

9 T 0 3 A

729 MULTI-CHANNEL TEST

A. PURPOSE OF TEST

1. TO CHECK TAPE INFORMATION FLOW IN MULIT-CHANNEL OPERATION.

B. METHOD OF TEST

1. THIS PROGRAM CONSISTS OF TWO PARTS -- A WRITE AND READ CHECK USING A 100 WORD RECORD OF A FIXED PATTERN WRITTEN FROM SYMBOLIC LOCATION FIX IN LISTING -- AND A WRITE AND READ CHECK USIGNG 100 RANDOM LENGTH, RANDOM WORD RECORDS.
2. THIS PROGRAM WRITES AND READS ON UP THROUGH 4 CHANNELS SIMULTANEOUSLY. IT IS WRITTEN FOR UNIT 1 ON EACH CHANNEL AND IS ADJUSTED FOR UP THROUGH 1 FRAMES ON EACH CHANNEL BY 9IOM AS SPECIFIED BY CONTRIL WORDS ENTERED AT BEGNNING OF TEST. SEE E NORMAL STOPS.
3. THIS PROGRAM USES THE STANDARD 709 ERROR PRINT ROUTINE 9DEPR FOR ERROR INDICATION AND PROGRAM CONTROL.

C. AREA OF MACHINE REQUIRED

1. UNITS MF, CF, PR, DS AND TAPE UNITS TO BE TESTED.
2. STORAGE LOCATIONS 00000 TO 05030 9T03 DIAGNOSTICS  
05500 TO 06416 9IOM MODIFYING ROUTINE  
06500 TO 07065 9DEPR ERROR ROUTINE

D. PROGRAM CONTROL

1. DECK 000 9LD01 LOADER  
001 - 082 9T03 DIAGNOSTICS  
083 - 106 9IOM MODIFICATION ROUTINE  
107 - 195 9DEPR ERROR ROUTINE  
196 TRANSFER CARD TRA 30

197-199 BLANK CARDS

2. SENSE SWITCH CONTROL

SENSE SWITCHES 1, 2, 3 AND 4 ARE USED BY 9DEPR. SEE  
WRITE UP FOR 9DEPR FOR DETAILED DESCRIPTION OF THESE USE  
WHICH IS BRIEFLY AS FOLLOWS

- A. SWITCH 1 UP - TEST SENSE SWITCH 4  
  
SWITCH 1 DN - REPEAT TEST LOOP
- B. SWITCH 2 UP - INDICATE ERROR - TEST SSW 3 TO  
PRINT OR HALT  
  
SWITCH 2 DN - BYPASS ERROR INDICATION - TEST SSW 1
- C. SWITCH 3 UP - PRINT OUT IF SSW 2 UP THEN TEST SSW 1  
SWITCH 3 DN - STOP ON ERRO IF SSW 1 IS UP. THEN  
TEST SSW 1
- D. SWITCH 4 UP - PROCEED TO NEXT TEST ROUTINE  
  
SWITCH 4 DN - REPEAT SECTION N TIMES. OR IF ERROR  
OCCURS GO TO NEXT SECTION
- E. SWITCH 5 UP - GO TO 9IOM TO ADJUST PROGRAM  
TO REPEAT SAME SEQUENCE OF UNITS  
  
SWITCH 5 DN - GO TO 9IOM AND HALT TO ENTER  
NEW CHANNEL CONTROL WORDS
- F. SWITCH 6 UP - END TEST - CALL IN NEXT PROGRAM  
SWITCH 6 DN - TEST SSW 5

E. NORMAL STOPS

- 1. STOPS AT BEGINNING OF PROGRAM TO ENTER ON KEYS THE  
CONTROL WORDS FOR CHANNELS AND UNITS USED IN  
MODIFICATION ROUTINE 9IOM. ONE, TWO OR THREE STOPS  
WILL OCCUR CORRESPONDING TO THE NUMBER OF DS TO BE TESTED  
AS SPECIFIED BY THE TAG BITS OF FIRST CONTROL WORDS.

A TAG OF 1 SPECIFIES CHN A AND/OR B  
A TAG OF 2 SPECIFIES CHN C AND/OR D  
A TAG OF 4 SPECIFIES CHN E AND/OR F

IF MORE THEN ONE DS IS TO BE TESTED. THEN THE FIRST CONTROL WORD SHOULD CONTAIN A MULTIPLE TAG.

05527 ENTER CONTROL WORD FOR FIRST DS ON KEYS  
TAG FOR ALL DS TO BE TESTED  
PRESS START

05555 ENTER CONTROL WORD FOR CHNN C AND/OR D  
PRESS START

05540 ENTER CONTROL WORD FOR CHN E AND/OR F  
PRESS START

05525 CONTROL WORD FAILED TO CONTAIN A TAG FOR ANY  
DS. RE-ENTER FIRST CONTROL WORD WITH TAG  
PRESS START

SEE CONTROL WORD FORMAT

#### F. ERROR STOPS

##### 1. 9DEPR ERROR INDICATION STOPS WITH SSW 3 DOWN

06527 INDEX REGISTER C CONTAINS THE TWOS COMPLEMENT  
OF THE ERROR EXIT ADDRESS. READ LIGHTS THAT ARE  
OUT + 1 AND CONSULT THAT ADDRESS IN PROGRAM  
LISTING FOR ERROR ANALYSIS.

06545 SAME AS ABOVE  
PUSH START TO CONTINUE PROGRAM

#### G. ERROR PRINT OUTS

SEE WRITE UP FOR 9DEPR FOR EXAMPLE AND DESCRIPTION  
OF PRINT OUT.

TEST LOC IS ADDRESS OF ENTRY TO ROUTINE IN WHICH  
ERROR OCCURED. OPN IS THE INSTRUCTION MOST BASIC  
TO THE CONDITION BEING TESTED IN FAILING ROUTINE.  
ERROR ADR IS THE EXIT FROM THE FAILING ROUTINE TO  
9DEPR

#### H. COMMENTS

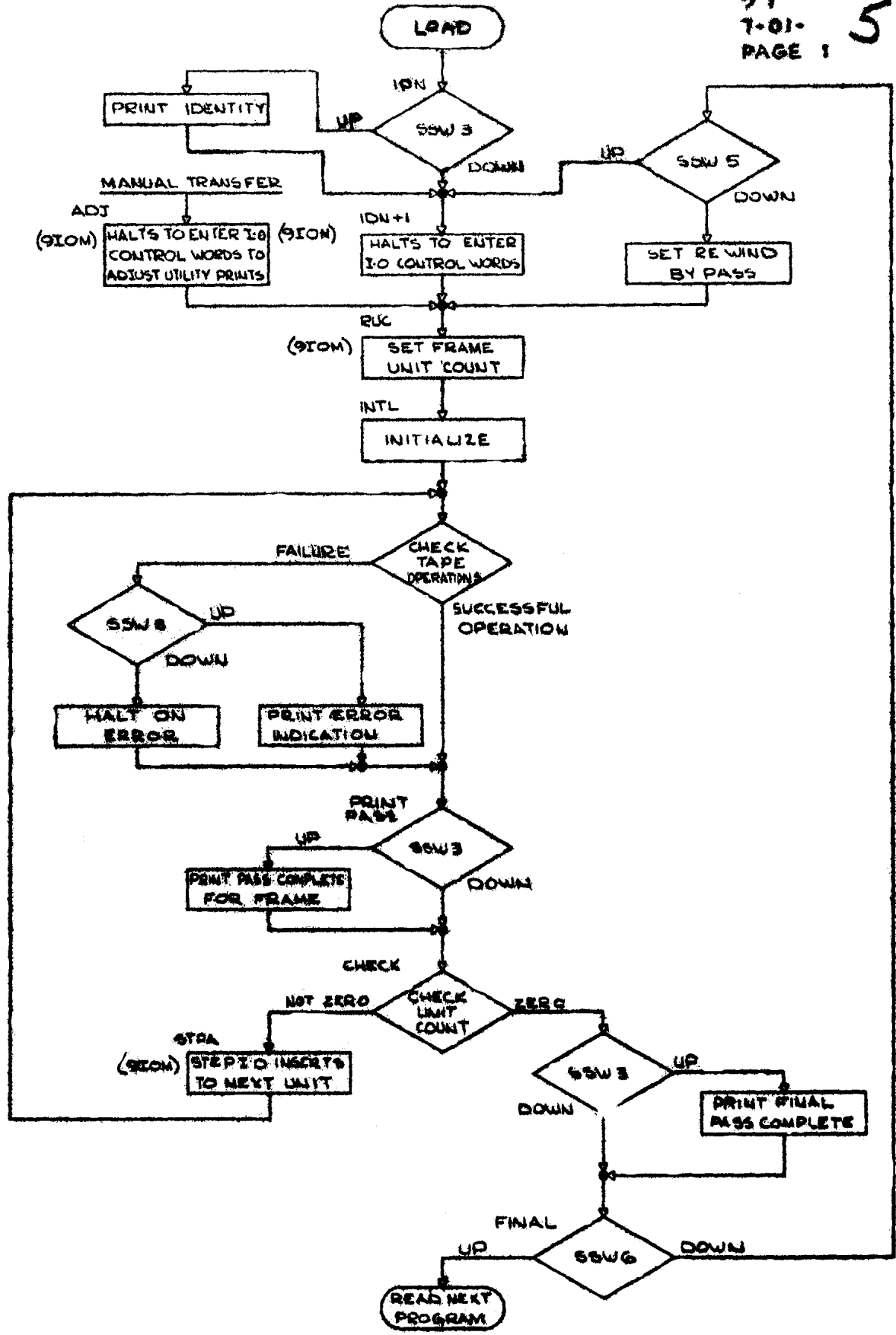
1. A POST RESTART IS INCLUDED WHICH STORES AT LOCATION  
ZERO A TRANSFER TO THE BEGINNING OF THE FRAME TEST.  
ANY TIME THE CONSOLE IS RESET. PRESSING START WILL

TRANSFER THE PROGRAM TO BEGIN TESTING THE CURRENT  
FRAME.

2. ONE OF THE MOST IMPORTANT FUNCTIONS OF THE ERROR PRINT  
OUT IS THE ERRRO ADR. BY REFERRING TO THIS ADDRESS  
IN THE PROGRAM LISTING. THE ROUTINE WHICH FAILED MAY BE  
LOCATED. BY ANALYZING THE ROUTINE WITH THE AID OF THE  
PROGRAM COMMENTS. IT IS HOPED THE CUSTOMER ENGINEER  
WILL BE ABLE TO DETERMINE THE MANNER IN WHICH THE MACHINE  
FAILED AND SO HAVE SUFFICIENT INFORMATION TO DIAGNOSE  
THE CAUSE OF THE MALFUNCTION.

J. TABLE OF TEST ROUTINES AND ADDRESSES OF ENTRY  
IN ORDER OF PERFORMANCE

1.	FORM BINARY WRITE PATTERN	BEGINS AT	00202
2.	WR-RD BIN AND 400 WORD REC	BEGINS AT	00136
4.	RANDOM PATTERN RELIABILITY	BEGINS AT	00212
4.	UTILITY ROUTINES	BEGINS AT	02400
5.	CONSTANTS	BEGINS AT	02003





00064	0020	00	0	00075		TRA INTL5	ADDRESS CORRECT CHECK NEXT CHANNEL
00065	0020	00	0	00067		TRA *+2	
00066	0760	00	0	00141		SLN 1	TURN ON SENSE LIGHT 1
00067	0634	00	4	03035		SXA TEMP, 4	SAVE XRC
00070	-0625	00	0	03034		STL XRC	ADDRESS WRONG
00071	0020	00	0	02567	INTL4	TRA STPA	GO TO STEP I-O INSTRS
00072	0534	00	4	03035		LXA TEMP, 4	RELOAD XRC
00073	-0760	00	0	00141		SLT 1	TEST SENSE LIGHT 1
00074	0020	00	0	00061		TRA INTL3+3	OFF - CHECK UNIT AGAIN
00075	0500	00	0	00071	INTL5	CLA INTL4	
00076	0400	00	0	02720		ADD THREE	L +3
00077	0621	00	0	00071		STA INTL4	SET CHANNEL STEP ADDRESS
00100	2	00001	2	00101		TIX *+1, 2, 1	
00101	2	00001	4	00054		TIX INTL2, 4, 1	
00102	2	00001	1	00053		TIX INTL2-1, 1, 1	
00103	0761	00	0	00000		NOP	REPLACEABLE BY XFER

00104	0074	00	2	00123		TSX REWA, 2	TO REWIND ALL UNITS
00105	0760	00	0	00140		SLF	TURN OFF ALL SENSE LIGHTS

\* POST RESTART

00106	0500	00	0	03050	AA	CLA TRA2	L TRA AA
00107	0601	00	0	00000		STO 0	POST RESTART

00110	0074	00	4	02514		TSX REST, 4	
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00111	0074	00	4	00126		TSX WEFA, 4	TO WRITE EOF ALL UNITS
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\* FORM FIXED PATTERN WRITE FIELDS

00112	0774	00	1	00100	FRM	AXT 64, 1	L +100 IN XRA
00113	0774	00	2	00006		AXT 6, 2	L +6 IN XRB
00114	-0500	00	1	03161		CAL FIX+64, 1	
00115	-0320	00	0	02704		ANA MASK1	
00116	-0501	00	2	02713		ORA MASK1+7, 2	INSERT CHN IDENTITY BITS
00117	0602	60	2	03222		SLW* K3B+6, 2	
00120	2	00001	2	00115		TIX *-3, 2, 1	
00121	2	00001	1	00113		TIX FRM+1, 1, 1	
00122	0020	00	0	00133		TRA WTA	

\* CHANNEL A INSTRUCTIONS

\* REWIND ALL UNITS

00123	0520	00	0	05504	REWA	ZET CTRA	
00124	0772	00	0	01201		REWA 1	REWIND CURRENT UNIT-CHN A
00125	0020	00	0	00764		TRA REWB	

\* WRITE END OF FILE ALL UNITS

00126 0520 00 0 05504 WEFA ZET CTRA  
00127 0770 00 0 01201 WEFA 1 WRITE END OF FILE - CHN A  
00130 0020 00 0 00767 TRA WEFB

\* TEST WRITING IN BINARY MODE

\* WRITE ONE 100 WORD RECORD

00131 666322606060 BCD 1WTB TEST INSTRUCTION  
00132 666322216001 BCD 1WTBA 1 TEST INSTRUCTION  
00133 -0520 00 0 05504 WTA NZT CTRA  
00134 0020 00 0 00773 TRA WTB  
00135 0766 00 0 01221 WTBA 1  
00136 0540 00 0 02732 RCHA CT1A WRITE 100 WDS FROM WRFDA  
00137 0074 00 4 02477 TSX ETT,4 GO TO CHECK FOR END OF TAPE

00140 -0760 00 0 00141 SLT 1  
00141 0020 00 0 00773 TRA WTB OFF - CONTINUE  
00142 0020 00 0 00133 TRA WTA ON - REPEAT

00143 0074 00 4 06560 WTA1 TSX RDNCK,4 CHECK FOR REDUNDANCY  
00144 0761 00 0 00132 NOP WTA-1

00145 0074 00 4 02563 TSX CLR,4 GO TO CLEAR READ FIELDS

00146 0020 00 0 00151 TRA RTA

\* IF REDUNDANCY OCCURS THERE WILL BE  
\* NO ATTEMPT TO REWRITE THE RECORD

\* READ ONE 100 WORD RECORD

00147 516322606060 BCD 1RTB TEST INSTRUCTION  
00150 516322216001 BCD 1RTBA 1 TEST INSTRUCTION  
00151 -0520 00 0 05504 RTA NZT CTRA  
00152 0020 00 0 01004 TRA RTB  
00153 -0764 00 0 01201 BSFA 1  
00154 0022 00 0 00155 TRCA \*+1 TURN OFF TRCA IND IF ON  
00155 0020 00 0 01004 TRA RTB

00156 -0520 00 0 05504 RTA1 NZT CTRA  
00157 0020 00 0 01011 TRA RTB1  
00160 0762 00 0 01221 RTBA 1 READ OVER  
00161 0540 00 0 02764 RCHA CT7 END OF FILE  
00162 0020 00 0 01011 TRA RTB1

00163 -0520 00 0 05504 RTA2 NZT CTRA  
00164 0020 00 0 01016 TRA RTB2  
00165 0060 00 0 00165 TCOA \* DELAY  
00166 0762 00 0 01221 RTBA 1  
00167 0540 00 0 02746 RCHA CT2 READ 100 WORDS - CHN A  
00170 0020 00 0 01016 TRA RTB2



00171 0074 00 4 06560 TSX RDNCK,4  
 00172 0761 00 0 00150 NOP RTA-1

\* COMPARE 100 WORD RECORD

00173 -0520 00 0 05504 RTA3 NZT CTRA  
 00174 0020 00 0 01025 TRA RTB3+1  
 00175 0500 00 0 03222 CLA K3C L HTR RDFDA+100  
 00176 0621 00 0 02464 STA RWC1  
 00177 0500 00 0 03214 CLA K3B L HTR WRFDA+100,1  
 00200 0621 00 0 02465 STA RWC1+1  
 00201 0621 00 0 02470 STA RWC1+4  
 00202 0074 00 2 01024 TSX RTB3,2 SET RETURN FROM COMPARE  
 00203 0774 00 2 00001 AXT 1,2 L NO. OF RECORDS IN XRB  
 00204 0074 00 4 06502 TSX ERROR-2,4 COMPARISON ERROR  
 00205 0761 00 0 00151 NOP RTA  
 00206 0020 00 0 02473 TRA RWC2-2  
  
 00207 0074 00 4 02456 RTA3A TSX RWC,4 SET RETURN TO CONTINUE  
  
 00210 0074 00 4 06511 TSX OK,4  
 00211 0020 00 0 00133 TRA WTA  
  
 00212 0761 00 0 00000 NOP  
 00213 0760 00 0 00140 SLF TURN ALL SENSE LIGHTS OFF  
 00214 0020 00 0 00216 TRA \*+2  
  
 00215 666322606060 BCD 1WTB TEST INSTRUCTION  
 00216 0534 00 1 02725 FRM1 LX A EIGHT,1 L +10 IN XRA  
 00217 -0500 00 1 03311 CAL K10+8,1 INITIALIZE RANDOM  
 00220 0602 00 1 03321 SLW K11+8,1 GENERATOR  
 00221 2 00001 1 00217 TIX \*-2,1,1  
  
 00222 0074 00 4 00126 TSX WEFA,4 GO TO WRITE EOF ALL UNITS

\* WRITE RANDOM WORD RANDOM LENGTH RECORDS

00223 0500 00 0 03166 CLA K2 L NO. OF REANDOM RECORDS  
 00224 0734 00 2 00000 PAX 0,2 IN XRB  
 00225 0400 00 0 02716 ADD ONE L +1  
 00226 0601 00 0 06557 STO RECNO  
  
 00227 0074 00 4 02514 TSX REST,4 GO TO RESET INDICATORS  
  
 00230 0074 00 4 00461 TSX GEN1,4  
  
 00231 -0520 00 0 05504 A1 NZT CTRA  
 00232 0020 00 0 01041 TRA B1  
 00233 0766 00 0 01221 WTBA 1  
 00234 0540 00 0 03000 RCHA CT10A  
 00235 0020 00 0 01041 TRA B1

00236	0074	00	4	06560	TSX RDNCK,4	
00237	0761	00	0	00132	NOP WTA-1	
00240	0074	00	4	02477	TSX ETT,4	GO TO CHECK FOR END OF TAPE
00241	-0760	00	0	00141	SLT 1	TEST SENSE LIGHT 1
00242	0020	00	0	00244	TRA *+2	OFF - CONTINUE
00243	0020	00	0	00216	TRA FRM1	ON - REPEAT.
00244	0500	00	0	03320	CLA K11+7	
00245	0760	00	0	00001	LBT	
00246	0020	00	0	00306	TRA A4A	DO NOT BACKSPACE
00247	0074	00	4	02563	TSX CLR,4	GO TO CLEAR READ FIELDS

\* BACKSPACE AND READ CURRENT RECORD

00250	0520	00	0	05504	A2	ZET CTRA	
00251	0764	00	0	01201		BSRA 1	
00252	0020	00	0	01046		TRA B2	
00253	-0520	00	0	05504	A3	NZT CTRA	
00254	0020	00	0	01051		TRA B3	
00255	0762	00	0	01221		RTBA 1	READ CURRENT RECORD
00256	0540	00	0	03014		RCHA CT12A	
00257	0020	00	0	01051		TRA B3	
00260	0074	00	4	06560		TSX RDNCK,4	
00261	0761	00	0	00150		NOP RTA-1	
00262	0074	00	4	00544		TSX GEN3,4	
00263	0020	00	0	00265		TRA *+2	
00264	666322216001					BCD 1WTBA 1	TEST INSTRUCTION
00265	0534	00	1	03162		LXA WDCT,1	L WORD COUNT IN XRA
00266	0500	00	0	03162		CLA WDCT	L WORD COUNT
00267	0400	00	0	02716		ADD ONE	L +1
00270	0601	00	0	06556		STO WDNO	
00271	-0520	00	0	05504	A4	NZT CTRA	
00272	0020	00	0	01057		TRA B4-4	
00273	0500	00	1	00000		CLA 0,1	L WORD READ CHN A
00274	0340	00	1	00000		CAS 0,1	COMPARE WORD GENERATED
00275	0020	00	0	00277		TRA *+2	
00276	0020	00	0	00304		TRA *+6	
00277	0560	00	1	00000		LDQ 0,1	L WORD GENERATED IN MQ
00300	0634	00	4	03034		SXA XRC,4	SAVE XRC
00301	0074	00	4	06502		TSX ERROR-2,4	COMPARISON ERROR
00302	0761	00	0	00265		NOP A4-4	

NOTE - THIS ROUTINE SPOT  
 CHECKS RANDOM RECORDS

00303	0534	00	4	03034		LXA XRC,4	RESET XRC
00304	2	00001	1	00273		TIX A4+2,1,1	DECREMENT WORD COUNT
00305	0020	00	0	01057		TRA B4-4	
00306	2	00001	2	00227	A4A	TIX A1-2,2,1	DECREMENT RECORD COUNT
00307	0074	00	4	00126		TSX WEFA,4	TO WRITE EOF ALL UNITS
* READ RANDOM BINARY RECORDS							
00310	-0520	00	0	05504	A5	NZT CTRA	
00311	0020	00	0	01100		TRA B5	
00312	-0764	00	0	01201		BSFA 1	BKSP OVER END OF FILE
00313	-0764	00	0	01201		BSFA 1	BKSP OVER FILE
00314	0020	00	0	01100		TRA B5	
00315	0534	00	1	02725		LXA EIGHT,1	L + 10 IN XRA
00316	-0500	00	1	03311		CAL K10+8,1	INITIALIZE RANDOM
00317	0602	00	1	03321		SLW K11+8,1	GENERATOR
00320	2	00001	1	00316		TIX *-2,1,1	
00321	-0520	00	0	05504	A6	NZT CTRA	
00322	0020	00	0	01105		TRA B6	
00323	0762	00	0	01221		RTBA 1	
00324	0540	00	0	02764		RCHA CT7	READ OVER EOF
00325	0020	00	0	01105		TRA B6	
00326	0500	00	0	03166		CLA K2	L NO. OF RANDOM RECORDS
00327	0734	00	2	00000		PAX 0,2	IN XRB
00330	0400	00	0	02716		ADD ONE	L +1
00331	0601	00	0	06557		STO RECNO	
00332	0074	00	4	02563		TSX CLR,4	GO TO CLEAR READ FIELDS
00333	0074	00	4	00461		TSX GEN1,4	GENERATE RANDOM RECORD
00334	0020	00	0	00336		TRA *+2	
00335	516322606060					BCD 1RTB	TEST INSTRUCTION
00336	-0520	00	0	05504	A7	NZT CTRA	
00337	0020	00	0	01112		TRA B7	
00340	0762	00	0	01221		RTBA 1	
00341	0540	00	0	03014		RCHA CT12A	
00342	0020	00	0	01112		TRA B7	
00343	0074	00	4	06560		TSX RDNCK,4	
00344	0761	00	0	00150		NOP RTA-1	

00345 0074 00 4 00544 TSX GEN3,4  
 00346 0020 00 0 00350 TRA \*+2

\* COMPARE

00347	516322216001		BCD 1RTBA 1	TEST INSTRUCTION
00350	0534 00 1 03162		LXA WDCT,1	L WORD COUNT IN XRA
00351	0500 00 0 03162		CLA WDCT	L WORD COUNT
00352	0400 00 0 02716		ADD ONE	L +1
00353	0601 00 0 06556		STO WDNO	
00354	-0520 00 0 05504		NZT CTRA	
00355	0020 00 0 00410		TRA A9+2	
00356	0500 00 1 00000	A8	CLA 0,1	L WORD READ - CHN A
00357	0340 00 1 00000		CAS 0,1	COMPARE WORD GENERATED
00360	0020 00 0 00362		TRA *+2	
00361	0020 00 0 00370		TRA *+7	
00362	0560 00 1 00000		LDQ 0,1	L WORD GENERATED
00363	0634 00 4 03034		SXA XRC,4	SAVE XRC
00364	0074 00 4 06502		TSX ERROR-2,4	COMPARISON ERROR
00365	0761 00 0 00350		NOP A8-6	
00366	0534 00 4 03034		LXA XRC,4	RESET XRC
00367	0760 00 0 00142		SLN 2	TURN ON SENSE LIGHT 2
00370	2 00001 1 00356		TIX A8,1,1	DECREMENT WORD COUNT
00371	-0760 00 0 00142		SLT 2	TEST SENSE LIGHT TWO
00372	0020 00 0 00411		TRA A9+3	OFF - DO NOT BACKSPACE
00373	-0500 00 0 03320		CAL K11+7	ON - L RANDOM WORD
00374	-0760 00 0 00001		PBT	
00375	0020 00 0 00411		TRA A9+3	NO - DO NOT BACKSPACE
00376	0764 00 0 01201		BSRA 1	BACKSPACE TO CHECK READ
00377	0500 00 0 03051		CLA TRA3	L TRA A9
00400	0601 00 0 00371		STO A8+11	
00401	0762 00 0 01221		RTBA 1	
00402	0540 00 0 03014		RCHA CT12A	
00403	0074 00 4 06560		TSX RDNCK,4	
00404	0761 00 0 00150		NOP RTA-1	
00405	0020 00 0 00350		TRA A8-6	
00406	0500 00 0 03060	A9	CLA SLT2	L SLT 2
00407	0601 00 0 00371		STO A8+11	
00410	0760 00 0 00140		SLF	TURN ALL SENSE LIGHTS OFF
00411	0020 00 0 01120		TRA B8-6	
00412	2 00001 2 00332		TIX A7-4,2,1	DECREMENT RECORD COUNT
00413	0020 00 0 00415		TRA A10	
00414	662526216001		BCD 1WEFA 1	TEST INSTRUCTION
00415	-0520 00 0 05504	A10	NZT CTRA	
00416	0020 00 0 01165		TRA B10	

00417	0762	00	0	01221		RTBA 1	READ EOF
00420	0540	00	0	03230		RCHA K4A	
00421	0020	00	0	01165		TRA B10	
00422	-0520	00	0	05504	A11	NZT CTRA	
00423	0020	00	0	01172		TRA B11	
00424	0060	00	0	00424		TCOA *	DELAY
00425	0640	00	0	03232		SCHA K4A+2	DSC CONTROL WORD
00426	0020	00	0	01172		TRA B11	
00427	-0520	00	0	05504		NZT CTRA	
00430	0020	00	0	01177		TRA B11+5	
00431	0560	00	0	03234		LDQ K4A+4	
00432	0500	00	0	03232		CLA K4A+2	
00433	0340	00	0	03234		CAS K4A+4	
00434	0020	00	0	00436		TRA *+2	
00435	0020	00	0	00446		TRA *+9	OK - SHOULD XFER
00436	0340	00	0	03233		CAS K4A+3	
00437	0020	00	0	00441		TRA *+2	
00440	0020	00	0	00444		TRA *+4	
00441	0074	00	4	06503		TSX ERROR-1,4	FAILURE TO DISCN CORRECTLY OR FAILURE TO SCH CORRECTLY
00442	0761	00	0	00415		NOP A10	
00443	0020	00	0	01177		TRA B11+5	
00444	0074	00	4	06503		TSX ERROR-1,4	FALSE EOR READ AT EOF
00445	-3	00000	4	00415		TXL A10,4	
00446	0020	00	0	01177		TRA B11+5	
00447	-0520	00	0	05504	A12	NZT CTRA	
00450	0020	00	0	01223		TRA B12	
00451	0030	00	0	00454		TEFA *+3	EOF SHOULD BE ON
00452	0074	00	4	06503		TSX ERROR-1,4	FAILED TO READ EOF-CHN A
00453	-3	00000	4	00415		TXL A10,4	
00454	0020	00	0	01223		TRA B12	
00455	0074	00	4	06511		TSX OK,4	
00456	0020	00	0	00213		TRA FRM1-3	
00457	0761	00	0	00000		NOP	
00460	0020	00	0	00641		TRA PRNT	

\* RANDOM BINARY GENERATOR

00461	0634	00	2	03033	GEN1	SXA XRB,2	SAVE XRB
00462	0560	00	0	03320		LDQ K11+7	RANDOM NUMBER GENERATOR
00463	0500	00	0	02715		CLA ZERO	CLEAR ACC
00464	-0763	00	0	00006		LGL 6	SHIFT FOR RANDOM NO OF WDS MAXIMUM OF 77
00465	0400	00	0	02716		ADD ONE	L +1
00466	0734	00	1	00000		PAX 0,1	L NO OF WDS PER REC IN XRA
00467	0634	00	1	03162		SXA WDCT,1	SET UP WORD COUNT IN
00470	-0634	00	1	03000		SXD CT10A,1	
00471	-0634	00	1	03002		SXD CT10B,1	WRITE
00472	-0634	00	1	03004		SXD CT10C,1	

00473	-0634	00	1	03006	SXD	CT10D,1	
00474	-0634	00	1	03010	SXD	CT10E,1	FIELDS
00475	-0634	00	1	03012	SXD	CT10F,1	
							AND
00476	-0634	00	1	03014	SXD	CT12A,1	
00477	-0634	00	1	03016	SXD	CT12B,1	READ
00500	-0634	00	1	03020	SXD	CT12C,1	
00501	-0634	00	1	03022	SXD	CT12D,1	
00502	-0634	00	1	03024	SXD	CT12E,1	FIELDS
00503	-0634	00	1	03026	SXD	CT12F,1	
00504	0774	00	2	00022	AXT	18,2	L +22 IN XRB
00505	0401	00	0	03177	ADM	K3	INITIAL ADDR - WRFDA
00506	0621	00	2	00542	STA	GEN2+22,2	
00507	0401	00	0	03273	ADM	K6+3	L +100
00510	2 00003	2	00506	TIX	*-2,2,3		
00511	0754	00	1	00000	PXA	0,1	
00512	0400	00	0	03205	ADD	K3+6	INITIAL ADDR OF RANDOM FLD
00513	0621	00	0	00515	STA	GEN2+1	
00514	-0500	00	0	03320	GEN2	CAL K11+7	GENERATE N-RANDOM WORDS
00515	0401	00	1	00000	ADM	0,1	
00516	-0320	00	0	02704	ANA	MASK1	L 777700007777
00517	-0501	00	0	02705	ORA	MASK1+1	L 000021210000
00520	0602	00	1	00000	SLW	0,1	
00521	-0320	00	0	02704	ANA	MASK1	
00522	-0501	00	0	02706	ORA	MASK1+2	L 000022220000
00523	0602	00	1	00000	SLW	0,1	
00524	-0320	00	0	02704	ANA	MASK1	
00525	-0501	00	0	02707	ORA	MASK1+3	L 000023230000
00526	0602	00	1	00000	SLW	0,1	
00527	-0320	00	0	02704	ANA	MASK1	
00530	-0501	00	0	02710	ORA	MASK1+4	L 000024240000
00531	0602	00	1	00000	SLW	0,1	
00532	-0320	00	0	02704	ANA	MASK1	
00533	-0501	00	0	02711	ORA	MASK1+5	L 000025250000
00534	0602	00	1	00000	SLW	0,1	
00535	-0320	00	0	02704	ANA	MASK1	
00536	-0501	00	0	02712	ORA	MASK1+6	L 000026260000
00537	0602	00	1	00000	SLW	0,1	
00540	2 00001	1	00515	TIX	GEN2+1,1,1		
00541	0602	00	0	03320	SLW	WRFDA-1	
00542	0534	00	2	03033	LXA	XRB,2	RESET XRB
00543	0020	00	4	00001	TRA	1,4	EXIT
00544	0500	00	0	03206	GEN3	CLA K3A	INITIAL ADDR READ FIELD - A
00545	0400	00	0	03162	ADD	WDCT	WORD COUNT
00546	0621	00	0	00273	STA	A4+2	
00547	0621	00	0	00356	STA	A8	
00550	0500	00	0	03207	CLA	K3A+1	INITIAL ADDR READ FIELD - B
00551	0400	00	0	03162	ADD	WDCT	
00552	0621	00	0	01065	STA	B4+2	
00553	0621	00	0	01126	STA	B8	
00554	0500	00	0	03210	CLA	K3A+2	INITIAL ADDR READ FIELD - C
00555	0400	00	0	03162	ADD	WDCT	
00556	0621	00	0	01332	STA	C4+2	

00557	0621	00	0	01373	STA C8	
00560	0500	00	0	03211	CLA K3A+3	INITIAL ADDR READ FIELD - D
00561	0400	00	0	03162	ADD WDCT	
00562	0621	00	0	01577	STA D4+2	
00563	0621	00	0	01640	STA D8	
00564	0500	00	0	03212	CLA K3A+4	INITIAL ADDR READ FIELD - E
00565	0400	00	0	03162	ADD WDCT	
00566	0621	00	0	02044	STA E4+2	
00567	0621	00	0	02105	STA E8	
00570	0500	00	0	03213	CLA K3A+5	INITIAL ADDR READ FIELD - F
00571	0400	00	0	03162	ADD WDCT	
00572	0621	00	0	02312	STA F4+2	
00573	0621	00	0	02353	STA F8	
00574	0500	00	0	03177	CLA K3	INITIAL ADDR WR FIELD - A
00575	0400	00	0	03162	ADD WDCT	
00576	0621	00	0	00274	STA A4+3	
00577	0621	00	0	00277	STA A4+6	
00600	0621	00	0	00357	STA A8+1	
00601	0621	00	0	00362	STA A8+4	
00602	0500	00	0	03200	CLA K3+1	INITIAL ADDR WR FIELD - B
00603	0400	00	0	03162	ADD WDCT	
00604	0621	00	0	01066	STA B4+3	
00605	0621	00	0	01071	STA B4+6	
00606	0621	00	0	01127	STA B8+1	
00607	0621	00	0	01132	STA B8+4	
00610	0500	00	0	03201	CLA K3+2	INITIAL ADDR WR FIELD - C
00611	0400	00	0	03162	ADD WDCT	
00612	0621	00	0	01333	STA C4+3	
00613	0621	00	0	01336	STA C4+6	
00614	0621	00	0	01374	STA C8+1	
00615	0621	00	0	01377	STA C8+4	
00616	0500	00	0	03202	CLA K3+3	INITIAL ADDR WR FIELD - D
00617	0400	00	0	03162	ADD WDCT	
00620	0621	00	0	01600	STA D4+3	
00621	0621	00	0	01603	STA D4+6	
00622	0621	00	0	01641	STA D8+1	
00623	0621	00	0	01644	STA D8+4	
00624	0500	00	0	03203	CLA K3+4	INITIAL ADDR WR FIELD - E
00625	0400	00	0	03162	ADD WDCT	
00626	0621	00	0	02045	STA E4+3	
00627	0621	00	0	02050	STA E4+6	
00630	0621	00	0	02106	STA E8+1	
00631	0621	00	0	02111	STA E8+4	
00632	0500	00	0	03204	CLA K3+5	INITIAL ADDR WR FIELD - F
00633	0400	00	0	03162	ADD WDCT	
00634	0621	00	0	02313	STA F4+3	
00635	0621	00	0	02316	STA F4+6	
00636	0621	00	0	02354	STA F8+1	
00637	0621	00	0	02357	STA F8+4	
00640	0020	00	4	00001	TRA 1,4	CONTINUE PROGRAM

\* PRINT PASS COMPLETE FOR FRAME

00641 0074 00 2 02650 PRNT TSX PRT,2 GO TO SPACE PRINTER

00642	0774	00	1	00006	AXT 6,1	L +6 IN XRA
00643	-0520	00	1	05512	NZT CTRF+1,1	
00644	0020	00	0	00652	TRA *+6	
00645	0500	00	1	02671	CLA NDRA+6,1	
00646	0621	00	0	00705	STA PASS+7	
00647	0634	00	1	03035	SXA TEMP,1	SAVE XRA
00650	0074	00	4	00676	TSX PASS,4	GO TO PRINT
00651	0534	00	1	03035	LXA TEMP,1	RESET XRA
00652	2 00001	1	1	00643	TIX *-7,1,1	
00653	0020	00	0	00654	TRA RDUS	

\* REDUCE UNIT COUNT

00654	0774	00	1	00006	RDUS AXT 6,1	
00655	0500	00	1	05512	CLA CTRF+1,1	L CURRENT UNIT COUNT
00656	0100	00	0	00661	TZE *+3	NO COUNT - CHECK NEXT CHN
00657	0402	00	0	02716	SUB ONE	L +1
00660	0601	00	1	05512	STO CTRF+1,1	SAVE NEW COUNT
00661	2 00001	1	1	00655	TIX *-4,1,1	

\* CHECK UNIT COUNT TO STEP UNIT ADDRESS

00662	0774	00	1	00006	CHK AXT 6,1	L +6 IN XRA TO TEST LOOP THROUGH 6 UNIT COUNTS
00663	0774	00	2	00022	AXT 18,2	L +20 IN XRC
00664	-0520	00	1	05512	NZT CTRF+1,1	CHECK CURRENT UNIT COUNT
00665	0020	00	0	00671	TRA *+4	NO COUNT - TRY NEXT CHN
00666	-0625	00	0	03034	STL XRC	COUNT REMAINING - PROCEED
00667	0020	00	2	02611	TRA STPF+3,2	
00670	0760	00	0	00142	SLN 2	INDICATE UNITS LEFT TO TEST
00671	2 00003	2	00672	TIX *+1,2,3		
00672	2 00001	1	00664	TIX *-6,1,1		
00673	-0760	00	0	00142	SLT 2	CHECK FOR UNITS UNTESTED
00674	0020	00	0	00743	TRA PASS3	OFF-PASS COMPLETE ALL UNITS
00675	0020	00	0	00106	TRA AA	ON - CONTINUE TESTING
00676	0760	00	0	00163	PASS SWT 3	TEST SENSE SWITCH 3
00677	0020	00	0	00701	TRA *+2	
00700	0020	00	0	00654	TRA RDUS	BYPASS PRINT
00701	0534	00	1	03171	LXA K2+3,1	L +22 IN XRA
00702	-0500	00	0	02713	CAL MASK2	L -341737707030
00703	0320	00	1	04777	ANS PR1+22,1	
00704	2 00002	1	00702	TIX *-2,1,2		
00705	0500	00	0	00000	CLA 0	L WRITE TAPE CURRENT UNIT
00706	0621	00	0	03040	STA TEMP3	
00707	-0320	00	0	03270	ANA K6	L +17
00710	0044	00	0	00000	PAI	L INDS WITH ACC
00711	0056	00	000012	RNT 00012		TEST FOR UNIT 10
00712	0020	00	0	00722	TRA PASS1	NO
00713	0774	00	1	00004	AXT 4,1	YES - L +4 IN XRA



00714	0500	00	0	02716		CLA ONE	L +1
00715	-0602	00	1	04773		ORS PR1+18,1	
00716	0774	00	1	00002		AXT 2,1	L +2 IN XRA
00717	0500	00	0	02717		CLA TWO	L +2
00720	-0602	00	1	04773		ORS PR1+18,1	
00721	0020	00	0	00741		TRA PASS2	
00722	0500	00	0	03040	PASS1	CLA TEMP3	
00723	-0320	00	0	02724		ANA SEVEN	CLEAR TO RIGHT DIGIT
00724	0767	00	0	00001		ALS 1	DOUBLE INCREMENT
00725	0734	00	1	00000		PAX 0,1	
00726	0500	00	0	02716		CLA ONE	L LOW BIT
00727	-0602	00	1	04773		ORS PR1+18,1	
00730	0774	00	1	00000		AXT 0,1	L +0 IN XRA
00731	0500	00	0	02717		CLA TWO	L HIGH BIT
00732	-0602	00	1	04773		ORS PR1+18,1	
00733	0500	00	0	03040		CLA TEMP3	
00734	-0320	00	0	03175		ANA K2+7	
00735	0771	00	0	00010		ARS 8	MOVE TO LOW ORDER + DOUBLE
00736	0734	00	1	00000		PAX 0,1	
00737	0500	00	0	03174		CLA K2+6	L +200 BIT TO PRINT CHN
00740	-0602	00	1	04773		ORS PR1+18,1	
00741	0074	00	2	02653	PASS2	TSX PRT1,2	
00742	0020	00	4	00001		TRA 1,4	
00743	0760	00	0	00163	PASS3	SWT 3	TEST SENSE SWITCH 3
00744	0020	00	0	02657		TRA PRT2	UP - GO TO PRINT
00745	0760	00	0	00166	FINL	SWT 6	
00746	0020	00	0	00757		TRA FINL1	
00747	0760	00	0	00165		SWT 5	
00750	0020	00	0	00754		TRA *+4	
00751	0500	00	0	03164		CLA K1	L NOP
00752	0601	00	0	00104		STO AA-2	
00753	0020	00	0	00035		TRA RUC	
00754	0500	00	0	03165		CLA K1+1	L TSX REWA,2
00755	0601	00	0	00104		STO AA-2	
00756	0020	00	0	00034		TRA RUC-1	
00757	0762	00	0	01321	FINL1	RCDA	SELECT CARD READER NOTE - THIS INSTR IS REPLACED BY RTBA 1 IF DIAGNOSTIC WAS READ FROM TAPE
00760	0540	00	0	00763		RCHA FNLX	READ IN
00761	0544	00	0	00000		LCHA 0	NEXT
00762	0020	00	0	00001		TRA 1	PROGRAM
00763	-1	00003	0	00000	FNLX	IOCT 0,0,3	

\*

CHANNEL B INSTRUCTIONS

00764 0520 00 0 05505 REWB ZET CTRB  
 00765 0772 00 0 02201 REWB 1 REWIND CURRENT UNIT-CHN B  
 00766 0020 00 0 01231 TRA REWC

00767 0520 00 0 05505 WEFB ZET CTRB  
 00770 0770 00 0 02201 WEFB 1 WRITE END OF FILE - CHN B  
 00771 0020 00 0 01234 TRA WEFB

\* WRITE ONE 100 WORD RECORD

00772 666322226060 BCD 1WTBB TEST INSTRUCTION  
 00773 -0520 00 0 05505 WTB NZT CTRB  
 00774 0020 00 0 01240 TRA WTC  
 00775 0766 00 0 02221 WTBB 1  
 00776 -0540 00 0 02734 RCHB CT1B WRITE 100 WDS FROM WRFDB  
 00777 0074 00 4 02477 TSX ETT,4 GO TO CHECK FOR END OF TAPE  
  
 01000 -0760 00 0 00141 SLT 1  
 01001 0020 00 0 01240 TRA WTC OFF - CONTINUE  
 01002 0020 00 0 00133 TRA WTA ON - REPEAT

\* READ ONE 100 WORD RECORD

01003 516322226001 BCD 1RTBB 1 TEST INSTRUCTION  
 01004 -0520 00 0 05505 RTB NZT CTRB  
 01005 0020 00 0 01251 TRA RTC  
 01006 -0764 00 0 02201 BSFB 1  
 01007 -0022 00 0 01010 TRCB \*+1 TURN OFF TRCB IND IF ON  
 01010 0020 00 0 01251 TRA RTC  
  
 01011 -0520 00 0 05505 RTB1 NZT CTRB  
 01012 0020 00 0 01256 TRA RTC1  
 01013 0762 00 0 02221 RTBB 1 READ OVER  
 01014 -0540 00 0 02766 RCHB CT7+2 END OF FILE  
 01015 0020 00 0 01256 TRA RTC1  
  
 01016 -0520 00 0 05505 RTB2 NZT CTRB  
 01017 0020 00 0 01263 TRA RTC2  
 01020 0061 00 0 01020 TCOB \* DELAY  
 01021 0762 00 0 02221 RTBB 1  
 01022 -0540 00 0 02750 RCHB CT2+2 READ 100 WORDS - CHN B  
 01023 0020 00 0 01263 TRA RTC2

\* COMPARE 100 WORD RECORD

01024 0074 00 4 02456 RTB3 TSX RWC,4 SET RETURN TO CONTINUE  
 01025 -0520 00 0 05505 NZT CTRB  
 01026 0020 00 0 01272 TRA RTC3+1  
 01027 0500 00 0 03223 CLA K3C+1 L HTR RDFDB+100  
 01030 0621 00 0 02464 STA RWC1

01031	0500	00	0	03215	CLA	K3B+1	L HTR	WRFDB+100,1
01032	0621	00	0	02465	STA	RWC1+1		
01033	0621	00	0	02470	STA	RWC1+4		
01034	0074	00	2	01271	TSX	RTC3,2	SET	RETURN FROM COMPARE
01035	0774	00	2	00001	AXT	1,2	L NO.	OF RECORDS IN XRB
01036	0074	00	4	06502	TSX	ERROR-2,4	COMPARISON	ERROR
01037	0761	00	0	01004	NOP	RTB		
01040	0020	00	0	02473	TRA	RWC2-2		

\* WRITE RANDOM WORD LENGTH RECORDS

01041	-0520	00	0	05505	B1	NZT	CTRB	
01042	0020	00	0	01306		TRA	C1	
01043	0766	00	0	02221		WTBB	1	
01044	-0540	00	0	03002		RCHB	CT10B	
01045	0020	00	0	01306		TRA	C1	
01046	0520	00	0	05505	B2	ZET	CTRB	
01047	0764	00	0	02201		BSRB	1	
01050	0020	00	0	01313		TRA	C2	
01051	-0520	00	0	05505	B3	NZT	CTRB	
01052	0020	00	0	01316		TRA	C3	
01053	0762	00	0	02221		RTBB	1	
01054	-0540	00	0	03016		RCHB	CT12B	
01055	0020	00	0	01316		TRA	C3	
01056	516322226001					BCD	1RTBB	1 TEST INSTRUCTION
01057	0534	00	1	03162		LXA	WDCT,1	L WORD COUNT IN XRA
01060	0500	00	0	03162		CLA	WDCT	L WORD COUNT
01061	0400	00	0	02716		ADD	ONE	L +1
01062	0601	00	0	06556		STO	WDNO	
01063	-0520	00	0	05505	B4	NZT	CTRB	
01064	0020	00	0	01330		TRA	C4	
01065	0500	00	1	00000		CLA	0,1	L WORD READ CHN B
01066	0340	00	1	00000		CAS	0,1	COMPARE WORD GENERATED
01067	0020	00	0	01071		TRA	*+2	
01070	0020	00	0	01076		TRA	*+6	
01071	0560	00	1	00000		LDQ	0,1	L WORD GENERATED IN MQ
01072	0634	00	4	03034		SXA	XRC,4	SAVE XRC
01073	0074	00	4	06502		TSX	ERROR-2,4	COMPARISON ERROR
01074	0761	00	0	01057		NOP	B4-4	
								NOTE - THIS ROUTINE SPOT
								CHECKS RANDOM RECORDS
01075	0534	00	4	03034		LXA	XRC,4	RESET XRC
01076	2	00001	1	01065		TIX	B4+2,1,1	DECREMENT WORD COUNT
01077	0020	00	0	01324		TRA	C4-4	

\* READ RANDOM BINARY RECORDS

01100	-0520	00	0	05505	B5	NZT	CTRB	
01101	0020	00	0	01345		TRA	C5	

01102	-0764	00	0	02201		BSFB 1	BKSP OVER END OF FILE
01103	-0764	00	0	02201		BSFB 1	BKSP OVER FILE
01104	0020	00	0	01345		TRA C5	
01105	-0520	00	0	05505	B6	NZT CTRB	
01106	0020	00	0	01352		TRA C6	
01107	0762	00	0	02221		RTBB 1	
01110	-0540	00	0	02766		RCHB CT7+2	READ OVER EOF
01111	0020	00	0	01352		TRA C6	
01112	-0520	00	0	05505	B7	NZT CTRB	
01113	0020	00	0	01357		TRA C7	
01114	0762	00	0	02221		RTBB 1	
01115	-0540	00	0	03016		RCHB CT12B	
01116	0020	00	0	01357		TRA C7	
* COMPARE							
01117	516322220160					BCD 1RTBB1 1	TEST INSTRUCTION
01120	0534	00	1	03162		LXA WDCT,1	L WORD COUNT IN XRA
01121	0500	00	0	03162		CLA WDCT	L WORD COUNT
01122	0400	00	0	02716		ADD ONE	L +1
01123	0601	00	0	06556		STO WDNO	
01124	-0520	00	0	05505		NZT CTRB	
01125	0020	00	0	01371		TRA C8-2	
01126	0500	00	1	00000	B8	CLA 0,1	L WORD READ CHN B
01127	0340	00	1	00000		CAS 0,1	COMPARE WORD GENERATED
01130	0020	00	0	01132		TRA *+2	
01131	0020	00	0	01140		TRA *+7	
01132	0560	00	1	00000		LDQ 0,1	L WORD GENERATED IN MQ
01133	0634	00	4	03034		SXA XRC,4	SAVE XRC
01134	0074	00	4	06502		TSX ERROR-2,4	COMPARISON ERROR
01135	0761	00	0	01120		NOP B8-6	
01136	0534	00	4	03034		LXA XRC,4	RESET XRC
01137	0760	00	0	00142		SLN 2	TURN ON SENSE LIGHT TWO
01140	2 00001	1	1	01126		TIX B8,1,1	DECREMENT WORD COUNT
01141	-0760	00	0	00142		SLT 2	TEST SENSE LIGHT TWO
01142	0020	00	0	01365		TRA C8-6	OFF - DO NOT BACKSPACE
01143	-0500	00	0	03320		CAL K11+7	
01144	-0760	00	0	00001		PBT	
01145	0020	00	0	01365		TRA C8-6	NO - DO NOT BACKSPACE
01146	0764	00	0	02201		BSRB 1	
01147	0500	00	0	03052		CLA TRA3+1	L TRA B9
01150	0601	00	0	01141		STO B8+11	
01151	0762	00	0	02221		RTBB 1	
01152	-0540	00	0	03016		RCHB CT12B	
01153	0634	00	4	03034		SXA XRC,4	SAVE XRC
01154	0074	00	4	06560		TSX RDNCK,4	
01155	0761	00	0	01120		NOP B8-6	
01156	0534	00	4	03034		LXA XRC,4	RESET XRC
01157	0020	00	0	01120		TRA B8-6	

01160	0500	00	0	03060	B9	CLA SLT2	L SLT 2
01161	0601	00	0	01141		STO B8+11	
01162	0760	00	0	00140		SLF	TURN ALL SENSE LIGHTS OFF
01163	0020	00	0	01365		TRA C8-6	
01164	662526226001					BCD 1WEFB 1	TEST INSTRUCTION
01165	-0520	00	0	05505	B10	NZT CTRB	
01166	0020	00	0	01432		TRA C10	
01167	0762	00	0	02221		RTBB 1	READ EOF
01170	-0540	00	0	03235		RCHB K4B	
01171	0020	00	0	01432		TRA C10	
01172	-0520	00	0	05505	B11	NZT CTRB	
01173	0020	00	0	01437		TRA C11	
01174	0061	00	0	01174		TCOB *	DELAY
01175	-0640	00	0	03237		SCHB K4B+2	DSC CONTROL WORD
01176	0020	00	0	01437		TRA C11	
01177	-0520	00	0	05505		NZT CTRB	
01200	0020	00	0	01444		TRA C11+5	
01201	0560	00	0	03241		LDQ K4B+4	
01202	0500	00	0	03237		CLA K4B+2	
01203	0340	00	0	03241		CAS K4B+4	
01204	0020	00	0	01206		TRA *+2	
01205	0020	00	0	01222		TRA *+13	OK - SHOULD XFER
01206	0340	00	0	03240		CAS K4B+3	
01207	0020	00	0	01211		TRA *+2	
01210	0020	00	0	01216		TRA *+6	
01211	0634	00	4	03034		SXA XRC,4	SAVE XRC
01212	0074	00	4	06503		TSX ERROR-1,4	FAILURE TO DISCN CORRECTLY OF FAILED TO SCH CORRECTLY
01213	0761	00	0	01165		NOP B10	
01214	0534	00	4	03034		LXA XRC,4	RESET XRC
01215	0020	00	0	01222		TRA *+5	
01216	0634	00	4	03034		SXA XRC,4	SAVE XRC
01217	0074	00	4	06503		TSX ERROR-1,4	FALSE EOR READ AT EOF
01220	-3	00000	4	01165		TXL B10,4	
01221	0534	00	4	03034		LXA XRC,4	RESET XRC
01222	0020	00	0	01444		TRA C11+5	
01223	-0520	00	0	05505	B12	NZT CTRB	
01224	0020	00	0	01470		TRA C12	
01225	-0030	00	0	01230		TEFB *+3	EOF SHOULD BE ON
01226	0074	00	4	06503		TSX ERROR-1,4	FAILED TO READ EOF-CHN B
01227	-3	00000	4	00415		TXL A10,4	
01230	0020	00	0	01470		TRA C12	

\* CHANNEL C INSTRUCTIONS

01231	0520	00	0	05506	REWC	ZET CTRC	
01232	0772	00	0	03201		REWC 1	REWIND CURRENT UNIT-CHN C
01233	0020	00	0	01476		TRA REWD	

01234	0520	00	0	05506	WEFC	ZET	CTRC	
01235	0770	00	0	03201		WEFC	1	WRITE END OF FILE - CHN C
01236	0020	00	0	01501		TRA	WEFD	

\* WRITE ONE 100 WORD RECORD

01237	666322236001					BCD	1WTBC	1	TEST INSTRUCTION
01240	-0520	00	0	05506	WTC	NZT	CTRC		
01241	0020	00	0	01505		TRA	WTD		
01242	0766	00	0	03221		WTBC	1		
01243	0541	00	0	02736		RCHC	CT1C		WRITE 100 WDS FROM WRFDC
01244	0074	00	4	02477		TSX	ETT,4		GO TO CHECK FOR END OF TAPE
01245	-0760	00	0	00141		SLT	1		
01246	0020	00	0	01505		TRA	WTD		OFF - CONTINUE
01247	0020	00	0	00133		TRA	WTA		ON - REPEAT

\* READ ONE 100 WORD RECORD

01250	516322236001					BCD	1RTBC	1	TEST INSTRUCTION
01251	-0520	00	0	05506	RTC	NZT	CTRC		
01252	0020	00	0	01516		TRA	RTD		
01253	-0764	00	0	03201		BSFC	1		
01254	0024	00	0	01255		TRCC	*+1		TURN OFF TRCC IND IF ON
01255	0020	00	0	01516		TRA	RTD		
01256	-0520	00	0	05506	RTC1	NZT	CTRC		
01257	0020	00	0	01523		TRA	RTD1		
01260	0762	00	0	03221		RTBC	1		READ OVER
01261	0541	00	0	02770		RCHC	CT7+4		
01262	0020	00	0	01523		TRA	RTD1		
01263	-0520	00	0	05506	RTC2	NZT	CTRC		
01264	0020	00	0	01530		TRA	RTD2		
01265	0062	00	0	01265		TCOC	*		DELAY
01266	0762	00	0	03221		RTBC	1		
01267	0541	00	0	02752		RCHC	CT2+4		READ 100 WORDS - CHN C
01270	0020	00	0	01530		TRA	RTD2		

\* COMPARE 100 WORD RECORDS

01271	0074	00	4	02456	RTC3	TSX	RWC,4		SET RETURN TO CONTINUE
01272	-0520	00	0	05506		NZT	CTRC		
01273	0020	00	0	01537		TRA	RTD3+1		
01274	0500	00	0	03224		CLA	K3C+2		L HTR RDFDC+100
01275	0621	00	0	02464		STA	RWC1		
01276	0500	00	0	03216		CLA	K3B+2		L HTR WRFDC+100,1
01277	0621	00	0	02465		STA	RWC1+1		
01300	0621	00	0	02470		STA	RWC1+4		
01301	0074	00	2	01536		TSX	RTD3,2		SET RETURN FROM COMPARE
01302	0774	00	2	00001		AXT	1,2		L NO. OF RECORDS IN XRB

01303 0074 00 4 06502 TSX ERROR-2,4 COMPARISON ERROR  
 01304 0761 00 0 01251 NOP RTC  
 01305 0020 00 0 02473 TRA RWC2-2

\* WRITE RANDOM WORD RANDOM LENGTH RECORDS

01306 -0520 00 0 05506 C1 NZT CTCRC  
 01307 0020 00 0 01553 TRA D1  
 01310 0766 00 0 03221 WTBC 1  
 01311 0541 00 0 03004 RCHC CT10C  
 01312 0020 00 0 01553 TRA D1

01313 0520 00 0 05506 C2 ZET CTCRC  
 01314 0764 00 0 03201 BSRC 1  
 01315 0020 00 0 01560 TRA D2

01316 -0520 00 0 05506 C3 NZT CTCRC  
 01317 0020 00 0 01563 TRA D3  
 01320 0762 00 0 03221 RTBC 1  
 01321 0541 00 0 03020 RCHC CT12C  
 01322 0020 00 0 01563 TRA D3

01323 516322236001 BCD 1RTBC 1 TEST INSTRUCTION  
 01324 0534 00 1 03162 LXa WDCT,1 L WORD COUNT IN XRA  
 01325 0500 00 0 03162 CLA WDCT L WORD COUNT  
 01326 0400 00 0 02716 ADD ONE L +1  
 01327 0601 00 0 06556 STO WDNO

01330 -0520 00 0 05506 C4 NZT CTCRC  
 01331 0020 00 0 01575 TRA D4  
 01332 0500 00 1 00000 CLA 0,1 L WORD READ CHN C  
 01333 0340 00 1 00000 CAS 0,1 COMPARE WORD GENERATED  
 01334 0020 00 0 01336 TRA \*+2  
 01335 0020 00 0 01343 TRA \*+6  
 01336 0560 00 1 00000 LDQ 0,1 L WORD GENERATED IN MQ  
 01337 0634 00 4 03034 SXa XRC,4 SAVE XRC  
 01340 0074 00 4 06502 TSX ERROR-2,4 COMPARISON ERROR  
 01341 0761 00 0 01324 NOP C4-4

NOTE - THIS ROUTINE SPOT  
 CHECKS RANDOM RECORDS

01342 0534 00 4 03034 LXa XRC,4 RESET XRC  
 01343 2 00001 1 01332 TIX C4+2,1,1 DECREMENT WORD COUNT  
 01344 0020 00 0 01571 TRA D4-4

\* READ RANDOM BINARY RECORDS

01345 -0520 00 0 05506 C5 NZT CTCRC  
 01346 0020 00 0 01612 TRA D5  
 01347 -0764 00 0 03201 BSFC 1 BKSP OVER END OF FILE  
 01350 -0764 00 0 03201 BSFC 1 BKSP OVER FILE  
 01351 0020 00 0 01612 TRA D5

01352 -0520 00 0 05506 C6 NZT CTCRC  
 01353 0020 00 0 01617 TRA D6

01354	0762	00	0	03221		RTBC 1	
01355	0541	00	0	02770		RCHC CT7+4	READ OVER EOF
01356	0020	00	0	01617		TRA D6	
01357	-0520	00	0	05506	C7	NZT CTRC	
01360	0020	00	0	01624		TRA D7	
01361	0762	00	0	03221		RTBC 1	
01362	0541	00	0	03020		RCHC CT12C	
01363	0020	00	0	01624		TRA D7	
*	COMPARE						
01364	516322236001					BCD 1RTBC 1	TEST INSTRUCTION
01365	0534	00	1	03162		LXA WDCT,1	L WORD COUNT IN XRA
01366	0500	00	0	03162		CLA WDCT	L WORD COUNT
01367	0400	00	0	02716		ADD ONE	L +1
01370	0601	00	0	06556		STO WDNO	
01371	-0520	00	0	05506		NZT CTRC	
01372	0020	00	0	01636		TRA D8-2	
01373	0500	00	1	00000	C8	CLA 0,1	L WORD READ - CHN C
01374	0340	00	1	00000		CAS 0,1	COMPARE WORD GENERATED
01375	0020	00	0	01377		TRA *+2	
01376	0020	00	0	01405		TRA *+7	
01377	0560	00	1	00000		LDQ 0,1	L WORD GENERATED IN MQ
01400	0634	00	4	03034		SXA XRC,4	SAVE XRC
01401	0074	00	4	06502		TSX ERROR-2,4	COMPARISON ERROR
01402	0761	00	0	01365		NOP C8-6	
01403	0534	00	4	03034		LXA XRC,4	RESET XRC
01404	0760	00	0	00142		SLN 2	TURN ON SENSE LIGHT TWO
01405	2 00001	1	1	01373		TIX C8,1,1	DECREMENT WORD COUNT
01406	-0760	00	0	00142		SLT 2	TEST SENSE LIGHT TWO
01407	0020	00	0	01632		TRA D8-6	OFF - DO NOT BACKSPACE
01410	-0500	00	0	03320		CAL K11+7	
01411	-0760	00	0	00001		PBT	
01412	0020	00	0	01632		TRA D8-6	NO - DO NOT BACKSPACE
01413	0764	00	0	03201		BSRC 1	
01414	0500	00	0	03053		CLA TRA3+2	L TRA C9
01415	0601	00	0	01406		STO C8+11	
01416	0762	00	0	03221		RTBC 1	
01417	0541	00	0	03020		RCHC CT12C	
01420	0634	00	4	03034		SXA XRC,4	SAVE XRC
01421	0074	00	4	06560		TSX RDNCK,4	
01422	0761	00	0	01365		NOP C8-6	
01423	0534	00	4	03034		LXA XRC,4	RESET XRC
01424	0020	00	0	01365		TRA C8-6	
01425	0500	00	0	03060	C9	CLA SLT2	L SLT2 2
01426	0601	00	0	01406		STO C8+11	
01427	0760	00	0	00140		SLF	TURN ALL SENSE LIGHTS OFF
01430	0020	00	0	01632		TRA D8-6	



01431	662526236001				BCD 1WEFC 1	TEST INSTRUCTION
01432	-0520 00 0 05506	C10			NZT CTRC	
01433	0020 00 0 01677				TRA D10	
01434	0762 00 0 03221				RTBC 1	
01435	0541 00 0 03242				RCHC K4C	
01436	0020 00 0 01677				TRA D10	
01437	-0520 00 0 05506	C11			NZT CTRC	
01440	0020 00 0 01704				TRA D11	
01441	0062 00 0 01441				TCOC *	DELAY
01442	0641 00 0 03244				SCHC K4C+2	DSC CONTROL WORD
01443	0020 00 0 01704				TRA D11	
01444	-0520 00 0 05506				NZT CTRC	
01445	0020 00 0 01711				TRA D11+5	
01446	0560 00 0 03246				LDQ K4C+4	
01447	0500 00 0 03244				CLA K4C+2	
01450	0340 00 0 03246				CAS K4C+4	
01451	0020 00 0 01453				TRA *+2	
01452	0020 00 0 01467				TRA *+13	OK - SHOULD XFER
01453	0340 00 0 03245				CAS K4C+3	
01454	0020 00 0 01456				TRA *+2	
01455	0020 00 0 01463				TRA *+6	
01456	0634 00 4 03034				SXA XRC,4	SAVE XRC
01457	0074 00 4 06503				TSX ERROR-1,4	FAILURE TO DISCN CORRECTLY OF FAILED TO SCH CORRECTLY
01460	0761 00 0 01432				NOP C10	
01461	0534 00 4 03034				LXA XRC,4	RESET XRC
01462	0020 00 0 01467				TRA *+5	
01463	0634 00 4 03034				SXA XRC,4	SAVE XRC
01464	0074 00 4 06503				TSX ERROR-1,4	FALSE EOR READ AT EOF
01465	-3 00000 4 01432				TXL C10,4	
01466	0534 00 4 03034				LXA XRC,4	RESET XRC
01467	0020 00 0 01711				TRA D11+5	
01470	-0520 00 0 05506	C12			NZT CTRC	
01471	0020 00 0 01735				TRA D12	
01472	0031 00 0 01475				TEFC *+3	EOF SHOULD BE ON
01473	0074 00 4 06503				TSX ERROR-1,4	FAILED TO READ EOF-CHN C
01474	-3 00000 4 01432				TXL C10,4	
01475	0020 00 0 01735				TRA D12	

\* CHANNEL D INSTRUCTIONS

01476	0520 00 0 05507	REWD			ZET CTRD	
01477	0772 00 0 04201				REWD 1	REWIND CURRENT UNIT-CHN D
01500	0020 00 0 01743				TRA REWE	
01501	0520 00 0 05507	WEFD			ZET CTRD	
01502	0770 00 0 04201				WEFD 1	WRITE END OF FILE - CHN D
01503	0020 00 0 01746				TRA WEFE	

\* WRITE ONE 100 WORD RECORD

01504	666322246001		BCD 1WTBD 1	TEST INSTRUCTION
01505	-0520 00 0 05507	WTD	NZT CTRD	
01506	0020 00 0 01752		TRA WTE	
01507	0766 00 0 04221		WTBD 1	
01510	-0541 00 0 02740		RCHD CT1D	WRITE 100 WDS FROM WRFDD
01511	0074 00 4 02477		TSX ETT,4	GO TO CHECK FOR END OF TAPE
01512	-0760 00 0 00141		SLT 1	
01513	0020 00 0 01752		TRA WTE	OFF - CONTINUE
01514	0020 00 0 00133		TRA WTA	ON - REPEAT

\* READ ONE 100 WORD RECORD

01515	516322246001		BCD 1RTBD 1	TEST INSTRUCTION
01516	-0520 00 0 05507	RTD	NZT CTRD	
01517	0020 00 0 01763		TRA RTE	
01520	-0764 00 0 04201		BSFD 1	
01521	-0024 00 0 01522		TRCD *+1	TURN OFF TRCD IND IF ON
01522	0020 00 0 01763		TRA RTE	
01523	-0520 00 0 05507	RTD1	NZT CTRD	
01524	0020 00 0 01770		TRA RTE1	
01525	0762 00 0 04221		RTBD 1	READ OVER
01526	-0541 00 0 02772		RCHD CT7+6	END OF FILE
01527	0020 00 0 01770		TRA RTE1	
01530	-0520 00 0 05507	RTD2	NZT CTRD	
01531	0020 00 0 01775		TRA RTE2	
01532	0063 00 0 01532		TCOD *	DELAY
01533	0762 00 0 04221		RTBD 1	
01534	-0541 00 0 02754		RCHD CT2+6	READ 100 WORDS - CHN D
01535	0020 00 0 01775		TRA RTE2	

\* COMPARE 100 WORD RECORD

01536	0074 00 4 02456	RTD3	TSX RWC,4	SET RETURN TO CONTINUE
01537	-0520 00 0 05507		NZT CTRD	
01540	0020 00 0 02004		TRA RTE3+1	
01541	0500 00 0 03225		CLA K3C+3	L HTR RDFDD+100
01542	0621 00 0 02464		STA RWC1	
01543	0500 00 0 03217		CLA K3B+3	L HTR WRFDD+100,1
01544	0621 00 0 02465		STA RWC1+1	
01545	0621 00 0 02470		STA RWC1+4	
01546	0074 00 2 02003		TSX RTE3,2	SET RETURN FROM COMPARE
01547	0774 00 2 00001		AXT 1,2	L NO. OF RECORDS IN XRB
01550	0074 00 4 06502		TSX ERROR-2,4	COMPARISON ERROR
01551	0761 00 0 01516		NOP RTD	
01552	0020 00 0 02473		TRA RWC2-2	

\* WRITE RANDOM WORD RANDOM LENGTH RECORDS

01553	-0520	00	0	05507	D1	NZT	CTRD	
01554	0020	00	0	02020		TRA	E1	
01555	0766	00	0	04221		WTBD	1	
01556	-0541	00	0	03006		RCHD	CT10D	
01557	0020	00	0	02020		TRA	E1	
01560	0520	00	0	05507	D2	ZET	CTRD	
01561	0764	00	0	04201		BSRD	1	
01562	0020	00	0	02025		TRA	E2	
01563	-0520	00	0	05507	D3	NZT	CTRD	
01564	0020	00	0	02030		TRA	E3	
01565	0762	00	0	04221		RTBD	1	
01566	-0541	00	0	03022		RCHD	CT12D	
01567	0020	00	0	02030		TRA	E3	
01570	516322246001					BCD	1RTBD 1	TEST INSTRUCTION
01571	0534	00	1	03162		LXA	WDCT,1	L WORD COUNT IN XRA
01572	0500	00	0	03162		CLA	WDCT	L WORD COUNT
01573	0400	00	0	02716		ADD	ONE	L +1
01574	0601	00	0	06556		STO	WDNO	
01575	-0520	00	0	05507	D4	NZT	CTRD	
01576	0020	00	0	02042		TRA	E4	
01577	0500	00	1	00000		CLA	0,1	L WORD READ CHN D
01600	0340	00	1	00000		CAS	0,1	COMPARE WORD GENERATED
01601	0020	00	0	01603		TRA	*+2	
01602	0020	00	0	01610		TRA	*+6	
01603	0560	00	1	00000		LDQ	0,1	L WORD GENERATED IN MQ
01604	0634	00	4	03034		SXA	XRC,4	SAVE XRC
01605	0074	00	4	06502		TSX	ERROR-2,4	COMPARISON ERROR
01606	0761	00	0	01571		NOP	D4-4	
NOTE - THIS ROUTINE SPOT								
CHECKS RANDOM RECORDS								
01607	0534	00	4	03034		LXA	XRC,4	RESET XRC
01610	2	00001	1	01577		TIX	D4+2,1,1	DECREMENT WORD COUNT
01611	0020	00	0	02036		TRA	E4-4	

\* READ RANDOM BINARY RECORDS

01612	-0520	00	0	05507	D5	NZT	CTRD	
01613	0020	00	0	02057		TRA	E5	
01614	-0764	00	0	04201		BSFD	1	BKSP OVER END OF FILE
01615	-0764	00	0	04201		BSFD	1	BKSP OVER FILE
01616	0020	00	0	02057		TRA	E5	
01617	-0520	00	0	05507	D6	NZT	CTRD	
01620	0020	00	0	02064		TRA	E6	
01621	0762	00	0	04221		RTBD	1	
01622	-0541	00	0	02772		RCHD	CT7+6	READ OVER EOF
01623	0020	00	0	02064		TRA	E6	

01624 -0520 00 0 05507 D7 NZT CTRD  
 01625 0020 00 0 02071 TRA E7  
 01626 0762 00 0 04221 RTBD 1  
 01627 -0541 00 0 03022 RCHD CT12D  
 01630 0020 00 0 02071 TRA E7

\* COMPARE

01631 516322246001 BCD 1RTBD 1 TEST INSTRUCTION  
 01632 0534 00 1 03162 LXА WDCT,1 L WORD COUNT IN XRA  
 01633 0500 00 0 03162 CLA WDCT L WORD COUNT  
 01634 0400 00 0 02716 ADD ONE L +1  
 01635 0601 00 0 06556 STO WDNO

01636 -0520 00 0 05507 NZT CTRD  
 01637 0020 00 0 02103 TRA E8-2

01640 0500 00 1 00000 D8 CLA 0,1 L WORD READ - CHN D  
 01641 0340 00 1 00000 CAS 0,1 COMPARE WORD GENERATED  
 01642 0020 00 0 01644 TRA \*+2  
 01643 0020 00 0 01652 TRA \*+7  
 01644 0560 00 1 00000 LDQ 0,1 L WORD GENERATED IN MQ  
 01645 0634 00 4 03034 SXА XRC,4 SAVE XRC  
 01646 0074 00 4 06502 TSX ERROR-2,4 COMPARISON ERROR  
 01647 0761 00 0 01632 NOP D8-6  
 01650 0534 00 4 03034 LXА XRC,4 RESET XRC  
 01651 0760 00 0 00142 SLN 2 TURN ON SENSE LIGHT TWO  
 01652 2 00001 1 01640 TIX D8,1,1 DECREMENT WORD COUNT

01653 -0760 00 0 00142 SLT 2 TEST SENSE LIGHT TWO  
 01654 0020 00 0 02077 TRA E8-6 OFF - DO NOT BACKSPACE  
 01655 -0500 00 0 03320 CAL K11+7  
 01656 -0760 00 0 00001 PBT  
 01657 0020 00 0 02077 TRA E8-6 NO - DO NOT BACKSPACE  
 01660 0764 00 0 04201 BSRD 1  
 01661 0500 00 0 03054 CLA TRA3+3 L TRA D9  
 01662 0601 00 0 01653 STO D8+11  
 01663 0762 00 0 04221 RTBD 1  
 01664 -0541 00 0 03022 RCHD CT12D  
 01665 0634 00 4 03034 SXА XRC,4 SAVE XRC  
 01666 0074 00 4 06560 TSX RDNCK,4  
 01667 0761 00 0 01632 NOP D8-6  
 01670 0534 00 4 03034 LXА XRC,4 RESET XRC  
 01671 0020 00 0 01632 TRA D8-6

01672 0500 00 0 03060 D9 CLA SLT2 L SLT 2  
 01673 0601 00 0 01653 STO D8+11  
 01674 0760 00 0 00140 SLF TURN ALL SENSE LIGHTS OFF  
 01675 0020 00 0 02077 TRA E8-6

01676 662526246001 BCD 1WEFD 1 TEST INSTRUCTION  
 01677 -0520 00 0 05507 D10 NZT CTRD  
 01700 0020 00 0 02144 TRA E10  
 01701 0762 00 0 04221 RTBD 1

01702	-0541	00	0	03247		RCHD K4D	
01703	0020	00	0	02144		TRA E10	
01704	-0520	00	0	05507	D11	NZT CTRD	
01705	0020	00	0	02151		TRA E11	
01706	0063	00	0	01706		TCOD *	DELAY
01707	-0641	00	0	03251		SCHD K4D+2	
01710	0020	00	0	02151		TRA E11	
01711	-0520	00	0	05507		NZT CTRD	
01712	0020	00	0	02156		TRA E11+5	
01713	0560	00	0	03253		LDQ K4D+4	
01714	0500	00	0	03251		CLA K4D+2	
01715	0340	00	0	03253		CAS K4D+4	
01716	0020	00	0	01720		TRA *+2	
01717	0020	00	0	01734		TRA *+13	OK - SHOULD XFER
01720	0340	00	0	03252		CAS K4D+3	
01721	0020	00	0	01723		TRA *+2	
01722	0020	00	0	01730		TRA *+6	
01723	0634	00	4	03034		SXA XRC,4	SAVE XRC
01724	0074	00	4	06503		TSX ERROR-1,4	FAILURE TO DISCN CORRECTLY OR FAILED TO SCH CORRECTLY
01725	0761	00	0	01677		NOP D10	
01726	0534	00	4	03034		LXA XRC,4	RESET XRC
01727	0020	00	0	01734		TRA *+5	
01730	0634	00	4	03034		SXA XRC,4	SAVE XRC
01731	0074	00	4	06503		TSX ERROR-1,4	FALSE EOF READ AT EOF
01732	-3	00000	4	01677		TXL D10,4	
01733	0534	00	4	03034		LXA XRC,4	RESET XRC
01734	0020	00	0	02156		TRA E11+5	
01735	-0520	00	0	05507	D12	NZT CTRD	
01736	0020	00	0	02202		TRA E12	
01737	-0031	00	0	01742		TEFD *+3	EOF SHOULD BE ON
01740	0074	00	4	06503		TSX ERROR-1,4	FAILED TO READ EOF-CHN D
01741	-3	00000	4	01677		TXL D10,4	
01742	0020	00	0	02202		TRA E12	

\* CHANNEL E INSTRUCTIONS

01743	0520	00	0	05510	REWE	ZET CTRE	
01744	0772	00	0	05201		REWE 1	REWIND CURRENT UNIT-CHN E
01745	0020	00	0	02210		TRA REWF	
01746	0520	00	0	05510	WEFE	ZET CTRE	
01747	0770	00	0	05201		WEFE 1	WRITE END OF FILE - CHN E
01750	0020	00	0	02214		TRA WEFW	

\* WRITE ONE 100 WORD RECORD

01751	666322256001					BCD 1WTBE 1	TEST INSTRUCTION
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01752	-0520	00	0	05510	WTE	NZT CTRE	
01753	0020	00	0	02220		TRA WTF	
01754	0766	00	0	05221		WTBE 1	
01755	0542	00	0	02742		RCHE CT1E	WRITE 100 WDS FROM WRFDD
01756	0074	00	4	02477		TSX ETT,4	GO TO CHECK FOR END OF TAPE
01757	-0760	00	0	00141		SLT 1	
01760	0020	00	0	02220		TRA WTF	OFF - CONTINUE
01761	0020	00	0	00133		TRA WTA	ON - REPEAT

\* READ ONE 100 WORD RECORD

01762	516322256001					BCD 1RTBE 1	TEST INSTRUCTION
01763	-0520	00	0	05510	RTE	NZT CTRE	
01764	0020	00	0	02231		TRA RTF	
01765	-0764	00	0	05201		BSFE 1	
01766	0026	00	0	01767		TRCE *+1	TURN OFF TRCD IND IF ON
01767	0020	00	0	02231		TRA RTF	
01770	-0520	00	0	05510	RTE1	NZT CTRE	
01771	0020	00	0	02236		TRA RTF1	
01772	0762	00	0	05221		RTBE 1	READ OVER
01773	0542	00	0	02774		RCHE CT7+8	END OF FILE
01774	0020	00	0	02236		TRA RTF1	
01775	-0520	00	0	05510	RTE2	NZT CTRE	
01776	0020	00	0	02243		TRA RTF2	
01777	0064	00	0	01777		TCOE *	DELAY
02000	0762	00	0	05221		RTBE 1	
02001	0542	00	0	02756		RCHE CT2+8	READ 100 WORDS - CHN E
02002	0020	00	0	02243		TRA RTF2	

\* COMPARE 100 WORD RECORD

02003	0074	00	4	02456	RTE3	TSX RWC,4	SET RETURN TO CONTINUE
02004	-0520	00	0	05510		NZT CTRE	
02005	0020	00	0	02252		TRA RTF3+1	
02006	0500	00	0	03226		CLA K3C+4	L HTR RDFDE+100
02007	0621	00	0	02464		STA RWC1	
02010	0500	00	0	03220		CLA K3B+4	L HTR WRFDE+100,1
02011	0621	00	0	02465		STA RWC1+1	
02012	0621	00	0	02470		STA RWC1+4	
02013	0074	00	2	02251		TSX RTF3,2	SET RETURN FROM COMPARE
02014	0774	00	2	00001		AXT 1,2	L NO. OF RECORDS IN XRB
02015	0074	00	4	06502		TSX ERROR-2,4	COMPARISON ERROR
02016	0761	00	0	01763		NOP RTE	
02017	0020	00	0	02473		TRA RWC2-2	

\* WRITE RANDOM WORD RANDOM LENGTH RECORDS

02020	-0520	00	0	05510	E1	NZT CTRE	
02021	0020	00	0	02266		TRA F1	
02022	0766	00	0	05221		WTBE 1	

02023	0542	00	0	03010		RCHE CT10E	
02024	0020	00	0	02266		TRA F1	
02025	0520	00	0	05510	E2	ZET CTRE	
02026	0764	00	0	05201		BSRE 1	
02027	0020	00	0	02273		TRA F2	
02030	-0520	00	0	05510	E3	NZT CTRE	
02031	0020	00	0	02276		TRA F3	
02032	0762	00	0	05221		RTBE 1	
02033	0542	00	0	03024		RCHE CT12E	
02034	0020	00	0	02276		TRA F3	
02035	516322256001					BCD 1RTBE 1	TEST INSTRUCTION
02036	0534	00	1	03162		LXA WDCT,1	L WORD COUNT IN XRA
02037	0500	00	0	03162		CLA WDCT	L WORD COUNT
02040	0400	00	0	02716		ADD ONE	L +1
02041	0601	00	0	06556		STO WDNO	
02042	-0520	00	0	05510	E4	NZT CTRE	
02043	0020	00	0	02310		TRA F4	
02044	0500	00	1	00000		CLA 0,1	L WORD READ CHN D
02045	0340	00	1	00000		CAS 0,1	COMPARE WORD GENERATED
02046	0020	00	0	02050		TRA *+2	
02047	0020	00	0	02055		TRA *+6	
02050	0560	00	1	00000		LDQ 0,1	L WORD GENERATED IN MQ
02051	0634	00	4	03034		SXA XRC,4	SAVE XRC
02052	0074	00	4	06502		TSX ERROR-2,4	COMPARISON ERROR
02053	0761	00	0	02036		NOP E4-4	
							NOTE - THIS ROUTINE SPOT CHECKS RANDOM RECORDS
02054	0534	00	4	03034		LXA XRC,4	RESET XRC
02055	2 00001	1	1	02044		TIX E4+2,1,1	DECREMENT WORD COUNT
02056	0020	00	0	02304		TRA F4-4	

\* READ RANDOM BINARY RECORDS

02057	-0520	00	0	05510	E5	NZT CTRE	
02060	0020	00	0	02325		TRA F5	
02061	-0764	00	0	05201		BSFE 1	BKSP OVER END OF FILE
02062	-0764	00	0	05201		BSFE 1	BKSP OVER FILE
02063	0020	00	0	02325		TRA F5	
02064	-0520	00	0	05510	E6	NZT CTRE	
02065	0020	00	0	02332		TRA F6	
02066	0762	00	0	05221		RTBE 1	
02067	0542	00	0	02772		RCHE CT7+6	READ OVER EOF
02070	0020	00	0	02332		TRA F6	
02071	-0520	00	0	05510	E7	NZT CTRE	
02072	0020	00	0	02337		TRA F7	
02073	0762	00	0	05221		RTBE 1	
02074	0542	00	0	03024		RCHE CT12E	
02075	0020	00	0	02337		TRA F7	

*		COMPARE				
02076	516322256001			BCD 1RTBE 1	TEST INSTRUCTION	
02077	0534 00 1 03162			LXA WDCT,1	L WORD COUNT IN XRA	
02100	0500 00 0 03162			CLA WDCT	L WORD COUNT	
02101	0400 00 0 02716			ADD ONE	L +1	
02102	0601 00 0 06556			STO WDNO		
02103	-0520 00 0 05510			NZT CTRE		
02104	0020 00 0 02351			TRA F8-2		
02105	0500 00 1 00000	E8		CLA 0,1	L WORD READ - CHN E	
02106	0340 00 1 00000			CAS 0,1	COMPARE WORD GENERATED	
02107	0020 00 0 02111			TRA *+2		
02110	0020 00 0 02117			TRA *+7		
02111	0560 00 1 00000			LDQ 0,1	L WORD GENERATED IN MQ	
02112	0634 00 4 03034			SXA XRC,4	SAVE XRC	
02113	0074 00 4 06502			TSX ERROR-2,4	COMPARISON ERROR	
02114	0761 00 0 02077			NOP E8-6		
02115	0534 00 4 03034			LXA XRC,4	RESET XRC	
02116	0760 00 0 00142			SLN 2	TURN ON SENSE LIGHT TWO	
02117	2 00001 1 02105			TIX E8,1,1	DECREMENT WORD COUNT	
02120	-0760 00 0 00142			SLT 2	TEST SENSE LIGHT TWO	
02121	0020 00 0 02345			TRA F8-6	OFF - DO NOT BACKSPACE	
02122	-0500 00 0 03320			CAL K11+7		
02123	-0760 00 0 00001			PBT		
02124	0020 00 0 02345			TRA F8-6	NO - DO NOT BACKSPACE	
02125	0764 00 0 05201			BSRE 1		
02126	0500 00 0 03055			CLA TRA3+4	L TRA E9	
02127	0601 00 0 02120			STO E8+11		
02130	0762 00 0 05221			RTBE 1		
02131	0542 00 0 03024			RCHE CT12E		
02132	0634 00 4 03034			SXA XRC,4	SAVE XRC	
02133	0074 00 4 06560			TSX RDNCK,4		
02134	0761 00 0 02077			NOP E8-6		
02135	0534 00 4 03034			LXA XRC,4	RESET XRC	
02136	0020 00 0 02077			TRA E8-6		
02137	0500 00 0 03060	E9		CLA SLT2	L SLT 2	
02140	0601 00 0 02120			STO E8+11		
02141	0760 00 0 00140			SLF	TURN ALL SENSE LIGHTS OFF	
02142	0020 00 0 02345			TRA F8-6		
02143	662526256001			BCD 1WEFE 1	TEST INSTRUCTION	
02144	-0520 00 0 05510	E10		NZT CTRE		
02145	0020 00 0 02412			TRA F10		
02146	0762 00 0 05221			RTBE 1		
02147	0542 00 0 03254			RCHE K4E		
02150	0020 00 0 02412			TRA F10		
02151	-0520 00 0 05510	E11		NZT CTRE		
02152	0020 00 0 02417			TRA F11		



02153	0064	00	0	02153		TCOE *		DELAY
02154	0642	00	0	03256		SCHE K4E+2		
02155	0020	00	0	02417		TRA F11		
02156	-0520	00	0	05510		NZT CTRE		
02157	0020	00	0	02424		TRA F11+5		
02160	0560	00	0	03260		LDQ K4E+4		
02161	0500	00	0	03256		CLA K4E+2		
02162	0340	00	0	03260		CAS K4E+4		
02163	0020	00	0	02165		TRA *+2		
02164	0020	00	0	02201		TRA *+13		OK - SHOULD XFER
02165	0340	00	0	03257		CAS K4E+3		
02166	0020	00	0	02170		TRA *+2		
02167	0020	00	0	02175		TRA *+6		
02170	0634	00	4	03034		SXA XRC,4		SAVE XRC
02171	0074	00	4	06503		TSX ERROR-1,4		FAILURE TO DISCN CORRECTLY OR FAILED TO SCH CORRECTLY
02172	0761	00	0	02144		NOP E10		
02173	0534	00	4	03034		LXA XRC,4		RESET XRC
02174	0020	00	0	02201		TRA *+5		
02175	0634	00	4	03034		SXA XRC,4		SAVE XRC
02176	0074	00	4	06503		TSX ERROR-1,4		FALSE EOF READ AT EOF
02177	-3	00000	4	02144		TXL E10,4		
02200	0534	00	4	03034		LXA XRC,4		RESET XRC
02201	0020	00	0	02424		TRA F11+5		
02202	-0520	00	0	05510	E12	NZT CTRE		
02203	0020	00	0	02450		TRA F12		
02204	0032	00	0	02207		TEFE *+3		EOF SHOULD BE ON
02205	0074	00	4	06503		TSX ERROR-1,4		FAILED TO READ EOF-CHN E
02206	-3	00000	4	02144		TXL E10,4		
02207	0020	00	0	02450		TRA F12		

\* CHANNEL F INSTRUCTIONS

02210	0520	00	0	05511	REWF	ZET CTRF		
02211	0772	00	0	06201		REWF 1		REWIND CURRENT UNIT-CHN F
02212	0760	00	0	00141		SLN 1		TURN ON SENSE LIGHT ONE
02213	0020	00	2	00001		TRA 1,2		TO CONTINUE PROGRAM
02214	0520	00	0	05511	WEFF	ZET CTRF		
02215	0770	00	0	06201		WEFF 1		WRITE END OF FILE - CHN F
02216	0020	00	4	00001		TRA 1,4		

\* WRITE ONE 100 WORD RECORD

02217	666322266001					BCD 1WTBF 1		TEST INSTRUCTION
02220	-0520	00	0	05511	WTF	NZT CTRF		
02221	0020	00	0	00143		TRA WTA1		
02222	0766	00	0	06221		WTBF 1		
02223	-0542	00	0	02744		RCHF CT1F		WRITE 100 WDS FROM WRDFD

02224 0074 00 4 02477 TSX ETT,4 GO TO CHECK FOR END OF TAPE  
02225 -0760 00 0 00141 SLT 1  
02226 0020 00 0 00143 TRA WTA1 OFF - CONTINUE  
02227 0020 00 0 00133 TRA WTA ON - REPEAT

\* READ ONE 100 WORD RECORD

02230 516322266001 BCD 1RTBF 1 TEST INSTRUCTION  
02231 -0520 00 0 05511 RTF NZT CTRF  
02232 0020 00 0 00156 TRA RTA1  
02233 -0764 00 0 06201 BSFF 1  
02234 -0026 00 0 02235 TRCF \*+1 TURN OFF TRCF IND IF ON  
02235 0020 00 0 00156 TRA RTA1  
  
02236 -0520 00 0 05511 RTF1 NZT CTRF  
02237 0020 00 0 00163 TRA RTA2  
02240 0762 00 0 06221 RTBF 1 READ OVER  
02241 -0542 00 0 02776 RCHF CT7+10 END OF FILE  
02242 0020 00 0 00163 TRA RTA2  
  
02243 -0520 00 0 05511 RTF2 NZT CTRF  
02244 0020 00 0 00171 TRA RTA2+6  
02245 0065 00 0 02245 TCOF \* DELAY  
02246 0762 00 0 06221 RTBF 1  
02247 -0542 00 0 02760 RCHF CT2+10 READ 100 WORDS - CHN F  
02250 0020 00 0 00171 TRA RTA2+6

\* COMPARE 100 WORD RECORD

02251 0074 00 4 02456 RTF3 TSX RWC,4 SET RETURN TO CONTINUE  
02252 -0520 00 0 05511 NZT CTRF  
02253 0020 00 0 00210 TRA RTA3A+1  
02254 0500 00 0 03227 CLA K3C+5 L HTR RDFDF+100  
02255 0621 00 0 02464 STA RWC1  
02256 0500 00 0 03221 CLA K3B+5 L HTR WRFDF+100,1  
02257 0621 00 0 02465 STA RWC1+1  
02260 0621 00 0 02470 STA RWC1+4  
02261 0074 00 2 00207 TSX RTA3A,2 SET RETURN FROM COMPARE  
02262 0774 00 2 00001 AXT 1,2 L NO. OF RECORDS IN XRB  
02263 0074 00 4 06502 TSX ERROR-2,4 COMPARISON ERROR  
02264 0761 00 0 02231 NOP RTF  
02265 0020 00 0 02473 TRA RWC2-2

\* WRITE RANDOM WORD RANDOM LENGTH RECORDS

02266 -0520 00 0 05511 F1 NZT CTRF  
02267 0020 00 0 00236 TRA A1+5  
02270 0766 00 0 06221 WTBF 1  
02271 -0542 00 0 03012 RCHF CT10F  
02272 0020 00 0 00236 TRA A1+5  
  
02273 0520 00 0 05511 F2 ZET CTRF

02274	0764	00	0	06201		BSRF 1	
02275	0020	00	0	00253		TRA A3	
02276	-0520	00	0	05511	F3	NZT CTRF	
02277	0020	00	0	00260		TRA A3+5	
02300	0762	00	0	06221		RTBF 1	
02301	-0542	00	0	03026		RCHF CT12F	
02302	0020	00	0	00260		TRA A3+5	
02303	516322266001					BCD 1RTBF 1	TEST INSTRUCTION
02304	0534	00	1	03162		LXA WDCT,1	L WORD COUNT IN XRA
02305	0500	00	0	03162		CLA WDCT	L WORD COUNT
02306	0400	00	0	02716		ADD ONE	L +1
02307	0601	00	0	06556		STO WDNO	
02310	-0520	00	0	05511	F4	NZT CTRF	
02311	0020	00	0	00306		TRA A4A	
02312	0500	00	1	00000		CLA 0,1	L WORD READ CHN F
02313	0340	00	1	00000		CAS 0,1	COMPARE WORD GENERATED
02314	0020	00	0	02316		TRA *+2	
02315	0020	00	0	02323		TRA *+6	
02316	0560	00	1	00000		LDQ 0,1	L WORD GENERATED IN MQ
02317	0634	00	4	03034		SXA XRC,4	SAVE XRC
02320	0074	00	4	06502		TSX ERROR-2,4	COMPARISON ERROR
02321	0761	00	0	02304		NOP F4-4	
							NOTE - THIS ROUTINE SPOT CHECKS RANDOM RECORDS
02322	0534	00	4	03034		LXA XRC,4	RESET XRC
02323	2	00001	1	02312		TIX F4+2,1,1	DECREMENT WORD COUNT
02324	0020	00	0	00306		TRA A4A	

\* READ RANDOM BINARY RECORDS

02325	-0520	00	0	05511	F5	NZT CTRF	
02326	0020	00	0	00315		TRA A5+5	
02327	-0764	00	0	06201		BSFF 1	BKSP OVER END OF FILE
02330	-0764	00	0	06201		BSFF 1	BKSP OVER FILE
02331	0020	00	0	00315		TRA A5+5	
02332	-0520	00	0	05511	F6	NZT CTRF	
02333	0020	00	0	00326		TRA A6+5	
02334	0762	00	0	06221		RTBF 1	
02335	-0542	00	0	02776		RCHF CT7+10	READ OVER EOF
02336	0020	00	0	00326		TRA A6+5	
02337	-0520	00	0	05511	F7	NZT CTRF	
02340	0020	00	0	00343		TRA A7+5	
02341	0762	00	0	06221		RTBF 1	
02342	-0542	00	0	03026		RCHF CT12F	
02343	0020	00	0	00343		TRA A7+5	

\* COMPARE

02344	516322266001					BCD 1RTBF 1	TEST INSTRUCTION
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02345	0534	00	1	03162		LXA WDCT,1	L WORD COUNT IN XRA
02346	0500	00	0	03162		CLA WDCT	L WORD COUNT
02347	0400	00	0	02716		ADD ONE	L +1
02350	0601	00	0	06556		STO WDNO	
02351	-0520	00	0	05511		NZT CTRF	
02352	0020	00	0	00412		TRA A9+4	
02353	0500	00	1	00000	F8	CLA 0,1	L WORD READ - CHN F
02354	0340	00	1	00000		CAS 0,1	COMPARE WORD GENERATED
02355	0020	00	0	02357		TRA *+2	
02356	0020	00	0	02365		TRA *+7	
02357	0560	00	1	00000		LDQ 0,1	L WORD GENERATED IN MQ
02360	0634	00	4	03034		SXA XRC,4	SAVE XRC
02361	0074	00	4	06502		TSX ERROR-2,4	COMPARISON ERROR
02362	0761	00	0	02345		NOP F8-6	
02363	0534	00	4	03034		LXA XRC,4	RESET XRC
02364	0760	00	0	00142		SLN 2	TURN ON SENSE LIGHT TWO
02365	2 00001	1	1	02353		TIX F8,1,1	DECREMENT WORD COUNT
02366	-0760	00	0	00142		SLT 2	TEST SENSE LIGHT TWO
02367	0020	00	0	00412		TRA A9+4	OFF - DO NOT BACKSPACE
02370	-0500	00	0	03320		CAL K11+7	
02371	-0760	00	0	00001		PBT	
02372	0020	00	0	00412		TRA A9+4	NO - DO NOT BACKSPACE
02373	0764	00	0	05201		BSRE 1	
02374	0500	00	0	03056		CLA TRA3+5	L TRA F9
02375	0601	00	0	02366		STO F8+11	
02376	0762	00	0	06221		RTBF 1	
02377	-0542	00	0	03026		RCHF CT12F	
02400	0634	00	4	03034		SXA XRC,4	SAVE XRC
02401	0074	00	4	06560		TSX RDNCK,4	
02402	0761	00	0	02345		NOP F8-6	
02403	0534	00	4	03034		LXA XRC,4	RESET XRC
02404	0020	00	0	02345		TRA F8-6	
02405	0500	00	0	03060	F9	CLA SLT2	L SLT 2
02406	0601	00	0	02366		STO F8+11	
02407	0760	00	0	00140		SLF	TURN ALL SENSE LIGHTS OFF
02410	0020	00	0	00412		TRA A9+4	
02411	662526266001					BCD 1WEFF 1	TEST INSTRUCTION
02412	-0520	00	0	05511	F10	NZT CTRF	
02413	0020	00	0	00422		TRA A11	
02414	0762	00	0	06221		RTBF 1	
02415	-0542	00	0	03261		RCHF K4F	
02416	0020	00	0	00422		TRA A11	
02417	-0520	00	0	05511	F11	NZT CTRF	
02420	0020	00	0	00427		TRA A11+5	
02421	0065	00	0	02421		TCOF *	DELAY
02422	-0642	00	0	03263		SCHF K4F+2	
02423	0020	00	0	00427		TRA A11+5	
02424	-0520	00	0	05511		NZT CTRF	

02425	0020	00	0	00447		TRA	A12	
02426	0560	00	0	03265		LDQ	K4F+4	
02427	0500	00	0	03263		CLA	K4F+2	
02430	0340	00	0	03265		CAS	K4F+4	
02431	0020	00	0	02433		TRA	*+2	
02432	0020	00	0	02447		TRA	*+13	OK - SHOULD XFER
02433	0340	00	0	03264		CAS	K4F+3	
02434	0020	00	0	02436		TRA	*+2	
02435	0020	00	0	02443		TRA	*+6	
02436	0634	00	4	03034		SXA	XRC,4	SAVE XRC
02437	0074	00	4	06503		TSX	ERROR-1,4	FAILURE TO DISCN CORRECTLY OR FAILED TO SCH CORRECTLY
02440	0761	00	0	02412		NOP	F10	
02441	0534	00	4	03034		LXA	XRC,4	RESET XRC
02442	0020	00	0	02447		TRA	*+5	
02443	0634	00	4	03034		SXA	XRC,4	SAVE XRC
02444	0074	00	4	06503		TSX	ERROR-1,4	FALSE EOF READ AT EOF
02445	-3	00000	4	02412		TXL	F10,4	
02446	0534	00	4	03034		LXA	XRC,4	RESET XRC
02447	0020	00	0	00447		TRA	A12	
02450	-0520	00	0	05511	F12	NZT	CTRF	
02451	0020	00	0	00455		TRA	A12+6	
02452	-0032	00	0	02455		TEFF	*+3	EOF SHOULD BE ON
02453	0074	00	4	06503		TSX	ERROR-1,4	FAILED TO READ EOF-CHN F
02454	-3	00000	4	02412		TXL	F10,4	
02455	0020	00	0	00455		TRA	A12+6	

\* UTILITY SUB-ROUTINE

02456	0500	00	0	02717	RWC	CLA	TWO	L +2
02457	0601	00	0	06557		STO	RECNO	
02460	0500	00	0	03267		CLA	K5+1	L +101
02461	0601	00	0	06556		STO	WDNO	
02462	0634	00	2	03037		SXA	TEMP2,2	SAVE RETURN FROM COMPARE
02463	0774	00	1	00100		AXT	64,1	L +100 IN XRA - WD COUNT
02464	0500	00	1	00000	RWC1	CLA	0,1	L WORD READ
02465	0340	00	1	00000		CAS	0,1	COMPARE WORD GENERATED
02466	0020	00	0	02470		TRA	*+2	
02467	0020	00	0	02475		TRA	RWC2	TO OK
02470	0560	00	1	00000		LDQ	0,1	L WORD GENERATED IN MQ
02471	0634	00	4	03035		SXA	TEMP,4	SAVE XRC
02472	0020	00	2	00001		TRA	1,2	GO TO CHANNEL ROUTINE TO PRINT OUT ERROR
02473	0534	00	2	03037		LXA	TEMP2,2	RESET RETURN FROM COMPARE
02474	0534	00	4	03035		LXA	TEMP,4	RESET RETURN TO CONTINUE
02475	2	00001	1	02464	RWC2	TIX	RWC1,1,1	DECREMENT WORD COUNT
02476	0020	00	4	00001		TRA	1,4	RETURN TO CONTINUE
02477	-0760	00	0	01000	ETT	ETTA		CHECK
02500	0020	00	0	02512		TRA	ETT1	
02501	-0760	00	0	02000		ETT	B	FOR
02502	0020	00	0	02512		TRA	ETT1	

02503	-0760	00	0	03000		ETTC	PHYSICAL
02504	0020	00	0	02512		TRA ETT1	
02505	-0760	00	0	04000		ETTD	END
02506	0020	00	0	02512		TRA ETT1	
02507	-0760	00	0	05000		ETTE	OF
02510	0020	00	0	02512		TRA ETT1	
02511	-0760	00	0	06000		ETTF	TAPE
02512	0074	00	2	00123	ETT1	TSX REWA, 2	
02513	0020	00	4	00001		TRA 1, 4	
02514	0022	00	0	02515	REST	TRCA *+1	TURN
02515	-0022	00	0	02516		TRCB *+1	OFF
02516	0024	00	0	02517		TRCC *+1	TRC
02517	-0024	00	0	02520		TRCD *+1	INDICATORS
02520	0026	00	0	02521		TRCE *+1	IF
02521	-0026	00	0	02522		TRCF *+1	ON
02522	0760	00	0	00005		IOT	
02523	0020	00	0	02524		TRA *+1	TURN OFF IOT IND IFON
02524	0030	00	0	02525		TEFA *+1	TURN
02525	-0030	00	0	02526		TEFB *+1	OFF
02526	0031	00	0	02527		TEFC *+1	END OF FILE
02527	-0031	00	0	02530		TEFD *+1	INDICATORS
02530	0032	00	0	02531		TEFE *+1	IF
02531	-0032	00	0	02532		TEFF *+1	ON
02532	0760	00	0	01000		BTTA	TURN
02533	0761	00	0	00000		NOP	
02534	0760	00	0	02000		BTTB	OFF
02535	0761	00	0	00000		NOP	
02536	0760	00	0	03000		BTTC	BEGINNING
02537	0761	00	0	00000		NOP	
02540	0760	00	0	04000		BTTD	OF TAPE
02541	0761	00	0	00000		NOP	
02542	0760	00	0	05000		BTTE	INDICATORS
02543	0761	00	0	00000		NOP	
02544	0760	00	0	06000		BTTF	IF ON
02545	0761	00	0	00000		NOP	
02546	-0760	00	0	01000		ETTA	TURN
02547	0761	00	0	00000		NOP	
02550	-0760	00	0	02000		ETTB	OFF
02551	0761	00	0	00000		NOP	
02552	-0760	00	0	03000		ETTC	END OF
02553	0761	00	0	00000		NOP	
02554	-0760	00	0	04000		ETTD	TAPE
02555	0761	00	0	00000		NOP	
02556	-0760	00	0	05000		ETTE	INDICATORS
02557	0761	00	0	00000		NOP	
02560	-0760	00	0	06000		ETTF	IF ON
02561	0761	00	0	00000		NOP	

02562 0020 00 4 00001           TRA 1,4           RETURN

02563 0774 00 1 00600   CLR    AXT 384,1           CLEAR

02564 0600 00 1 04721           STZ RDFDA+384,1       READ

02565 2 00001 1 02564           TIX \*-1,1,1           FIELD

02566 0020 00 4 00001           TRA 1,4

\*                   STEP UNIT ADDRESS

02567 0074 00 4 05512   STPA   TSX CTX,4           STEP CHANNEL A

02570 0004 47 0 00123           HTR REWA,0,A12

02571 0020 00 0 02610           TRA STPF+2

02572 0074 00 4 05512   STPB   TSX CTX,4           STEP CHANNEL B

02573 0012 23 0 00764           HTR REWB,0,B12

02574 0020 00 0 02610           TRA STPF+2

02575 0074 00 4 05512   STPC   TSX CTX,4           STEP CHANNEL C

02576 0014 70 0 01231           HTR REWC,0,C12

02577 0020 00 0 02610           TRA STPF+2

02600 0074 00 4 05512   STPD   TSX CTX,4           STEP CHANNEL D

02601 0017 35 0 01476           HTR REWD,0,D12

02602 0020 00 0 02610           TRA STPF+2

02603 0074 00 4 05512   STPE   TSX CTX,4           STEP CHANNEL E

02604 0022 02 0 01743           HTR REWE,0,E12

02605 0020 00 0 02610           TRA STPF+2

02606 0074 00 4 05512   STPF   TSX CTX,4           STEP CHANNEL F

02607 0024 50 0 02210           HTR REWF,0,F12

02610 0535 00 4 03034           LAC XRC,4           SET XRC FOR RETURN

02611 0020 00 4 00001           TRA 1,4           XFER TO CONTINUE PROGRAM

\*                   ADJUST UTILITY PRINT ROUTINES FOR DESIRED CHANNEL

02612 0500 00 0 05500   ADJ    CLA CTRL1           SAVE

02613 0601 00 0 03032           STO XRA           CONTROL

02614 0500 00 0 05501           CLA CTRL2           WORDS

02615 0601 00 0 03033           STO XRB           FOR

02616 0500 00 0 05502           CLA CTRL3           ALL

02617 0601 00 0 03034           STO XRC           CHANNELS

02620 0074 00 4 05514           TSX IOC,4           ENTER CONTROL WORD FOR  
                                                           PRINTER ON DESIRED CHANNEL

02621 0074 00 4 05512           TSX CTX,4

02622 0070 61 0 07057           HTR CH14-1,0,CH14+1

02623 0074 00 4 05512           TSX CTX,4

02624 0074 07 0 07400           HTR WPRA-1,0,WPRA+6

02625 0074 00 4 05512           TSX CTX,4

02626 0026 62 0 02640           HTR PRID,0,PRT2+3

02627	0761	00	0	00000		NOP	
02630	0761	00	0	00000		NOP	
02631	0500	00	0	03032		CLA XRA	RESET
02632	0601	00	0	05500		STO CTRL1	CONTROL
02633	0500	00	0	03033		CLA XRB	WORDS
02634	0601	00	0	05501		STO CTRL2	FOR
02635	0500	00	0	03034		CLA XRC	ALL
02636	0601	00	0	05502		STO CTRL3	CHANNELS
02637	0020	00	0	00035		TRA RUC	CONTINUE PROGRAM

\* PRINT - NOW PERFORMING DIAGNOSTICS TEST 9T03

02640	0760	00	0	00163	PRID	SWT 3	TEST SENSE SWITCH 3
02641	0020	00	0	02643		TRA *+2	PRINT TEST IDENTITY
02642	0020	00	0	02646		TRA *+4	BYPASS PRINT
02643	0766	00	0	01361	IDN	WPRA 1	PRINT OUT TEST IDENTITY
02644	0760	00	0	01363		SPRA 3	DOUBLE SPACE
02645	0540	00	0	02730		RCHA CTIDN	
02646	0766	00	0	01361		WPRA 1	SPACE
02647	0020	00	4	00001		TRA 1,4	RETURN TO MAIN PROGRAM

\* SPACE PRINTER

02650	0766	00	0	01361	PRT	WPRA 1	
02651	0060	00	0	02651		TCOA *	DELAY
02652	0020	00	2	00001		TRA 1,2	RETURN

\* PRINT - 9T03 PASS COMPLETE CHN + TF

02653	0766	00	0	01361	PRT1	WPRA 1	
02654	0540	00	0	02762		RCHA CT3	
02655	0060	00	0	02655		TCOA *	DELAY
02656	0020	00	2	00001		TRA 1,2	RETURN

\* PRINT - 9T03 PASS COMPLETE ALL UNITS

02657	0766	00	0	01361	PRT2	WPRA	
02660	0760	00	0	01363		SPRA 3	DOUBLE SPACE
02661	0540	00	0	03030		RCHA CTFIN	
02662	0020	00	0	00745		TRA FINL	

\* INDIRECT ADDRESSES

02663	0000	00	0	00233	NDRA	HTR A1+2	WTBA X - CURRENT UNIT CHN A
02664	0000	00	0	01043		HTR B1+2	WTBB X - CURRENT UNIT CHN B
02665	0000	00	0	01310		HTR C1+2	WTBB X - CURRENT UNIT CHN C
02666	0000	00	0	01555		HTR D1+2	WTBB X - CURRENT UNIT CHN D
02667	0000	00	0	02022		HTR E1+2	WTBB X - CURRENT UNIT CHN E



02670 0000 00 0 02270 HTR F1+2 WTBB X - CURRENT UNIT CHN F

\* CONSTANTS FOR COMPARISON

02671	0766 00 0 01221	WTBA	WTBA 1	
02672	0766 00 0 02221		WTBB 1	
02673	0766 00 0 03221		WTBC 1	
02674	0766 00 0 04221		WTBD 1	
02675	0766 00 0 05221		WTBE 1	
02676	0766 00 0 06221		WTBF 1	
02677	0766 00 0 01221		WTBA 1	
02700	0766 00 0 01222		WTBA 2	
02701	0762 00 0 01221	RTBA	RTBA 1	
02702	+000000000400	MASK	OCT 000000000400	EXCLUSIVE TAPE FRAME BIT FOR CHN A,C,E
02703	+000000040000		OCT 000000040000	EXCLUSIVE TAPE FRAME BIT FOR CHN B,D,F
02704	-377700007777	MASK1	OCT 777700007777	
02705	+000021210000		OCT 000021210000	
02706	+000022220000		OCT 000022220000	
02707	+000023230000		OCT 000023230000	
02710	+000024240000		OCT 000024240000	
02711	+000025250000		OCT 000025250000	
02712	+000026260000		OCT 000026260000	
02713	-341737707030	MASK2	OCT 741737707030	
02714	-377777777777	ONES	OCT -377777777777	
02715	+000000000000	ZERO	OCT 000000000000	
02716	+000000000001	ONE	OCT +1	
02717	+000000000002	TWO	OCT +2	
02720	+000000000003	THREE	OCT +3	
02721	+000000000004	FOUR	OCT +4	
02722	+000000000005	FIVE	OCT +5	
02723	+000000000006	SIX	OCT +6	
02724	+000000000007	SEVEN	OCT +7	
02725	+000000000010	EIGHT	OCT +10	
02726	+000000000011	NINE	OCT +11	
02727	+000000000012	TEN	OCT +12	
02730	0000 30 0 04721	CTIDN	IOCD PRIDN,0,24	
02731	0000 00 0 00000	HTR	0	PROGRAM PROTECT - I-O DISC
02732	0001 00 0 03321	CT1A	IOCD WRFDA,0,64	WRITE 100 WDS - WRFDA
02733	0000 00 0 00000	HTR	0	PROGRAM PROTECT - I-O DISC
02734	0001 00 0 03421	CT1B	IOCD WRFDB,0,64	WRITE 100 WDS - WRFDB
02735	0000 00 0 00000	HTR	0	PROGRAM PROTECT - I-O DISC
02736	0001 00 0 03521	CT1C	IOCD WRFDC,0,64	WRITE 100 WDS - WRFDC
02737	0000 00 0 00000	HTR	0	PROGRAM PROTECT - I-O DISC

02740	0001	00	0	03621	CT1D	IOCD WRFDD,0,64	WRITE 100 WDS - WRFDD
02741	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
02742	0001	00	0	03721	CT1E	IOCD WRFDE,0,64	WRITE 100 WDS - WRFDE
02743	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
02744	0001	00	0	04021	CT1F	IOCD WRFDF,0,64	WRITE 100 WDS - WRFDF
02745	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
02746	0001	00	0	04121	CT2	IOCD RDFDA,0,64	READ 100 WORDS-CHN A
02747	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
02750	0001	00	0	04221		IOCD RDFDB,0,64	READ 100 WORDS-CHN B
02751	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
02752	0001	00	0	04321		IOCD RDFDC,0,64	READ 100 WORDS-CHN C
02753	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
02754	0001	00	0	04421		IOCD RDFDD,0,64	READ 100 WORDS-CHN D
02755	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
02756	0001	00	0	04521		IOCD RDFDE,0,64	READ 100 WORDS-CHN E
02757	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
02760	0001	00	0	04621		IOCD RFDFF,0,64	READ 100 WORDS-CHN F
02761	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
02762	0000	30	0	04751	CT3	IOCD PR1,0,24	
02763	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
02764	0000	01	0	03041	CT7	IOCD TEMPA,0,1	
02765	0000	00	0	00000		HTR	PROGRAM PROTECT - I-O DISC
02766	0000	01	0	03042		IOCD TEMPB,0,1	
02767	0000	00	0	00000		HTR	PROGRAM PROTECT - I-O DISC
02770	0000	01	0	03043		IOCD TEMPC,0,1	
02771	0000	00	0	00000		HTR	PROGRAM PROTECT - I-O DISC
02772	0000	01	0	03044		IOCD TEMPD,0,1	
02773	0000	00	0	00000		HTR	PROGRAM PROTECT - I-O DISC
02774	0000	01	0	03045		IOCD TEMPE,0,1	
02775	0000	00	0	00000		HTR	PROGRAM PROTECT - I-O DISC
02776	0000	01	0	03046		IOCD TEMPF,0,1	
02777	0000	00	0	00000		HTR	PROGRAM PROTECT - I-O DISC
03000	0000	00	0	03321	CT10A	IOCD WRFDA	
03001	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
03002	0000	00	0	03421	CT10B	IOCD WRFDB	
03003	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
03004	0000	00	0	03521	CT10C	IOCD WRFDC	
03005	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
03006	0000	00	0	03621	CT10D	IOCD WRFDD	
03007	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
03010	0000	00	0	03721	CT10E	IOCD WRFDE	
03011	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
03012	0000	00	0	04021	CT10F	IOCD WRFDF	
03013	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
03014	0000	00	0	04121	CT12A	IOCD RDFDA	
03015	0000	00	0	00000		HTR 0	RECORDS
03016	0000	00	0	04221	CT12B	IOCD RDFDB	
03017	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
03020	0000	00	0	04321	CT12C	IOCD RDFDC	
03021	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
03022	0000	00	0	04421	CT12D	IOCD RDFDD	
03023	0000	00	0	00000		HTR 0	PROGRAM PROTECT - I-O DISC
03024	0000	00	0	04521	CT12E	IOCD RDFDE	

03025	0000 00 0 00000		HTR 0	PROGRAM PROTECT - I-O DISC
03026	0000 00 0 04621	CT12F	IOCD RDFDF	
03027	0000 00 0 00000		HTR 0	PROGRAM PROTECT - I-O DISC
03030	0000 30 0 05001	CTFIN	IOCD FNPT,0,24	
03031	0000 00 0 00000		HTR 0	PROGRAM PROTECT - I-O DISC
03032	+0000000000000	XRA	OCT 0	
03033	+0000000000000	XRB	OCT 0	
03034	+0000000000000	XRC	OCT 0	
03035	+0000000000000	TEMP	OCT	
03036	+0000000000000	TEMP1	OCT 00000000000	
03037	+0000000000000	TEMP2	OCT 00000000000	
03040	+0000000000000	TEMP3	OCT 00000000000	
03041	+0000000000000	TEMPA	OCT +0	TEMPORARY STORAGE - CHN A
03042	+0000000000000	TEMPB	OCT +0	TEMPORARY STORAGE - CHN B
03043	+0000000000000	TEMPC	OCT +0	TEMPORARY STORAGE - CHN C
03044	+0000000000000	TEMPE	OCT +0	TEMPORARY STORAGE - CHN D
03045	+0000000000000	TEMPE	OCT +0	TEMPORARY STORAGE - CHN E
03046	+0000000000000	TEMPF	OCT +0	TEMPORARY STORAGE - CHN F

\* TRANSFER TABLE

03047	0020 00 0 00035	TRA1	TRA RUC
03050	0020 00 0 00106	TRA2	TRA AA
03051	0020 00 0 00406	TRA3	TRA A9
03052	0020 00 0 01160		TRA B9
03053	0020 00 0 01425		TRA C9
03054	0020 00 0 01672		TRA D9
03055	0020 00 0 02137		TRA E9
03056	0020 00 0 02405		TRA F9
03057	0020 00 0 02567	TRA4	TRA STPA
03060	-0760 00 0 00142	SLT2	SLT 2
03061	+0101010101010	FIX	OCT 0101010101010
03062	+0202020202020		OCT 0202020202020
03063	+0303030303030		OCT 0303030303030
03064	+0404040404040		OCT 0404040404040
03065	+0505050505050		OCT 0505050505050
03066	+0606060606060		OCT 0606060606060
03067	+0707070707070		OCT 0707070707070
03070	+10101010101010		OCT 10101010101010
03071	+11111111111111		OCT 11111111111111
03072	+12121212121212		OCT 12121212121212
03073	+13131313131313		OCT 13131313131313
03074	+14141414141414		OCT 14141414141414
03075	+15151515151515		OCT 15151515151515
03076	+16161616161616		OCT 16161616161616
03077	+17171717171717		OCT 17171717171717
03100	+20202020202020		OCT 20202020202020
03101	+21212121212121		OCT 21212121212121

03102	+222222222222	OCT	222222222222
03103	+232323232323	OCT	232323232323
03104	+242424242424	OCT	242424242424
03105	+252525252525	OCT	252525252525
03106	+262626262626	OCT	262626262626
03107	+272727272727	OCT	272727272727
03110	+303030303030	OCT	303030303030

03111	+313131313131	OCT	313131313131
03112	+323232323232	OCT	323232323232
03113	+333333333333	OCT	333333333333
03114	+343434343434	OCT	343434343434
03115	+353535353535	OCT	353535353535
03116	+363636363636	OCT	363636363636
03117	+373737373737	OCT	373737373737
03120	-004040404040	OCT	404040404040

03121	-014141414141	OCT	414141414141
03122	-024242424242	OCT	424242424242
03123	-034343434343	OCT	434343434343
03124	-044444444444	OCT	444444444444
03125	-054545454545	OCT	454545454545
03126	-064646464646	OCT	464646464646
03127	-074747474747	OCT	474747474747
03130	-105050505050	OCT	505050505050

03131	-115151515151	OCT	515151515151
03132	-125252525252	OCT	525252525252
03133	-135353535353	OCT	535353535353
03134	-145454545454	OCT	545454545454
03135	-155555555555	OCT	555555555555
03136	-165656565656	OCT	565656565656
03137	-175757575757	OCT	575757575757
03140	-206060606060	OCT	606060606060

03141	-216161616161	OCT	616161616161
03142	-226262626262	OCT	626262626262
03143	-236363636363	OCT	636363636363
03144	-246464646464	OCT	646464646464
03145	-256565656565	OCT	656565656565
03146	-266666666666	OCT	666666666666
03147	-276767676767	OCT	676767676767
03150	-307070707070	OCT	707070707070

03151	-317171717171	OCT	717171717171
03152	-327272727272	OCT	727272727272
03153	-337373737373	OCT	737373737373
03154	-347474747474	OCT	747474747474
03155	-357575757575	OCT	757575757575
03156	-367676767676	OCT	767676767676
03157	-377777777777	OCT	777777777777
03160	+010101010100	OCT	010101010100

03161	+000000000000	OCT	000000000000
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03162	+000000000000	WDCT	OCT	
03163	+000000000000		OCT	INITIAL WR ADDR + COUNT
03164	0761 00 0 00000	K1	NOP	
03165	0074 00 2 00123		TSX REWA,2	
03166	+000000000400	K2	OCT +400	RANDOM RECORD COUNT
03167	+000000000622		OCT 622	
03170	+000000000300		OCT 300	
03171	+000000000060		OCT 60	
03172	+000000000026		OCT +26	
03173	0020 00 0 00106		TRA AA	REPEAT PROGRAM
03174	+000000000200		OCT +200	
03175	+0000000007000		OCT +7000	
03176	+0000000000375		OCT +375	
03177	0000 00 0 03321	K3	HTR WRFDA	
03200	0000 00 0 03421		HTR WRFDB	
03201	0000 00 0 03521		HTR WRFDC	
03202	0000 00 0 03621		HTR WRFDD	
03203	0000 00 0 03721		HTR WRFDE	
03204	0000 00 0 04021		HTR WRFDF	
03205	0000 00 0 03311		HTR K11	
03206	0000 00 0 04121	K3A	HTR RDFDA	LOC OF READFIELD CHN A
03207	0000 00 0 04221		HTR RDFDB	LOC OF READFIELD CHN B
03210	0000 00 0 04321		HTR RDFDC	LOC OF READFIELD CHN C
03211	0000 00 0 04421		HTR RDFDD	LOC OF READFIELD CHN D
03212	0000 00 0 04521		HTR RDFDE	LOC OF READFIELD CHN E
03213	0000 00 0 04621		HTR RDFDF	LOC OF READFIELD CHN F
03214	0000 00 1 03421	K3B	HTR WRFDA+64,1	
03215	0000 00 1 03521		HTR WRFDB+64,1	
03216	0000 00 1 03621		HTR WRFDC+64,1	
03217	0000 00 1 03721		HTR WRFDD+64,1	
03220	0000 00 1 04021		HTR WRFDE+64,1	
03221	0000 00 1 04121		HTR WRFDF+64,1	
03222	0000 00 0 04221	K3C	HTR RDFDA+64	
03223	0000 00 0 04321		HTR RDFDB+64	
03224	0000 00 0 04421		HTR RDFDC+64	
03225	0000 00 0 04521		HTR RDFDD+64	
03226	0000 00 0 04621		HTR RDFDE+64	
03227	0000 00 0 04721		HTR RDFDF+64	
03230	2 00036 0 04121	K4A	IORP RDFDA,0,30	
03231	0000 00 0 03231		IOCD K4A+1	
03232	+000000000000		OCT +0	
03233	0032 32 0 03231		IOCD K4A+1,0,K4A+2	
03234	2 03231 0 04121		IORP RDFDA,0,K4A+1	
03235	2 00036 0 04221	K4B	IORP RDFDB,0,30	
03236	0000 00 0 03236		IOCD K4B+1	
03237	+000000000000		OCT +0	
03240	0032 37 0 03236		IOCD K4B+1,0,K4B+2	
03241	2 03236 0 04221		IORP RDFDB,0,K4B+1	
03242	2 00036 0 04321	K4C	IORP RDFDC,0,30	
03243	0000 00 0 03243		IOCD K4C+1	
03244	+000000000000		OCT +0	

03245	0032 44 0	03243		IOCD K4C+1,0,K4C+2
03246	2 03243 0	04321		IORP RDFDC,0,K4C+1
03247	2 00036 0	04421	K4D	IORP RDFDD,0,30
03250	0000 00 0	03250		IOCD K4D+1
03251	+000000000000			OCT +0
03252	0032 51 0	03250		IOCD K4D+1,0,K4D+2
03253	2 03250 0	04421		IORP RDFDD,0,K4D+1
03254	2 00036 0	04521	K4E	IORP RDFDE,0,30
03255	0000 00 0	03255		IOCD K4E+1
03256	+000000000000			OCT +0
03257	0032 56 0	03255		IOCD K4E+1,0,K4E+2
03260	2 03255 0	04521		IORP RDFDE,0,K4E+1
03261	2 00036 0	04621	K4F	IORP RDFDF,0,30
03262	0000 00 0	03262		IOCD K4F+1
03263	+000000000000			OCT +0
03264	0032 63 0	03262		IOCD K4F+1,0,K4F+2
03265	2 03262 0	04621		IORP RDFDF,0,K4F+1
03266	+000000000077		K5	OCT +77
03267	+000000000101			OCT +101
03270	+000000000017		K6	OCT +17
03271	+000000001000			OCT +1000
03272	+000000001001			OCT +1001
03273	+000000000100			OCT +100
03274	+000000000101			OCT +101
03275	+000000000036			OCT +36
03276	+000000000020			OCT +20
03277	+000000000102			OCT +102
03300	+377777777767		K8	OCT +377777777767
03301	-331011416132		K10	OCT -331011416132
03302	+033420275437			OCT +033420275437
03303	-126044765051			OCT -126044765051
03304	-202037467555			OCT +602037467555
03305	-305552746526			OCT -305552746526
03306	-134703564071			OCT -134703564071
03307	+364271003007			OCT +364271003007
03310	+060203746526			OCT +60203746526
	03311	K11		EQU K10+8
	03321			ORG K11+8
	03321	WRFDA	BSS	64
	03421	WRFDB	BSS	64
	03521	WRFDC	BSS	64
	03621	WRFDD	BSS	64
	03721	WRFDE	BSS	64
	04021	WRFDF	BSS	64
	04121	RFDA	BSS	64
	04221	RFDB	BSS	64
	04321	RFDC	BSS	64
	04421	RFDD	BSS	64
	04521	RFDE	BSS	64
	04621	RDFDF	BSS	64

\* PRINT FIELDS

\* IMAGE - NOW PERFORMING DIAGNOSTIC TEST 9T03

04721	+002241004010	PRIDN	OCT 002241004010	9 ROW LEFT
04722	+000000000000		OCT 000000000000	9 ROW RIGHT
04723	+000000000000		OCT 000000000000	8 L
04724	+000000000000		OCT 000000000000	8 R
04725	+010010200000		OCT 010010200000	7 L
04726	+000000000000		OCT 000000000000	7 R
04727	+141400040000		OCT 141400040000	6 L
04730	+000000000000		OCT 000000000000	6 R
04731	+204020100200		OCT 204020100200	5 L
04732	+000000000000		OCT 000000000000	5 R
04733	+000102000000		OCT 000102000000	4 L
04734	+000000000000		OCT 000000000000	4 R
04735	+000000012445		OCT 000000012445	3 L
04736	+000000000000		OCT 000000000000	3 R
04737	+000000020100		OCT 000000020100	2 L
04740	+000000000000		OCT 000000000000	2 R
04741	+000000400000		OCT 000000400000	1 L
04742	+000000000000		OCT 000000000000	1 R
04743	+040000030546		OCT 040000030546	0 L
04744	+000000000000		OCT 000000000000	0 R
04745	+312720140000		OCT 312720140000	11 L
04746	+000000000000		OCT 000000000000	11 R
04747	+005053606200		OCT 005053606200	12 L
04750	+000000000000		OCT 000000000000	12 R

\* IMAGE - 9T03 PASS COMPLETE CHN + TF

04751	-000000000000	PR1	OCT 400000000000	9 ROW LEFT
04752	+000000000000		OCT 000000000000	9 ROW RIGHT
04753	+000000002000		OCT 000000002000	8 L
04754	+000000000000		OCT 000000000000	8 R
04755	+001002000000		OCT 001002000000	7 L
04756	+000000000000		OCT 000000000000	7 R
04757	+000010000010		OCT 000010000010	6 L
04760	+000000000000		OCT 000000000000	6 R
04761	+000000501000		OCT 000000501000	5 L
04762	+000000000000		OCT 000000000000	5 R
04763	+000004000000		OCT 000004000000	4 L
04764	+000000000000		OCT 000000000000	4 R
04765	+240021204020		OCT 240021204020	3 L
04766	+000000000000		OCT 000000000000	3 R
04767	+000300000000		OCT 000300000000	2 L
04770	+000000000000		OCT 000000000000	2 R
04771	+000400000000		OCT 000400000000	1 L
04772	+000000000000		OCT 000000000000	1 R
04773	+300300200020		OCT 300300200020	0 L
04774	+000000000000		OCT 000000000000	0 R
04775	+001017001000		OCT 001017001000	11 L
04776	+000000000000		OCT 000000000000	11 R
04777	+000420506210		OCT 000420506210	12 L

05000 +0000000000000 OCT 000000000000 12 R

\* IMAGE - 9T03 PASS COMPLETE ALL UNITS

05001	-0000000000040	FNPT	OCT 400000000040	9	ROW LEFT
05002	+0000000000000		OCT 000000000000	9	ROW RIGHT
05003	+0000000000000		OCT 000000000000	8	L
05004	+0000000000000		OCT 000000000000	8	R
05005	+0010020000000		OCT 001002000000	7	L
05006	+0000000000000		OCT 000000000000	7	R
05007	+0000100000000		OCT 000010000000	6	L
05010	+0000000000000		OCT 000000000000	6	R
05011	+0000005000100		OCT 0000005000100	5	L
05012	+0000000000000		OCT 0000000000000	5	R
05013	+0000004000200		OCT 0000004000200	4	L
05014	+0000000000000		OCT 0000000000000	4	R
05015	+240021203020		OCT 240021203020	3	L
05016	+0000000000000		OCT 0000000000000	3	R
05017	+0003000000010		OCT 0003000000010	2	L
05020	+0000000000000		OCT 0000000000000	2	R
05021	+000400004000		OCT 000400004000	1	L
05022	+0000000000000		OCT 0000000000000	1	R
05023	+300300200230		OCT 300300200230	0	L
05024	+0000000000000		OCT 0000000000000	0	R
05025	+001017003100		OCT 001017003100	11	L
05026	+0000000000000		OCT 0000000000000	11	R
05027	+000420504040		OCT 000420504040	12	L
05030	+0000000000000		OCT 0000000000000	12	R

\* EQUIVALENT ADDRESSES

06504	ERROR	EQU 3396
06511	OK	EQU 3401
06560	RDNCK	EQU 3440
06556	WDNO	EQU 3438
06557	RECNO	EQU 3439
07060	CH14	EQU 3632
07401	WPRA	EQU 3841
05500	CTRL1	EQU 2880
05501	CTRL2	EQU 2881
05502	CTRL3	EQU 2882
05503	IOCT	EQU 2883
05504	CTRA	EQU 2884
05505	CTRB	EQU 2885
05506	CTRC	EQU 2886
05507	CTRD	EQU 2887
05510	CTRE	EQU 2888
05511	CTRF	EQU 2889
05512	CTX	EQU 2890
05513	IOCNT	EQU 2891
05514	IOC	EQU 2892
00000		END





EOF\*