AMARS
NO. 1A AUTOMATIC MESSAGE ACCOUNTING RECORDING CENTER
(NO. 1A AMARC)
GENERIC 2 TO GENERIC 3 RETROFIT PROCEDURE
(Standard and Emergency Fallback Procedure to Generic 2)

CONTENTS

1. GENERAL INFORMATION

1.01 The procedures in Handbook 59, Sections 214A, 214B and 214C must be completed prior to starting the tests in this handbook section (except if emergency fallback to Phase II).

1.02 At the start of this handbook section, the system will be writing dual comparison tapes. One tape will be generated on the Generic 2 side (CPU0) while the other tape will be generated on the Generic 3 side (CPU1). After sufficient data has been collected (determined by the TELCO) the TELCO will request Western Electric to restore the system to a duplex Generic 2 configuration, while the RAO examines the tapes. This handbook section will be used to return to a duplex Generic 2 configuration. This procedure can also be used as an emergency fallback to Generic 2 on CPU1.

1.03 The TELCO should arrange to have their craft personnel available for inputting messages to the AMARC or authorize Western Electric to perform these operations.

1.04 The TELCO should arrange to have their data facilities personnel available to disconnect the Generic 3 modem cables at the 'Y' connector at the data set cabinet or authorize Western Electric to perform this operation.

1.05 This handbook section was written for a fully equipped No. 1A AMARC Phase II (Generic 2). If not fully equipped, then this handbook section must be modified accordingly.

1.06 Incorrect responses to the following tests, when the generic program is executing, can be examined by referring to the Input and Output Manuals (IM/OM) for the appropriate generic issue.

1.07 The DSIAF diagnostics will be executed on the CPU1 side prior to restoring the system to a duplex Generic 2 operation.

1.08 In connecting a cable to the male connector on the transition panel, the triangle on the cable (female) connector should be inserted to mate with the triangle designation stamped on the panel.

1.09 Before any work is started, the procedure to be followed should be reviewed, revised if necessary, for local office conditions and approved by the local operating company representative.

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 executing the tests in this handbook section.

3. TEST EQUIPMENT

3.1 One ITE-5632 digital multimeter (or equivalent).

3.2 One ITE-5237B Oscilloscope (or equivalent).

3.3 Input and Output manuals, IM/OM, for the associated Generic 2 and Generic 3 program issues.

3.4 Clean magnetic tapes (1600BPI) (obtained from the TELCO) for use in recording billing data.

3.5 No. 1A AMARC DSIAF diagnostic on magnetic tape.

3.6 No. 1A AMARC Generic 2 program on magnetic tape.

3.7 RP06 disk pack for Generic 2 AMA data (if required by the TELCO).

4. REMOVE GENERIC 3 VALIDATION TAPE

4.1 Put the Generic 3 processor through the mignight sequence. Input the following using the TTY associated with CPU1.

INPUT: SET CLK UCL TIME 235945!
NOTE: The midnight sequence will start in 15 seconds.

4.2 Remove all the active channels on the Generic 3 processor. Input the following using the TTY associated with CPU1, one at a time for each active channel.

INPUT: RMV CHL XXX!
where: XXX=channel number

4.3 Input the following using the TTY associated with CPU1.

INPUT: RMV TAPE!

4.4 When the Generic 3 AMA tape has rewound, remove it from the drive, remove the 'write enable ring', label the tape and turn the tape over to the TELCO.

NOTE: Note the time interval of the dual tape write and supply this information to the TELCO. Also indicate that the midnight sequence was executed at the end of the tape write.

4.5 Halt CPU1 by placing its HALT/ENABLE to the HALT position.

5. CABLE FOR GENERIC 2 ON CPU1

5.1 Isolate CPU1

5.11 Using the Main Alarm Control and Display Panel, place CPU1 into the PROCESSOR ISOLATE state.

5.12 Remove power from the CPU1 side of the J1P040V cabinet(s).

5.2 Restore TTY1 for Generic 2

5.21 Disconnect the DEC part #BC05C-50 from the ALM unit location 02-080. Connect this cable into the M25A cable labeled 'to J7 connector 230A CPU1'.

5.22 Disconnect the CB21 cable connected to the 'A' connector of the SH11 circuit pack in the 0 PWR/FLT unit location 02-098. Into this 'A' connector, connect the M6AS cable labeled "to J9 connector 230A CPU1".

5.3 Restore CPU1 Panel Cables for Generic 2

5.31 Disconnect the Generic 3 cables from the transition panels on CPU1's J1P040K and J1P040L cabinets as listed in Tables 1 and 2, respectively.

TABLE 1

Cable Designation			Panel Connector Desig.		
CB70-1	CPU1	00DZ11B	CA30-1	J5B	00DZ11B
CB71-1	CPU1	01DZ11B	CA31-1	J6B	01DZ11B
CP72-1	CPU1	02DZ11B	CA32-1	J7B	02DZ11B
CP73-1	CPU1	03DZ11B	CA33-1	J8B	03DZ11B

TABLE 2

Cable Designation			Panel Connector Desig.		
CB74-1	CPU1	04DZ11B	CA40-1	J5B	04DZ11B
CB75-1	CPU1	05DZ11B	CA41-1	J6B	05DZ11B
CB76-1	CPU1	06DZ11B	CA42-1	J7B	06DZ11B
CB77-1	CPU1	07DZ11B	CA43-1	J8B	07DZ11B
CB78-1	CPU1	10DZ11B	CA50-1	J5B	10DZ11B
CB79-1	CPU1	11DZ11B	CA51-1	J6B	11DZ11B
CB80-1	CPU1	12DZ11B	CA52-1	J7B	12DZ11B
CB81-1	CPU1	13DZ11B	CA53-1	J8B	13DZ11B

5.32 Connect the Generic 2 cables to the transition panels on CPU1's J1P040K and J1P040L cabinets as listed in Tables 3 and 4, respectively.

TABLE 3

Cable Designation	Panel Connector Desig.		
CA30-1	CA30-1	J5B	00DZ11B
CA31-1	CA31-1	J6B	01DZ11B
CA32-1	CA32-1	J7B	02DZ11B
CA33-1	CA33-1	J8B	03DZ11B
CA36-1	CA36-1	J3B	00DN11DA
CA37-1	CA37-1	J4B	01DN11DA
CA46-1	CA46-1	J3D	02DN11DA
CA47-1	CA47-1	J4D	03DN11DA

TABLE 4

Cable Designation	Panel Connector Desig.		
CA40-1	CA40-1	J5B	04DZ11B
CA41-1	CA41-1	J6B	05DZ11B
CA42-1	CA42-1	J7B	06DZ11B
CA43-1	CA43-1	J8B	07DZ11B
CA56-1	CA56-1	J3D	04DN11DA
CA57-1	CA57-1	J4D	05DN11DA
CA50-1	CA50-1	J5B	10DZ11B
CA51-1	CA51-1	J6B	11DZ11B
CA52-1	CA52-1	J7B	12DZ11B
CA53-1	CA53-1	J8B	13DZ11B

6. RESTORE GENERIC 2 AMA DISK PACK CPU1

6.1 Important Note

6.11 The disk pack used for Generic 2 AMA data may be a different one than the disk pack used for Generic 3 AMA data. This is a decision for the TELCO. If the same disk pack is to be used for Generic 2 and Generic 3 AMA data, all Generic 3 AMA data must be retrieved first, if present, then proceed to Paragraph 7.

6.2 Mount the Generic 2 AMA Disk Pack

6.21 Remove the Generic 3 AMA Disk Pack on CPU1.

6.211 Depress the START/STOP switch on the disk drive to the STOP position.

6.212 When the 'DOOR LOCKED' lamp extinguishes, slide the door open.

6.213 Place the top portion of the disk pack cover over and onto the disk.

6.214 Turn the handle on the disk pack cover counter clockwise until clicking sounds can be heard.

6.215 Lift the disk pack straight up and out of the disk drive.

6.216 Install the bottom cover onto the disk pack and store the disk pack.

6.22 Mount the Generic 2 AMA Disk Pack on CPU1.

6.221 Remove the bottom portion of the disk pack cover.

6.222 Place the disk pack with the top portion of the disk pack cover into the disk drive.

6.223 Turn the handle on the disk pack cover clockwise until it stops. Do not overtighten.

6.224 Lift the disk pack cover straight up and out of the disk drive.

6.225 Close the door securely on the disk drive.

6.3 Perform a lamp test at the disk drive

6.31 Depress the lamp test button located under the front display panel.

6.32 Observe that all disk drive lamps are lighted.

6.4 Disk Drive Control Functions

6.41 Depress the 'CONTROL A' switch to the 'CONTROL A' position. Observe that the 'CONTROL A' lamp is lighted.

6.42 Place the 'WRITE PROTECT' switch to the NON-WRITE PROTECT mode.

6.43 Ensure that lap plug 0 is installed in the disk drive on CPU1.

6.5 Start the Disk Drive on CPU1

6.51 Depress the START/STOP switch on the disk drive to the START position.

6.52 Observe that the START indicator and the DOOR LOCKED indicator are lighted and the disk pack starts to rotate.

NOTE: The disk drive will not start if the door is not closed securely and the DOOR LOCKED lamp is not lighted.

7. DSIAF DIAGNOSTIC DESCRIPTION

7.1 The DSIAF Diagnostic is divided into four test groups because the test in each group requires the installer to perform manual operations on the isolation panel. The TTY will output a message of what manual operation is required at the appropriate time.

NOTE: The output message will only be printed upon the execution of the first test in each Test Group.

7.2 The following is a description of test included in Test Group 100.

7.21 TEST 101: This test verifies that the DR11C operates properly.

7.3 The following is a description of test included in Test Group 200.

7.31 TEST 201: This test verifies that the CPU No. is properly wired.

7.4 The following is a description of the test included in Test Group 300. This Test Group diagnosis the different boards of the DSIAF; after the message printout the program will halt waiting for the proper isolation mode. Then it will execute in sequence all other DSIAF tests.

7.41 TEST 301: This test is the ODD parity test.

7.42 TEST 302: Power Disconnect test, CPC4 is tested for Power Disconnect on the other processor.

7.43 TEST 303: Power Switch Test. This test checks the ability of the DR11C to control the switch of the Data Sets power and the related function of CPC4.

7.44 TEST 304: Alarm and Display Drive Test. This test verifies that leads B0, B1 and B2 on CPC's are correct.

7.45 TEST 305: Alarm and Display Drive Test. This test is a continuation of Test 304, except it has an isolation test to CPC5.

7.46 TEST 306: Watch Dog Test. This test verifies that the Watch Dog operates by pulsing every 50 and 250 Msec.

7.47 TEST 307: Request to Send (RTS) Memory Test. In this test the memory is tested first, then the drivers are tested. The circuit packs involved are CPC1 (JW440), CPC2 (JW172), CPC3 (JW173), CPC4 (JW174) and CPC6 (JW443).

7.48 TEST 310: Data Terminal Ready (DTR) Memory Test, this test verifies that the memories associated with the 202S Data Sets are working.

7.5 Test Results Formats for Test Groups 100, 200 and 300.

7.51 PASS

When a specific test has completed a particular test, the following printout occurs:

TST XXX PASS

where XXX = Test Number

7.52 FAIL

Under a FAIL condition of a test, the following will print:

TST XXX FAIL CPCY, CPCZ, ...

AAAAAA BBBBBB CCCCCC DDDDDD

where XXX = Test Number

Y,Z = CPC Number (Circuit Pack No.)

AAAAAA = contents of the Status Register (SR). SR part of the DR11-C.

BBBBBB = contents of the READ/WRITE Buffer Register (RWBR). RWBR is part of the DR11-C.

CCCCCC = contents of the Input Read Only Register (IROR). IROR is part of the DR11-C.

DDDDDD = Program address of the failure.

7.53 ANALYSIS Condition

Under an Analysis Condition of a test, the following will print:

ANALYSIS: TEST XXX

FAILURES IN: CPCY....

or

RTS MEMORY ANAL. TST 307

SINGLE FAILURES IN CPCY ...

or

DTR MEMORY ANAL. TST 310

SINGLE FAILURES IN CPC3, CPC4

7.6 The following is a description of test included in Test Group 400.

7.61 TEST 401: This tests the isolation circuit associated with the DZ11B multiplexers, cables from the isolation circuit to the DZ11B multiplexers and the DZ11B multiplexer circuitry.

7.7 Test Results Formats for Test Group 400

7.71 PASS

When a particular test has been completed, the following printout occurs:

MX aa,b PASS

where: MX = DZ11B multiplexer
aa = multiplexer no. under test (ØØ -13) octal.
b = channel no. within the MX (Ø-7).

7.72 FAIL

Under a FAIL condition of a test, the following will print:

MX aa,b FAIL #C

where: MX = DZ11B multiplexer
aa = multiplexer no. under test (ØØ-13) octal.
b = channel no. within the MX (Ø-7).
c = failure code (Ø-5). See Table 6 for description of codes.

7.73 ANALYSIS Condition

Under the Analysis Condition of a test, the PASS printout remains the same. The FAIL printout is as follows:

MX aa,b FAIL #C rØ,r2,r4,r6

where: MX = DZ11B multiplexer
aa = multiplexer no. under test (ØØ-13) octal.
b = channel no. within the MX (Ø-7)
c = failure code (Ø-5). See Table 6 for description of codes.
rØ = contents of DZ11 Control Status Register.
r2 = contents of DZ11 Receiver Buffer.
r4 = contents of DZ11 Transmit Control Register.
r6 = contents of DZ11 Modem Status Register.

7.8 DSIAF Diagnostic Troubleshooting Aid

7.81 Tables 5A, 5B, 5C and 5D give the bit definition for registers RWBR (READ/WRITE) Buffer Register IROR (INPUT READ ONLY REGISTER), and SR (STATUS REGISTER) of the DR11-C devices.

7.82 Table 6 gives an analysis of failure codes for test group 400, the multiplexer tests.

7.83 Tables 7.a, 7.b, 7.c and 7.d contains the data used to test registers TCR (Transmit Control Register), MSR (Modem Status Register), CSR (Control Status Register), and RBUF (Receiver Buffer) for the multiplexer tests.

7.84 Table 8 lists the associated components used for the multiplexer tests and their corresponding location.

TABLE 5A (RWBR)

RMV BOTH TAPES	MNR ALM	MJR ALM	EIA PD	EIA PC	ON/ OFF	RTSE	CLEAR		DTRE	RTS/ DTR	DATA SET ADDRESS
15	14	13	12	11	10	9	8	7	6	5	4 3 2 1 0

TABLE 5B (IROR)

CPU NUMBER OR MAINT.	CAR 20 to 37 (other CU)	CAR 0 to 17 (other CU)	CTSU 20 to 37	CTSU 0 to 17	CAR 20 to 37	CAR 0 to 17	CTSM 20 to 37	CTSM 0 to 17	EIAPD IMAGE (other CU)	EIAPD IMAGE	EIAPI (other CU)	EIAPI	RTSI/DTRE (other CU)	RTSI/DTRE	ODD PARITY
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

TABLE 5C (SR)

RB								RA	ENBB	ENBA				WATCH DOG OR MAINT.	WATCH DOG OR MAINT.
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

TABLE 5D (Addresses)

DRII-C REG.	B CAB	CO CAB	C1 CAB
SR ADDR.	17767770	17767760	17767750
RWBR ADDR.	17767772	17767762	17767752
IROR ADDR.	17767774	17767764	17767754

TABLE 6

ANALYSIS OF FAILURE CODES FOR TESTS

FAILURE CODE	TEST FUNCTION	POSSIBLE CAUSE	ACTION TO BE TAKEN
Ø	COMPARE CONTENTS OF MSR WITH TABLE 7.b.	1) BAD CABLE 2) ISOLATION CKT 3) DZ11B MPXR	1) REPLACE CABLE 2) REPLACE TN37 3) REPLACE DZ11B
1	COMPARE CONTENTS OF CSR WITH TABLE 7.c	DZ11B MPXR	REPLACE DZ11B
2	VERIFY CSR BIT 7 = 1 RECEIVER DONE	SAME AS Ø	SAME AS Ø
3	COMPARE CONTENTS OF RBUF WITH TABLE 7.d	SAME AS Ø	SAME AS Ø
4	VERIFY RBUF BIT 15 = Ø	SAME AS 1	SAME AS 1
5	VERIFY MSR BITS 15:0 = Ø	SAME AS Ø	SAME AS Ø

The following tables contain data that is used to test the multiplexers.

TABLE 7.a

SET UP THE TCR TO ENABLE TRANSMIT AND RECEIVE			
DATA	TRANSMIT ON LINE	SET DTR FOR LINE	RECEIVE ON LINE
ØØ1ØØ1	Ø	1	1
ØØØ4Ø2	1	Ø	Ø
ØØ4ØØ4	2	3	3
ØØ2Ø1Ø	3	2	2
Ø2ØØ2Ø	4	5	5
Ø1ØØ4Ø	5	4	4
1ØØ1ØØ	6	7	7
Ø4Ø2ØØ	7	6	6

TABLE 7.b

EXPECTED CARRIER AND RING INDICATION (MSR)	
DATA	RING AND CARRIER ON LINE
ØØØ4Ø1	Ø
ØØ1ØØ2	1
ØØ2ØØ4	2
ØØ4Ø1Ø	3
Ø1ØØ2Ø	4
Ø2ØØ4Ø	5
Ø4Ø1ØØ	6
1ØØ2ØØ	7

TABLE 7.c

EXPECTED CSR VALUE			
DATA	MSE BIT 5	TLINE BITS 10:8	TRDY BIT 15
1ØØØ4Ø	1	ØØØ	1
1ØØ44Ø	1	ØØ1	1
1Ø1Ø4Ø	1	Ø1Ø	1
1Ø144Ø	1	Ø11	1
1Ø2Ø4Ø	1	1ØØ	1
1Ø244Ø	1	1Ø1	1
1Ø3Ø4Ø	1	11Ø	1
1Ø344Ø	1	111	1

TABLE 7.d

EXPECTED RBUF VALUE		
DATA*	LINE NO BITS 10:8	DATA VALID BIT 15
1ØØ4XX	ØØ1	1
1ØØØXX	ØØØ	1
1Ø14XX	Ø11	1
1Ø1ØXX	Ø1Ø	1
1Ø24XX	1Ø1	1
1Ø2ØXX	1ØØ	1
1Ø34XX	111	1
1Ø3ØXX	11Ø	1

* Bits Ø - 7 are the transmitted character in octal.

TABLE 8

ASSOCIATED COMPONENTS AND THEIR CORRESPONDING LOCATION								
CABINET	DZ11B MULTIPLEXERS MPXR NO.	CHANNEL NO.	UNIBUS ADDRESS	CP TN37 LOCATION CPUØ	CPU1	CABLE	CONNECTOR CPUØ	CPU1
B	ØØ	Ø-7	16Ø35Ø	12-15	2Ø-15	CA3Ø	1Ø-13	18-13
B	Ø1	Ø-7	16Ø36Ø	12-31	2Ø-31	CA31	1Ø-29	18-29
B	Ø2	Ø-7	16Ø37Ø	12-41	2Ø-41	CA32	1Ø-39	18-39
B	Ø3	Ø-7	16Ø4ØØ	12-65	2Ø-65	CA33	1Ø-63	18-63
CØ	Ø4	Ø-7	16Ø41Ø	12-15	2Ø-15	CA4Ø	1Ø-13	18-13
CØ	Ø5	Ø-7	16Ø42Ø	12-31	2Ø-31	CA41	1Ø-29	18-29
CØ	Ø6	Ø-7	16Ø43Ø	12-41	2Ø-41	CA42	1Ø-39	18-39
CØ	Ø7	Ø-7	16Ø44Ø	12-65	2Ø-65	CA43	1Ø-63	18-63
C1	1Ø	Ø-7	16Ø45Ø	12-15	2Ø-15	CA5Ø	1Ø-13	18-13
C1	11	Ø-7	16Ø46Ø	12-31	2Ø-31	CA51	1Ø-29	18-29
C1	12	Ø-7	16Ø47Ø	12-41	2Ø-41	CA52	1Ø-39	18-39
C1	13	Ø-7	16Ø5ØØ	12-65	2Ø-65	CA53	1Ø-63	18-63

8. LOADING THE DSIAF DIAGNOSTIC INTO CPU1

8.1 Loading the Magnetic Tape

8.11 Taking the magnetic tape containing the No. 1A AMARC DSIAF diagnostic, remove the plastic write enable ring (if equipped) from the reel. Removing the write enable ring will protect the magnetic tape from being overwritten.

8.12 Depress the RESET key on the tape drive unit associated with CPU1 (RESET lamp will light on the drive unit).

8.13 Place the DSIAF tape on the uppermost mount on the drive unit by pulling the handle on the mount out. After mounting the reel, push handle back in place and verify reel is held securely.

8.14 Thread tape through drive, as indicated in printed diagram on the drive unit. Thread tape on the lower reel and wind around reel only twice*, leaving slack in the process of threading.

*NOTE: There is a metallic tape located near the beginning of the tape. This location is termed the load point on the tape. When threading any magnetic tape, it is important in winding tape on the lower reel (take-up reel) that the load point is before the read/write sensors.

8.15 Depress the LOAD key on the drive unit. The tape should wind forward to the load point and then stop.

8.16 Depress the ONLINE key on the drive unit. Only two lights - ONLINE and LOAD - should be on before continuing.

8.2 Loading Program

8.21 Verify that the ENABLE/HALT key on CPU1 is set to the HALT position.

8.22 Set the console switches (SWR) on the CPU1 console to 17773030. Then depress the LOAD ADDR key.

8.23 Set the SWR keys to zero - all down.

8.24 Place the ENABLE/HALT key to ENABLE.

8.25 Depress the START key on the CU console. The magnetic tape moves forward and the message CORE MEMORY SIZE IS XXXK WORDS is typed on the processor terminal. The tape then continues to move forward and then rewind back to the supply reel. The DSIAF Diagnostic should now be in memory.

8.26 If CRC check fails the following message will be printed:

CRC CHECK HAS FAILED, RELOAD THE PROGRAM.

It will be necessary to repeat Paragraph 8.2. If errors occur repeatedly, tape could be defective, memory could be defective, or KG11A peripheral could be defective.

8.27 After the magnetic tape rewinds back to the ON LINE/LOAD position, halt CPU1 using the HALT key.

9. DSIAF DIAGNOSTIC PROCEDURE ON CPU1

9.1 Start

9.11 The DSIAF Diagnostic can be manually restarted at any time following the procedure beginning at this paragraph.

9.12 Set the ENABLE/HALT key on the CPU1 console to HALT. Load the address 200 into the ADDRESS register by setting the SWR keys to 200 and then depressing the LOAD ADDR key.

9.13 Set the SWR keys to state the test number to be performed and the mode of test operation as follows:

SWR Bits	Description
0 thru 8	Test Number to be performed. Test Number must be valid test number (i.e., not 100, 200, 300 or 400) or all zeroes.

NOTE: If bits 0 thru 8 are zero (all down), the default feature will cause Test 101 to be selected.

SWR Bits	Description
9=1 (up)	Loop on a DZ11B multiplexer channel for test group 400. Not assigned for test groups 100, 200 and 300.
10=1 (up)	Loop on test (subtest within a group test) - scope loop.
11=1 (up)	Loop on a test group.
12=1 (up)	Perform test analysis.
13=1 (up)	No TTY printout.
14=1 (up)	Exercise all tests (continue testing even if error occurs). For test groups 100, 200 and 300. Not assigned for test group 400.
15=1 (up)	Halt on an error.

NOTE: SWR bits 9 thru 15 (mode) can be changed during testing without restarting the DSIAF program.

In performing the DSIAF Diagnostic for the first time on a particular DSIAF unit, all tests should be run in consecutive order, starting with TEST 101, with the test analysis options. Therefore, set the SWR keys to 050101 (octal) - 0/101/000/001/000/001 (binary).

9.14 After the SWR keys have been selected, set the ENABLE/HALT key to ENABLE. Then depress the START key. Press the CONTINUE key. A CRC check of the loaded program will be automatically performed to verify that the program is stored accurately. If a "magging" error has been encountered, the following TTY printout will be typed out:

CRC CHECK HAS FAILED

RELOAD PROGRAM

If the above message occurs, reload the program by repeating procedure from Paragraph 8.2. If error occurs again, repeat the entire procedure starting at Paragraph 8.1.

If no CRC failure has been encountered, the program is accurately stored and the following TTY printout will be typed out:

B-C CABINET DIAGNOSTIC BEGINS TEST GIVES INSTRUCTIONS ON OPERATION OF TTY AND PID (PROC ISOLATION & DISPLAY)

OUTPUT FAILURE MESSAGES HAVE THE FOLLOWING FORMAT:

TST xxx FAIL CPCy, CPCz.....a b c d

Where:

xxx = TEST NUMBER
y,z = CPC NUMBER
a = CONTENTS OF DR11-C STATUS REGISTER
b = CONTENTS OF DR11-C R/W BUFF. REG.
c = CONTENTS OF DR11-C READ ONLY REG.
d = PROG. ADDR. OF FAILURE
TO START THE DIAGNOSTIC TYPE THE CABINET IDENTIFICATION (B, C0, OR C1) AND LF.

9.15 At this point a B character and a LF (line feed) character should be typed on TTY1.

9.2 Test 101

9.21 The following message will be typed on TTY:

GROUP 1 TST - VERIFY THAT PID IS IN DEC ISOLATION STATE.
TYPE IN LF WHEN ABOVE IS DONE.

9.22 At this point the isolation unit for circuit 1 should be enabled. This is done by pushing the DEC key under CIRCUIT 1 up and pressing the EXECUTE key.

The red LED above the DEC key should light; the red DEC1 LED on all TN38 packs should light; and all the red ISO LED's on TN37 packs in CB1 units light. At this point a LF (line feed) character should be typed on TTY.

9.3 Test 201

9.31 The following message will be typed on TTY:

VERIFY THAT PID IS IN NORMAL STATE TYPE IN LF WHEN ABOVE IS DONE.

9.32 Put the Isolation Unit back in the normal stae by pushing the DEC key under CIRCUIT 1 down and pressing the EXECUTE key. The red LED above the DEC key should extinguish; the red DEC0 LED on TN38 packs should extinguish and the green LED's illuminate.

9.33 A LF (line feed character) should be typed on TTY1. The following message will then appear:

GROUP 2 TST - TYPE IN CPU NO. FOLLOWED BY LF

9.34 A 1 character followed by a LF (line feed) character should be typed on TTY1.

9.4 Test Group 300

9.41 The computer will then print out the following message on the TTY for this group test:

GROUP 3 TST - VERIFY THAT PID IS IN DSIAF ISOLATION STATE
TYPE IN LF WHEN ABOVE IS DONE.

9.42 Put the Isolation Unit in the DSIAF mode by pushing the DSIAF key under CIRCUIT 1 up and pressing the EXECUTE key. Verify that the red LED above DSIAF key lights; all red ISO LED's light in CB1 units except TN37 in position 07; and red DSIAF0 and DEC1 LED's on TN38 light.

9.43 Type in a Line Feed (LF) character.

9.44 Tests 301 through 310 will be run sequentially.

9.5 Test Group 400

9.51 The following TTY printout will be typed out:

DZ11B LOOPBACK TEST BEGINS

OUTPUT FAILURE MESSAGE HAVE THE FOLLOWING FORMAT:

```
MX  aa,b  PASS  or
MX  aa,b  FAIL  #C or with analysis
                bit set
MX  aa,b  FAIL  #C rØ, r2, r4, r6
```

Where:

aa = MULTIPLEXER NO. UNDER TEST (ØØ - 13) OCTAL.
b = CHANNEL NO. WITHIN MULTIPLEXER (Ø - 7)
c = FAILURE CODE (Ø - 5).
rØ = CONTENTS OF DZ11 CTRL & STATUS.
r2 = CONTENTS OF DZ11 RECEIVER BUFF.
r4 = CONTENTS OF DZ11 TRANSMIT CTRL.
r6 = CONTENTS OF DZ11 MODEM STATUS.

VERIFY THAT THE PID IS IN DSIAF OR DEC ISOLATION STATE. THEN HIT 'LF'.

9.52 Verify that PID is still in DSIAF isolation state.

9.53 Type in a Line Feed (LF) character. The following message will then appear, followed by a prompt character.

TYPE IN THE NO. OF THE FIRST MPXR TO BE TESTED. NUMBER MUST BE ØØ-13 OCTAL. THEN HIT 'LF'.

9.54 The program checks for a valid input, otherwise it responds via the TTY by printing the following message followed by a prompt character.

INVALID MPXR NO. MUST BE OCTAL ØØ TO 13 TYPE THE MPXR NUMBER AGAIN. THEN HIT 'LF'.

9.55 Type in "ØØ" followed by a 'LF' on the TTY. The following message will then be printed, followed by the prompt character.

TYPE IN NO. OF LAST DZ11 MPXR TO BE TESTED. NUMBER MUST BE ØØ - 13 OCTAL. THEN HIT 'LF'.

9.56 Type in the last multiplexer number (in octal) followed by a 'LF' on the TTY. The program then starts testing.

9.57 Restore the isolation unit to normal by pushing the DSIAF key under CIRCUIT 1 down and pressing the EXECUTE key. The red LED above the DSIAF key should extinguish; the red LED's on TN38 packs should extinguish and the green LED's illuminate; and all red LED's on TN 37 packs should be extinguished and all green LED's on TN37 should be illuminated.

9.6 First C Cabinet Tests

9.61 Repeat Paragraph 9.1 typing C0 and LF (line feed) characters to start the diagnostic.

9.62 Repeat Paragraphs 9.2 - 9.5.

9.7 Second C Cabinet Tests

9.71 Repeat Paragraph 9.1, typing C1 and LF (line feed) characters to start the diagnostic.

9.72 Repeat Paragraphs 9.2 - 9.5.

10. LOAD GENERIC 2 INTO CPU1

10.1 Set the ENABLE/HALT key on the CPU1 console to the HALT position. Depress and release the START key. Release the HALT key.

10.2 Verify, at the isolation panel on the B cabinet, that CPU1 is in the NORMAL mode. Place CPU1 into the NORMAL mode if necessary.

10.3 Input the following using the TTY associated with CPU0 (Generic 2 side).

INPUT: UPD MEM PRG!

10.4 When the generic program has been loaded into CPU1 the following messages will occur.

On TTY-0
UPD MEM PRG COMPLETE

On TTY-1
CORE MEMORY SIZE IS XXXK WORDS
INIT SYS 1 OOS ...

where XXXK = memory size

NOTE: Additional informational messages may be printed on TTY-1.

10.5 Input the following on TTY-1.

INPUT: TEST DET 3!

A response indicating that the test passed should be obtained. If a failure response is obtained, return to Paragraph 10.1.

11. LOAD NPD INTO CPU1

11.1 On TTY-0:

INPUT: UPD MEM NPD!

A response indicating 'UPD MEM NPD COMPLETE' should be obtained.

11.2 On TTY-1:

INPUT: TEST DET 4!

A response indicating that the test passed should be obtained.

11.3 Input the following message on both TTY's.

INPUT: TEST DET 6!

The response from this test will contain a calculated CRC value. The calculated CRC value from both printouts should match. If the printouts do not match, return to Paragraph 11.1.

11.4 On TTY-1:

INPUT: INIT SYS!

An initialization message will be obtained on TTY-1.

NOTE: This initialization must be completed before continuing.

12. RESTORE CPU1 TO STANDBY

12.1 Mount a clean (blank), certified accounting center magnetic tape on the CPU1 tape drive. The tape must be equipped with a 'write enable ring'.

NOTE: The 'WRITE ENABLE' lamp should be illuminated.

12.2 IMPORTANT - The initialization of CPU1 in Paragraph 11.4 must be completed before proceeding.

12.3 Restore CPU1 to STANDBY. Input the following on TTY-1.

INPUT: RST TAPE!

The system will take several minutes to restore to STANDBY. When the system restore to STANDBY, the following printouts will be obtained.

Both TTY's:
UPD MEM TRN COMPLETE
RST SYS 1 STANDBY

On TTY1:
RST TAPE AMA ...

NOTE: Additional informational messages may also be obtained.

12.4 Monitor the systems for a few minutes. Verify that the systems are running in a stable duplex configuration.

13. CONCLUDING STEPS

13.1 Remove V Cabinet Modem Cables from 'Y' Connectors

13.11 Disconnect the Data Set modem cables associated with the V Cabinets from the 'Y' cables located at the data set cabinet.

IMPORTANT NOTE: Do NOT disconnect any data set modem cables that are connected to the D, C0 or C1 cabinets.

13.2 Stop Monitoring Channel Troubles

13.21 If channel troubles were being monitored on CPU0 from Handbook 59, Section 214C, stop monitoring the channel troubles by typing the following on TTY-0 for each type of channel trouble being monitored.

INPUT: STOP MON TBL X!

where X = 1 for RLR
= 2 for CTS
= 3 for CRC
= 4 for BLK OFL
= 5 for BLK TMOUT

13.3 Restore Power to the V Cabinets

13.31 Restore to both sides of the J1P040D and J1P040V-1 cabinets.

13.4 Conclusion

13.41 The system should be running duplex Generic 2. After the validation of the Generic 2 and Generic 3 AMA tapes has been made by the RAO, Western Electric will be recalled to place the system into duplex Generic 3. Handbook 59, Section 214E will be used to convert the system to a duplex Generic 3 configuration.

Manager, Product Engineering
Control Center

Reason for Reissue:
To include UIS information.