAC       (-12000) /TO COME READY. NO MORE THAN
02074 R 047423 R          DAC       CHK.1#   /40 MS.
02075 R 707301 A          MTR
02076 R 602101 R          JMP       .+3
02077 R 442072 R          ISZ       CHKHAN
02100 R 622072 R          JMP*     CHKHAN    /HANDLER READY, RETURN.
02101 R 447423 R          ISZ       CHK.1
02102 R 602075 R          JMP       .-5
02103 R 602647 R          JMP       ER02     /NOT RDY, ERROR
          .EJECT

```


/******
 /SELECT NEW NEXT HANDLER ROUTINE.
 /

02104 R 000000 A	SLNXHN 0		
02105 R 102152 R	SLNX.5 JMS	SELTAB	/GET NO. OF HANDLERS AVAILABLE
02106 R 740200 A	SZA		/FOR RANDOM SELECTION.
02107 R 602137 R	JMP	SLNX.1	/ONE OR MORE AVAILABLE.
02110 R 200162 R	LAC	ANRWD	/NO HANDLERS AVAILABLE FOR SELECTION. CHECK
02111 R 740001 A	CMA		/FOR AN OUTSTANDING REWIND.
02112 R 741200 A	SNA		
02113 R 602665 R	JMP	ER20	/NO REWINDS-ALL OUT OF HANDLERS.
02114 R 147501 R	DZM	SLX.1#	/YES AN OUTSTANDING REWIND.
02115 R 741100 A	SPA		/FIND FIRST REWINDING HANDLER
02116 R 602122 R	JMP	.+4	/FOUND.
02117 R 744010 A	RCL		/NOT FOUND, CONTINUE SEARCH.
02120 R 447501 R	ISZ	SLX.1	
02121 R 602115 R	JMP	.-4	
02122 R 207501 R	LAC	SLX.1	/SET HANDLER SELECTION
02123 R 100621 R	JMS	GET	
02124 R 000045 R	.DSA	HANDNM	
02125 R 340043 R	TAD	NOOP1	
02126 R 707326 A	MTLC		
02127 R 207600 R	LAC	(SLNX.4)	/EXIT TO MONITOR SETTING
02130 R 040115 R	DAC	DISTSW	/DISTRIBUTOR SWITCH TO RETURN
02131 R 600306 R	JMP	EXIT	/HERE ON INTERRUPT.
02132 R 207501 R	SLNX.4 LAC	SLX.1	/AFTER REWINDING COMPLETE.
02133 R 102057 R	JMS	CLRRWD	/CLEAR REWINDING BIT FOR THIS HANDLER.
02134 R 207532 R	LAC	(RANTST)	/RESET DISTRIBUTION SWITCH.
02135 R 040115 R	DAC	DISTSW	
02136 R 602105 R	JMP	SLNX.5	/TRY AGAIN.
02137 R 101624 R	SLNX.1 JMS	RANGEN	/GET NEXT RANDOM NUMBER
02140 R 507557 R	AND	(7)	/AND CHECK SELECTION TABLE
02141 R 047501 R	DAC	SLX.1	/TO DETERMINE IF THAT ONE
02142 R 347601 R	TAD	(SELHAN)	/IS AVAILABLE.
02143 R 047502 R	DAC	SLX.2#	
02144 R 227502 R	LAC*	SLX.2	
02145 R 740200 A	SZA		/NO, GET ANOTHER HANDLER NO.
02146 R 602137 R	JMP	SLNX.1	/YES, USE THAT NO. FOR NEW
02147 R 207501 R	LAC	SLX.1	/NEXT HANDLER.
02150 R 040065 R	DAC	THSHAN	/SET OLD NEXT HANDLER IN THIS
02151 R 622104 R	JMP*	SLNXHN	/EXIT.
	.EJECT		

/ROUTINE TO DETERMINE WHICH HANDLERS ARE AVAILABLE FOR RANDOM SELECTION.

```

/
02152 R 000000 A SELTAB 0
02153 R 777770 A LAW -10 /CLEAR SELECTABLE HANDLERS
02154 R 047472 R DAC SEL.1# /TO MINUS ONES.
02155 R 207601 R LAC (SELHAN) /AS EACH HANDLER IS EXAMINED FOR
02156 R 047473 R DAC SEL.2# /SELECTABILITY, ITS ENTRY IS ZEROED
02157 R 750001 A CLC /IF AVAILABLE FOR SERVICE.
02160 R 067473 R SELT.1 DAC* SEL.2 /RETURN TO SLNXHN WITH NUMBER
02161 R 447473 R ISZ SEL.2 /HANDLERS AVAILABLE.
02162 R 447472 R ISZ SEL.1 /AND TOGETHER THE FOLLOWING TO DETER-
02163 R 602160 R JMP SELT.1 /MINE SELECTABILITY.
02164 R 207601 R LAC (SELHAN)
02165 R 047473 R DAC SEL.2 /ACTIVE:0=INACTIVE;1=ACTIVE
02166 R 147472 R DZM SEL.1 /ARWD;0=REWINDING;1=NOT REWINDING
/ACTIVE:0=INACTIVE;1=ACTIVE
/ARWD;0=REWINDING;1=NOT REWINDING
/SPECIAL:0=SPEC. SEQ;1=NOT SPECIAL
/ALL THOSE WITH A ONE RESULT ARE SELECTABLE.
02167 R 200161 R LAC ACTIVE
02170 R 500162 R AND ANRWD
02171 R 740100 A SELT.2 SMA /CHECK LEFT MOST BIT.
02172 R 602175 R JMP SELT.3 /OFF-NOT AVAILABLE.
02173 R 167473 R DZM* SEL.2 /ON-CLEAR HANDLER ENTRY.
02174 R 447472 R ISZ SEL.1 /COUNT THE NO. AVAILABLE.
02175 R 744010 A SELT.3 RCL /SHIFT TO GET NEXT ONE.
02176 R 741200 A SNA
02177 R 602202 R JMP SELT.4 /DONE-NO MORE AVAILABLE.
02200 R 447473 R ISZ SEL.2 /MORE AVAILABLE-GET THEM.
02201 R 602171 R JMP SELT.2
02202 R 207472 R SELT.4 LAC SEL.1 /SET NUMBER AVAILABLE IN AC.
02203 R 622152 R JMP* SELTAB /AND RETURN.
.EJECT

```

/******

/WRITE EXERCISER TEST

```

02204 R 000000 A
02205 R 207602 R
02206 R 040115 R
02207 R 100513 R
02210 R 100525 R
02211 R 602665 R
02212 R 101242 R
02213 R 101513 R
02214 R 207521 R
02215 R 047446 R
02216 R 102255 R
02217 R 102274 R
02220 R 207465 R
02221 R 047515 R
02222 R 207576 R
02223 R 060070 R
02224 R 207466 R
02225 R 060071 R
02226 R 102307 R
02227 R 102543 R
02230 R 602665 R
02231 R 600306 R
02232 R 000000 A
02233 R 100661 R
02234 R 200110 R
02235 R 507564 R
02236 R 740200 A
02237 R 602242 R
02240 R 447515 R
02241 R 602226 R
02242 R 200044 R
02243 R 360077 R
02244 R 060067 R
02245 R 101513 R
02246 R 102543 R
02247 R 602665 R
02250 R 207603 R
02251 R 040115 R
02252 R 600306 R
02253 R 000000 A
02254 R 622204 R

TST1.1 0
LAC (TST1.2) /SET DISTRIBUTION SWITCH FOR RETURN.
DAC DISTSW
JMS POLINT /GO TO POLL HANDLERS AND
JMS POLHAN /FIND ONE ACTIVE.
JMP ER20 /NONE ACTIVE-TERMINATE.
JMS SETNXT /SET THIS HANDLER
JMS CLRDIS /CLEAR PARAMETERS
LAC (1)
DAC HANCNT
JMS GENWRT /GENERATE WRITE COMMAND.
JMS CLBM1 /CLEAR WRITE BUFFER TO ALL 1'S
LAC RANLEN /SET NUMBER OF CYCLES TO 300
DAC TS1.2# /UCTAL.
LAC (BUF1-1)
DAC* CA
LAC RECLEN
DAC* WC
TST1.3 JMS HOLD
JMS TRNCMD
JMP ER20 /HANDLER NOT READY ERROR.
JMP EXIT
TST1.2 0
JMS CHKOPR /CHECK OPERATION
LAC SVSTAT
AND (4000)
SZA
JMP .+3
ISZ TS1.2 /COUNT END
JMP TST1.3 /NOT END
LAC REWND1
TAD* HANNUM
DAC* CMD
JMS CLRDIS
JMS TRNCMD
JMP ER20
LAC (TST1.4)
DAC DISTSW
JMP EXIT
TST1.4 0
JMP* TST1.1
.EJECT

```

/GENERATE A WRITE COMMAND

02255 R 000000 A
 02256 R 200036 R
 02257 R 360077 R
 02260 R 360075 R
 02261 R 060067 R
 02262 R 207576 R
 02263 R 060070 R
 02264 R 200061 R
 02265 R 060072 R
 02266 R 207566 R
 02267 R 1000621 R
 02270 R 000116 R
 02271 R 060076 R
 02272 R 460100 R
 02273 R 622255 R

GENWRT 0
 LAC WRITE
 TAD* HANNUM
 TAD* DENPAR
 DAC* CMD
 LAC (BUF1-1)
 DAC* CA
 LAC CKWRT
 DAC* CHKPTR
 LAC (4)
 JMS GET
 .DSA NONTAB
 DAC* NONSEN
 ISZ* CMDCNT
 JMP* GENWRT

/GET WRITE COMMAND
 /SET HANDLER NUMBER,
 /DENSITY AND PARITY AND
 /SET IN COMMAND.

/SET CHECK WRITE POINTER.

/INCREMENT COMMAND COUNT.
 /EXIT.

/CLEAR BUFFER TO MINUS ONES.

02274 R 000000 A
 02275 R 207604 R
 02276 R 047434 R
 02277 R 774000 A
 02300 R 047435 R
 02301 R 207460 R
 02302 R 067434 R
 02303 R 447434 R
 02304 R 447435 R
 02305 R 602302 R
 02306 R 622274 R

CLBM1 0
 LAC (BUF1)
 DAC CLBM.1#
 LAW -BUFSIZ
 DAC CLBM.2#
 LAC PATTEN
 DAC* CLBM.1
 ISZ CLBM.1
 ISZ CLBM.2
 JMP .-3
 JMP* CLBM1

/HOLD

02307 R 000000 A
 02310 R 750004 A
 02311 R 507521 R
 02312 R 741200 A
 02313 R 622307 R
 02314 R 100433 R
 02315 R 602310 R

HOLD 0
 LAS
 AND (1)
 SNA
 JMP* HOLD
 JMS BREAK
 JMP .-5
 .EJECT

/******

/WRITE EXERCISER

/

02316	R	000000	A	TEST1	0		
02317	R	207521	R		LAC	(1)	
02320	R	047514	R		DAC	TSTNO	
02321	R	102204	R		JMS	TST1.1	
02322	R	600367	R		JMP	TERMIN	

/

/**** WRITE-READ EXERCISER

/

02323	R	000000	A	TEST2	0		
02324	R	207547	R		LAC	(2)	/SET TEST NO. TO 2.
02325	R	047514	R		DAC	TSTNO	
02326	R	102204	R		JMS	TST1.1	/WRITE RECORDS.
02327	R	750001	A		CLC		
02330	R	347515	R		TAD	TS1.2	
02331	R	740001	A		CMA		
02332	R	347465	R		TAD	RANLEN	
02333	R	047516	R		DAC	TS2.1#	
02334	R	102336	R		JMS	TST2.1	/READ RECORDS.
02335	R	602327	R		JMP	.-6	

/

/******

/WRITE-READ EXERCISER TEST

/

02336	R	000000	A	TST2.1	0		/ASSUMES EXECUTION OF TST1.1
02337	R	102625	R		JMS	GENRD	/GENERATE A READ COM.
02340	R	207605	R		LAC	(TST2.2)	/SET DISTRIBUTION SWITCH.
02341	R	040115	R		DAC	DISTSW	
02342	R	102307	R	TST2.3	JMS	HOLD	
02343	R	102543	R		JMS	TRNCMD	/TRANSMIT COMMAND.
02344	R	602665	R		JMP	ER20	/HANDLER NOT READY.
02345	R	600306	R		JMP	EXIT	/EXIT.
02346	R	000000	A	TST2.2	0		
02347	R	100661	R		JMS	CHKOPR	/CHECK OPERATION
02350	R	200110	R		LAC	SVSTAT	
02351	R	507564	R		AND	(4000)	
02352	R	740200	A		SZA		
02353	R	602356	R		JMP	.*+3	
02354	R	447516	R		ISZ	TS2.1	/COUNT CYCLES,
02355	R	602342	R		JMP	TST2.3	/NOT DONE, REPEAT.
02356	R	200044	R		LAC	REWIND1	
02357	R	360077	R		TAD*	HANNUM	
02360	R	060067	R		DAC*	CMD	
02361	R	101513	R		JMS	CLRDIS	
02362	R	102543	R		JMS	TRNCMD	/TRANSMIT IT.
02363	R	602665	R		JMP	ER20	/HANDLER NOT READY.
02364	R	207606	R		LAC	(TST2.4)	/SET DISTRIBUTION SWITCH.
02365	R	040115	R		DAC	DISTSW	
02366	R	600306	R		JMP	EXIT	/EXIT.
02367	R	000000	A	TST2.4	0		/DONE REWINDING, RETURN.
02370	R	622336	R		JMP*	TST2.1	

.EJECT

/*
/

02371 R 000000 A	TEST3	0	
02372 R 207607 R		LAC	(3)
02373 R 047514 R		DAC	TSTNO
02374 R 102376 R		JMS	TST3.1
02375 R 600367 R		JMP	TERMIN
/			
02376 R 000000 A	TST3.1	0	
02377 R 147446 R		DZM	HANCNT
02400 R 207610 R		LAC	(TST3.3)
02401 R 040115 R		DAC	DISTSW
02402 R 100513 R		JMS	POLINT
02403 R 100525 R	TST3.7	JMS	POLHAN
02404 R 602665 R		JMP	ER20
02405 R 447446 R		ISZ	HANCNT
02406 R 047517 R		DAC	TS3.1#
02407 R 207446 R		LAC	HANCNT
02410 R 547521 R		SAD	(1)
02411 R 741000 A		SKP	
02412 R 602416 R		JMP	TST3.6
02413 R 207517 R		LAC	TS3.1
02414 R 047447 R		DAC	HANNO1#
02415 R 602403 R		JMP	TST3.7
02416 R 207517 R	TST3.6	LAC	TS3.1
02417 R 047450 R		DAC	HANNO2#
02420 R 101242 R		JMS	SETNXT
02421 R 101513 R		JMS	CLRDIS
02422 R 207447 R		LAC	HANNO1
02423 R 101242 R		JMS	SETNXT
02424 R 101513 R		JMS	CLRDIS
02425 R 102274 R		JMS	CLBM1
02426 R 102255 R		JMS	GENWRT
02427 R 207465 R		LAC	RANLEN
02430 R 047517 R		DAC	TS3.1
02431 R 102307 R	TST3.4	JMS	HOLD
02432 R 101624 R		JMS	RANGEN
02433 R 507557 R		AND	(7)
02434 R 100621 R		JMS	GET
02435 R 000141 R		.DSA	RECTAB
02436 R 740001 A		CMA	
02437 R 347521 R		TAD	(1)
02440 R 060071 R		DAC*	WC
02441 R 102543 R		JMS	TRNCMD
02442 R 602665 R		JMP	ER20
02443 R 600306 R		JMP	EXIT

.EJECT

```

02444 R 000000 A   TST3.3 0
02445 R 100661 R   JMS     CHKOPR
02446 R 200110 R   LAC     SVSTAT
02447 R 507564 R   AND     (4000)
02450 R 740200 A   SZA
02451 R 602454 R   JMP     .+3
02452 R 447517 R   ISZ     TS3.1
02453 R 602431 R   JMP     TST3.4
02454 R 200044 R   LAC     REWND1
02455 R 360077 R   TAD*    HANNUM
02456 R 060067 R   DAC*    CMD
02457 R 101513 R   JMS     CLRDIS
02460 R 102543 R   JMS     TRNCMD
02461 R 602665 R   JMP     ER20
02462 R 207611 R   LAC     (TST3.5)
02463 R 040115 R   DAC     DISTSW
02464 R 750001 A   CLC
02465 R 347517 R   TAD     TS3.1
02466 R 740001 A   CMA
02467 R 347465 R   TAD     RANLEN
02470 R 047517 R   DAC     TS3.1
02471 R 600306 R   JMP     EXIT

```

```

/
02472 R 000000 A   TST3.5 0
02473 R 102307 R   JMS     HOLD
02474 R 207447 R   LAC     HANNO1
02475 R 101242 R   JMS     SETNXT
02476 R 207612 R   LAC     (TST3.8)
02477 R 040115 R   DAC     DISTSW
02500 R 102625 R   JMS     GENRD
02501 R 102543 R   JMS     TRNCMD
02502 R 602665 R   JMP     ER20
02503 R 600306 R   JMP     EXIT
      .EJECT

```



```

02504 R 000000 A   TST3.8 0
02505 R 100661 R   JMS     CHKOPR
02506 R 200110 R   LAC     SVSTAT
02507 R 507564 R   AND     (4000)
02510 R 740200 A   SZA
02511 R 602542 R   JMP     TST3.2
02512 R 102307 R   JMS     HOLD
02513 R 207450 R   LAC     HANN02
02514 R 101242 R   JMS     SETNXT
02515 R 207613 R   LAC     (TST3.9)
02516 R 040115 R   DAC     DISTSW
02517 R 102255 R   JMS     GENWRT
02520 R 750001 A   CLC
02521 R 340112 R   TAD     SVWC
02522 R 740001 A   CMA
02523 R 340163 R   TAD     MAXBUF
02524 R 741200 A   SNA
02525 R 602664 R   JMP     ER17
02526 R 060071 R   DAC*    WC
02527 R 102543 R   JMS     TRNCMD
02530 R 602665 R   JMP     ER20
02531 R 600306 R   JMP     EXIT
/
02532 R 000000 A   TST3.9 0
02533 R 100661 R   JMS     CHKOPR
02534 R 200110 R   LAC     SVSTAT
02535 R 507564 R   AND     (4000)
02536 R 740200 A   SZA
02537 R 602542 R   JMP     TST3.2
02540 R 447517 R   ISZ     TS3.1
02541 R 602473 R   JMP     TST3.5+1
/
02542 R 622376 R   TST3.2 JMP*    TST3.1
          .EJECT

```

/TRANSMIT COMMAND TO HANDLER.

02543 R 000000 A
 02544 R 220071 R
 02545 R 060114 R
 02546 R 220070 R
 02547 R 060113 R
 02550 R 220067 R
 02551 R 707321 A
 02552 R 602551 R
 02553 R 707326 A
 02554 R 707352 A
 02555 R 507534 R
 02556 R 745200 A
 02557 R 602573 R
 02560 R 200000 R
 02561 R 507614 R
 02562 R 547614 R
 02563 R 602573 R
 02564 R 742020 A
 02565 R 740020 A
 02566 R 047504 R
 02567 R 707312 A
 02570 R 507615 R
 02571 R 247504 R
 02572 R 707326 A
 02573 R 102072 R
 02574 R 622543 R
 02575 R 102307 R
 02576 R 707304 A
 02577 R 442543 R
 02600 R 622543 R

/
 TRNCMD 0
 LAC* WC
 DAC* SYSWC
 LAC* CA
 DAC* SYSCA
 LAC* CMD
 MTRC
 JMP .-1
 MTLG
 MTRS
 AND (10)
 SNA!CLL
 JMP TRNC.1
 LAC UODSW
 AND (3000)
 SAD (3000)
 JMP TRNC.1
 RTR
 RAR
 DAC SVPAR#
 MTRC
 AND (777477)
 XOR SVPAR
 MTLG
 TRNC.1 JMS CHKHAN
 JMP* TRNCMD
 JMS HOLD
 MTGO
 ISZ TRNCMD
 JMP* TRNCMD
 .EJECT

/TRANSMIT COMMAND SUBROUTINE.
 /LOAD WC AND CURRENT ADR.
 /FROM OPR TAB.

/THEN, GET CURRENT COMMAND
 /AND CHECK CONTROLLER.
 /NOT READY, ERROR AND TERMIN.
 /READY, LOAD COMMAND AND

/CHECK HANDLER
 /NEED ANOTHER HANDLER,
 /OK, SET GO.

/BUFFER RANDOM DATA GENERATION ROUTINE

```

/
BUFGEN 0
02601 R 000000 A          LAW      -40
02602 R 777740 A          DAC      BUF.1#      /FORTY OCTAL LOCATIONS PER
02603 R 047420 R          JMS      RANGEN      /ENTRY
02604 R 101624 R          SNA
02605 R 741200 A          JMP      .-2
02606 R 602604 R          DAC*     BUF.2#
02607 R 067421 R          ISZ      BUF.2
02610 R 447421 R          ISZ      BUF.3#
02611 R 447422 R          SKP
02612 R 741000 A          JMS      RESBUF
02613 R 102617 R          ISZ      BUF.1
02614 R 447420 R          JMP      .-11
02615 R 602604 R          JMP*     BUFGEN
02616 R 622601 R

```

```

/
RESBUF 0
02617 R 000000 A          LAW      -BUFSIZ
02620 R 774000 A          DAC      BUF.3
02621 R 047422 R          LAC      (BUF1)
02622 R 207604 R          DAC      BUF.2
02623 R 047421 R          JMP*     RESBUF
02624 R 622617 R

```

```

/
/
/
GENRD 0      /GENERATE READ
02625 R 000000 A          LAC      READ
02626 R 200034 R          TAD*     HANNUM
02627 R 360077 R          TAD*     DENPAR
02630 R 360075 R          DAC*     CMD
02631 R 060067 R          LAC      (BUF1-1)
02632 R 207576 R          DAC*     CA
02633 R 060070 R          LAC      MAXBUF
02634 R 200163 R          DAC*     WC
02635 R 060071 R          LAC      CKREAD
02636 R 200057 R          DAC*     CHKPTR
02637 R 060072 R          LAC      (2)
02640 R 207547 R          JMS      GET
02641 R 100621 R          .DSA    NONTAB
02642 R 000116 R          DAC*     NUNSEN
02643 R 060076 R          ISZ*     CMDCNT
02644 R 460100 R          JMP*     GENRD
02645 R 622625 R          .EJECT

```

/******
 /ERROR DECODER AND PROCESSOR.
 /

```

02646 R 102671 R ER01 JMS ERR00
02647 R 102677 R ER02 JMS ERR01
02650 R 102723 R ER03 JMS ERR02
02651 R 102723 R ER04 JMS ERR02
02652 R 102723 R ER05 JMS ERR02
02653 R 102727 R ER06 JMS ERR03
02654 R 601144 R ER07 JMP ER07.1
02655 R 102723 R ER10 JMS ERR02
02656 R 102723 R ER11 JMS ERR02
02657 R 102723 R ER12 JMS ERR02
02660 R 102723 R ER13 JMS ERR02
02661 R 102723 R ER14 JMS ERR02
02662 R 102723 R ER15 JMS ERR02
02663 R 102671 R ER16 JMS ERR00
02664 R 102671 R ER17 JMS ERR00
02665 R 102671 R ER20 JMS ERR00
02666 R 102733 R ER21 JMS ERR04
02667 R 102733 R ER22 JMS ERR04
02670 R 102733 R ER23 JMS ERR04
  
```

```

/Possible errors-----
/CONTROLLER NOT READY AT INITIATION.
/SELECTED TRANSPORT NOT READY AT INIT.
/ILLEGAL COMMAND RETURN.
/EF HIGH, NO CAUSE BITS HIGH.
/NONSENSE BITS HIGH FOR THIS CMD.
/BAD TAPE ERROR-INITIATE RECOVERY.
/PARITY ERROR.
/DATA REQUEST LATE ERROR.
/WC--CA ERROR ON READ.
/WC--INCORRECT LENGTH BIT ERROR.
/WC--CA ERROR ON WRITE.
/WC NON-ZERO AFTER WRITE
/EOF BIT NOT SET AFTER WRITE.
/ILLEGAL ENTRY TO MAG. TAPE.
/NOT BOT AND CNTR=0.
/ALL OUT OF HANDLERS
  
```

```

02671 R 000000 A ERR00 0
02672 R 103075 R JMS ERNUM
02673 R 777777 A LAW -1
02674 R 047441 R DAC DONE
02675 R 103135 R JMS ENDPUT
02676 R 600367 R JMP TERMIN
  
```

```

/CONTROLLER NOT READY
-1
DONE
/SET ERROR NUMBER AND SYSERR
/FLAG AND TERMINATE.
  
```

```

02677 R 000000 A ERR01 0
02700 R 103075 R JMS ERNUM
02701 R 220067 R LAC* CMD
02702 R 103130 R JMS PUT
02703 R 200065 R LAC THSHAN
02704 R 100621 R JMS GET
02705 R 000131 R .DSA MSKTAB
02706 R 500161 R AND ACTIVE
02707 R 040161 R DAC ACTIVE
02710 R 103135 R JMS ENDPUT
02711 R 750001 A CLC
02712 R 347446 R TAD HANCNT
02713 R 047446 R DAC HANCNT
02714 R 740200 A SZA
02715 R 622072 R JMP* CHKHAN
02716 R 200162 R LAC ANRWD
02717 R 740001 A CMA
02720 R 740200 A SZA
02721 R 622072 R JMP* CHKHAN
02722 R 602665 R JMP ER20
  
```

```

/TRANSPORT NOT READY, SET ER.NUM.,
/HANDLER NUM., COMMAND, AND SYSERR

/DE-ACTIVATE THIS
/HANDLER.

/DECREMENT HANDLER COUNT AND
/CHECK FOR NO MORE LEFT AND
/NONE REWINDING.

/CHECK FOR
/ANY REWINDING.

/YES, CONTINUE.
/NO. TERMINATE
  
```

.EJECT

02723	R	000000	A	ERR02	0			/OTHER ERRORS, SET ERROR NUMBER
02724	R	103075	R		JMS	ERNUM		
02725	R	103050	R	ERR2.1	JMS	ERRPUT		/THEN SET REMAINING PARAMETERS.
02726	R	602771	R		JMP	ERR.1		
/								
02727	R	000000	A	ERR03	0			/BAD TAPE ERROR, SET ERROR
02730	R	103075	R		JMS	ERNUM		
02731	R	103050	R		JMS	ERRPUT		/NUMBER, THEN REMAINING PAPAMETERS
02732	R	603001	R		JMP	BADTAP		/AND FINALLY BAD TAPE SPECIAL SEQ.
02733	R	000000	A	ERR04	0			
02734	R	202733	R		LAC	ERR04		
02735	R	042742	R		DAC	ERR4.2		
02736	R	207514	R		LAC	TSTNO		
02737	R	741200	A		SNA			
02740	R	602743	R		JMP	ERR4.1		
02741	R	620666	R		JMP*	CKSR2		
02742	R	000000	A	ERR4.2	0			
02743	R	103075	R	ERR4.1	JMS	ERNUM		
02744	R	220067	R		LAC*	CMD		
02745	R	103130	R		JMS	PUT		
02746	R	200110	R		LAC	SVSTAT		
02747	R	103130	R		JMS	PUT		
02750	R	220073	R		LAC*	CNTR		
02751	R	103130	R		JMS	PUT		
02752	R	203414	R		LAC	BUF1		
02753	R	103130	R		JMS	PUT		
02754	R	203415	R		LAC	BUF1+1		
02755	R	103130	R		JMS	PUT		
02756	R	207564	R		LAC	(BUFSIZ		
02757	R	340112	R		TAD	SVWC		
02760	R	103130	R		JMS	PUT		
02761	R	207444	R		LAC	ERR.22		
02762	R	103130	R		JMS	PUT		
02763	R	103135	R		JMS	ENDPUT		
02764	R	460073	R		ISZ*	CNTR		
02765	R	740000	A		NOP			
02766	R	220073	R		LAC*	CNTR		
02767	R	060074	R		DAC*	CNTW		
02770	R	600647	R		JMP	RANTS6		
/								
02771	R	103135	R	ERR.1	JMS	ENDPUT		/CLOSE PUT ROUTINE, IF SECOND ERROR
02772	R	207514	R		LAC	TSTNO		
02773	R	740200	A		SZA			
02774	R	620661	R		JMP*	CHKOPR		
02775	R	207443	R		LAC	ERN.1		
02776	R	547607	R		SAD	(3)		
02777	R	600647	R		JMP	RANTS6		
03000	R	620661	R		JMP*	CHKOPR		/ENDPUT RETURNS TO SELECT NEXT OPER.
					.EJECT			

```

03001 R 740000 A   BADTAP  NOP           /BAD TAPE SEQUENCE. PERFORMED
03002 R 200041 R   LAC           /IN THE EVENT OF A BAD TAPE
03003 R 360075 R   TAD*        DENPAR       /ERROR. THE SEQUENCE IS AS
03004 R 360077 R   TAD*        HANNUM      /FOLLOWS. A FORCED BACKWARD
03005 R 060067 R   DAC*        CMD         /SPACE IS ARTIFICIALLY SET AS
03006 R 200115 R   LAC           DISTSW
03007 R 047470 R   DAC           SAYDIS
03010 R 207616 R   LAC           (BDTAP1)   /THE NEXT OPERATION FOR THIS
03011 R 040115 R   DAC           DISTSW     /HANDLER.
03012 R 777777 A   LAW           -1
03013 R 060071 R   DAC*        WC
03014 R 103135 R   JMS          ENDPUT    /SET SPECIAL SEQUENCE SWITCH TO
03015 R 102543 R   JMS          TRNCMD   /AVOID SELECT NXT OP FOR THIS HANDLER.
03016 R 603044 R   JMP          BDTAP3
03017 R 600306 R   JMP          EXIT

/
03020 R 000000 A   BDTAP1  0           /SECOND PORTION OF BAD TAPE
03021 R 200042 R   LAC           WRTEXT    /SEQUENCE. FORCE AN EXTENDED
03022 R 360075 R   TAD*        DENPAR       /WRITE
03023 R 360077 R   TAD*        HANNUM
03024 R 060067 R   DAC*        CMD
03025 R 200163 R   LAC           MAXBUF
03026 R 060071 R   DAC*        WC
03027 R 207576 R   LAC           (BUF1-1)
03030 R 060070 R   DAC*        CA
03031 R 207617 R   LAC           (BDTAP2)
03032 R 040115 R   DAC           DISTSW
03033 R 200061 R   LAC           CKWRT    /SET CHECK POINTER AS FOR A
03034 R 060072 R   DAC*        CHKPTR   /NORMAL WRITE.
03035 R 102543 R   JMS          TRNCMD   /RETURN TO NORMAL SEQUENCE.
03036 R 603044 R   JMP          BDTAP3
03037 R 600306 R   JMP          EXIT

/
03040 R 000000 A   BDTAP2  0
03041 R 207470 R   LAC           SAYDIS
03042 R 040115 R   DAC           DISTSW
03043 R 600642 R   JMP          RANTST+1

/
03044 R 207514 R   BDTAP3  LAC           TSTNO
03045 R 547524 R   SAD           (0)
03046 R 600650 R   JMP          RANTS3
03047 R 600367 R   JMP          TERMIN
          .EJECT

```

```

03050 R 000000 A ERRPUT 0
03051 R 220067 R LAC* CMD /SET INITIAL COMMAND.
03052 R 103130 R JMS PUT
03053 R 200022 R LAC ERCODE
03054 R 507557 R AND (7)
03055 R 547557 R SAD (7)
03056 R 741000 A SKP
03057 R 603062 R JMP ,+3
03060 R 207503 R LAC SSVTAT
03061 R 741000 A SKP
03062 R 200110 R LAC SVSTAT /SET RESULTING STATUS.
03063 R 103130 R JMS PUT
03064 R 220071 R LAC* WC /SET INITIAL WORD COUNT.
03065 R 103130 R JMS PUT
03066 R 200112 R LAC SVWC /SET FINAL WORD COUNT.
03067 R 103130 R JMS PUT
03070 R 220070 R LAC* CA /SET INITIAL CURRENT ADDRESS.
03071 R 103130 R JMS PUT
03072 R 200111 R LAC SVCA /SET FINAL CURRENT ADDRESS.
03073 R 103130 R JMS PUT
03074 R 623050 R JMP* ERRPUT /RETURN.

```

/ROUTINE FOR DETERMINING ERROR NUMBER.

```

03075 R 000000 A ERNUM 0
03076 R 203075 R LAC ERNUM /GET ERROR ENTRY ADDRESS AND
03077 R 507620 R AND (77777)
03100 R 347621 R TAD (-2) /FORM:
03101 R 047443 R DAC ERN.1# /(ERR. ADR.-BASE ADR.)=ER.NUM.
03102 R 750001 A CLC
03103 R 347022 R TAD (ER01)
03104 R 740001 A CMA
03105 R 367443 R TAD* ERN.1
03106 R 507620 R AND (77777)
03107 R 047443 R DAC ERN.1
03110 R 103112 R JMS RESPUT /SET ERROR NUMBER IN PROPER TABLE.
03111 R 623075 R JMP* ERNUM /RETURN.
      .EJECT

```

/PUT ROUTINE, PLACES ERROR PARAMETERS IN SUCCESSIVE LOCS. IN PROPER
/ERROR TABLE FOR MONITOR.

```

/
03112 R 000000 A   RESPUT  0
03113 R 200020 R       LAC      SYSERR      /GET SECOND ERROR FLAG, IS IT ON?
03114 R 740200 A       SZA
03115 R 603122 R       JMP      PUTS.1      /YES, THIS IS SECOND ERROR.
03116 R 207443 R       LAC      ERN.1      /NO, FIRST ERROR. GET ERROR NUMBER.
03117 R 040022 R       DAC      ERCODE     /SET ERROR NUMBER.
03120 R 207623 R       LAC      (ERCODE+1) /SET START PUTAWAY ADDRESS.
03121 R 603125 R       JMP      PUTS.2
03122 R 207443 R   PUTS.1  LAC      ERN.1
03123 R 040175 R       DAC      SAVERR      /SET ERROR NUMBER.
03124 R 207624 R       LAC      (SAVERR+1)
03125 R 047462 R   PUTS.2  DAC      PUT.1#      /SET START PUTAWAY ADR.
03126 R 147463 R       DZM      PUT.2#      /CLEAR PARAMETER COUNTER.
03127 R 623112 R       JMP*     RESPUT      /EXIT.
03130 R 000000 A   PUT      0          /PUT SUBROUTINE, DEPOSITS PARAMETERS
03131 R 067462 R       DAC*     PUT.1      /IN SUCCESSIVE LOCS.
03132 R 447462 R       ISZ      PUT.1
03133 R 447463 R       ISZ      PUT.2
03134 R 623130 R       JMP*     PUT
03135 R 000000 A   ENDPUT  0
03136 R 447463 R       ISZ      PUT.2
03137 R 200020 R       LAC      SYSERR      /CHECK SECOND ERROR FLAG.
03140 R 740200 A       SZA
03141 R 603160 R       JMP      PUTS.3      /ON, THIS WAS SECOND ERROR.
03142 R 207463 R       LAC      PUT.2      /OFF, THIS WAS FIRST ERROR.
03143 R 740001 A       CMA
03144 R 347521 R       TAD      (1)
03145 R 040021 R       DAC      ERCODE-1    /SET PARAMETER COUNT IN
03146 R 207441 R       LAC      DONE
03147 R 741200 A       SNA
03150 R 603155 R       JMP      ENDP.1
03151 R 777776 A       LAW      -2
03152 R 040020 R       DAC      SYSERR
03153 R 600306 R       JMP      EXIT
      .EJECT

```



```

03154 R 600367 R DON.1 JMP TERMIN
03155 R 207625 R ENDP.1 LAC (-1) /NORMAL ERROR TABLE, SET
03156 R 040020 R DAC SYSERR /SYSERR TO -1 FOR MONITOR.
03157 R 623135 R JMP* ENDPUT /EXIT.
03160 R 207463 R PUTS.3 LAC PUT.2 /THIS IS SECOND ERROR, SET
03161 R 740001 A CMA
03162 R 347521 R TAD (1)
03163 R 040174 R DAC SAVERR-1 /PARAMETER COUNT, SET ERROR
03164 R 777777 A LAW -1 /SWITCH TO MOVE PARAMETERS,
03165 R 047457 R DAC MOVERR /SET -2 FOR MONITOR IN
03166 R 207621 R LAC (-2) /SYSERR AND
03167 R 040020 R DAC SYSERR
03170 R 707322 A MTAFF
03171 R 600306 R JMP EXIT /EXIT TO MONITOR, NO NEW I/O.
03172 R 000000 A MOVPUT 0
03173 R 200174 R LAC SAVERR-1 /GET PARAMETER COUNT +1 AND
03174 R 347625 R TAD (-1) /SET FOR MOVE.
03175 R 047462 R DAC PUT.1
03176 R 207626 R LAC (SAVERR-1) /SET--FROM--ADDRESS
03177 R 047463 R DAC PUT.2
03200 R 207627 R LAC (ERCODE-1) /SET--TO--ADDRESS
03201 R 047464 R DAC PUT.3#
03202 R 227463 R PUTS.4 LAC* PUT.2 /MAKE THE MOVE OF ERROR
03203 R 067464 R DAC* PUT.3 /PARAMETERS.
03204 R 447463 R ISZ PUT.2
03205 R 447464 R ISZ PUT.3
03206 R 447462 R ISZ PUT.1
03207 R 603202 R JMP PUTS.4
03210 R 777777 A LAW -1 /DONE WITH MOVE.
03211 R 040020 R DAC SYSERR
03212 R 147457 R DZM MOVERR /RESET MOVE ERROR SWITCH.
03213 R 623135 R JMP* ENDPUT /GO TO INITIATE NEW I/O.

```

/ OPERATION TABLE, ENTRIES BY HANDLER

```

03214 R A OPRTAB .BLOCK NUMHAN*NUMPAR /CONTAINS-----
/COMMAND
/CURRENT ADDRESS
/WORD COUNT
/CHECK ROUTINE POINTER FOR THIS CMD.
/CNTR
/CNTW
/CURRENT DENSITY AND PARITY.
/NINETRACK HANDLER.
/ACTIVE - INACTIVE
/REWINDING - NOT REWINDING.

```

/ INPUT-OUTPUT BUFFERS

```

03414 R A BUF1 .BLOCK BUFSIZ /BUFFER1.
07414 R 000000 A ENDBUF 0
.EJECT

```

.END UODSW

000000 R
07520 R 377777 A *L
07521 R 000001 A *L
07522 R 100000 A *L
07523 R 000300 A *L
07524 R 000000 A *L
07525 R 000100 A *L
07526 R 000200 A *L
07527 R 400000 A *L
07530 R 776600 A *L
07531 R 777774 A *L
07532 R 000641 R *L
07533 R 000151 R *L
07534 R 000010 A *L
07535 R 177777 A *L
07536 R 000615 R *L
07537 R 700000 A *L
07540 R 200000 A *L
07541 R 777600 A *L
07542 R 003214 R *L
07543 R 010000 A *L
07544 R 774000 A *L
07545 R 001000 A *L
07546 R 003415 R *L
07547 R 000002 A *L
07550 R 040000 A *L
07551 R 137600 A *L
07552 R 000400 A *L
07553 R 020000 A *L
07554 R 001116 R *L
07555 R 001157 R *L
07556 R 001171 R *L
07557 R 000007 A *L
07560 R 000070 R *L
07561 R 007000 A *L
07562 R 006000 A *L
07563 R 002000 A *L
07564 R 004000 A *L
07565 R 000004 A *L
07566 R 000005 A *L
07567 R 000077 A *L
07570 R 000006 A *L
07571 R 040300 A *L
07572 R 770000 A *L
07573 R 001673 R *L
07574 R 001663 R *L
07575 R 766000 A *L
07576 R 003413 R *L
07577 R 002014 R *L
07600 R 002132 R *L
07601 R 000164 R *L
07602 R 002232 R *L
07603 R 002253 R *L

07604 R 003414 R *L
07605 R 002346 R *L
07606 R 002367 R *L
07607 R 000003 A *L
07610 R 002444 R *L
07611 R 002472 R *L
07612 R 002504 R *L
07613 R 002532 R *L
07614 R 003000 A *L
07615 R 777477 A *L
07616 R 003020 R *L
07617 R 003040 R *L
07620 R 077777 A *L
07621 R 777776 A *L
07622 R 002646 R *L
07623 R 000023 R *L
07624 R 000176 R *L
07625 R 777777 A *L
07626 R 000174 R *L
07627 R 000021 R *L

SIZE=07642

NO ERROR LINES

ACSAVE	07415	R	ACTIVE	00161	R	ANRWD	00162	R	APIFLG	07416	R
BADTAP	03001	R	BDTAP1	03020	R	BDTAP2	03040	R	BDTAP3	03044	R
BREAK	00433	R	BREAK1	00451	R	BRKAC	07417	R	BUFGEN	02601	R
BUFSIZ	004000	A	BUF.1	07420	R	BUF.2	07421	R	BUF.3	07422	R
BUF1	03414	R	CA	00070	R	CHKCOM	01032	R	CHKC.1	01045	R
CHKC.2	01057	R	CHKHAN	02072	R	CHKOPR	00661	R	CHKPTR	00072	R
CHKTAB	000055	R	CHK.1	07423	R	CKNOOP	00055	R	CKO.1	07424	R
CKRDCM	00060	R	CKREAD	00057	R	CKRWD	02023	R	CKRWND	00056	R
CKRW.1	02045	R	CKRW.2	02034	R	CKSPBK	00064	R	CKSPFD	00063	R
CKSR.4	00717	R	CKSR2	00666	R	CKSR4	01000	R	CKSR5	01015	R
CKSR6	01024	R	CKSR7	01027	R	CKS.1	07425	R	CKS.2	07426	R
CKS.3	07427	R	CKS2.1	07430	R	CKS2.2	00743	R	CKS2.3	00752	R
CKWRT	00061	R	CKWTEF	00062	R	CKW.1	07431	R	CKW.2	07432	R
CKW.3	07433	R	CLBM.1	07434	R	CLBM.2	07435	R	CLBM1	02274	R
CLOPTB	00627	R	CLOP.1	00634	R	CLO.1	07436	R	CLO.2	07437	R
CLRDIS	01513	R	CLRRWD	02057	R	CMD	00067	R	CMDCNT	00100	R
CMDDIS	01537	R	CMDD.1	01556	R	CMDD.2	01562	R	CMDD.5	01566	R
CMDD.6	01600	R	CMDD.7	01612	R	CMDSKL	000032	R	CMD.1	07440	R
CNTR	00073	R	CNTW	00074	R	CURHAN	00066	R	DENPAR	00075	R
DISTSW	00115	R	DLRETY	01224	R	DONE	07441	R	DDN.1	03154	R
DOOVER	01116	R	DSTSW1	07442	R	EBA	707754	A	EEM	707702	A
ENDBUF	07414	R	ENDOPR	00356	R	ENDPUT	03135	R	ENDP.1	03155	R
EQFCNT	00101	R	EQFCON	00126	R	ERCODE	00022	R	ERNUM	03075	R
ERN.1	07443	R	ERRPUT	03050	R	ERR.1	02771	R	ERR.22	07444	R
ERR00	02671	R	ERR01	02677	R	ERR02	02723	R	ERR03	02727	R
ERR04	02733	R	ERR2.1	02725	R	ERR4.1	02743	R	ERR4.2	02742	R
ER01	02646	R	ER02	02647	R	ER03	02650	R	ER04	02651	R
ER05	02652	R	ER06	02653	R	ER07	02654	R	ER07.1	01144	R
ER10	02655	R	ER10.1	01105	R	ER11	02656	R	ER12	02657	R
ER13	02660	R	ER14	02661	R	ER15	02662	R	ER16	02663	R
ER17	02664	R	ER20	02665	R	ER21	02666	R	ER22	02667	R
ER23	02670	R	EXIT	00306	R	FIVTRY	01157	R	FIV.1	01171	R
FIV.2	01211	R	GENRD	02625	R	GENRWD	01505	R	GENWRT	02255	R
GET	00621	R	GET.1	07445	R	HANCNT	07446	R	HANDNM	00045	R
HANN01	07447	R	HANN02	07450	R	HANNUM	00077	R	HNDNUM	07451	R
HOLD	02307	R	INCR	00604	R	INTOPR	01673	R	INTO.1	01722	R
INTO.3	01757	R	INTO.4	01731	R	INTO.5	01764	R	INTO.6	01727	R
INT.3	07452	R	INT.4	07453	R	INT.5	07454	R	INT.6	07455	R
LINK	07456	R	MAXBUF	00163	R	MINIT	00205	R	MINIT1	00224	R
MINI.1	00465	R	MINI.2	00507	R	MOVERR	07457	R	MOVPUT	03172	R
MPY	01263	R	MSERV	00301	R	MSKTAB	00131	R	MTAF	707322	A
MTCM	707324	A	MTCR	707321	A	MTGO	707304	A	MTLC	707326	A
MTRC	707312	A	MTRS	707352	A	MTSF	707341	A	MTTR	707301	A
NONSEN	00076	R	NONTAB	00116	R	NOOP	00032	R	NOOP1	00043	R
NUMHAN	000010	A	NUMPAR	000020	A	OPRTAB	03214	R	PARDRL	01064	R
PARD.2	01103	R	PARTAB	000067	R	PATTEN	07460	R	POLDON	07461	R
POLHAN	00525	R	POLH.2	00555	R	POLH.4	00562	R	POLH.5	00570	R
POLH.6	00615	R	POLH.7	00531	R	POLH.8	00577	R	POLH.9	00535	R
POLINT	00513	R	PUT	03130	R	PUTS.1	03122	R	PUTS.2	03125	R
PUTS.3	03160	R	PUTS.4	03202	R	PUT.1	07462	R	PUT.2	07463	R
PUT.3	07464	R	RANCNT	01660	R	RANCON	01661	R	RANDEX	01662	R
RANGEN	01624	R	RANINT	00456	R	RANLEN	07465	R	RANSAV	01657	R
RANTAD	01641	R	RANTBL	01663	R	RANTST	00641	R	RANTS2	00646	R

RANTS3	00650	R	RANTS5	00651	R	RANTS6	00647	R	RDCNT	00102	R
RDCOMP	00035	R	READ	00034	R	RECLEN	07466	R	RECTAB	00141	R
RESBUF	02617	R	RESPUT	03112	R	REWIND	00033	R	REWND1	00044	R
RPTER7	01230	R	SAVCMD	07467	R	SAVDIS	07470	R	SAVEOP	00653	R
SAVERR	00175	R	SAVOLD	01126	R	SAVWC	07471	R	SELHAN	00164	R
SELTAB	02152	R	SELT.1	02160	R	SELT.2	02171	R	SELT.3	02175	R
SELT.4	02202	R	SEL.1	07472	R	SEL.2	07473	R	SETNXT	01242	R
SETN.1	01254	R	SETRWD	01772	R	SETR.1	02014	R	SET.1	07474	R
SET.2	07475	R	SLNO.0	01353	R	SLNO.1	01364	R	SLNO.2	01406	R
SLNO.3	01412	R	SLNO.4	01451	R	SLNO.6	01456	R	SLNO.7	01375	R
SLNO.8	01467	R	SLNO.9	01473	R	SLNO10	01434	R	SLNXHN	02104	R
SLNXOP	01344	R	SLNX.1	02137	R	SLNX.4	02132	R	SLNX.5	02105	R
SLN.1	07476	R	SLN.2	07477	R	SLN.3	07500	R	SLX.1	07501	R
SLX.2	07502	R	SPBCNT	00105	R	SPBCON	00130	R	SPCFWD	00040	R
SPCREV	00041	R	SPFCNT	00104	R	SPFCON	00127	R	SSVTAT	07503	R
SVCA	00111	R	SVCMD	00107	R	SVPAR	07504	R	SVSTAT	00110	R
SVWC	00112	R	SYSCA	00113	R	SYSERR	00020	R	SYSWC	00114	R
TERMIN	00367	R	TERM.1	00373	R	TERM.2	00403	R	TER.1	07505	R
TER.2	07506	R	TER.3	07507	R	TEST1	02316	R	TEST2	02323	R
TEST3	02371	R	THSHAN	00065	R	TKTBP	07510	R	TOTPAR	07511	R
TOTRTY	07512	R	TRKTAB	00151	R	TRNCMD	02543	R	TRNC.1	02573	R
TSTCMD	07513	R	TSTFLG	00307	R	TSTF.1	00332	R	TSTF.2	00344	R
TSTF.3	00353	R	TSTF.4	00320	R	TSTF.5	00364	R	TSTNO	07514	R
TSTRUN	00200	A	TST1.1	02204	R	TST1.2	02232	R	TST1.3	02226	R
TST1.4	02253	R	TST2.1	02336	R	TST2.2	02346	R	TST2.3	02342	R
TST2.4	02367	R	TST3.1	02376	R	TST3.2	02542	R	TST3.3	02444	R
TST3.4	02431	R	TST3.5	02472	R	TST3.6	02416	R	TST3.7	02403	R
TST3.8	02504	R	TST3.9	02532	R	TS1.2	07515	R	TS2.1	07516	R
TS3.1	07517	R	UODSW	00000	R	UPDTCT	01270	R	UPDT.1	01306	R
UPDT.2	01321	R	UPDT.3	01337	R	UPDT.4	01331	R	WC	00071	R
WRITE	00036	R	WRTCNT	00103	R	WRTEOF	00037	R	WRTEXT	00042	R

UODSW	00000	R	NUMHAN	000010	A	NUMPAR	000020	A	SYSERR	00020	R
ERCODE	00022	R	CMSKSL	000032	R	NOOP	00032	R	REWIND	00033	R
READ	00034	R	RDCOMP	00035	R	WRITE	00036	R	WRTEOF	00037	R
SPCFWD	00040	R	SPCREV	00041	R	WRTEXT	00042	R	NOOP1	00043	R
REWND1	00044	R	HANDNM	00045	R	CHKTAB	000055	R	CKNOOP	00055	R
CKRWND	00056	R	CKREAD	00057	R	CKRDCM	00060	R	CKWRT	00061	R
CKWTEF	00062	R	CKSPFD	00063	R	CKSPBK	00064	R	THSHAN	00065	R
CURHAN	00066	R	CMD	00067	R	PARTAB	000067	R	CA	00070	R
WC	00071	R	CHKPTR	00072	R	CNTR	00073	R	CNTW	00074	R
DENPAR	00075	R	NONSEN	00076	R	HANNUM	00077	R	CMDCNT	00100	R
EOFCNT	00101	R	RDCNT	00102	R	WRTCNT	00103	R	SPFCNT	00104	R
SPBCNT	00105	R	SVCMD	00107	R	SVSTAT	00110	R	SVCA	00111	R
SVWC	00112	R	SYSCA	00113	R	SYSNC	00114	R	DISTSW	00115	R
NONTAB	00116	R	EOFCON	00126	R	SPFCON	00127	R	SPBCON	00130	R
MSKTAB	00131	R	RECTAB	00141	R	TRKTAB	00151	R	ACTIVE	00161	R
ANRWD	00162	R	MAXBUF	00163	R	SELHAN	00164	R	SAVERR	00175	R
MINIT	00205	R	MINIT1	00224	R	MSERV	00301	R	EXIT	00306	R
TSTFLG	00307	R	TSTF.4	00320	R	TSTF.1	00332	R	TSTF.2	00344	R
TSTF.3	00353	R	ENDOPR	00356	R	TSTF.5	00364	R	TERMIN	00367	R
TERM.1	00373	R	TERM.2	00403	R	BREAK	00433	R	BREAK1	00451	R
RANINT	00456	R	MINI.1	00465	R	MINI.2	00507	R	POLINT	00513	R
POLHAN	00525	R	POLH.7	00531	R	POLH.9	00535	R	POLH.2	00555	R
POLH.4	00562	R	POLH.5	00570	R	POLH.8	00577	R	INCRE	00604	R
POLH.6	00615	R	GET	00621	R	CLOPTB	00627	R	CLOP.1	00634	R
RANTST	00641	R	RANTS2	00646	R	RANTS6	00647	R	RANTS3	00650	R
RANTS5	00651	R	SAVEUP	00653	R	CHKOPR	00661	R	CKSR2	00666	R
CKSR.4	00717	R	CKS2.2	00743	R	CKS2.3	00752	R	CKSR4	01000	R
CKSR5	01015	R	CKSR6	01024	R	CKSR7	01027	R	CHKCOM	01032	R
CHKC.1	01045	R	CHKC.2	01057	R	PARDRL	01064	R	PARD.2	01103	R
ER10.1	01105	R	DOOVER	01116	R	SAVOLD	01126	R	ER07.1	01144	R
FIVTRY	01157	R	FIV.1	01171	R	FIV.2	01211	R	DLRETY	01224	R
RPTER7	01230	R	SETNXT	01242	R	SETN.1	01254	R	MPY	01263	R
UPDTCT	01270	R	UPDT.1	01306	R	UPDT.2	01321	R	UPDT.4	01331	R
UPDT.3	01337	R	SLNXOP	01344	R	SLNO.0	01353	R	SLNO.1	01364	R
SLNO.7	01375	R	SLNO.2	01406	R	SLNO.3	01412	R	SLNO10	01434	R
SLNO.4	01451	R	SLNO.6	01456	R	SLNO.8	01467	R	SLNO.9	01473	R
GENRWD	01505	R	CLRDIS	01513	R	CMDDIS	01537	R	CMDD.1	01556	R
CMDD.2	01562	R	CMDD.5	01566	R	CMDD.6	01600	R	CMDD.7	01612	R
RANGEN	01624	R	RANTAD	01641	R	RANSAV	01657	R	RANCNT	01660	R
RANCON	01661	R	RANDEX	01662	R	RANTBL	01663	R	INTOPR	01673	R
INTO.1	01722	R	INTO.6	01727	R	INTO.4	01731	R	INTO.3	01757	R
INTO.5	01764	R	SETRWD	01772	R	TSTRUN	002000	A	SETR.1	02014	R
CKRWD	02023	R	CKRW.2	02034	R	CKRW.1	02045	R	CLRRWD	02057	R
CHKHAN	02072	R	SLNXHN	02104	R	SLNX.5	02105	R	SLNX.4	02132	R
SLNX.1	02137	R	SELTAB	02152	R	SELT.1	02160	R	SELT.2	02171	R
SELT.3	02175	R	SELT.4	02202	R	TST1.1	02204	R	TST1.3	02226	R
TST1.2	02232	R	TST1.4	02253	R	GENWRT	02255	R	CLBM1	02274	R
HOLD	02307	R	TEST1	02316	R	TEST2	02323	R	TST2.1	02336	R
TST2.3	02342	R	TST2.2	02346	R	TST2.4	02367	R	TEST3	02371	R
TST3.1	02376	R	TST3.7	02403	R	TST3.6	02416	R	TST3.4	02431	R
TST3.3	02444	R	TST3.5	02472	R	TST3.8	02504	R	TST3.9	02532	R
TST3.2	02542	R	TRNCMD	02543	R	TRNC.1	02573	R	BUFGEN	02601	R
RESBUF	02617	R	GENRD	02625	R	ER01	02646	R	ER02	02647	R

ER03	02650	R	ER04	02651	R	ER05	02652	R	ER06	02653	R
ER07	02654	R	ER10	02655	R	ER11	02656	R	ER12	02657	R
ER13	02660	R	ER14	02661	R	ER15	02662	R	ER16	02663	R
ER17	02664	R	ER20	02665	R	ER21	02666	R	ER22	02667	R
ER23	02670	R	ERR00	02671	R	ERR01	02677	R	ERR02	02723	R
ERR2.1	02725	R	ERR03	02727	R	ERR04	02733	R	ERR4.2	02742	R
ERR4.1	02743	R	ERR.1	02771	R	BADTAP	03001	R	BDTAP1	03020	R
BDTAP2	03040	R	BDTAP3	03044	R	ERRPUT	03050	R	ERNUM	03075	R
RESPUT	03112	R	PUTS.1	03122	R	PUTS.2	03125	R	PUT	03130	R
ENDPUT	03135	R	DON.1	03154	R	ENDP.1	03155	R	PUTS.3	03160	R
MOVPUT	03172	R	PUTS.4	03202	R	OPRTAB	03214	R	BUF1	03414	R
BUFSIZ	04000	A	ENDBUF	07414	R	ACSAVE	07415	R	APIFLG	07416	R
BRKAC	07417	R	BUF.1	07420	R	BUF.2	07421	R	BUF.3	07422	R
CHK.1	07423	R	CK0.1	07424	R	CKS.1	07425	R	CKS.2	07426	R
CKS.3	07427	R	CKS2.1	07430	R	CKW.1	07431	R	CKW.2	07432	R
CKW.3	07433	R	CLBM.1	07434	R	CLBM.2	07435	R	CLO.1	07436	R
CLO.2	07437	R	CMD.1	07440	R	DONE	07441	R	DSTSW1	07442	R
ERN.1	07443	R	ERR.22	07444	R	GET.1	07445	R	HANCNT	07446	R
HANNO1	07447	R	HANNO2	07450	R	HNDNUM	07451	R	INT.3	07452	R
INT.4	07453	R	INT.5	07454	R	INT.6	07455	R	LINK	07456	R
MOVERR	07457	R	PATTEN	07460	R	POLDON	07461	R	PUT.1	07462	R
PUT.2	07463	R	PUT.3	07464	R	RANLEN	07465	R	RECLEN	07466	R
SAVCMD	07467	R	SAVOIS	07470	R	SAVWC	07471	R	SEL.1	07472	R
SEL.2	07473	R	SET.1	07474	R	SET.2	07475	R	SLN.1	07476	R
SLN.2	07477	R	SLN.3	07500	R	SLX.1	07501	R	SLX.2	07502	R
SSVTAT	07503	R	SVPAR	07504	R	TER.1	07505	R	TER.2	07506	R
TER.3	07507	R	TKTBPT	07510	R	TOTPAR	07511	R	TOTRTY	07512	R
TSTCMD	07513	R	TSTNO	07514	R	TS1.2	07515	R	TS2.1	07516	R
TS3.1	07517	R	MTIR	707301	A	MTGO	707304	A	MTRC	707312	A
MTCR	707321	A	MTAF	707322	A	MTCM	707324	A	MTLC	707326	A
MTSF	707341	A	MTRS	707352	A	EEM	707702	A	EBA	707764	A