IBM-POUGHKEEPSIE
December 31, 1964

Diagnostic Engineering Publication
1410/7010

Subject: Diagnostic Program MP01C PRIORITY TEST

Sequence Number	251
Replaces	MP01B

MP01 requires SYSTEM and CHANNEL CONTROL CARDS. These cards must be punched in accordance with the instructions given in the "1410/7010 Introduction", Volume 1.00.

System Control Card	MP01C	001
Channel One Control Card	MP01C	002
Channel Two Control Card	MP01C	003
Channel Three Control Card	MP01C	004
Channel Four Control Card	MP01C	005

This change corrects an addressing error:

pglin

1717	WAS:	PROG	MLCWS	BLANK, MID+21	D 0948609401 7
	IS:	PROG	MLCWS	AREND+1, MID+21	D 0943309401 7

Enclosures: 54 Pages
Card Deck for CARD ONLY SYSTEMS (as punched by UP51)
8 Cards - Card Loader (1-7) and 1 Core Clear
159 Cards No. 001-159 Data Cards
1 Card Execute Card

Distribution:
X 1410 with Priority Feature 5620
X 7010
Other

MP01C

PRIORITY TEST

(1410/7010)

12/31/64

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3.00.00.0 TEST DESCRIPTION

00.1 MODIFICATIONS

See Release Page for changes between Levels.

00.2 DESCRIPTION

MP01 is a comprehensive test of the interrupt system on a 1410 or 7010 Data Processing System with the Priority Feature. Testing is done on up to four channels in both overlap and unoverlap modes. The I/O devices employed are:[1].

1402-2	Card Reader - Punch
1403	Printer, Model 1 or 2
1442-3	Serial Card Reader
1011	Paper Tape Reader
729/7330	Tape Drives

Operations are performed in priority alter mode and the Y(I)E and Y(I)X instructions are tested for correct operation.

I/O NOP instructions are used to determine the status of the I/O devices tested.

The channel 1 and/or channel 2 I/O Unit Priority Request Indicators are tested through the use of the priority select switch and the I/O devices indicated by the switch setting. (Reader, Punch, Printer, Paper Tape.) The associated test and branch instructions are Y(I)U and Y(I)F, respectively.

The channel 1 Inquiry Request Indicator is tested through the use of the console Inquiry Request key. The channel 2 Inquiry Request Indicator is not tested itself but is sensed for among a group of other priority test and branch instructions. Y(I)Q and Y(I)* are the test and branch instructions used.

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1. The system configuration tested is obtained from the STANDARD SYSTEM and CHANNEL CONTROL CARDS. See "1410/7010 Introduction," Volume 1.00, for further information.

3.00.00.0 TEST DESCRIPTION (continued)

On systems with the Processing Overlap Feature, the channel 1 and 2 Overlap Priority Request Indicators are tested by performing overlapped reader, punch, printer, paper tape and magnetic tape operations. Channels 3 and 4 Overlap Priority Request Indicators are tested by performing overlapped (magnetic) tape operations only. The test and branch instructions used are Y(I)1, Y(I)2, Y(I)3 and Y(I)4.

The remaining priority test and branch instructions Y(I)N, Y(I)≠, Y(I)S, Y(I)T, Y(I)A and Y(I)B are not tested specifically in conjunction with an I/O device but are checked in the event that some other priority request indicator is on.

If one of these branches is taken, it is reported by a typeout as illustrated in Section 3.00.05.2.

The I/O units are tested sequentially and after each I/O operation a closed loop or table of interruptable instructions is entered. The address at which any instruction is interrupted is stored and compared with the address at which it should interrupt. An error message is typed if this comparison fails. (See 3.00.05.2)

For (additional) information on how to run this test, refer to Section 3.00.02.1, OPERATING PROCEDURES.

00.3 EQUIPMENT

Any model 1410 or 7010 system with the Priority Feature and one or more of the following I/O devices:

1402-2	Reader-Punch
1403	Printer, Model 1 or 2
1442	Serial Card Reader
1011	Paper Tape Reader
729	Tape Drive, any model
7330	Tape Drive

The Processing Overlap Feature is optional.

3.00.00.0 TEST DESCRIPTION (continued)

00.4 CARD DECK

A complete card deck of MP01, ready to run, contains:

7	cards	Loader
1	card	Core Clear
	data cards [1.]	MP01 Program Deck
1	card	Execute Card (branch to 02000)

00.5 EC LEVEL OF SYSTEM

Not applicable.

3.00.01.0 LOADING PROCEDURES

Use Standard 1410/7010 Diagnostic Loading procedure. Refer to "1410/7010 Introduction," Volume 1.00, for further information.

3.00.02.0 OPERATING PROCEDURES

02.1 Load and set to READY status all units to be tested.[2.] Any I/O device that is not READY at the start of the test is bypassed. Only one tape drive is tested on any channel, and it should be set to number 1 (TD # 1). All instructions necessary for the operation of MP01 are typed out. Illustrations are given in Section 3.00.05.1 under Normal Typeouts. For correct operation of this test, follow the instructions given.

Note: The channel 1 and 2 priority select on-off key must be off at the start of the test. It should also be turned off on completion of MP01.

The I/O units are used sequentially in unoverlap and then in overlap mode (Reader-unoverlap, Printer-unoverlap ... Reader-overlap, Printer-overlap, etc.). A total of 100 operations are performed on each I/O unit in each routine.

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1. Refer to Release sheet for exact number of cards.
2. Any data cards may be used for the card reader input. The punch output is acceptable.

3.00.02.0 OPERATING PROCEDURES (continued)

02.2 Program operation can be changed at any time using the "Program Alter Routine." TADS are loaded as blanks and TAD locations are only tested for 1. Only STANDARD TADS are used.

STANDARD TADS

TAD	Address	1	Not 1
TAD0	01000	Bypass type	Type output
TAD1	01001	Loop	Do not Loop
TAD2	01002	Halt	Do not Halt
TAD3	01003	Repeat Prgm	Do not Repeat

Note: After any INQUIRY REQUEST testing of the device in process is terminated and the main program resumes with the next unit in the Ready Table.

To add a new unit to the test or drop one in use, the program must be restarted (RESET-START).

If a message is typed indicating that an inquiry priority request came from a device other than the console INQUIRY key, this request must be serviced or reset before the test can continue. The test will halt after this message is typed. Start will begin the test again from 02000.

3.00.03.0 OPERATING HINTS, COMMENTS

Set PRINTOUT INHIBIT switch to inhibit to eliminate all stop typeouts at halts following instructions to the operator.

3.00.04.0 PROGRAM STOPS AND RESTARTS

04.1 NORMAL HALTS

A halt follows each typed operator instruction to allow time to change the priority switch setting. No useful purpose is served by enumerating them. In all cases press START to continue.

3.00.04.0 PROGRAM STOPS AND RESTARTS (continued)

04.2 ERROR HALTS

In all but one case where a halt follows an error message, press START to continue test. The one exception is an inquiry priority request that did not come from the console. To resume, RESET and START.

In case an interrupt occurs and no priority branch instruction is taken, a halt is given.

Address 06280 To resume, START

There are three cases of dead-end halts for which no typed message is given.

Address	Reason	To Resume	
07455	Y(I)E	Did not branch	RESET and START
07487	Y(I)E	Did not branch	RESET and START
07500	Y(I)X	Did not branch	RESET and START

3.00.05.0 TYPEOUTS

05.1 NORMAL TYPEOUTS

MP01 Test identification, type at start of test.

PASS Typed at the end of one program pass that consisted of 100 records being read, written, punched or printed on the associated I/O unit in each routine run. On systems with the overlap, an additional 100 records are processed in each overlap I/O routine.

All necessary instructions on how and when to turn on and off the priority select switches are typed. The channel 1 typeouts are given as illustrations:

PRESS CH 1 PRIORITY KEY ON

Switch lights up when it is on. (It is located below the CE Console Test Panel above the select dial.)

3.00.05.0 TYPEOUTS (continued)

DIAL READER CH 1

DIAL PUNCH CH 1

DIAL PRINTER CH 1

DIAL PAPER TAPE READER CH 1

Turn the priority select switch to the I/O device indicated and press START. Failure to dial the requested unit results in an error message, "NO INTERRUPT." Each of these instructions are repeated for channel 2 where applicable.

DIAL OFF CH 1 AND CH 2

Turn dial(s) to OFF position.

05.2 ERROR TYPEOUTS

NO PRIORITY ON SYSTEM

The System Control Card indicates that the system does not have the Priority Feature. See "1410/7010 Introduction," Volume 1.00, for further information.

NO INTERRUPT FROM PRESSING KEY

Typed if the key is not pressed as directed or if no interrupt occurred dur to its being pressed.

INTRPT BAR WAS -00000 SHLD BE -00000

The locations at which each instruction, in the table of interruptable instructions, should interrupt and actually did interrupt are compared. If they are not equal, the message is typed with the addresses filled in.

3.00.05.0 TYPEOUTS (continued)

CH X OVERLAP FAILED (X can be 1, 2, 3 or 4)

Branch on overlap in process after an overlap I/O instruction was not taken.

NO INTERRUPT

Expected interrupt did not occur. Was unit dialed as requested?

Y(I)U BRANCHED WHEN NO UNIT PRIO REQ

Branch on channel 1 I/O unit priority request was taken when no request was made. Y(I)F is typed if error occurred on channel 2.

BRANCHED ON SECOND Y(I)U

Indicator should have been reset after first branch was taken. Y(I)F on channel 2.

INQ PRI REQ CANNOT BE SERVICED BY CONSOLE READ

An inquiry priority request was received that could not be satisfied by a console read. It may have come from a file seek operation or a telecommunications device.

Y(I)1 BRANCHED AFTER R(I)≠

R(I)≠ did not reset the channel 1 overlap priority request indicator. Similar messages for channels 2, 3 and 4 are also used.

Y(I)X BRANCHED

The priority test and branch instruction indicated was taken but the associated device was not tested. The d modifiers may be N, ≠, S, T, A and B.

3.00.05.0 TYPEOUTS (continued)

CH 1 READER STATUS IND. X

This is the manner in which status errors are reported. The channel, I/O device and indicator set are filled in when the error is detected.

NOTES

```
PGLIN     LABEL     OPCOD  OPERAND                                          CT  ADDRS  INSTRUCTION
1002                CTL    2
1003
1004                    STANDARD TADS
1005
1006                                          1          NOT 1
1007                                          -          -----
1008                ORG    1000                                                01000
1009      TAD0      DC     @ @          BYPASS TYPE   TYPE OUTPUT          1   01000
1010      TAD1            @ @          LOOP          DO NOT LOOP           1   01001
1011      TAD2            @ @          HALT          DO NOT HALT           1   01002
1012      TAD3            @ @          REPEAT PGM    DO NOT REPEAT         1   01003
1013      SPTAD0    DCW    @ @                                              1   01004
1014                DCW    @M@                                              1   01005
1015       *********
1016       $STANDARD TYPE ROUTINE 1.
1017      TYP1      SBR    TYP2&5        STORE MESSAGE ADDRESS              7   01006  G 01025 B
1018                SBR    TYP3&8        STORE MESSAGE ADDRESS              7   01013  G 01059 B
1019      TYP2      SCNRG  0,0           FIND RETURN ADDRESS               12   01020  D 00000 00000 Q
1020                SAR    TYP4&5        SET ADDRESS FOR EXIT               7   01032  G 01092 A
1021                BCE    TYP4,TAD0,1   BYPASS TYPING PER TAD 0           12   01039  B 01087 01000 1
1022      TYP3      WCP    0             TYPE MESSAGE                      10   01051  M %TO 00000 W
1023                BCB1   TYP3          TRY AGAIN IF BUSY                  7   01061  R 01051 2
1024                BA1    *&1           RESET INTERLOCK                    7   01068  R 01075 M
1025                BCE    *&8,TAD2,1     BR TO HALT                       12   01075  B 01094 01002 1
1026      TYP4      B      0             RETURN TO MASTER PROGRAM           7   01087  J 00000
1027                H      *-12                                             6   01094  . 01087
1028
1029
1030                PROGRAM ALTER ROUTINE
1031
1032      ITR       SBR    ITREXT&5      STORE BAR                          7   01100  G 01167 B
1033      ITR1      RCP    ITR2&4        ENTER TO ALTER                    10   01107  M %TO 01142 R
1034                BEX1   ITR1,M        RETRN                              7   01117  R 01107 M
1035                BNT1   ERR6D          NO TRANSFER                        7   01124  R 08453 B
1036                BA1    ITR2          RESET INTERLOCK                    7   01131  R 01138 M
1037      ITR2      RCPW   0             ENTER DATA-ADDRESS MODFIED         10   01138  L %TO 00000 R
```

```
PGLIN     LABEL      OPCOD  OPERAND
1038                 BEX1   ITR2,S,M      RETRN ON ANY BUT WLR
1039                 BA1    *&1
1040      ITREXT     B      0              RETURN TO MAIN PGM
1041                 H
1042      *
1043      * TYPE ROUTINE
1044      *
1045      TYP        SBR    TYPE&8
1046      TYPE       WCP    0
1047                 SBR    TYPEXT&5
1048                 BCB1   TYPE
1049                 BA1    *&1
1050      TYPEXT     B      0
1051                 H
1052      *
1053      *
1054      *                        SYSTEM CONTROL CONSTANTS
1055      *
1056                 ORG    1242
1057                 DCW    @1C8251#9@     SEQ # 251 ICK  PRIORITY
1058      *
1059      *              TEST NUMBER AND SUFFIX
1060      *
1061                 ORG    1250
1062       NUMBR C   DCW    @MP01C@,G
1063      *
```

```
CT  ADDRS  INSTRUCTION
 7  01148  R 01138 S,M
 7  01155  R 01162 G,M
 7  01162  J 00000
 1  01169  .

 7  01170  G 01185 B
10  01177  M %TO 00000 W
 7  01187  G 01213 B
 7  01194  R 01177 2,G
 7  01201  R 01208 M
 7  01208  J 00000
 1  01215  .

    01242
 8  01249

    01250
 5  01250
```

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION

```
PGLIN     LABEL     OPCOD  OPERAND                                        CT  ADDRS  INSTRUCTION
1066      *********
1067      $STANDARD SYSTEM CONTROL CARD.
1068                ORG    1256     CHARACTER & PURPOSE          COL          01256
1069      SYS1      DC     @ @  ALPHA O,I,X - 1410,1410ACC,7010 13        1  01256
1070              &1 DC     @ @  0,1,3,5,7,9-10,20,40,60,80,100K 14        1  01257
1071              &2 DC     @ @                SPARE             15        1  01258
1072              &3 DC     @ @  1,2-CHNL1 100,132 CHAR PRINTER  16        1  01259
1073              &4 DC     @ @  1,2-CHNL2 100,132 CHAR PRINTER  17        1  01260
1074              &5 DC     @ @  1 - EUROPEAN EDIT               18        1  01261
1075              &6 DC     @ @                SPARE             19        1  01262
1076              &7 DC     @ @  1 - OVERLAP                     20        1  01263
1077              &8 DC     @ @  1 - PRIORITY ALERT              21        1  01264
1078             &11 DC     @   @              SPARES          22-24        3  01267
1079             &12 DC     @ @  1 - CHANNEL ONE PRESENT         25        1  01268
1080             &13 DC     @ @  1 - CHANNEL TWO PRESENT         26        1  01269
1081             &14 DC     @ @  1 - CHANNEL THREE PRESENT       27        1  01270
1082             &15 DC     @ @  1 - CHANNEL FOUR PRESENT        28        1  01271
1083             &17 DC     @ @                SPARES          29-30        2  01273
1084             &18 DC     @ @  1 - 1401 COMPATIBILITY          31        1  01274
1085             &19 DC     @ @  1 - TIMER INTERRUPT             32        1  01275
1086             &20 DC     @ @  1 - REAL TIME CLOCK             33        1  01276
1087             &21 DC     @ @  1 - RELOCATE AND PROTECT        34        1  01277
1088             &22 DC     @ @  1 - FLOATING POINT ARITHMETIC   35        1  01278
1089             &31 DC     @      @           SPARES          36-44        9  01287
1090             &32 DC     @*@                                 45        1  01288
```

```
PGLIN     LABEL      OPCOD  OPERAND                                          CT  ADDRS  INSTRUCTION

1092       *********
1093       $STANDARD CHANNEL 1 CONTROL CARD.
1094                  ORG    1289     CHARACTER & PURPOSE          COL          01289
1095       CHN1       DC     @ @  1 - PAPER TAPE READER             13     1  01289
1096              &1   DC     @ @  1 - CONSOLE PRINTER               14     1  01290
1097              &2   DC     @ @  1 - TAPES 729/7330                15     1  01291
1098             &11   DC     @       @        SPARES              16-24    9  01300
1099             &12   DC     @ @  R,S,C - 1402,1442,7223 READER     25     1  01301
1100             &13   DC     @ @  B - READER COLUMN BINARY FEAT.    26     1  01302
1101             &14   DC     @ @  P - 1402 PUNCH                    27     1  01303
1102             &15   DC     @ @  B - PUNCH COLUMN BINARY FEAT.     28     1  01304
1103             &16   DC     @ @  P - 1403 PRINTER                  29     1  01305
1104             &17   DC     @ @  A,N - ALPHA,NUMERIC PRINT CHAIN   30     1  01306
1105             &18   DC     @ @  1,2 - 100,132 CHAR PRINT BUFFER   31     1  01307
1106             &19   DC     @ @  F - 1301 FILE                     32     1  01308
1107             &20   DC     @ @  1 THRU 0 - 1 THRU 10 FILE MODULE  33     1  01309
1108             &21   DC     @ @  1 THRU 0 - 1 THRU 10 ACCESSES     34     1  01310
1109             &22   DC     @ @  R - 1311 IMPAC                    35     1  01311
1110             &23   DC     @ @  1 THRU 5 - 1 THRU 5 IMPAC MODULE  36     1  01312
1111             &24   DC     @ @  1 - SEEK OVERLAP FEATURE          37     1  01313
1112             &25   DC     @ @  1 - SCAN FEATURE                  38     1  01314
1113             &26   DC     @ @  1 - TRACK RECORD FEATURE          39     1  01315
1114             &27   DC     @ @  F - 1405 FILE                     40     1  01316
1115             &28   DC     @ @  1,2,3 - 1,2,3 ARMS IN MODULE 0    41     1  01317
1116             &29   DC     @ @  1,2,3 - 1,2,3 ARMS IN MODULE 1    42     1  01318
1117             &30   DC     @ @  1,2,3 - 1,2,3 ARMS IN MODULE 2    43     1  01319
1118             &31   DC     @ @  1,2,3 - 1,2,3 ARMS IN MODULE 3    44     1  01320
1119             &32   DC     @ @  1,2,3 - 1,2,3 ARMS IN MODULE 4    45     1  01321
1120             &33   DC     @ @  1 - 7750 ON THIS CHANNEL          46     1  01322
1121             &34   DC     @ @  1 - 7740 ON THIS CHANNEL          47     1  01323
1122             &35   DC     @ @  1 - 1440/1460 ON THIS CHANNEL     48     1  01324
1123             &36   DC     @ @  1 - CHAN HAS CHANNEL EXTENDER     49     1  01325
1124             &37   DC     @ @  L - LOW SPEED HYPER TAPE          50     1  01326
1125             &38   DC     @ @  1,2,3-1050-1,2,OR BOTH ADAPTERS   51     1  01327
1126             &39   DC     @ @  1-BIT-1412-MAGNETIC INK CHAR RDR  52     1  01328
1127                                  2-BIT-1419-MAGNETIC INK CHAR RDR
```

PGLIN	LABEL		OPCOD	OPERAND			CT	ADDRS	INSTRUCTION
1128		&40	DC	@ @	1-BIT-1009-DATA TRANS UNIT	53	1	01329	
1129		&41	DC	@ @	1-BIT-1014-REMOTE INQUIRY	54	1	01330	
1130		&42	DC	@ @	1-BIT-TELEGRAPH	55	1	01331	
1131		&43	DC	@ @	F-1302 FILES	56	1	01332	
1132		&44	DC	@ @	RESERVED	57	1	01333	
1133		&55	DC	@	@	58-68	11	01344	
1134		&56	DC	@+@		69	1	01345	
1135	*********								
1136	$STANDARD CHANNEL 2 CONTROL CARD.								
1137			ORG	1346	CHARACTER & PURPOSE	COL		01346	
1138	CHN2		DC	@ @	1 - PAPER TAPE READER	13	1	01346	
1139		&1	DC	@ @	1 - CONSOLE PRINTER	14	1	01347	
1140		&2	DC	@ @	1 - TAPES 729/7330	15	1	01348	
1141		&11	DC	@	@ SPARES	16-24	9	01357	
1142		&12	DC	@ @	R,S,C - 1402,1442,7223 READER	25	1	01358	
1143		&13	DC	@ @	B - READER COLUMN BINARY FEAT.	26	1	01359	
1144		&14	DC	@ @	P - 1402 PUNCH	27	1	01360	
1145		&15	DC	@ @	B - PUNCH COLUMN BINARY FEAT.	28	1	01361	
1146		&16	DC	@ @	P - 1403 PRINTER	29	1	01362	
1147		&17	DC	@ @	A,N - ALPHA,NUMERIC PRINT CHAIN	30	1	01363	
1148		&18	DC	@ @	1,2 - 100,132 CHAR PRINT BUFFER	31	1	01364	
1149		&19	DC	@ @	F - 1301 FILE	32	1	01365	
1150		&20	DC	@ @	1 THRU 0 - 1 THRU 10 FILE MODULE	33	1	01366	
1151		&21	DC	@ @	1 THRU 0 - 1 THRU 10 ACCESSES	34	1	01367	
1152		&22	DC	@ @	R - 1311 IMPAC	35	1	01368	
1153		&23	DC	@ @	1 THRU 5 - 1 THRU 5 IMPAC MODULE	36	1	01369	
1154		&24	DC	@ @	1 - SEEK OVERLAP FEATURE	37	1	01370	
1155		&25	DC	@ @	1 - SCAN FEATURE	38	1	01371	
1156		&26	DC	@ @	1 - TRACK RECORD FEATURE	39	1	01372	
1157		&27	DC	@ @	F - 1405 FILE	40	1	01373	
1158		&28	DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 0	41	1	01374	
1159		&29	DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 1	42	1	01375	
1160		&30	DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 2	43	1	01376	
1161		&31	DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 3	44	1	01377	
1162		&32	DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 4	45	1	01378	
1163		&33	DC	@ @	1 - 7750 ON THIS CHANNEL	46	1	01379	

```
PGLIN     LABEL      OPCOD  OPERAND                                    CT  ADDRS  INSTRUCTION
1164              &34 DC     @ @  1 - 7740 ON THIS CHANNEL         47   1  01380
1165              &35 DC     @ @  1 - 1440/1460 ON THIS CHANNEL    48   1  01381
1166              &36 DC     @ @  1 - CHAN HAS CHANNEL EXTENDER    49   1  01382
1167              &37 DC     @ @  L - LOW SPEED HYPER TAPE         50   1  01383
1168              &38 DC     @ @  1,2,3-1050-1,2,OR BOTH ADAPTERS  51   1  01384
1169              &39 DC     @ @  1-BIT-1412-MAGNETIC INK CHAR RDR 52   1  01385
1170                              2-BIT-1419-MAGNETIC INK CHAR RDR
1171              &40 DC     @ @  1-BIT-1009-DATA TRANS UNIT       53   1  01386
1172              &41 DC     @ @  1-BIT-1014-REMOTE INQUIRY        54   1  01387
1173              &42 DC     @ @  1-BIT-TELEGRAPH                  55   1  01388
1174              &43 DC     @ @  F-1302 FILES                     56   1  01389
1175              &44 DC     @ @  RESERVED                         57   1  01390
1176              &55 DC     @       @                          55-68  11  01401
1177              &56 DC     @+@                                   69   1  01402
1178      *********
1179      $STANDARD CHANNEL 3 CONTROL CARD.
1180                ORG      1403     CHARACTER & PURPOSE          COL      01403
1181      CHN3      DC       @ @  1 - PAPER TAPE READER            13   1  01403
1182               &1 DC     @ @  1 - CONSOLE PRINTER              14   1  01404
1183               &2 DC     @ @  1 - TAPES 729/7330               15   1  01405
1184              &11 DC     @       @        SPARES            16-24   9  01414
1185              &12 DC     @ @  R,S,C - 1402,1442,7223 READER    25   1  01415
1186              &13 DC     @ @  B - READER COLUMN BINARY FEAT.   26   1  01416
1187              &14 DC     @ @  P - 1402 PUNCH                   27   1  01417
1188              &15 DC     @ @  B - PUNCH COLUMN BINARY FEAT.    28   1  01418
1189              &16 DC     @ @  P - 1403 PRINTER                 29   1  01419
1190              &17 DC     @ @  A,N - ALPHA,NUMERIC PRINT CHAIN  30   1  01420
1191              &18 DC     @ @  1,2 - 100,132 CHAR PRINT BUFFER  31   1  01421
1192              &19 DC     @ @  F - 1301 FILE                    32   1  01422
1193              &20 DC     @ @  1 THRU 0 - 1 THRU 10 FILE MODULE 33   1  01423
1194              &21 DC     @ @  1 THRU 0 - 1 THRU 10 ACCESSES    34   1  01424
1195              &22 DC     @ @  R - 1311 IMPAC                   35   1  01425
1196              &23 DC     @ @  1 THRU 5 - 1 THRU 5 IMPAC MODULE 36   1  01426
1197              &24 DC     @ @  1 - SEEK OVERLAP FEATURE         37   1  01427
1198              &25 DC     @ @  1 - SCAN FEATURE                 38   1  01428
1199              &26 DC     @ @  1 - TRACK RECORD FEATURE         39   1  01429
```

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                    UNITS TESTED
PGLIN     LABEL     OPCOD  OPERAND                                    CT  ADDRS  INSTRUCTION
1200              &27 DC     @ @  F - 1405 FILE                  40    1  01430
1201              &28 DC     @ @  1,2,3 - 1,2,3 ARMS IN MODULE 0 41    1  01431
1202              &29 DC     @ @  1,2,3 - 1,2,3 ARMS IN MODULE 1 42    1  01432
1203              &30 DC     @ @  1,2,3 - 1,2,3 ARMS IN MODULE 2 43    1  01433
1204              &31 DC     @ @  1,2,3 - 1,2,3 ARMS IN MODULE 3 44    1  01434
1205              &32 DC     @ @  1,2,3 - 1,2,3 ARMS IN MODULE 4 45    1  01435
1206              &33 DC     @ @  1 - 7750 ON THIS CHANNEL       46    1  01436
1207              &34 DC     @ @  1 - 7740 ON THIS CHANNEL       47    1  01437
1208              &35 DC     @ @  1 - 1440/1460 ON THIS CHANNEL  48    1  01438
1209              &36 DC     @ @  1 - CHAN HAS CHANNEL EXTENDER  49    1  01439
1210              &37 DC     @ @  L - LOW SPEED HYPER TAPE       50    1  01440
1211              &38 DC     @ @  1,2,3-1050-1,2,OR BOTH ADAPTERS 51   1  01441
1212              &39 DC     @ @  1-BIT-1412-MAGNETIC INK CHAR RDR52   1  01442
1213                                2-BIT-1419-MAGNETIC INK CHAR RDR
1214              &40 DC     @ @  1-BIT-1009-DATA TRANS UNIT     53    1  01443
1215              &41 DC     @ @  1-BIT-1014-REMOTE INQUIRY      54    1  01444
1216              &42 DC     @ @  1-BIT-TELEGRAPH                55    1  01445
1217              &43 DC     @ @  F-1302 FILES                   56    1  01446
1218              &44 DC     @ @  RESERVED                       57    1  01447
1219              &55 DC     @        @                       58-68   11  01458
1220              &56 DC     @+@                                 69    1  01459
1221     *********
1222     $STANDARD CHANNEL 4 CONTROL CARD.
1223                ORG     1460     CHARACTER & PURPOSE         COL      01460
1224     CHN4       DC      @ @  1 - PAPER TAPE READER           13    1  01460
1225               &1 DC     @ @  1 - CONSOLE PRINTER            14    1  01461
1226               &2 DC     @ @  1 - TAPES 729/7330             15    1  01462
1227              &11 DC     @        @        SPARES          16-24   9  01471
1228              &12 DC     @ @  R,S,C - 1402,1442,7223 READER  25    1  01472
1229              &13 DC     @ @  B - READER COLUMN BINARY FEAT. 26    1  01473
1230              &14 DC     @ @  P - 1402 PUNCH                 27    1  01474
1231              &15 DC     @ @  B - PUNCH COLUMN BINARY FEAT.  28    1  01475
1232              &16 DC     @ @  P - 1403 PRINTER               29    1  01476
1233              &17 DC     @ @  A,N - ALPHA,NUMERIC PRINT CHAIN 30   1  01477
1234              &18 DC     @ @  1,2 - 100,132 CHAR PRINT BUFFER 31   1  01478
1235              &19 DC     @ @  F - 1301 FILE                  32    1  01479
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UNITS TESTED

PGLIN	LABEL	OPCOD	OPERAND		CT	ADDRS	INSTRUCTION
1236		&20 DC	@ @	1 THRU 0 - 1 THRU 10 FILE MODULE33	1	01480	
1237		&21 DC	@ @	1 THRU 0 - 1 THRU 10 ACCESSES 34	1	01481	
1238		&22 DC	@ @	R - 1311 IMPAC 35	1	01482	
1239		&23 DC	@ @	1 THRU 5 - 1 THRU 5 IMPAC MODULE36	1	01483	
1240		&24 DC	@ @	1 - SEEK OVERLAP FEATURE 37	1	01484	
1241		&25 DC	@ @	1 - SCAN FEATURE 38	1	01485	
1242		&26 DC	@ @	1 - TRACK RECORD FEATURE 39	1	01486	
1243		&27 DC	@ @	F - 1405 FILE 40	1	01487	
1244		&28 DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 0 41	1	01488	
1245		&29 DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 1 42	1	01489	
1246		&30 DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 2 43	1	01490	
1247		&31 DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 3 44	1	01491	
1248		&32 DC	@ @	1,2,3 - 1,2,3 ARMS IN MODULE 4 45	1	01492	
1249		&33 DC	@ @	1 - 7750 ON THIS CHANNEL 46	1	01493	
1250		&34 DC	@ @	1 - 7740 ON THIS CHANNEL 47	1	01494	
1251		&35 DC	@ @	1 - 1440/1460 ON THIS CHANNEL 48	1	01495	
1252		&36 DC	@ @	1 - CHAN HAS CHANNEL EXTENDER 49	1	01496	
1253		&37 DC	@ @	L - LOW SPEED HYPER TAPE 50	1	01497	
1254		&38 DC	@ @	1,2,3-1050-1,2,OR BOTH ADAPTERS 51	1	01498	
1255		&39 DC	@ @	1-BIT-1412-MAGNETIC INK CHAR RDR52	1	01499	
1256				2-BIT-1419-MAGNETIC INK CHAR RDR			
1257		&40 DC	@ @	1-BIT-1009-DATA TRANS UNIT 53	1	01500	
1258		&41 DC	@ @	1-BIT-1014-REMOTE INQUIRY 54	1	01501	
1259		&42 DC	@ @	1-BIT TELEGRAPH 55	1	01502	
1260		&43 DC	@ @	F-1302 FILES 56	1	01503	
1261		&44 DC	@ @	RESERVED 57	1	01504	
1262		&55 DC	@	@ 58-68	11	01515	
1263		&56 DC	@*@	69	1	01516	
1264							
1265							
1266	UNITS TESTED						
1267							
1268		ORG	1600			01600	
1269	RE1	DC	@ @		1	01600	
1270	RE2		@ @		1	01601	
1271	PU1		@ @		1	01602	

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PGLIN     LABEL     OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
1272      PU2               @ @                                       1  01603
1273      PT1               @ @                                       1  01604
1274      PT2               @ @                                       1  01605
1275      PR1               @ @                                       1  01606
1276      PR2               @ @                                       1  01607
1277      TA1               @ @                                       1  01608
1278      TA2               @ @                                       1  01609
1279      TA3               @ @                                       1  01610
1280      TA4               @ @                                       1  01611
1281      TA6               @ @                                       1  01612
1282
1283            RESET RESTART AND INTERRUPT INST.
1284
1285      LABEL1    B       START                                     7  01613  J 02000
1286                DCW     @+@                                       1  01620
1287      LABEL2    SBR     X5                                        7  01621  G 00049 B
1288                B       OUT                                       7  01628  J 05738
1289                DCW     @+@                                       1  01635
1290
1291
1292
1293              TYPE TITLE
1294
1295                ORG     2000                                         02000
1296      START     NOP                                               1  02000  N
1297                B       TART                                      7  02001  J 02015
1298                B       BEGIN          BYPASS FOR ONE SHOT        7  02008  J 02724
1299      TART      WCP     NUMBR          TEST NUMBER               10  02015  M %TO 01250 W
1300                BAI     *-16           RESET INTERLOCK            7  02025  R 02015 M
1301                B       TYP1                                      7  02032  J 01006
1302                DCW     @INSURE ALL CHL PRIORITY KEYS ARE OFF@,G  36  02074
1303                H                            WAIT FOR ACTION      1  02076  .
1304                CW      START&1                                   6  02077  ¤ 02001
1305                CS      99             CLEAR STORAGE              6  02083  / 00099
1306                SW      25,30          SET WMS                   11  02089  , 00025 00030
1307                SW      35,40                                    11  02100  , 00035 00040
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PGLIN     LABEL     OPCOD  OPERAND                                          CT  ADDRS  INSTRUCTION
1308                SW     45,50                                            11  02111  , 00045 00050
1309                SW     55,60                                            11  02122  , 00055 00060
1310      LES       BCE    ON,SYS1&8,1  BRNCH IF SYST HAS PRIORITY          12  02133  B 02180 01264 1
1311      MES       B      TYP             TO TYPE                           7  02145  J 01170
1312                DCW    @NO PRIORITY ON SYSTEM@,G                        21  02172
1313                H      04C0            TO NEXT TEST                      6  02174  . 00400
1314      ON        BCE    ON1,CHN1&12,                                     12  02180  B 02235 01301
1315                BCE    ON1,CHN1&12,C       BRCH IF CONSOLE READER       12  02192  B 02235 01301 C
1316                R      1,WKAREA                                         10  02204  M %11 09301 R
1317                BCB1   *-16                                              7  02214  R 02204 2
1318                BA1    *&1                                               7  02221  R 02228 MG
1319                B      ON2                                               7  02228  J 02284
1320      ON1       BCE    ON2,CHN1,1                                       12  02235  B 02284 01289 1
1321                BCE    ON2,CHN1&16,P                                    12  02247  B 02284 01305 P
1322                BCE    ON2,CHN1&14,P                                    12  02259  B 02284 01303 P
1323                CW     IO1&1                                             6  02271  ¤ 05785
1324                B      PLOY                                              7  02277  J 02419
1325      ON2       B      TYP             TO TYPE                           7  02284  J 01170
1326                DCW    @PRESS CH1 PRIORITY KEY ON@,G                    25  02315
1327                B      SAID                                              7  02317  J 02387
1328      KEY       SBR    X8                                                7  02324  G 00064 B
1329                B      TYP1            TO TYPE                           7  02331  J 01006
1330                DCW    @NO INTERUPT FROM PRESSING KEY @,G               30  02367
1331                S      &25,X8                                           11  02369  S 09641 00064
1332                B      0&X8                                              7  02380  J 00!00
1333      SAID      BUPR   PLOY         OUT IF SW ON                         7  02387  Y 02419 U
1334                A      &2,CNTR        ADD 2                             11  02394  A 09642 09639
1335                BZ     KEY          REMIND OPERATOR                     7  02405  J 02324 V
1336                B      SAID                                              7  02412  J 02387
1337      PLOY      S      CNTR         ZERO COUNTER                        6  02419  S 09639
1338                BCE    NYT,CHN2&12,  CHECK FOR                          12  02425  B 02480 01358
1339                BCE    NYT,CHN2&12,C       BRCH IF CONSOLE CARD READER  12  02437  B 02480 01358 C
1340                R2     1,WKAREA                                         10  02449  M ¤11 09301 R
1341                BCB2   *-16                                              7  02459  X 02449 2
1342                BA2    *&1                                               7  02466  X 02473 MG
1343                B      MAST1                                             7  02473  J 02529
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UNITS TESTED

PGLIN	LABEL	OPCOD	OPERAND		CT	ADDRS	INSTRUCTION
1344	NYT	BCE	MAST1,CHN2,1	I/O	12	02480	B 02529 01346 1
1345		BCE	MAST1,CHN2&16,P		12	02492	B 02529 01362 P
1346		BCE	MAST1,CHN2&14,P		12	02504	B 02529 01360 P
1347		CW	IO2&1		6	02516	¤ 05812
1348		B	BARK		7	02522	J 02718
1349	MAST1	B	TYP	TO TYPE	7	02529	J 01170
1350		DCW	@ENTER 2 IF PRIORITY EXT. FEATURE NOT ON CH2@,G		43	02578	
1351		RCP	1004	ENTER REPLY TO CH2 PRIORITY REQ	10	02580	M %TO 01004 R
1352		BEX1	*-16,SM	BRCH ON ANY BUT WLR	7	02590	R 02580 SMG
1353		BA1	*&1		7	02597	R 02604 M
1354		BCE	BEGIN,1004,2	BRCH IF NO PRIORITY EXT ON CH2	12	02604	B 02724 01004 2
1355		B	TYP		7	02616	J 01170
1356		DCW	@PRESS CH2 PRIORITY KEY ON@,G		25	02647	
1357		B	TAID		7	02649	J 02686
1359		DCW	@NO INTERUPT FROM PRESSING KEY@,G		29	02684	
1360	TAID	BUPR2	BARK	BR IF SWITCH ON	7	02686	Y 02718 F
1361		A	&2,CNTR	ADD 2	11	02693	A 09642 09639
1362		BZ	KEY	REMIND OPERATOR	7	02704	J 02324 V
1363		B	TAID		7	02711	J 02686
1364	BARK	S	CNTR	ZERO COUNTER	6	02718	S 09639
1365							
1366			INITIALIZE				
1367							
1368	BEGIN	MLCA	&EXT,X5	ADDRESS OF TABLE	12	02724	D 09647 00049 T
1369		CS	TA6		6	02736	/ 01612
1370		CW	BLANK,BUR&1		11	02742	¤ 09486 07531
1371		S	NAUT		6	02753	S 09586
1372		BAV	*&1		7	02759	J 02766 Z
1373		BNQ	ITR	TO INT TAD ROUTINE	7	02766	J 01100 Q
1374	CLST	MRCWR	LABEL1,1	MOVE RESET RESTART INSTR	12	02773	D 01613 00001 SMS
1375		MRCWR	LABEL2,101	MOVE INTERRUPT INSTR	12	02785	D 01621 00101 SMS
1376		CS	AREND	CLEAR 132	6	02797	/ 09432
1377		CS		POSITIONS	1	02803	/
1378							

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PGLIN  LABEL  OPCOD  OPERAND                  CT  ADDRS  INSTRUCTION
1380
1381   R1     MU     %11,WKAREA,Q  NOP READER CH 1   10  02804  M %11 09301 Q
1382          BNR1   R2                              7  02814  R 02840 1G
1383          BA1    *&1                             7  02821  R 02828 M
1384          MLNS   &1,RE1        READER CH 1 READY 12  02828  D 09648 01600 1
1385   R2     MU     %44,WKAREA,V  NOP PUNCH CH 1   10  02840  M %44 09301 V
1386          BNR1   R3                              7  02850  R 02876 1G
1387          BA1    *&1                             7  02857  R 02864 M
1388          MLNS   &1,PU1        PUNCH CH 1 READY  12  02864  D 09648 01602 1
1389   R3     MU     %P0,WKAREA,Q  NOP PAPER TAPE CH 1 10  02876  M %P0 09301 Q
1390          BNR1   R4                              7  02886  R 02912 1G
1391          BA1    *&1                             7  02893  R 02900 M
1392          MLNS   &1,PT1        PAPTAPE CH 1 READY 12  02900  D 09648 01604 1
1393   R4     MU     %2C,WKAREA,V  NOP PRINTER CH 1  10  02912  M %20 09301 V
1394          BNR1   R5                              7  02922  R 02948 1G
1395          BA1    *&1                             7  02929  R 02936 M
1396          MLNS   &1,PR1        PRINTER CH 1 READY 12  02936  D 09648 01606 1
1397   R5     MU     %U1,WKAREA,V  NOP TAPE CH 1     10  02948  M %U1 09301 V
1398          BNR1   R6-12                           7  02958  R 02984 1G
1399          BA1    *&1                             7  02965  R 02972 M
1400          MLNS   &1,TA1        TAPE CH 1 READY   12  02972  D 09648 01608 1
1401
1402          BCE    UT3,SYS1&13,  NO CH 2           12  02984  B 03176 01269
1403   R6     MU     ¤11,WKAREA,Q  NOP READER CH 2   10  02996  M ¤11 09301 Q
1404          BNR2   R7                              7  03006  X 03032 1G
1405          BA2    *&1                             7  03013  X 03020 M
1406          MLNS   &1,RE2        READER CH 2 READY 12  03020  D 09648 01601 1
1407   R7     MU     ¤44,WKAREA,V  NOP PUNCH CH 2    10  03032  M ¤44 09301 V
1408          BNR2   R8                              7  03042  X 03068 1G
1409          BA2    *&1                             7  03049  X 03056 M
1410          MLNS   &1,PU2        PUNCH CH 2 READY  12  03056  D 09648 01603 1
1411   R8     MU     ¤P0,WKAREA,Q  NOP PAPER TAPE    10  03068  M ¤P0 09301 Q
1412          BNR2   R9                              7  03078  X 03104 1G
1413          BA2    *&1                             7  03085  X 03092 M
1414          MLNS   &1,PT2        PAPTAPE CH 2 READY 12  03092  D 09648 01605 1
1415   R9     MU     ¤20,WKAREA,V  NOP PRINTER CH 2  10  03104  M ¤20 09301 V
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PGLIN     LABEL     OPCOD  OPERAND                                          CT  ADDRS  INSTRUCTION
1416                BNR2   R1C                                               7  03114  X 03140 1
1417                BA2    *&1                                               7  03121  X 03128 1GM
1418                MLNS   &1,PR2          PRINTER CH 2 READY                12  03128  D 09648 01607 1
1419      R10       MU     □U1,WKAREA,V    NOP TAPE CH 2                     10  03140  M □U1 09301 V
1420                BNR2   UT3                                               7  03150  X 03176 1
1421                BA2    *&1                                               7  03157  X 03164 1GM
1422                MLNS   &1,TA2          TAPE CH 2 READY                   12  03164  D 09648 01609 1
1423
1424      UT3       BCE    UT3A,SYS1&14,    NO CH 3                         12  03176  B 03224 01270
1425                MU     &U1,WKAREA,V    NOP TAPE CH 3                     10  03188  M 1GMU1 09301 V
1426                BNR3   UT3A                                              7  03198  3 03224 1
1427                BA3    *&1                                               7  03205  3 03212 1GM
1428                MLNS   &1,TA3          TAPE CH 3 READY                   12  03212  D 09648 01610 1
1429
1430      UT3A      BCE    UN1,SYS1&15,    NO CH 4                           12  03224  B 03279 01271
1431                MU     -U1,WKAREA,V    NOP TAPE CH 4                     10  03236  M .U1 09301 V
1432                BNR4   UN1                                               7  03246  1 03279 1
1433                BA4    *&1                                               7  03253  1 03260 1GM
1434                MLNS   &1,TA4          TAPE CH 4 READY                   12  03260  D 09648 01611 1
1435                B      UN1                                               7  03272  J 03279
1436
1437
1438
1439        CHECK FOR UNITS BEING USED
1440
1441      UN1       MLCA   DATA,MID        USE DATA IF NO READER             12  03279  D 09568 09380 T
1442                MLCWS  AREND&1,MID&1    WMGM                             12  03291  D 09433 09381 7
1443                BCE    REA,RE1,1       READER CH 1                       12  03303  B 03677 01600 1
1444                BCE    PUA,PU1,1       PUNCH  CH 1                       12  03315  B 03770 01602 1
1445                BCE    PTA,PT1,1       PAPER TAPE CH 1                   12  03327  B 03862 01604 1
1446                BCE    NOPRI2,1004,2       BRCH IF NO PRIORITY EXT ON CH2 12  03339  B 03387 01004 2
1447                BCE    REE,RE2,1       READER CH 2                       12  03351  B 03959 01601 1
1448                BCE    PUE,PU2,1       PUNCH  CH 2                       12  03363  B 04052 01603 1
1449                BCE    PTE,PT2,1       PAPER TAPE CH 2                   12  03375  B 04144 01605 1
1450      NOPRI2    MLCWS  BL,MID&1            CLEAR WMGM                    12  03387  D 09575 09381 7
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PGLIN     LABEL     OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
1451                BCE    PRA,PR1,1        PRINTER CH 1            12  03399  B 04241 01606 1
1452                BCE    NOPRI3,1004,2        BRCH IF NO PRIORITY EXT ON CH2  12  03411  B 03435 01004 2
1453                BCE    PRE,PR2,1        PRINTER CH 2            12  03423  B 04385 01607 1
1454      NOPRI3    BCE    UN2,SYS1&7,1         BRCH IF OVERLAP         12  03435  B 03454 01263 1
1455                B      END                                      7  03447  J 08513
1456
1457        FOR OVERLAP
1458
1459      UN2       MLCWS  AREND&1,MID&1    WMGM                     12  03454  D 09433 09381 7
1460                BCE    UN3,TA6,         NO SWITCH               12  03466  B 03507 01612
1461                B      TYP                                      7  03478  J 01170
1462                DCW    @DIAL OFF CH1 AND CH2@,G                 20  03504
1463                H                                               1  03506  .
1464      UN3       BCE    RECA,RE1,1       READER 1                12  03507  B 04510 01600 1
1465                BCE    PUCA,PU1,1       PUNCH  1                12  03519  B 04578 01602 1
1466                BCE    PTCA,PT1,1       PAPER TAPE 1            12  03531  B 04646 01604 1
1467                BCE    RECE,RE2,1       READER 2                12  03543  B 04714 01601 1
1468                BCE    PUCE,PU2,1       PUNCH  2                12  03555  B 04782 01603 1
1469                BCE    PTCE,PT2,1       PAPER TAPE 2            12  03567  B 04850 01605 1
1470                MLCWS  BL,MID&1         CLEAR WMGM               12  03579  D 09575 09381 7
1471                BCE    PRCA,PR1,1       PRINTER 1               12  03591  B 04918 01606 1
1472                BCE    PRCE,PR2,1       PRINTER 2               12  03603  B 05036 01607 1
1473                BCE    TAA,TA1,1        TAPE CH 1               12  03615  B 05135 01608 1
1474                BCE    TAE,TA2,1        TAPE CH 2               12  03627  B 05210 01609 1
1475                BCE    TAL,TA3,1        TAPE CH 3               12  03639  B 05285 01610 1
1476                BCE    TAR,TA4,1        TAPE CH 4               12  03651  B 05360 01611 1
1477                BNQ    ITR                                      7  03663  J 01100 Q
1478                B      END                                      7  03670  J 08513
1479
1480
1481
1482
1483        READER CH 1
1484
1485      REA       SBR    X3                                       7  03677  G 00039 B
1486                B      TYP                                      7  03684  J 01170
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PGLIN     LABEL     OPCOD  OPERAND                          CT  ADDRS  INSTRUCTION
1487                DCW    @DIAL READER CH 1@,G             16  03706
1488                H                                        1  03708  .
1489                MLCA   K2,MES3&11       READER           12  03709  D 09606 06890 T
1490      REB       R      1,WKAREA         READ A CARD      10  03721  M %11 09301 R
1491                BAI    CHK1             ANY ERROR         7  03731  R 06708 M
                                                                          G
1492                A      &1,NAUT          ADD 1            11  03738  A 09648 09586
1493                BAV    ENIO                               7  03749  J 07415 Z
1494                B      TABLE1                             7  03756  J 07461
1495                B      REB                                7  03763  J 03721
1496
1497
1498        PUNCH CH 1
1499
1500      PUA       SBR    X3                                 7  03770  G 00039 B
1501                B      TYP                                7  03777  J 01170
1502                DCW    @DIAL PUNCH CH 1@,G               15  03798
1503                H                                        1  03800  .
1504                MLCA   K3,MES3&11       PUNCH            12  03801  D 09613 06890 T
1505      PUB       P      4,WKAREA         PUNCH A CARD     10  03813  M %44 09301 W
1506                BAI    CHK1             ANY ERROR         7  03823  R 06708 M
                                                                          G
1507                A      &1,NAUT          ADD 1            11  03830  A 09648 09586
1508                BAV    ENIO                               7  03841  J 07415 Z
1509                B      TABLE1                             7  03848  J 07461
1510                B      PUB                                7  03855  J 03813
1511
1512
1513        PAPER TAPE CH 1
1514
1515      PTA       SBR    X3                                 7  03862  G 00039 B
1516                B      TYP                                7  03869  J 01170
1517                DCW    @DIAL PAPER TAPE CH 1@,G          20  03895
1518                H                                        1  03897  .
1519                MLCA   K4,MES3&11       PAPTAPE          12  03898  D 09620 06890 T
1520      PTB       MU     %PO,WKAREA,R     READ PAPER TAPE  10  03910  M %PO 09301 R
1521                BAI    CHK1             ANY ERROR         7  03920  R 06708 M
                                                                          G
1522                A      &1,NAUT          ADD 1            11  03927  A 09648 09586
```

```
PGLIN     LABEL     OPCOD  OPERAND                          CT  ADDRS  INSTRUCTION

1523                BAV    ENIO                              7  03938  J 07415 Z
1524                B      TABLE1                            7  03945  J 07461
1525                B      PTB                               7  03952  J 03910
1526
1527
1528          READER CH 2
1529
1530      REE       SBR    X3                                7  03959  G 00039 B
1531                B      TYP                               7  03966  J 01170
1532                DCW    @DIAL READER CH 2a,G             16  03988
1533                H                                        1  03990  .
1534                MLCA   K2,MES3&11     READER            12  03991  D 09606 06890 T
1535      REF       MU     ¤11,WKAREA,R   READ A CARD       10  04003  M ¤11 09301 R
1536                BA2    CHK2           ANYERROR           7  04013  X 07214 M
                                                                        G
1537                A      &1,NAUT        ADD 1             11  04020  A 09648 09586
1538                BAV    ENIO                              7  04031  J 07415 Z
1539                B      TABLE1                            7  04038  J 07461
1540                B      REF                               7  04045  J 04003
1541
1542
1543          PUNCH CH 2
1544
1545      PUE       SBR    X3                                7  04052  G 00039 B
1546                B      TYP                               7  04059  J 01170
1547                DCW    @DIAL PUNCH CH 2a,G              15  04080
1548                H                                        1  04082  .
1549                MLCA   K3,MES3&11     PUNCH             12  04083  D 09613 06890 T
1550      PUF       MU     ¤44,WKAREA,W   PUNCH A CARD       10  04095  M ¤44 09301 W
1551                BA2    CHK2           ANYERROR           7  04105  X 07214 M
                                                                        G
1552                A      &1,NAUT                          11  04112  A 09648 09586
1553                BAV    ENIO                              7  04123  J 07415 Z
1554                B      TABLE1                            7  04130  J 07461
1555                B      PUF                               7  04137  J 04095
1556
1557
1558          PAPER TAPE CH 2
```

```
PGLIN     LABEL     OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
1559
1560      PTE       SBR    X3                                        7  04144  G 00039 B
1561                B      TYP                                       7  04151  J 01170
1562                DCW    @DIAL PAPER TAPE CH 2@,G                 20  04177
1563                H                                                1  04179  .
1564                MLCA   K4,MES3&11      PAPTAPE                  12  04180  D 09620 06890 T
1565      PTF       MU     ¤PC,WKAREA,R    READ PAPER TAPE          10  04192  M ¤P0 09301 R
1566                BA2    CHK2            ANYERROR                  7  04202  X 07214 MG
1567                A      &1,NAUT                                  11  04209  A 09648 09586
1568                BAV    ENIO                                      7  04220  J 07415 Z
1569                B      TABLE1                                    7  04227  J 07461
1570                B      PTF                                       7  04234  J 04192
1571
1572
1573        PRINTER CH 1
1574
1575      PRA       SBR    X3                                        7  04241  G 00039 B
1576                B      TYP                                       7  04248  J 01170
1577                DCW    @DIAL PRINTER CH 1@,G                    17  04271
1578                H                                                1  04273  .
1579                MLCA   K5,MES3&11      PRINTER                  12  04274  D 09627 06890 T
1580      PRB       BCE    PRC,CHN1&18,1   BR ON 100 CHAR BUFFER    12  04286  B 04347 01307 1
1581                W      WKAREA          PRINT A LINE             10  04298  M %20 09301 W
1582                BA1    CHK1            ANYERROR                  7  04308  R 06708 MG
1583                A      &1,NAUT                                  11  04315  A 09648 09586
1584                BAV    PRC                                       7  04326  J 04366 Z
1585                B      TABLE1                                    7  04333  J 07461
1586                B      PRB&12                                    7  04340  J 04298
1587
1588      PRC       MLCWS  AREND&1,MID&21  100 CHAR                 12  04347  D 09433 09401 7
1589                B      PRB&12                                    7  04359  J 04298
1590
1591      PRD       MLCWS  BL,MID&21                                 12  04366  D 09575 09401 7
1592                B      ENIO                                      7  04378  J 07415
1593
1594        PRINTER CH 2
```

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PGLIN  LABEL    OPCOD  OPERAND                          CT  ADDRS  INSTRUCTION
1595
1596
1597   PRE      SBR    X3                               7   04385  G 00039 B
1598            B      TYP                              7   04392  J 01170
1599            DCW    @DIAL PRINTER CH 2@,G            17  04415
1600            H                                       1   04417  .
1601            MLCA   K5,MES3&11      PRINTER          12  04418  D 09627 06890 T
1602   PRF      BCE    PRG,CHN2&18,1   BR ON 100 CHAR BUFFER 12  04430  B 04491 01364 1
1603            MU     ¤2C,WKAREA,W    PRINT A LINE     10  04442  M ¤20 09301 W
1604            BA2    CHK2            ANYERROR         7   04452  X 07214 GM
1605            A      &1,NAUT                          11  04459  A 09648 09586
1606            BAV    PRC                              7   04470  J 04366 Z
1607            B      TABLE1                           7   04477  J 07461
1608            B      PRF&12                           7   04484  J 04442
1609
1610   PRG      MLCWS  AREND&1,MIC&21  WMGM 101 PSN     12  04491  D 09433 09401 7
1611            B      PRF&12                           7   04503  J 04442
1612
1613
1614     READER CH 1 OVERLAP
1615
1616   REOA     SBR    X3                               7   04510  G 00039 B
1617            MLCA   K2,MES3&11      READER           12  04517  D 09606 06890 T
1618   REOB     RO     1,WKAREA        READ A CARD      10  04529  M @11 09301 R
1619            B      OVLP1           TO OVERLAP ROUTINE 7 04539  J 05435
1620            BA1    CHK5            ANY INDICATOR    7   04546  R 08921 GM
1621            A      &1,NAUT         ADD 1            11  04553  A 09648 09586
1622            BAV    O&X3            TO NEXT I/O      7   04564  J 000MO Q Z
1623            B      REOB                             7   04571  J 04529
1624
1625
1626     PUNCH CH 1 OVERLAP
1627
1628   PUOA     SBR    X3                               7   04578  G 00039 B
1629            MLCA   K3,MES3&11      PUNCH            12  04585  D 09613 06890 T
1630   PUOB     PO     4,WKAREA        PUNCH A CARD     10  04597  M @44 09301 W
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PGLIN     LABEL     OPCOD  OPERAND          CT  ADDRS  INSTRUCTION
1631                B      OVLP1            TO OVERLAP ROUTINE      7  04607  J 05435
1632                BA1    CHK5             ANY INDICATOR           7  04614  R 08921 GM
1633                A      &1,NAUT          ADD 1                  11  04621  A 09648 09586
1634                BAV    O&X3             TO NEXT I/O             7  04632  J 000MQ0 Z
1635                B      PUOB                                     7  04639  J 04597
1636
1637
1638          PAPER TAPE CH 1 OVERLAP
1639
1640      PTOA      SBR    X3                                       7  04646  G 00039 B
1641                MLCA   K4,MES3&11       PAPTAPE                12  04653  D 09620 06890 T
1642      PTOB      MU     @PC,WKAREA,R     READ PAPTAPE           10  04665  M @P0 09301 R
1643                B      OVLP1            TO OVERLAP ROUTINE      7  04675  J 05435
1644                BA1    CHK5             ANY INDICATOR           7  04682  R 08921 GM
1645                A      &1,NAUT                                 11  04689  A 09648 09586
1646                BAV    O&X3                                    7  04700  J 000MQ0 Z
1647                B      PTOB                                     7  04707  J 04665
1648
1649
1650          READER CH 2 OVERLAP
1651
1652      REOE      SBR    X3                                       7  04714  G 00039 B
1653                MLCA   K2,MES3&11       READER                 12  04721  D 09606 06890 T
1654      REOF      MU     *11,WKAREA,R     READ A CARD            10  04733  M *11 09301 R
1655                B      OVLP2            TO OVERLAP ROUTINE      7  04743  J 05456
1656                BA2    CHK6             ANY INDICATOR           7  04750  X 08971 GM
1657                A      &1,NAUT                                 11  04757  A 09648 09586
1658                BAV    O&X3                                    7  04768  J 000MQ0 Z
1659                B      REOF                                     7  04775  J 04733
1660
1661
1662          PUNCH CH 2 OVERLAP
1663
1664      PUOE      SBR    X3                                       7  04782  G 00039 B
1665                MLCA   K3,MES3&11       PUNCH                  12  04789  D 09613 06890 T
1666      PUOF      MU     *44,WKAREA,W     PUNCH                  10  04801  M *44 09301 W
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PGLIN     LABEL     OPCOD  OPERAND                        CT  ADDRS  INSTRUCTION
1667                B      OVLP2          TO OVERLAP ROUTINE  7  04811  J 05456
1668                BA2    CHK6           ANY INDICATOR       7  04818  X 08971 GM
1669                A      &1,NAUT        ADD 1              11  04825  A 09648 09586
1670                BAV    O&X3           TO NEXT I/O         7  04836  J 000MO Z
1671                B      PUOF                               7  04843  J 04801
1672
1673
1674          PAPER TAPE CH 2 OVERLAP
1675
1676      PTOE      SBR    X3                                 7  04850  G 00039 B
1677                MLCA   K4,MES3&11     PAPTAPE            12  04857  D 09620 06890 T
1678      PTOF      MU     *PO,WKAREA,R   READ PAPTAPE        10  04869  M *PO 09301 R
1679                B      OVLP2          TO OVERLAP ROUTINE  7  04879  J 05456
1680                BA2    CHK6           ANY INDICATOR       7  04886  X 08971 GM
1681                A      &1,NAUT        ADD 1              11  04893  A 09648 09586
1682                BAV    O&X3           TO NEXT I/O         7  04904  J 000MO Z
1683                B      PTOF                               7  04911  J 04869
1684
1685
1686          PRINTER CH 1 OVERLAP
1687
1688      PROA      SBR    X3                                 7  04918  G 00039 B
1689                MLCA   K5,MES3&11     PRINTER            12  04925  D 09627 06890 T
1690                BCE    PROC,CHN1&18,1  100 CHAR.         12  04937  B 04998 01307 1
1691      PROB      WC     WKAREA         PRINT              10  04949  M @20 09301 W
1692                B      OVLP1          TO OVERLAP ROUTINE  7  04959  J 05435
1693                BA1    CHK5           ANY INDICATOR       7  04966  R 08921 GM
1694                A      &1,NAUT        ADD 1              11  04973  A 09648 09586
1695                BAV    PROD                               7  04984  J 05017 Z
1696                B      PROB                               7  04991  J 04949
1697
1698      PROC      MLCWS  AREND&1,MID&21  WMGM 101 PSN       12  04998  D 09433 09401 7
1699                B      PROB                               7  05010  J 04949
1700
1701      PROD      MLCWS  BL,MID&21                          12  05017  D 09575 09401 7
1702                B      O&X3           TO NEXT I/O         7  05029  J 000MO
```

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PGLIN     LABEL      OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
1704      *
1705      *
1706      * PRINTER CH 2 OVERLAP
1707      *
1708      PRCE       SBR    X3                                        7  05036  G 00039 B
1709                 MLCA   K5,MES3&11       PRINTER                 12  05043  D 09627 06890 T
1710                 BCE    PRCG,CHN2&18,1    100 CHAR              12  05055  B 05116 01364 1
1711      PRCF       MU     *20,WKAREA,W      PRINT                 10  05067  M *20 09301 W
1712                 B      OVLP2             TO OVERLAP RCUTINE     7  05077  J 05456
1713                 BA2    CHK6              ANY INDICATOR          7  05084  X 08971 G M
1714                 A      &1,NAUT           ADD 1                 11  05091  A 09648 09586
1715                 BAV    PRCC                                     7  05102  J 05017 Z
1716                 B      PRCF                                     7  05109  J 05067
1717      *
1718      PRCG   C   MLCWS  ARENC&1,MID&21  WMGM TO 101 ST POSITION  12  05116  D 09433 09401 7
1719                 B      PRCF                                     7  05128  J 05067
1720      *
1721      *
1722      * TAPE CH 1
1723      *
1724      TAA        SBR    X3                                        7  05135  G 00039 B
1725                 MLCA   K6,MES3&11       TAPE                    12  05142  D 09634 06890 T
1726      TAB        WTC    11,WKAREA         WRITE TAPE             10  05154  M @U1 09301 W
1727                 B      OVLP1             TO OVERLAP RCUTINE      7  05164  J 05435
1728                 BA1    CHK5                                      7  05171  R 08921 G M
1729                 BCPR1  ERR3              BR IF OVLP PRIO REQ IND ON CH 1  7  05178  Y 07373 1
1730                 A      &1,NAUT           ADD 1                 11  05185  A 09648 09586
1731                 BAV    O&X3              TO NEXT I/C            7  05196  J 000M0 Q Z
1732                 B      TAB                                      7  05203  J 05154
1733      *
1734      *
1735      * TAPE CH 2
1736      *
1737      TAE        SBR    X3                                        7  05210  G 00039 B
1738                 MLCA   K6,MES3&11       TAPE                    12  05217  D 09634 06890 T
1739      TAF        WTC    21,WKAREA         WRITE TAPE             10  05229  M *U1 09301 W
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PGLIN     LABEL     OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
1740                B      OVLP2                                     7  05239  J 05456
1741                BA2    CHK6                                      7  05246  X 08971 G M
1742                BCPR2  ERR5          BR IF OVLP PRIC REC IND ON CH 2  7  05253  Y 06582 2
1743                A      &1,NAUT       ADD 1                      11  05260  A 09648 Q 09586
1744                BAV    O&X3          TO NEXT I/C                7  05271  J 000M0 Z
1745                B      TAP                                       7  05278  J 05229
1746      *
1747      *
1748      * TAPE CH 3
1749      *
1750      TAL       SBR    X3                                        7  05285  G 00039 B
1751                MLCA   K6,MES3&11    TAPE                      12  05292  D 09634 06890 I
1752      TAM       MU     $U1,WKAREA,W  WRITE TAPE                10  05304  M $U1 09301 W
1753                B      OVLP3                                     7  05314  J 05477
1754                BA3    CHK3                                      7  05321  3 08545 G M
1755                BCPR3  ERR5A         BR IF OVLP PRIC REC IND ON CH 3  7  05328  Y 06624 3
1756                A      &1,NAUT       ADD 1                      11  05335  A 09648 Q 09586
1757                BAV    O&X3          TO NEXT I/C                7  05346  J 000M0 Z
1758                B      TAM                                       7  05353  J 05304
1759      *
1760      *
1761      * TAPE CH 4
1762      *
1763      TAR       SBR    X3                                        7  05360  G 00039 B
1764                MLCA   K6,MES3&11    TAPE                      12  05367  D 09634 06890 I
1765      TAS       MU     #U1,WKAREA,W  WRITE TAPE                10  05379  M #U1 09301 W
1766                B      OVLP4                                     7  05389  J 05498
1767                BA4    CHK4                                      7  05396  1 08733 G M
1768                BCPR4  ERR5B         BR IF OVLP PRIC REC IND ON CH 4  7  05403  Y 06666 4
1769                A      &1,NAUT       ADD 1                      11  05410  A 09648 Q 09586
1770                BAV    O&X3          TO NEXT I/C                7  05421  J 000M0 Z
1771                B      TAS                                       7  05428  J 05379
1772      *
1773      *
1774                OVERLAP ROUTINE
1775      *
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PGLIN  LABEL   OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
1776   CVLP1   SBR    X7                                        7  05435  G 00059 B
1777           BCL1   OVLP5                                     7  05442  J 05519 1
1778           B      OVER1                                     7  05449  J 05533
1779   *
1780   OVLP2   SBR    X7                                        7  05456  G 00059 B
1781           BCL2   CVLP5                                     7  05463  J 05519 2
1782           B      OVER2                                     7  05470  J 05639
1783   *
1784   CVLP3   SBR    X7                                        7  05477  G 00059 B
1785           BCL3   OVLP5                                     7  05484  J 05519 3
1786           B      CVER3                                     7  05491  J 05672
1787   *
1788   CVLP4   SBR    X7                                        7  05498  G 00059 B
1789           BCL4   CVLP5                                     7  05505  J 05519 4
1790           B      CVER4                                     7  05512  J 05705
1791   *
1792   CVLP5   B      TABLE                                     7  05519  J 07429
1793           B      0&X7                                      7  05526  J 00*MO
1794   *
1795   CVER1   BEX1   0&X7,#                                    7  05533  R 00*MO #
1796           MLNS   &1,OVTP&3       1 IN ERROR TYPE          12  05540  D 09648 05569 1
1797           BA1    *&1                                       7  05552  R 05559 M
1798           B      TYP1                                      7  05559  J 01006
1799    OVTP   DCW    @CF   OVERLAP FAILED@,G                  19  05566
1800           MLNA   X7,X1                                    12  05586  D 00059 00029 /
1801           A      &7,X1                                    11  05598  A 09649 00029
1802           MLNA   X1,X2                                    12  05609  D 00029 00034 /
1803           S      &24,X2                                   11  05621  S 09651 00034
1804           B      CHKPA                                     7  05632  J 06946
1805   *
1806   CVER2   BEX2   0&X7,#                                    7  05639  X 00*MO #
1807           MLNS   &2,OVTP&3       2 IN ERROR TYPE          12  05646  D 09642 05569 1
1808           BA2    *&1                                       7  05658  X 05665 M
1809           B      OVTP-7                                    7  05665  J 05559
1810   *
1811   CVER3   BEX3   0&X7,#                                    7  05672  3 00*MO #
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PGLIN  LABEL  OPCCD  OPERANC                                  CT  ADDRS  INSTRUCTION
1812          MLNS   &3,OVTP&3                               12  05679  U 09652 05569 1
1813          BA3    *&1                                       7  05691  3 05698 G M
1814          B      CVTP-7                                    7  05698  J 05559
1815   *
1816   CVER4  BEX4   O&X7,#                                    7  05705  1 00*MQO #
1817          MLNS   &4,OVTP&3       &4,OVTP&3                12  05712  D 09653 05569 1
1818          BA4    *&1                                       7  05724  1 05731 G M
1819          B      CVTP-7                                    7  05731  J 05559
1820   *
1821   *
1822   *          INTERRUPT ROUTINE
1823   *
1824   CUT    CW     BLANK,BUR&1   TURN SWITCH OFF            11  05738  ¤ 09486 07531
1825          S      ZERO          RESET COUNT                6  05749  S 09485
1826          C      X5,X4         CCMPARE FCR INTRPT BAR CHK 11  05755  C 00049 00044
1827          BU     RRE             UNEQUAL                  7  05766  J 06454 /
1828          S      @6@,X5                                   11  05773  S 09654 00049
1829   I01    NCP                                             1  05784  N
1830          BUPR   CC              I/O UNIT REQUEST CH 1     7  05785  Y 06364 U
1831          BCPR1  O&X7            OVERLAP PRIOR REQUEST CH 1 7  05792  Y 00*MQO 1
1832          BCE    *&16,SYS1&13,       NO CHANNEL 2         12  05799  B 05826 01269
1833   I02    NCP                                             1  05811  N
1834          BUPR2  DD              I/O UNIT REQUEST CH 2     7  05812  Y 06409 F
1835          BCPR2  O&X7            OVERLAP PRIOR REQUEST CH2 7  05819  Y 00*MQO 2
1836          BCE    *&8,SYS1&14,    NO CH 3                  12  05826  B 05845 01270
1837          BCPR3  O&X7            OVERLAP PRIOR REQUEST CH3 7  05838  Y 00*MQO 3
1838          BCE    *&8,SYS1&15,    NO CH 4                  12  05845  B 05864 01271
1839          BCPR4  O&X7            OVERLAP PRICR REQUEST CH4 7  05857  Y 00*MQO 4
1840          BIPR   OUT1&6                                   7  05864  Y 06286 Q
1841          BCE    SEPR-19,CHN1&40,1  1009                  12  05871  B 05919 01329 1
1842          BCE    SEPR-19,CHN1&41,1  1014                  12  05883  B 05919 01330 1
1843          BCE    SEPR-19,CHN1&42,1  TELEGRAPH             12  05895  B 05919 01331 1
1844          BCE    SEPR,CHN1&38,   NO 1050                  12  05907  B 05938 01327
1845          MLCS   @N@,ERR6C&9     YIN                     12  05919  D 09655 08436 3
1846          BCPR1  ERR6C                                    7  05931  Y 08427 N
1847   SEPR   BCE    ADPR-19,CHN1&19,F  1301                  12  05938  B 05974 01308 F
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PGLIN     LABEL     OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
1847                BCE    *&13,CHN1&27,F  1405                     12  05950  B 05974 01316 F
1848                BCE    ADPR,CHN1&43,   NO 1302                  12  05962  B 05993 01332
1849                MLCS   @S@,ERR6C&9     YIS                      12  05974  D 09656 08436 3
1850                BSPR1  ERR6C                                     7  05986  Y 08427 S
1851      ADPR      BCE    OUTA-19,CHN1&33,1  7750                  12  05993  B 06041 01322 1
1852                BCE    OUTA-19,CHN1&37,L  HYPERTAPE             12  06005  B 06041 01326 L
1853                BCE    OUTA-19,CHN1&35,1  1440                  12  06017  B 06041 01324 1
1854                BCE    OUTA,CHN1&34,   NO 7740                  12  06029  B 06060 01323
1855                MLCS   @A@,ERR6C&9     YIA                      12  06041  D 09657 08436 3
1856                BXPR1  ERR6C                                     7  06053  Y 08427 A
1857      OUTA      BCE    OUT1,SYS1&13,   NO CH 2                  12  06060  B 06280 01269
1858                BCE    *&37,CHN2&41,1  1014                     12  06072  B 06120 01387 1
1859                BCE    *&25,CHN2&40,1  1009                     12  06084  B 06120 01386 1
1860                BCE    *&13,CHN2&42,1  TELEGRAPH                12  06096  B 06120 01388 1
1861                BCE    SEPR1,CHN2&38,  NO 1050                  12  06108  B 06158 01384
1862                MLCS   @#@,ERR6C&9     YI#                      12  06120  D 09658 08436 3
1863                BQPR2  ERR6C                                     7  06132  Y 08427 #
1864                MLCS   @*@,ERR6C&9     YI*                      12  06139  D 09659 08436 3
1865                BIPR2  ERR6C                                     7  06151  Y 08427 *
1866      SEPR1     BCE    ADPR1-19,CHN2&19,F  1301                 12  06158  B 06194 01365 F
1867                BCE    *&13,CHN2&27,F  1405                     12  06170  B 06194 01373 F
1868                BCE    ADPR1,CHN2&43,  NO 1302                  12  06182  B 06213 01389
1869                MLCS   @T@,ERR6C&9     YIT                      12  06194  D 09660 08436 3
1870                BSPR2  ERR6C                                     7  06206  Y 08427 T
1871      ADPR1     BCE    OUT1-19,CHN2&33,1  7750                  12  06213  B 06261 01379 1
1872                BCE    OUT1-19,CHN2&35,1  1440                  12  06225  B 06261 01381 1
1873                BCE    OUT1-19,CHN2&37,L  HYPERTAPE             12  06237  B 06261 01383 L
1874                BCE    OUT1,CHN2&34    NO 7740                  12  06249  B 06280 01380
1875                MLCS   @B@,ERR6C&9     YIB                      12  06261  D 09661 08436 3
1876                BXPR2  ERR6C                                     7  06273  Y 08427 B
1877      CUT1      H      START                                     6  06280  . 02000
1878
1879                B      ITR                                       7  06286  J 01100
1880                BA1    *&1                                       7  06293  R 06300 G M
1881                BCE    *&8,SYS1&13,   NO CH 2                   12  06300  B 06319 01269
1882                BA2    *&1                                       7  06312  X 06319 G M
```

```
PGLIN   LABEL   OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
1883            BCE    *&8,SYS1&14,   NO CH 3                   12  06319  B 06338 01270
                                                                                    G
1884            BA3    *&1                                       7  06331  3 06338 M
1885            BCE    *&8,SYS1&15,   NO CH 4                   12  06338  B 06357 01271
                                                                                    G
1886            BA4    *&1                                       7  06350  1 06357 M
                                                                                Q
1887            B      0&X3                                      7  06357  J 000M0
1888
1889                 I/O UNIT PRIORITY REQ CAUSED INTERRUPT
1890
1891    CC      BIPR   ITR            SERVICE IF INQ REQ         7  06364  Y 01100 Q
1892            BUPR   ERR6           ERROR IF 2ND YIU BRANCH    7  06371  Y 08297 U
1893            MLCS   @U@,ERR6B&16                             12  06378  D 09662 08387 3
1894            BCE    ERR6B,TA6,     BR IF NO UNIT PRIOR REQ   12  06390  B 08371 01612
1895            B      0&X6           BACK TO PROGRAM           7  06402  J 00*.0
1896
1897    DD      BIPR   ITR                                       7  06409  Y 01100 Q
1898            BUPR2  ERR6A          ERROR IF 2ND YIF BRANCH    7  06416  Y 08334 F
1899            MLCS   @F@,ERR6B&16                             12  06423  D 09663 08387 3
1900            BCE    ERR6B,TA6,     BR IF NO UNIT PRIOR REQ   12  06435  B 08371 01612
1901            B      0&X6           BACK TO PROGRAM           7  06447  J 00*.0
1902
1903
1904
1905                 BAR COMPARE ERROR ROUTINE
1906
1907    RRE     SBR    X8                                        7  06454  G 00064 B
1908            SW     MES2&15,MES2&29   SET WMS                 11  06461  , 06525 06539
1909            MLNB   X5,MES2&19        MOVE INTRPT ADRSS       12  06472  D 00049 06529 J
1910            MLNB   X4,MES2&33        MOVE INSTR ADDRESS      12  06484  D 00044 06543 J
                                                                                    G
1911            BA1    *&1                                       7  06496  R 06503 M
1912            B      TYP1           COMMON TYPE ROUTINE       7  06503  J 01006
1913     MES2   DCW    @INTRPT BAR WAS-00000 SHLD BE-00000@,G    34  06510
1914            BCE    RRF,TA6,                                  12  06545  B 06564 01612
1915            B      0&X8                                      7  06557  J 00.00
1916
1917    RRF     S      @6@,X5                                    11  06564  S 09654 00049
                                                                                Q
1918            B      0&X7                                      7  06575  J 00*M0
```

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PGLIN     LABEL     OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
1919
1920
1921                      YI2 ERROR ROUTINE
1922
1923      ERR5        SBR    LL&5          FOR EXIT                   7  06582  G 06622 B
1924                  B      TYP1          COMMON TYPE ROUTINE        7  06589  J 01006
1925       TOTC       DCW    @YI2 BRANCH AFTER XIM@,G                20  06596
1926      LL          B      0                                        7  06617  J 00000
1927
1928        YI3 ERROR ROUTINE
1929
1930      ERR5A       SBR    EX5A&5                                   7  06624  G 06664 B
1931                  B      TYP1                                     7  06631  J 01006
1932                  DCW    @YI3 BRANCH AFTER 3IM@,G                20  06657
1933      EX5A        B      0                                        7  06659  J 00000
1934
1935        YI4 ERROR ROUTINE
1936
1937      ERR5B       SBR    EX5B&5                                   7  06666  G 06706 B
1938                  B      TYP1                                     7  06673  J 01006
1939                  DCW    @YI4 BRANCH AFTER 1IM@,G                20  06699
1940      EX5B        B      0                                        7  06701  J 00000
1941
```

```
PGLIN     LABEL     OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
1943
1944      CHK1      SBR    X1                                        7  06708  G 00029 B
1945                SBR    X2                                        7  06715  G 00034 B
1946      CHK1A     MLNS   &1,MES3&3       CH 1 IN ERROR TYPE      12  06722  D 09648 06882 1
1947                MLCA   IND,MES3&35                              12  06734  D 09597 06914 T
1948                BNR1   *&13            BR IF IND 1 ON           7  06746  R 06765 1
1949                MLCS   BL,MES3&25      BLANK IND 1             12  06753  D 09575 06904 3
1950                BCB1   *&13            BR IF IND 2 ON           7  06765  R 06784 2
1951                MLCS   BL,MES3&27      BLANK IND 2             12  06772  D 09575 06906 3
1952                BER1   *&13            BR IF IND 4 ON           7  06784  R 06803 4
1953                MLCS   BL,MES3&29      BLANK IND 4             12  06791  D 09575 06908 3
1954                BEF1   *&13            BR IF IND 8 ON           7  06803  R 06822 8
1955                MLCS   BL,MES3&31      BLANK IND 8             12  06810  D 09575 06910 3
1956                BNT1   *&13            BR IF IND A ON           7  06822  R 06841 8
1957                MLCS   BL,MES3&33      BLANK IND A             12  06829  D 09575 06912 3
1958                BWL1   *&13            BR IF IND B ON           7  06841  R 06860 -
1959                MLCS   BL,MES3&35      BLANK IND B             12  06848  D 09575 06914 3
1960      CHKP      BCE    EF,MES3&31,8    BR IF CONDITION         12  06860  B 06972 06910 8
1961                B      TYP1                                     7  06872  J 01006
1962       MES3     DCW    @CH 1          STATUS IND. 1 2 4 8 A B@,G 36  06879
1963      CHKOV     S      &17,X2                                   11  06916  S 09665 00034
1964                BCE    CHKPH,O&X2,M                             12  06927  B 07183 000.0 M
1965                B      CHKPC                                    7  06939  J 07003
1966      CHKPA     BNQ    ITR                                      7  06946  J 01100 Q
1967                BCE    O&X2,TAD1,1          REPEAT              12  06953  B 000.0 01001 1
1968                B      O&X1                                     7  06965  J 000#0
1969
1970      EF        BCE    CHKPF,MES3&9,D  READER                  12  06972  B 07021 06888 D
1971                BCE    CHKPG,MES3&7,   TAPE                    12  06984  B 07071 06886
1972                B      MES3-7                                   7  06996  J 06872
1973
1974
1975      CHKPC     S      &7,X2                                    11  07003  S 09649 00034
1976                B      CHKPA                                    7  07014  J 06946
1977
1978      CHKPF     BCE    CHKPFA,MES3&3,2  CH 2                   12  07021  B 07052 06882 2
```

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PGLIN     LABEL     OPCOD  OPERAND                          CT  ADDRS  INSTRUCTION
1979                MLNS   BL,RE1                           12  07033  D 09575 01600 1
1980                B      O&X3                              7  07045  J 000MO
1981      CHKPFA    MLNS   BL,RE2                           12  07052  D 09575 01601 1
1982                B      O&X3                              7  07064  J 000MO
1983
1984      CHKPG     BCE    CHKPGA,MES3&3,2  CH 2             12  07071  B 07126 06882 2
1985                BCE    CHKPGB,MES3&3,3  CH 3             12  07083  B 07145 06882 3
1986                BCE    CHKPGC,MES3&3,4  CH 4             12  07095  B 07164 06882 4
1987                RWD    11               REWIND TAPE      5  07107  U %U1 R
1988                BA1    *&1                               7  07112  R 07119 GM
1989                B      O&X3                              7  07119  J 000MO
1990
1991      CHKPGA    RWD    21               REWIND TAPE CH 2  5  07126  U ¤U1 R
1992                BA2    *&1                               7  07131  X 07138 GM
1993                B      O&X3                              7  07138  J 000MO
1994
1995      CHKPGB    RWD    31               REWIND TAPE CH 3  5  07145  U MU1 R
1996                BA3    *&1                               7  07150  3 07157 GM
1997                B      O&X3                              7  07157  J 000MO
1998
1999      CHKPGC    RWD    41               REWIND TAPE CH 4  5  07164  U :U1 R
2000                BA4    *&1                               7  07169  1 07176 GM
2001                B      O&X3                              7  07176  J 000MO
2002
2003      CHKPH     BCE    O&X2,MES3&25,1                   12  07183  B 000:0 06904 1
2004                BCE    O&X2,MES3&31,8                   12  07195  B 000:0 06910 8
2005                B      CHKPA                             7  07207  J 06946
2006
2007
2008
```

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PGLIN     LABEL     OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
2010
2011      CHK2      SBR    X1                                        7  07214  G 00029 B
2012                SBR    X2                                        7  07221  G 00034 B
2013      CHK2A     MLNS   &2,MES3&3        CH 2                    12  07228  D 09642 06882 1
2014                MLCA   IND,MES3&35                              12  07240  D 09597 06914 T
2015                BNR2   *&13             BR IF IND 1 ON          7  07252  X 07271 1
2016                MLCS   BL,MES3&25       BLNAK IND 1             12  07259  D 09575 06904 3
2017                BCB2   *&13             BR IF IND 2 ON          7  07271  X 07290 2
2018                MLCS   BL,MES3&27       BLANK IND 2             12  07278  D 09575 06906 3
2019                BER2   *&13             BR IF IND 4 ON          7  07290  X 07309 4
2020                MLCS   BL,MES3&29       BLANK IND 4             12  07297  D 09575 06908 3
2021                BEF2   *&13             BR IF IND 8 ON          7  07309  X 07328 8
2022                MLCS   BL,MES3&31       BLANK IND 8             12  07316  D 09575 06910 3
2023                BNT2   *&13             BR IF IND A ON          7  07328  X 07347 8
                                                                                        S
2024                MLCS   BL,MES3&33       BLANK IND A             12  07335  D 09575 06912 3
2025                BWL2   *&13             BR IF IND B ON          7  07347  X 07366 -
2026                MLCS   BL,MES3&35       BLANK IND B             12  07354  D 09575 06914 3
2027                B      CHKP                                      7  07366  J 06860
2028
2029                    Y11 ERROR ROUTINE
2030
2031      ERR3      SBR    PP&5             FOR EXIT                 7  07373  G 07413 B
2032                B      TYP1             COMMON TYPE ROUTINE      7  07380  J 01006
2033       ONON     DCW    aY11 BRANCH AFTER RIMa,G                 20  07387
                                                  G
2034      PP        B      0                                         7  07408  J 00000
2035
2036
2037      ENIO      B      TABLE1                                    7  07415  J 07461
2038                B      O&X3                                      7  07422  J 000M0
                                                                                      Q
2039
2040                    TABLE OF INTERRUPTIBLE INSTRUCTIONS
2041
2042      TABLE     SBR    X6                                        7  07429  G 00054 B
2043                MLCS   BL,TA6                                   12  07436  D 09575 01612 3
2044                BEPA   O&X5             ENTER PRIORITY ALERT MODE 7  07448  Y 00**0 E
2045                H      *-5                                       6  07455  . 07455
```

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PGLIN  LABEL   OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
2046   TABLE1  SBR    X6                                        7  07461  G 00054 B
2047           MLNS   &1,TA6                                   12  07468  D 09648 01612 1
2048           BEPA   0&X5                                      7  07480  Y 00‡‡0 E
2049           H      *-5          DID NOT BRANCH ON YIE       6  07487  . 07487
2050   ARR     BXPA   INTERR       EXIT PRIORITY ALERT MODE    7  07493  Y 08246 X
2051           H      *-5                                       6  07500  . 07500
2052   EXT     CW     *&15                                      6  07506  ¤ 07526
2053           SBR    X4                                        7  07512  G 00044 B
2054           A      &1,ZERO      COUNTER                     11  07519  A 09648 09485
2055   BUR     NOPWM                                            1  07530  N
2056           SW     BLANK        SET SWITCH ON-RESET AT 101  6  07531  , 09486
2057           CW     *&15         SET BAR                     6  07537  ¤ 07557
2058           SBR    X4           STORE BAR                   7  07543  G 00044 B
2059           BW     ARR,BLANK    TO INDICATE INTERRUPT ERR  12  07550  V 07493 09486 1
2060           SW     *&15                                      6  07562  , 07582
2061           SBR    X4                                        7  07568  G 00044 B
2062           BAV    SAT                                       7  07575  J 07602 Z
2063           SW     *&15                                      6  07582  , 07602
2064           SBR    X4                                        7  07588  G 00044 B
2065           B      NOW          CONTINUE                    7  07595  J 07608
2066   SAT     SW     BUR&1        SET SWITCH                  6  07602  , 07531
2067   NOW     CW     *&15                                      6  07608  ¤ 07628
2068           SBR    X4                                        7  07614  G 00044 B
2069           MLCWA  BFIELD,BFLD  TEST MOVE-STOP AT-A-WM INS 12  07621  D 09436 09440 X
2070           CW     *&15                                      6  07633  ¤ 07653
2071           SBR    X4                                        7  07639  G 00044 B
2072           MLCWB  AFIELD,AFLD  TEST MOVE-STOP AT-B-WM INS 12  07646  D 09437 09441 P
2073           CW     *&15                                      6  07658  ¤ 07678
2074           SBR    X4                                        7  07664  G 00044 B
2075           ZA     AFLD,BFLD    TEST ZERO & ADD INSTR      11  07671  M 09441 09440
2076           CW     *&15                                      6  07682  ¤ 07702
2077           SBR    X4                                        7  07688  G 00044 B
2078           D      AFLD,BFLD    TEST DIVIDE INSTR          11  07695  % 09441 09440
2079           S      BFLD         ZERO FIELD                  6  07706  S 09440
2080           ZS     BFLD         REMOVE ZONES-CHANGE SIGN    6  07712  ' 09440
2081           CW     *&15                                      6  07718  ¤ 07738
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PGLIN     LABEL     OPCOD  OPERAND                          CT  ADDRS  INSTRUCTION
2082                SBR    X4                                7  07724  G 00044 B
2083                A      AFLD,BFLD-2  TEST ADD INSTR      11  07731  A 09441 09438
2084                CW     *&15                              6  07742  ¤ 07762
2085                SBR    X4                                7  07748  G 00044 B
2086                M      AFLD,BFLD    TEST MULTIPLY INSTR  11  07755  @ 09441 09440
2087                CW     *&15                              6  07766  ¤ 07786
2088                SBR    X4                                7  07772  G 00044 B
2089                ZS     AFLD,BFLD    TEST ZERO & SUBT INSTR 11 07779  ! 09441 09440
2090                CW     *&15                              6  07790  ¤ 07810
2091                SBR    X4                                7  07796  G 00044 B
2092                S      AFLD,BFLD    TEST SUBT INSTR      11  07803  S 09441 09440
2093                CW     *&15                              6  07814  ¤ 07834
2094                SBR    X4                                7  07820  G 00044 B
2095                MLCWA  CTRL,EDIT    SET UP EDIT          12  07827  D 09460 09471 X
2096                CW     *&15                              6  07839  ¤ 07859
2097                SBR    X4                                7  07845  G 00044 B
2098                MCE    DAT,EDIT     TEST EDIT INSTR      11  07852  E 09449 09471
2099                CW     *&15                              6  07863  ¤ 07883
2100                SBR    X4                                7  07869  G 00044 B
2101                LE     SCHA,DAT     TEST TABLE LOOKUP INSTR 12 07876 T 09476 09449 2
2102                CW     *&15                              6  07888  ¤ 07908
2103                SBR    X4                                7  07894  G 00044 B
2104                MCS    SCHA,BAD     TEST MOVE CHAR SUPRS ZEROS 11 07901 Z 09476 09481
2105                CW     *&15                              6  07912  ¤ 07932
2106                SBR    X4                                7  07918  G 00044 B
2107                C      AFIELD,BFIELD  TEST COMPARE INSTR 11 07925  C 09437 09436
2108                CW     *&15                              6  07936  ¤ 07956
2109                SBR    X4                                7  07942  G 00044 B
2110                BCE    *&2,AFIELD,A  TEST BRNCH CHAR EQUAL INS 12 07949 B 07962 09437 A
2111      HARE      H                                        1  07961  .
2112                CW     *&15                              6  07962  ¤ 07982
2113                SBR    X4                                7  07968  G 00044 B
2114                BBE    *&2,AFIELD,A  TEST BRNCH BIT EQUAL INS 12 07975 W 07988 09437 A
2115      TARE      H                                        1  07987  .
2116                CW     *&15                              6  07988  ¤ 08008
2117                SBR    X4                                7  07994  G 00044 B
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PGLIN     LABEL     OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
2118                BWZ    *&2,AFIELD,&  TEST BRNCH WM OR ZONE INS  12  08001  V 08014 09437 C
2119                H                                                1  08013  .
2120                CW     *&15                                      6  08014  ¤ 08034
2121                SBR    X4                                        7  08020  G 00044 B
2122                SW     HARE,TARE     TEST SET WM INSTR          11  08027  , 07961 07987
2123                CW     *&15                                      6  08038  ¤ 08058
2124                SBR    X4                                        7  08044  G 00044 B
2125                CW     HARE&2,TARE&2 TEST CLEAR WM INSTR        11  08051  ¤ 07963 07989
2126                CW     *&15                                      6  08062  ¤ 08082
2127                SBR    X4                                        7  08068  G 00044 B
2128                CS     *&1,9999      TEST CLEAR STORAGE INSTR   11  08075  / 08086 09999
2129                CW     *&15                                      6  08086  ¤ 08106
2130                SBR    X4                                        7  08092  G 00044 B
2131                BW     POP,TALLY&1   TEST BRNCH IF WM INSTR      12  08099  V 08226 09572 1
2132                CW     *&15                                      6  08111  ¤ 08131
2133                SBR    X4                                        7  08117  G 00044 B
2134                BW     POP,TALLY&2   TEST BRNCH IF WM INSTR      12  08124  V 08226 09573 1
2135                CW     *&15                                      6  08136  ¤ 08156
2136                SBR    X4                                        7  08142  G 00044 B
2137                BCE    POP,TA6,        BR IF OVERLAP           12  08149  B 08226 01612
2138                SW     *&15                                      6  08161  , 08181
2139                SBR    X4                                        7  08167  G 00044 B
2140                BA1    *&1           TEST BRNCH STAT IND ON CH1  7  08174  R 08181 GM
2141                CW     *&15                                      6  08181  ¤ 08201
2142                SBR    X4                                        7  08187  G 00044 B
2143                BCE    POP,SYS1&13,    NO CH 2                 12  08194  B 08226 01269
2144                SW     *&15                                      6  08206  , 08226
2145                SBR    X4                                        7  08212  G 00044 B
2146                BA2    *&1           TEST BRNCH STAT IND ON CH2  7  08219  X 08226 GM
2147      POP       SW     *&15                                      6  08226  , 08246
2148                SBR    X4                                        7  08232  G 00044 B
2149                B      EXT                                       7  08239  J 07506
2150
2151                    INDICATE INTERRUPT ERROR
2152
2153      INTERR    S      ZERO          RESET COUNT                 6  08246  S 09485
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PGLIN     LABEL     OPCOD  OPERAND                                          CT  ADDRS  INSTRUCTION
2154                CW     BUR&1,BLANK  RESET SWITCHES                     11  08252  ¤ 07531 09486
2155                BAI    *&1          RESET INTERLOCK CHAN1               7  08263  R 08270 GM
2156                B      TYP1         COMMON TYPE ROUTINE                 7  08270  J 01006
2157      SPN       DCW    @NC INTERRUPT@,G                                 12  08288
2158                B      0&X6                                             7  08290  J 00*.0
2159
2160                     BRANCHED ON SECOND YIU ERROR ROUTINE
2161
2162      ERR6      B      TYP1           TO TYPE                           7  08297  J 01006
2163                DCW    @BRANCHED ON SECOND YIU@,G                       22  08325
2164                B      0&X6                                             7  08327  J 00*.0
2165
2166        BRANCHED ON SECOND YIF ERROR ROUTINE
2167
2168      ERR6A     B      TYP1           TO TYPE                           7  08334  J 01006
2169                DCW    @BRANCHED ON SECOND YIF@,G                       22  08362
2170                B      0&X6                                             7  08364  J 00*.0
2171
2172        BRANCHED WHEN NO UNIT PRIORITY REQUEST
2173
2174      ERR6B     BAI    *&1                                              7  08371  R 08378 GM
2175                B      TYP1           TO TYPE                           7  08378  J 01006
2176                DCW    @YIU BRANCHED WHEN NO UNIT PRIO REQ@,G           34  08418
2177                B      0&X6                                             7  08420  J 00*.0
2178
2179              INVALID PRIORITY REQUEST
2180
2181      ERR6C     B      TYP1                                             7  08427  J 01006
2182                DCW    @YIN BRANCHED@,G                                 12  08445
2183                H      START                                            6  08447  . 02000
2184
2185      ERR6D     B      TYP1                                             7  08453  J 01006
2186                DCW    @INQ PRI REQ CANNOT BE SERVICED BY CONSOLE READ@,G  46  08505
2187                H      START                                            6  08507  . 02000
2188
2189
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PGLIN     LABEL     OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
2190                      END ROUTINE
2191
2192      END       B      TYP                                       7  08513  J 01170
2193                CCW    @PASS@,G                                  4  08523
2194                BCE    START,TAD3,1  BRNCH IF REPEATING TEST    12  08525  B 02000 01003 1
2195                B      400           CALL IN NEXT TEST           7  08537  J 00400
2196                H                                                1  08544  .
2197
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PGLIN     LABEL     OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
2199
2200      CHK3      SBR    X1                                        7  08545  G 00029 B
2201                SBR    X2                                        7  08552  G 00034 B
2202                S      &24,X2                                   11  08559  S 09651 00034
2203                BCB3   0&X2                                      7  08570  3 000.0 2
2204                A      &24,X2                                   11  08577  A 09651 00034
2205      CHK3A     MLNS   &3,MES3&3      CH 3                     12  08588  D 09652 06882 1
2206                MLCA   IND,MES3&35                              12  08600  D 09597 06914 T
2207                BNR3   *&13           BR IF IND 1 ON            7  08612  3 08631 1
2208                MLCS   BL,MES3&25     BLANK IND 1              12  08619  D 09575 06904 3
2209                BCB3   *&13           BR IF IND 2 ON            7  08631  3 08650 2
2210                MLCS   BL,MES3&27     BLANK IND 2              12  08638  D 09575 06906 3
2211                BER3   *&13           BR IF IND 4 ON            7  08650  3 08669 4
2212                MLCS   BL,MES3&29     BLANK IND 4              12  08657  D 09575 06908 3
2213                BER3   *&13           BR IF IND 8 ON            7  08669  3 08688 4
2214                MLCS   BL,MES3&31     BLANK IND 8              12  08676  D 09575 06910 3
2215                BNT3   *&13           BR IF IND A ON            7  08688  3 08707 B
2216                MLCS   BL,MES3&33     BLANK IND A              12  08695  D 09575 06912 3
2217                BWL3   *&13           BR IF IND B ON            7  08707  3 08726 -
2218                MLCS   BL,MES3&35     BLANK IND B              12  08714  D 09575 06914 3
2219                B      CHKP                                      7  08726  J 06860
2220
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PGLIN     LABEL     OPCOD  OPERAND                  CT  ADDRS  INSTRUCTION
2222
2223      CHK4      SBR    X1                        7  08733  G 00029 B
2224                SBR    X2                        7  08740  G 00034 B
2226                S      &24,X2                   11  08747  S 09651 00034
2227                BCB4   0&X2                      7  08758  1 000.0 2
2228                A      &24,X2                   11  08765  A 09651 00034
2229      CHK4A     MLNS   &4,MES3&3     CH 4       12  08776  D 09653 06882 1
2230                MLCA   IND,MES3&35               12  08788  D 09597 06914 T
2231                BNR4   *&13          BR IF IND 1  7  08800  1 08819 1
2232                MLCS   BL,MES3&25    BLANK IND 1  12  08807  D 09575 06904 3
2233                BCB4   *&13          BR IF IND 2  7  08819  1 08838 2
2234                MLCS   BL,MES3&27    BLANK IND 2  12  08826  D 09575 06906 3
2235                BER4   *&13          BR IF IND 4  7  08838  1 08857 4
2236                MLCS   BL,MES3&29    BLANK IND 4  12  08845  D 09575 06908 3
2237                BEF4   *&13          BR IF IND 8  7  08857  1 08876 8
2238                MLCS   BL,MES3&31    BLANK IND 8  12  08864  D 09575 06910 3
2239                BNT4   *&13          BR IF IND A  7  08876  1 08895 8
2240                MLCS   BL,MES3&33    BLANK IND A  12  08883  D 09575 06912 3
2241                BWL4   *&13          BR IF IND B  7  08895  1 08914 -
2242                MLCS   BL,MES3&35    BLANK IND B  12  08902  D 09575 06914 3
2243                B      CHKP                       7  08914  J 06860
2244
2245      CHK5      SBR    X1                        7  08921  G 00029 B
2246                SBR    X2                        7  08928  G 00034 B
2247                S      &24,X2                   11  08935  S 09651 00034
2248                BCB1   0&X2                      7  08946  R 000.0 2
2249                A      &24,X2                   11  08953  A 09651 00034
2250                B      CHK1A                      7  08964  J 06722
2251
2252
2253      CHK6      SBR    X1                        7  08971  G 00029 B
2254                SBR    X2                        7  08978  G 00034 B
2255                S      &24,X2                   11  08985  S 09651 00034
2256                BCB2   0&X2                      7  08996  X 000.0 2
2257                A      &24,X2                   11  09003  A 09651 00034
2258                B      CHK2A                      7  09014  J 07228
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PGLIN     LABEL     OPCOD  OPERAND                                  CT  ADDRS  INSTRUCTION
2259                H                                                1  09021  .
2260
2261                    AREAS
2262
2263                ORG    9301                                          09301
2264      WKAREA    DA     1X132,G                                       09301
2265      MID             1,80                                          09380
2266      ARENC           132                                           09432
2267
2268                    CONSTANTS
2269
2270      BFIELD    DCW    @0CA@                                     3   09436
2271      AFIELD           @A@                                       1   09437
2272      BFLD             @0CA@                                     3   09440
2273      AFLD             @A@                                       1   09441
2274      CAT              @0C1000000@                               8   09449
2275      CTRL             @$   ,  0.  @                            11   09460
2276      EDIT      DS     11                                            09471
2277      SCHA      DCW    @0C0000@                                  5   09476
2278      BAD              @    @                                    5   09481
2279      TWC              @2@                                       1   09482
2280      ZERO      DCW    @000@                                     3   09485
2281      BLANK     DC     @ @                                       1   09486
2282      SPACE            @ @                                       1   09487
2283      TER       DC     @0@                                       1   09488
2284                DCW    @E-B AJ/1BKS2CLT3DMU4ENV5FOW6GPX7HQY8I@  37   09525
2285                DC     @RZ9E-B AJ/1BKS2CLT3DMU4ENV5FOW6GPX7HQ@   37   09562
2286      DATA             @Y8IRZ9@                                  6   09568
2287      FOE              @ @                                       1   09569
2288      CO               @ @                                       1   09570
2289       TALLY           @    @                                    4   09571
2290      BL               @ @                                       1   09575
2291       A34             @  @                                      2   09576
2292      C                @ @                                       1   09578
2293      T                @ @                                       1   09579
2294      P                @ @                                       1   09580
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PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2295	COL	DC	@$@	1	09581	
2296	PLD		@#@	1	09582	
2297	THREE	DCW	@3@	1	09583	
2298	CNE		@1@	1	09584	
2299	NAUT		@0C@	2	09586	
2300	IND		@1 2 4 8 A B@	11	09597	
2301	K1	DCW	@ZC@	2	09599	
2302	K2		@ READER@	7	09606	
2303	K3		@ PUNCH@	7	09613	
2304	K4		@PAPTAPE@	7	09620	
2305	K5		@PRINTER@	7	09627	
2306	K6		@ TAPE@	7	09634	
2307	CNTR	DCW	@0C000@	5	09639	
2308		PST				
2309		END	2000			J02000
2309			&25	2	09641	
2309			&2	1	09642	
2309			EXT	5	09647	07506
2309			&1	1	09648	
2309			&7	1	09649	
2309			&24	2	09651	
2309			&3	1	09652	
2309			&4	1	09653	
2309			@6@	1	09654	
2309			@N@	1	09655	
2309			@S@	1	09656	
2309			@A@	1	09657	
2309			@+@	1	09658	
2309			@*@	1	09659	
2309			@T@	1	09660	
2309			@B@	1	09661	
2309			@U@	1	09662	
2309			@F@	1	09663	
2309			&17	2	09665	

END OF ASSEMBLY