AMARS
#1A AUTOMATIC MESSAGE ACCOUNTING RECORDING CENTER
(AMARC)
ADDITIONAL PRELIMINARY SYSTEM VERIFICATION UNDER GENERIC CONTROL

CONTENTS

1. GENERAL INFORMATION

1.1 The tests in this section are intended as additional preliminary verification of the generic program after the No. 1A AMARC generic program has been loaded into both processors. The tests in this section are intended to be performed by Western Electric only if requested by the TELCO and on an extra item basis. The tests in this section require equipment which is the responsibility of the TELCO.

1.2 The tests in this section require that a minimum of one dedicated channel (channel 001), one dial-up channel (channel 000), and one automatic call unit be equipped with data sets and associated cabling. Data Sets and associated cabling are the responsibility of the TELCO. If Western Electric is requested to install Data Sets and associated cabling on an extra item basis, refer to Handbook 59, Section 206B.

1.3 Section 210 does not require that the remote offices (CDA, etc.) be connected via the dedicated channels. The dedicated channels (tip and ring) should not be connected to AMARC at this time. Section 210 is intended only as a test of the No. 1A AMARC and, therefore, it does not require any equipment exterior to the Recording Center.

1.4 The No. 1A AMARC Generic program must be loaded into both processors before proceeding with this section.

1.5 Both tape units (Tape 0 and Tape 1) must be ON LINE and equipped with clean accounting magnetic tapes.

1.6 Incorrect responses to the following tests can be examined by referring to the IOM Manuals.

1.7 This section should not be performed when the system is receiving vital data from remote locations.

1.8 System console 0 is always associated with the Active System. System console 1 is always associated with the non-active system (standby or out-of-service).

2. RECORDS AND REQUIREMENTS

2.1 The test trouble record forms (SD-97-1313 and SD-97-1315) should be used to record all troubles which may be encountered when running tests in this handbook section.

3. TEST EQUIPMENT

3.1 Input Output Manuals, IM/OM, for the associated generic program issue.

3.2 Load map for the associated generic program issue.

4. INITIAL STATUS

4.1 Both processors (CU-0 and CU-1) must be running the No. 1A AMARC Generic program. Verification is each processor's "RUN", "BUS" and "VIRTUAL" lamps are lit and their "ADDRESS" lamps are continuously flickering. CU-0 should be ON LINE and CU-1 should be OFF LINE (or STANDBY). Verification on status is from the Main Alarm Control and Display panel. Processor 0 should have its NORMAL and ACTIVE LED's illuminated. Processor 1 should have its NORMAL and STANDBY LED's illuminated. There should be no alarm LED's illuminated.

4.2 For testing purposes, both tape units should be "ON LINE". The designation "ON LINE" for the tape units does not correspond with the ON LINE or OFF LINE state of the related processor. The "ON LINE" state of the tape unit means it is available for use by the processor independent of whether one processor is ON LINE or OFF LINE. Verify that each tape unit has the following lamps lit. "ON LINE" and "WRITE ENABLE". Do not proceed unless these lamps are lit. Both TTY's must be ON LINE and CAPS LOCK on DEC writer must be depressed for message to be accepted.

4.3 The disks should be operational. Any output messages printed in this section referencing the disk should be discarded. Verify that the START/STOP switch on each RP06 disk drive is in the START position.

5. WORKING MODE FUNCTIONAL TESTS

5.1 Pretest Status

5.11 The Working Mode Functional tests are not to be performed when the system is receiving vital data from remote locations.

5.12 Processor 0 should be active and processor 1 should be standby. Type in appropriate commands if the processors are not in this state.

5.13 Verify entity 0 is equipped by typing on both system consoles:

```
          DUMP MEM NPD ENT!
Response: PF
          M tt yz DUMP MEM NPD ENT
            yz aaaaaX...
```

where X = 0 if entity 0 is unequipped.

5.14 Channel 1 should be equipped. To verify that Channel 1 is equipped, type the following input on both system consoles:

```
Input:    REPT CHL 1!
Response: M tt yz REPT CHL 001 STATUS
            X00011
```

where X = 0 if channel is equipped.

Repeat for Channels 2 through 6.

5.15 If entity 0 is not equipped, proceed to Paragraph 5.16. If Channels 1 through 6 are not equipped proceed to Paragraph 5.17. If channels are equipped proceed to Paragraph 5.2.

5.16 Remove the standby processor by typing the following input on system console 1:

```
Input:    RMV SYS!
Response: M tt yz RMV SYS 1 OOS 000001
          tt yz REPT SYS STA 0 ACTIVE,
            1 OOS...
```

On the out-of-service processor, equip entity 0 by typing the following input using system console 1:

```
Input: RC ENT OOO 2 0!
```

5.17 Remove the standby processor by typing the following input on system console 1, if not already in the out-of-service state:

```
Input:    RMV SYS!
Response: M tt yz RMV SYS 1 OOS 000001
          tt yz REPT SYS STA 0 ACTIVE,
            1 OOS...
```

On the out-of-service processor, equip channels by typing the following input using system console 1:

```
Input:    RC CHL X EQP 0 0 0000000!
Response: OK
```

where X = 1, 2, 3, 4, 5 or 6.

NOTE: At this point the above equip commands are intended only to permit testing of the Working Mode and not to facilitate communication between AMARC and a remote office. Therefore, the data fields in the above input instruction were chosen as zero.

Restore the out-of-service processor (CU-1) by typing the following input on system console 1:

```
Input:    INIT SYS!
Response: *tt yz INIT SYS 1 OOS . . .
Note:  Additional messages associated
       with the PTP and tape may be
       printed.
Input:    RST SYS!
Response: M tt yz UPD MEM TRN COMPLETE
          M tt yz RST SYS 1 STANDBY
          tt yz REPT SYS STA 0 ACTIVE,
          1 STANDBY...
```

With CU-1 in standby, switch processors by typing the following input using the system console 0:

```
Input:    SW SYS!
Response: M tt yz SW SYS 0 STANDBY 1
          ACTIVE
          tt yz REPT SYS STA 0 STANDBY,
          1 ACTIVE...
```

Remove the standby processor by typing the following input on system console 1:

```
Input:     RMV SYS!
Response:  M tt yz RMV SYS 0 OOS 000001
           tt yz REPT SYS STA 0 OOS,
           1 ACTIVE...
```

Type the following message on system console 0:

```
Input:     UPD MEM NPD!
Response:  M tt yz UPD MEM NPD COMPLETE
```

Restore the out-of-service processor (CU-0) by typing the following input on system console 1:

```
Input:     INIT SYS!
Response:  *tt yz INIT SYS 0 OOS . . .
Note:  Additional messages associated
       with the PTP and tape may be
       printed.
Input:     RST SYS!
Response:  M tt yz UPD MEM TRN COMPLETE
           M tt yz RST SYS 0 STANDBY
           tt yz REPT SYS STA 0
             STANDBY, 1 ACTIVE...
```

With CU-0 in standby, switch processors by typing the following input using system console 0:

```
Input:    SW SYS!
Response: M tt yz SW SYS 0 ACTIVE,
            1 STANDBY
          tt yz REPT SYS STA 0 ACTIVE,
            1 STANDBY...
```

Once Channels 1 through 6 are equipped on both processor's, verify status by typing the following input using both system consoles:

```
Input:     REPT CHL 1!
Response:  M tt yz REPT CHL 001 STATUS
           000011
```

Repeat for Channels 2 through 6.

5.2 Working Mode Inhibited

5.21 Place Channel 1 in the monitor mode where all failures encountered on the specified channel will be reported via the TTY by typing on both system consoles the following input:

```
Input:     MON CHL 1!
Response:  OK
```

5.22 Inhibit the working mode on Channel 1 to prevent all actions upon failures except retries. Type the following input on system console 0:

```
Input:     INH WM CHL 1!
Response:  OK
```

Verify that the monitor and inhibit have been accepted by typing the following input on both system consoles:

```
Input:     REPT CHL 1!
Response:  M tt yz REPT CHL 001 STATUS
           000011 INHIB MON
```

5.23 The following input will place Channel 1 in an IN-SERVICE state. Initialize commands will be sent on the channel. Since there is no working remote channel connected to the channel at this time, failure messages (RLR) will occur on the channel and reported via both system consoles. The initialize commands will be repeatedly sent since the working modes have been inhibited on Channel 1. Type the following input on system console 0:

```
Input:     RST CHL 1!
Response:  M tt yz RST CHL 001
```

followed by:

tt yz REPT CHL 001 INIT CDA (for a SXS CDA entry channel)

tt yz REPT CHL 001 DLS (for a single entry channel)

5.24 To verify the channel status, interrupt the current TTY output using the DELETE key and type the following input from both system consoles:

```
Input:     REPT CHL 1!
Response:  M tt yz REPT CHL 001 STATUS
           000401 INHIB MON
```

5.25 Remove Channel 1 from service by typing the following input on system console 0:

```
Input:     RMV CHL 1!
Response:  M tt yz RMV CHL 001
```

5.26 Verify that Channel 1 is out-of-service by typing the following input on both system consoles:

```
Input:     REPT CHL 1!
Response:  M tt yz REPT CHL 001 STATUS
           000411 INHIB MON
```

5.3 Maintenance Mode

5.31 With the inhibit and monitor still in affect from the previous paragraph, restore Channel 1 to the maintenance mode by typing the following input using system console 0:

```
Input:     RST CHL 1 MAINT!
Response:  M tt zy RST CHL 001 MAINT
```

followed by similar output messages as in Paragraph 5.23 when the channel was restored normally.

5.32 To verify the channel status, interrupt the current TTY output using the DELETE key and type the following input from both system consoles:

```
Input:     REPT CHL 1!
Response:  M tt yz REPT CHL 001 STATUS
           000401 INHIB MAINT MON
```

5.33 Remove Channel 1 from service by typing the following input on system console 0:

```
Input:     RMV CHL 1!
Response:  M tt yz RMV CHL 001
```

5.4 Working Mode Allowed

5.41 Allow working modes on Channel 1 by typing the following input on system console 0:

```
Input:     ALW WM CHL 1!
Response:  OK
```

NOTE: Any failures occurring now will result in the corrective Working Mode sequence.

5.42 To prevent output messages from flooding both system consoles, type the following input message on both system consoles:

```
Input:     STOP MON CHL 1!
Response:  OK
```

5.43 Verify that all equipped dial-ups are removed from service.

5.431 Type the following input using system console 0, for each equipped dial-up:

```
Input:     REPT DLP XXX!
Response:  M tt yz REPT DLP XXX ZZZZ
           STATUS 000011
where: XXX = dial-up number
       ZZZZ = 202S or 212A
```

5.432 For each equipped dial-up which does not indicate the above response, remove the dial-up from service by typing the following on system consoles 0:

```
Input:     RMV DLP XXX!
Response:  M tt yz RMV DLP XXX ZZZZ
where:  XXX = dial-up number
        ZZZZ = 202S or 212A
```

5.44 Restore Channel 1 to service by typing the following input on system console 0:

```
Input:     RST CHL 1!
Response:  *tt yz REPT CHL 001 INIT CDA
            00 (or DLS) (Both consoles)
           M tt yz RST CHL 001
           yy zy REPT CHL 001 TBL RLR
            TMOUT...
           A tt yz SW CHL 001 DLP ZZZZ
            FAILED TYPE 001
           *tt yz REPT CHL 001 INIT CDA
            00 (or DLS)
           *tt yz RMV CHL 001 FAIL TYPE
            001
           tt yz UPD MEM TRN COMPLETE
            (Both consoles)
Where:     ZZZZ = 202S or 212A
```

5.45 The second last output in the previous paragraph stated Channel 1 was removed from service by the Generic program. Verify that Channel 1 is out-of-service (by the Working Mode program) by typing the following input on both system consoles:

```
Input:     REPT CHL 1!
Response:  M tt yz REPT CHL 001 STATUS
           000010
```

NOTE: The status 10 indicates removed from service by the Working Mode.

5.5 Non-Existant Channel

5.501 The following test will poll a non-existant remote location from both processors with the standby processor patched so that no failures will be seen by the standby while RLR failures are occurring on the active. This test will verify the sequence causing a processor switch.

5.502 Inhibit the Working Mode on Channel 1 by typing the following input on system console 0:

```
Input:     INH WM CHL 1!
Response:  OK
```

5.503 Restore Channel 1 by typing the following input using system console 0:

Input: RST CHL 1!
Response: M tt yz RST CHL 001

Since the remote office is not connected at the other end of Channel 1, the following output will flood system console 0:

Response: tt yz REPT CHL 001 RLR TMOUT...

5.504 Inhibit polling on Channel 1 by typing the following input from both system consoles. Setting address SCNTRL to 2 will inhibit polling and eventually the RLR output will stop. (Refer to Note 2 to determine the virtual address)

Input: IN MEM D 0 bbbbbb 2!
where: bbbbbb = virtual address of SCNTRL

A response indicating the address change will be printed.

5.505 Zero out the contents of address FAILTB +2 (address FAILTB plus octal 2) in the standby processor to prevent the standby from seeing failures. Type the following input using system console 1:

Input: IN MEM D 0 bbbbbb 0!
where: bbbbbb = virtual address of FAILTB +2

A response indicating the address change will be printed.

5.506 Allow the Working Mode on Channel 1 by typing the following input on system console 0:

Input: ALW WM CHL 1!
Response: OK

5.507 In order to start the active processor polling, type the following input from system console 0. The active will poll the remote location and receive RLR failures. The standby processor will assume no failures. The Working Mode program will then cause a processor switch since the channel is not failing on the standby processor:

Input: IN MEM D 0 bbbbbb 1002!
Where: bbbbbb = virtual address of SCNTRL
Response: (a response indicating the address change)
**tt yz SW SYS 0 STANDBY, 1 ACTIVE 000004
tt yz REPT SYS STA 0 STANDBY, 1 ACTIVE...
tt yz REPT CHL 001 TBL RLR TMOUT...
* tt yz SW CHL 001 DLP ZZZZ FAILED TYPE 001
*tt yz REPT CHL 001 INIT CDA 00 (or DLS)
*tt yz RMV CHL 001 FAIL TYPE 001
Where: ZZZZ = 202S or 212A

5.508 Remove processor 0 by typing the following input on system console 1:

Input: RMV SYS!
Response: tt yz RMV SYS 0 00S 000001
tt yz REPT SYS STA 0 00S, 1 ACTIVE...

5.509 Put Channel 1 into the manually removed state by typing the following on system console 0:

Input: RMV CHL 1!
Response: M tt yz RMV CHL 001

5.510 If any Channels 1 through 6 were equipped in Paragraph 5.17, unequip each of these by typing the following on system console 1:

NOTE: Channels must be unequipped in descending order (i.e. highest number channel first)

Input: RC CHL X!
Response: OK
where: X = channel number (1,2,3,4,5 or 6)

5.511 If entity 0 was equipped in Paragraph 5.16, unequip entity 0 by typing the following on system console 1:

Input: RC ENT 000!
Response: OK

5.512 Restore processor 0 to standby which will cause a transient memory update which will correct overwrites previously made. Type the following input on system console 1:

Input: INIT SYS!
Response: *tt yz INIT SYS 0 OOS . . .
Note: Additional messages associated with the PTP and tape may be printed.
Input: RST SYS!
Response: tt yz UPD MEM TRN COMPLETE
M tt yz RST SYS 0 STANDBY
tt yz REPT SYS STA 0 STANDBY, 1 ACTIVE...

5.513 Switch processors placing processor 0 active by typing the following input using system console 0:

Input: SW SYS!
Response: M tt yz SW SYS 0 ACTIVE, 1 STANDBY 000001
tt yz REPT SYS STA 0 ACTIVE, 1 STANDBY...

5.514 If any Channels 1 through 6 were equipped in Paragraph 5.17, type the following:

A) Type the following on system console 1:

Input: RMV SYS!
Response: M tt yz RMV SYS 1 OOS...
tt yz REPT SYS STA 0 ACTIVE, 1 OOS...

B) Type the following on system console 0:

Input: UPD MEM NPD!
Response: M tt yz UPD MEM NPD COMPLETE

C) Type the following on system console 1:

Input: INIT SYS!
Response: *tt yz INIT SYS 1 OOS . . .
Note: Additional messages associated with the PTP and tape may be printed.
Input: RST SYS!
Response: tt yz UPD MEM TRN COMPLETE
M tt yz RST SYS 1 STANDBY
tt yz REPT SYS STA 0 ACTIVE, 1 STANDBY...

5.6 This paragraph marks the end of testing for Section 210.

6. NOTES

NOTE:1: The following procedure should be used in loading memory using the console keys:
A) Load the octal address of the memory word into the Switch Register keys (SWR).

B) Momentarily depress the LOAD ADDR key.

C) Load the desired contents (in octal) into the SWR.

D) Momentarily lift the Deposit key.

E) Depress once the EXAMINE key and verify that the correct address is displayed in the ADDRESS display lamps and the correct contents is displayed in the data lamps. Note that depressing the EXAM key one additional time will automatically increase the address register by two.

NOTE 2: To determine the virtual address, absolute address and/or user number of a mnemonic used in the No. 1A AMARC generic program, it is required to use the Generic Load Map PK document.

The Generic Load Map PK document consists of three parts. The first part labeled 'USERS (TEXT & DATE) ALPHABETICALLY', is the only part needed for handbook section tests. All mnemonics are listed in alphabetical order in this table.

Locate the desired mnemonic in the table. Each entry is listed as follows:

u vvvvvvb aaaaaa mmmmmm
where: u = user number (A, 0 through 7), an 'A' indicates 'ALL', therefore any user number 0 through 7 may be used.
vvvvvv = virtual address
b = 'T' for 'Text or Instruction' 'D' for 'DATA'
aaaaaa = absolute address
mmmmmm = mnemonic name

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