MAINTAIN III TEST SYSTEM

RELEASE BULLETIN

92W0106-013F4

February 10, 1978

I.   **INTRODUCTION**

This is to announce that a Revision F4 of the MAINTAIN III test
system is released and will replace all previous material that
has been affected.

This release obsoletes the MAINTAIN III test system Revision E,
F0, F1, F2 and F3, and the MAINTAIN III test system supplement.

II.   **SUPPORTING DOCUMENTATION CHANGES/ADDITIONS**

89A0450A	Flexible Disk Test
89A0417C	Direct Memory Disk Controller Test (See Part VI)
98A 9952 073	MAINTAIN III Test System Manual (See Part VII)
89A0174F	Line Printer Test

III.   **MAJOR REVISION CHANGES**

A.   AID III
1.   Removed from magnetic tape object.

B.   FORMAT
1.   Remove format routines from the test system
(may be found under 92A0205-032).

C.   INSTRUCTION TEST, PART 2
1.   Replaced certain non-DAS encoded instructions
with DAS encoded instructions.

D.   CACHE MEMORY TEST
1.   Allows the test to report and not test encached
areas of memory (uncached areas may be shared

areas of a multi-processor system).

2. Allows for testing depopulated memory boards.
3. Changes the power fail to restart the current test.
4. Changes the error reporting routine to print the current subtest.

E. MEMORY MAP TEST
1. Enhances the testing of the V77-4xx computer system.
2. Enables the memory error interrupt after the first cycle to permit testing the virgin memories.
3. Changes the power fail to restart the current cycle.

F. MOVING HEAD DISK (70-7520/7530)
1. Corrected an error in the seek interrupt processor.

G. PIM TEST
1. Cleared pending interrupts from each PIM prior to each test.

H. DCM TEST
1. Enhanced for testing V77 with DCM.
2. Corrected an error in the testing of the 5307 LAD.

I. FLEXIBLE DISK TEST
1. Added test to composite.
2. Corrected for erroneous BICABN message.
3. Corrected for proper unit selection after a timeout (SMR 1634).

J. DIRECT MEMORY DISK CONTROLLER
1. Added test to composite.
2. Allowed for interrupt location input.
3. Provided disk time-outs.
4. Provide unit configuration upon execution of a UNIT command.
5. Corrected the secondary status loop.
6. Corrected for Multiple Device.
7. Corrected PIM mask for Group Enable.
8. Provide read/write CRC.

9.   Add Random Burn-In Test.
10.   Add Memory Map Transfer Test.
11.   Add English text for secondary status.
12.   Improve error reporting.

K.   DCM MAPPED TEST FOR V77-4xx
      1.   Added test to composite.

L.   INSTRUCTION TEST, PART 1
      1.   Enhanced the double word conditional jump.

M.   V77-4xx WRITABLE CONTROL STORE TEST
      1.   Added test to composite.

N.   BISYNC LAD TEST
      1.   Enhanced for testing V77 with BSC.
      2.   Changed test 4 for transparent data transmission.
      3.   Corrected a timing problem associated with the V77-400.

O.   POWER FAIL/RESTART TEST
      1.   Corrected an error in the Core Modification Test
                that gave an address error during error printout.

P.   LINE PRINTER TEST
      1.   Modified to use SSWT routine.
      2.   Added "Printer Not Ready" message.
      3.   Added "Write Alert" message.

Q.   MEMORY TEST, PART 2
      1.   Removed thehalt on a V70 type memory erase.
      2.   On V70 type memory error, added display of the
                contents of the B and X registers and their contents.

R.   MAINTAIN III TEST EXECUTIVE
      1.   Replaced the magnetic tape version Executive.

IV.   SMRs FIXED WITH THIS RELEASE

1115, 1216, 1224, 1308, 1309, 1332, 1335, 1374, 1375, 1442, 1215
and 1634.

V.   PARTS CHANGED AND ADDED (NEW NO.)

A.   MAINTAIN III TEST SYSTEM
      92 ( ) 0106-013F0
      F, H, M, and Y parts

      92 ( ) 0106-013F4
      A, G, J, R, and W parts

B.   INSTRUCTION TEST, PART 2
      92 ( ) 0107-003H
      L and U parts

C.   CACHE MEMORY TEST
      92 ( ) 0111-002B
      L and U parts

D.   MEMORY MAP TEST
      92 ( ) 0109-006E
      L and U parts

E.   MOVING HEAD DISK TEST (70-7520/7530)
      92 ( ) 0109-008C
      L and U parts

F.   PIM TEST
      92 ( ) 0107-009H
      L and U parts

G.   DCM TEST
      92 ( ) 0106-014D
      L and U parts

H.   FLEXIBLE DISC TEST
      92 ( ) 0106-025C
      L and U parts

I.   DIRECT MEMORY DISC TEST
      92 ( ) 0111-010E
      L and U parts

J.   DCM MAPPED TEST FOR V77-4xx
        92 ( ) 0109-011B
        L part

K.   INSTRUCTION TEST, PART 1
        92 ( ) 0107-002L
        L and U parts

L.   V77-4xx WRITABLE CONTROL STORE TEST
        92 ( ) 0109-012A
        L part

M.   BISYNC LAD TEST
        92 ( ) 0106-017F
        L and U parts

N.   POWER FAIL/RESTART TEST
        92 ( ) 0107-008G
        L and U parts

O.   LINE PRINTER TEST
        92 ( ) 0107-011R
        L and U parts

P.   MEMORY TEST, PART 2
        92 ( ) 0107-021J
        L and U parts

Q.   MAINTAIN III TEST EXECUTIVE
        92 ( ) 0106-013E
        L part

VI.   CHANGES TO 89A0417 B

2.3.2.25   WRITE,CRC Directive

Form: WRITE,CRC,C,T,S,n.

Purpose: To write a specified CRC character n, at cylinder C,
                    track T, and sector S.

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2.3.2.26	READ,CRC Directive

Form: READ,CRC,C,T,S.

Purpose: To read the CRC character from cylinder C, track T, and sector S.

2.3.2.27	BURNIN Directive

Form: BURNIN.

Purpose: To exercise the disc system by randomly positioning the disc and performing a write/read function. Use the DEVICE and UNIT directives to setup for multiple drives. Use zero on the GO directive for continuous cycling.

Example:

2 drives on device 14
1 drive on device 12

To run all 3 drives enter the following:

DEVICE,14.
UNIT,0.
BURNIN.
UNIT,1.
BURNIN.
DEVICE,12.
UNIT,0.
BURNIN.
GO,0

2.3.2.28	MAP Directive

Form: MAP.

Purpose: To verify disc transfers into and out of each 32K memory module.

VII. CHANGES TO 98A 9952 073

Add to Section 2.2.1:

Table 2-76 BIC mode Magnetic Tape Bootstrap
for use with 70-7104, 70-7105 and E4359 mag tape.

```
000200  1031XE   BOOT   OAR    BIC              SET INITIAL ADDRESS
000201  005301          DECR   1                A=0177777 FOR LAST ADRESS
000202  1031X0          OAR    BIC+1            SET FINAL ADDRESS
000203  1000XE          EXC    BIC              ACTIVATE BIC
000204  1000ZZ          EXC    MT               READ ONE RECORD FROM MAGNETIC TAPE
000205  1012ZZ   WAIT   SEN    0200+MT,07002    TO START IF MAG TAPE READY
000206  007002
000207  005000          NOP
000210  001000          JMP    WAIT             LOOP UNTIL READY
000211  000205
                 *
                 *              START AT 0212 WITH X=07000
                 *
000212  1000X0   START  EXC    BIC+1            INITIALIZE BIC
000213  104YZZ          EXC2   (TU*0100)+MT     SELECT MAGNETIC TAPE UNIT
000214  005141          INCR   041              SET A=07001 (START ADDRESS)
000215  001000          JMP    BOOT             START BIC
000216  000200
```

Where

XE	Even BIC device address
XO	Odd BIC device address
Y	Drive number 1,2,3 or 4
ZZ	MT device address

If the magnetic tape version is being used, the following additional commands may be used:

Edc.   Write EOF on drive d, controller c.

fn,dc.   Position to file n on drive d, controller.

Ldc[,bic].   Load and execute program on drive d controller c
               [using BIC bic].

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Px,y,z,dc[,bic].   (see P control)

    A feature that appears in the magentic tape version only
is a directory of programs available. To use: after booting
in the system and getting the identification message, type

    Ldc[,bic].

    Do not position the tape prior to loading.

Delete Section 2.2.5

Add to Section 4.3 (parity error)

    The V70 Series computers will not halt after a parity error, but
will print out the address, the contents of the B and X registers,
and their contents.