

**OPERATOR ANALYSIS OF SYSTEM
RELATED TROUBLE MESSAGES
NO. 1A AUTOMATIC MESSAGE ACCOUNTING
RECORDING CENTER (AMARC)**

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1. GENERAL

1.01 This section is used in diagnosing No. 1A AMARC System related troubles as reported on the input/output terminal. This section is divided into parts covering the major categories of troubles. Table A lists these categories and the messages that are covered in this section.

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 For each covered message, this section gives the message format and contains information labeled:

- Explanation of message
- Explanation of variable fields (if required)
- Trouble description (when additional descriptive details are provided)
- Trouble resolution.

1.04 If other errors occur, or other output messages are printed at either terminal while using this section, refer to the IM/OM or other documentation to correct these errors or analyze the output messages.

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

2. NO. 1A AMARC OPERATION

2.01 The No. 1A AMARC is a fully duplicated minicomputer system which receives, translates, and stores call information transmitted by a variety of sensing units in the central offices. Data links connect the AMARC and served central offices. Refer to Section 201-900-103 for a description of the AMARC System.

2.02 Some of the commonly used execute commands, acknowledgment messages, and priority symbols used in this section include:

- ! execute command
- PF printout follows
- IP in progress
- NG no good
- OK accomplished
- M manual action
- tt minutes after the hour
- yz processor state

2.03 Some of the commonly used variable fields, unless defined differently elsewhere, are:

- aa data channel DZ11B multiplexer number
- b port of the multiplexer.

3. MULTIPLEXER AND DATA LINK TROUBLES

tt yz REPT CHL aab TBL CRC ddddddd eeeeeee fff ggg
yz ll: nn nn, etc

Explanation of Message: This message is printed when the cyclic redundancy check (CRC) computed by the AMARC System disagrees with the CRC sent by the remote office. This failure may be caused by a:

- Problem at a remote office
- Faulty data link
- Faulty DZ11B (multiplexer)
- Faulty KG11A (arithmetic unit).

This message is followed by up to 13 lines of data giving the contents of the Input Assembly Table (IAT) for the failing channel.

Explanation of Variable Fields:

dddddd = the CRC value computed by software (octal).

eeeeee = the CRC value transmitted from the remote location.

fff = maximum data block size for the channel as determined by the entity type.

ggg = **ERR** (error), **UEQ** (unequipped), or blank

ll = line number

nn = byte values in IAT.

Trouble Description: One of the more recognizable remote office problems is a CRC of all zeros sent by a call data accumulator (CDA). This happens when the CDA determines that the data in its output buffer is bad. The AMARC will request the CDA to retransmit the data. After the data fails three times, the error message is generated. Refer to Section 201-900-309 if a problem at the remote office is suspected.

The error message may also be accompanied by some working-mode-generated message (eg, RMV CHL, SW SYS, SW CHL DLP, etc). If only one message affecting one channel occurs, start a trouble history file until enough data is gathered to pinpoint the source of the trouble.

The error message data fields will vary depending upon the type of originating office. Use the channel number to determine what type of office transmitted the data.

Trouble Resolution: Place the failing channel on monitor to see how often troubles occur. If the troubles occur regularly, request that the channel go to the dialup (DLP) facility. If this corrects the problem, the data link is the likely source of the problem. If the channel also fails on DLP, request a system switch. If this corrects the problem, computer maintenance personnel should test the DZ11B or KG11A. If the failures occur on both sides of the AMARC System, the remote office may be the source of the problem.

tt yz REPT CHL aab TBL CTS ERROR dddddd eeeeee

Explanation of Message: This message is generated when a clear-to-send (CTS) signal is not received from the data set connection circuit following an attempt to switch a channel data set from the receive mode to the send mode.

Explanation of Variable Fields:

dddddd = contents of data set control read/write buffer register (DRRWBR). (See Table B.)

eeeeee = contents of the data set control read-only buffer register (DRIROR). (See Table C.)

Trouble Description: This indicates a problem with the active processor controlling the data set. This could be caused by a faulty DZ11B multiplexer, faulty DSIAF circuitry, or a faulty 202S, 202T, or 212A data set. This message is printed on the active processor only. The standby processor will print REPT CHL TBL RLR TMOUT messages.

Trouble Resolution: The generation of this message means some working mode action. The seriousness of the action will depend on the system state. The least serious would be one channel removed from

service. The most serious problem is neither system being able to control the data sets. Determine the seriousness of the problem and take appropriate action. Refer to Section 201-900-323 for emergency procedures and Section 201-900-324 for fault isolation procedures.

If only one channel is failing, replace the data set associated with the failure. If this fails to correct the problem, run the data set interface and auxiliary function (DSIAF) diagnostic and correct any failures. If the problem still persists, perform a manual data set test (for a 202T data set) or a manual dialup test (for a 202S or 212A data set). Use signal tracing in investigating failures.

****tt yz REPT CHL aab TBL POLLING CEASED (TAPE) ccc ddd eeeee fffff gggggg**

Explanation of Message: This message may indicate that polling on a channel has failed to resume within 8 seconds following the receipt of a data block unless the channel was terminated for a valid reason.

Explanation of Variable Fields:

ccc = contents of ORT byte associated with channel.

ddd = contents of SCNTRL byte associated with this channel.

eeeeee = contents of IATC word for this channel.

fffff = user number of last user to call function "stpscn" in order to inhibit polling.

gggggg = return address of last program to call function "stpscn" in order to inhibit polling.

Trouble Description: Typing RMV TAPE while in a simplex mode may cause momentary polling ceased messages to occur for one or more channels.

This message may also indicate that the AMA tape is full or the tape output registers are full, and the system is unable to switch. In this case, the word TAPE is included in the error message.

Typing RMV TAPE on the active side while in a duplex mode with tape/disk function enabled on both sides but no tape on nonactive side could cause the polling ceased tape message to be printed.

Trouble Resolution: To correct this condition, verify that the active tape is on-line (restored). If the tape drive is down, attempt to restore the disk. Refer to Section 201-900-322 for the appropriate clearing procedure.

tt yz REPT CHL aab TBL RLR TMOUT ddddd eeeee

Explanation of Message: This message is generated when a remote location fails to respond to a request for data. In most cases, this message will be caused by a data link failure or remote office failure. However, it could also be caused by a faulty DZ11B or DSIAF circuit.

Explanation of Variable Fields:

dddddd = contents of the data set control read/write buffer register (DRRWBR). (See Table B.)

eeeeee = contents of the data set read-only buffer register (DRIROR). (See Table C.)

Trouble Description: There are several tests that should be performed by AMARC personnel before referring the trouble to the remote office. If it is suspected that only one processor has the problem, verify this by inhibiting the working modes on the affected channel. Request a monitor of that channel on both processors. If the problem is common to both processors, remote location response (RLR) printouts will appear on both I/O terminals. If it is not common to both processors, the message will appear on the I/O terminal of the side of the system that does not see the response.

A DSIAF diagnostic cannot be run to detect the cause of the problem. The signal must be traced back into the failing processor. If the signal is present at the proper connector, make a continuity check of that cable. Have computer maintenance personnel test the DZ11B.

Trouble Resolution: If both processors recognize the problem, the following items should be suspected and tested in this order: the data set at the AMARC end, the data link to the remote office, the data set at the remote office, and the remote office. For CDA channels, this message could indicate a major alarm condition at the remote terminal.

tt yz REPT DLP aab tttt ACU ccc TBL pppppp ssssss

Explanation of Message: This message is generated when a fault has occurred in the DN11 hardware. There are two faults that can generate this message:

- (a) FPWOF = 1 in progress mark 1
- (b) FDLO = 1 in progress mark 1.

Explanation of Variable Fields:

tttt = 202S or 212A data set type.

ccc = ACU number associated with dialup.

pppppp = dialup status (octal). Consists of progress mark status and channel number being dialed up.

sssss = contents of DN11 dialup hardware status buffer. If the associated ACU is out of service, this field will be blank.

Trouble Description: All other dialup (DLP) faults will result in a SW CHL DLP FAILED message. A DLP failure should be treated with a lower priority than a channel failure. If the printout suggests a problem with the DLP circuitry, clear any troubles with the channel that tried to go DLP before working with the DLP itself.

Word 1 of the error message gives the status of the DLP (dialup +0 for DLP0 or dialup +2 for DLP1). The lower byte gives the current progress mark in use by the DLP. The upper byte gives the channel number that is using the DLP. This word must be all zeroes in order for the DLP to be idle. The word must be the same on both processors. The word can be corrected with an IN MEM message on the active side of the system or an INIT SYS message on the out-of-service side of the system.

Word 2 of the error message is the contents of the DN11 status register. This word is a hardware register that has control and status bits for the DN11.

Trouble Resolution: Analyze the dialup status and the DN11 buffer contents, and refer the trouble to the proper maintenance personnel.

tt yz REPT MPX aa ERR bbbbbb ccccc

Explanation of Message: This message is generated when an error is discovered in the DZ11B multiplexer transmit function.

Explanation of Variable Fields:

bbbbbb = contents of multiplexer control status register (CSR).

cccccc = contents of transmit control register (TCR).

Trouble Description: This error is identified when the TCR is nonzero, but the CSR transmit ready flag is not set.

Trouble Resolution: If the channel is polling normally when the trouble message is printed, start a trouble history of the problem. If error messages are repeated, notify the personnel responsible for maintenance of the multiplexer hardware.

tt yz REPT MPX aa RCV OFL bbbbbb

Explanation of Message: This message is generated when the DZ11B communication multiplexer receiver reports that more than 80 characters were received in one clock interrupt.

Explanation of Variable Fields:

bbbbbb = high error address register contents.

Trouble Description: This message is generated when the DZ11B multiplexer receives more than 64 characters in one clock interrupt. A bad DZ11B or an incorrect baud rate set on the DZ11B either by hardware or wrong options could be the cause of the error message.

Trouble Resolution: A manual test of the DZ11B multiplexer may be made. Have computer maintenance personnel test the DZ11B. Note that the DSIAF diagnostics do not test this circuitry.

**tt yz RMV CHL aab FAIL TYPE ttttt

Explanation of Message: This message is generated when the working modes program automatically removes a channel.

Explanation of Variable Field:

ttttt = failure type on the primary channel which caused removal.

Trouble Description: This message will more than likely accompany the SW CHL DLP message and some other channel-related error message as indicated by the data field.

Trouble Resolution: If only one channel is involved and it successfully went to dialup, then the data link is probably faulty. If the data link checks good, check the DZ11B circuitry. If only one channel is

involved and it is unsuccessful in going to dialup, then the remote office may be at fault. If more than one channel is failing, the problem is probably with the AMARC System.

tt yz RMV DLP aab tttt

Explanation of Message: This message is generated when the dialup channel has been removed from service manually or automatically.

Explanation of Variable Field:

tttt = type of dialup unit (202S, 212A, or 201C).

Trouble Description: A manual removal is indicated by an "M" in the priority field. An automatic removal is indicated by a major alarm and "***" in the priority field. This would indicate a problem with the dialup facility or the DN11 circuitry. Check the printout for SW CHL DLP or RMV CHL FAIL TYPE messages. If the DLP was removed because a failing channel was unable to go to DLP, there is probably nothing wrong with the DLP. However, if the channel was able to go on the other DLP, there could be a problem with one DLP.

Trouble Resolution: A quick test of a DLP facility is to request a channel to go to DLP (SW CHL XXX DLP!). If it is successful, then the DLP facility can be assumed to be faulty. Otherwise, have computer maintenance personnel test the DN11.

tt yz SW CHL aab ^{DLP}BKP ^{OK}ccd tttt ABORTED TYPE fffff
 FAILED

Explanation of Message: This message is generated by a request to switch a channel to dialup. This request may be either manual or automatic. This message indicates that the AMARC software suspected a problem with the data link, so it attempted to switch or succeeded in switching the channel to dialup (DLP).

Explanation of Variable Fields:

ccd = dialup channel number, if OK.

tttt = type of data set (202S or 212A).

fffff = indicates the type of failure which caused the switch to dialup.

Trouble Description: If the switch was successful, the data link was probably faulty. Attempt to restore the channel to its dedicated data link. If it is restored successfully, watch for future failures on this channel. Report the problem to personnel responsible for maintaining the data links. The type of problem with the data link is indicated in the data field of the error message.

Trouble Resolution: An aborted or failed response usually indicates that the problem is with other than the data link. If only one channel is failing, the problem may be at the remote end. If this is the case, notify this office immediately of the problem.

If any other failure type is indicated, perform a manual data set test. Have computer maintenance personnel test the DZ11B or DR11C if it is determined to be faulty.

One other condition that can cause a FAIL or ABORT response is a faulty dialup facility. This can easily be checked by requesting a switch of a good channel to DLP. If this channel goes successfully to

both dialups, the AMARC equipment is working. If it fails, a manual dialup test should be performed. Have computer maintenance personnel test the DN11 circuitry if it is determined to be faulty.

4. PTP RELATED TROUBLES

***tt yz PTP TEST FAILED aaaa bbbbbb ccccc**

Explanation of Message: This message is printed in response to the TEST PTP input message if a problem occurred while running the test.

Explanation of Variable Fields:

aaaa = SLOW or FAST (indicates the test phase that was running when the problem occurred).

bbbbbb = error code indicating the status of the test phase when the error occurred.

ccccc = number of test runs not completed (octal).

Trouble Description: This message may print on either or both sides of the system. The PTP will not be removed when this message occurs.

Trouble Resolution: Use the printouts of the two processors to determine the corrective action. Field b set (equal to 1) bits indicate the action to be taken as indicated in Table D.

***tt yz REPT PTP ABORT**

Explanation of Message: This message is generated when the PTP channel is removed due to three or more successive errors.

Trouble Description: Status of the PTP may be checked by the REPT SYS! input message. A 1 in bit 4 of the c field of the REPT SYS STA output message indicates that the PTP was removed.

Trouble Resolution: Analyze any other PTP error messages that may have been printed. If the other system is running, try to restore the PTP and rerun the PTP test. Perform actions according to the resultant output messages.

tt yz REPT PTP ERR aaaa bbbbbb ccccc dddddd eeeee fffff gggggg

Explanation of Message: This message is generated when an error has occurred on the PTP channel.

Explanation of Variable Fields:

aaaa = indicates the type of error that has occurred. Refer to the IM/OM for complete details.

bbbbbb, ccccc = contents of the DMC11 hardware register se/0 and se/2.

dddddd, eeeee, fffff, gggggg = contents of DMC11 hardware register r2 through r5, respectively.

Trouble Resolution: Refer to the IM/OM for solution of the trouble indicated by the a field.

****tt yz REPT TOBC TBL aaa bbbbbb ccc dddddd**

Explanation of Message: This message is generated when a problem occurs during tape output buffer comparison (TOBC).

Explanation of Variable Fields:

aaa = code indicating cause of trouble.

bbbbbb = TOBC status word.

ccc = TOBC inhibit indication.

dddddd = count of words last transmitted on PTP by TOBC (octal).

Trouble Description: Typing **RMV TAPE!** on active processor while in a duplex mode with tape/disk function enabled on both sides, but no tape on nonactive side, could cause this message to be printed. Refer to Section 201-900-321 for a method of recovery from this condition.

Trouble Resolution: Input a **REPT SYS!** message to see if the TOBC is turned off. A set bit 7 of the first data word indicates that TOBC is off. Type **RMV SYS!** and then **RST SYS!** to turn TOBC back on. If many errors occur without TOBC being turned off, remove the standby system and request an initialization by typing **INIT SYS!** and **RST SYS!**.

5. SOFTWARE TROUBLES

m tt yz DUMP SYS

m tt yz TYPE nnnnnn etc
m tt yz PC nnnnnn etc
m tt yz PS nnnnnn etc
m tt yz R0 nnnnnn etc
m tt yz R1 nnnnnn etc
m tt yz R2 nnnnnn etc
m tt yz R3 nnnnnn etc
m tt yz R4 nnnnnn etc
m tt yz R5 nnnnnn etc
m tt yz KSP nnnnnn etc
m tt yz KST1 nnnnnn etc
m tt yz KST2 nnnnnn etc
m tt yz KST3 nnnnnn etc
m tt yz KST4 nnnnnn etc
m tt yz USER nnnnnn etc
m tt yz USP nnnnnn etc
m tt yz UST1 nnnnnn etc
m tt yz UST2 nnnnnn etc
m tt yz UST3 nnnnnn etc
m tt yz UST4 nnnnnn etc
m tt yz DATE nnnnnn etc
m tt yz TIME nnnnnn etc

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m tt yz LVSC nnnnnn etc
**tt yz INIT SYS x YYYYYY aaaaaa bbbbbb cccccc
**tt yz dddddd eeeeee ffffff gggggg hhhhhh iiiiii jjjjjj kkkkkk llllll
**tt yz mmmmmm nnnnnn oooooo pppppp qqqqqq rrrrrr ssssss tttttt uuuuuu

```

Explanation of Message: The INIT SYS message is generated when a system is initialized. When an INIT SYS message appears, a DUMP SYS should be requested since this message is easier to analyze. The DUMP SYS output message and the INIT SYS response contain the same information. The difference between the two messages is that the INIT SYS message provides the current initialization whereas the DUMP SYS provides the five most recent initializations.

Explanation of Variable Fields:

INIT SYS

YYYYYY = ACTIVE or OOS.

aaaaaa = level of initialization.

Fields bbbbbb through uuuuuu indicate TYPE through UST4 fields contained in the DUMP SYS message.

DUMP SYS

nnnnnn = various register values from the last five system initializations.

Trouble Description: The causes of initialization are:

- As a result of INIT SYS! input message
- A hardware problem
- A software problem.

Investigate all initializations except manual requests. Attempt to determine if the initialization was caused by hardware or software. If the initialization was caused by hardware, the appropriate maintenance procedures should be taken to repair the faulty hardware. If the initialization was caused by a software problem, a trouble report should be written and forwarded to the proper organization.

Trouble Resolution: Analyze the DUMP SYS output message to determine the cause of initialization (TYPE, PC, and PS registers). Type TEST DET 3! to verify that program memory is correct.

One way to determine if the problem is caused by hardware is to search the message for a hardware address. If any peripheral address appears, have that peripheral unit tested.

Another method to identify a problem caused by hardware is to look up the routine that was being performed at the time of the initialization. If the routine was using a peripheral device, have that device tested.

The type code may also serve as an indication of the trouble. If the type code indicates a 5, check the power supplies. A type code of 7 indicates a manual INIT SYS input message. Any other type code indicates that the problem is probably caused by the software.

tt yz REPT ALARM MONITOR UNKNOWN PROGRESS MARK

tt yz REPT AMA MONITOR UNKNOWN PROGRESS MARK

Explanation of Message: This message reports that an invalid progress mark has been encountered by the alarm or AMA monitor.

Trouble Description: This message indicates a software problem.

Trouble Resolution: Type **TEST DET 3!** to check the software. If the test fails, take appropriate action as indicated by the REPT DET XXX FAIL output message. If the detection test passes, contact Western Electric (WE) regional Product Engineering Control Center (PECC) for further information.

tt yz REPT AMA MONITOR CAN NOT CLEAR ALARM

tt yz REPT AMA MONITOR CAN NOT SET ALARM

Explanation of Messages: One of these messages is printed whenever the alarm control subroutine cannot successfully clear or set an alarm.

Trouble Description: These messages indicate a software problem in either the AMA monitor or alarm monitor programs.

Trouble Resolution: Type **TEST DET 3!**. If the test fails, take appropriate action as indicated by the REPT DET XXX FAIL output message. If the detection test passes, contact WE regional PECC for further information.

tt yz REPT CHL aab TBL CRR ACSS ERR cc dd eee fff

Explanation of Message: This message is printed whenever the call record register (CRR) routine returns an error value indicating that it cannot make accessible to the CDT call processing programs the CRR memory associated with the trunk being processed.

Explanation of Variable Fields:

cc = trunk link frame number.

dd = trunk number.

eee = identity of type of swappable memory page being accessed.

fff = error return value from CRR access routine.

Trouble Description: This message indicates trouble with either the input data to the CRR access routine, NPD, or program software.

Trouble Resolution: Verify the input data to the CRR access routine (trunk link frame and trunk numbers). Verify the NPD through the **DUMP MEM NPD TLF!** and **DUMP MEM NPD ESP!** input messages. If the input data and NPD appear to be valid, refer the problem to WE regional PECC for further information.

tt yz REPT CHL aab TBL INCOMP LINK TO SRC cc dd ee ff gg

Explanation of Message: This message indicates that an incomplete link from the primary channel buffer to the source data stream buffer has been detected.

Explanation of Variable Fields:

cc = common transient memory index (always zero).

dd = data source index.

ee = primary channel buffer flag.

ff = local channel number of primary channel.

gg = source data stream buffer flag.

Trouble Description: This message is indicated by a set flag in either the channel buffer or source buffer, but not both.

Trouble Resolution: If this message occurs frequently, it may represent an AMARC program execution error. Notify WE regional PECC for analysis of the message contents and evaluation of this condition.

tt yz REPT CHL aab TBL INV LSTCMD cccccc ddd eee

Explanation of Message: This message indicates a report channel trouble of an invalid last-sent command.

Explanation of Variable Fields:

ccccc = address of storage location of last command sent to the sensor.

ddd = data byte stored at cccccc + 2.

eee = data byte stored at cccccc + 3.

Trouble Description: The address of the last command which was sent to the sensor is stored in the command table (cmdtab) entry associated with the channel being served. When a new message is received from the sensor, a check is made to verify that the received message is a valid response to the last-sent command.

This trouble report indicates that while attempting to make the responsive message check, the CDT call processing detected an invalid address for the storage location of the last-sent command or an invalid message type for the last-sent command.

Trouble Resolution: This trouble represents a program execution error and should be referred to WE regional PECC for analysis of the output message and evaluation of the trouble condition.

tt yz REPT DET xxx FAIL (1) (2) (3) (4)

Explanation of Message: This message is generated when one of the detection tests fails. A failure of a detection test indicates a problem with the memory.

Explanation of Variable Fields:

xxx = specific detection test that failed.

(1) (2) (3) (4) = vary depending upon the type of failure.

Trouble Description: Upon detecting a failure, the AMARC system attempts to put the processor out of service. When a failure occurs on the standby, it is taken out of service. If it is active, the system will switch first if the other processor is standby. If the other processor is already OOS, the active may initialize, but will remain active.

Trouble Resolution: The detection tests and their meanings are:

BIT—Bit-to-bit short circuit test. This test checks for a short circuit between bits of an address. If this test fails, word 1 will give an absolute address within the failing module. Contact computer maintenance personnel immediately upon the appearance of this failure.

DVS—Device selector memory test. This test detects a faulty device selector which results in two or more modules being selected simultaneously. If this test fails, contact computer maintenance personnel. Word 1 of the failure message provides an absolute address within the failing module.

LIN—Line memory test. This test checks the X and Y control lines of core memory. These lines determine which bit in core memory is to be selected. If this test fails, contact computer maintenance personnel. Word 1 of the failure message provides an absolute address within the failing module.

MAR—Memory address register test. This test checks for faults in the memory address register for each 8K module. If this test fails, contact computer maintenance personnel. Word 1 of the failure message provides an absolute address within the failing module.

NPD—(Nongeneric data CRC test) and **PRG** (program CRC test). These tests provide a cyclic redundancy check (CRC) of their respective areas. A CRC sum is computed on each 128-word (not byte) block of memory and stored in memory. If a **TEST DET 6!** input message is typed, the CRC sums for the NPD area are recomputed, and the new sums replace the CRC sums presently stored for the NPD area. The detection program routinely computes CRC for these areas and compares the sum against the stored sum. If these sums do not agree, the failure message is printed. This failure could be caused by a hardware problem in the core or a program error that causes areas of generic to be overwritten. A closer check should be made on these areas. Suggested procedures are rather time consuming, and a determination must be made as to whether or not they should be performed. One factor that would prevent performing these checks is if the failure is affecting billing, ie, the failures are occurring on the active system while the other system is out of service. In this case, refer to emergency procedures and restore an error-free generic in one processor. This may clear the failure.

CLK—Crystal clock rate test. This test checks the operation of the two clocks (KW11L and KW11P). The checks that this test make are as follows:

- (1) Verifies that the line clock in the standby processor is running
- (2) Checks the pulse rate of both crystal clocks using the standby clock as a reference
- (3) Loading of the up/down counter
- (4) Zeroing of the crystal clock counter.

This test will fail if there is a problem in either of the two clocks or there is a PTP-related problem. Perform these steps to correct this problem:

- (1) At the standby and then the active processor, type: **RST PTP!**
- (2) At the standby I/O terminal, type: **TEST DET 7!**

If the system response is REPT DET CLK PASSED, no further action is required. If a clock detection test failure of the same type occurs again, notify personnel responsible for computer maintenance.

tt yz REPT MEM ACCS ERR aaaa bbbbbb ccccc dddddd eeeee fffff gggggg

Explanation of Message: This message reports the occurrence of a memory access error for a user when using the software memory management system.

Explanation of Variable Fields:

- aaaa** = FREE, GET, SAVE, or RST (the type of access which returned the error).
- bbbbbb** = returned error code.
- ccccc** = address of program experiencing the error.
- dddddd** = ID of current process.
- eeeeee** = memory management control flag.
- fffff** = pointer to current process table.
- gggggg** = processor virtual space indicator.

Trouble Description: Depending upon which program is experiencing the error and the frequency of occurrences, actions ranging from no action to automatic system reconfiguration may occur.

Trouble Resolution: Notify WE regional PECC upon occurrence of this message.

****tt yz REPT MEM ERR aaaaaa bbbbbb ccccc dddddd eeeee fffff**

****tt yz REPT PAR ERR aaaaaa bbbbbb ccccc dddddd eeeee fffff**

Explanation of Message: This message occurs when a memory parity error or error check code occurs.

Explanation of Variable Fields:

- aaaaaa** = contents of low error address register.
- bbbbbb** = contents of high error address register.
- ccccc** = contents of memory system error register.
- dddddd** = contents of control register.

eeeeee = contents of maintenance register.

fffff = contents of hit/miss register.

Trouble Resolution: Analyze message parameters and consult with computer maintenance personnel.

tt yz REPT SYS CTL MONITOR UNKNOWN PROGRESS MARK

Explanation of Message: This message reports a system control monitor program problem. During the execution of a system configuration control operation, the monitor control program encountered an unknown progress mark. The operation in progress probably stopped.

Trouble Resolution: Type **TEST DET 3!** to analyze this problem. If the detection test fails, reload the generic program. If the problem continues to occur, refer it to WE regional PECC for solution.

tt yz UPD MEM aaa FAILED bbbbbb cccccc

Explanation of Message: This message indicates that the updating of the named memory has failed.

Explanation of Variable Fields:

aaa = NPD, PRG, or TRN (type of memory).

bbbbbb = sub-ID of update.

ccccc = next absolute address to update.

Trouble Description: The three memory types are generic memory, nongeneric parameter data, and transient memory. The transient memory can be requested automatically or manually; the others can only be requested manually.

Trouble Resolution: Check for a PTP ABORT message indicating that the PTP is removed from service. For the other conditions, the PTP must be restored. If there is some doubt about the status of the PTP, type **REPT SYS!**. A set bit 4 of the first data word (a field) of the REPT SYS STA output message indicates that the PTP is out of service. If the last word of the UPD MEM FAILED message (c field) equals 177777, this is an indication that the PTP was out of service at the time of the request.

Restore the PTP if needed and retry the request. Note that if **RST PTP!** is typed, a transient memory update occurs. If the PTP needs to be in service, verify its status on both processors. If after several retries the update still fails, restore the memory via tape rather than the PTP. Also, check the PTP channel.

6. SYSTEM TROUBLES

tt yz REPT ALARM PANEL CLEAR FLAG FAILED TO SET

Explanation of Message: This message is printed when the alarm clear flag fails to set in response to an ALMCLR from the processor.

Trouble Description: This trouble may be caused by a failure of the ODR11C general interface or the alarm control circuit.

Trouble Resolution: Inform computer maintenance personnel and have them run the alarm and control unit diagnostics.

tt yz REPT ALARM PANEL ERROR—aaa bbbb cccc

Explanation of Message: This message is printed when the alarms expected by the processor are not all set in the input register from the alarm panel.

Explanation of Variable Fields:

aaa = PLCK (error detected after a panel update) or LLCHG (error detected after a change relative to the last look memory).

bbbb = alarms expected by alarm monitor.

cccc = alarms reported by input register from alarm panel.

Trouble Description: This message indicates that an error has occurred in the ODR11C general interface or the alarm control circuit.

Trouble Resolution: Inform computer maintenance and have them run the alarm and control unit diagnostics.

tt yz REPT AMA DATA STATUS ON xxxx ERROR

Explanation of Message: This message is printed whenever a mismatch between the AMA expected data and the status and alarm panel occurs.

Explanation of Variable Fields:

xxxx = DISK (error concerns AMA data on disk), TAPE (error concerns AMA data on tape), or DISK AND TAPE (error concerns AMA data on both disk and tape).

Trouble Resolution: Inform computer maintenance personnel and have them run the alarm and control unit diagnostics.

****tt yz REPT SYS ERR STA aaaaaa bbbbbb ccccc dddddd eeeee**

Explanation of Message: This message is printed whenever a status verification error occurs caused by either hardware or memory failures. The program goes through self-recovery and proceeds.

Explanation of Variable Fields:

aaaaaa = contents of the system status in memory (location PSSTAT).

bbbbbb = contents of the system status last look word in memory.

ccccc = contents of the data set control read-only buffer register.

dddddd = contents of the read/write buffer register.

eeeeee = contents of the last look data for the read-only buffer register and the read/write buffer register.

Trouble Description: The types of errors are:

- (a) **Both processors active—indicated by bits 3 and 4 of word 3 being set:** This error indicates that both processors are controlling the data sets. The software will attempt to determine which processor is in error and remove it. If the software is unable to remove a processor, manual action must be taken to make only one processor active.
- (b) **Both processors standby—indicated by bits 3 and 4 of word 3 being reset:** This indicates that neither processor is controlling the data sets. The software will attempt to recover from this condition and remove the faulty processor. Perform the DSIAF diagnostic (Section 201-900-326) on the processor that is removed from service. If this fails to identify the problem, perform the DSIAF diagnostic on the other processor. If the software is unable to recover, attempt to restore one processor to an active state.
- (c) **One of the processors is turning data set power off on the other processor:** This action occurs when working modes initiate a system switch. This is identified by a system switch message with a cause type of 5 and bit 6 of word 3 set. On the now active processor, a system switch message with a cause type of 4 occurs. The system error message in this case should be ignored and the reason for the working modes requesting the switch should be investigated.
- (d) **DSIAF registers and data set status (DSSTAT) not in agreement:** This is indicated by several conditions such as the DSSTAT word indicating the processor is active but bit 10 of word 4 is reset or vice versa. Little can be done if the DSSTAT word is in error except to keep a trouble history. If the DSIAF input read-only register (IROR) is in error, the DSIAF diagnostic should be performed to determine if the DSIAF caused the error. If the read-write buffer register (RWBR) is in error, contact computer maintenance personnel.
- (e) **System active bit data set power turned off:** This is indicated by bit 10 of word 4 being set and bit 3 of word 3 being reset. This could be caused by faulty DSIAF circuitry. Attempt to run the DSIAF diagnostic on the out-of-service processor.
- (f) **System placed offline but data set power not turned off by other processor:** This is indicated by bit 15 in the DSSTAT word being set but bit 6 of word 3 being reset. This could be a problem in either processor. Run the DSIAF diagnostic on both processors. Word 1 of this message should be analyzed by someone familiar with program PCCK.

Trouble Resolution: Ignore any system error message caused by (a) inserting the JW181 isolation card into the DSIAF or (b) a system switch due to working modes. Investigate the cause of the working mode action.

In most cases, this message indicates a transient problem in some portion of the hardware. Test the DSIAF hardware indicated by the error message as soon as the error occurs. Arrange the DSIAF diagnostic test to loop in an effort to cause the hardware to fail. If it is a transient problem, start a trouble history for that piece of hardware. Allow the system to run until a more solid failure or a definite pattern of failures occurs.

**tt yz REPT SYS TBL PRI ERR pppppp aaaaaa

Explanation of Message: This message is printed when the system priority level sanity check fails.

Explanation of Variable Fields:

pppppp = contents of processor status (PS) register (octal).

aaaaaa = starting address of last program executed (octal).

Trouble Description: This trouble indicates that the software has somehow changed the system status from the base level. This sanity check is made each time a base level program ends.

Trouble Resolution: Analyze the message parameters to correct the trouble. Contact WE regional PECC for assistance.

tt yz REPT TOBC ERR a bbbbbb ccccc ddddd etc

Explanation of Message: This message is printed on the standby processor when a formatted call sent across the PTP channel from the active to the standby processor in the comparison output buffer (COB) does not match the corresponding call in the standby processor for some reason.

Explanation of Variable Fields:

a = code indicating type of mismatch.

bbbbbb = octal virtual address of the expanded call in the COB (active version).

cccccc = octal virtual address of the expanded call in the TTOB (standby version).

dddddd = octal virtual address of the address of the standby TOR record.

Trouble Resolution: Mismatch code 1 and 2 (a field) may indicate inconsistencies in the NPD stored in each processor. Type **TEST DET 6!** to test the NPD. Use the DUMP MEM NPD input message to check for differences. Update the incorrect NPD from tables supplied by the data base administrator.

Mismatch codes 3, 4, 5, and 6 may be caused by differences of the processor clocks. Type **OP CLK!** to examine the current clock values and correct, if necessary, with the SET CLK TIME or the UPD CLK input messages.

Mismatch code 7 also indicates a difference in the processor clock. Use the SET CLOCK DATE input message to correct the calendar.

Mismatch codes 8 and 9 or any codes for which the cause cannot be determined should be referred to WE regional PECC as a software problem.

tt yz RMV SYS a OOS bbbbbb ERROR—INPUT ccccc OUTPUT ddddd

Explanation of Message: This message indicates that a remove system operation has been interrupted by a hardware problem. Since the removal stopped before all operations were completed, the hardware may not have changed state.

Explanation of Variable Fields:

a = processor number.

bbbbbb = cause of system change.

cccccc = hardware input status.

dddddd = hardware output status.

Trouble Resolution: Analyze this and any other output messages to determine why the system removal error occurred. The affected hardware should be tested or the hardware diagnostic program may be run to help identify the problem. The input message **RMV SYS UCL!** may be required to take the processor out of service.

M tt yz RST SYS REJECT NO RESPONSE
M tt yz RST SYS REJECT TAPE OOS

Explanation of Message: This message is printed when the request to restore the OOS processor to standby cannot be satisfied. This message is printed on both terminals.

Trouble Description: The NO RESPONSE message indicates that a transient memory update has not completed within a specified time or that there has been no response across the PTP that the OOS system has been updated to standby.

The TAPE OOS message indicates that the tape controller on the OOS side is not restored. Thus, the OOS side cannot be restored to standby.

Trouble Resolution: For the NO RESPONSE message, verify that the PTP channel is operating properly by restoring the PTP on the OOS side and then the active side. This initiates a transient update from the active side. Then restore the OOS side to standby. If this cannot be accomplished, refer to Section 201-900-324. For the TAPE OOS message, restore the tape on the OOS side. This will automatically request a system restored to standby.

M tt yz RST SYS STOPPED INPUT aaaaaa OUTPUT bbbbbb

Explanation of Message: This message is printed whenever a manual request to restore a processor from OOS to standby is stopped because of a hardware or software problem or by a higher priority system action.

Explanation of Variable Fields:

aaaaaa = hardware input status.

bbbbbb = hardware output status.

Trouble Resolution: Analyze this and any other output messages to determine why the system restoral was stopped. The affected hardware should be tested, or the hardware diagnostic program may be run to help identify the problem.

tt yz SW SYS FAILED—TYPE aaaaaa INPUT bbbbbb OUTPUT ccccc

Explanation of Message: This message is printed whenever an attempt to switch processors failed because of a hardware problem. Since the switch was stopped before completion, the hardware probably did not change state.

Explanation of Variable Fields:

aaaaaa = cause of system change.

bbbbbb = hardware input status.

cccccc = hardware output status.

Trouble Resolution: Analyze this and any other output messages to determine why the system switch was stopped. The affected hardware should be tested or the hardware diagnostic program may be run to help identify the problem.

tt yz SW SYS REJECT aaaaaa bbbbbb

Explanation of Message: This message is generated when a normal system switch is rejected. The normal requests are generated by the **SW SYS!** or **RMV TAPE!** input messages.

Explanation of Variable Fields:

aaaaaa = normal system switch progress mark (NRSWPM).

bbbbbb = normal system switch buffer (NORSWB).

Trouble Resolution: Investigate the data fields to determine the reason for failure and take appropriate action. If it is determined that the reasons are invalid and data processing might become affected, force a system switch. The hardware involved that may cause this message is:

- PTP (Progress Mark 1 or 2)
 - Tape Controller (Progress Mark 3)
 - DSIAF (Progress Mark 4).
-

tt yz SW SYS REJECT NO RESPONSE

Explanation of Message: This message is generated when a normal system switch is requested but is unable to be performed because the standby processor did not respond to the active processor's question as to whether it can become active. This could be an indication of PTP trouble if the standby processor is running normally.

Trouble Resolution: Investigate any PTP-related messages and act accordingly. If an emergency situation exists, force a system switch by using the **SW SYS UCL!** message.

tt yz SW SYS REJECT STANDBY OOS

Explanation of Message: This message is generated when a normal system switch is requested and is unable to be performed because the standby processor is out of service.

Trouble Resolution: Attempt to restore the out-of-service processor (RST SYS input message) to standby and repeat the request. If an emergency condition exists, force the system configuration (SW SYS UCL! input message).

tt yz SW SYS STOPPED INPUT aaaaaa OUTPUT bbbbbb

Explanation of Message: This message is printed whenever an attempt to change a duplex system's processor status is stopped because of a hardware or software problem or by a higher priority system action. Since the switch was stopped in progress, the hardware may not have changed state.

Explanation of Variable Fields:

aaaaaa = hardware input status

bbbbbb = hardware output status.

Trouble Resolution: Analyze this and any other output messages to determine why the system switch was stopped. The affected hardware should be tested, or the hardware diagnostic program may be run to help identify the problem.

tt yz WARNING: AMA DATA STATUS MAY BE IN ERROR

Explanation of Message: This message is printed whenever the AMA data status does not agree with that shown on the status and alarm panel.

Trouble Description: This message indicates that a hardware or software problem exists. The problem is usually in the hardware.

This message is precautionary to ensure that any billing data on the tape or disk is not destroyed. After the problem is cleared, the disk and tape should be checked for possible billing data.

Trouble Resolution: Notify the personnel responsible for computer maintenance and have the alarm and control unit diagnostics run.

7. TAPE AND/OR DISK TROUBLES

tt yz REPT BILLING DATA RECOVERY FROM DISK I/O ERROR aaaaaa bbbbbb

Explanation of Message: This message indicates that an I/O error has been encountered while performing the recovery of the primary copy billing data from disk to tape. As a result of the error, the tape/disk functions are disabled and the recovery has been terminated.

Explanation of Variable Fields:

aaaaaa = recovery function I/O error code.

bbbbbb = disk file manager error code.

Trouble Resolution: Interrupt all of the disk error messages. If a hardware error is indicated, type **RMV TAPE!** and call computer maintenance personnel. If there is no apparent error, type **RST DISK!** and then **RECVR PC!** The recovery should continue from where it stopped at the time of the error.

tt yz REPT DISK CHK a...a bbbbbb cccccc

Explanation of Message: This message is printed while the disk check function is running.

Explanation of Variable Fields:

a...a = various words to indicate that the check is in progress, had an error, or is completed.

bbbbbb, cccccc = common routine error codes.

Trouble Description: A check of the full RP06 disk pack takes approximately 6-1/2 hours. The input message **STOP DISK CHK ALL!** may be used to stop a disk check.

Trouble Resolution: Analyze the output message. Hardware errors should be referred to computer maintenance personnel. Software errors should be referred to WE regional PECC. Bad block troubles indicate that the check should be rerun.

***tt yz REPT DISK ERR a...a bbbbbb**

Explanation of Message: This message is printed whenever various disk and file manager errors occur.

Explanation of Variable Fields:

a...a = indicates type of error.

bbbbbb = provides additional information pertaining to the type of error.

Trouble Resolution: Analyze this and any other output messages to determine the cause. If error conditions persist, notify WE regional PECC.

tt yz REPT TAPDSK CNTL BLK ERR aaaaaa bbbbbb

tt yz REPT TAPDSK FILE SYSTEM NOT USABLE aaaaaa bbbbbb

Explanation of Message: The first message indicates that an error in reading or writing the disk control block (CNTL BLK) has occurred. Since this is critical to the disk function, the disk will probably become disabled and the second message will be printed.

Explanation of Variable Fields:

aaaaaa = tape/disk function error code.

bbbbbb = file manager error code.

Trouble Description: The control block contains the read and write pointers plus special flags for the management of the tape/disk functions.

Trouble Resolution: Attempt to enable the disk by typing **RMV DISK!** and then **RST DISK!** If the tape/disk functions become disabled again, analyze the output error messages. If a hardware error is suspected, notify computer maintenance personnel or notify WE regional PECC if the software appears to be at fault.

****tt yz REPT TAPE ERR ttttt ssssss mmmmmm rrrrr ccccc lllll ppppp**

Explanation of Message: This message is printed whenever an error occurs while the tape controller is writing on magnetic tape. It indicates a problem with the tape controller or a completely bad magnetic tape.

Explanation of Variable Fields:

ttttt = indicates status of the tape controller while in the nongeneric parameter mode of operation (TSTATUS +2). (See Table E.)

sssss = indicates status of the tape controller while in the AMA recording mode (TSTATUS). (See Table F.)

mmmmm = contents of the magnetic tape status register. (See Table G.)

rrrrr = contents of the magnetic tape control register. (See Table H.)

cccc = current progress mark.

llll = last progress mark.

pppp = next to last progress mark.

Trouble Resolution: Analyze message parameters and take the necessary actions. Refer to the IM/OM for complete explanation of the message.

tt yz REPT TAPE NOT RESPONDING TO BILLING DATA RECOVERY

Explanation of Message: This message indicates that the tape is not responding to the write requests during recovery of the primary copy billing data from disk to tape.

Trouble Description: This error message may mean that the tape is not restored or that the tape has experienced some errors. For an automatic recovery, the disk is still used for backup until the recovery is complete.

Trouble Resolution: Verify that the tape is restored. Analyze any other tape error messages. Notify WE regional PECC if the trouble cannot be corrected.

****tt yz REPT TAPE OOS ttttt ssssss mmmmmm rrrrr ccccc lllll ppppp**

Explanation of Message: This message is generated when the tape is at load point or file protection following an initialization of the tape controller by either an INIT TAPE input message or as a part of

a system initialization. The message may be ignored unless it occurred as a result of an automatic system initialization. In this case, the INIT SYS message should be investigated.

Explanation of Variable Fields:

tttttt = indicates status of the tape controller while in the nongeneric parameter mode of operation (TSTATUS +2). (See Table E.)

ssssss = indicates status of the tape controller while in the AMA mode (TSTATUS). (See Table F.)

mmmmmm = contents of the magnetic tape status register. (See Table G.)

rrrrrr = contents of the magnetic tape control register. (See Table H.)

cccccc = current progress mark.

llllll = last progress mark.

pppppp = next to last progress mark.

Trouble Resolution: Type **RST TAPE AMA!** to put the tape controller in service. Analyze any output messages and take appropriate action.

tt yz REPT TAPE TBL ab CR=ccccc SR=dddddd

Explanation of Message: This message is generated when a tape controller error is detected while writing or reading data.

Explanation of Variable Fields:

ab = indicates the error condition.

ccccc = contents of the magnetic tape control register. (See Table H.)

dddddd = contents of the magnetic tape status register. (See Table G.)

Trouble Description: This is a tape error message generated by the tape driver program used in Generic 3 for writing and verifying labels on the AMA tape. The tape controller is checked three times on each command:

- (a) Prior to using the controller
- (b) After the command is executed
- (c) At tape interrupt when the command completes.

Trouble Resolution: Analyze the output message and take appropriate action. Refer to the IM/OM for complete information.

tt yz RMV TAPE AMA tttttt ssssss mmmmmm rrrrrr cccccc llllll pppppp

Explanation of Message: This message indicates that the system has removed the tape controller from service. Removal may have been manual or automatic.

Explanation of Variable Fields:

ttttt = indicates status of the tape controller while in the nongeneric parameter mode of operation (TSTATUS +2). (See Table E.)

sssss = indicates status of the tape controller while in the AMA mode (TSTATUS). (See Table F.)

mmmmm = contents of the magnetic tape status register. (See Table G.)

rrrrr = contents of the magnetic tape control register. (See Table H.)

ccccc = current progress mark.

lllll = last progress mark.

ppppp = next to last progress mark.

Trouble Description: Automatic removal of the tape controller may have occurred because of a malfunction in the hardware or because the magnetic tape was full of data. This message gives a major alarm when occurring on the active side.

Trouble Resolution: Remove the tape and mount another one per Section 201-900-321. If a hardware fault caused the removal, take appropriate action. If the transfer label was not written on removal (indicated by bit 10 of field ssssss), or on the restoral (see the RST TAPE output message generated when the tape was mounted), or if there was an ID burst error, notify accounting to that effect.

TABLE A
NO. 1A AMARC TROUBLE MESSAGES

TYPE TROUBLE	TROUBLE MESSAGE	REFER TO PAGE
MULTIPLEXER AND DATA LINK TROUBLES	REPT CHL TBL CRC	2
	REPT CHL TBL CTS ERROR	3
	REPT CHL TBL POLLING CEASED	4
	REPT CHL TBL RLR TMOUT	4
	REPT DLP ACU TBL	5
	REPT MPX ERR	6
	REPT MPX RCV OFL	6
	RMV CHL FAIL TYPE	6
	RMV DLP	7
	SW CHL DLP TYPE	7
PTP RELATED TROUBLES	PTP TEST FAILED	8
	REPT PTP ABORT	8
	REPT PTP ERR	8
	REPT TOBC TBL	9
SOFTWARE TROUBLES	DUMP SYS	9
	INIT SYS	10
	REPT ALARM MONITOR UNKNOWN PROGRESS MARK	11
	REPT AMA MONITOR CAN NOT CLEAR ALARM	11
	REPT AMA MONITOR CAN NOT SET ALARM	11
	REPT AMA MONITOR UNKNOWN PROGRESS MARK	11
	REPT CHL TBL CRR ACSS ERR	11
	REPT CHL TBL INCMP LINK TO SRC	12
	REPT CHL TBL INV LSTCMD	12
	REPT DET FAIL	12
	REPT MEM ACCS ERR	14
	REPT MEM ERR	14
	REPT PAR ERR	14
	REPT SYS CTL MONITOR UNKNOWN PROGRESS MARK	14
UPD MEM FAILED	15	

TABLE A (Contd)

NO. 1A AMARC TROUBLE MESSAGES

TYPE TROUBLE	TROUBLE MESSAGE	REFER TO PAGE
SYSTEM TROUBLES	REPT ALARM PANEL CLEAR FLAG FAILED TO SET	15
	REPT ALARM PANEL ERROR	16
	REPT AMA DATA STATUS ON ERROR	16
	REPT SYS ERR STA	16
	REPT SYS TBL PRI ERR	17
	REPT TOBC ERR	18
	RMV SYS OOS ERROR	18
	RST SYS REJECT NO RESPONSE	19
	RST SYS REJECT TAPE OOS	19
	RST SYS STOPPED	19
	SW SYS FAILED	19
	SW SYS REJECT	20
	SW SYS REJECT NO RESPONSE	20
	SW SYS REJECT STANDBY OOS	20
	TAPE AND/OR DISK TROUBLES	REPT BILLING DATA RECOVERY FROM DISK I/O EROR
REPT DISK CHK		22
REPT DISK ERR		22
REPT TAPDSK CNTL BLK ERR		22
REPT TAPDSK FILE SYSTEM NOT USABLE		22
REPT TAPE ERR		23
REPT TAPE NOT RESPONDING TO BILLING DATA RECOVERY		23
REPT TAPE OOS		23
REPT TAPE TBL		24
RMV TAPE AMA		25

TABLE B

**DATA SET CONTROL READ/WRITE
BUFFER REGISTER (DRRWBR) BIT DEFINITIONS**

BIT	MEANING
0 — 4	Data set address.
5	If reset, data set in receive mode. If set, data set in transmit mode.
6	Data terminal ready enable bit.
7	Not used.
8	If reset, data set controller memory cleared. If set, data set controller normal.
9	Request to send enable.
10	Processor active indicator.
11	Power disconnect override bit.
12	Power disconnect bit.
13	Indicates major alarm if set.
14	Indicates minor alarm if set.
15	Remove both tapes indicator.

TABLE C

**DATA SET CONTROL
READ-ONLY REGISTER (DRIROR) BIT DEFINITIONS**

BIT	MEANING
0	Indicates odd (if reset) or even parity in bits 0 — 7 of DRRWBR.
1	Request to send image or data terminal ready image from this system.
2	Request to send image or data terminal ready image from other system.
3	Processor does not (reset) or does (set) have control of data sets.
4	Indicates other processor has control of data sets if set.
5 & 6	Power disconnect bit (same as bit 12 of DRRWBR).
7	Indicates that data set is ready to receive (if reset) or send (if set) lines 0 through 15.
8	Indicates that data set is ready to receive (if reset) or transmit (if set) lines 16 through 31.
9	Indicates that carrier signal exists for lines 0 through 15 if set.
10	Indicates that carrier signal exists for lines 16 through 31 if set.
11 — 14	Not used.
15	System number.

TABLE D

PTP TEST FAILED CORRECTIVE ACTION

FIELD b BIT	MEANING
0	Write to the PTP not allowed. Remove and restore the PTP and retry the test. If this failure reoccurs, notify WE regional PECC.
1	A second PTP write was allowed before the first write was completed. Run the test from the other processor and remove the PTP if the test fails. Notify WE regional PECC that this failure occurred.
3	The user performing the PTP write has timed out. Use bits 9, 10, and 11 to analyze the failure.
4	Something caused a transmission failure after the write was accepted. Use bits 9, 10, and 11 to analyze the failure.
5	The data was given to the driver program and no acknowledgment was received. Use bits 9, 10, and 11 to analyze the problem.
6	Another PTP test is in progress. If there is no test in progress, remove and restore the PTP and rerun the test. Notify WE regional PECC if this problem persists.
9	Indicates that the buffer of data test that was sent has not yet been acknowledged by the other processor's DMC11. If bit 10 is set and bit 11 is zero, the processor's PTP is OOS or there is a hardware problem. Run the test from the other side to determine the problem. If the PTP is in service on the other side, the cables or hardware are probably faulty.
10	The buffer to be transmitted has been given to the DMC11 but has not been acknowledged from the other side. Indicates a probable cable or hardware problem if the PTP is in service on both sides.
11	The buffer to be transmitted cannot be given to the DMC11. Remove and restore the PTP and retry the test. If the test fails again, there is a hardware problem.
13	The data received is not what was expected. If there are no indications of program failures, there is a probable hardware problem.
14	The data block received is the wrong length. Probably a cabling or hardware problem.
15	The return acknowledgment PTP write was not allowed. Run the test again from the same side that printed the output message to diagnose the problem.

TABLE E

**BIT DEFINITIONS OF TAPE CONTROLLER WHILE
IN THE NONGENERIC PARAMETER MODE OF OPERATION**

BIT	MEANING
0 — 7	Unused.
8	Indicates a request to write a tape mark.
9	Indicates a request to rewind the tape.
10	Indicates that tape is restored for use by nongeneric parameter backup program.
11	Indicates that tape was empty when restored.
12	Indicates that backup function was completed.
13	Indicates header on restoration of tape for nongeneric parameter backup function.
14	Indicates nongeneric data backup read (if reset) or write (if set) function.
15	Indicates that tape controller is in AMA data (if reset) or nongeneric data backup (if set) mode.

TABLE F

**BIT DEFINITIONS OF TAPE CONTROLLER WHILE
IN THE AMA MODE OF OPERATION**

BIT	MEANING
0	Indicates that tape controller (TC) is in service (if reset).
1	Indicates that TC is in process of being restored (if set).
2	Indicates TC is in process of manual removal (if set).
3	Indicates TC is in process of automatic removal (if set).
4	Indicates TC is OOS (if set).
5	Indicates TC is OOS, at load point, or in file-protect mode (if set).
6	Indicates unconditional restoral request (if set).
7	Indicates unconditional removal request (if set).
8	Indicates last entry from base level (if reset) or from interrupt (if set).
9	Not used.
10	Indicates an error in the ID burst (if set).
11	Indicates that a manual initialization was requested (if set).
12	Unused.
13	Indicates a system restoral error (if set).
14	Unused.
15	Unused.

TABLE G
MAGNETIC TAPE STATUS REGISTER BIT DEFINITIONS

BIT	MEANING
0	Command inhibited (if set).
1	Tape is rewinding (if set).
2	No write-enable ring (if set).
3	Tape mark just written (if set).
4	ID burst just written (if set).
5	Tape at load point (if set).
6	Indicates a nonexistent memory error (if set).
7	Tape past end-of-tape reflective strip.
8	Indicates a hardware time-out (if set).
9	Indicates a read count error.
10	Indicates tape controller off-line (if reset) or on-line (if set).
11	Indicates a bus grant late error (if set).
12	Indicates a correctable error (if set).
13	Indicates a hard error (if set).
14	Indicates a write-parity error (if set).
15	Indicates a read-parity error (if set).

TABLE H

MAGNETIC TAPE CONTROL REGISTER BIT DEFINITIONS

BIT	DEFINITION
0	Go bit (if set).
1 - 4	1 = write forward command. 2 = read forward command. 4 = read reverse command. 7 = erase forward command. 10 = rewind command. 13 = last forward command. 15 = write ID burst command. 16 = write tape mark command. 17 = put tape controller off-line command.
5	Tape controller busy (if set).
6	Interrupt enable bit.
7	Tape control unit ready bit.
8 & 9	Not used.
10	Mag tape transport ready bit.
11	Power clear request bit.
12 & 13	Extended memory address bits.
14	Illegal command error bit.
15	Error bit.