ATTN: I.B.M.C.E.   7/14/65

LISTING

R 501C

PROVIDENT MUTUAL LIFE
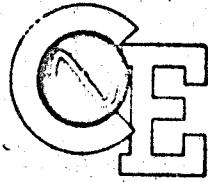
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Subject: Diagnostic Program   RS01D
            1442 Serial Card Reader and 7223 Console Card Reader Test
     Sequence Number   513
            Replaces   RS01C and BZ50A

1.   This program replaces and obsoletes RS01C (1442 serial
      card reader test), and BZ50A (7223 Console Card Reader test).

2.   This level may be run from the TC50 tape.

3.   C Level Test Decks (Ripple and Illegal Character) should be
      used with RS01D.

Enclosures: 31 Pages
            Card Deck for CARD ONLY SYSTEMS (as punched by UP51)
       8 Cards - Card Loader and Core Clear   77 Cards - Deck I 001-077
    068 Cards No. 001-068   Data Cards   51 Cards - Deck II 078-128
       1 Card   Execute Card

Distribution: X   1410   - With 1442 Serial Reader or 7223 Console Card Reader
              X   7010
                  Other

RS01D

SERIAL CARD READER TEST

(1442 MODEL 3)

(7223 Console Reader)

3/30/64

CONTENTS OF RS01

5.00.00.0   TEST DESCRIPTION

.00.1   Modifications

A.   RS01D modifies and obsoletes RS01C and also obsoletes
BZ50A (7223 Console Card Reader)
The ability to test the 7223 console card reader has been
added to this version of the program.

.00.2   Description

A.   The 1442 Mod 3 Serial Card Reader or the 7223 Console
Card Reader is tested for reliability while reading pre-
punched cards. The ability to interrupt and the cause of
interrupt are also tested. The test can be run on Channel
I or Channel II.

B.   Two decks of prepunched cards are used as input.

a.   Deck I is a repeated or single 77 card deck, has
legal characters, and is composed of sequentially
numbered (001-077) rippled cards.
A similar pattern is set up in storage, rippled,
and a card-image-to-pattern comparison made
for proper reading. Compare errors are sig-
nalled by typeouts and the display of card image
and storage pattern.

Status Indicator ON errors are signalled by
specific error typeouts.
If the Priority feature is included and is to be
tested; the operator must turn the Priority
Request Indicator ON. This, plus channel not
busy, an interruptible instruction, and the
entering of Priority Alert Mode, causes an in-
terrupt. If there is no interrupt, an error
typeout will follow. If the interrupt routine is
entered properly, the cause of the interrupt is
tested. If the cause was other than the proper
settings of the Priority Request Indicator, an
error typeout will follow.

During the reading of Deck I, the time between
the first 2 consecutive clutch latch-ups is pro-
longed. As reading continues the time between
latch-ups is progressively decreased.

b. Deck II is a 51 card <u>illegal</u> character deck num-
bered (078-128), each card containing one different
illegal character randomly placed. This deck
should be read with Asterisk Insert Switch ON.

If expected data checks do not occur, a typeout
will signal the error.

Interrupt and its cause are tested as in B (a).

Clutch latch-up timing is not modified as in B (a).

.00.3 **Equipment**

Serial Card Reader 1442 Mod 3 or 7223 Console
Card Reader. Processing Unit 1411 Mod 1, 2, 3, 4,
or 5   (Minimum Storage - 10K)
Console 1415

.00.4 **Card Deck**

Number of Cards	Sequence	Numbers in col. 78-80
7	Loader	-----
1	Core Clear	-----
68	Program	001-068
1	Execute Card	-----
Multiples of 77	*Repeated Ripple Deck(I)	
		001-077
51	*Illegal Character Deck (II)	
		078 - 128

.00.5 E.C. Level of Machine

Serial Card Reader E.C. 805333 (all Suffixes)

5.00.01.0 LOADING PROCEDURES

01.1 FROM CARDS (Load Program L1A preceding Card Deck)

* Decks I and II cannot be put on tape.

A.   7010-1410 without Load Button.

    1.   Display Memory Location 00000

    2.   Alter to
           vv   v
           RL%1100011$.   Enter according to chan-
           v   nel location of the card
           X ⌗   reader.

    3.   Set to Run, Computer Reset and Start.

B.   7010 with Load Button

    1.   Computer Reset

    2.   Depress Load Button

.01.2   FROM TAPE (80 Character Master or Memory Dump Tape)

A.   7010-1410 with out Load Button

    1.   Display Memory Location 00000

    2.   Alter to
           vv   v
           RL%B000011$.   Enter according to chan-
           v   nel location of the tape
           X ⌗   drive.

    3.   Set to Run, press Computer Reset.

B.   7010 with load button

    1.   Computer Reset

    2.   Depress Load Button

5.00.02.0   OPERATING PROCEDURES

.02.1   Switches

A.   <u>Asterisk Insert Switch must be ON to permit
reading of illegal character cards.</u>

B.   When testing interrupt, it is necessary to turn on the Priority Request Indicator. To do this, set the Priority Select ON-OFF switch to ON, and dial Reader.

..02.2   **TAD's**

A.   Normal TAD's will not be requested, but may be inserted by the operator.

Location	Normal TAD's			
1000	TAD 0	OFF	1	Normal typeouts
		ON	1	Bypass typeouts (for scoping)
1001	TAD 1	OFF	1	Proceed to next routine
		ON	1	Loop the routine
1002	TAD 2	OFF	1	Continue on errors
		ON	1	Halt on errors
1003	TAD 3	OFF	1	One pass of program
		ON	1	Repeat program

Normal TAD's are internally set to "bbbb".

.02.3   **Program Time Changes**

By altering location ~ 3277 to N, any latch-up time interval may be made constant throughout the ripple deck run.

By simultaneously altering location 07297 and 07299, progressive latch-up time interval may be shortened(by increasing the constants) or lengthened (by decreasing the constants).

5. bb. 03. 0   **OPERATING HINTS, COMMENTS**

03. 1   Choice of Input Machines

RS01 can be read into storage from tape, or from a 1402 Mod 2 card reader on a separate channel or from the S.C.R., or from the 7223 Console Card Reader.

03.2   Illegal Character cards

If an illegal character card is lost or mutilated, any illegal
character card may be substituted provided there is a "1"
in column 77.

03.3   DUPLICATE ALL DECKS WHEN RECEIVED*

03.4   Always check to see that the last card has been stacked. If
the last card has not been stacked, Press Non Process Runout
and Start.

03.5   "PASS" is the end of test.

03.6   When Running the 7223 a blank card must be added to the end of the
test deck.

5.bb.04.0   PROGRAM STOPS AND RESTARTS

04.1   Stops, their Causes and Restart Procedures are given below
in sequential order.   An "N" in the left-hand margin signifies
the stop is normal.

Stop Location	Cause	Restart Procedure
O3157	Compare Error	Press Start to Continue
O3680	Interrupt Did Not Take Place Properly	Check Priority Request It Should be on. Press Start to Continue
O3742	Error Branch on Chan 1	Press Start to Continue
O3814	Error Branch on Chan 2	Press Start to Continue
O3843	Branched on Second Y1U	Press Start to Continue

* If facilities are not available, send for new decks to Reliability and
Serviceability Department.

Stop Location	Cause	Restart Procedure
N 06025	Reader not Ready	Make Reader Ready Press Start to Continue
N 06180	To repeat test or no Channel Card Punched	Press Start or punch Channel Card
06259	Data Check	Press Start, if 1002-1 to continue

5.bb.05.0   **TYPEOUTS**

  05.1   **Normal**

"RS01D". Number and Suffix of Test

"READER NOT READY - MAKE READY AND PRESS START"

If there is no Feed Check, consider this a normal typeout.
If there is a Feed Check, it may be due to one or more of the
following conditions:

    a.   Misfeed error (covered separately).
    b.   Card jam (reset button will not reset feed chk light).
    c.   Card in wrong place (covered separately). Reset button
    d.   Extra cycle taken will reset feed chk light
    e.   Photocell malfunction (covered separately).
    f.   Cover interlock switch operating.

"PASS" End of Test. This indicates that the end of file condition has been
properly generated and tested by the program. RS01D branched to 400 to
load the next diagnostic program.

"TO REPEAT TEST, PUT DATA CARDS IN HOPPER, MAKE READER READY,
AND HIT START" when 1003 is a "1", program can repeat. When 1003 is not
a "1", program will call in next test.

  05.2   **Error**

"CARD XXX DOES NOT GIVE EXPECTED DATA CHECK"

This message occurs when a card in deck II (illegal) is not
recognized as an illegal character card. If this error is solid
or intermittent, a translation problem exists.

"DATA CHECK - CARD NUMBER XXX - PRESS START IF
1002-1." Either CPU detects a parity error, or an error is
detected by the hole count checking circuitry.

"CARD XXX DOES NOT COMPARE"
"CARD READS"
XXXXX --XXX
"CPU CONTAINS"
XXXXX --XXX
If location 1000 contains a "1", this message is bypassed.

"BRANCHED IF PRIORITY INQUIRY". The cause of interrupt
was either an intentional Inquiry Request or a machine error.

"INTERRUPT DID NOT TAKE PLACE PROPERLY"
If the Priority Request Indicator has not been set ON properly
or there is a machine failure, there will be no interrupt.

"BRANCHED ON CHAN 1 OLAP"
"BRANCHED ON CHAN 2 OLAP"
"BRANCHED ON SECOND Y1U"
Any one of the above 3 messages depicts an error, and shows
that the cause of the interrupt was other than the first Y(I)U
instruction.

"MISFEED ERR - VISUAL CK SHOWS NO CARD AT READ
STATION - FIX CARD" The no transfer indicator has been
tested and found ON. A reader-not-ready message will follow.
After fixing card, make the reader ready and press START.
The program will continue.

"WLR - FEED CHK OCCURRED AFTER READ INSTRUCTION-
CARD IN WRONG PLACE OR JAM - IF CARDS OUT OF SEQUENCE
DUE TO JAM, RELOAD ALL DATA CDS." The wrong length
record indicator has been tested and found ON. Cards may or may
not be out of sequence. Ready may or may not drop. The various
combinations are listed below:

	Procedure	Due to
		*
	Clear Jam	(Reset button
WLR	Make Reader Ready	JAM will not reset
Not ready	Reload All Data Cds	feed chk light)
Out of Sequence	Press Start	* (Reset Button will
	Remove Faulty Eject Cd if	Jam not reset feed chk
WLR	Present	light)
Not ready	Clear Jam if Present	
Not out of	Make Reader Ready	Card in wrong place
Sequence	Press Start	
		Other than 80 strobes
	Look for an obstruction in	have been sent to CPU
WLR	one or more of the emitter	
Not Not Ready	disk slots	

"DATA CHECK - CARD NUMBER XXX - PRESS START IF
1002-1"

"CARD XXX DOES NOT COMPARE"

"CARD READS"
XXXXX --XXX

"CPU CONTAINS"
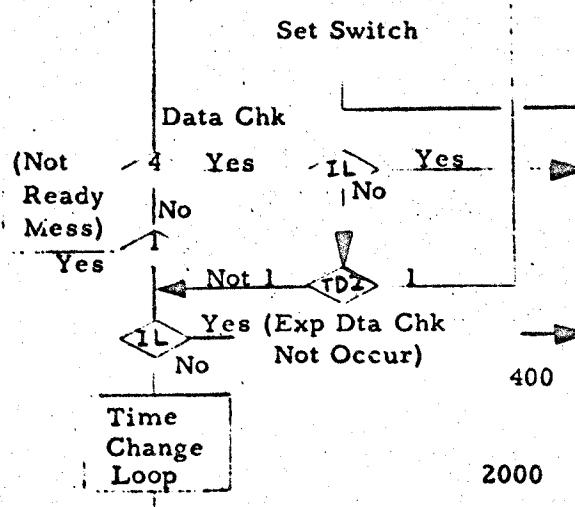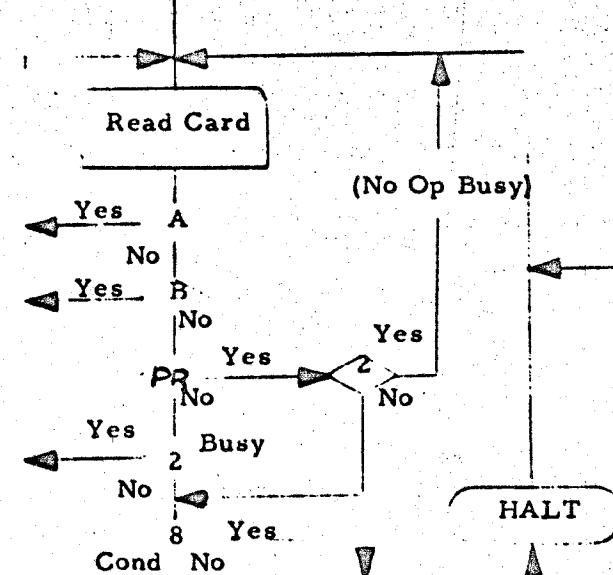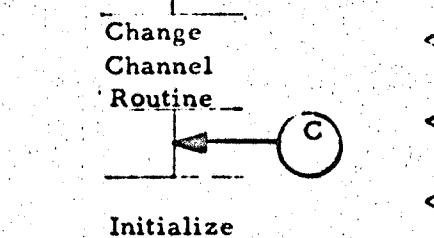XXXXX --XXX

"READER NOT READY - MAKE READY AND PRESS START"
This combination of Data Check and Not Ready message equal
a cell chk. The no-compare typeout tells the operator which
photocell(s) is faulty. Chk non-process run out after clearing
feed, or chk for faulty motion past the read station.

*TRY RESET BEFORE OPENING COVER

Change
Channel
Routine

C

Initialize

PR ▷ Priority
IL ▷ Illegal Char Cd
TDO ▷ Type
B ▷ Cd in wrong place or Jam

TD1 ▷ Loop
TD2 ▷ Halt
TD3 ▷ Repeat
A ▷ Misfeed

D

IL — Yes
No

Compare
Cd Image
to Memory

= — Yes

No

1 — TDO Not 1
(Display CPU & Mem.

Read Card

(No Op Busy)

Yes — A
No
Yes — B
No

PR — Yes — 2 — Yes
No — No

Yes — 2 Busy
No

8 — Yes
Cond No

1 — TD1 — Not 1

TD2 — Not 1
1

HALT

HALT

Set Switch

Data Chk

(Not 4 — Yes
Ready | No IL — Yes
Mess) | No
Yes — 1

Not 1 — TD2 — 1

IL — Yes (Exp Dta Chk
No Not Occur)

Time
Change
Loop

400

2000

Reset
Initial
Conditions

Not 1 — TD3
1 — TD3

HALT

PR — Yes
No

Test
Interrupt

8 — Yes
No

D

Yes — Switch On?
No
Yes — IL
No

77th Cd — Yes — C
No

Add 1 to
Counter

Ripple

Modify
Time
Loop

PGLIN	LABEL	CPCCD	CPERAND		CT	ACCKS	INSTRUCTICN
ICC2S		LINES	36				
ICC3S		LCAC					
ICC4		CIL	2				
ICC5	*						
ICC6	*	TEST ALTERATICN CIGITS					
ICC7	*						
ICC8		CRG	ICCC				01CC0
ICC9	TAC0	CC		1 BYPASS TYPE-NCT 1,CC NCT	1	01CC0	
IC10	TAC1		ä ä	1 LOOP-NCT 1,CC NCT	1	01CC1	
IC11	TAC2		ä ä	1 HALT-NCT 1,CC NCT	1	01CC2	
IC12	TAC3		ä ä		1	01CC3	
IC13			ä G	1 REPEAT PGM-NCT 1,CC NCT	1	01CC4	
IC14		CCW	ä M ä				
IC15	*						
IC16	*	STANDARD INTERNAL TAD RCUTINE					
IC17	ITR	SER	ITREXTES	SICRE PAR	7	01CC5	G 01C72 B
IC18	ITR1	RCP	ITR2&4	ENTER TC ALTER	1C	01C12	M ?TO 01C47 R
IC19		BEX1	ITR1,M	RETURN CN ANY BUT WLR & NT	7	01C22	R 01012 M
IC2C		BAT1	ITREXT	BRACH NT	7	01C29	K 01067 G
IC21		BA1	ITR2	RESET INTERLCCK	7	01C36	R 01C43 M
IC22		RCPH	C	ENTER DATA-ACCRESS MCCFIER	1C	01C43	L ?TO 0000C0 R
IC23	ITR2	BEX1	ITR2,M	RETRN CN ANY BUT WLR	7	01C53	R 01C43 S
IC24		BA1	*&1	RESET INTERLCCK	7	01C6C	R 01067 G
IC25	ITREXT	B	C	RETRN TC MAIN PRCGRAM	7	01C67	M
IC26		H			1	01074	J 0CCC0
IC27	*						
IC28	*						
IC29	*	PRCGRAMMING SYSTEM CCNTRCL CCNSTANTS					
IC3CS		CRG	1233			01233	
IC31S		CCW	äSMSCMSSJKCJK513.9ä		17	01249	
IC32	*						
IC33	*	TEST NUMBER ANC SUFFIX					
IC34	*						
IC35		CRG	125C			01250	
IC36S	NUMBR	CCW	äRSCICä,G		5	0125C	

PGLIN	LABEL	CPCCD	CPERANC		CT	ADDRS
1038	**********************************					
1039	*STANCARC SYSTEM CCNTROL CARC.		*			
1040	**********************************		*			
1041		CRG	1256 CHARACTER & PLRPCSE CCL			01256
1042	SYS1	CC	@ ALPHA C,1,X - 141C,141CACC,7C1C 1?		1	01256
1043		E1 DC	@ @ 0,1,3,5,7,9-10,20,40,60,8C,1CCK 14		1	01257
1044		E2 CC	@ @ 1-BIT SHAREC FILE SYSTEM 1C		1	01258
1045		E3 CC	@ @ 1,2-CHNL1 1C0,132 CHAR PRINTER 1C		1	01259
1046		E4 DC	@ @ 1,2-CHNL2 100,132 CHAR PRINTER 17		1	01260
1047		E5 CC	@ @ 1 BIT--EURCPEAN ECIT 1A		1	01261
1048	*		2-BIT--50 CYCLE PCKER			
1049		E6 CC	@ @ SPARE 1S		1	01262
1050		E7 CC	@ @ 1 - OVERLAP 2C		1	01263
1051		E8 CC	@ @ 1 - PRIORITY ALERT 21		1	01264
1052		E11 CC	@ SPARES 22-24		3	01267
1053		E12 CC	@ @ 1 - CHANNEL ONE PRESENT 25		1	01268
1054		E13 CC	@ @ 1 - CHANNEL TWC PRESENT 2C		1	01269
1055		E14 CC	@ @ 1 - CHANNEL THREE PRESENT 27		1	01270
1056		E15 CC	@ @ 1 - CHANNEL FCUR PRESENT 2P		1	01271
1057		E17 CC	@ SPARES 2S-3C		2	01273
1058		E18 CC	@ @ 1 - 1401 CCMPATIBILITY 31		1	01274
1059		E19 CC	@ @ 1 BIT-TIMER INTERRCPT 3?		1	01275
1060	*		2 BIT-RELCCATE ANC PRCTECT			
1061	*		4 BIT-FLCATING PCINT ARITHMETIC			
1062		E2C CC	@ @ 1. - PRCGRAM ACCRESSABLE CLCCK 3?		1	01276
1063		E31 CC	@ SPARES 34-44		11	01287
1064		E32 CC	@+@ SPARES 4C		1	01288

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
1066	************************************					
1067	*STANDARD CHANNEL 1 CONTROL CARD. *					
1068	************************************					
1069		ORG	1269 CHARACTER & PURPOSE COL		01289	
1070	CHN1	CC	@ @ 1 - PAPER TAPE READER 13	1	01289	
1071		61 CC	@ @ 1 - CONSOLE PRINTER 14	1	01290	
1072		62 CC	@ @ 1 - TAPES 729/7330 15	1	01291	
1073		@11 CC	@ @ SPARES 16-24	9	01300	
1074		@12 CC	@ @ R,S,C - 1402,1442,7223 READER 25	1	01301	
1075		@13 CC	@ @ B - READER COLUMN BINARY FEAT. 26	1	01302	
1076		@14 CC	@ @ P - 1402 PUNCH 27	1	01303	
1077		@15 CC	@ @ B - PUNCH COLUMN BINARY FEAT. 28	1	01304	
1078		@16 CC	@ @ P - 1403 PRINTER 29	1	01305	
1079		@17 CC	@ @ A,N - ALPHA,NUMERIC PRINT CHAIN 30	1	01306	
1080		@18 CC	@ @ 1,2 - 100,132 CHAR PRINT BUFFER 31	1	01307	
1081		@19 CC	@ @ F - 1301 FILE 32	1	01308	
1082		@20 CC	@ @ 1 THRU 0 - 1 THRU 10 FILE MODULES33	1	01309	
1083		@21 CC	@ @ 1 THRU 0 - 1 THRU 10 ACCESSES 34	1	01310	
1084		@22 CC	@ @ R - 1311 IMPAC 35	1	01311	
1085		@23 CC	@ @ 1 THRU 5 - 1 THRU 5 IMPAC MODULES36	1	01312	
1086		@24 CC	@ @ 1 - SEEK OVERLAP FEATURE 37	1	01313	
1087		@25 CC	@ @ 1 - SCAN FEATURE 38	1	01314	
1088		@26 CC	@ @ 1 - TRACK RECORD FEATURE 39	1	01315	

RSOI INSTRUCTION

PGLIN	LABEL	OPCOD	OPERAND			CT	ADDRS	INSTRUCTION
ICSO		827 DC	@ @	F - 1405 FILE	4C	1	01316	
ICSI		828 DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE C	41	1	01317	
IC92		829 DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 1	42	1	01318	
IC93		830 DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 2	43	1	01319	
IC94		831 DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 3	44	1	01320	
IO95		832 DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 4	45	1	01321	
IC96		833 DC	@ @	1 - 7750 ON THIS CHANNEL	46	1	01322	
IC97		834 DC	@ @	1 - 7740 ON THIS CHANNEL	47	1	01323	
IC8		835 DC	@ @	1 - 1440/1460 ON THIS CHANNEL	48	1	01324	
IC99		836 DC	@ @	1 - CHAN HAS CHANNEL EXTENDER	49	1	01325	
IICO		837 DC	@ @	L - LOW SPEED HYPER TAPE	5C	1	01326	
IIC1		838 DC	@ @	1,2,3-1050-1,2,CR BOTH ADAPTERS	51	1	01327	
IIC2		839 DC	@ @	1-BIT-1412-MAGNETIC INK CHAR RDR	52	1	01328	
IIC3S			@ @	2-BIT-1419S-MAGNETIC INK CHAR RDR	53			
IIC4		84C DC	@ @	1-BIT-1009S-DATA TRANS UNIT	53	1	01329	
IIC5		841 DC	@ @	1-BIT-1014-REMOTE INQUIRY	54	1	01330	
IIC6		842 DC	@ @	1-BIT-TELEGRAPH	55	1	01331	
IIC7		843 DC	@ @	F - 1302 FILES	56	1	01332	
IIC8		844 DC	@ @	RESERVED	57	1	01333	
IIC9		845 DC	@ @	RESERVED	58	1	01334	
1110		846 DC	@ @	RESERVED	59	1	01335	
IIII		855 DC	@ @	@ SPARES	6C-69	5	01344	
III2		856 DC	@ @ @	@	6C	1	01345	

PGLIN	LABEL	CPCCD	CPERANC	CI	ACCRS INSTRLCTICN
1114			*****************		
1115			*STANDARD CHANNEL 2 CCNTRCL CARL.		
1116			*****************		
1117		CRG	1346 CHARACTER & PURPCSE CCL	1	01346
1118	CHN2	CC	@a 1 - PAPER TAPE REACER 1?	1	C1346
1119		E1 CC	@a 1 - CCNSCLE PRINTER 14	1	01347
1120		E2 CC	@a 1 - TAPES 729/7330 15	1	C1348
1121		E11 CC	@a SPARES 16-24	5	C1357
1122		E12 CC	@a R,S,C - 14C2,1442,7223 READER 25	1	01358
1123		E13 CC	@a B - REACER COLLMN BINARY FEAT. 24	1	C1359
1124		E14 CC	@a P - 1402 PLNCH 27	1	C1360
1125		E15 CC	@a B - PLNCH CCLLMN BINARY FEAT. 29	1	01361
1126		E16 CC	@a P - 1403 FRINTER 29	1	C1362
1127		E17 CC	@a A,N - ALPHA,NUMERIC PRINT CHAIN 30	1	01363
1128		E18 CC	@a 1,2 - 1CO,132 CHAR PRINT BUFFER 31	1	01364
1129		E19 CC	@a F - 13C1 FILE 32	1	01365
1130		E2C CC	@a 1 THRU 0 - 1 THRU 1C FILE MCCLLE3? 33	1	01366
1131		E21 CC	@a 1 THRL 0 - 1 THRU 1C ACCESSES 34	1	C1367
1132		E22 CC	@a R - 1311 IMPAC 35	1	C1368
1133		E23 CC	@a 1 THRL 5 - 1 THRU 5 IMPAC MCCULE34 36	1	01369
1134		E24 CC	@a 1 - SEEK CVERLAP FEATURE 37	1	C1370
1135		E25 CC	@a 1 - SCAN FEATURE 38	1	C1371
1136		E26 CC	@a 1 - TRACK RECCRD FEATURE 35	1	C1372

PGLIN	LABEL	CPCCD	CPERAND		CT	ADDRS	INSTRUCTION
1138		E27 CC	a a	F - 1405 FILE 40	1	01373	
1139		E28 CC	a a	1,2,3 - 1,2,3 ARMS IN MODULE 0 41	1	01374	
1140		E29 CC	a a	1,2,3 - 1,2,3 ARMS IN MODULE 1 42	1	01375	
1141		E30 CC	a a	1,2,3 - 1,2,3 ARMS IN MODULE 2 43	1	01376	
1142		E31 CC	a a	1,2,3 - 1,2,3 ARMS IN MODULE 3 44	1	01377	
1143		E32 CC	a a	1,2,3 - 1,2,3 ARMS IN MODULE 4 45	1	01378	
1144		E33 CC	a a	1 - 7750 ON THIS CHANNEL 46	1	01379	
1145		E34 CC	a a	1 - 7740 ON THIS CHANNEL 47	1	01380	
1146		E35 CC	a a	1 - 1440/1460 ON THIS CHANNEL 48	1	01381	
1147		E36 CC	a a	1 - CHAN HAS CHANNEL EXTENDER 49	1	01382	
1148		E37 CC	a a	L - LOW SPEED HYPER TAPE 50	1	01383	
1149		E38 CC	a a	1,2,3-1050-1,2,CR BCTH ADAPTERS 51	1	01384	
1150		E39 CC	a a	1-BIT-1412-MAGNETIC INK CHAR RCR52	1	01385	
1151$				2-BIT-1419-MAGNETIC INK CHAR RCR			
1152		E40 CC	a a	1-BIT-1009-DATA TRANS UNIT 53	1	01386	
1153		E41 CC	a a	1-BIT-1014-REMOTE INQUIRY 54	1	01387	
1154		E42 CC	a a	1-BIT-TELEGRAPH 55	1	01388	
1155		E43 CC	a a	F - 1302 FILES 56	1	01389	
1156		E44 CC	a a	RESERVED 57	1	01390	
1157		E45 CC	a a	RESERVED 58	1	01391	
1158		E46 CC	a a	RESERVED 59	1	01392	
1159		E55 CC	a	SPARES 60-64	5	014C1	
1160		E56 CC	a+a	65	1	014C2	

PGLIN	LABEL	OPCOD	OPERAND		CT	ADDRS	INSTRUCTION
1162		*********					
1163		*STANDARD TYPE ROUTINE 1.					
1164	TYP1	SBR	TYP265	STORE MESSAGE ADDRESS	7	01403	G 01422 B
1165		SBR	TYP368	STORE MESSAGE ADDRESS	7	01410	G 01456 B
1166	TYP2	SCNRG	C,C	FIND RETURN ADDRESS	12	01417	0 00000 00000 C
1167		SAR	TYP465	SET ADDRESS FOR EXIT	7	01429	G 01477 A
1168		BCE	TYP4,TADC,1	BYPASS TYPING PER TAC C	12	01436	B 01472 C1C00 1
1169	TYP3	HCP	C	TYPE MESSAGE	1C	01448	M $TO CCCCC M
1170		BCBL	TYP3	TRY AGAIN IF BUSY	7	01458	R 0144H 2
1171		HAI	*C1	RESET INTERLOCK	7	01465	R C1472 G
1172	TYP4	H	C	RETURN TO MASTER PROGRAM	7	01472	J 00000
1173		H	C	TERMINATE TYPE ROUTINE	-1	C1479	.
1174	.		CHANGE CHANNEL ROUTINE				
1175	.						
1176		CRG	2CCC		1	32CC0	N
1177	START	NOP			7	C2CC0	N
1178		B	CHAN1	ONE SHOT CHAN CHANGE	7	C2CC1	J 02178
1179		B	JCC	BYPASS CHAN CHANGE	7	C2CC8	J 02441
1180	TART	CS	X15		6	C2015	/ 0CC99
1181S		BCE	TWCK,SYS1613.1	CHAN 2 AVAIL	12	C2C21	B 02064 01269 1
1182S		PLCHS	NN,R1	NCP PRIORITY INST-2	12	C2C33	D 07314 03514 7
1183S		PLCHS	NN,CREH1	NCP PRIORITY INST-2	12	C2045	D 07314 C5C08 7
1184S		H	TART1		7	C2C57	J 02100
1185S	TWCK	BCE	TART1,SYS169.1	PRIORITY EXTENSION FEAT.	12	C2C64	B 021CC 01265 1
1186S		PLCHS	NN,R1		12	C2C76	C 07314 03514 7
1187S		PLCHS	NN,CREH1		12	C2C88	D 07314 05C08 7
1188S	TART1	SH	X15-4,X1-4		11	C21C0	. 00095 0CC25
1189		PLWP	X15-4,X14-4	PUT WP OVER EVERY +1 CRF	12	C2111	U 0CC55 CCC90 M
1190		BCE	CHAN2,CHN2612,S	CHAN2	12	C2123	B 02226 C1358 S
1191S		BCE	CHANA,CHN2612,C	7223 CONSOLE RCR CN 2	12	C2135	A 02202 01358 C
1192		BCE	JCC,CHN1612,S	CHAN1	12	C2147	B 02441 C1301 S
1193S		HCE	JCCA,CHN1612,C	7223 CONSOLE RCR CN 1	12	C2159	H 0241F C1301 J
1194		H	WR118C17	TRY AGAIN	7	C2171	J 0618C
1195	CHAN1	HCP	NUMBER	TYPE TEST NUMBER	1C	C217H	M 4TC C125C W
1196		HAI	*-16	ANY	7	C2188	K C2179 M
1197		H	TART		7	C2195	J 02015

PGLIN	LABEL	OPCOD	OPERAND		CT	ADDRS	INSTRUCTION	RSOI
1158$	CHANA	PLCS	ZZ,REAC62		12	C22C2	D 07315 02510	3
1159$		PLCS	ZZ,PRICR62		12	C2214	D 07315 03426	3
12C0	CHAN2	PLCHA	65CCC,X1	SET HIGH NUMBER	12	C2226	D 07791 0CC29	X
12C1		BCE	=C13,SYS1C9,1	PRICRITY ENT. AVAIL	12	C2238	b 02262 01265	1
12C2	.	PLCHS	AN,R2	ACP PRICRITY INSTR	12	C2250	D 07314 03521	7
12C3$	hP	Bh	F,C6X1	hP	12	C2262	V C231C CCC40	1
12C4	SLBT	S	E1,X1	SUB 1	11	C2274	S 07792 00029	
12C5		C	E2253,A1	CMP WITH LCW	11	C2265	C 07796 0CC29	
12C6$		BE	CTHEH		7	C2256	J 0241C	S
12C7		B	hP		7	C2303	J 02262	
12C8	F	BCE	MOVX,O6X1,R	LCCK FCR K	12	C2310	B 02353 0CC40	K
12C9		BCE	MGVP,16X1,2	LCCK FCR 2	12	C2322	b 02372 CCC41	2
1210		BCE	MCVU,66X1,L	LCCK FCR U	12	C2334	B 02391 0CC46	L
1211		B	SUET	NEXT CHAR	7	C2346	J 02274	
1212	PCVX	PLCHS	EX,C6X1	REPLACE R	12	C2353	C 07188 CCC40	7
1213		B	SUET	NEXT CHAR	7	C2365	J 02274	
1214	PCVP	PLCS	LOZ,16X1	REPLACE 2	12	C2372	U 07286 CCC41	3
1215		B	SUET	NEXT CHAR	7	02384	J C2274	
1216	PCVU	PLCS	EF,66X1	REPLACE U	12	C2391	D 07285 0CC46	3
1217		B	SUET	NEXT CHAR	7	C24C3	J C2274	
1218	CTHER	B	JCC	TC INITIALIZE	1	C2410	J 02441	
1219	.							
1220	.		INITIALIZE					
1221	.							
1222$	JCCA	PLCS	ZZ,REAC62		12	C2417	D 07315 02510	3
1223$		PLCS	ZZ,PHICR62		12	C2429	D 07315 C3426	3
1224	JCC	Ch	START61	SET SWITCH	6	02441	B 02CC1	
1225		PRCHR	LABEL1,1	MCVE RESTART	12	C2447	C 06260 CCC01	SE52
1226		PRCHR	LABEL2,1C1	MCVE PRICRITY	12	C2459	C 06268 C0101	2
1227		PLNHA	ABC,A2	LCAC INCEX REG 2	12	C2471	D 07276 0C034	V
1228		PLCA	HCCAT,HCENC	MCVE DATA TC WCRK	12	C2483	D 07268 C7C73	1
1229	.		REAC RCLTINE					
1230	.	BAC	ITH	TC ITH	7	C2465	J 0100C5	C
1231								
1232	JIC	BAC	ITH	TC ITH				
1233	E	CS	HCRCNC	CLEAR EC PCSITICNS	6	C25C2	/ 07179	

PGLIN	LABEL	OPCOD	OPERAND	(comment)	CT	ADDRS	KSOI INSTRUCTION
1234	READ	R	1,+CRD	REAC A CARC	1C	C25C8	M X11 C7ICO R / S
1235		BATI	MESP	BRNCH CN MISFEEC ER	7	C2518	R 026C0 H
1236		BNLI	MESC	FEEC CHK AFTER REAC	7	C2525	R 02687 -
1237		BCE	BLSY,SYSI68,1	BRANCH IF PRICRITY	12	C2532	B C2558 C1264 1
1238		BCBI	REAC	NCRMAL HUSY CHK	7	C2544	R 025C8 2
1239		B	LCCK		7	C2551	J C2572
1240	BLSY	NCP			1	C2558	N
1241		BCBI	REAC	CNE SHCT BUSY CHK	7	C2559	R 025C3 2
1242		CH	BUSYEI	NCCP BLSY	6	C2566	D 02559
1243	LCCK	BEFI	SWP	ECF	7	C2572	R C2985 8
1244		BERI	INSERT	CATA CHK	7	C2579	K 02852 4
1245		BNRI	WRIIZ	CHK NCT REACY	7	C2586	R 060C0 1
1246		B	PLCW	TC RESET INTLCCK	7	C2593	J 02838
1247	MESP	BCE	ALC,TACO,1	CPT TC TYPE	12	C2600	B C26C0 C1CCC 1
1248		B	TYPEIT		7	C2612	J 07742
1249		CCW	aMISFEEC ERR-VISLAL CK SHCHS NC CARCa		35	C2653	
1250		CC	a AT REAC STATICN-FIX CARCa,G		25	C2676	
1251	ALC	BCE	ALI,TACO,1	CPT TC TYPE	12	C26H0	J C25C8
1252	MESG	B	TYPEIT		7	C2687	H 02831 01CC0 1
1253		B	REAC		7	C2659	J C7142
1254		CCW	aWLR-FEEC CHK CCCURED AFTER READa		31	C2736	
1255		CC	a INSTRUCTICN-CARC IN WRCNG PLACEa		32	C2768	
1256			a CR JAM-IF CCS CUT CF SEQUENCE DUE TCa		37	C28C5	
1257			a JAM,RELCAC ALL DATA CCSa,G		24	C2829	
1258	ALI	B	REAC		7	C2831	J 025C8
1259	PLCW	BAI	+CI		7	C283H	K C2645 G
1260		B	TIME	NEITHER	7	C2845	J C2855
1261	INSERT	SW	HCRCNC-2	PREPARE FCR MCVE	6	C2852	. C7177
1262		MLNA	HCRCNC,MES3626	MCVE CC NMBR TC MESS	12	C2858	D C7173 07386 /
1263		CH	HCRCNC-2		6	C2870	D C7177
1264		BCE	CCNT,HCRCNC-3,1	ILLEGAL	12	C2876	R 02932 C7176 1
1265		B	WRII3	DATA CHECK MESSAGE	7	C28HH	J C6023
1266	TIME	BCE	WRII9,HCRCNC-3,1	ILLEGAL	12	C2895	B 06186 C7176 1
1267		A	YYY,ZZZ	USE	11	C29C7	A 073C3 C73C8
1268		BAV	CCNT	TIMING	7	C2918	J C2932 Z
1269		B	TIME	LCCF	7	C2925	J 02855

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PGLIN  LABEL   OPCCD  CPERAND             comment

1270   CCNT    NCP    N                   RESET INTERLCCK
1271   ANY     BAL    •61                 TO ITR
1272           BNQ    ITR                 BRANCH IF NC PRICRTY
1273           BCE    CNA,SYS168,         TC PRICRITY ROUTINE
1274           B      PRICR               ILLEGAL
1275   CNN     BCE    ACC,HCRCNC-3,1      TC CCMPARE
1276           B      CCPP                SWITCH FCR LAST CARC
1277   SWP     SW     SPACE1              TC RESET
1278           B      ANY
1279   •
1280   •
1281           CCMPARE RCUTINE
1282   CCMP    SW     HCRC                SET WM TC STCP CCMPARE
1283           BH     ENC,SPACE1          LAST CARD
1284           C      HCENC-3,HCRCNC-3    CCMPARE WCRK TC REAC
1285           BE     ACL                 BRANCH ECUAL
1286           BCE    BB,1CCC,1           BRNCH TC EYPASS TYPF
1287           SW     HCRCNC-2
1288           MLNA   HCRCND,MES667       MCVE CC NMBR TC MESS
1289           CH     HCRCNC-2
1290           MLCA   HCRCNC,MES6BE79     CISPLAY CARC
1291           SW     HCWK
1292           MLCA   HCENC,MES6CE79      CISPLAY CPU
1293           CH     HCWK
1294           B      WRIT6               NC CCMPARE
1295   XXXX    BCE    JIC,1CC1,1          LCCP IF TAD1 IS 1
1296           B      ACC                 PRCCEEC
1297   BB      BCE    FLT,1CC2,1          HALT IF TAC2 IS 1
1298           B      XXXX                CHECK FCR LCCP
1299   FLT     H      XXXX                HALT & CHECK FCR LCCP
13C0   •
13C1   •               RIPPLE RCLTINE
13C2           BH     ENC,SPACE1          BRANCH TC END
13C3   ACD     BCE    E,FCRCND-3,1        ILLEGAL
13C4                  =C,X?
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CT  ADCRS  INSTRUCTICN

1   02932  N                 G
7   C2933  R C2940           M
7   C2940  J 01005           G
12  C2947  B 02966  C1264
7   02959  J 03424
12  C2966  B 03157  C7176 1
7   C2978  J 02998
6   C2985  • 07288
7   C2991  J 02933

6   02958  • 071CO
12  C3CC4  V 03316  07288 1
11  03016  C 07076  C7176
7   C3C27  J 03157  S
12  C3C34  B C3132  C1000 1
6   C3046  • 07177
12  C3C52  D 07179  C7417 /
6   C3C64  = C7177
12  C3070  D C7179  C7527 1
6   C3C82  • 07CC0
12  C3C38  D 07C79  07621 1
6   C31CO  = 07CC0
7   C31C6  J 06047
12  C3113  H 02455  C1001 1
7   C3125  J 03157
12  C3132  B 03151  01CO2 1
7   C3144  J 03113
6   C3151  • 03113

12  C3157  V 03316  07288 1
12  C3169  B 025C2  C7176 1
11  C3181  C 07281  CCC34
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PGLIN	LABEL	OPCODE	OPERAND		CT	ADDRS	RSCI INSTRUCTION
1306		BE	JCC		7	C3192	J C2441 S
1307		SH	HOENC-2,HOENC-3	PREPARE FOR RIPPLE	11	C3199	. 07C77 C7C76
1308		A	TALLY,HOENC	NEXT CARD	11	C3210	A 07271 07C79
1309		SH	HOCAT-3		6	C3221	. 07265
1310		MRC	CCCCCLX2,HCWK	START	12	C3227	D CCC.0 07CCO #
1311		SHR	FINI&IC		7	C3239	G 03279 B
1312		CH	HOCAT-3	RIPPLE	6	C3246	D 07265
1313		S	CNE,X2		11	C3252	S 07186 CCC34
1314		CH	HOCAT-79	FINISH	6	C3263	D 07187
1315	FINI	MRC	HOCAT-79,0C000	RIPPLE	12	C3269	D 071HJ OCCCO #
1316		SH	HOCAT-79		6	C3281	. 07189
1317		A	XXX,YYY		11	C3287	A C7298 C73C3
1318		CH	HOENC-2,HOENC-3		11	C3298	D C7C77 07C76
1319		B	E	BRANCH TO CLEAR READ AREA	7	C33C9	J C25C2
1320	.						
1321	.		END ROUTINE				
1322	.						
1323	END	MLCA	BLANKS,MES3&26	BLANK	12	C3316	D 07284 C7386 T
1324		MLCA	BLANKS,MES6&7	IN MESSAGE	12	C3328	D C7284 C7417 T
1325		MLNW	WWW,ZZZ	RESET	12	C3340	O 07313 07308 E
1326		MLNW	XXX,YYY	TIMING	12	C3352	D 07293 C73C3 E
1327		CH	HORO,HCRONC-2	RE	11	C3364	D 071CC C717J E
1328		CH	HOENC-2,HOENC-3	SET	11	C3375	D C7C77 C7C76
1329		MLCWA	XTHLK,X2	CONDITIONS	12	C3386	D 07293 0CC34 X
1330		CH	SPACE1	RESET SWITCH	6	C3398	D 07288
1331		BCE	WRITE,10C3,1	REPEAT TEST	12	C34C4	B C6163 C1CC3 1
1332		B	WRITI	END TEST	7	C3416	J 06133
1333		H		NEITHER	1	C2423	.
1334	.		ENTER PRICRITY ALERT MODE				
1335	.						
1336	.						
1337	PRIOR	ML	?11,HCRO,Q	DUMMY READ	10	C3424	M ?11 C71CO Q
1338		HOBL	*-16	WAIT ON BUSY	7	C3434	R 03424 2
1339		RAL	*61		7	C3441	K 03448 M
1340		REFI	ENO		7	C3448	R 03316 8
1341	CCC	BEPA	EXI	ENTER PRICRITY ALERT MODE	7	C3455	Y C346S E

PGLIN	LABEL	OPCCD	CPERANC		CT	ACCRS	RS01 INSTRUCTICN
1342		BXPA	INTERR	EXIT PRICRITY ALERT MCCE	7	C3462	Y 03604 X
1343	EXT	BW	*-18,BLANK	101 CLEARS WM	12	C3469	V 03462 07287 1
1344		SW	BLANK	SET SWITCH CN	6	C3481	. 07287
1345		B	CNN		7	C3487	J 02966
1346							
1347	*		INTERRUPT RCUTINE				
1348	*						
1349	CLT	CW	BLANK	TURN SWITCH CFF	6	C3494	D 07287
1350		B	CREW		7	C35C0	J 05CC1
1351	FLY	BCPR1	ERR1	ERROR BRANCH CN CHAN 1CLAP	7	C35C7	Y 0368C 1
1352	R1	BCPR2	ERR2	ERRCR BRANCH CN CHAN 2 CLAP	7	C3514	Y 03748 2
1353	R2	BLPR	ERRH3	ERRCR BRANCH CN 2NC YIC	7	C3521	Y 03816 U
1354	R3	BIPR	CUR	PRICRITY INCUIRY BRANCH	7	C3528	Y 03542 C
1355	R4	B	99994EX5	BACK TC MAIN PGM	7	C3535	J 99224
1356							
1357	*		INCICATE BRANCH CN INCUIRY RCLTINE				
1358	*						
1359	CUR	BCE	YBP,1CCO,1	BRANCH TC EYPASS TYPE	12	C3542	B C3590 01CC0 1
1360		B	TYPEIT	CCMMCN TYPE RCUTINE	7	C3554	J 07742
1361		CCW	aBRANCHEC CN PRICRITY INCUIRYa.G		28	C3588	
1362	YBP	B	ITR	TC ITR	7	C3590	J 01CC5
1363		B	R4	BACK TC INTERRUPT ROUTINE	7	C3597	J 03535
1364							
1365	*		INCICATE INTERRLPT ERRCR				
1366	*						
1367	INTERR	B	TYPEIT	CCMMCN TYPE RCLTINE	7	C36C4	J 07742
1368S		CCW	aINTERRUPT DIC NCT TAKEa		22	C3632	
1369	RC	CC	a FLACE PRCPERLYa.G		15	C3647	
1370	CBA	CW	BLANK	TLRN SWITCH CFF	6	C3649	D C7287
1371		BCE	CRC,1CC2,1	TC HALT	12	C3655	B 03674 01CC2 1
1372		B	CNN	BYPASS HALT	7	C3667	J C2966
1373	CRC	H	CNN	HALT ANC LCCP	6	C3674	. 02966
1374							
1375	*		ERRCRS IN INTERRLPT RCUTINE				
1376	*						
1377	ERR1	BCE	BYP,1CCO,1	BRANCH TC EYPASS TYPE	12	C3680	B C3723 01CC0 1

PGLIN	LABEL	OPCOD	OPERAND		CT	ADDRS	INSTRUCTION
1378		B	TYPEIT	COMMON TYPE ROUTINE	7	C3692	J 07742
1379	BYP	CCW	&BRANCHED ON CHAN 1 CLAP&,G		23	C3721	
1380		BCE	ERC,ICC2,1	TO HALT	12	C3723	B 03742 C1CC2 1
1381		B	R1	BYPASS HALT	7	C3735	J 03514
1382	ERC	H	R1	HALT-PRESS START TC GO	6	C3742	. 03514
1383	ERR2	BCE	BPY,ICCO,1	BRANCH TO BYPASS TYPE	12	C3748	H 03791 01CC0 1
1384		B	TYPEIT	COMMON TYPE ROUTINE	7	C376C	J 07742
1385		CCW	&BRANCHED ON CHAN 2 CLAP&,G		23	C3789	
1386	BPY	HCE	ERC,ICC2,1	TO HALT	12	C3791	B 03810 01C02 1
1387		B	R2	BYPASS HALT	7	C38C3	J 03521
1388	ERC	H	R2	HALT-PRESS START TC GO	6	C3810	. 03521
1389	ERR3	BCE	PBY,ICCO,1	BRANCH TO BYPASS TYPE	12	C3816	B 03858 C1CC0 1
1390		B	TYPEIT	COMMON TYPE ROUTINE	7	C3828	J 07742
1391		CCW	&BRANCHED ON SECOND YILA,C		22	C3856	
1392	PBY	BCE	ERC,ICC2,1	TO HALT	12	C3858	B 03877 C1C02 1
1393		B	R3	BYPASS HALT	7	C3870	J 03528
13934	ERC	H	R3	HALT PRESS START TO GO	6	C3877	. 03528
1355		CRG	SCC1			C5CC1	
1356	CREW	BLPR	FLY	RESET CH 1 UNIT PRICK REG	7	C5CC1	Y 03507 U
13575	CREW1	CCW	&Y&		1	C5CC8	
1358		CC	FLY	UNIT PRICK	5	C5013	03507
1359		B	&F&	REG	1	C5C14	
14CC		H	FLY		7	C5015	J 03507
14C1	*				1	C5C22	.
14C2	*						
14C3	*						
14C4	*		WRITES				
14C5		CRG	ECCC		1C	C6CCO	
14C6	WRIT2	WCP	MES2		1C	C6CCO	M *IC C7316 W G
14C7		BA1	*-16		7	C6C1O	R 060CC W
14C8		H	REAC		6	C6C17	. C25C8
14C9	WRIT3	WCP	MES3		1C	C6C23	M *IC C7360 W G
141C		BA1	*-16		7	C6C33	R 06023 W
141L		B	IC7		7	C6C40	J C6234
1412	WRIT6	WCP	MES6		1C	C6C47	M *IO 0741C W G
1413		BA1	*-16		7	C6C57	R 06C47 W

PGLIN	LABEL	CPCCD	CPERANC	CT	ADCRS	INSTRUCTICN
1414		WCP	MES6A	1C	C6C64	M %TO C7436 W
1415		BAI	*-16	7	C6C74	R 06064 2
1416		WCP	MES6B	1C	C6C81	M %TO C7448 W
1417		BAI	*-16	7	C6C91	R 06081 2
1418		WCP	MES6C	1C	C6C98	M %TO 07529 W
1419		BAI	*-16	7	C61C8	R C609H 2
1420		WCP	MES6D	1C	C6115	M %TO 07542 W
1421		BAI	*-16	7	C6125	R 06115 2
1422		B	EB	7	C6132	J 03132
1423	WRIT7	WCP	MES7	1C	C6139	M %TC C7623 W
1424		BAI	*-16	7	C6149	R 06139 2
1425		B	4CC	7	C6156	J 004CC
1426	WRIT8	WCP	MES8	1C	C6163	M %TC C7628 W
1427		BAI	*-16	7	C6173	R 06163 2
1428		H	2CCC	E	C6180	. 02CCC
1429	WRIT9	SH	I-CRCND-2	E	C6186	. 07177
1430		MLNA	I-CRCNC,MES9C7	12	C6192	D 07179 077C6 /
1431		CH	I-CRCND-2	E	C62C4	. 07177
1432		WCP	MES5	1C	C6210	M %TC C7699 W
1433		BAI	*-16	7	C6220	R 06210 2
1434		B	CCAT	7	C6227	J 02932
1435	TC7	BCE	TIMC,1CC2.1	12	C6234	H 06253 01CC2 1
1436		B	TIME	7	C6246	J C2855
1437	TIMC	H	E	E	C6253	. C25C2
1438		H		1	C6259	.
1439	*					
144C	*		INSTRLCTICNS TO BE MOVED			
1441	LABEL1	B	START	7	C6260	J 020C0
1442		CCW	a+a	1	C6267	
1443		SER	X5	7	C6268	G CCC45 B
1444	LABEL2	B	CUT	7	C6275	J 03494
1445		CCW	a+a	1	C6282	
1446						
1447	*					
1448	*		AREAS			
1449	*					

PGLIN	LABEL	OPCODD	OPERAND	CT	ADCRS	INSTRUCTION
1450		ORG	7OCC		07CC0	
1451	FChK	DA	1X8C,G		C7CC0	
1452	FCENC		8C		0709	
1453	FCRD	ORG	*8XCC		071C0	
1454	FCRD	DA	1X8C,G		C71C0	
1455	FCRCNC		8C		07179	
1456	.					
1457	.		CONSTANTS			
1458	.					
1459	ARh	CCW	aRa	1	07181	
1460	CAE		CCCC1	5	C7186	
1461	THC		2	1	07187	
1462	EX		aXa	1	07188	
1463			a a LLG R.C .GTC	1	C7189	
			a.E8TAES=8.L-/,*&SSMEha.TMMAUCCEEFa			
1464		CC	aGFI.JKLMNCPQR&STUVhXYZC 23456789a	31	C7220	
1465			LLG R.C	32	C7252	
1466	FCDAT		a .DBTAES=8.L-CC1a	16	C7268	
1467	TALLY	CCW	CC1	3	C7271	
1468	ABC		FCCAT-3	5	C7276	C7265
1469	EFG		FCCAT-79	5	C7281	07189
1470	BLANKS		a a	3	C7284	
1471	EF	CC	aFa	1	07285	
1472	LCZ		aoa	1	C7286	
1473	BLANK		a a	1	C7287	
1474	SPACE1		a a	1	C7288	
1475	XIHLK	CCW	a a	5	07293	
1476	XXX		80COL0	5	07298	
1477	YYY		8CCC1C	5	C73C3	
1478	ZZZ		8CCCCC	5	C73C8	
1479	hhh		8CCCCC	5	07313	
1480CS	NN	CCW	aNa	1	C7314	
1481S	ZZ	CCW	aZa	1	C7315	
1482	.					
1483	.		MESSAGES			
1484	.					
1485	MES2		aREACER NOT REACY-MAKE REAC/ AND PRESS?	37	07316	

RS01   INSTRUCTICN

PGLIN	LABEL	CPCCD	CPERANC		CT	ACCRS	INSTRUCTICN
1486			ã START2,G		6	07358	
1487	MES3		ãDATA CHECK-CARC NUMBER -PRESSã		33	0736C	
1488			ã START IF 1002-13,G		16	074C8	
1489	MES6		ãCARC CCES NCT CCMPAREã,G		25	07410	
1490	MES6A		ãCARC READS-ã,G		11	C7436	
1491	MES6B		ã		37	07448	
1492			ã		37	07521	
1493			ã ã,G		6	C7527	
1454	MES6C		ãCPU CCNTAINSã,G		12	07529	
1455	MES6C		ã		37	07542	
1456			ã ã,G		37	07615	
1457			ã ã,G		6	07621	
1458	MES7		ãPASSã,G		4	07623	
1459	MES8		ãTC REPEAT TEST,PUT CATA CARCS IN HCPPã		37	07628	
15CC			ãER,MAKE REACER REACY, ã HIT STARTã,G		33	C7697	
15C1	MES9		ãCARC CCES NCT GIVE EXPECTED CATAã		36	07699	
15C2			ã CHECKã,G		6	07740	
15C3	.						
15C4	.		CCMMCN TYPE RCUTINE				
15C5	.						
15C6	TYPEIT	SER	TYPE68 ENTER RCUTINE HERE		7	07742	G 07757 B
15C7	TYPE	WCP	C TYPE MESSAGE		1C	07749	W 2I0 CCCCC W
15C8		SER	TYFEXTE5 SET RETURN ACCRESS		7	07759	G 07785 B
15C9		BCB1	TYPE BLSY		7	07766	R 07749 2
151C		EA1	=61 RESET INTERLCCK		7	C7773	R 0778C M
1511	TYPEXT	B	C RETURN IC PRCGRAM		7	07780	J CCCCC
1512		H		TERMINATE RCUTINE		1	07787	. J
1513		END	E5CCC		4	07791	
1513			E1		1	07792	
1513			E2259		4	.07796	

ENC CF ASSEMBLY