

AMARS
#1A AUTOMATIC MESSAGE ACCOUNTING RECORDING CENTER
(#1A AMARC)
DIAL BACKUP CHANNEL FUNCTIONAL TEST

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1. GENERAL DESCRIPTION

1.1 This section provides a procedure for testing the equipment and the functional control associated with the dial backup channel(s) after the 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 procedure requires a 202S Data Set at the remote office (i.e., CDA, etc.) or a 212A Data Set at the remote office (CDT) and the office's dial up line number. Since this procedure attempts only to establish a communication link between the No. 1A AMARC and the remote office, the status of the remote office is unimportant except that power be applied to the 202S or 212A Data Set, the 202S or 212A Data Set to be used has been successfully tested by TELCo, all previous Handbook 59 sections pertaining to the AMARC should be completed prior to attempting this section.

1.3 This section assumes that NPD for all equipped multiplexors, dial-ups and automatic call units has been entered. This section will use Channel 1 for testing. Therefore, NPD for Channel 1 is also required. Channel 1 must not be a No. 3 ESS because it uses

a dedicated channel for backup instead of the dial backup through the DDD. Loading of NPD for system use is the responsibility of the TELCo. If Western Electric is requested to perform this function on an extra item basis, than refer to Handbook 59 Section 209.

1.4 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 program issue.

3.2 Load map for the associated generic program issue.

3.3 For trouble shooting purposes, it is recommended to have on hand at least the following equipment:

- 1 ITE-4442A Volt-Ohmmeter (or equivalent)
- 1 ITE-5237B Oscilloscope, Tektronix #465 (or equivalent)

4. PRETEST STATUS

4.1 The two processors in the No. 1A AMARC must be running the Generic program. Processor 0 (CU-0) must be ON-LINE and Processor 1 (CU-1) must be STANDBY (or OFF-LINE). The Working Mode Functionals per Section 210 must have been completed. The dial up tip and ring must be connected to each 202S or 212A Data Set/801 Automatic Calling Unit.

4.2 Verify that the remote office's 202S or 212A Data Set is connected to the dial up network with its power on.

4.3 The START/STOP switch on the RPO6 disk drives should be in the START position.

4.4 Any output messages printed in this section referencing the disk should be discarded.

5. PROCEDURE

5.1 Each dial-up (DLP) has an associated automatic call unit (ACU).

5.2 Obtain the status of each equipped ACU and its associated DLP. Restore each that it listed out-of-service.

5.21 Using the system console 0, obtain the status of each equipped ACU as follows:

Input: REPT ACU XX!
 Response if the ACU is out-of-service:
 tt yz REPT ACU OXX 000006 007400
 Response if the ACU is restored:
 tt yz REPT ACU OXX 000000 007400
 where: XX = ACU number (0-15)

5.22 For each equipped ACU which is listed as out-of-service, type the following using system console 0:

Input: RST ACU XX!
 Response: M tt yz RST ACU OXX
 Input: REPT ACU X!
 Response: tt yz REPT ACU OXX 000000
 007400
 where: XX = ACU number

5.23 Using system console 0, obtain the status of each equipped DLP as follows:

Input: REPT DLP YYY!
 Response if the DLP is removed from service:
 M tt yz REPT DLP YYY ZZZZ STATUS 000011
 Response if the DLP is restored:
 M tt yz REPT DLP YYY ZZZZ STATUS 000000
 where: YYY = DLP number
 ZZZZ = 202S or 212A

5.24 For each equipped DLP which is listed as removed from service, type the following using system console 0:

Input: RST DLP YYY!
 Response: M tt yz RST DLP YYY ZZZZ
 Input: REPT DLP YYY!
 Response: M tt yz REPT DLP YYY ZZZZ
 STATUS 000000
 where: YYY = DLP number
 ZZZZ = 202S or 212A

5.3 ACU Power Removal

5.31 Disconnect the AC power cord to the 801 ACU's.

5.32 Report the ACU status by typing the following on both system consoles for each equipped ACU:

Input: REPT ACU XX!
 Response: tt yz REPT ACU OXX 000000
 107400
 where: XX = ACU number (0-15)

NOTE: Bit 15 set in the second data field indicates a power failure for the ACU.

5.33 Reconnect the power cord to the 801 ACU's.

5.34 Verify that each equipped ACU indicates a normal status, by typing the following on both system consoles:

Input: REPT ACU XX!
 Response: tt yz REPT ACU OXX 000000
 007400
 where: XX = ACU number (00-15)

5.4 Dial Up Routine Set-Up

5.41 The test specified in this section will verify the automatic dial up of a remote office by the Generic program. This test will use the dial up line number for the remote office associated with Channel 1. Therefore, verify now that the tip and ring is not connected to Channel 1; if Channel 1 was connected, polling would take place over the dedicated channel (Channel 1) instead of the dial up channel.

5.42 All equipped dial-ups will be removed from service except for the dial-up under test. The first dial-up will be tested first, therefore, remove all equipped DLP's from service except for the first dial-up by typing the following on system console 0 for each DLP to be removed:

Input: RMV DLP YYY!
 Response: M tt yz RMV DLP YYY ZZZZ
 where: YYY = DLP number
 ZZZZ = 202S or 212A

5.43 Channel 1 must be equipped with NPD. It is assumed that Channel 1 is not a No. 3 ESS Channel. Verify that Channel 1 is equipped by typing the following on system console 0:

Input: DUMP MEM NPD CHL 001!
 Response: M tt yz DUMP MEM NPD CHL 001
 yz dddddd fffffff gggggg
 hhhhhh kkkkkk 111111-
 mmmmmm nnnnnn
 yz EOD

where: hhhhhh = bits 0-3 = digit 2
 (D2) in dial sequence (BCD)
 = bits 4-7 = D1
 = bits 8-11 = D4
 = bits 12-15 = D3

kkkkkk = bits 0-3 = D6
 = bits 4-7 = D5
 = bits 8-11 = D8
 = bits 12-15 = D7

111111 = bits 0-3 = D10
 = bits 4-7 = D09
 = bits 8-11 = D12
 = bits 12-15 = D11

mmmmmm = bits 4-7 = D13

5.44 Manual Switch to Dial-Up

5.441 To prevent unwanted working mode actions, type the following input using system console 0:

Input: INH WM ALL CHL!
 Response: OK

5.442 Initialize the primary channel's state by typing on system console 0:

Input: RST CHL 1!
 Response: M tt yz RST CHL 001
 tt yz REPT CHL 001 TBL RLR TMOUT . . .

NOTE: Other messages printed on either system console can be discarded.

5.443 In order to enable a switch to the dial-up channel, type the following input on system console 0:

Input: INH SCN CHL 1!
 Response on both system consoles:
 tt yz INH SCN CHL 001

5.444 Type in the following input, using system console 0:

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

A response will be received indicating the address change.

5.445 Switch Channel 1 to dial up by typing the following input on system console 0:

Input: SW CHL 1 DLP!

The Generic program will attempt to dial up the number established in the RC CHL message. If the remote 202S or 212A answers, the following response will be outputted:

Response: M tt yz SW CHL 1 DLP YYY ZZZZ
 OK TYPE 000
 Where: YYY - DLP number
 ZZZZ - 202S or 212A

If the dialing fails or the remote 202S or 212A does not answer with tone, the dialing sequence will automatically be reattempted. If four retries fail, the following response will be printed:

Response: M tt yz SW CHL 001 DLP YYY
 ZZZZ FAILED TYPE ttttt
 Where: YYY = DLP number
 ZZZZ = 202S or 212A
 ttttt = data field indicating type of failure (See output manual)

If the failing response is obtained, other messages will be printed and the dial up attempts will continue since the Working Mode is inhibited. To stop the failure loop, use the DELETE key and type "RMV CHL 1" on the active TTY. Determine why the dial up has failed and reattempt Paragraph 5.442 through 5.445 until successful.

5.446 To verify that the dial up link has been established, type on both system consoles:

Input: REPT CHL 1!
 Response: M tt yz REPT CHL 1 STATUS
 000006 INHIB

NOTE: The status 6 indicates channel is on dial-up.

Using both system consoles, type the following input to report status of the dial up channel:

- Input: REPT DLP YYY!
Response: M tt yz REPT DLP YYY ZZZZ
STATUS 000001
where: YYY = dial-up number
ZZZZ = 202S or 212A
- 5.447 Allow scanning on Channel 1 by typing the following input on system console 0:
- Input: ALW SCN CHL 1!
Response on both system consoles:
tt yz ALW SCN CHL 001 IP
- NOTE: Other responses can be discarded.
- 5.448 Remove Channel 1 by typing the following input on system console 0:
- NOTE: It may be necessary to use the DELETED key before entering this command.
- Input: RMV CHL 1!
Response: M tt yz RMV CHL 001
- 5.449 Remove the dial-up just tested by typing on system console 0:
- Input: RMV DLP YYY!
Response: M tt yz RMV DLP YYY ZZZZ
where: YYY = DLP number just tested
ZZZZ = 202S or 212A
- 5.450 Restore the next sequential equipped dial-up by typing on system console 0:
- Input: RST DLP YYY!
Response: M tt yz RST DLP YYY ZZZZ
where: YY = DLP number
ZZZZ = 202S or 212A
- 5.451 Repeat Paragraphs 5.442 through 5.451 for the next sequential equipped dial-up until all equipped DLP's have been tested.
- 5.452 Restore dial-up 000 by typing on system console 0:
- Input: RST DLP 0!
Response: M tt yz RST DLP 000 ZZZZ
where: ZZZZ = 202S or 212A
- 5.453 Switch processors by typing the following on system console 0:
- Input: SW SYS!
Response: M tt yz SW SYS 0 STANDBY
1 ACTIVE 000001
- NOTE: Additional responses appropriate for a normal system switch will be printed.
- 5.454 Repeat Paragraphs 5.441 through 5.452.
- NOTE: CPU1 is now the active processor.
- 5.455 Switch processors by typing the following on system console 0:
- Input: SW SYS!
Response: M tt yz SW SYS 0 ACTIVE
1 STANDBY 000001
- NOTE: Additional responses for a normal system switch will be printed.
- 5.5 Working Mode Dial-Up
- 5.51 Allow working modes on all channels by typing the following input using system console 0:
- Input: ALW WM ALL CHL!
Response: OK
- 5.52 At least six channels must be equipped. If Channels 2 through 6 are equipped, proceed to Paragraph 5.53.
- 5.521 Remove CPU1 by typing the following on system console 1:
- Input: RMV SYS!
Response on both system consoles:
M tt yz RMV SYS 1 OSS ...
tt yz REPT SYS STA 0 ACTIVE, 1 OSS ...
- 5.522 On system console 1, equip Channels 2 through 6 by typing the following for each of these channels which are un-equipped:
- Input: RC CHL 00X EQP 000 202S
0000000!
Response: OK
where: X = channel number
- 5.523 Restore the out-of-service processor by typing the following input on system console 1:
- 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
- 5.524 With CPU-1 in standby, switch processors by typing the following input using system console 0:
- Input: SW SYS!
- The appropriate responses for a normal system switch will be printed.

- 5.525 Remove CPU-0 by typing the following on system console 1:

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

- 5.526 Equip Channels 2 through 6 by typing the following for each of these channels which were unequipped using system console 1:

Input: RC CHL 00X EQP 000 0 202S
 0000000!
 Response: OK
 where: X = channel number

- 5.527 Restore the out-of-service processor by typing the following on system console 1:

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 ...

- 5.528 Switch processors by typing the following on system console 0:

Input: SW SYS!

The appropriate responses for a normal system switch will be printed.

- 5.53 Remove the standby processor by typing 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 ...

- 5.54 Verify that DLP 000 is restored.

- 5.541 Type the following on system console 0:

Input: REPT DLP 000!
 Response: M tt yz REPT DLP 000 ZZZZ
 STATUS XXXXXX
 Where: XXXXXX = 000000 if DLP 000 is
 restored
 XXXXXX = 000011 if DLP 000 is
 out-of-service
 ZZZZ = 202S or 212A

- 5.542 If DLP 000 was listed as out-of-service, type the following on system console 0:

Input: RST DLP 000!
 Response: M tt yz RST DLP 000 ZZZZ
 where: ZZZZ = 202S or 212A

- 5.55 Restore Channel 1 by typing the following on system console 0:

Input: RST CHL 1!
 Response:
 M tt yz RST CHL 001
 *tt yz REPT CHL 001 INIT CDA 00 (or DLS)
 tt yz REPT CHL 001 TBL RLR RMOUT ...
 *tt yz SW CHL 001 DLP 000 ZZZZ OK TYPE 001
 *tt yz REPT CHL 001 INIT CDA 00 (or DLS)
 tt yz REPT CHL 000 TBL RLR TMOUT ...
 *tt yz REPT CHL 001 INIT CDA 00 (or DLS)
 A tt yz SW CHL 001 DLP ZZZZ ABORTED TYPE 001
 Where: ZZZZ = 202S or 212A

- 5.56 The Generic will retry dialing up the remote location three times. When the reattempts have been unsuccessful, Channel 1 will be automatically removed from service with no more retries attempted. When Channel 1 is removed from service, the following response will be printed on system console 0:

Response: ** tt yz RMV CHL 001 FAIL
 TYPE 001

NOTE: The above response indicates Channel 1 has been automatically removed and the failure type 1 indicates Remote Location Response (RLR) Time-out. Paragraph 5.5 assumes the remote office (i.e., CDA, etc.) is not in the working state so that no response from polling will be obtained.

- 5.57 Verify Channel 1 is removed from service by typing the following input using system console 0:

Input: REPT CHL 1!
 Response: M tt yz REPT CHL 001 STATUS
 000410

NOTE: The status 410 indicates that the channel is removed from service.

- 5.58 Report the status of DLP 000 by typing the following input using system console 0:

Input: REPT DLP 0!
 Response: M tt yz REPT DLP 000 ZZZZ
 STATUS 000000
 Where: ZZZZ = 202S or 212A

NOTE: Status 0 indicates that the dial up is idle.

- 5.59 Restore CU-1 to standby by typing the following on system console 1:

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 Dial Backup Power Failure

5.61 Remove power from the 801 ACU's by disconnecting the AC power cord.

5.62 Restore Channel 1 by typing on system console 0:

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

5.63 When the 801 is attempted to be used, the following fail message will be printed:

Response: ** tt REPT DLP 000 ZZZZ 000
TBL 000000
Where: ZZZZ = 202S or 212A

NOTE: This response indicates a power failure. This failure will also cause DLP 000 to be placed out-of-service indicated by the following response:

Response: **tt yz RMV DLP 000 ZZZZ
Where: ZZZZ = 202S or 212A

NOTE: The channel requesting dial up will also eventually be removed from service as indicated by the following response:

Response: * tt yz RMV CHL 001 FAIL
TYPE 001

NOTE: Additional output messages can be discarded.

5.64 Restore power to the 801 ACU's by re-connecting the power cord.

5.65 Restore each equipped ACU that is listed as out-of-service.

5.651 Type the following for each equipped ACU using system console 0:

Input: REPT ACU YY!
Response: tt yz REPT ACU OYY aaaaaa
007400

Where: YY = ACU number
aaaaaa = 000006 if out-of-service
aaaaaa = 000000 if restored

5.652 For each equipped ACU that was listed as out-of-service, type the following using system console 0:

Input: RST ACU YY!
Response: M tt yz RST ACU OYY
Where: YY = ACU number

5.66 Restore each equipped DLP by typing the following using system console 0:

Input: RST DLP XXX!
Response: M tt yz RST DLP XXX ZZZZ
Where: XXX = DLP number
ZZZZ = 202S or 212A

5.7 In order to prevent unwanted system switches caused by Working Modes, leave all channels that were equipped in Paragraph 5.52 equipped until NPD is available for these channels.

No changes are indicated due to extensive revision.

Manager, Product Engineering
Control Center

Reason for Reissue
To update for Generic 3.