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DMS-10 Family

600-Series Generics

Maintenance and Test Manual - Part 2 of 2

08.02

For Generic 602.20 Standard August 2006

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Contents

Section 1: Trouble procedures

Description

Trouble Procedures (TPs) address specific hardware troubleshooting tasks and are designed as a response to system-generated messages. Upon detecting a trouble indicator message on the maintenance terminal or an LED code on the CPU Miscellaneous pack, the user should refer to the Output Message Manual (OMM) for a description of the trouble and for referral to a TP. The OMM serves as a starting point for all message-oriented troubleshooting.

Organization

Because of the complexity of the system and its hardware, these procedures have been divided into eight discrete groups by function and/or system location. These groups and their assigned ranges (from 2000 to 9998) are as follows:

- Power TPs TP 2000 - TP 2499
- System TPs TP 2500 - TP 2999
- Control Equipment TPs TP 3000 - TP 3999
- Network Equipment TPs TP 4000 - TP 4999
- Peripheral Equipment TPs TP 5000 - TP 5999
- Line Concentrating Equipment TPs TP 6000 - TP 6999
- Remote Equipment TPs TP 7000 - TP 7999
- Automatic Message Accounting Equipment TPs TP 8000 - TP 8999

Power TPs and System TPs are presented first because of the general nature of these tasks, and also because they are procedures for hardware components that are better defined by function rather than location. For example, TPs for clearing faults in power-related packs that are located in Peripheral Equipment are found in the subset of Power TPs and not in the subset of Peripheral Equipment TPs.

Apart from Power TPs and System TPs, which are not location-specific, the remaining subsets of TPs follow a strict hierarchy of DMS-10 switch equipment from control components to peripheral components.

Power TPs

This group of TPs (TP 2000 - TP 2499) is used in response to power-related faults and messages, and is not linked to specific equipment. Included in this subset are any bay- or shelf-level power fault procedures, such as those for clearing faults in or replacing the 5/12 V Converter pack; the Peripheral Shelf Control 1 and Peripheral Control 2 packs; and the Peripheral Shelf Controller and Peripheral Shelf Converter packs.

System TPs

This group of TPs (TP 2500 - TP 2999) is for troubleshooting faults in particular types of interface equipment that have a system-level function (instead of a function linked solely to one type of equipment in the system hierarchy). This includes procedures for clearing faults in Input/Output Interface (IOI) equipment (IOI pack and IOI device), man-machine interface equipment (Serial Data Interface pack, data terminals, and so on), and DMS-10 cluster hardware (Data Link Controller pack).

Control equipment TPs

This group of TPs (TP 3000 - TP 3999) provides fault-clearing information for components located in the Common Equipment bay (CE-3). TPs for the following components are included in this subset:

- Control Equipment shelf
- Power and Cooling Module
- Alarm and Ringing Module

The IOI shelf, which is also located in this bay, is not included in this set of procedures because it is system interface equipment. IOI troubleshooting can be found in System TPs.

Network equipment TPs

This group of TPs (TP 4000 - TP 4999) provides fault-clearing information for packs located on the Network shelf. The various hardware components that are included in this subset are the Tone and Digit Sender pack, the Three-Way Conference pack, the DS-30A Interface pack, the Multiplex Loop Interface pack, and the Network pack.

Peripheral equipment TPs

This group of TPs (TP 5000 - TP 5999) addresses troubles that are located in Peripheral Equipment. This includes all analog line and trunk faults, service equipment (Digitone Receiver pack and Multifrequency Receiver pack) faults, Digital Carrier Module shelf and pack faults, and Peripheral Processor pack faults.

Line concentrating equipment TPs

This group of TPs (TP 6000 - TP 6999) provides trouble-clearing information for all Line Concentrating Equipment (LCE) faults. This includes the Digroup Control pack, the Bus Interface Circuit card, the LCM Ringing Generator pack, and all standard line cards.

Remote equipment TPs

This group of TPs (TP 7000 - TP 7999) provides fault-clearing information for equipment that is remotely located from the DMS-10 switch, and the interface to that equipment. This includes the Outside Plant Module (OPM), Outside Plant Subscriber Module (OPSM), Remote Concentrator Terminal (RCT), Remote Equipment Module (REM), Remote Line Concentrating Module (RLCM), Remote Subscriber Line Equipment (RSLE), Remote Subscriber Line Module (RSLM), Subscriber Carrier Module (SCM), Subscriber Carrier Module for the SLC-96 (SCM-10S), and the Subscriber Remote Interface (SR

Automatic message accounting (AMA) equipment TPs

This group of TPs (TP 8000 - TP 8999) provides fault-clearing information for the 800-bpi Magnetic Tape Unit (MTU) and the 1600-bpi AMA system, which are the storage devices for subscriber billing data.

CCS7 transmission and troubleshooting TP

TP 9000 is designed to aid with troubleshooting CCS7 link outages. This TP is primarily a guide for maintenance personnel. As such, it discusses various CCS7 link transmission configurations, explains different loopback types, and provides reasons for link failures and the steps to follow to isolate and identify specific link failures.

Bit Error Rate Testing (BERT) problem analysis and response TP

TP 9001 is designed to aid maintenance personnel with a suggested strategy for responding to problems uncovered by Bit Error Rate Testing. The TP is designed to be used in conjunction with Section 9, “Bit Error Rate Testing, ” in NTP 297-3401-500, *General Maintenance Information*, which provides complete information about BERT when used with the DMS-10 switch.

Clear major local power alarm on peripheral equipment or recorded announcement equipment

1) Locate the bay with the fault by the lit row lamp and the lit LED at the top of the bay.

2) If a row lamp is lit but no bay LED is lit, replace the Ringing and Alarm Control pack (NT3T55) (MP 1264).

3) Determine whether FAILED on the bay fuse panel is lit.

If FAILED	Go to
is lit	step 4
is not lit	step 5

4) Replace the blown fuse in the bay fuse panel.
Go to step 6.

5) Determine whether a Peripheral Equipment shelf has a Peripheral Shelf Converter (PSC2) pack (NT2T42) with a lit PWR FAIL LED.

If the PSC2 pack	Go to
has a lit PWR FAIL LED	TP 2033
does not have a lit PWR FAIL LED	step 11

6) Determine whether the new fuse holds.

If the fuse	Go to
holds	step 7
does not hold	step 8

7) Determine whether the alarms cleared.

If the alarms	Go to
cleared	step 12
did not clear	step 11

8) Determine what kind of equipment has the blown fuse.

If the equipment	Go to
is peripheral equipment	step 10
recorded announcement equipment	step 9

9) Consult the recorded announcement equipment manufacturer's documentation, or suspect a bay wiring or connector fault.

10) Determine whether the shelf associated with the blown fuse contains a PSC2 pack (NT2T42).

If the shelf	Go to
contains a PSC2 pack	TP 2030
does not contain a PSC2 pack	TP 2060

11) Check the fuse alarm wiring, the circuit board behind the bay LED, and the wiring to the Alarm and Ringing Module shelf. Clean or replace the appropriate circuit pack.
Go to step 7.

12) This procedure is complete.

Clear Power Converter (NT3T89) fault on IOI shelf

1) Determine if the Alarm Processor pack is faulty (TP 3315) and replace the pack if it is faulty (MP 1262).
2) Determine if the Alarm Signal Distribution pack is faulty and replace the pack if it is faulty (MP 1263).
3) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 4
does not display	step 36

4) Determine whether any breakers on the Power and Cooling Module (PCM) are tripped.

If breakers on the PCM	Go to
are tripped	step 5
are not tripped	step 10

5) Switch the breaker ON.
6) Determine whether the breaker trips.

If the breaker	Go to
trips	step 7
does not trip	step 10

7) Replace Power Converter fed by tripped breaker (MP 1250).
8) Switch the breaker ON.
9) Determine whether the breaker trips.

If the breaker	Go to
trips	step 10
does not trip	step 11

10) Check for wiring fault between the breaker and the Power Converter that feeds it.
Go to step 8.

11) Determine whether there are any terminal messages relating to shelf power failure.

If messages pertaining to shelf power failure	Go to
display	step 12
do not display	step 14

12) Check the cable connection between the PCM and the IOI shelf, and tighten the connection, if necessary.

13) Determine whether the alarms clear.

If the alarms	Go to
clear	step 24
do not clear	step 14

14) Isolate failed Power Converter by testing voltages on backplane or looking at the lit FAIL LED on the pack faceplate.

15) Unplug, but do not remove, the IOI device that is powered by the failed Power Converter.

Note: *The Power Converter in shelf Position 1 is on IOI Bus B (CONB), providing power for the IOI device in Positions 6 through 11. The Power Converter in Position 21 is on IOI Bus A (CONA), providing power for the IOI device in Positions 12 through 17.*

16) Reset the circuit breaker for the shelf.

17) Determine whether the breaker holds and the FAIL LED on the Power Converter goes out.

If the breaker	Go to
holds	step 18
does not hold	step 22

Note: *The NT3T89 Power Converter will shut down due either to an output voltage violation or an output current overload. To return the NT3T89 to service, cycle the faceplate switch down (disable) and then back up (enable). (For the NT3T89AD, it is also necessary to momentarily move the faceplate switch to the RESET position).*

18) Plug in the unplugged IOI device.

19) Determine whether the breaker trips or if the FAIL LED on the Power Converter is lit.

If the breaker	Go to
trips	step 20
does not trip	step 26

20) Replace the IOI device

21) Reset the circuit breaker on the PCM for the Power Converter. Go to step 25.

22) Switch the circuit breaker on the PCM for the Power Converter OFF, if on.

23) Replace Power Converter (MP 1250).

24) Reset the circuit breaker on the PCM for the Power Converter.

25) Determine whether the breaker holds and the Power Converter FAIL LED goes out.

If the breaker	Go to
holds	step 26
does not hold	step 14

26) Determine whether the IOI shelf is in the CE-3 bay or in the 1600-bpi AMA bay.

If the IOI shelf is in	Go to
the AMA bay	step 27
the CE-3 bay	step 33

27) Load Overlay MTD by entering: OVLY MTD <CR>

28) Obtain the status of the IOI packs by entering: STAT IOI <CR>

29) Enable the disabled disk drive by entering: ENBL DISK A/B UPDT <CR>

30) Determine whether all power alarms have cleared.

If all power alarms	Go to
have cleared	step 32
have not cleared	step 31

31) Check for alarm wiring faults between PCM and Alarm and Ringing shelf. Go to step 30.

32) Refer to terminal messages that display at the same time as the power alarm and clear other alarms, if necessary.

33) Load Overlay IOD by entering: OVLY IOD <CR>

34) Obtain the status of the IOI pack by entering: STAT IOI <CR>

35) Enable the disabled IOI pack by entering: ENBL IOI <CR>
Go to step 30.

36) This procedure is complete.

Clear power distribution alarm

1) One of the circuit breakers in the Power Distribution Panel (PDP) at the top of the ME, CE, or PE bay has tripped.

2) Determine whether the breaker feeds an ME, PE, or CE bay.

If the breaker	Go to
feeds an ME, PE, or CE bay	step 4
does not feed an ME, PE, or CE bay	step 3

3) Determine whether the breaker feeds an LCE bay.

If the breaker	Go to
feeds an LCE bay	step 9
does not feed an LCE bay	step 31

4) Switch breaker on.

5) Determine whether the breaker holds.

If the breaker	Go to
holds	step 7
does not hold	step 6

6) Repair cable or connector fault between tripped breaker and the fuse/breaker distribution it feeds.
Go to step 4.

7) Determine whether the bay Frame Alarm LED and/or MAJ LED is extinguished and the message, ALM021 PDA CLR displays.

If	Go to
the LEDs are extinguished and ALM021 PDA CLR displays	step 32
the LEDs are not extinguished and ALM021 PDA CLR does not display	step 8

8) There is another tripped breaker.
Go to step 2.

9) Determine whether the tripped breaker is a talk battery breaker.

If the breaker	Go to
is a talk battery breaker	step 20
is not a talk battery breaker	step 10

10) Determine whether the tripped breaker is an A or B signal battery breaker.

If the breaker	**Go to**
is an A signal battery breaker	step 11
is a B signal battery breaker	step 17

11) On the Frame Supervisory Panel of the affected LCE bay, turn down breakers CB1, CB3, and CB5.

12) Reset the tripped circuit breaker in the Power Distribution Panel.

13) Reset circuit breakers CB1, CB3, and CB5 on the Frame Supervisory Panel of the affected LCE bay.

14) Load Overlay DED by entering: OVLY DED <CR>

15) Busy the ringing generator powered by the affected breaker (CB5 or CB6) by entering: BUSY LRNG (*site*) LCE *b u* <CR>

16) Return the Ringing Generator to service by entering: RTS LRNG (*site*) LCE *b u* <CR>
Go to step 7.

17) On the Frame Supervisory Panel of the affected LCE bay, turn down breakers CB2, CB4, and CB6.

18) Reset the tripped circuit breaker in the Power Distribution Panel.

19) Reset circuit breakers CB2, CB4, and CB6 on the Frame Supervisory Panel of the affected LCE bay.
Go to step 14.

20) Switch breaker on.

21) Determine whether the breaker holds.

If the breaker	**Go to**
holds	step 7
does not hold	step 22

22) Reset breaker again immediately following trip.

23) Determine whether the breaker holds.

If the breaker	**Go to**
holds	step 7
does not hold	step 24

24) Determine whether the tripped breaker is an A or B signal battery breaker.

If the breaker	**Go to**
is an A signal battery breaker	step 28
is a B signal battery breaker	step 25

25) Remove -48V fuses from LCA shelves 2 and 4.

26) Reset tripped circuit breaker in the PDP.

27) Replace the -48V fuses in LCA shelves 2 and 4.
Go to step 7.

28) Remove -48 V fuses from LCA shelves 1 and 3.

29) Reset tripped circuit breaker in the PDP.

30) Replace the -48V fuses in LCA shelves 1 and 3.
Go to step 7.

31) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

32) This procedure is complete.

Clear Peripheral Equipment shelf power fault

1) Determine whether any -48V fuses in the Bay Supervisory Panel are blown.

If fuses	Go to
are blown	step 2
are not blown	step 3

2) Replace the blown -48V fuses.

3) Determine whether any LEDs on both PC1 and PC2 are lit.

If LEDs both on PC1 and PC2	Go to
are lit	step 4
are not lit	step 10

4) Replace PC2 (MP 1273).

5) Press PC1 reset button.

6) Determine whether the LEDs remain off.

If the LEDs	Go to
remain off	step 8
do not remain off	step 7

7) Reinstall original pack (MP 1273).
Go to step 10.

8) Test PE shelf (TP 5000).

9) Determine whether PE shelf passed the test.

If the PE shelf	Go to
passed the test	step 18
do not remain off	step 17

10) Remove one PE pack (MP 1250).

11) Press PC1 reset button.

12) Determine whether the LEDs remain off.

If the LEDs	Go to
remain off	step 15
do not remain off	step 13

13) Replace PE pack (MP 1250).

14) Determine whether steps10 through12 have been performed for each PE pack.

If steps 10 through 12	**Go to**
have been performed for each PE pack	step 16
have not been performed for each PE pack	step 10

15) Replace PE pack (MP 1250).

16) Contact the next level of technical support for assistance.

17) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

18) This procedure is complete.

Clear power fault in analog PE shelf

1) Determine whether the blown fuse is a -48V SIG BATT fuse.

If the blown fuse	Go to
is a -48V SIG BATT fuse	step 2
is not a -48V SIG BATT fuse	step 20

2) Unplug, but do not remove, PC1 and PC2 from the appropriate shelf (MP 1272, MP 1273).

3) Replace the blown fuse in the bay fuse panel.

4) Determine whether the new fuse holds.

If the fuse	Go to
holds	step 6
does not hold	step 5

5) Unseat, but do not remove, all packs from shelf. Replace blown fuse.
Go to step 21.

6) Plug in PC1 (MP 1272).

7) Determine whether the new fuse continues to hold.

If the fuse	Go to
holds	step 9
does not hold	step 8

8) Replace PC1, (MP 1272) then replace blown fuse.
Go to step 14.

9) Plug in PC2 (MP 1273).

10) Determine whether the new fuse continues to hold.

If the fuse	Go to
holds	step 12
does not hold	step 11

11) Replace PC2, (MP 1273) then replace blown fuse.
Go to step 16.

12) Determine whether the message ALM022 MAJ LPWR CLR displays.

If ALM022 MAJ LPWR CLR	**Go to**
displays	step 27
does not display	step 13

13) Check fuse alarm wiring, and alarm and ring control pack.
Go to step 12.

14) Determine whether the new fuse holds.

If the fuse	**Go to**
holds	step 9
does not hold	step 15

15) Faulty PC1. Obtain another spare PC1.
Go to step 8.

16) Determine whether the new fuse holds.

If the fuse	**Go to**
holds	step 12
does not hold	step 17

17) Replace PC1, (MP 1272) then replace blown fuse.

18) Determine whether the new fuse holds.

If the fuse	**Go to**
holds	step 12
does not hold	step 19

19) Faulty spare PC1 or PC2. Replace with another spare PC1 or PC2. (MP 1272, MP 1273)
Go to step 3.

20) Unseat, but do not remove all packs except PC1 and PC2 from the shelf. Replace blown fuses.

CAUTION
Performing this step disrupts service to all lines and trunks serviced by the shelf. If the blown fuse is a ringing fuse, originating and established calls are not affected, and this step can be delayed until a period of low traffic. Otherwise perform this step immediately.

21) Determine whether the new fuse holds.

If the fuse	Go to
holds	step 24
does not hold	step 22

22) Check bay wiring between fuse holder and appropriate shelf. Check connectors in shelf.

23) Insert all packs in shelf and replace blown fuse.
Go to step 26.

24) Reinsert packs one at a time in shelf until fuse blows.

25) Replace faulty pack (MP 1250). Insert all packs in shelf. Replace blown fuse.

26) Determine whether the new fuse holds.

If the fuse	Go to
holds	step 12
does not hold	step 22

27) This procedure is complete.

Clear power converter fault in analog PE shelf

1) Locate the shelf with a lit LED on PC2. Press RESET button on PC1 on same shelf.

2) Determine whether the LED on PC1 goes out.

If the LED	Go to
goes out	step 11
does not go out	step 3

3) Unplug, but do not remove, all packs except PC1 and PC2 from the shelf.

4) Press RESET button on the PC1.

5) Determine whether the LED on PC1 goes out.

If the LED	Go to
goes out	step 7
does not go out	step 6

6) Check shelf backplane and connectors.
Go to step 4.

7) Reinsert packs one at a time until PC1 LED lights.

8) Replace faulty pack (MP 1250).

9) Insert all packs in shelf.

10) Press RESET button on PC1.

11) Determine whether the message, ALM022 MAJ LPWR CLR displays.

If ALM022	Go to
displays	step 13
does not display	step 12

12) Check fuse alarm wiring, alarm processor packs, and ringing and alarm control packs.
Go to step 11.

13) This procedure is complete.

Clear fuse or breaker fault in dual PE shelf

1) Determine whether the blown fuse/breaker is one of the -48V SIG BATT fuses/breakers.

If the blown fuse/breaker	Go to
is -48V SIG BATT	step 2
is not -48V SIG BATT	step 26

2) Unseat, but do not remove, the Peripheral Shelf Controller (PSC1) pack (NT2T41) and the Peripheral Shelf Converter (PSC2) pack (NT2T42) from the appropriate shelf.

3) Replace the blown fuse in the bay fuse panel.

4) Determine whether the new fuse holds.

If the fuse	Go to
holds	step 5
does not hold	step 8

5) Push in the PSC2 pack (NT2T42) that was unseated in step 2.

6) Determine whether the new fuse still holds.

If the fuse	Go to
holds	step 7
does not hold	step 9

7) Push in the PSC1 pack (NT2T41) that was unseated in step 2.
Go to step 12.

8) Unseat, but do not remove, all packs from the shelf and replace the blown fuse.
Go to step 27.

9) Replace the PSC2 pack (NT2T42), then replace the blown fuse.

10) Determine whether the new fuse holds.

If the fuse	Go to
holds	step 7
does not hold	step 11

11) The spare PSC2 pack (NT2T42) is faulty; obtain another spare pack.
Go to step 9.

12) Determine whether the new fuse still holds.

If the fuse	Go to
holds	step 22
does not hold	step 13

13) Load Overlay DED by entering: OVLY DED <CR>

14) Busy the PE shelf by entering: BUSY PSHF PE *b s* <CR>

15) Operate the Enable switch on the PSC1 pack (NT2T41) to the Disable position.

16) Replace the PSC1 pack (NT2T41) (MP 1250).

Note: *When this command is executed, all trunks on the PE shelf are taken out of service.*

17) Operate the Enable switch on the PSC1 pack (NT2T41) to the Enable position.

18) Return the PE shelf to service by entering: RTS PSHF PE *b s* <CR>

19) Replace the blown fuse.

20) Determine whether the new fuse holds.

If the fuse	Go to
holds	step 22
does not hold	step 21

21) Replace the PSC2 pack (NT2T42), then replace the blown fuse.
Go to step 24.

22) Determine whether the alarms disappear and ALM022 MAJ CLR LPWR displays.

If the indicated results	Go to
occur	step 33
do not occur	step 32

23) Check the fuse alarm wiring, the processor packs, and the ringing and alarm control packs. If necessary, repair the wiring or execute TP 3309, or do both.
Go to step 22.

24) Determine whether the new fuse holds.

If the fuse	Go to
holds	step 22
does not hold	step 25

25) The spare PSC1 pack (NT2T41) or PSC2 pack (NT2T42) is faulty; replace with another spare PSC1 or PSC2.
Go to step 2.

CAUTION
This step disrupts service to all trunks and lines served by the shelf. If a blown fuse is a ringing fuse, originating calls and established calls are not affected, and step 26 can be delayed until a period of low traffic. Otherwise, perform step 28 immediately.

26) Unseat, but do not remove, all packs except the PSC1 pack (NT2T41) and PSC2 pack (NT2T42) from the shelf and replace the blown fuse.

27) Determine whether the new fuse holds.

If the fuse	Go to
holds	step 28
does not hold	step 32

28) Re-insert the packs in the shelf, one at a time, until the fuse blows.

29) Replace the faulty pack (MP 1250), replace the blown fuse, and plug in all the remaining packs.

30) Repeat step 29 if the insertion of any subsequent pack creates a blown fuse.

31) Determine whether the new fuse holds.

If the fuse	Go to
holds	step 22
does not hold	step 32

32) Check and correct the wiring from the fuse holder to the shelf and the connectors. Plug in all the packs in the shelf and replace the blown fuse.
Go to step31.

33) This procedure is complete.

Clear Peripheral Shelf Converter (PSC2) pack (NT2T42) fault in dual PE shelf

1) Load Overlay DED by entering: OVLY DED <CR>

2) Determine whether the -48V SIG BAT fuse for the shelf on which the PSC2 is located is blown.

If the -48V SIG BAT fuse	Go to
is blown	step 3
is not blown	step 8

3) Replace blown fuse.

4) Return the PSC2 to service by entering: RTS PSC2 PE *b s* <CR>

5) Test the PSC2 by entering: TEST PSC2 PE *b s* <CR>

6) Determine whether the PSC2 passed the test.

If the PSC2	Go to
passed the test	step 7
did not pass the test	step 10

7) Determine whether the same fuse has blown during the past 24 hours.

If the fuse	Go to
has blown during the past 24 hours	step 10
has not blown during the past 24 hours	step 34

8) Obtain the status of the PSC2 by entering: STAT PSC2 PE *b s* <CR>

Note: *A lit SPARED LED on the faulty PSC2 and a lit SPARED LED on the PSC1 (NT2T41) of the mate shelf, indicates that sparing has occurred for the peripheral shelf with the power fault.*

9) Determine whether the PSC2 is in spared state.

If the PSC2	Go to
is in a spared state	step 10
is not in a spared state	step 15

10) Busy faulty Peripheral Shelf Converter 2 (PSC2) by entering: BUSY PSC2 PE *b s* <CR>

11) Pull out the -48V SIG BAT fuse for the shelf on which the PSC2 pack is located. The fuse is located in the Bay Supervisory Panel.

12) Replace the PSC2 pack. (MP 1250)

13) Push in the -48 V SIG BAT fuse.

14) Return Peripheral Shelf Converter 2 (PSC2) to service by entering: RTS PSC2 PE *b s* <CR>

15) With the PSC2 in-service, test the PSC2 by entering: TEST PSC2 PE *b s* <CR>

16) Determine whether the PSC2 passed the test.

If the PSC2	Go to
passed the test	step 17
did not pass the test	step 19

17) Test the peripheral shelf by entering: TEST PSHF PE *b s* <CR>

18) Determine whether the shelf passed the test.

If the shelf	Go to
passed the test	step 34
did not pass the test	step 22

19) Refer to *Output Message Manual* for interpretation of any output messages.

20) Faulty PSC2; replace with another PSC2 (see Step 10).

21) Inspect cables, connectors, and backplane.

22) Busy the PE shelf by entering: BUSY PSHF PE *b s* <CR>

23) Operate Enable switch on PSC1 to DISABLE position.

24) Replace PSC1 (MP 1250).

25) Operate Enable switch on PSC1 to ENABLE position.

26) Return PE shelf to service by entering: RTS PSHF PE *b s* <CR>

27) Test the peripheral shelf by entering: TEST PSHF PE *b s* <CR>

28) Determine whether the shelf passed the test.

If the shelf	Go to
passed the test	step 29
did not pass the test	step 33

29) Obtain the status of the PSC2 by entering: STAT PSC2 PE *b s* <CR>

30) Determine whether the PSC2 is in service.

If the PSC2	Go to
is in service	step 31
is not in service	step 33

31) Test the PSC2 by entering: TEST PSC2 PE *b s* <CR>

32) Determine whether the PSC2 passed the test.

If the PSC2	Go to
passed the test	step 34
did not pass the test	step 33

33) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

34) This procedure is complete.

Clear Peripheral Shelf Controller (PSC1) pack (NT2T41) faults

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the PE shelf by entering: BUSY PSHF PE *b s* <CR>

3) Operate the Enable switch on the PSC1 pack (NT2T41) to the Disable position.

4) Replace the PSC1 pack (NT2T41) (MP 1250).

5) Operate the Enable switch on the PSC1 pack (NT2T41) to the Enable position.

6) Return the PE shelf to service by entering: RTS PSHF PE *b s* <CR>

7) Determine whether the PE shelf is returned to service.

If the shelf	Go to
is returned to service	step 8
is not returned to service	step 12

8) Test the PE shelf by entering: TEST PSHF PE *b s* <CR>

9) Determine whether the PE shelf passed the test.

If the shelf	Go to
passed the test	step 10
did not pass the test	step 12

10) Test the PSC2 pack (NT2T42) by entering: TEST PSC2 PE *b s* <CR>

11) Determine whether the PSC2 pack (NT2T41) passed the test.

If the PSC2 pack	Go to
passed the test	step 13
did not pass the test	step 12

12) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

13) This procedure is complete.

Clear Peripheral Shelf Converter (PSC2) (NT2T42) fault

1) Replace PSC2. (MP 1274)

2) Determine whether a fault occurs after returning the PSC2 to service.

If a fault	Go to
occurs	step 5
does not occur	step 3

3) Test the PSC2 pack (NT2T42) by entering: TEST PSC2 PE *b s* <CR>

4) Determine whether the PSC2 pack (NT2T42) passed the test.

If the PSC2 pack	Go to
passed the test	step 6
did not pass the test	step 5

5) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

6) This procedure is complete.

Clear overvoltage condition

1) Load Overlay TLT by entering: OVLY TLT <CR>
2) Determine whether the fault is associated with an RSLE or with an RSLM.

If the fault	Go to
is associated with an RSLE or an RSLM	step 3
is not associated with an RSLE or an RSLM	step 13

3) Busy the specified World Line Card (NT6X17BA/NT6X18BA) by entering: BUSY (IMED) *site* RSE *b s lsg l* <CR>
4) Select the specified pack by entering: SEL *site* RSE *b s lsg l* <CR>
5) Perform a measurement by entering: MEAS <CR>
6) Determine whether the measurement indicates high AC/DC voltage.

   Note: *High voltage is indicated either when TG is greater than +20V A/C or -35V D/C, or RG is greater than +5V A/C or -68V D/C.*

If the measurement	Go to
indicates high voltage	step 7
does not indicate high voltage	step 8

7) The problem is probably in the outside plant equipment. Check wiring leading to office.
   Go to step 22.
8) Abort Overlay TLT by entering: **** <CR> and load Overlay PED by entering: OVLY PED <CR>
9) Test the specified pack by entering: TEST LPK *site* RSE *b s lsg l* (REP *n*) <CR>
10) Determine whether the test passed.

If the test	Go to
passed	step 11
did not pass	MP 1250

11) Return the pack to service by entering: RTS LPK *site* RSE *b s lsg l* <CR>
12) Monitor the pack for recurrence of the fault.
    Go to step 22.
13) Busy the specified World Line Card (NT6X17BA/NT6X18BA) by entering: BUSY (IMED) *(site)* LCE *b s lsg l* <CR>

14) Select the specified pack by entering: SEL *(site)* LCE *b s lsg l* <CR>

15) Perform a measurement by entering: MEAS <CR>

16) Determine whether the measurement indicates high AC/DC voltage.

If the measurement	Go to
indicates high voltage	step 17
does not indicate high voltage	step 18

17) The problem is probably in the outside plant equipment. Check the wiring leading to the office.
Go to step 22.

18) Abort Overlay TLT by entering: **** <CR> and load Overlay PED by entering: OVLY PED <CR>

19) Test the specified pack by entering: TEST LPK *(site)* LCE *b s lsg l* (NORG) <CR>

20) Determine whether the test passed.

If the test	Go to
passed	step 21
did not pass	MP 1255

21) Return the pack to service by entering: RTS LPK *(site)* LCE *b s lsg l* <CR>

22) This procedure is complete.

Clear power failure in digital PE shelf

1) Inspect digital shelf circuit breakers, located behind right bay cover plate (DCM), on rightmost pack (OCM), or on the top of the bay (J0T80 bay).

2) Determine whether any breakers are tripped.

If breakers	Go to
are tripped	step 3
are not tripped	step 15

3) Load Overlay NED by entering: OVLY NED <CR>

4) Busy any MLI loops serving the DCMs by entering: BUSY PELP CE *b s p l* <CR>

5) Switch on the tripped breaker.

6) Determine whether the breaker holds.

If the breaker	Go to
holds	step 7
does not hold	step 8

7) Determine whether the bay LED goes out.

If the bay LED	Go to
goes out	step 11
does not go out	step 10

8) Replace the 5/12 V Converter fed by the tripped breaker (MP 1252).

9) Switch the breaker on.
Go to step 13.

10) Abort Overlay NED by entering: ****
Go to TP 2003.

11) Return to service any MLI loops made busy earlier by entering: RTS PELP CE *b s p l* <CR>

12) Abort Overlay NED by entering: ****
Go to step 26.

13) Determine whether the breaker holds.

If the breaker	Go to
holds	step 15
does not hold	step 14

14) Correct wiring fault between breaker and the 5/12 V Converter it feeds. Go to step 9.

15) Determine whether there are any messages displaying that relate to equipment failure on a digital shelf.

If messages displaying	**Go to**
relate to digital shelf equipment failure	step 17
do not relate to digital shelf equipment failure	step 16

16) Isolate the faulty 5/12 V Converter using faceplate test points or the faceplate indicator.
Go to step 18.

17) Using TTY messages, isolate the failure to the left or right 5/12 V Converter.

18) Replace appropriate 5/12 V Converter (MP 1252).

19) Switch off the breaker for that converter and then return it to the ON position.

CAUTION
Resetting an active 5/12 V Converter causes power interruption to the circuit packs it feeds.

20) Determine whether the bay LED goes out.

If the bay LED	**Go to**
goes out	step 26
does not go out	step 21

21) Remove one pack in the half-shelf served by the Converter.

Note: *For each DCM, the Carrier Interface pack must be the first removed and the last inserted.*

22) Switch off the breaker for that converter and then return it to the ON position.

CAUTION
Resetting an active 5/12 V Converter causes power interruption to the circuit packs it feeds.

23) Determine whether the bay LED goes out.

If the bay LED	Go to
goes out	step 24
does not go out	step 27

24) Replace appropriate pack (MP 1250).

25) Determine whether the bay LED goes out.

If the bay LED	Go to
goes out	step 26
does not go out	step 29

26) Determine whether the message, ALM022 MAJ CLR LPWR displays.

If ALM022	Go to
displays	step 31
does not display	step 30

27) Restore the pack removed earlier and remove another pack.

Note: *For each DCM, the Carrier Interface pack must be the first removed and the last inserted.*

28) Reset the 5/12 V Converter by switching off the breaker for that shelf and then returning it to the ON position.

CAUTION
Resetting an active 5/12 V Converter causes power interruption to the circuit packs it feeds.

Go to step 23.

29) Perform TP 2003. If analysis points to the same half-shelf, suspect a faulty backplane or bay LED fault.
Go to TP 2003.

30) Check fuse alarm wiring, board behind bay LED, alarm wiring to the Alarm and Ringing Shelf, and the Ringing and Alarm Control pack (NT3T55).
Go to step 29.

31) This procedure is complete.

Clear 5/12 V Converter (NT3T19) fault

1) Isolate fault to specific bay with lit LED on Power and Cooling Module (PCM) or Bay Supervisory Panel, or to shelf with FAIL LED lit on 5/12 V Converter pack.

2) Determine whether the suspected faulty 5/12 V Power Converter is located on a J0T93 (Control) shelf, on a J1T72B-1 or J1T72C-1 (CPU/Network) shelf, or on a J8M75A-1, L1 (CNI Module) shelf.

If the pack	Go to
is located on a J0T93 shelf	step 4
is located on a J1T72B-1, J1T72C-1, or J8M75A-1 shelf	step 3
is located on a another shelf	step 14

3) Load the appropriate overlays and busy or software disable all applicable packs on the affected shelf powered by the suspected faulty 5/12 V Converter pack. (See Table 2100-A for affected packs and the index in NTP 297-3601-506 for applicable commands.)

4) Determine whether the system is in one-bus mode.

If the system	Go to
is in one-bus mode	step 14
is not in one-bus mode	step 5

5) Abort current overlay and load Overlay IOD by entering: **** OVLY IOD <CR>

6) Disable any TTYs on the idle CPU Shelf by entering: DSBL TTY *n* <CR>

7) Disable the IOI system by entering: DSBL IOI IMED <CR>

8) Abort Overlay IOD and load Overlay CED by entering: **** OVLY CED <CR>

9) Obtain the status of the Network clock by entering: STAT CLK <CR>

10) Determine whether the idle Core Network clock is ACTV.

If the idle Core Network clock	Go to
is ACTV	step 11
is not ACTV	step 12

11) Switch Network clocks by entering: SWCH CLK (IMED) <CR>

12) Enter one-bus mode by entering: ENTR 1BUS <CR>

13) Determine whether the message CED001 displays.

If CED001	Go to
displays	step 14
does not display	step 46

14) Operate the Enable switches, if any, on all packs powered by the suspected faulty power converter to the DISABLE position.

CAUTION
Refer to table 2100A on page 7 of this procedure, to determine the positions of the packs powered by the converter being replaced. Disable only the packs in those positions.

15) Unseat from backplane, all packs powered by the suspected faulty power converter.

16) Determine whether the breaker for suspected faulty converter is tripped.

If the breaker	Go to
is tripped	step 20
is not tripped	step 17

17) Determine whether the NT3T19 converter has a reset switch.

If the NT3T19 converter	Go to
has a reset switch	step 18
does not have a reset switch	step 22

18) Push reset switch.

19) Determine whether the converter restarted and the FAIL LED was extinguished.

If the converter	Go to
restarted and the FAIL LED was extinguished	step 26
did not restart and the FAIL LED remained lit	step 22

20) Switch the breaker for the power converter to the ON position.

Note: *If the converter is either an NT3T19AD/AE/AF or an NT3T19BA (Release C or later) model, the faceplate FAIL LED will be on. Momentarily press the reset button on the converter faceplate to start the converter and extinguish its FAIL LED.*

21) Determine whether the breaker holds.

If the breaker	Go to
holds	step 26
does not hold	step 22

22) Replace the 5/12 V Power Converter pack (NT3T19) (MP1250).

CAUTION
Presume the suspected faulty pack to be bad. Reinstalling a faulty Converter pack can permanently damage packs powered by it.

23) Switch the breaker for the replaced power converter pack to the ON position

Note: *If the converter is either a NT3T19AD/AE/AF or an NT3T19BA (Release C or later) model, the faceplate LED will be on. Momentarily press the reset button on the converter faceplate to start the converter and extinguish its LED.*

24) Determine whether the breaker holds.

If the breaker	Go to
holds	step 26
does not hold	step 25

25) Possible faulty spare pack. Replace 5/12 V Power Converter pack (NT3T19) with another spare (MP 1250). If the NT3T19 pack has already been replaced a second time, contact the next level of technical support for assistance.
Go to step 48.

26) Insert packs into shelf, one at a time, checking for a lit LED on the converter faceplate, or a tripped circuit breaker as each pack is inserted. If circuit breaker trips or converter shuts down when a pack is inserted, replace that pack (MP1250).

27) Operate the Enable switches, if any, on all packs equipped to the ENABLE position.

28) Determine whether the fault cleared.

If the fault	Go to
cleared	step 29
did not clear	step 47

29) Determine whether the system is in one-bus mode.

If the system	Go to
is in one-bus mode	step 30
is not in one-bus mode	step 44

30) In a DMS-10 Classic Network, <u>all</u> idle remote NT3T72 family codes AC/AD/AE (AE, release 07 or earlier) must be reseated. The faceplate LEDs on the idle NT3T72 packs will be lit. Remote NT3T72 packs can be located on CPU shelves, CPU/Network shelves, Network shelves, or GPIO shelves.

31) Abort current overlay and load Overlay CED by entering: **** OVLY CED <CR>

32) Exit the one-bus mode by entering: EXIT 1BUS <CR>

33) Determine whether the system exited one-bus mode.

If the system	Go to
exited one-bus mode	step 34
did not exit one-bus mode	step 46

34) Enable Network Clock by entering: ENBL CLK *n* <CR>

35) Determine whether the system is equipped with sync clock.

If the system	Go to
is equipped with sync clock	step 36
is not equipped with sync clock	step 39

36) Disable sync clock by entering: DSBL SYNC <CR>

37) Test sync clock by entering: TEST SYNC <CR>

38) Enable sync clock by entering: ENBL SYNC <CR>

39) Test the CPU Core by entering: ENBL CORE <CR>

40) Determine whether the Core passed the test.

If the Core	Go to
passed the test	step 41
did not pass the test	step 46

41) Abort Overlay CED and load overlay IOD by entering: **** OVLY IOD <CR>

42) Enable the IOI system by entering: ENBL IOI <CR>

43) Enable any TTY's disabled earlier by entering: ENBL TTY *n* <CR>
Go to step 48.

44) Load the appropriate overlays and return all packs on shelf to service.

45) Perform pack and shelf tests for the appropriate equipment powered by the replaced 5/12 V Power Converter pack. (See index for the appropriate procedures.)
Go to step 48.

46) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.
Go to step 48.

47) Contact the next level of technical support for assistance.

48) This procedure is complete.

Table 2100-A
Shelf positions powered by power converters (NT3T19)

Shelf type	Positions powered by left converter	Positions powered by right converter
Control (J0T93A-1)	2, 3, 4, 5, 6, 7, 8, 9	9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
CPU/Network (J1T72B-1)	2, 3, 4, 5, 6, 7, 8, 9	9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
CPU/Network (J1T72C-1)	2, 3, 4, 5, 6, 7, 8	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
DCI (J1T80)	4, 8, 12, 16, 20	6, 10, 14, 18, 22
DCI (J1T80A-2) See Note 1	Shelf and DSI modules support power sparing. Pack removal is not necessary.	Shelf and DSI modules support power sparing. Pack removal is not necessary.

Table 2100-A (Continued)
Shelf positions powered by power converters (NT3T19)

Shelf type	Positions powered by left converter	Positions powered by right converter
DCM (J0T13) See Note 2	2, 3, 4, 5, 6, 7, 8, 9, 10	12, 13, 14, 15, 16, 17, 18, 19, 20
GPIO (J1T81)	2, 3, 4, 5, 6, 7, 8, 9, 10, 11	12, 13, 14, 15, 16, 17, 18, 19, 20
Local REM (J0T53)	3, 4, 5, 6, 7, 8, 9, 10	11, 12, 13, 14, 15, 16, 17, 18
Messaging (J1T65)	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23
Network (J1T31) See Note 3	3, 6, 7, 11, 12, 16, 17, 19	2, 4, 5, 9, 10, 13, 14, 15, 18
Remote REM (J0T55)	2, 3, 4, 5, 6, 7, 8, 9	11, 12, 13, 14, 15, 16, 17, 18
SCM-10 (J0T69)	2, 4, 5, 6, 12, 13, 14	7, 8, 9, 11, 12, 13, 15
CNI Module shelf CE 1 5 (J8M75A-1)	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 14, 17, 18	10, 12, 13, 15, 16, 19, 20, 21, 22
CNI Module shelf CE 1 4 (J8M75A-1)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 17, 18	11, 12, 13, 15, 16, 19, 20, 21, 22

Note 1: The following slots are considered primary power for the LEFT convertor: 3, 4, 7, 8, 11, 12, 15, 16, 19, 20. The following slots are considered primary power for the RIGHT convertor: 5, 6, 9, 10, 13, 14, 17, 18, 21, 22.

Note 2: Position 11, which is not powered by a Power Converter pack, contains a Six-Loop Terminator pack (NT2T33).

Note 3: Position 8, NT4T00, receives power from the left convertor but must not be removed. Position 20, NT4T07, receives power from both left and right convertors and also must not be removed.

Clear Power Converter pack (NT6X53) fault

1) Determine whether the red “Converter Fail” faceplate LED on the faulty Power Converter pack (NT6X53) is lit.

If the LED	Go to
is lit	step 2
is not lit	step 7

2) Verify that cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the faulty NT6X53.

3) Determine whether the faulty NT6X53 pack's circuit breaker in the Frame Supervisory Panel is tripped.

If the circuit breaker	Go to
is tripped	step 4
is not tripped	step 28

4) Reset the circuit breaker.

5) Determine whether the circuit breaker holds.

If the circuit breaker	Go to
holds	step 30
does not hold	step 6

6) Load Overlay DED by entering OVLY DED <CR> and then obtain the status of the Line Concentrating Module Controller (LCMC) associated with the faulty NT6X53 by entering STAT LCMC (*site*) LCE *b s* <CR> Go to step 13.

7) Load Overlay DED by entering: OVLY DED <CR>

CAUTION
Because of the potential for electrostatic discharge, a wrist strap connected to the wrist strap grounding point on the frame supervisory panel should be worn while the measurements are being taken.

8) Obtain a digital voltmeter with measurement accuracy to 0.01 volts and then measure the voltage between the +5 V and COMMON faceplate test jacks of both NT6X53 packs in the LCM module.

Note: *This precautionary step is performed to determine the load-sharing capability of the two NT6X53 power converters. The converters supporting the LCM must have closely-matched voltage output capability to ensure that taking a unit out of service will not compromise LCM redundancy. Before replacing the faulty NT6X53 pack, it will be necessary to replace the mate pack if it has an unacceptably low voltage output capability. This will ensure that when the faulty NT6X53 pack is taken out of service for replacement, the mate NT6X53 pack will be able to carry the power load for the shelf.*

9) Determine whether the difference between the voltage readings of the two NT6X53 packs is <u>not</u> more than 0.20 V (200 millivolts).

If the difference between the readings	Go to
is not more than 0.20 V (200 millivolts)	step 10
is more than 0.20 V (200 millivolts)	step 11

10) Obtain the status of the Line Concentrating Module Controller (LCMC) associated with the faulty NT6X53 by entering: STAT LCMC (*site*) LCE *b s* <CR>
Go to step 8.

11) Determine whether the faulty pack has the higher of the two readings.

If the faulty pack	Go to
has the higher of the two readings	step 12
does not have the higher of the two readings	step 28

12) Obtain the status of the Line Concentrating Module Controller (LCMC) associated with the NT6X53 with the <u>lower</u> of the two readings by entering: STAT LCMC (*site*) LCE *b s* <CR>

13) Determine whether the status of the LCMC is MMOF or SMOF.

If the status of the LCMC	Go to
is MMOF or SMOF	step 16
is not MMOF or SMOF	step 14

14) Busy the LCMC by entering: BUSY LCMC (*site*) LCE *b s* <CR>

15) Place the LCMC offline by entering: OFFL LCMC (*site*) LCE *b s* <CR>

16) Turn off the circuit breaker in the Frame Supervisory Panel for the shelf.

Note: *Circuit breakers CB1 through CB4 (labeled 04, 21, 38, and 55) correspond to shelves 1 through 4, respectively. Circuit breakers CB5 and CB6 (labeled RG0 and RG1) correspond to ringing generators 1 and 2, respectively.*

17) Replace the Power Converter pack (MP 1250).

18) Determine whether the the NT6X53 just replaced is the faulty NT6X53 that was originally to be replaced.

If the NT6X53 is the pack	Go to
that was originally to be replaced	step 20
that was not originally to be replaced	step 19

19) Obtain the status of the Line Concentrating Module Controller (LCMC) associated with the faulty NT6X53 by entering: STAT LCMC (*site*) LCE *b s* <CR>
Go to step 13.

20) Reset the circuit breaker.

Note: *Circuit breakers CB1 through CB4 (labeled 04, 21, 38, and 55) correspond to shelves 1 through 4, respectively. Circuit breakers CB5 and CB6 (labeled RG0 and RG1) correspond to ringing generators 1 and 2, respectively.*

21) Measure the voltage between the +5 V and COMMON faceplate test jacks of both NT6X53 packs in the LCM module.

22) Determine whether the difference between the voltage readings of the two NT6X53 packs is more than 0.20 V (200 millivolts).

If the difference	Go to
is more than 0.20 V (200 millivolts)	step 28
is not more than 0.20 V (200 millivolts)	step 24

23) Busy the LCMC by entering: BUSY LCMC (*site*) LCE/RSC *b s* <CR>

24) Download the LCMC by entering: DNLD LCMC (*site*) LCE *b s* <CR>

25) Return the Line Concentrating Module to service by entering: RTS LCMC (*site*) LCE *b s* <CR>

26) Test the LCMC by entering: TEST LCMC (*site*) LCE *b s* <CR>

27) Determine whether the LCMC passed the test.

If the LCMC	Go to
passed the test	step 30
did not pass the test	step 29

28) Contact the next level of technical support for assistance.

29) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

30) This procedure is complete.

Clear overload faults

1) Analyze all OVD messages that are printed within this sequence of events using the following guidelines:

   (a) Messages are not necessarily in chronological order: a major alarm message may precede, on the maintenance terminal printout, a minor alarm that actually preceded it in time. Check the last field in the printout for the time of the 0.5-millisecond clock or the message sequence number if printed.

   (b) If an OVD001 message is followed by an OVD200 message for the same address, the fault has cleared and the Peripheral Equipment has been returned to service, but it should be monitored for recurrence of the fault.

   (c) An OVD002 message indicates that the peripheral device cannot be disabled, either because the device has no facility to be disabled or because of the fault. Look for other messages indicating that a higher level of equipment has been disabled. The fault is probably in the lowest level of equipment.

   (d) An OVD040 message means that the system is attempting to get out of the overload mode by switching the peripheral equipment to the mate loop. If this fails, an OVD020 message should follow, showing that the peripheral shelf was disabled.

   (e) If no other OVD messages follow the OVD040, the system has recovered by switching the loop, and the peripheral loop is faulty.

   (f) OVD messages print out either BUFF or TERM. With messages indicating TERM, attempt to clear the fault by restoring the equipment to service. If the fault recurs, replace the pack.

2) Repair the faults starting at the lowest order of equipment that is shown in the OVD messages, that is, the peripheral pack, the peripheral shelf, and the network pack. Refer to the index of NTP 297-3601-511, *Maintenance and Test Manual*, and NTP 297-3601-506, *Maintenance Diagnostic Input Manual*, for procedures and commands to use.

3) Return the equipment to service starting at the highest order of equipment that is disabled. Refer to the index of NTP 297-3601-506, *Maintenance Diagnostic Input Manual*, for commands to use.

4) This procedure is complete.

Clear alarm

1) Determine the procedure to follow based on the alarm source listed below.

If the alarm source is	Go to
ABFA - alarm battery fuse alarm	TP 3004
ACF - Outside Plant Module ac failure condition exists	TP 7068
BATF - Remote Concentrator Terminal battery failure	TP 7026
BCF0 - Outside Plant Module battery charge controller 0 failed	TP 7071
BCF1 - Outside Plant Module battery charge controller 1 failed	TP 7071
CONV - CE bay power converter alarm	TP 2100
CPF - Remote Concentrator Terminal common power failure	TP 7025
ETTY - enable teletype request	TP 2560
FALM - Outside Plant Module BCU fan failure	TP 7074
FAN AMA - 1600 BPI AMA bay fan alarm	TP 8036
FDR - Outside Plant Module front door alarm	TP 7070
FSP - Outside Plant Module frame supervisory panel alarm	TP 7072
FUSE - Remote Concentrator Terminal ringing distribution fuse alarm (MAJ) or talk battery fuse alarm (MIN)	TP 7027
HTMP - Outside Plant Module extremely high temperature condition	TP 7070
INV AMA - 1600 BPI AMA bay inverter alarm	TP 8035
LAC - low ac charging (one rectifier failed)	TP 7068
LOWV - Outside Plant Module low voltage condition	TP 7068
LPF - Remote Concentrator Terminal line power failure	TP 7021
LPWR - local power alarm	TP 2003
LTMP - Outside Plant Module extremely low temperature condition	TP 7070
LV - low voltage alarm	TP 7068
NAC - no ac charging (two rectifiers failed)	TP 7068
PDA - power distribution alarm	TP 2006
RA - recorded announcement	TP 2003
RCF0 - Outside Plant Module rectifier 0 failed	TP 7068

If the alarm source is	Go to
RCF1 - Outside Plant Module rectifier 1 failed	TP 7068
RCL0 - Outside Plant Module rectifier 0 current limit reached	TP 7073
RCL1 - Outside Plant Module rectifier 1 current limit reached	TP 7073
RGFA - ringing distribution fuse alarm (ME bay)	TP 3333
RMAJ - Remote Concentrator Terminal major ring alarm	TP 7024
RMIN - Remote Concentrator Terminal minor ring alarm	TP 7024
RNG1 - one ringing generator failed	TP 3333
RNG2 - both ringing generators failed	TP 3333
SDR - Outside Plant Module side door alarm	TP 7070
SWRG - switched peripheral equipment ringing generators	TP 3333
SYS - system alarm	GP 0123

Clear SCSI Bus I/O and Disk Drive pack (NT8T90) fault

1) Load Overlay IOD by entering: OVLY IOD <CR>

2) Obtain the status of the NT8T90 pack and devices by entering: STAT IOI <CR>

3) Determine whether the NT8T90 pack is enabled.

If the pack	Go to
is enabled	step 6
is disabled	step 4

4) Enable the NT8T90 pack by entering: ENBL IOI <CR>

5) Determine whether the message, IOD001 displays.

If IOD001	Go to
displays	step 6
does not display	step 8

6) Test the NT8T90 by entering: TEST IOI <CR>

7) Determine whether the NT8T90 passed the test.

If the NT8T90	Go to
passed the test	step 12
did not pass the test	step 8

8) Determine whether the NT8T90 has been reseated.

If the NT8T90	Go to
has been reseated	step 10
has not been reseated	step 9

9) Perform MP 1256 to reseat the NT8T90 pack, and then check all attached cables.
Go to step 4.

10) Determine whether the NT8T90 has been replaced.

If the NT8T90	Go to
has been replaced	step 19
has not been replaced	step 11

11) Perform MP 1256 to replace the NT8T90 pack.
Go to step 4.

12) Determine whether any installed devices are listed as unequipped (UNEQ).

If	**Go to**
any installed devices are listed as unequipped	step 13
no installed devices are listed as unequipped	step 16

13) Disable and enable the NT8T90 in order to cause the unequipped devices to be recognized by the system, by entering: DSBL IOI <CR> followed by ENBL IOI <CR>

14) Obtain the status of the NT8T90 by entering: STAT IOI <CR>

15) Replace any device still listed as UNEQ by performing MP 1256.
Go to step 12.

16) Test any suspected faulty device(s) by entering for each device: TEST *device* <CR>

17) Determine whether the device(s) passed the test.

If the device(s)	**Go to**
passed the test	step 20
did not pass the test	step 18

18) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.
Go to step 20.

19) Contact the next level of technical support for assistance.

20) This procedure is complete.

Clear secondary IOI pack (NT3T90) or device fault

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Obtain the status of the LIOI system by entering: STAT <CR>

3) Determine whether a fault exists by checking the LIOI displays.

If	Go to
the ACTV LIOI displays AMA NRML (SEIZ)	step 4
the ACTV LIOI displays AMA NRML (RLSE)	step 8
the ACTV LIOI displays AMA NRML (EHLD)	step 11
the ACTV LIOI displays AMA NRML (POSN)	step 2
both LIOIs display DSBL	step 15

4) Determine whether Disk A, Disk B, and NTRA display ENAB ACTV or ????.

Note: *???? indicates that the NTRA is busy and cannot process additional commands. LIOI status should be obtained at a different time.*

If Disk A, Disk B, and NTRA	Go to
display ENAB ACTV or ????	step 6
do not display ENAB ACTV or ????	step 5

5) Disable and enable any device that does not display ENBL ACTV, by entering the appropriate ENBL/DSBL commands. Also follow any instructions provided in output messages that display.

6) Determine the NT3T90 pack version.

If the NT3T90 pack version	Go to
is BA through BD	step 7
is BE or greater	step 23

7) Determine whether the accompanying IOI messages are output frequently (more than a dozen times per day).

If the IOI messages are	Go to
output frequently	step 23
not output frequently	step 25

8) Remove the AMA tape and send it to downstream processing.

9) Mount a new or processed tape on the drive.

10) Enter: AMA SEIZ <CR>
Go to step 2.

11) Enter DSBL NTRA <CR>

12) Enter ENBL NTRA <CR>

13) Determine whether the display is AMA NRML (RLSE).

If AMA NRML (RLSE)	Go to
displays	step 14
does not display	step 2

14) Determine whether billing information exists on the tape.

If billing information	Go to
exists	step 8
does not exist	step 9

15) Enter SWCH LIOI <CR>

16) Determine whether an LIOI becomes ENBL ACTV.

If an LIOI	Go to
becomes ENBL ACTV	step 2
does not become ENBL ACTV	step 17

17) Determine whether power faults exist on the shelves containing the NT3T90.

If power faults	Go to
exist	TP 2100
do not exist	step 18

18) Enter TEST LIOI <CR>

19) Determine whether the LIOI passed the test.

If the LIOI	Go to
passed the test	step 2
did not pass the test	step 20

20) Determine whether the IOI pack has been reseated.

If the IOI pack	Go to
has been reseated	step 22
has not been reseated	step 21

21) Reseat the pack by performing MP 1286.
Go to step 15.

22) Determine whether the IOI pack has been replaced.

If the IOI pack	Go to
has been replaced	step 24
has not been replaced	step 23

23) Replace the pack by performing MP 1286
Go to step 15.

24) Contact the next level of technical support for assistance.

25) This procedure is complete.

Clear system (primary) IOI stuck interrupt

1) Replace the SCSI Bus I/O and Disk Drive pack (NT8T90) on the faulty Control (CPU) shelf using procedure MP 1256.

   Note 1: When installing a new NT8T90 pack, make certain before removing the apparently faulty pack that the pack and all attached cables are properly seated and that this is not the cause of the system error messages.

   Note 2: In order to execute the ENBL CORE step in MP 1256, it may be necessary to input the IOI and INT fault masks. For example, ENBL CORE IOI INT.

2) Load overlay IOD by entering: **** OVLY IOD <CR>

3) Disable the active NT8T90 and subtending devices by entering: DSBL IOI IMED <CR>

4) Load overlay CED by entering: **** OVLY CED <CR>

CAUTION
Use this command with extreme caution and only after attempting to clear the previously found fault. If the fault has not cleared, the switch may initialize or SYSLOAD.

5) Enter: SWCH CORE IOI INT <CR>

6) Determine whether CED001 is printed.

If CED001	Go to
is printed	step 8
is not printed	step 7

7) Observe the hexadecimal display on the System Processor pack (NT3T98) and refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

8) Load overlay IOD by entering: **** OVLY IOD <CR>

9) Enable the active NT8T90 and subtending devices by entering: ENBL IOI <CR>

10) Determine whether IOD001 is printed.

If IOD001	Go to
is printed	step 12
is not printed	step 11

11) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

12) Load overlay CED by entering: **** OVLY CED <CR>

13) Switch to the formerly active CORE by entering: SWCH CORE IOI <CR>.

14) This procedure is complete.

Clear TTY fault

1) Determine whether the faulty TTY is either 0 or 1.

If the faulty TTY	Go to
is 0 or 1	step 2
is not 0 or 1	step 3

2) Replace Maintenance Interface pack (NT3T71) (MP 1257).
Go to step 4.

3) Replace interface pack, Dual Serial Data Interface pack (NT3T80) or Serial Data Interface pack (NT3T09) (MP 1254).

4) Determine whether either IOD203 or IOD202 display.

If either IOD203 or IOD202	Go to
displays	step 7
does not display	step 5

5) Determine whether the faulty TTY is the on-site TTY.

If faulty TTY	Go to
is the on-site TTY	step 6
is not the on-site TTY	step 7

6) Press UTILITY INTERRUPT button on Alarm and Ringing shelf.

   Note: *This causes IOD to be loaded and run. Wait about 3 minutes for TTY to be enabled.*

7) Load IOD overlay by entering: OVLY IOD <CR>

8) Enable the teletype by entering: ENBL TTY *n* <CR>

9) Test the teletype by entering: TEST TTY *n* <CR>

10) Determine whether the printout displays all characters on the keyboard.

If the printout	Go to
displays all characters on the keyboard	step 12
does not display all characters on the keyboard	step 11

11) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

12) This procedure is complete.

Clear TTY interrupt

1) Determine whether the TTY interrupt is on either TTY 0 or 1.

If the TTY interrupt	Go to
is on either TTY 0 or 1	step 2
is not on either TTY 0 or 1	step 6

2) Replace the Maintenance Interface pack (NT3T71) serving the affected TTY (MP 1257).

3) Load Overlay CED by entering: OVLY CED <CR>

4) Test the CPUs, masking the interrupts by entering: ENBL CORE INT <CR>

5) Determine whether CED001 displays.

If CED001	Go to
displays	step 8
does not display	step 7

6) Replace the Dual Serial Data Interface pack (NT3T80) or Serial Data Interface pack (NT3T09) (MP 1254).
Go to step 3.

7) Observe the hexadecimal display on the System Processor pack (NT3T98) and refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

8) This procedure is complete.

Clear coin line fault

1) Determine whether the line pack is a Peripheral Equipment (PE) line pack.

If the pack	Go to
is a PE line pack	step 3
is not a PE line pack	step 2

2) Clear the possible Line Concentrating Equipment line card fault (TP 6001) Go to step 4.

3) Clear the possible PE line pack fault (TP 5053)

4) Determine whether the fault is cleared.

If the fault	Go to
is cleared	step 6
is not cleared	step 5

5) Physically check the associated coin set (use manufacturer's documentation)

6) This procedure is complete.

Clear Data Link Controller pack fault

1) Load Overlay IOD by entering: OVLY IOD <CR>

2) Determine whether DLC pack *n* is in service by entering: STAT DLC *n* <CR>

   Note: *If digital lines are connected to the DLC packs, refer to the STAT DLC response to verify that the Digital Carrier Modules (DCMs) are in service.*

3) Disable DLC pack *n* by entering: DSBL DLC *n* <CR>

   Note: *If the mate DLC pack or a port to a Satellite Switching Office is disabled, enter: DSBL DLC n IMED <CR>*

4) Test DLC pack *n* by entering: TEST DLC *n <CR>*

5) Determine whether the DLC pack (NT3T50) passed the test.

If the DLC pack	Go to
passed the test	step 7
did not pass the test	step 6

6) Replace the DLC pack (NT3T50) (MP 1250).
   Go to step 9.

7) Determine whether DLC107, DLC108, DLC109, DLC111, DLC112, or DLC2*XX* messages related to the DLC pack (NT3T50) printed within the past 48 hr.

   Note 1: If DLC108, DLC109, or DLC208 messages appear with a DCM failure message, the problem is in the outside plant. Do not replace the DLC pack (NT3T50) without further testing.

   Note 2: Span line faults may cause DLC fault messages to be output. If span line faults are suspected, do not replace the DLC pack.

If the indicated messages	Go to
printed within the past 48 hr	step 8
did not print within the past 48 hr	step 9

8) Replace the DLC pack (NT3T50) (MP 1250).

9) Enable the DLC pack (NT3T50) by entering: ENBL DLC *n* <CR>

10) This procedure is complete.

Clear data link controller port fault

Note: *For more detailed information on interfaces within the Host Satellite Office/Satellite Switching Office (HSO/SSO) and Large Cluster Controller (LCC)/SSO configurations, refer to the "DMS-10 Cluster Concept" section of the NTP entitled General Description (297-3601-100).*

1) Test to confirm that outside plant equipment is operating properly.

Note: *Specific tests are determined by local operating company procedures.*

2) Determine whether the test passed.

If the test	Go to
passed	step 5
did not pass	step 3

3) Clear outside plant problems, then check terminal for "no fault" report.

4) Determine whether the DLC port fault still exists.

If the DLC port fault	Go to
exists	step 5
does not exist	step 92

5) If the Carrier Interface pack is has an AE family code, check the DIP-switch setting for switch 2 and correct if necessary.

6) Determine whether the link is a digital or analog link.

If the link is	Go to
a digital link	step 7
an analog link	step 31

7) Determine whether the DLC at the local site is attached to a DCM or to a drop and insert system.

If the DLC is attached to	Go to
a DCM	step 8
a drop and insert system	step 34

8) Determine whether the cable connection between the DCM and DLC are firmly attached.

If the cable	**Go to**
is firmly attached	step 11
is not firmly attached	step 9

9) Tighten cable connection and check terminal for “no fault” report.

10) Determine whether the DLC port fault still exists.

If the DLC port fault	**Go to**
exists	step 11
does not exist	step 92

11) Load DED overlay by entering: OVLY DED <CR>

12) Busy DCM by entering: BUSY DCM PE *b s p* <CR> (PE *b s p* is the location of the leftmost pack of the DCM.)

13) Test DCM by entering: TEST DCM PE *b s p* <CR>

14) Determine whether the DCM passed the test.

If the DCM	**Go to**
passed the test	step 15
did not pass the test	step 91

15) Return DCM to service by entering: RTS DCM PE *b s p* <CR>

16) Determine whether the message, DCM304, DCM305, or DCM307 displays.

If DCM304, DCM305, or DCM307	**Go to**
displays	step 17
does not display	step 91

17) Abort overlay by entering: ****

18) Load IOD overlay by entering: OVLY IOD <CR>

19) Disable data link by entering: DSBL DLNK *n n* IMED <CR> where the first *n*=DLC number (0 through 15) and the second *n*=link number (port 0 or 1).

20) Test data link by entering: TEST DLNK *n n* <CR>

21) Determine whether the data link passed the test.

If the data link	**Go to**
passed the test	step 22
did not pass the test	step 91

22) Enable data link by entering: ENBL DLNK *n n* <CR>

23) Determine whether the message, DLC300 displays.

If DLC300	**Go to**
displays	step 24
does not display	step 36

24) Disable DLC pack by entering: DSBL DLC *n* IMED <CR>

Note: *Both DLC ports will be out of service after entering this command.*

25) Test DLC pack by entering: TEST DLC *n* <CR>

26) Determine whether the DLC passed the test.

If the DLC	**Go to**
passed the test	step 27
did not pass the test	step 91

27) Enable DLC pack by entering: ENBL DLC *n* <CR>

28) Determine whether the message, DLC300 displays.

If DLC300	**Go to**
displays	step 30
does not display	step 29

29) Replace the DLC pack.
Go to step 11.

30) Abort overlay by entering: ****
Go to step 92.

31) Ensure that the modem is operating properly by checking the modem's power and switch settings. If necessary, take corrective action.

32) Ensure that the cable between the modem and the DLC pack is firmly connected.
Go to step 18.

33) Ensure that the drop and insert system is operating properly by checking the red “Power Fail” LEDs and other indicators. If necessary, take corrective action.

34) Ensure that the cable between the drop and insert system and the DLC pack is firmly connected.
Go to step 18.

35) Determine whether a DLC failure message displays.

If a DLC failure message	Go to
displays	step 91
does not display	step 36

36) Determine whether the message, DLC405 displays.

If DLC405	Go to
displays	step 37
does not display	step 38

37) The DLC at the remote site is out of service. Check output messages at the remote site to correct fault.

38) Determine whether the message, DLC401, DLC402, DLC403, or DLC412 displays.

If DLC401, DLC402, DLC403, or DLC412	Go to
displays	step 39
does not display	step 91

39) Replace the DLC pack at the local site.

40) Load IOD overlay by entering: OVLY IOD <CR>

41) Disable data link by entering: DSBL DLNK *n n* IMED <CR> where the first *n*=DLC number (0 through 15) and the second *n*=link number (port 0 or 1).

42) Test data link by entering: TEST DLNK *n n* <CR>

43) Determine whether the data link passed the test.

If the data link	Go to
passed the test	step 44
did not pass the test	step 91

44) Enable data link by entering: ENBL DLNK *n n* <CR>

45) Determine whether the message, DLC300 displays.

If DLC300	**Go to**
displays	step 24
does not display	step 46

46) Replace the new DLC pack with the original DLC pack that was removed earlier in the procedure.

47) Replace the Carrier Interface pack (NT2T32).
(MP1250)

CAUTION
Unplug the DCM Carrier Interface pack before removing any other pack. Plug in after replacing other pack.

48) Load DED overlay by entering: OVLY DED <CR>

49) Busy DCM by entering: BUSY DCM PE *b s p* <CR> (PE *b s p* is the location of the leftmost pack of the DCM.)

50) Test DCM by entering: TEST DCM PE *b s p* <CR>

51) Determine whether the DCM passed the test.

If the DCM	**Go to**
passed the test	step 52
did not pass the test	step 91

52) Return DCM to service by entering: RTS DCM PE *b s p* <CR>

53) Determine whether the message, DCM304, DCM305, or DCM307 displays.

If DCM304, DCM305, or DCM307	**Go to**
displays	step 54
does not display	step 91

54) Abort overlay by entering: ****

55) Load IOD overlay by entering: OVLY IOD <CR>

56) Disable data link by entering: DSBL DLNK *n n* IMED <CR> where the first *n*=DLC number (0 through 15) and the second *n*=link number (port 0 or 1).

57) Test data link by entering: TEST DLNK *n n* <CR>

58) Determine whether the data link passed the test.

If the data link	Go to
passed the test	step 59
did not pass the test	step 91

59) Enable data link by entering: ENBL DLNK *n n* <CR>

60) Determine whether the message, DLC350 displays.

If DLC350	Go to
displays	step 24
does not display	step 61

61) Replace the DLC pack that was returned in Step 44, so that both of the original DLC and Carrier Interface packs have been replaced.

62) Load IOD overlay by entering: OVLY IOD <CR>

63) Disable data link by entering: DSBL DLNK *n n* IMED <CR> where the first *n*=DLC number (0 through 15) and the second *n*=link number (port 0 or 1).

64) Test data link by entering: TEST DLNK *n n* <CR>

65) Determine whether the data link passed the test.

If the data link	Go to
passed the test	step 66
did not pass the test	step 91

66) Enable data link by entering: ENBL DLNK *n n* <CR>

67) Determine whether the message, DLC300 displays.

If DLC300	Go to
displays	step 24
does not display	step 68

68) Replace the new DLC pack with the original DLC pack.

69) Replace the new Carrier Interface pack with the original pack.

70) Replace the DLC to DCM cable (for digital link) or the DLC to modem cable (for analog link).

71) Load DED overlay by entering: OVLY DED <CR>

72) Busy DCM by entering: BUSY DCM PE *b s p* <CR> (PE *b s p* is the location of the leftmost pack of the DCM.)

73) Test DCM by entering: TEST DCM PE *b s p* <CR>

74) Determine whether the DCM passed the test.

If the DCM	Go to
passed the test	step 75
did not pass the test	step 91

75) Return DCM to service by entering: RTS DCM PE *b s p* <CR>

76) Determine whether the message, DCM304, DCM305, or DCM307 displays.

If DCM304, DCM305, or DCM307	Go to
displays	step 17
does not display	step 91

77) Abort overlay by entering: ****

78) Load IOD overlay by entering: OVLY IOD <CR>

79) Disable data link by entering: DSBL DLNK *n n* IMED <CR> where the first *n*=DLC number (0 through 15) and the second *n*=link number (port 0 or 1).

80) Test data link by entering: TEST DLNK *n n* <CR>

81) Determine whether the data link passed the test.

If the data link	Go to
passed the test	step 82
did not pass the test	step 91

82) Enable data link by entering: ENBL DLNK *n n* <CR>

83) Determine whether the message, DLC300 displays.

If DLC300	Go to
displays	step 24
does not display	step 84

84) Determine whether the message, DLC401, DLC402, DLC412, or DLC403 displays.

If	**Go to**
DLC402 or DLC403 displays	step 85
DLC401 or DLC412 displays	step 91

85) Determine whether the person performing this procedure is located at the host site or at the SSO site.

If the person performing this procedure is	**Go to**
located at the host site	step 87
located at the SSO site	step 86

86) Go to the host site and perform this procedure (TP 2656).
Go to step 92.

87) Access the SSO terminal by entering: ACC SSO *n* (*n* is the identifying number of the SSO)

88) Perform this procedure (TP 2656) for the remote SSO site.
Go to step 92.

89) Determine whether the DLC at the local or remote site is attached to a drop and insert system.

If the DLC	**Go to**
is attached to a drop and insert system	step 90
is not attached to a drop and insert system	step 92

90) The transmission indicators on the drop and insert system may be faulty.
Refer to the vendor's equipment manual to troubleshoot the unit.
Go to step 92.

91) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

92) This procedure is complete.

Clear local area network (LAN) pack (NT4T16, NT4T18, NT4T20) faults

1) Load LED overlay by entering: OVLY LED <CR>

2) Busy the pack by entering: BUSY LCI / LSC / LAC CE / PE *b s p* <CR>

3) Determine whether the faulty pack is an NT4T16 (LCI).

If the faulty pack	Go to
is an NT4T16	step 4
is not an NT4T16	step 10

4) Check the pack DIP switch settings. See the NTP entitled *DIP Switch Settings for Printed Circuit Packs* (297-3601-316).

5) Determine whether the DIP switches are set correctly.

If the DIP switches	Go to
are set correctly	step 6
are not set correctly	step 7

6) Reseat the pack by first pulling it out approximately 1 inch and then pushing it back in.
Go to step 8.

7) Reset the DIP switches.

8) Test the pack by entering: TEST LCI CE *b s p* <CR>

9) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 15
did not pass the test	step 30

10) Reseat the pack by first pulling it out approximately 1 inch and then pushing it back in.

11) Determine whether the faulty pack is an NT4T18 (LSC).

If the faulty pack	Go to
is an NT4T18	step 12
is not an NT4T18	step 25

12) Test the LSC pack by entering: TEST LSC CE/PE *b s p* <CR>

13) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 15
did not pass the test	step 14

14) Replace the LAN Shelf Controller paddleboard (NT4T19) (MP1312)
Go to step 16.

15) Return the pack to service by entering: RTS LCI / LSC / LAC CE / PE *b s p* <CR>
Go to step 35.

16) Test the LSC pack by entering: TEST LSC CE/PE *b s p* <CR>

17) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 15
did not pass the test	step 18

18) Replace the LAN Shelf Controller pack (NT4T18) (MP 1250)

19) Test the LSC pack by entering: TEST LSC CE/PE *b s p* <CR>

20) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 22
did not pass the test	step 21

21) Replace the associated LAN Coax cable (ED1T68-01) and/or the LAN Reset cable (ED1T94-01)
Go to step 23.

22) Return the pack to service by entering: RTS LCI / LSC / LAC CE / PE *b s p* <CR>
Go to step 35.

23) Test the LSC pack by entering: TEST LSC CE/PE *b s p* <CR>

24) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 22
did not pass the test	step 33

25) Determine whether the pack is an NT4T20 (LAC).

If the pack	Go to
is an NT4T20	step 26
is not an NT4T20	step 27

26) Download the LAC pack by entering: DNLD LAC CE / PE *b s p* <CR>

27) Test the pack by entering: TEST LCI / LSC / LAC CE / PE *b s p* <CR>

28) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 29
did not pass the test	step 30

29) Return the pack to service by entering: RTS LCI / LSC / LAC CE / PE *b s p* <CR>

30) Replace the pack (MP 1250).

31) Test the pack by entering: TEST LCI / LSC / LAC CE / PE *b s p* <CR>

32) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 29
did not pass the test	step 34

33) Contact the next level of technical support for assistance.

34) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

35) This procedure is complete.

Clear local area network (LAN) LAC SNC (L3) data mismatch faults

1) Load LED overlay by entering: OVLY LED <CR>
2) Busy the STBY SNC pack by entering: BUSY LAC / PE *b s p* <CR>
3) Download the LAC pack by entering: DNLD LAC CE / PE *b s p* <CR>
4) Return the pack to service by entering: RTS LAC PE *b s p* <CR>
5) Busy the ACTV SNC pack by entering: BUSY LAC PE *b s p* <CR>
6) Download the LAC pack by entering: DNLD LAC PE *b s p* <CR>
7) Return the pack to service by entering: RTS LAC PE *b s p* <CR>
8) This procedure is complete.

Clear disk loading problem

1) Determine whether the hex code displaying on the NT3T98 pack is 230 or 2FE.

If the code displaying is	Go to
230	step 2
2FE	step 39

2) Determine whether a SYSLOAD or a split core reload is being performed.

If a	Go to
SYSLOAD is being performed	step 3
split core reload	step 19

CAUTION
Take no action until the system has attempted to load from all available disks. When the LED associated with a disk (HD0 or HD1) on the NT8T90 pack faceplate, or the LED on the faceplate of the NT4T32BA pack is flickering, the disk represented by the LED is still actively loading data.

3) Ensure that the DIP switches and jumper settings are correctly set on the NT8T90 and/or NT4T32BA packs, by pulling the pack from the shelf and verifying the settings with those for the pack(s) shown in NTP 297-3601-316.

4) Attempt to sysload the system from hard disk by simultaneously operating the ENABLE and RELOAD switches on the Alarm and Ringing shelf.

5) Determine whether the hex 230 code is still displaying on the NT3T98 pack.

If the hex 230 code	Go to
is still displaying	step 6
is no longer displaying	step 73

6) Operate the NT8T90 On/Off switch to the Off position.

7) Operate the NT4T20BA On/Off switch to the Off position.

8) Eject the cartridge from the NT4T32BA pack by pressing the manual eject button on the NT4T32BA faceplate.

9) Insert the cartridge containing the most recent system backup into the NT4T32BA pack.

10) Operate the NT8T90 On/Off switch to the On position.

11) Operate the NT4T32BA On/Off switch to the On position.

12) Attempt to sysload the system from hard disk by simultaneously operating the ENABLE and RELOAD switches on the Alarm and Ringing shelf.

13) Determine whether the hex 230 code is still displaying on the NT3T98 pack.

If the hex 230 code	Go to
is still displaying	step 14
is no longer displaying	step 73

14) Operate the NT8T90 On/Off switch to the Off position.

15) Replace the NT8T90 SCSI Bus I/O and Disk Drive pack with an NT8T90 pack which is know to contain valid data.

16) Operate the NT8T90 On/Off switch to the On position.

17) Attempt to sysload the system from hard disk by simultaneously operating the ENABLE and RELOAD switches on the Alarm and Ringing shelf.

18) Determine whether the hex 230 code is still displaying on the NT3T98 pack.

If the hex 230 code	Go to
is still displaying	step 72
is no longer displaying	step 73

19) Load Overlay CED by entering: OVLY CED <CR>

20) Exit one-bus mode by entering: EXIT 1BUS <CR>

21) Abort Overlay CED and load Overlay IOD by entering: ****OVLY IOD <CR>

22) Obtain status of the disk subsystem by entering: STAT IOI <CR>

23) Determine whether the NT8T90 associated with CPU 0 is disabled.

If the NT8T90 pack associated with CPU 0	Go to
is disabled	step 25
is not disabled	step 24

24) Disable the NT8T90 pack by entering: DSBL IOI IMED <CR>

25) Abort Overlay IOD and load Overlay CED by entering: ****OVLY CED <CR>

26) Switch cores to make CPU 1 active by entering: SWCH CORE <CR>

27) Abort Overlay CED and load Overlay IOD by entering: ****OVLY IOD <CR>

28) Enable the NT8T90 pack by entering: ENBL IOI <CR>

29) Determine whether the NT8T90 associated with CPU 1 is enabled.

If the NT8T90 pack associated with CPU 1	Go to
is enabled	step 30
is not enabled	step 71

30) Test the device from which the split core load is to be attempted by entering: TEST *device* <CR>

31) Determine whether the device passed the test.

If the device	Go to
passed the test	step 32
did not pass the test	step 71

32) Determine whether the device contains valid data.

If the device	Go to
contains valid data	step 34
does not contain valid data	step 33

33) Refer to Overlay IOD to determine the commands to use to replace the data on the device.

34) Using procedure MP 1010, perform an equipment data dump to *all* devices. If any device cannot be dumped successfully, determine the cause of the problem and resolve it before continuing with this procedure.

35) Load overlay IOD by entering: **** OVLY IOD <CR>.

36) Disable the active NT8T90 by entering: DSBL IOI IMED <CR>

37) Attempt to perform a split core reload using procedure MP 1037.

38) Determine whether the split core reload was successful.

If the split core reload	Go to
was successful	step 73
was not successful	step 72

39) Determine whether a SYSLOAD or a split core reload is being performed.

If a	Go to
SYSLOAD is being performed	step 40
split core reload	step 51

CAUTION
Take no action until the system has attempted to load from all available disks. When the LED associated with a disk (HD0 or HD1) on the NT8T90 pack faceplate, or the LED on the faceplate of the NT4T32BA pack is flickering, the disk represented by the LED is still actively loading data.

40) Ensure that the DIP switches and jumper settings are correctly set on the NT8T90 and/or NT4T32BA packs, by pulling the pack from the shelf and verifying the settings with those for the pack(s) shown in NTP 297-3601-316.

41) Attempt to sysload the system from hard disk by simultaneously operating the ENABLE and RELOAD switches on the Alarm and Ringing shelf.

42) Determine whether the hex 2FE code is still displaying on the NT3T98 pack.

If the hex 2FE code	Go to
is still displaying	step 43
is no longer displaying	step 73

43) Operate the NT8T90 On/Off switch to the Off position.

44) Operate the NT4T32BA On/Off switch to the Off position.

45) Eject the cartridge from the NT4T32BA pack by pressing the manual eject button on the NT4T32BA faceplate.

46) Insert the cartridge containing the most recent system backup into the NT4T32BA pack.

47) Operate the NT8T90 On/Off switch to the On position.

48) Operate the NT4T32BA On/Off switch to the On position.

49) Attempt to sysload the system from hard disk by simultaneously operating the ENABLE and RELOAD switches on the Alarm and Ringing shelf.

50) Determine whether the hex 2FE code is still displaying on the NT3T98 pack.

If the hex 2FE code	Go to
is still displaying	step 72
is no longer displaying	step 73

51) Load Overlay CED by entering: OVLY CED <CR>

52) Exit one-bus mode by entering: EXIT 1BUS <CR>

53) Abort Overlay CED and load Overlay IOD by entering: ****OVLY IOD <CR>

54) Obtain status of the disk subsystem by entering: STAT IOI <CR>

55) Determine whether the NT8T90 associated with CPU 0 is disabled.

If the NT8T90 pack associated with CPU 0	Go to
is disabled	step 57
is not disabled	step 56

56) Disable the active NT8T90 by entering: DSBL IOI IMED <CR>

57) Abort Overlay IOD and load Overlay CED by entering: ****OVLY CED <CR>

58) Switch cores to make CPU 1 active by entering: SWCH CORE <CR>

59) Abort Overlay CED and load Overlay IOD by entering: ****OVLY IOD <CR>

60) Enable the NT8T90 pack by entering: ENBL IOI <CR>

61) Determine whether the NT8T90 associated with CPU 1 is enabled.

If the NT8T90 pack associated with CPU 1	Go to
is enabled	step 62
is not enabled	step 71

62) Test the device from which the split core load is to be attempted by entering: TEST *device* <CR>

63) Determine whether the device passed the test.

If the device	Go to
passed the test	step 64
did not pass the test	step 71

64) Determine whether the device contains valid data.

If the device	Go to
contains valid data	step 66
does not contain valid data	step 65

65) Refer to Overlay IOD to determine the commands to use to replace the data on the device.

66) Using procedure MP 1010, perform an equipment data dump to *all* devices. If any device cannot be dumped successfully, determine the cause of the problem and resolve it before continuing with this procedure.

67) Load overlay IOD by entering: **** OVLY IOD <CR>.

68) Disable the active NT8T90 by entering: DSBL IOI IMED <CR>

69) Attempt to perform a split core reload using procedure MP 1037.

70) Determine whether the split core reload was successful.

If the split core reload	Go to
was successful	step 73
was not successful	step 72

71) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

72) Contact the next level of support for assistance.

Note: *Areas for further investigation include SCSI bus A and B setup (see TP 2533), integrity of bus cables, and proper termination.*

73) This procedure is complete.

Clear alarm battery fuse alarm

1) Determine whether the LED in the fuse panel located at the top of the ME bay is lit.

If the LED	Go to
is lit	step 2
is not lit	step 5

2) Replace the blown fuse in the fuse panel at the top of the ME bay.

3) Determine whether the fuse located at the top of the ME bay blows again.

If the FA fuse	Go to
is blown	step 4
is not blown	step 10

4) Check the wiring from the appropriate fuse to the equipment it feeds (See the list below). If no fault is found, check equipment itself.

   FA - Fuse Alarm Pack, ME bay
   AB MON - Alarm Battery Monitor Relay, ME bay
   DISPL PNL - LED Display Panel, ME bay
   PWR MON - Power Monitor circuit pack, ME bay
   ALM REL - Alarm Relays (located behind Display Panel)
   PF0 BELL - Power Fail Bell, Audible Alarm Panel
   PF1 BELL - Power Fail Bell, Audible Alarm Panel
   TONE BAR - Tone Bar, Audible Alarm Panel
   ROW PILOT - All Row Pilot Lamps (both ends, each row)
   EXIT PILOT - Exit Pilot Lamp (located over exit door)
   PWR MON -48 V MAIN - Power Monitor circuit pack, ME bay
   Row 1-6 - All fuse alarm packs (one per bay) in the specified row

   Go to step 2.

5) Determine whether the FA fuse located at the top of the ME bay is blown.

If the FA fuse	Go to
is blown	step 7
is not blown	step 9

6) Replace the Fuse Alarm pack, NT3T30, located behind the fuse panel. Go to step 1.

7) Replace the FA fuse.

8) Determine whether the FA fuse located at the top of the ME bay blows again.

If the FA fuse	Go to
is blown	step 9
is not blown	step 10

9) Replace the Fuse Alarm pack, NT3T30, located behind the fuse panel.
Go to step 7.

10) Determine whether the FA AFBA (ABS) and MJL LEDs are extinguished and the message, ALM021 ABFA CLR, displays.

If	Go to
the LEDs are extinguished and the ALM021 message displays	step 12
if the LEDs are not extinguished and the ALM021 message doesn't display	step 11

11) There is another blown fuse in the fuse panel.
Go to step 2.

12) This procedure is complete.

Clear sync clock fault (#1)

1) Load Overlay CED by entering: OVLY CED <CR>
2) Disable the Synchronous Clock pack (NT3T47) by entering: DSBL SYNC <CR>
3) Test the Synchronous Clock pack (NT3T47) by entering: TEST SYNC <CR>
4) Determine whether the Synchronous Clock pack (NT3T47) passed the test.

If the pack	Go to
passed the test	step 5
did not pass the test	step 6

5) Enable the Synchronous Clock pack (NT3T47) by entering: ENBL SYNC <CR>
   Go to step 7.
6) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.
7) This procedure is complete.

Clear a synchronous clock fault (#2)

1) Determine whether INI420 or INI421 immediately preceded the OMM message.

If INI420 or INI421	**Go to**
immediately preceded the SNC message	step 2
did not immediately precede the SNC message	step 3

2) Refer to the OMM for other -511 NTP trouble procedure references to clear the INI message.

3) Load Overlay CED by entering: OVLY CED <CR>

4) Enter: DSBL SYNC <CR>

5) Enter: TEST SYNC <CR>

6) Determine whether fault messages exist.

If fault messages	**Go to**
exist	step 13
do not exist	step 18

7) Load Overlay CED by entering: OVLY CED <CR>

8) Enter: STAT SYNC <CR>

9) Determine whether the status of either Synchronous Clock pack (NT3T47) is man-made-busy (MMB).

If either Synchronous Clock pack	**Go to**
is MMB	step 10
is not MMB	step 12

10) Enter: TEST SYNC <CR>

11) Determine whether fault messages exist.

If fault messages	**Go to**
exist	step 13
do not exist	step 18

12) Enter: DSBL SYNC <CR>

13) Operate the Enable switch on the Synchronous Clock pack (NT3T47) to the Disable position.

14) Replace the Synchronous Clock pack (NT3T47) (MP 1250).

15) Operate the Enable switch on the Synchronous Clock pack (NT3T47) to the Enable position.

16) Enter: TEST SYNC <CR>

17) Determine whether fault messages exist.

If fault messages	Go to
exist	step 23
do not exist	step 18

18) Enter: ENBL SYNC <CR>

19) Enter: STAT SYNC <CR>

20) Determine whether the sync clock is enabled.

If sync clock is	Go to
enabled	step 21
not enabled	step 23

21) Obtain the status of the CPU by entering: STAT CORE <CR>

22) Determine whether fault messages exist.

If fault messages	Go to
exist	TP 3165
do not exist	step 24

23) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

24) This procedure is complete.

Clear sync clock fault (#3)

1) Determine whether a Synchronous Clock pack (NT3T47) is in place.

If a Synchronous Clock pack	Go to
is in place	step 4
is not in place	step 2

2) Determine whether the system is equipped with a sync clock.

If the system	Go to
is equipped with sync clock	step 6
is not equipped with sync clock	step 3

3) Remove sync clock from the configuration record (see Overlay CNFG (SYS), in NTP 297-3601-311, *Data Modification Manual*).
Go to step13 .

4) Determine whether the Enable switch is in the Enable position.

If the Enable switch	Go to
is in the Enable position	step 6
is not in the Enable position	step 5

5) Place the Enable switch in the Enable position.

6) Replace the Synchronous Clock pack (NT3T47) (MP 1250).

7) Load Overlay CED by entering: OVLY CED <CR>

8) Enter: TEST SYNC <CR>

9) Determine whether fault messages exist.

If fault messages	Go to
exist	step 10
do not exist	step 11

10) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

11) Enter: ENBL SYNC <CR>

12) Determine whether the Synchronous Clock pack (NT3T47) is enabled.

If the Synchronous Clock pack	Go to
is enabled	step 14
is not enabled	step 13

13) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

14) This procedure is complete.

Clear sync reference fault (#1)

1) Determine whether DCM or DED messages indicate a fault in the reference DCM.

If DCM or DED messages	**Go to**
indicate a fault	step 2
do not indicate a fault	step 3

2) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

3) Load Overlay DED by entering: OVLY DED <CR>

4) Return the DCM SYNC source to service by entering: RTS DCM PE *b s p* or RTS DTRK PE *b s p u* <CR>

5) Determine whether the SYNC message recurs.

If the SYNC message	**Go to**
recurs	step 6
does not recur	step 21

6) Busy the DCM by entering: BUSY DCM PE *b s p* <CR>

CAUTION
This command will cut off all calls in progress on this DCM.

7) Replace the Carrier Interface pack (NT2T32). (MP1250)

CAUTION
Unplug the Carrier Interface pack before removing any other pack. Plug in after replacing other pack.

8) Return the DCM to service by entering: RTS DCM PE *b s p* <CR>

9) Determine whether the SYNC message recurs.

If the SYNC message	Go to
recurs	step 10
does not recur	step 21

10) Repeat steps 6 through 9, but replace the NT2T31 pack instead of the NT2T32 pack.

11) Determine whether the SYNC message recurs.

If the SYNC message	Go to
recurs	step 12
does not recur	step 21

12) Abort Overlay DED and load Overlay CED by entering: **** OVLY CED <CR>

13) Enter: DSBL SYNC <CR>

14) Operate the switch on the Synchronous Clock pack (NT3T47) to the Disable position.

15) Replace the Synchronous Clock pack (NT3T47) (MP 1250).

16) Operate the switch on the Synchronous Clock pack (NT3T47) to the Enable position.

17) Enter: TEST SYNC <CR>

18) Enter: ENBL SYNC <CR>

19) Determine whether the SYNC message recurs.

If the SYNC message	Go to
recurs	step 20
does not recur	step 21

20) Refer fault to the far-end office.

21) This procedure is complete.

Clear sync reference fault (#2)

1) Determine whether DED messages indicate a fault in the reference DCM.

If DED messages	Go to
indicate a fault in the reference DCM	step 2
do not indicate a fault in the reference DCM	step 3

2) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

3) Replace the ED0T25-27 DCM cable.

Note: *SNC messages will print when the cable is removed and replaced. These can be ignored.*

4) Determine whether SNC408 or SNC409 recurs.

If SNC408 or SNC409	Go to
recurs	step 5
does not recur	step 12

5) Load Overlay DED by entering: OVLY DED <CR>

6) Busy the DCM by entering: BUSY DCM PE *b s p* <CR>

CAUTION
This command will cut off all calls in progress on this DCM.

7) Replace the Network Interface pack (NT2T30). (MP1250)

CAUTION
Unplug the DCM Carrier Interface pack before removing any other pack. Plug in after replacing other pack.

8) Return the DCM to service by entering: RTS DCM PE *b s p* <CR>

9) Determine whether SNC408 or SNC409 recurs.

If SNC408 or SNC409	Go to
recurs	step 10
does not recur	step 12

10) Replace both Synchronous Clock packs (NT3T47) (MP 1250).

11) Enable the DCM by entering: RTS DCM PE *b s p* <CR>.

12) This procedure is complete.

Clear System Bus Controller pack (NT3T70) fault

1) Determine which CPU the defective NT3T70 is located on.

2) Place the switch in the 1BUS mode with the defective NT3T70 pack on the INACTIVE side as described in MP 1282.

3) Remove the System Bus Controller pack (NT3T70) from the shelf.

4) Check the DIP switch settings on the pack against the appropriate table in *DIP Switch Settings for Printed Circuit Packs and Balance Networks*, NTP 297-3501-316.

5) Determine whether the DIP switch settings are correct.

If the DIP switch settings	Go to
are correct	step 6
are not correct	step 10

6) Install a known good System Bus Controller pack (NT3T70).

7) Load Overlay CED by entering: OVLY CED <CR>

8) Test the CPU by entering: TEST ALL <CR>

9) Determine whether the System Bus Controller pack (NT3T70) passed the test and the fault was corrected.

If the fault	Go to
was corrected	step 16
was not corrected	step 15

10) Set the DIP switches properly. Refer to *DIP Switch Settings for Printed Circuit Packs and Balance Networks*, NTP 297-3501-316.

11) Install the System Bus Controller pack (NT3T70) on the shelf.

12) Load Overlay CED, if not already loaded, by entering: OVLY CED <CR>

13) Test the CPU by entering: TEST ALL <CR>

14) Determine whether the System Bus Controller pack (NT3T70) passed the test and the fault was corrected.

If the fault	Go to
was corrected	step 16
was not corrected	step 15

15) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

16) This procedure is complete.

Clear I/O bus extender (IOBE) fault

1) Determine whether the fault is on the active bus extender.

If the fault	Go to
is on the active bus extender	step 2
is not on the active bus extender	step 7

2) Load CED overlay by entering: OVLY CED <CR>

3) Enter: SWCH CORE <CR>

4) Determine whether CED001 displays.

If CED001	Go to
displays	step 7
does not display	step 5

5) Determine whether the system is processing calls.

If the system	Go to
is processing calls	step 6
is not processing calls	step 7

6) Determine whether INI300 displayed earlier.

If INI300	Go to
displayed earlier	step 7
is not display earlier	step 9

7) Replace indicated I/O Bus Extender pack (MP 1258).

8) This procedure is complete.

9) Call the next level of technical support before attempting to clear this fault.

Primary IOI INT stuck somewhere

1) Perform TP 2539.

2) Determine whether the error condition has been corrected by observing whether message IOD001 displays during the execution of procedure TP 2539.

If the error condition	Go to
has been corrected	step 4
has not been corrected	step 3

3) Perform TP 3159.

4) This procedure is complete.

No Carrier on ENET Links

1) Determine whether the NT3T98 System Processor pack is on a LAN.

If the NT3T98	Go to
is on a LAN	step 3
is not on a LAN	step 2

2) Ignore output messages INI695 and INI696.
Go to step 9.

3) Load CED overlay by entering: OVLY CED <CR>

4) Determine whether the ENET failure was on the active NT3T98 pack (message INI695 displays).

If the ENET failure	Go to
was on the active NT3T98 pack	step 5
was not on the active NT3T98 pack	step 6

5) Switch Cores by entering: SWCH CORE <CR>

6) Test the Ethernet circuitry on the inactive NT3T98 pack by entering: TEST ENET <CR>

7) Determine whether the fault is in the NT3T98 Core, in the NT3T84 paddleboard, or in the LAN itself.

If the fault	Go to
is in the NT3T98 Core	MP 1282
is in the NT3T84 paddleboard	TP 3146
is in the LAN	step 8

8) Contact the LAN administrator to determine the next course of action.

9) This procedure is complete.

Clear local bus extender interrupt faults

1) Determine whether the fault is on the active CPU.

If the fault	Go to
is on the active CPU	step 2
is not on the active CPU	step 8

2) Load CED overlay by entering: OVLY CED <CR>

3) Enter: ENBL INT <CR>

CAUTION
The ENBL INT command may cause the system to initialize.

4) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 15
does not display	step 5

5) Determine whether the message, INI000 displays.

If INI000	Go to
displays	step 6
does not display	step 14

6) Enter: SWCH CORE <CR>

7) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 8
does not display	step 14

8) Replace local idle IOBE and test (MP 1258).

9) Enter: SWCH CORE INT <CR>

10) Determine whether the message, CED001 displays.

If CED001	**Go to**
displays	step 15
does not display	step 11

11) Replace remote idle IOBE one at a time (MP 1258); enter: SWCH CORE INT <CR> after each is replaced.

12) Determine whether the message, CED001 displays.

If CED001	**Go to**
displays	step 3
does not display	step 13

13) Check IOBE cables.
Go to step 15.

14) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

15) This procedure is complete.

Ready INT stuck for NT3T70 ICPU Bus

1) Determine whether the Ready INT is stuck in the CPU or in the NT3T70 (INI502 or INI503 messages display).

If either INI502 or INI503 messages	Go to
display	step 2
do not display	step 4

2) Perform TP 3159.

3) Determine whether the error condition has been corrected.

If the error condition	Go to
has been corrected	step 8
has not been corrected	step 4

4) Determine which NT3T70 pack is faulty by observing whether message, INI805 displays.

If INI805	Go to
displays	step
does not display	step 7

5) Load CED overlay by entering: OVLY CED <CR>

6) Switch Cores by entering: SWCH CORE <CR>

7) Perform TP 3063.

8) This procedure is complete.

I/O response fault on ICPU

1) Load CED overlay by entering: OVLY CED <CR>
2) Test the Inter-Core Port (ICP) on the NT3T70 pack by entering: TEST ICP <CR>
3) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.
4) This procedure is complete.

Clear remote bus extender interrupt faults

1) Determine whether the fault is on the active CPU.

If the fault	Go to
is on the active CPU	step
is not on the active CPU	step

2) Load CED overlay by entering: OVLY CED <CR>

3) Enter: ENBL INT <CR>

CAUTION
The ENBL INT command may cause the system to initialize.

4) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 12
does not display	step 5

5) Determine whether the message, INI000 displays.

If INI000	Go to
displays	step
does not display	step 11

6) Enter: SWCH CORE <CR>

7) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step
does not display	step 11

8) Replace indicated IOBE and test (MP 1258).

9) Enter: SWCH CORE INT <CR>

10) Determine whether the message, CED001 displays.

If CED001	**Go to**
displays	step
does not display	step 11

11) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

12) This procedure is complete.

Clear memory fault (#1)

1) Determine which CPU the defective NT3T98 is located on.

2) Place the switch in the 1BUS mode with the defective NT3T98 pack on the INACTIVE side as described in MP 1282.

3) Reseat indicated NT3T98 Core pack.

4) Determine whether the problem has been cleared.

If the problem	Go to
has been cleared	step 11
has not been cleared	step 5

5) Determine whether the fault is on the active Core.

If the problem	Go to
is on the active Core	step 6
is not on the active Core	step 8

6) Load Overlay CED by entering: OVLY CED <CR>

7) Switch Cores by entering: SWCH CORE <CR>

8) Test the Core memory by entering: TEST MEM <CR>

9) Determine whether the problem has been cleared.

If the problem	Go to
has been cleared	step 11
has not been cleared	step 10

10) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

11) This procedure is complete.

Clear ECP and SBC bus status discrepancy

1) Suspect right power converter failure on idle CPU shelf. Use TP 2100 to correct the fault.

2) Determine whether the fault was corrected.

If the fault	Go to
was corrected	step 8
was not corrected	step 3

3) Suspect faulty ECP pack on active CPU shelf. Use MP 1284 to correct the fault.

4) Determine whether the fault was corrected.

If the fault	Go to
was corrected	step 8
was not corrected	step 5

5) Suspect faulty SBC pack on active CPU shelf. Use TP 3063 to clear fault.

6) Determine whether the fault was corrected.

If the fault	Go to
was corrected	step 8
was not corrected	step 7

7) Refer to the TTY printouts and the Output Message Manual to determine other alarms that need to be corrected and the procedure to follow.

8) This procedure is complete.

Clear stuck interrupt indication

1) Load CED overlay by entering: OVLY CED <CR>
2) Obtain status of the Core CPUs by entering: STAT CORE <CR>
3) Obtain status of the IO Bus Extenders by entering: STAT XTDR <CR>
4) Determine which IO Extender has an INT fault display.

If the INT fault on remote XTDR	Go to
displays	step 5
does not display	step 9

5) Replace remote I/O Bus Extender pack indicatiing the INT fault (MP 1258).
6) If CORE controlling remote with INT fault still idle, switch COREs, masking interrupts by entering: SWCH CORE INT <CR>
7) Enable interrupts by entering: ENBL INT <CR>

CAUTION
ENBL INT causes the system to trap if the fault has not been cleared by replacing the I/O Bus Extender pack.

8) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 15
does not display	step 9

9) Replace the local I/O Bus Extender pack controlled by the CORE with the INT fault indication (MP 1258).
10) If CORE with INT fault still idle, switch COREs, masking interrupts by entering: SWCH CORE INT <CR>

11) Enable interrupts by entering: ENBL INT <CR>

CAUTION
ENBL INT causes the system to trap if the fault has not been cleared by replacing the I/O Bus Extender pack.

12) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 15
does not display	step 13

13) Replace remote I/O Bus Extender packs controlled by the idle CPU shelf, switch Core CPUs and enable interrupts until CED001 is printed out.

14) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

15) This procedure is complete.

Replace NT3T84 paddle card

1) Load CED overlay by entering: OVLY CED <CR>

2) Obtain status by entering: STAT CORE <CR>

3) Determine whether the system is in 1bus mode.

If the system	Go to
is in 1bus mode	step 10
is not in 1bus mode	step 4

4) Place the system in 1bus mode by entering: ENTR 1BUS <CR>

5) Abort Overlay CED and load Overlay IOD by entering: **** OVLY IOD <CR>

6) Disable any TTYs on the idle CORE shelf by entering: DSBL TTY *n* <CR>

7) Disable any IOI device on the active CORE shelf by entering: DSBL IOI IMED <CR>

8) Abort Overlay IOD and load Overlay CED by entering: **** OVLY CED <CR>

9) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 10
does not display	step 20

10) At the back of the inactive CORE shelf, remove the inter-CPU cable and Ethernet cables (if equipped) from the NT3T84 paddle card and then remove the NT3T84 paddle card.

11) At the back of the inactive CORE shelf, insert a new NT3T84 paddle card, replace the Ethernet cables (if equipped), and then replace the inter-CPU cable.

12) Remove the system from 1bus mode by entering: EXIT 1BUS <CR>

13) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 14
does not display	step 20

14) Test the Ethernet connection by entering: TEST ENET <CR>

15) Abort Overlay CED and load Overlay IOD by entering: **** OVLY IOD <CR>

16) Enable any TTYs disabled earlier by entering: ENBL TTY *n* <CR>

17) Abort Overlay IOD and load Overlay CED by entering: **** OVLY CED <CR>

18) Enable IOI device on the active CORE shelf by entering: ENBL IOI <CR>

19) Determine whether the message, CED001 displays.

If CED001	**Go to**
displays	step 21
does not display	step 20

20) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

21) This procedure is complete.

Download the System Processor pack (NT3T98) Board Support Package (BSP)

1) Load CED overlay by entering: OVLY CED <CR>

2) Obtain status by entering: STAT CORE <CR>

3) Determine whether the system is in 1bus mode.

If the system	Go to
is in 1bus mode	step 4
is not in 1bus mode	step 6

4) Remove the system from 1bus mode by entering: EXIT 1BUS <CR>

5) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 6
does not display	step 15

6) Determine whether the inactive BSP requires the download.

If the inactive BSP	Go to
requires the download	step 9
does not require the download	step 7

7) Switch COREs by entering: SWCH CORE <CR>

8) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 9
does not display	step 15

9) Download the BSP by entering: DNLD BSP *(default)* <CR>, where *default* may be one of: DFLT, OLD, or NEW.

10) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 11
does not display	step 15

11) Verify the download by entering: TEST FLSH <CR>

12) Determine whether the message, CED001 displays.

If CED001	**Go to**
displays	step 13
does not display	step 15

13) Switch CORES back to the original configuration by entering: SWCH CORE <CR>

14) Determine whether the message, CED001 displays.

If CED001	**Go to**
displays	step 16
does not display	step 15

15) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

16) This procedure is complete.

Download the System Processor pack (NT3T98) Board Support Package Loader (BSPL)

Note: *This procedure is to be performed only by authorized personnel.*

1) Load CED overlay by entering: OVLY CED <CR>

2) Obtain status by entering: STAT CORE <CR>

3) Determine whether the system is in 1bus mode.

If the system	Go to
is in 1bus mode	step
is not in 1bus mode	step

4) Remove the system from 1bus mode by entering: EXIT 1BUS <CR>

5) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step
does not display	step

6) Determine whether the inactive BSPL requires the download.

If the inactive BSPL	Go to
requires the download	step
does not require the download	step

7) Switch COREs by entering: SWCH CORE <CR>

8) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step
does not display	step

9) Download the BSP by entering: DNLD BSPL *(default)* <CR>, where *default* may be one of: DFLT, OLD, or NEW.

Note: *The DNLD BSPL command is allowed only when the BNR_LAB_FLAG3 [.LAB_DNLD_BSPL] is on.*

10) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step
does not display	step

11) Verify the download by entering: TEST FLSH <CR>

12) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step
does not display	step

13) Switch CORES back to the original configuration by entering: SWCH CORE <CR>

14) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step
does not display	step

15) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

16) This procedure is complete.

Clear IOI problem

1) Load IOD overlay by entering: OVLY IOD <CR>

2) Enter: STAT IOI <CR>

3) Determine whether the NT8T90 SCSI Bus I/O and Disk Drive Pack and all attached devices are enabled.

If the NT8T90 pack and attached devices	Go to
are enabled	step 5
are disabled	step 4

4) Enable the appropriate IOI device by entering one or both of the following commands, as required:
   ENBL IOI <CR>
   ENBL device <CR>, where *device* may be one of HD0, HD1, or MO0

5) Continue performing the task that resulted in this trouble procedure being performed. If the problem is solved, this procedure is complete. If the problem still exists, continue this procedure at the next step.

6) Disable the attached device by entering: DSBL *device* <CR>, where *device* may be one of HD0, HD1, or MO0.

7) Test the attached device by entering: TEST *device* <CR>, where *device* may be one of HD0, HD1, or MO0.

8) Determine whether the attached device passed the test.

If the attached device	Go to
passed the test	step 10
did not pass the test	step 9

9) Do not continue with this procedure. Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

10) Enable the attached device by entering: ENBL *device* <CR>, where *device* may be one of HD0, HD1, or MO0.

11) Continue performing the task that resulted in this trouble procedure being performed. If the problem is solved, this procedure is complete. If the problem still exists, continue this procedure at the next step.

12) Disable the NT8T90 pack and the attached devices by entering: DSBL IOI IMED <CR>

13) Enable the NT8T90 pack and the attached devices by entering: ENBL IOI <CR>

14) Continue performing the task that resulted in this trouble procedure being performed. If the problem is solved, this procedure is complete. If the problem still exists, continue this procedure at the next step.

15) Disable the primary attached device entering: DSBL *device* <CR>, where *device* is the primary device name shown in the STAT IOI report displayed when step 2 was performed.

16) Enable another attached device as the primary device by entering: ENBL *device* <CR>, where *device* is another device name shown in the STAT IOI report displayed when step 2 was performed.

17) Enable any another attached devices as secondary devices by entering for each device: ENBL *device* <CR>

18) Continue performing the task that resulted in this trouble procedure being performed. If the problem is solved, this procedure is complete. If the problem still exists, contact the next level of support to determine the next course of action.

Clear CPU switch inhibit

1) Load CED overlay by entering: OVLY CED <CR>

2) Obtain status of the Core CPUs by entering: STAT CORE <CR>

3) Determine whether the Core status is GOOD.

If the Core status	Go to
is GOOD	step NO TAG
is not GOOD	TP 3165

4) Allow CPU switchover by entering: ALLW SWCH <CR>

CAUTION
Never enter ALLW SWCH before determining why INH SWCH was invoked; the system may Initialize or SYSLOAD.

5) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 6
does not display	step 10

6) Test Core CPU by entering: ENBL CORE <CR>

7) Determine whether the Core passed the test.

If the Core	Go to
passed the test	step 8
did not pass the test	step 10

8) Determine status of the Core CPU by entering: STAT CORE <CR>

9) Determine whether any other faults are indicated.

If other faults	Go to
are indicated	step 10
are not indicated	step 11

10) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

11) This procedure is complete.

Clear CPU stuck interrupt

1) Determine whether the fault is on the active or idle Core.

If the fault is on	Go to
the active Core	step 2
the idle Core	step 3

2) Call the next level of technical support before attempting to resolve the fault.

3) Replace idle System Processor pack.

4) Replace idle CPU Miscellaneous pack (MP 1261).

5) Load CED overlay by entering: OVLY CED <CR>

6) Switch Core CPUs, masking interrupts, by entering: SWCH CORE INT <CR>

7) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 9
does not display	step 8

8) Observe hexadecimal display on Core CPU and output messages on TTY printout.
Go to step 12.

9) Enable interrupts by entering: ENBL INT <CR>

10) Determine whether the message, CED001 displays.

If CED001	Go to
displays	step 12
does not display	step 11

11) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

12) This procedure is complete.

Clear CPU fault

1) Determine whether the CPU is in one-bus mode.

If the CPU	Go to
is in one-bus mode	step 2
is not in one-bus mode	step 5

2) Load overlay CED by entering: OVLY CED <CR>

3) Exit the one-bus mode by entering: EXIT 1BUS <CR>

4) Determine whether the system exited one-bus mode.

If the system	Go to
exited one-bus mode	step 5
did not exit from one-bus mode	step 40

5) Determine whether the message, CED110, CED140, or CED144 displays.

If	Go to
CED110 displays	step 10
CED140 displays	step 9
CED144 displays	step 6
none of the messages display	step 10

6) Determine whether “FLSH” was displayed as part of the CED144 message.

If FLSH	Go to
displayed	step 7
did not display	step 10

7) Enter: TEST FLSH <CR>

8) In response to the CED message that displays, perform its associated trouble procedure (TP).
Go to step 41.

9) Refer to the display on the Core CPU and use the associated message or procedure.
Go to step 41.

10) Determine whether there are any power faults on the CPU shelf.

If power faults	**Go to**
exist on the CPU shelf	TP 2100
do not exist on the CPU shelf	step 11

11) Enter: STAT CORE <CR>

Note: *CORE status command output format is illustrated in Figure 3165-1. Stat1 can be GOOD, BAD or ?. Stat2 can be ALRM, BUS, CLK, GOOD, INT, IOI, PWR, or ?. Refer to the NTP entitled Maintenance Diagnostic Input Manual (297-3601-506) for a definition of these mnemonics.*

12) Determine whether the CPU status is GOOD.

If the CPU status	**Go to**
is GOOD	step 41
is not GOOD	step 13

13) Observe the fault mnemonic for the CPU status.

Note: *When bus faults are indicated simultaneously with other faults, clear the bus fault first. Use the mask mnemonics to mask other faults when using TEST XTDR or ENBL CORE to isolate bus faults.*

14) Determine whether the fault mnemonic is IOI.

If the fault mnemonic	**Go to**
is IOI	step 15
is not IOI	step 24

15) Abort CED overlay and load IOD overlay by entering: **** OVLY IOD <CR>

16) Enter: STAT IOI <CR>

17) Determine whether any device is disabled.

If a device	**Go to**
is disabled	step 18
is not disabled	step 20

18) Enable IOI device by entering: ENBL (device) <CR>

19) Determine whether the device is enabled.

If the device	Go to
is enabled	step 20
is not enabled	step 23

20) Abort IOD overlay and load CED overlay by entering: **** OVLY CED <CR>

21) Enter: ENBL CORE (*mask*) <CR>

Note: *Unless SYSLOAD or an Initialization occurred in the course of fault correction, a mask mnemonic may be entered with the ENBL CORE command. This mnemonic corresponds to the fault mnemonic(s) listed by the STAT CORE command, usually IOI in this procedure. The ENBL CORE command must be used with caution because a SYSLOAD or an Initialization may occur if the fault is still present in the idle CPU.*

22) Enter: STAT CORE <CR>
Go to step 12.

23) Test IOI device by entering: TEST (device) <CR> (Clear any faults indicated)
Go to step 20.

24) Determine whether the fault mnemonic is CLK.

If the fault mnemonic	Go to
is CLK	step 30
is not CLK	step 25

25) Determine whether the fault mnemonic is INT.

If the fault mnemonic	Go to
is INT	step 40
is not INT	step 26

Note: *Interrupt faults always cause Initializations. Check the printout for INI messages and troubleshoot accordingly.*

26) Determine whether the fault mnemonic is ALRM.

If the fault mnemonic	Go to
is ALRM	TP 3171
is not ALRM	step 36

27) Determine whether any memory faults are indicated.

If memory faults	**Go to**
are indicated	step 28
are not indicated	step 29

28) Test for indicated faults by entering: TEST MEM <CR>
Go to step 40.

29) Determine whether the message CED001 displays.

If CED001	**Go to**
displays	step 32
does not display	step 40

30) Enter: ENBL CLK *n* <CR>

Note: *The disabled CLK has to be on the inactive CPU in order to enable it.*

31) Determine whether the message CED001 displays.

If CED001	**Go to**
displays	step 32
does not display	step 40

32) Enter: ENBL CORE *mask* <CR>

Note: *Unless a SYSLOAD or an Initialization occurred in the course of fault correction, a mask mnemonic may be entered with the ENBL CORE command. This mnemonic corresponds to the fault mnemonic(s) listed by the STAT CORE command. The ENBL CORE command must be used with caution because a SYSLOAD or an initialization may occur if the fault is still present in the idle CPU.*

33) Determine whether the message CED001 displays.

If CED001	**Go to**
displays	step 34
does not display	step 40

34) Perform complete Control Equipment diagnostics by entering: TEST ALL <CR>

35) Determine whether the message CED001 displays.

If CED001	**Go to**
displays	step 41
does not display	step 40

36) Determine whether the fault mnemonic is a question mark.

If the fault mnemonic	**Go to**
is a question mark	step 37
is not a question mark	step 39

37) Enter: ENBL CORE <CR>

Note: *Unless a SYSLOAD or an Initialization occurred in the course of fault correction, a mask mnemonic may be entered with the ENBL CORE command. This mnemonic corresponds to the fault mnemonic(s) listed by the STAT CORE command. The ENBL CORE command must be used with caution because a SYSLOAD or an initialization may occur if the fault is still present in the idle CPU.*

38) Determine whether the message CED001 displays.

If CED001	**Go to**
displays	step 41
does not display	step 39

39) Replace the Central Processor pack. (MP 1282).
Go to step 41.

40) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

41) This procedure is complete.

Clear CPU alarm fault

1) Load CED overlay by entering: OVLY CED <CR>
2) Enter: STAT CORE <CR>
3) Determine whether CPU faults other than ALRM faults display in the status report.

If other CPU faults	Go to
display	step 4
do not display	step 5

4) Troubleshoot other CPU faults first (TP 3165).
   Go to step 3.
5) Abort Overlay CED and load ALT overlay by entering: ****OVLY ALT <CR>
6) Enter: TEST <CR>
7) Determine whether the test was passed.

If the test	Go to
was passed	step 9
was not passed	step 8

8) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.
   Go to step 10.
9) Abort overlay and log out by entering: **** LOGO <CR>
10) This procedure is complete.

Active FPGA load not current

1) Load CED overlay by entering: OVLY CED <CR>
2) Switch Cores by entering: SWCH CORE <CR>
3) Abort Overlay CED and load Overlay IOD by entering: **** OVLY IOD <CR>
4) Disable any TTYs on the idle CORE shelf by entering: DSBL TTY *n* <CR>
5) Disable IOI devices on the active CORE shelf by entering: DSBL IOI IMED <CR>
6) Abort Overlay IOD and load Overlay CED by entering: **** OVLY CED <CR>
7) Enter 1BUS mode by entering: ENTR 1BUS <CR>
8) Disable the idle NT3T98 System Processor pack by moving the “Enable” switch on the pack faceplate to the Disable position.
9) Remove the idle NT3T98 pack from the shelf (MP 1250).
10) Reseat the idle NT3T98 pack into the shelf (MP 1250).
11) Enable the idle NT3T98 pack by moving the “Enable” switch on the pack faceplate to the Enable position.
12) Exit 1BUS mode by entering: EXIT 1BUS <CR>
13) Abort Overlay CED and load Overlay IOD by entering: **** OVLY IOD <CR>
14) Enable any TTYs disabled earlier by entering: ENBL TTY *n* <CR>
15) Enable any IOI devices on the active CORE shelf by entering: ENBL IOI <CR>
16) This procedure is complete.

Inactive FPGA load not current

1) Load IOD overlay by entering: OVLY IOD <CR>
2) Disable any TTYs on the idle CORE shelf by entering: DSBL TTY *n* <CR>
3) Disable IOI devices on the active CORE shelf by entering: DSBL IOI IMED <CR>
4) Abort Overlay IOD and load Overlay CED by entering: **** OVLY CED <CR>
5) Enter 1BUS mode by entering: ENTR 1BUS <CR>
6) Disable the idle NT3T98 System Processor pack by moving the “Enable” switch on the pack faceplate to the Disable position.
7) Remove the idle NT3T98 pack from the shelf (MP 1250).
8) Reseat the idle NT3T98 pack into the shelf (MP 1250).
9) Enable the idle NT3T98 pack by moving the “Enable” switch on the pack faceplate to the Enable position.
10) Exit 1BUS mode by entering: EXIT 1BUS <CR>
11) Abort Overlay CED and load Overlay IOD by entering: **** OVLY IOD <CR>
12) Enable any TTYs disabled earlier by entering: ENBL TTY *n* <CR>
13) Enable any IOI devices on the active CORE shelf by entering: ENBL IOI <CR>
14) This procedure is complete.

Clear alarm fault (#1)

1) Determine whether an alarm is connected to the given alarm point.

If an alarm	Go to
is connected to the alarm point	step
is not connected to the alarm point	step

2) Replace the Alarm Processor pack (MP 1262).

3) Define alarm point in data. (See the NTP entitled *Data Modification Manual* [297-3601-311].)

4) Refer to the TTY printouts and the Output Message Manual to determine other alarms that need to be cleared and the procedure to follow.

Clear alarm fault (#2)

Note: *If the fault message is ALM017 start at Step 1. If the fault message is ALM018, ALM013, or ALM014, verify that ABS circuit breaker is on, then start at Step 4.*

1) Determine whether an ALM018 message displays.

If ALM018	**Go to**
displays	step 15
does not display	step 2

2) Determine whether the ALM017 message is preceded by multiple ALM021 messages naming one alarm point.

If ALM021 messages	**Go to**
display preceding the ALM017 message	step 3
do not display	step 4

3) Repair fault shown by ALM021 messages.

4) Replace the alarm pack specified in alarm message.

5) Determine whether ALM messages continue displaying.

If ALM messages	**Go to**
continue displaying	step 6
do not display	step 15

6) Abort the current overlay by entering: ****

7) Switch CPUs (MP 1498).

8) Replace Miscellaneous pack in inactive CPU (MP 1261).

9) Switch CPUs (MP 1498).

10) Load Overlay ALO by entering: **** OVLY ALO <CR>

11) Enter: BUSY ALPK CE *b s p* <CR>

12) Enter: RTS ALPK CE *b s p* <CR>

13) Determine whether ALM messages display again.

If ALM messages	**Go to**
display again	step 14
do not display again	step 15

14) Check for wiring faults between the CPU and the alarm and ringing shelf.

15) This procedure is complete.

Clear firmware-detected alarm faults

1) Determine whether the message, ALM019 displays.

If ALM019	Go to
displays	step 2
does not display	step 4

2) Determine whether messages other than ALM019 display.

If messages other than ALM019	Go to
display	step 3
do not display	step 6

3) Replace Alarm Processor pack (MP 1262).
Go to step 25.

4) Determine whether the messages ALM016, ALM017, or ALM018 display.

If messages ALM016, ALM017, or ALM018	Go to
display	step 5
do not display	step 7

5) Replace indicated pack (MP 1263, MP 1262, or MP 1264).
Go to step 25.

6) Replace Maintenance Interface pack in idle CPU (MP 1257).
Go to step 25.

7) Determine fault code of ALM015 message.

8) Determine whether the fault code, 00 displays.

If fault code 00	Go to
displays	step 9
does not display	step 10

9) Replace Alarm Processor pack (MP 1262).
Go to step 25.

10) Determine whether the fault code, 01, 06, or 07 display.

If fault code 01, 06, or 07	Go to
displays	step 11
does not display	step 15

11) Replace the Maintenance Interface pack (MP 1257).

12) Determine whether fault messages recur.

If fault messages	Go to
recur	step 13
do not recur	step 25

13) Replace Alarm Processor pack (MP 1262).

14) Check the cable that runs from connector G of the alarm and ringing shelf to connector B of the CPU shelf.
Go to step 25.

15) Determine whether fault code, 02 displays.

If fault code 02	Go to
displays	step 16
does not display	step 17

16) If multiple 02 messages display, replace Alarm Processor pack (MP 1262).

Note: *Infrequent messages with this fault code do not require corrective action.*

Go to step 25.

17) Determine whether fault code, 03 displays.

If fault code 03	Go to
displays	step 18
does not display	step 20

18) Replace Alarm Processor pack (MP 1262).

19) Determine whether fault messages recur.

If fault messages	Go to
recur	step 21
do not recur	step 25

20) Determine whether fault code, 04 displays.

If fault code 04	Go to
displays	step 21
does not display	step 22

21) Replace Maintenance Interface pack (MP 1257).
Go to step 25.

22) Fault code 05: Wait for low traffic period, then load Overlay IOD by entering OVLY IOD <CR>, disable the SCSI Bus I/O and Disk Drive pack (NT8T90) by entering DSBL IOI <CR>, and then press the MAN INT button.

Note: *The MAN INT button is located on the faceplate of the Core CPU pack (NT3T98). When the MAN INT button is pressed, the system Initializes.*

23) Determine whether fault messages continue to display after the initialization.

If fault messages	Go to
display	step 24
do not display	step 25

24) Replace Alarm Processor pack (MP 1262).

25) This procedure is complete.

Clear signal distribution point fault

1) Load ALT overlay by entering: OVLY ALT <CR>
2) Enter the appropriate STAT DIST command.
3) If any SD points are set by the system, enter RESE to reset the SD points.
4) If any SD points are manually set, abort overlay, load overlay ALO, and enter SDPT to release the SD points.
5) Determine whether the alarms cleared.

If the alarms	Go to
cleared	step 6
did not clear	step 7

6) If necessary, abort overlay, re-load overlay ALT, and enter TEST command again.
   Go to step 16.
7) Abort overlay and load overlay CED, IOD, MTD, or PED.
8) Enter: CLR MAJ <CR>
9) Enter: CLR MIN <CR>
10) Determine whether the alarms cleared.

If the alarms	Go to
cleared	step 15
did not clear	step 11

11) Abort current overlay and load overlay ALO by entering: **** OVLY ALO <CR>
12) Enter: CLR CAT ALL <CR>
13) Enter: CLR MAJ ALL <CR>
14) Enter: CLR MIN ALL <CR>
15) Abort overlay ALO, re-load overlay ALT, and enter TEST command again.
16) This procedure is complete.

Clear alarm signal distribution point faults

1) Determine whether a CPU switch of activity has occurred.

If a CPU switch	Go to
has occurred	step 2
has not occurred	step 4

2) Determine whether fault messages have been issued for only one CPU.

If fault messages	Go to
have been issued for only one CPU	step
have not been issued for only one CPU	step 4

3) Replace Maintenance Interface pack in CPU that was active when fault messages were printed (MP 1257).
Go to step 12.

4) Determine whether more than one SD point fault exists.

If more that one SD point fault	Go to
exists	step
does not exist	step 5

5) Replace the Alarm SD pack (NT3T54) (MP 1263).
Go to step 8.

6) Replace the Alarm Control pack (NT3T55) (MP 1264).

7) Load ALT overlay: OVLY ALT <CR>

8) Return the pack to service by entering: RTS 0 <CR>

9) Retest the SD point operation by entering: TEST

10) Determine whether the message ALT001 displays.

If ALT001	Go to
displays	step 12
does not display	step 11

11) Refer to the TTY printouts and the Output Message Manual to determine other alarms that need to be cleared and the procedure to follow.

12) This procedure is complete.

Clear PE ringing faults

Note: *The alarm condition queried in the procedure below is indicated by a silent alarm and the TTY message {CAT} {RNG1} ALM {MAJ} {RNG2} {MIN}*

1) Press Ringing Generator reset key on Manual Control Center.

2) Determine whether the alarm condition disappears.

If the alarm condition	Go to
disappears	step 76
does not disappear	step 3

3) Determine whether the hardware is vintage 3.

If the hardware	Go to
is vintage 3	step 4
is not vintage 3	step 38

Note: *See Overlay CNFG, prompting sequence ALRM, in the NTP entitled Data Modification Manual (297-3601-311) for information on alarm hardware vintages.*

4) Determine whether the ringing generator input fuse is blown.

If the ringing generator fuse	Go to
is blown	step 5
is not blown	step 12

5) Replace the corresponding ringing generator pack.

6) Replace the associated Ringing Monitor pack. (MP 1276)

7) Check wiring between blown fuses and ringing generator pack and Ringing Monitor pack.

8) Replace blown ringing generator fuse.

9) Press ringing generator reset switch on the Manual Control Center.

10) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 11
does not exist	step 12

11) Press ringing generator reset switch again.
Go to step 76.

12) Determine whether the ringing generator (ringing generator) output fuse is blown.

If the ringing generator output fuse	Go to
is blown	step 13
is not blown	step 17

13) Check wiring between tripped breaker and corresponding PE bay.

14) Press ringing generator reset switch on the Manual Control Center.

15) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 16
does not exist	step 17

16) Press ringing generator reset switch again.
Go to step 76.

17) Determine whether ringing generator pack LED is lit.

If the ringing generator pack LED	Go to
is lit	step 18
is not lit	step 26

18) Replace the associated Ringing Monitor pack. (MP 1276)

Note: *If these packs are eventually found to be clear of faults, they may be put back in the system.*

19) Press ringing generator reset switch on the Manual Control Center.

20) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 21
does not exist	step 22

21) Press the ringing generator reset switch again.
Go to step 76.

22) Replace the ringing generator pack that has a lit LED on the faceplate. (MP 1276)

23) Press ringing generator reset switch on the Manual Control Center.

24) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 25
does not exist	step 26

25) Press ringing generator reset switch again.
Go to step 76.

26) Check wiring and operation of ringing generator output transformer.

27) Press ringing generator reset switch on the Manual Control Center.

28) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 29
does not exist	step 30

29) Press ringing generator reset switch again.
Go to step 76.

30) Ensure that ALL the ringing monitor leads are on terminal 8 of their respective barrier strips in the back of the Alarm and Ringing shelf.

31) Press ringing generator reset switch on the Manual Control Center.

32) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 33
does not exist	step 34

33) Press ringing generator reset switch again.
Go to step 76.

34) Check all other wiring associated with ringing alarm detection.

35) Press ringing generator reset switch on the Manual Control Center.

36) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 37
does not exist	step 75

37) Press ringing generator reset switch again.
Go to step 76.

38) Determine whether the O/P FAILED LED is lit.

If the O/P FAILED LED	**Go to**
is lit	step 39
is not lit	step 42

39) Replace the blown fuse.

40) Press ringing generator reset switch on the Manual Control Center.

41) Determine whether the alarm condition still exists.

If the alarm condition	**Go to**
exists	step 76
does not exist	step 42

42) Determine whether the I/P FAILED LED is lit.

If the I/P FAILED LED	**Go to**
is lit	step 43
is not list	step 47

43) Replace the blown fuse.

44) Press ringing generator reset switch on the Manual Control Center.

45) Determine whether the fuses hold.

If the fuses	**Go to**
hold	step 46
do not hold	step 47

46) Determine whether the alarm condition still exists.

If the alarm condition	**Go to**
exists	step 76
does not exist	step 47

47) Check cabling between blown fuse and corresponding PE bay.

48) Press ringing generator reset button.

49) Determine whether the alarm condition still exists.

If the alarm condition	**Go to**
exists	step 76
does not exist	step 50

50) Determine whether the ringing generator LEDs are lit.

If the ringing generator LEDs	Go to
are lit	step 51
are not lit	step 54

Note: *These LEDs are SF RG1, MF RG2, SF RG3, MF RG4*

51) Replace the associated Ringing Monitor pack. (MP 1276)

52) Press ringing generator reset button.

53) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 76
does not exist	step 54

54) Replace the ringing generator pack associated with the lit LED.

55) Press ringing generator reset button.

56) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 76
does not exist	step 57

57) Check wiring between blown fuses and indicated ringing generator.

58) Press ringing generator reset button.

59) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 76
does not exist	step 60

60) Check wiring between blown fuses and ringing monitor, including MON relay.

61) Press ringing generator reset button.

62) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 76
does not exist	step 63

63) Check wiring between fuse and associated transformer, and check transformer.

64) Press ringing generator reset button.

65) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 76
does not exist	step 66

66) Check wiring on ringing generator pack or transformer behind Alarm and Ringing shelf.

67) Press ringing generator reset button.

68) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 76
does not exist	step 69

69) Check relay K14 behind status display panel (catastrophic or multiple ringing faults).

70) Press ringing generator reset button.

71) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 76
does not exist	step 72

72) Check relay K27 behind status display panel (single or minor ringing faults).

73) Press ringing generator reset button.

74) Determine whether the alarm condition still exists.

If the alarm condition	Go to
exists	step 76
does not exist	step 75

75) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

76) This procedure is complete.

Clear Global Tone Service (GTS) pack (NT8T04) or Universal Tone Receiver (UTR) pack (NT4T02) fault

1) Determine whether the pack is a GTS (NT8T04) or a UTR (NT4T02).

If the pack	Go to
is a GTS (NT8T04)	step 9
is a UTR (NT4T02)	step 2

2) Load Overlay SED by entering: OVLY SED <CR>

3) Obtain status of the UTR pack by entering: STAT UTPK CE *b s p* <CR>

4) Busy designated pack by entering: BUSY UTPK CE *b s p* <CR>

5) Test UTR pack by entering: TEST UTPK CE *b s p* <CR>

6) Determine whether the UTR pack passed the test.

If the UTR	Go to
passed the test	step 8
did not pass the test	step 7

7) Replace the UTR pack (refer to MP 1269). Go to step 19.

8) Return UTR pack to service by entering: RTS UTPK CE *b s p* <CR>.
Go to step 19.

9) Load Overlay NED by entering: OVLY NED <CR>

10) Obtain status of the GTS bank by entering: STAT GTSB CE *b s c u* <CR>

11) Busy designated bank by entering: BUSY GTSB CE *b s c u* <CR>

12) Test GTS bank by entering: TEST GTSB CE *b s c u* <CR>

13) Determine whether the GTS bank passed the test.

If the GTS bank	Go to
passed the test	step 18
did not pass the test	step 14

14) Busy and RTS the NT8T04 of the GTS bank by entering:
BUSY IFPK CE *b s c* <CR>
RTS IFPK CE *b s c* <CR>

15) Test GTS bank by entering: TEST GTSB CE *b s c u* <CR>

16) Determine whether the GTS bank passed the test.

If the GTS bank	Go to
passed the test	step 18
did not pass the test	step 17

17) Replace the NT8T04 pack (refer to MP 1250).

18) Return the GTS bank to service by entering: RTS GTSB CE *b s c u* <CR>.

19) This procedure is complete.

Clear Conference (CNF) pack or Tone and Digit Sender (TDS) pack faults (NED850)

1) Load Overlay NED by entering: OVLY NED <CR>

2) Identify the network port (NWPP) which serves the CNF pack or TDS pack that failed by entering: STAT <*device*> *b s p* <CR>

3) Busy and RTS the servicing network port (NWPP) by entering:
BUSY NWPP CE *b s p* <CR>
RTS NWPP CE *b s p* <CR>

4) Verify that the device that failed is normal by entering:
TEST <*device*> ALL <CR>

Note: *This step should be performed for all devices that exhibit this fault.*

5) If the problem persists on the same device, repeat steps 2 through 4 several times. If the problem still persists, end this procedure and contact Nortel Networks technical support.

6) If the problem occurs on another device, perform steps 2 through 4 for the device(s). If the problem propagates back to the original device, contact Nortel Networks technical support.

7) This procedure is complete.

Clear Tone and Digit Sender (TDS) pack (NT4T01)/Network Interface pack (NT8T04) Global Tone Services fault

1) Determine which pack.

If designated pack	Go to
is Clear Tone and Digit Sender (TDS) pack	step 2
is Network Interface pack	TP 4107

2) Load NED overlay by entering: OVLY NED <CR>

Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

3) Busy designated pack by entering: BUSY TDS CE *b s p* <CR>

Note: *SMB devices must be MMB prior to testing.*

4) If the designated pack is capable of being downloaded, download the pack by entering: DNLD TDS CE *b s p* <CR>

Note: *Downloadable packs include certain versions of the NT4T01, NT4T04, and NT4T05. See NTP 297-3601-150, Equipment Identification for more information.*

5) Test designated pack by entering: TEST TDS CE *b s p* <CR>

6) Return pack to service by entering: RTS TDS CE *b s p* <CR>

7) Determine whether errors are still reported.

If errors	Go to
are reported	step 8
are no longer reported	step 15

8) Busy designated pack by entering: BUSY TDS CE *b s p* <CR>

9) Replace pack (MP 1250).

10) If the designated pack is capable of being downloaded, and if applicable, download the pack by entering: DNLD TDS CE *b s p* <CR>

Note: *Downloadable packs include certain versions of the NT4T01, NT4T04, and NT4T05. See NTP 297-3601-150, Equipment Identification for more information.*

11) Test designated pack by entering: TEST TDS CE *b s p* <CR>

12) Return pack to service by entering: RTS TDS CE *b s p* <CR>

13) Determine whether errors are still reported.

If errors	Go to
are reported	step 14
are no longer reported	step 15

14) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

15) This procedure is complete.

Clear interface pack fault (parity test)

1) Log in (GP 0100).

   Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

2) Load NED overlay by entering: OVLY NED <CR>
3) Busy designated interface pack by entering: BUSY pack mnemonic CE *b s p* <CR>

   Note: *SMB devices must be MMB prior to testing.*

4) Test designated interface pack by entering: TEST pack mnemonic CE *b s p* <CR>
5) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 6
did not pass the test	step 8

6) Return pack to service by entering: RTS pack mnemonic CE *b s p* <CR>
7) Abort overlay and log out by entering: **** LOGO <CR>
   Go to step 24.
8) Replace pack (MP 1250).
9) Test designated interface pack by entering: TEST pack mnemonic CE *b s p* <CR>
10) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 11
did not pass the test	step 13

11) Return pack to service by entering: RTS pack mnemonic CE *b s p* <CR>
12) Abort overlay and log out by entering: **** LOGO <CR>
    Go to step 24.
13) Replace pack with original interface pack (MP 1250)
14) Return pack to service by entering: RTS pack mnemonic CE *b s p* <CR>
15) Busy designated Network pack by entering: BUSY NWPK CE 1 *s p* <CR>
16) Test designated Network pack by entering: TEST NWPK CE 1 *s p* <CR>

17) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 18
did not pass the test	step 20

18) Return Network pack to service by entering: RTS NWPK CE 1 *s p* <CR>

19) Abort overlay and log out by entering: **** LOGO <CR>
Go to step 24.

20) Replace Network pack (MP 1250).

21) Test Network pack by entering: TEST NWPK CE 1 *s p* <CR>

22) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 18
did not pass the test	step 23

23) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

24) This procedure is complete.

Clear Network pack (NT8T06) or Network Interface pack (NT8T04) fault (PCM switching test)

1) Load Overlay NED by entering: OVLY NED <CR>

Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

2) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

3) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* (NEW/OLD) <CR>

4) Determine whether the pack downloaded successfully.

If the pack	Go to
downloaded successfully	step 5
did not download successfully	step 10

5) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>

6) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 7
did not pass the test	step 10

7) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

8) Determine whether the error still exists.

If the error	Go to
still exists	step 9
no longer exists	step 51

9) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

10) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>

11) Replace the NT8T04 pack (MP 1250).

12) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

13) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* (NEW/OLD) <CR>

14) Determine whether the pack downloaded successfully.

If the pack	Go to
downloaded successfully	step 15
did not download successfully	step 20

15) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>

16) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 17
did not pass the test	step 20

17) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

18) Determine whether the error still exists.

If the error	Go to
still exists	step 19
no longer exists	step 51

19) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

20) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>

21) Replace the NT8T04 pack with the original pack (MP 1250).

22) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

23) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>

24) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 25
did not pass the test	step 50

25) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

26) Determine whether the error still exists.

If the error	Go to
still exists	step 27
no longer exists	step 51

27) Busy the associated NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

28) Test the NT8T06 pack by entering: TEST NWPK CE *b s p* <CR>

29) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 30
did not pass the test	step 33

30) Return the NT8T06 pack to service by entering: RTS NWPK CE *b s p* <CR>.

31) Determine whether the error still exists.

If the error	**Go to**
still exists	step 32
no longer exists	step 51

32) Busy the NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

33) Place the NT8T06 pack offline by entering: OFFL NWPK CE *b s p* <CR>.

34) Replace the NT8T06 pack (MP 1250).

35) Busy the NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

36) Test the NT8T06 pack by entering: TEST NWPK CE *b s p* <CR>

37) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 38
did not pass the test	step 41

38) Return the NT8T06 pack to service by entering: RTS NWPK CE *b s p* <CR>.

39) Determine whether the error still exists.

If the error	Go to
still exists	step 40
no longer exists	step 51

40) Busy the NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

41) Place the NT8T06 pack offline by entering: OFFL NWPK CE *b s p* <CR>.

42) Replace the NT8T06 pack with the original pack (MP 1250).

43) Busy the NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

44) Test the NT8T06 pack by entering: TEST NWPK CE *b s p* <CR>

45) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 46
did not pass the test	step 50

46) Return the NT8T06 pack to service by entering: RTS NWPK CE *b s p* <CR>.

47) Determine whether the error still exists.

If the error	Go to
still exists	step 48
no longer exists	step 51

48) Test the connection to the peripheral equipment (DCM, SCM, PSHF, REM, LCE) indicated in the output message. Use Overlay DED to test the LCE connection; use Overlay SCM to test the SCM connection.

49) Determine whether the error still exists.

If the error	Go to
still exists	step 50
no longer exists	step 51

50) Contact the next level of technical support for assistance.

51) This procedure is complete.

Clear interface pack fault (PCM continuity test)

1) Load NED overlay by entering: OVLY NED <CR>

Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

2) Test the designated interface port by entering: TEST *port mnemonic* CE *b s p pt* <CR>

3) Determine whether the port passed the test.

If the port	Go to
passed the test	step 16
did not pass the test	step 4

4) Replace pack (MP 1250).

5) Test the designated interface port by entering: TEST *port mnemonic* CE *b s p pt* <CR>

6) Determine whether the port passed the test.

If the port	Go to
passed the test	step 16
did not pass the test	step 7

7) Replace pack with original interface pack (MP 1250).

8) Busy designated Network pack by entering: BUSY NWPK CE *b s p* <CR>

9) Test designated Network pack by entering: TEST NWPK CE *b s p* <CR>

10) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 11
did not pass the test	step 12

11) Return Network pack to service by entering: RTS NWPK CE *b s p* <CR> Go to step 16.

12) Replace Network pack (MP 1250).

13) Test Network pack by entering: TEST NWPK CE *b s p* <CR>

14) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 9
did not pass the test	step 15

15) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

16) This procedure is complete.

Clear Network Interface pack (NT8T04) fault (parity test)

1) Load Overlay NED by entering: OVLY NED <CR>

   Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

2) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>
3) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>
4) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 5
did not pass the test	step 7

5) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>
6) Determine whether the error still exists.

If the error	Go to
still exists	step 7
no longer exists	step 42

7) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>
8) Replace the NT8T04 pack (MP 1250).
9) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>
10) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>
11) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>
12) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 13
did not pass the test	step 15

13) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>
14) Determine whether the error still exists.

If the error	Go to
still exists	step 15

If the error	Go to
no longer exists	step 42

15) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>

16) Replace the NT8T04 pack with the original pack (MP 1250).

17) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

18) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>

19) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 20
did not pass the test	step 41

20) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

21) Determine whether the error still exists.

If the error	Go to
still exists	step 22
no longer exists	step 42

22) Busy the associated NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

23) Test the NT8T06 pack by entering: TEST NWPK CE *b s p* <CR>

24) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 25
did not pass the test	step 27

25) Return the NT8T06 pack to service by entering: RTS NWPK CE *b s p* <CR>.

26) Determine whether the error still exists.

If the error	Go to
still exists	step 27
no longer exists	step 42

27) Place the NT8T06 pack offline by entering: OFFL NWPK CE *b s p* <CR>.

28) Replace the NT8T06 pack (MP 1250).

29) Busy the NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

30) Test the NT8T06 pack by entering: TEST NWPK CE *b s p* <CR>

31) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 32
did not pass the test	step 34

32) Return the NT8T06 pack to service by entering: RTS NWPK CE *b s p* <CR>.

33) Determine whether the error still exists.

If the error	Go to
still exists	step 34
no longer exists	step 42

34) Place the NT8T06 pack offline by entering: OFFL NWPK CE *b s p* <CR>.

35) Replace the NT8T06 pack with the original pack (MP 1250).

36) Busy the NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

37) Test the NT8T06 pack by entering: TEST NWPK CE *b s p* <CR>

38) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 39
did not pass the test	step 41

39) Return the NT8T06 pack to service by entering: RTS NWPK CE *b s p* <CR>.

40) Determine whether the error still exists.

If the error	Go to
still exists	step 41
no longer exists	step 42

41) Contact the next level of technical support for assistance.

42) This procedure is complete.

Clear Network Interface pack (NT8T04) fault

1) Load Overlay NED by entering: OVLY NED <CR>

   Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

2) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>
3) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>
4) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>
5) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step
did not pass the test	step

6) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>
7) Determine whether the errors still exist.

If the errors	Go to
still exist	step 8
do not exist	step 25

8) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>
9) Replace the NT8T04 pack (MP 1250).
10) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>
11) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>
12) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>
13) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 14
did not pass the test	step 16

14) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

15) Determine whether the errors still exist.

If the errors	Go to
still exist	step 16
do not exist	step 25

16) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>

17) Replace the NT8T04 pack with the original pack (MP 1250).

18) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

19) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>

20) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>

21) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 22
did not pass the test	step 24

22) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

23) Determine whether the errors still exist.

If the errors	Go to
still exist	step 24
do not exist	step 25

24) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

25) This procedure is complete.

Clear interface pack fault (peripheral continuity test)

1) Load NED overlay by entering: OVLY NED <CR>

   Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

2) Busy designated interface pack by entering: BUSY *pack mnemonic* CE *b s p* <CR>

   Note: *SMB devices must be MMB prior to testing.*

3) If the designated pack is capable of being downloaded, download the pack by entering: DNLD *pack mnemonic* CE *b s p* <CR>

   Note: *Downloadable packs include certain versions of the NT4T01, NT4T04, and NT4T05. See NTP 297-3601-150, Equipment Identification for more information.*

4) Test the device by entering: TEST *device mnemonic* CE *b s p* <CR>

5) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 8
did not pass the test	step 6

6) Replace pack (MP 1250).

7) Test the interface pack by entering: TEST *pack mnemonic* CE *b s p* <CR> Go to step 5.

8) Return pack to service by entering: RTS *pack mnemonic* CE *b s p* <CR>

9) Test the interface pack and peripheral loops by entering: TEST *pack mnemonic* CE *b s p* <CR>

   Note: *Loops and diloops can be tested only when the pack is in service. Testing the out-of-service pack tests the internal functions of the pack.*

10) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 17
did not pass the test	step 11

11) Replace pack with original interface pack (MP 1250).

12) Return pack to service by entering: RTS *pack mnemonic* CE *b s p* <CR>

13) Test connected peripheral equipment (that is, DCM, SCM, PSHF, REM, LCE) indicated in message. Use DED overlay to test DCM, LCE,PSHF, REM, or SCM-10S; use SCM overlay to test SCM.

14) Determine whether the equipment passed the test.

If the equipment	**Go to**
passed the test	step 16
did not pass the test	step 15

15) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

16) Return equipment tested to service.

17) This procedure is complete.

Clear Network Interface pack (NT8T04) fault (peripheral continuity test)

1) Load Overlay NED by entering: OVLY NED <CR>

   Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

2) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>
3) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>
4) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>
5) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 6
did not pass the test	step 8

6) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>
7) Determine whether the error still exists.

If the error	Go to
still exists	step 8
no longer exists	step 25

8) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>
9) Replace the NT8T04 pack (MP 1250).
10) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>
11) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>
12) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>
13) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 14
did not pass the test	step 16

14) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

15) Determine whether the error still exists.

If the error	Go to
still exists	step 16
no longer exists	step 25

16) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>

17) Replace the NT8T04 pack with the original pack (MP 1250).

18) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

19) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>

20) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>

21) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 22
did not pass the test	step 24

22) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

23) Determine whether the error still exists.

If the error	Go to
still exists	step 24
no longer exists	step 25

24) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

25) This procedure is complete.

Clear Network Interface pack (NT8T04) fault (PCM continuity test)

1) Load Overlay NED by entering: OVLY NED <CR>

   Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

2) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

3) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>

4) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>

5) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 6
did not pass the test	step 8

6) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

7) Determine whether the error still exists.

If the error	Go to
still exists	step 8
no longer exists	step 39

8) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>

9) Replace the NT8T04 pack (MP 1250).

10) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

11) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>

12) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>

13) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 14
did not pass the test	step 16

14) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

15) Determine whether the error still exists.

If the error	Go to
still exists	step 16
no longer exists	step 39

16) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>

17) Replace the NT8T04 pack with the original pack (MP 1250).

18) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

19) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>

20) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>

21) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 22
did not pass the test	step 24

22) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

23) Determine whether the error still exists.

If the error	Go to
still exists	step 24
no longer exists	step 39

24) Busy the associated NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

25) Test the NT8T06 pack by entering: TEST NWPK CE *b s p* <CR>

26) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 27
did not pass the test	step 29

27) Return the NT8T06 pack to service by entering: RTS NWPK CE *b s p* <CR>.

28) Determine whether the error still exists.

If the error	**Go to**
still exists	step 29
no longer exists	step 39

29) Place the NT8T06 pack offline by entering: OFFL NWPK CE *b s p* <CR>.

30) Replace the NT8T06 pack with the original pack (MP 1250).

31) Busy the NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

32) Test the NT8T06 pack by entering: TEST NWPK CE *b s p* <CR>

33) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 34
did not pass the test	step 38

34) Return the NT8T06 pack to service by entering: RTS NWPK CE *b s p* <CR>.

35) Determine whether the error still exists.

If the error	**Go to**
still exists	step 36
no longer exists	step 39

36) Test the connection to the peripheral equipment (DCM, SCM, PSHF, REM, LCE) indicated in the output message. Use Overlay DED to test the LCE connection; use Overlay SCM to test the SCM connection.

37) Determine whether the error still exists.

If the error	**Go to**
still exists	step 38
no longer exists	step 39

38) Contact the next level of technical support for assistance.

39) This procedure is complete.

Clear DS-30A Interface (NT4T04), Multiplex Loop Interface pack (NT4T05) or DS30/MLI Interface pack (NT8T04) fault

Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

1) Load Overlay NED by entering: OVLY NED <CR>

2) Obtain the status of the suspected faulty interface pack by entering: STAT D3A/MLI CE *b s p* <CR> for the NT4T04/NT4T05 packs.

or,

STAT IFPK CE *b s p* <CR> for the NT8T04 pack.

3) Determine whether the interface pack is in man-made-busy state.

If the pack	Go to
is man-made-busy	step 5
is not man-made-busy	step 4

4) Busy the D3A/MLI pack by entering: BUSY D3A/MLI CE *b s p* <CR> for the NT4T04/NT4T05 packs

or,

BUSY IFPK CE *b s p* <CR> for the NT8T04 pack.

5) Determine whether the pack is a DS-30A or MLI.

If the pack	Go to
is a DS-30A	step 6
is an MLI	step 9

6) Determine whether the pack is an NT4T04AL or later series NT4T04 or an NT8T04.

If the pack	Go to
is an NT4T04AL or later series NT4T04 or NT8T04	step 7
is not an NT4T04AL or later series NT4T04 and not an NT8T04	step 9

7) Download the interface pack by entering: DNLD D3A CE *b s p* <CR> for the NT4T04/NT4T05 packs

or,

DNLD IFPK CE *b s p* <CR> for the NT8T04 pack.

8) Determine whether the download was successful.

If the download	Go to
was successful	step 9
was not successful	step 11

9) Test the interface pack by entering: TEST D3A/MLI CE *b s p* <CR> for NT4T04/NT4T05 packs

or,

TEST IFPK CE *b s p* <CR> for the NT8T04 pack.

10) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 18
did not pass the test	step 11

11) Place the interface pack offline by entering: OFFL D3A/MLI CE *b s p* <CR> for the NT4T04/NT4T05 packs

or,

OFFL IFPK CE *b s p* <CR> for the NT8T04 pack.

12) Replace the DS-30A/MLI pack (MP 1250)

13) Busy the interface pack by entering: BUSY D3A/MLI CE *b s p* <CR> for the NT4T04/NT4T05 packs

or,

BUSY IFPK CE *b s p* <CR> for the NT8T04 pack.

14) If the designated pack is capable of being downloaded, download the pack by entering: DNLD *pack mnemonic* CE *b s p* <CR>

Note: *See NTP 297-3601-150, Equipment Identification for more information.*

15) Test the interface pack by entering: TEST D3A/MLI CE *b s p* <CR> for the NT4T04/NT4T05 packs

or,

TEST IFPK CE *b s p* <CR> for the NT8T04 pack.

16) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 18
did not pass the test	step 17

17) Contact the next level of technical support for assistance. This procedure is complete.

18) Return the pack to service by entering: RTS D3A/MLI CE *b s p* <CR> for the NT4T04/NT4T05 packs

or,

RTS IFPK CE *b s p* <CR>

19) Test the interface pack by entering: TEST D3A/MLI CE *b s p* <CR> for the NT4T04/NT4T05 packs

or,

TEST IFPK CE *b s p* <CR> for the NT8T04 pack.

20) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 22
did not pass the test	step 21

21) Busy the interface pack by entering: BUSY D3A/MLI CE *b s p* <CR> for the NT4T04/NT4T05 packs

or,

BUSY IFPK CE *b s p* <CR> for NT8T04 pack.

Go to step 11.

22) Verify that the interface pack is in service by entering: STAT D3A/MLI CE *b s p* <CR> for the NT4T04/NT4T05 packs

or,

STAT IFPK CE *b s p* <CR> for the NT8T04 pack.

23) This procedure is complete.

Clear Network Interface pack (NT8T04) fault

1) Load Overlay NED by entering: OVLY NED <CR>

   Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

2) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>
3) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>
4) Determine whether the pack downloaded successfully.

If the pack	Go to
downloaded successfully	step 5
did not download successfully	step 9

5) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>
6) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 7
did not pass the test	step 9

7) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>
8) Determine whether the error still exists.

If the error	Go to
still exists	step 9
no longer exists	step 17

9) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>
10) Replace the NT8T04 pack (MP 1250).
11) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>
12) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>
13) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>
14) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 15
did not pass the test	step 16

15) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>
Go to step 17.

16) Contact the next level of technical support for assistance.

17) This procedure is complete.

Clear DS-30A loop fault

1) Load Overlay DED by entering: OVLY DED <CR>

Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

2) Busy the peripheral by entering the appropriate BUSY command (see NTP 297-3601-506, Overlay DED).

3) If the peripheral is downloadable, download the peripheral by entering the appropriate download command.

4) Test the peripheral by entering the appropriate TEST command (see NTP 297-3601-506, Overlay DED).

5) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 6
did not pass the test	step 38

6) Return the peripheral to service by entering the appropriate RTS command (see NTP 297-3601-506, Overlay DED).

7) Determine whether peripheral loop around failure still occurs.

If the failure	Go to
still occurs	step 8
doesn't occur	step 40

8) Abort Overlay DED and load NED overlay by entering: ****OVLY NED <CR>

9) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

10) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* (NEW/OLD) <CR>

11) Determine whether the pack downloaded successfully.

If the pack	Go to
downloaded successfully	step 12
did not download successfully	step 17

12) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>

13) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 14
did not pass the test	step 17

14) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

15) Determine whether the error still exists.

If the error	Go to
still exists	step 16
no longer exists	step 40

16) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

17) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>

18) Replace the NT8T04 pack (MP 1250).

19) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

20) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* (NEW/OLD) <CR>

21) Determine whether the pack downloaded successfully.

If the pack	Go to
downloaded successfully	step 22
did not download successfully	step 27

22) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>

23) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 24
did not pass the test	step 27

24) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

25) Determine whether the error still exists.

If the error	Go to
still exists	step 26
no longer exists	step 40

26) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

27) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>

28) Replace the NT8T04 pack with the original pack (MP 1250).

29) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

30) Test the NT8T04 pack by entering: TEST IFPK CE *b s p* <CR>

31) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 32
did not pass the test	step 39

32) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

33) Determine whether the error still exists.

If the error	Go to
still exists	step 34
no longer exists	step 40

34) Replace the NT8T04 pack loop cable.

35) Abort Overlay NED and load DED overlay by entering: ****OVLY DED <CR>

36) Test the peripheral by entering the appropriate TEST command (see NTP 297-3601-506, Overlay DED).

37) Determine whether peripheral loop around failure still occurs.

If the failure	Go to
still occurs	step 39
doesn't occur	step 40

38) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

39) Contact the next level of technical support for assistance.

40) This procedure is complete.

Clear Network/Network Interface pack fault (function test)

Note 1: Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.

Note 2: If a new trouble message is output while following this procedure, refer to the *Output Message Manual* and follow the trouble procedure that is referenced by the new message.

1) Load Overlay NED by entering: OVLY NED <CR>
2) If the suspected faulty pack is a network pack (4T06), proceed step 31
3) Obtain status of the device by entering: STAT *device mnemonic* CE *b s p* <CR> or: STAT *device mnemonic* PE *b s p* <CR>
4) Busy the interface pack indicated in first message by entering: BUSY *device mnemonic* CE *b s p* <CR>
5) If the designated pack is capable of being downloaded, download the pack by entering: DNLD *pack mnemonic* CE *b s p* <CR>
6) Test the device by entering: TEST *device mnemonic* CE *b s p* <CR>
7) Determine whether the device passed the test.

If the device	Go to
passed the test	step 17
did not pass the test	step 9

8) Offline the interface pack by entering: OFFL *device mnemonic* CE *b s p* <CR>
9) Replace the pack (MP 1250).
10) Busy the interface pack by entering: BUSY *device mnemonic* CE *b s p* <CR>
11) If the designated pack is capable of being downloaded, download the pack by entering: DNLD *pack mnemonic* CE *b s p* <CR>
12) Test the interface pack by entering: TEST *device mnemonic* CE *b s p* <CR>
13) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 17
did not pass the test	step 18

14) Offline the interface pack by entering: OFFL *device mnemonic* CE *b s p* <CR>

15) Replace the pack with the original interface pack (MP 1250).

16) Busy the interface pack by entering: BUSY *device mnemonic* CE *b s p* <CR>

17) Return the interface pack to service by entering: RTS *device mnemonic* CE *b s p* <CR>
Go to step 32 if you have just replaced the second MLI/D3A pack

18) Busy interface pack indicated in second message by entering: BUSY *device mnemonic* CE *b s p* <CR>

19) If the designated pack is capable of being downloaded, download the pack by entering: DNLD *pack mnemonic* CE *b s p* <CR>

20) Test the interface pack by entering: TEST *device mnemonic* CE *b s p* <CR>

21) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 30
did not pass the test	step 22

22) Offline the interface pack by entering: OFFL *device mnemonic* CE *b s p* <CR>

23) Replace interface pack indicated in second message (MP 1250).

24) Busy interface pack by entering: BUSY *device mnemonic* CE *b s p* <CR>

25) If the designated pack is an NT4T04AL (or later series), download the pack by entering: DNLD D3A CE *b s p* <CR>

26) Test interface pack by entering: TEST *device mnemonic* CE *b s p* <CR>

27) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 30
did not pass the test	step 28

28) Offline the interface pack by entering: OFFL *device mnemonic* CE *b s p* <CR>

29) Replace the pack with the original interface pack (MP 1250).

30) Busy the interface pack by entering: BUSY *device mnemonic* CE *b s p* <CR>

31) Return second interface pack to service by entering: RTS *device mnemonic* CE *b s p* <CR>

32) Busy the Network pack indicated in the first message by entering: BUSY NWPK CE *b s p* <CR>

33) Test the Network pack by entering: TEST NWPK CE *b s p* <CR>

34) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 42
did not pass the test	step 35

35) Offline Network pack by entering: OFFL NWPK CE *b s p* <CR>

CAUTION
For systems configured with paired network packs located in slots 18 and 19 of a Network shelf, busy the mate network pack before taking the faulty Network pack offline and replacing it, by entering: BUSY NWPK CE *b s p* <CR>.

36) Replace Network pack (MP 1250).

37) Busy Network pack by entering: BUSY NWPK CE *b s p* <CR>

38) Test Network pack by entering: TEST NWPK CE *b s p* <CR>

39) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 42
did not pass the test	step 40

40) Offline the Network pack by entering: OFFL NWPK CE *b s p* <CR>

41) Replace Network pack with original pack (MP 1250).

42) Busy Network pack by entering: BUSY NWPK CE *b s p* <CR>

43) Return Network pack to service by entering: RTS NWPK CE *b s p* <CR>

Note: *If a mate network pack of a network pack pair was made busy earlier in this procedure, return the pack to service by entering: RTS NWPK CE b s p (CR)*

44) Busy Network pack indicated in second message by entering: BUSY NWPK CE *b s p* <CR>

45) Test Network pack indicated in second message by entering: TEST NWPK CE *b s p* <CR>

46) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 55
did not pass the test	step 47

47) Offline the Network pack by entering: OFFL NWPK CE *b s p* <CR>

CAUTION
For systems configured with paired network packs located in slots 18 and 19 of a Network shelf, busy the mate network pack before taking the faulty Network pack offline and replacing it, by entering: BUSY NWPK CE *b s p* <CR>.

48) Replace Network pack indicated in second message (MP 1250).

49) Busy Network pack indicated in second message by entering: BUSY NWPK CE *b s p* <CR>

50) Test Network pack by entering: TEST NWPK CE *b s p* <CR>

51) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 55
did not pass the test	step 52

52) Offline Network pack indicated in second message by entering: OFFL NWPK CE *b s p* <CR>

53) Replace second Network pack with the original pack. (MP 1250).

54) Busy the Network pack by entering: BUSY NWPK CE *b s p* <CR>

55) Return Network pack to service by entering: RTS NWPK CE *b s p* <CR>

Note: *If a mate network pack of a network pack pair was made busy earlier in this procedure, return the pack to service by entering: RTS NWPK CE b s p (CR)*

56) Determine whether any faults still exist.

If faults	**Go to**
exist	step 58
do not exist	step 59

57) Determine whether the faults that now exist are the same as those that originally occurred.

If the faults	**Go to**
are the same as the original faults	step 58
are not the same as the original faults	step 59

58) Contact the next level of technical support for assistance.

59) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

60) This procedure is complete.

CAUTION
Disable/unseat only the packs indicated in Note 1; do nothing to the packs that are not indicated.

Clear network parity fault

Note 1: Parity errors within the DMS-10 Network may occur infrequently, therefore location of the problem source and completion of this procedure may require a period of time (four weeks is suggested). Multiple passes through this procedure may be required to clear all sources of AFD003 messages. Upon beginning this procedure, the craftsperson should record all actions taken (pack replacements, for example). If the problem persists upon the completion of this procedure, call Nortel Networks technical support for further assistance.

Note 2: Prior to using this procedure, the circuit pack and its associated Network pack indicated by the AFD003 message should be reseated. If reseating does not clear the problem, continue with this procedure.

Note 3: Remove CED from the overlay schedule prior to beginning the procedure. This will eliminate unwanted switching of CPU activity while performing the procedure. Upon completion of the procedure, re-install CED in the overlay schedule.

Note 4: This procedure should not indicate the same pack more than once. If the procedure leads to the same pack a second time, call Nortel Networks technical support for further assistance.

1) Determine whether the occurrence of this problem been noted over several days.

If the problem	Go to
has occurred over several days	step 4
has not occurred over several days	step 2

2) Determine whether the problem is occurring more than once per hour.

If the problem is	Go to
occurring more than once per hour	step 4
is not occurring more than once per hour	step 3

3) Monitor office logs over several days to determine Step 1 criteria.

4) Load overlay CED by entering: OVLY CED <CR>

5) Switch the clock by entering: SWCH CLK <CR>

6) Monitor the office logs for a 48 hour period.

7) Determine whether the message, AFD003 still displays.

If AFD003	Go to
still displays	step 8
does not display	step 9

8) Replace the System Bus Controller (NT3T70) pack which had an active clock at the time of the AFD003 message.
Go to step 45.

9) Switch the Core CPUs by entering: SWCH CORE <CR>

10) Monitor the office logs for a 48 hour period.

11) Determine whether the message, AFD003 still displays.

If AFD003	Go to
still displays	step 12
does not display	step 18

12) Determine whether the AFD003 messages are associated with only one specific pack.

If the AFD003 messages	Go to
are associated with only one specific pack	step 13
are not associated with only one specific pack	step 15

13) Determine whether the pack is an Interface pack, Service pack, or Network pack.

If the pack is	Go to
an Interface or Service pack	step 14
a Network pack	step 15

14) Determine whether the pack has been replaced.

If the pack	Go to
has been replaced	step 15
has not been replaced	step 21

15) Determine whether the Network pack containing the Network loop indicated by the AFD003 message been replaced.

If the Network pack	Go to
has been replaced	step 16
has not been replaced	step 29

16) Determine whether the mate Network (NT4T06) pack been replaced.

If the mate Network pack	Go to
has been replaced	step 17
has not been replaced	step 18

17) Determine whether the I/O Bus Extender (NT3T72) packs on the CPU and Network shelves associated with the CPU that was active at the time of the AFD003 message displayed have been replaced.

If the I/O Bus Extender packs	Go to
have been replaced	step 43
have not been replaced	step 18

18) Determine whether, the message, AFD003, associated with Network packs on a single shelf, displays.

If AFD003	Go to
displays	step 19
does not display	step 20

19) Replace the I/O Bus Extender (NT3T72) pack on the Network shelf associated with the CPU that was active at the time of the AFD003 message (MP 1258).
Go to step 45.

20) Replace the I/O Bus Extender (NT3T72) pack on the CPU shelf associated with the CPU that was active at the time of the AFD003 message (MP 1258).
Go to step 45.

21) Load overlay NED by entering: OVLY NED <CR>

22) Busy the indicated interface pack by entering: BUSY *device* CE *b s p* (IMED) <CR>

CAUTION
Before busying a Network pack, call Technical Support to verify that declared buffers are adequate for existing upgrades or extensions. Inadequate buffers can result in switch degradation or an outage, or both.

23) Offline the indicated interface pack by entering: OFFL *device* CE *b s p* <CR>

24) Replace the indicated interface pack (MP 1250).

25) Test the indicated interface pack by entering: TEST *device* CE *b s p* (REP *n*) <CR>

26) Determine whether the test passed.

If the test	**Go to**
passed	step 27
did not pass	step 44

27) Busy the interface pack just tested by entering: BUSY *device* CE *b s p* (IMED) <CR>

28) Return the indicated interface pack to service by entering: RTS *device* CE *b s p* <CR>
Go to step 45.

29) Load overlay NED by entering: OVLY NED <CR>

30) Busy the indicated Network pack and its mate Network pack (if equipped) by entering: BUSY NWPK CE *b s p* (IMED) <CR>

CAUTION
Before busying a Network pack, call Technical Support at 1-800-758-4827 to verify that declared buffers are adequate for existing upgrades or extensions. Inadequate buffers can result in switch degradation or an outage, or both.

31) Offline the indicated Network pack by entering: OFFL NWPK CE *b s p* <CR>

32) Replace the indicated Network pack (MP 1250).

33) Test the indicated Network pack by entering: TEST NWPK CE *b s p* (REP *n*) <CR>

34) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 35
did not pass the test	step 44

35) Busy the Network pack just tested by entering: BUSY NWPK CE *b s p* (IMED) <CR>

36) Return the Network pack(s) to service by entering: RTS NWPK CE *b s p* <CR>
Go to step 45.

37) Load overlay NED by entering: OVLY NED <CR>

38) Busy both Network packs on the indicated shelf by entering: BUSY NWPK CE *b s p* (IMED) <CR>

CAUTION
Before busying a Network pack, call Technical Support at 1-800-627-8318 to verify that declared buffers are adequate for existing upgrades or extensions. Inadequate buffers can result in switch degradation or an outage, or both.

39) Offline the mate Network pack by entering: OFFL NWPK CE *b s p* <CR>

40) Replace the mate Network pack (MP 1250)

41) Test the mate Network pack by entering: TEST NWPK CE *b s p* (REP *n*) <CR>

42) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 35
did not pass the test	step 44

43) Contact the next level of technical support for assistance.

44) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

45) This procedure is complete.

Clear Network pack fault (parity test)

Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

1) Load Overlay NED by entering: OVLY NED <CR>

2) Obtain status of the device by entering: STAT *device mnemonic* CE *b s p* <CR> or: STAT *device mnemonic* PE *b s p* <CR>

3) Determine whether the device is enabled.

If the device	Go to
is enabled	step 4
is not enabled	step 7

4) Test the device by entering: TEST *device mnemonic* CE *b s p* <CR>

5) Determine whether the device passed the test.

If the device	Go to
passed the test	step 6
did not pass the test	step 7

6) Return the device to service by entering: RTS *device mnemonic* CE *b s p* <CR>
Go to step 37.

7) Busy the designated interface pack by entering: BUSY *device mnemonic* CE *b s p* <CR>

8) If the designated pack is capable of being downloaded, download the pack by entering: DNLD *device mnemonic* CE *b s p* <CR>

9) Test the interface pack by entering: TEST *device mnemonic* CE *b s p* <CR>

10) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 20
did not pass the test	step 11

11) Offline the interface pack by entering: OFFL *device mnemonic* CE *b s p* <CR>

12) Replace the interface pack (MP 1250).

13) Busy the interface pack by entering: BUSY *device mnemonic* CE *b s p* <CR>

14) If the designated pack is capable of being downloaded, download the pack by entering: DNLD *device mnemonic* CE *b s p* <CR>

15) Test the pack by entering: TEST *device mnemonic* CE *b s p* <CR>

16) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 20
did not pass the test	step 17

17) Offline the interface pack by entering: OFFL *device mnemonic* CE *b s p* <CR>

18) Replace the new interface pack with the original interface pack (MP 1250).

19) Busy the interface pack by entering: BUSY *device mnemonic* CE *b s p* <CR>

20) Return the interface pack to service by entering: RTS *device mnemonic* CE *b s p* <CR>

21) Busy the designated Network pack by entering: BUSY NWPK CE *b s p* <CR>

22) Test the Network pack by entering: TEST NWPK CE *b s p* <CR>

23) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 32
did not pass the test	step 24

24) Offline the pack by entering: OFFL NWPK CE *b s p* <CR>

CAUTION
For systems configured with paired network packs located in slots 18 and 19 of a Network shelf, busy the mate network pack before taking the faulty Network pack offline and replacing it, by entering: BUSY NWPK CE *b s p* <CR>.

25) Replace Network pack (MP 1250).

26) Busy the Network pack by entering: BUSY NWPK CE *b s p* <CR>

27) Test the Network pack by entering: TEST NWPK CE *b s p* <CR>

28) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 32
did not pass the test	step 29

29) Offline Network pack by entering: OFFL NWPK CE *b s p* <CR>

30) Replace new Network pack with the original pack (MP 1250).

31) Busy Network pack by entering: BUSY NWPK CE *b s p* <CR>

32) Return Network pack to service by entering: RTS NWPK CE *b s p* <CR>

Note: *If a mate network pack of a network pack pair was made busy in Step 21, return the pack to service by entering: RTS NWPK CE b s p (CR)*

33) Determine whether faults still exist.

If faults	Go to
exist	step 34
do not exist	step 37

34) Determine whether the faults indicated are the same as the original faults.

If the faults	Go to
are the same as the original faults	step 35
are not the same as the original faults	step 36

35) Contact the next level of technical support for assistance.

36) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

37) This procedure is complete.

Clear interface/network pack fault (PCM switching test)

1) Load Overlay NED by entering: OVLY NED <CR>

   Note 1: Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.

   Note 2: If a new trouble message is output while following this procedure, refer to the Output Message Manual and follow the trouble procedure that is referenced by the new message.

2) Obtain status of the device by entering: STAT *device mnemonic* CE *b s p* <CR> or: STAT *device mnemonic* PE *b s p* <CR>

3) Busy the interface pack indicated in first message by entering: BUSY *device mnemonic* CE *b s p* <CR>

4) If the designated pack is capable of being downloaded, download the pack by entering: DNLD *device mnemonic* CE *b s p* <CR>

   Note: *Downloadable packs include certain versions of the NT4T01, NT4T04, and NT4T05. See NTP 297-3601-150, Equipment Identification for more information.*

5) Test the device by entering: TEST *device mnemonic* CE *b s p* <CR>

6) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 16
did not pass the test	step 7

7) Offline the interface pack by entering: OFFL *device mnemonic* CE *b s p* <CR>

8) Replace the interface pack (MP 1250).

9) Busy the interface pack by entering: BUSY *device mnemonic* CE *b s p* <CR>

10) If the designated pack is capable of being downloaded, download the pack by entering: DNLD *device mnemonic* CE *b s p* <CR>

    Note: *Downloadable packs include certain versions of the NT4T01, NT4T04, and NT4T05. See NTP 297-3601-150, Equipment Identification for more information.*

11) Test the pack by entering: TEST *device mnemonic* CE *b s p* <CR>

12) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 16
did not pass the test	step 13

13) Offline the interface pack by entering: OFFL *device mnemonic* CE *b s p* <CR>

14) Replace the interface pack with the original pack (MP 1250).

15) Busy the interface pack by entering: BUSY *device mnemonic* CE *b s p* <CR>

16) Return the interface pack to service by entering: RTS *device mnemonic* CE *b s p* <CR>

17) Busy designated Network pack by entering: BUSY NWPK CE *b s p* <CR>

18) Test the Network pack by entering: TEST NWPK CE *b s p* <CR>

19) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 28
did not pass the test	step 20

20) Offline the Network pack by entering: OFFL NWPK CE *b s p* <CR>

CAUTION
For systems configured with paired network packs located in slots 18 and 19 of a Network shelf, busy the mate network pack before taking the faulty Network pack offline and replacing it, by entering: BUSY NWPK CE *b s p* <CR>.

21) Replace the Network pack (MP 1250).

22) Busy the Network pack by entering: BUSY NWPK CE *b s p* <CR>

23) Test Network pack by entering: TEST NWPK CE *b s p* <CR>

24) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 28
did not pass the test	step 25

25) Offline the Network pack by entering: OFFL NWPK CE *b s p* <CR>

26) Replace the Network pack with original pack (MP 1250).

27) Busy the Network pack by entering: BUSY NWPK CE *b s p* <CR>

28) Return the Network pack to service by entering: RTS NWPK CE *b s p* <CR>

Note: *If a mate network pack of a network pack pair was made busy in Step 18, return the pack to service by entering: RTS NWPK CE b s p (CR)*

29) Test connected peripheral equipment (DCM, SCM, PSHF, REM, LCE) indicated in message. Use DED overlay to test LCE; use SCM overlay to test SCM.

30) Determine whether the error still exists.

If the error	Go to
still exists	step 31
does not exist	step 32

31) Contact the next level of technical support for assistance.

32) This procedure is complete.

Clear a Network pack fault

1) Load NED overlay by entering: OVLY NED <CR>

2) Determine status of Network pack by entering: STAT NWPK CE *b s p* <CR>

3) Determine whether the network pack is man-made-busy.

If the network pack	Go to
is man-made-busy	step 5
is not man-made-busy	step 4

4) Busy the Network pack by entering: BUSY NWPK CE *b s p* <CR>

5) Test the Network pack by entering: TEST NWPK CE *b s p* <CR>

6) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 7
did not pass the test	step 8

7) Return the Network pack to service by entering: RTS NWPK CE *b s p* <CR>
Go to step 19.

8) Offline the Network pack by entering: OFFL NWPK CE *b s p* <CR>

CAUTION
For systems configured with paired network packs located in slots 18 and 19 of a Network shelf, busy the mate network pack before taking the faulty Network pack offline and replacing it, by entering: BUSY NWPK CE *b s p* <CR>.

9) Replace Network pack (MP 1250).

10) Busy Network pack by entering: BUSY NWPK CE *b s p* <CR>

11) Test Network pack by entering: TEST NWPK CE *b s p* <CR>

12) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 16
did not pass the test	step 13

13) Offline the Network pack by entering: OFFL NWPK CE *b s p* <CR>

14) Replace Network pack with original pack (MP 1250).

15) Busy Network pack by entering: BUSY NWPK CE *b s p* <CR>

16) Return the Network pack to service by entering: RTS NWPK CE *b s p* <CR>

Note: *If a mate network pack of a network pack pair was made busy at a point earlier in this procedure, return the pack to service by entering: RTS NWPK CE b s p <CR>*

17) Determine whether the fault still exists.

If the fault	**Go to**
exists	step 19
does not exist	step 18

18) Contact the next level of technical support for assistance.

19) This procedure is complete.

Clear Network Interface pack (NT8T04) Global Tone Services (GTS) fault

1) Load Overlay NED by entering: OVLY NED <CR>

   Note: *Communication problems between the CPU and the Network Equipment may be caused by faulty I/O Bus Extender packs.*

2) Busy both Global Tone Services Bank (GTSB) packs by entering: BUSY GTSB CE *b s p bank*<CR>
3) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>
4) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>
5) Test both the GTSB packs by entering: TEST GTSB CE *b s p bank* <CR>
6) Determine whether the packs passed the test.

If the packs	Go to
passed the test	step
did not pass the test	step

7) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>
8) Return the GTSB packs to service by entering: RTS GTSB CE *b s p bank* <CR>
9) Determine whether the error still exists.

If the error	Go to
still exists	step 10
no longer exists	step

10) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>
11) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>
12) Replace the NT8T04 pack (MP 1250).
13) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>
14) Download the NT8T04 pack by entering: DNLD IFPK CE *b s p* <CR>
15) Test both GTSB packs by entering: TEST GTSB CE *b s p bank* <CR>

16) Determine whether the packs passed the test.

If the packs	**Go to**
passed the test	step
did not pass the test	step 20

17) Return the NT8T04 pack to service by entering: RTS IFPK CE *b s p* <CR>

18) Return the GTSB packs to service by entering: RTS GTSB CE *b s p bank* <CR>

19) Determine whether the error still exists.

If the error	**Go to**
still exists	step 20
no longer exists	step

20) Busy the NT8T04 pack by entering: BUSY IFPK CE *b s p* <CR>

21) Place the NT8T04 pack offline by entering: OFFL IFPK CE *b s p* <CR>

22) Contact the next level of technical support for assistance.

23) This procedure is complete.

Clear Network pack (NT8T06) fault

1) Load Overlay NED by entering: OVLY NED <CR>

2) Busy the NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

3) Test the NT8T06 pack by entering: TEST NWPK CE *b s p* <CR>

4) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 5
did not pass the test	step 7

5) Return the NT8T06 pack to service by entering: RTS NWPK CE *b s p* <CR>.

6) Determine whether the error still exists.

If the error	Go to
still exists	step 7
no longer exists	step 17

7) Place the NT8T06 pack offline by entering: OFFL NWPK CE *b s p* <CR>.

8) Replace the NT8T06 pack (MP 1250).

9) Busy the NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

10) Test the NT8T06 pack by entering: TEST NWPK CE *b s p* <CR>

11) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 12
did not pass the test	step 14

12) Return the NT8T06 pack to service by entering: RTS NWPK CE *b s p* <CR>

13) Determine whether the error still exists.

If the error	Go to
still exists	step 14
no longer exists	step 17

14) Busy the NT8T06 pack by entering: BUSY NWPK CE *b s p* <CR>

15) Place the NT8T06 pack offline by entering: OFFL NWPK CE *b s p* <CR>

16) Contact the next level of technical support for assistance.

17) This procedure is complete.

Clear Peripheral Processor pack fault

1) Load Overlay PED by entering: OVLY PED <CR>
2) Busy the Peripheral Processor pack by entering: BUSY PEPK PE *b s p* <CR>
3) Obtain the status of the Peripheral Processor pack by entering: STAT PEPK PE *b s p* <CR>
4) Determine whether the pack is man-made-busy.

If the pack	Go to
is man-made-busy	step 6
is not man-made-busy	step 5

5) The unit may be in use. Resume performing this procedure at a later time.
6) Replace pack (MP 1250).
7) Test the Peripheral Processor pack by entering: TEST PEPK PE *b s p* <CR>
8) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 9
did not pass the test	step 13

9) Return the pack to service by entering: RTS PEPK PE *b s p* <CR>
10) Abort Overlay PED and load Overlay DNLD by entering: **** OVLY DNLD <CR>
11) Download the Peripheral Processor by entering: DNLD PE *b s p* <CR>
12) Determine whether the message, DLD001 displays.

If DLD001	Go to
displays	step 14
does not display	step 13

13) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.
14) This procedure is complete.

Clear Peripheral Processor fault

1) Clear all faults related to the shelf containing the Peripheral Processor pack.

2) Load Overlay PED by entering: OVLY PED <CR>

3) Busy the Peripheral Processor pack by entering: BUSY PEPK PE *b s p* <CR>

4) Remove the pack from the slot for 15 s. Then reinsert the pack.

5) Return the pack to service by entering: RTS PEPK PE *b s p* <CR>

6) Abort Overlay PED, and load Overlay DNLD by entering: **** OVLY DNLD <CR>

7) Download the Peripheral Processor by entering:
DNLD PE *b s p* <CR>

8) Determine whether the printout is DLD001.

If DLD001	Go to
displays	step 10
does not display	step 9

9) Perform TP 5003.

10) This procedure is complete.

Clear Peripheral Processor fault

1) Replace Peripheral Processor pack (MP 1250).

2) Load Overlay PED by entering: OVLY PED <CR>

3) Test the Peripheral Processor pack by entering: TEST PEPK PE *b s p* <CR>

4) Return the pack to service by entering: RTS PEPK PE *b s p* <CR>

5) Abort Overlay PED and load Overlay DNLD by entering: OVLY DNLD <CR>

6) Download the Peripheral Processor by entering:
DNLD PE *b s p* <CR>

7) Determine whether the message, DLD001 displays.

If DLD001	Go to
displays	step 9
does not display	step 8

8) Faulty replacement pack. Select another.
Go to step 1.

9) This procedure is complete.

Clear impedance and padding fault

Note: *A line that is conditioned using Overlay TLT will supersede the original padding of the line. Use Overlay STBL to stat the dB and loading level before conditioning a line. Re-condition the line to its original level and padding before leaving this procedure.*

1) Determine whether an initial cut-over is being performed.

If an initial cut-over	Go to
is being performed	step 2
is not being performed	step 4

2) Load Overlay CKT by entering: OVLY CKT <CR>

3) Prevent LIN022 messages from being output by entering: DSBL FLM <CR>

   Note: *LIN022 messages will not be output until the system initializes or ENBL FLM is entered using Overlay CKT.*

   Go to step 24.

4) Load Overlay TLT by entering: OVLY TLT <CR>

5) Select the test device by entering: SEL (*site*) LCE *b s lsg l* <CR> or SEL (*site*) PE *b s p u* <CR>

6) Connect the digital path by entering: CONN FREQ 2804-16 <CR>

7) Temporarily set the gain pad and balance network settings on the 0-dB line pack by entering: COND 0 L <CR>

8) Connect the device to the AC Tester pack by entering: POWR <CR>

9) Record the result from Step 8.

10) Temporarily set the gain pad and balance network settings on the 0-dB line pack by entering: COND 0 NL <CR>

11) Connect the device to the AC Tester pack by entering: POWR <CR>

12) Record the result from Step 11.

13) Determine whether the result recorded either in step 9 or step 12 is less than -22dB.

If the result	Go to
is less than -22dB	step 19
is not less than -22dB	step 14

14) Determine whether the result recorded in step 9 is less than the result recorded in step 12.

If the result	Go to
is less	step 17
is not less	step 15

15) Abort Overlay TLT and Load Overlay DN by entering: OVLY DN <CR>

16) Use the STN prompting sequence to delete the line and reassign the new FIXL 2dB NOLD line option (see the NTP entitled *Data Modification Manual* (297-3601-311)).
Go to step 24.

17) Abort Overlay TLT and Load Overlay DN by entering: **** OVLY DN <CR>

18) Use the STN prompting sequence to delete the line and reassign the new FIXL 2dB LD line option (see the NTP entitled *Data Modification Manual* (297-3601-311)).
Go to step 24.

19) Determine whether the result recorded in step 9 is less than the result recorded in step 12.

If the result	Go to
is less	step 22
is not less	step 20

20) Abort Overlay TLT and Load Overlay DN by entering: **** OVLY DN <CR>

21) Use the STN prompting sequence to delete the line and reassign the new FIXL 0dB NOLD line option (see the NTP entitled *Data Modification Manual* (297-3601-311)).
Go to step 24.

22) Abort Overlay TLT and Load Overlay DN by entering: OVLY DN <CR>

23) Use the STN prompting sequence to delete the line and reassign the new FIXL 0dB LD line option (see the NTP entitled *Data Modification Manual* (297-3601-311)).

24) This procedure is complete.

Clear CAMA position signaling circuit faults

1) Load Overlay PED by entering: OVLY PED <CR>
2) Test the peripheral pack by entering: TEST PPK PE *b s p* <CR>
3) Determine whether the peripheral pack passed the test.

If the peripheral pack	Go to
passed the test	step 9
did not pass the test	step 4

4) Ask the CAMA operator to release CPSC.
5) Replace circuit pack (MP 1250).
6) Test the Peripheral Processor pack by entering: TEST PEPK PE *b s p* <CR>
7) Determine whether the Peripheral Processor pack passed the test.

If the Peripheral Processor pack	Go to
passed the test	step 9
did not pass the test	step 8

8) The replacement pack may be faulty. Perform steps 5 through 7 again. If the problem persists, contact your next level of support.
9) This procedure is complete.

Clear peripheral equipment fault (#1)

1) Determine whether the cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the device under test.

If the cables	Go to
are connected firmly	step 2
are not connected firmly	step 6

2) Load PED overlay by entering: OVLY PED <CR>

3) Determine whether more than one PED message displays.

If more than one PED message	Go to
displays	step 4
does not display	step 8

4) Determine whether faults exist on other shelves.

If faults on other shelves	Go to
exist	step 5
do not exist	step 9

5) Test Line and Trunk Tester by entering: TEST LTT PE *b s p* <CR>
Go to step 23.

6) Tighten loose cables.

7) Determine whether the problem still exists.

If the problem	Go to
exists	step 2
does not exist	step 28

8) Test peripheral shelf by entering: TEST PSHF PE *b s* <CR>
Go to step 12.

9) Test PSC1 by entering: TEST PEPK PE *b s p* <CR>

10) Determine whether the PSC1 passed the test.

If the PSC1	Go to
passed the test	step 15
did not pass the test	step 11

11) Replace PSC1 (MP 1251).
Go to step 15.

12) Determine whether the peripheral shelf passed the test.

If the peripheral shelf	**Go to**
passed the test	step 28
did not pass the test	step 13

13) Replace indicated peripheral pack (MP 1250).

14) Test peripheral pack by entering: TEST PEPK PE *b s p* <CR>
Go to step 16.

15) Test peripheral shelf by entering: TEST PSHF PE *b s* <CR>

16) Determine whether the peripheral shelf passed the test.

If the peripheral shelf	**Go to**
passed the test	step 17
did not pass the test	step 18

17) Enter: RTS PEPK PE *b s p* <CR>
Go to step 28.

18) Abort PED overlay and load DED overlay by entering: OVLY DED <CR>

19) Test PSC2 by entering: TEST PSC2 PE *b s* <CR>

20) Determine whether the PSC2 passed the test.

If the PSC2	**Go to**
passed the test	step 21
did not pass the test	step 22

21) Abort DED overlay and load PED overlay by entering: OVLY PED <CR>
Go to step 24.

22) Replace PSC2 (TP 2033).
Go to step 24.

23) Determine whether the Line and Trunk Tester passed the test.

If the Line and Trunk Tester	**Go to**
passed the test	step 24
did not pass the test	step 26

24) Test peripheral shelf by entering: TEST PSHF PE *b s* <CR>

25) Determine whether the peripheral shelf passed the test.

If the peripheral shelf	Go to
passed the test	step 28
did not pass the test	step 27

26) Replace Line and Trunk Tester pack (MP 1250).
Go to step 23.

27) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

28) This procedure is complete.

Clear peripheral equipment fault (#3)

1) Determine whether the cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the device under test.

If the cables	Go to
are firmly connected	step 2
are not firmly connected	step 6

2) Load DED overlay by entering: OVLY DED <CR>

3) Determine whether the fault is in a DCM or REM shelf.

If the fault	Go to
is in a DCM or REM shelf	step 4
is not in a DCM or REM shelf	step 8

4) Busy the DCM or REM by entering: BUSY DCM PE *b s p* <CR> or by entering: BUSY REM (*site*) PE *b s p* <CR>

5) Test the DCM or REM by entering: TEST DCM PE *b s p* <CR> or by entering: TEST REM (*site*) PE *b s p* <CR>
Go to step 23.

6) Tighten loose cables.

7) Determine whether the problem still exists.

If the problem	Go to
exists	step 2
does not exist	step 24

8) Obtain status of PE shelf by entering: STAT PSHF PE *b s* <CR>

9) Test the PE shelf by entering: TEST PSHF PE *b s* <CR>

10) Determine whether the PE shelf passed the test.

If the PE shelf	Go to
passed the test	step 24
did not pass the test	step 11

11) Determine whether the message displaying indicates a PE shelf fault.

If the message displaying	Go to
indicates a PE shelf fault	step 12
does not indicate a PE shelf fault	step 23

12) Replace PC1 pack (MP 1272) or PSC1 pack (MP 1251).

13) Test the PE shelf by entering: TEST PSHF PE *b s* <CR>

14) Determine whether the PE shelf passed the test.

If the PE shelf	Go to
passed the test	step 24
did not pass the test	step 15

15) Determine whether the message displaying indicates a PE shelf fault.

If the message displaying	Go to
indicates a PE shelf fault	step 16
does not indicate a PE shelf fault	step 23

16) Check connection of all plug-in cables associated with the faulty shelf.

17) Test the PE shelf by entering: TEST PSHF PE *b s* <CR>

18) Determine whether the PE shelf passed the test.

If the PE shelf	Go to
passed the test	step 24
did not pass the test	step 19

19) Determine whether the message displaying indicates a PE shelf fault.

If the message displaying	Go to
indicates a PE shelf fault	step 20
does not indicate a PE shelf fault	step 23

20) Either the replacement pack is faulty and the pack should be replaced (steps 12 through 17), or there is a problem with the controlling NT4T05 (the NT4T05 should be replaced [MP 1299]), or there is a problem with the second PC1 or PSC1 pack controlled by the same loop (perform MP 1251).

21) Determine whether the problem still exists.

If the problem	Go to
exists	step 22
does not exist	step 24

22) Contact the next level of technical support for assistance.

23) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

24) This procedure is complete.

Clear peripheral/LCE loop cable fault

1) Determine whether the cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the device under test (DUT).

If the cables	**Go to**
are firmly connected to the DUT	step 4
are not firmly connected to the DUT	step 2

2) Tighten any loose cables.

3) Determine whether the problem still exists.

If the problem	**Go to**
still exists	step 4
no longer exists	step 11

4) Load DED overlay by entering: OVLY DED <CR>

5) Test the LCM indicated in the error message by entering: TEST LCM LCE *b s* <CR> or test all LCMs by entering: TEST LCM ALL <CR>

6) Determine whether the LCM passed the test.

If the LCM	**Go to**
passed the test	step 11
did not pass the test	step 7

7) Replace the peripheral loop cable.

8) Test the LCM indicated in the error message by entering: TEST LCM LCE *b s* <CR> or test all LCMs by entering: TEST LCM ALL <CR>

9) Determine whether the LCM passed the test.

If the LCM	**Go to**
passed the test	step 11
did not pass the test	step 10

10) Contact the next level of technical support for assistance.

11) This procedure is complete.

Clear peripheral pack fault (#1)

1) Determine whether cables (diloop cables, peripheral loop cables, etc.) firmly connected to the device under test.

If the cables	Go to
are firmly connected	step 4
are not firmly connected	step 2

2) Tighten loose cables.

3) Determine whether the problem still exists.

If the problem	Go to
exists	step 4
does not exist	step 27

4) Determine whether more than one DED601 or DED602 message for the same peripheral shelf displayed.

If more than one DED601 or DED602 message	Go to
displayed for the same peripheral shelf	step 5
did not display for the same peripheral shelf	step 7

5) Replace the Peripheral Shelf Controller (PSC1) (MP 1251).

6) Determine whether the problem still exists.

If the problem	Go to
exists	step 7
does not exist	step 27

7) Load DED overlay by entering: OVLY DED <CR>

8) Test the PE shelf by entering: TEST PSHF PE *b s* <CR> or: TEST PSHF ALL <CR>

9) Determine whether the peripheral shelf passed the test.

If the peripheral shelf	Go to
passed the test	step 27
did not pass the test	step 10

10) Determine whether the messages DED601 or DED602 display.

If either DED601 or DED602	Go to
displays	step 11
does not display	step 22

11) Determine whether either DED601 or DED602 display more than one time for this shelf.

If DED601 or DED602	**Go to**
display more than one time for this shelf	step 21
do not display more than one time for this shelf	step 12

12) Test faulty circuit or pack.

13) Determine whether the device passed the test.

If the device	**Go to**
passed the test	step 17
did not pass the test	step 14

14) Replace faulty circuit pack.

15) Test new circuit pack.

16) Determine whether the circuit pack passed the test.

If the pack	**Go to**
passed the test	step 17
did not pass the test	step 19

17) Test the PE shelf by entering: TEST PSHF PE *b s* <CR> or: TEST PSHF ALL <CR>

18) Determine whether the PE shelf passed the test.

If the PE shelf	**Go to**
passed the test	step 27
did not pass the test	step 20

19) Replacement pack is faulty.
Go to step 14.

20) Determine whether the messages DED601 or DED602 display.

If either DED601 or DED602	**Go to**
displays	step 21
does not display	step 26

21) Replace PSC1 (MP 1251).

22) Test the PE shelf by entering: TEST PSHF PE *b s* <CR> or: TEST PSHF ALL <CR>

23) Determine whether the PE shelf passed the test.

If the PE shelf	Go to
passed the test	step 27
did not pass the test	step 24

24) Determine whether the messages, DED601 or DED602 display.

If either DED601 or DED602	Go to
displays	step 25
does not display	step 26

25) Replace each pack on the shelf, one at a time.
Go to step 21.

26) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

27) This procedure is complete.

Clear peripheral pack fault (#2)

Note: *If the faulty peripheral pack is a line card located in LCE-based equipment, perform procedure TP 6080 rather than this procedure.*

1) Determine whether the cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the device under test.

If the cables	Go to
are firmly connected	step 4
are not firmly connected	step 2

2) Tighten loose cables.

3) Determine whether the problem still exists.

If the problem	Go to
exists	step 4
does not exist	step 26

4) Load Overlay PED by entering: OVLY PED <CR>

5) Obtain status of unit by entering: STAT UNIT PE *b s p u* <CR>

6) Busy unit by entering: BUSY UNIT PE *b s p u* <CR>

7) Test the peripheral unit by entering: TEST UNIT PE *b s p u* <CR>

8) Determine whether the peripheral unit passed the test.

If the peripheral unit	Go to
passed the test	step 9
did not pass the test	step 10

9) Return unit to service by entering: RTS UNIT PE *b s p u* <CR>
Go to step 26.

10) Determine whether message displays indicated a peripheral pack fault.

If the message displays	Go to
indicate a peripheral pack fault	step 11
do not indicate a peripheral pack fault	step 25

11) Determine whether the faulty circuit is a line circuit.

If the faulty circuit	Go to
is a line circuit	step 12
is not a line circuit	step 14

12) Determine whether the circuit should be temporarily switched to a standby circuit.

If the circuit	**Go to**
should be switched to a standby circuit	step MP 1031
should not be switched to a standby circuit	step 13

13) Replace the circuit pack (MP 1250).

14) Test the pack by entering: TEST PEPK PE *b s p* <CR>

15) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 16
did not pass the test	step 18

16) Obtain status of the pack by entering: STAT PEPK PE *b s p* <CR>

17) Determine whether the pack is in service.

If the pack	**Go to**
is in service	step 26
is not in service	step 25

18) Busy the pack by entering: BUSY PEPK PE *b s p* <CR>

19) Replace the pack (MP 1250).

20) Return the pack to service by entering: RTS PEPK PE *b s p* <CR>

21) Test the pack by entering: TEST PEPK PE *b s p* <CR>

22) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 16
did not pass the test	step 23

23) Determine whether the display indicates a peripheral fault.

If the display	**Go to**
indicates a peripheral fault	step 24
does not indicate a peripheral fault	step 25

24) Faulty replacement pack.
Go to step 13.

25) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

26) This procedure is complete.

Clear peripheral bus fault

1) Remove all packs except PSC1 and PSC2 from mate shelf.

2) Determine whether the message PSC012 displays.

If PSC012	Go to
displays	step 4
does not display	step 3

3) Inspect backplane for short circuits or crosses.
Go to step 11.

4) Reinstall one peripheral pack.

5) Determine whether the PSC2 LED lights.

If the PSC2 LED	Go to
lights	step 6
does not light	step 4

6) Replace faulty circuit pack.

7) Determine whether any packs need to be installed.

If packs	Go to
are not all installed	step 4
are all installed	step 8

8) Return peripheral shelf to service by entering: RTS PSHF PE *b s* <CR>

9) Determine whether peripheral shelf returns to service.

If the peripheral shelf	Go to
returns to service	step 11
does not return to service	step 10

10) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

11) This procedure is complete.

Clear ANI failures

Note 1: Collect ANI failure messages until it can be determined that a particular line (CLG), trunk (TRK), receiver (RCVR), or CAMA Position Signaling circuit (CPSC) is faulty, then test the circuit.

Note 2: Refer to the NTP entitled *Maintenance Diagnostic Input Manual* (297-3601-506) for commands that test or make busy a peripheral line or trunk pack.

1) Determine whether a line pack, trunk pack, MF or Digitone Receiver, or CPSC is to be replaced.

If the pack is to be replaced and is a	**Perform**
line pack	MP 1277
trunk pack	MP 1267
MF or Digitone Receiver	MP 1266
CPSC	MP 1250

Clear multifrequency or Digitone receiver faults

1) Load overlay SED by entering: OVLY SED <CR>

Note: *Make sure cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the device under test.*

2) Obtain the status of the receiver unit by entering: STAT *device (site)* PE *b s p u* <CR>

3) Busy the receiver unit by entering: BUSY *device (site)* PE *b s p u* <CR>

4) Test the receiver unit by entering: TEST *device (site)* PE *b s p u* <CR>

Note: *This test may take up to 5 minutes to perform if no fault is found. If a fault is found, the test may take up to 15 minutes.*

5) Determine whether the receiver unit passed the test.

If the receiver unit	Go to
passed the test	step 16
did not pass the test	step 6

6) Determine whether a receiver fault is indicated by the output messages displayed.

If a receiver fault	Go to
is indicated by the output message displays	step 7
is not indicated by the output message displays	step 13

7) Obtain the status of the receiver pack by entering: STAT *device* (*site*) PE *b s p* <CR>

8) Determine whether the receiver pack is man-made-busy.

If the receiver pack	Go to
is man-made-busy	step 10
is not man-made-busy	step 9

9) Busy the receiver pack by entering: BUSY *device* (*site*) PE *b s p* <CR>

10) Replace the receiver pack (MP 1250).

11) Test the receiver pack by entering: TEST *device (site)* PE *b s p* <CR>

12) Determine whether the receiver pack passed the test.

If the receiver pack	**Go to**
passed the test	step 14
did not pass the test	step 13

13) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

14) Return the receiver pack to service by entering: RTS *device (site)* PE *b s p* <CR>

15) Ensure that the receiver pack returned to service by entering: STAT *device* (*site*) PE *b s p* <CR>

16) This procedure is complete.

Clear Digitone faults

1) Determine whether the message displayed is LIN018 or LIN019.

If message displayed is	Go to
LIN018	step 2
LIN019	step 3

2) Record the message number and the address of the Digitone Receiver pack. Go to step 4.

3) Record the message number and the address of the peripheral unit.

4) Determine from the recorded messages whether the Digitone Receiver pack or the Digitone pad at the subscriber station is the source of the fault.

5) Perform MP 1501 to test the Digitone Receiver pack and, if necessary, MP 1266 to replace the Digitone Receiver pack.

Clear trunk faults

1) Determine whether the problem is associated with a digital trunk.

If the problem	Go to
is associated with a digital trunk	step 3
is not associated with a digital trunk	step 2

Note: *The suffix DTRK indicates that the trunk is on a Digital Carrier Module (DCM). PE b s p u indicates the Carrier Interface pack and the timeslot. Use the table located at the end of this procedure, "DMS-10 timeslot to channel conversion" to relate the timeslot to the channel unit.*

2) Load PED overlay by entering: OVLY PED <CR>
Go to step 10.

3) Refer fault to far-end office for testing or repair.

4) Determine whether the fault is located at the far end.

If the fault	Go to
is located at the far end	step 26
is not located at the far end	step 5

5) Load DED overlay by entering: OVLY DED <CR>

6) Busy the DCM by entering: BUSY DCM PE *b s p* <CR>

Note: *This procedure will cause all established calls served by DCM to be aborted.*

7) Test the DCM by entering: TEST DCM PE *b s p* <CR>

8) Determine whether the DCM passed the test.

If the DCM	Go to
passed the test	step 9
did not pass the test	step 25

9) Fault is probably at far end.
Go to step 26.

10) Test the trunk unit by entering: TEST UNIT PE *b s p u* <CR>

11) Determine whether the unit passed the test.

If the unit	Go to
passed the test	step 12
did not pass the test	step 18

12) Determine whether the bay LED is lit.

If the bay LED	Go to
is lit	step 13
is not lit	step 25

13) Determine whether the trunk is an outgoing trunk.

If the trunk	Go to
is an outgoing trunk	step 14
is not an outgoing trunk	step 16

14) Make a test call (MP 1530).

15) Determine whether a connection can be established.

If a connection	Go to
can be established	step 26
cannot be established	step 17

16) Refer to the far-end office for testing.
Go to step 26.

17) Fault is in facilities or far-end office.
Go to step 26.

18) Busy the trunk pack by entering: BUSY PEPK *(site)* PE *b s p* <CR>

19) Remove the trunk pack from the PE shelf.

20) Carefully remove the daughterboard(s) from the trunk pack, and install on a known good trunk pack.

21) Install the new trunk pack in the appropriate slot in the PE shelf.

22) Test the trunk pack by entering: TEST PEPK (*site*) PE *b s p* <CR>

23) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 24
did not pass the test	step 25

24) Return the trunk pack to service by entering: RTS PEPK (*site*) PE *b s p* <CR>
Go to step 26.

Note: *If problems are encountered in setting the transmission levels of the analog trunk packs, the Balance Network or Loop Terminator daughter boards may be faulty.*

25) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

26) This procedure is complete.

DMS-10 timeslot to channel conversion		
DMS-10 timeslot	**DE-3 channel**	**DE-2 channel**
1	1	12
2	2	13
3	3	1
4	4	17
5	5	5
6	6	21
7	7	9
8	8	15
9	9	3
10	10	19
11	11	7
12	12	23
13	13	11
14	14	14
15	15	2
16	16	18
17	17	6
18	18	22
19	19	10
20	20	16
21	21	4
22	22	20
23	23	8
24	24	24

Clear line and trunk tester fault

1) Load PED overlay by entering: OVLY PED <CR>

2) Determine whether a message in the range, PED010-PED029 displays.

If a PED010-PED029 message	Go to
displays	step 3
does not display	step 10

3) Busy the pack by entering: BUSY PEPK PE *b s p* <CR>

4) Replace the pack (MP 1250).

5) Return the pack to service by entering: RTS PEPK PE *b s p* <CR>

6) Test pack by entering: TEST PEPK PE *b s p* <CR>

7) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 11
did not pass the test	step 8

8) Determine whether a message in the range, PED010-PED029 displays.

If a PED010-PED029 message	Go to
displays	step 9
does not display	step 10

9) Replacement pack is faulty.
Go to step 3.

10) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

11) This procedure is complete.

Clear ACT fault

1) Load Overlay PED by entering: OVLY PED IMED <CR>

2) Return the ACT to service by entering: RTS PEPK PE *b s* 2 <CR>

3) Determine whether the ACT returns to service.

If the ACT	Go to
returns to service	step 5
does not return to service	step 4

4) Perform TP 5173.

5) This procedure is complete.

Clear ACT/PMS fault

1) Load Overlay PED by entering: OVLY PED <CR>

2) Busy the Peripheral Maintenance System (PMS) or AC Tester (ACT) by entering: BUSY PEPK PE *b s* 2 <CR>

3) Test the PMS or ACT by entering: TEST PEPK PE *b s* 2 <CR>

4) Determine whether the PMS or ACT passed the test.

If the PMS or ACT	Go to
passed the test	step 5
did not pass the test	step 7

5) Return the PMS or ACT to service by entering: RTS PEPK PE *b s* 2 <CR>

6) Determine whether the PMS or ACT returns to service.

If the PMS or ACT	Go to
returns to service	step 16
does not return to service	step 7

7) Abort Overlay PED and load Overlay MPD by entering: OVLY MPD <CR>

8) Operate Power switch of NT2T71 pack to OFF position.

9) Pull out all packs in the ACT or PMS and push them back in.

Note: *Put the NT2T71 pack Power switch in the OFF position before pulling the pack. Put the switch in the ON position after pushing the pack back into place.*

10) Ensure that the NT2T71 Power switch is ON.

11) Ensure that packs are installed in the correct positions.

12) Ensure that the PE shelf is enabled.

13) Download the ACT or PMS (specified as device) by entering: DNLD *device* <CR>

Note: *After a successful download, verify that the ACT or PMS is in service.*

14) Determine whether the download was successful.

If the download	**Go to**
was successful	step 16
was not successful	step 15

15) Replace ACT/PMS packs, one at a time, and repeat download attempt until faulty pack is located.

16) This procedure is complete.

Test and correct a failed DSI link or DSI module

1) Load Overlay DED by entering: OVLY DED <CR>

2) Obtain the status of each suspect DSI link or module by entering: STAT DSLK CE *site b s p lk* <CR> or STAT DSI CE *b s p* <CR>

3) Determine whether the link or module is in service.

If the link or module	Go to
is in service	step 28
is not in service	step 4

4) Determine whether the link or module is assigned either a CCS7 SNL link or a DLC link.

If the link or module	Go to
is assigned either a CCS7 SNL link or DLC link	step 5
is not assigned either a CCS7 SNL link or DLC link	step 13

5) Determine whether the link assigned is an SNL link or DLC link.

If the link assigned is	Go to
an SNL link	step 6
a DLC link	step 9

6) Abort DED overlay and load SND overlay by entering: ****OVLY SND <CR>

7) Find the link/module SNL link set *(n)* and code *(x)* by entering: STAT SNL ALL <CR>

8) Busy the SNL by entering: BUSY SNL *n x* <CR>

CAUTION
If any trunks are call processing busy, or an SNL connected to a DSI link or module is not in an MMB mode, the IMED option must be used to execute a BUSY command. This situation could cause an office to lose existing calls and not receive new calls.

Go to step 12.

9) Abort DED overlay and load IOD overlay by entering: ****OVLY IOD <CR>

10) Find the DLC link by entering: STAT DLC <CR>

11) Disable the DLC link by entering: DSBL DLC *n* <CR>

12) Abort the current overlay and load DED overlay by entering: ****OVLY DED <CR>

13) Busy the link or module by entering: BUSY DSLK *site* CE *b s p lk* <CR> or BUSY DSI *site* CE *b s p* <CR>. For a DSI module, both links must be busied.

CAUTION
If any trunks are call processing busy, or an SNL connected to a DSI link or module is not in an MMB mode, the IMED option must be used to execute a BUSY command. This situation could cause an office to lose existing calls and not receive new calls.

14) Test the link or module by entering: TEST DSLK *site* CE *b s p lk* <CR> or TEST DSI *site* CE *b s p* <CR>. For a DSI module, both links must be tested.

15) Determine whether the link or module passed the test.

If the link or module	Go to
passed the test	step 16
did not pass the test	step 17

16) Return the busied link or module to service, by entering: RTS DSLK *site* CE *b s p lk* <CR> or RTS DSI *site* CE *b s p* <CR>
Go to step 21.

17) Determine whether the test indicates an NT4T24/NT4T50 or NT6X50 failure.

If the test	Go to
indicates an NT4T24/NT4T50 or NT6X50 failure	step 18
does not indicate an NT4T24/NT4T50 or NT6X50 failure	step 19

18) Replace faulty pack. (MP 1250). If the pack was already replaced, contact the next level of technical support for assistance before continuing.
Go to step 1.

19) Determine whether the test indicates that no response was received from the link or module.

If the test	Go to
indicates that no response was received from the link or module	step 20
does not indicate that no response was received from the link or module	step 21

20) Check DSI cabling for loose connections and correct. If connections were already checked, contact the next level of technical support for assistance before continuing.
Go to step 14.

21) Determine whether the link or module is assigned either a CCS7 SNL link or a DLC link.

If the link or module	Go to
is assigned either a CCS7 SNL or DLC link	step 22
is not assigned either a CCS7 SNL or DLC link	step 28

22) Determine whether the link assigned is an SNL link or a DLC link.

If the link assigned is	Go to
an SNL link	step 23
a DLC link	step 25

23) Abort DED overlay and load SND overlay by entering: ****OVLY SND <CR>

24) Return the busied SNL to service by entering: RTS SNL *n x* <CR>.
Go to step 28.

25) Abort DED overlay and load IOD overlay by entering: ****OVLY IOD <CR>

26) Enable the DLC link by entering: ENBL DLC *n* <CR>
Go to step 28.

27) Contact the next level of technical support for assistance.

28) This procedure is complete.

Test and correct a failed DSI link

1) Load Overlay DED by entering: OVLY DED <CR>

2) Obtain the status of each suspect DSI link or module by entering: STAT DSLK CE *site b s p lk* <CR> or STAT DSI CE *b s p* <CR>

3) Determine whether the link or module is in service.

If the link or module	Go to
is in service	step 58
is not in service	step 4

4) Determine whether the link or module is assigned a CCS7 SNL link or a DLC link.

If the link or module	Go to
is assigned a CCS7 SNL link or DLC link	step 5
is no assigned a CCS7 SNL link or DLC link	step 13

5) Determine whether the assignment is a CCS7 SNL link or DLC link.

If the assignment is	Go to
a CCS7 SNL link	step 6
a DLC link	step 9

6) Abort DED overlay and load SND overlay by entering: **** OVLY SND <CR>

7) Find the link/module SNL link set *(n)* and code *(x)* by entering: STAT SNL ALL <CR>

8) Busy the SNL by entering: BUSY SNL *n x* <CR>

CAUTION
If any trunks are call processing busy, or an SNL connected to a DSI link or module is not in an MMB mode, the IMED option must be used to execute a BUSY command. This situation could cause an office to lose existing calls and not receive new calls.

Go to step 12.

9) Abort DED overlay and load IOD overlay by entering: ****OVLY IOD <CR>

10) Find the DLC link by entering: STAT DLC <CR>

11) Disable the DLC link by entering: DSBL DLC *n* <CR>

12) Abort the current overlay and load DED overlay by entering: ****OVLY DED <CR>

13) Busy the link or module by entering: BUSY DSLK *site* CE *b s p lk* <CR> or BUSY DSI *site* CE *b s p* <CR>. For a DSI module, both links must be busied.

CAUTION
If any trunks are call processing busy, or an SNL connected to a DSI link or module is not in an MMB mode, the IMED option must be used to execute a BUSY command. This situation could cause an office to lose existing calls and not receive new calls.

14) Test the link or module by entering: TEST DSLK *site* CE *b s p lk* <CR> or TEST DSI *site* CE *b s p* <CR>. For a DSI module, both links must be tested.

15) Determine whether the link or module passed the test.

If the link or module	**Go to**
passed the test	step 16
did not pass the test	step 17

16) Return the busied link or module to service, by entering: RTS DSLK *site* CE *b s p lk* <CR> or RTS DSI *site* CE *b s p* <CR>
Go to step 50.

17) Obtain the status of the NT4T24 or NT4T50 pack by entering: STAT DSI CE *b s p* <CR>

18) Determine whether the NT4T24 or NT4T50 pack is man-made-busy.

If the pack	**Go to**
is man-made busy	step 20
is not man-made-busy	step 19

19) Busy the NT4T24 or NT4T50 pack by entering: BUSY DSI CE *b s p* <CR>

20) Download the NT4T24 or NT4T50 pack by entering: DNLD DSI CE *b s p* <CR>

21) Determine whether the NT4T24 or NT4T50 pack was successfully downloaded.

If the pack	**Go to**
was successfully downloaded	step 30
was not successfully downloaded	step 22

22) Determine whether this NT4T24 or NT4T50 pack has been downloaded once or twice.

If the pack	**Go to**
was downloaded once	step 17
was downloaded twice	step 23

23) Replace the NT4T24 or NT4T50 pack. (MP 1250)

24) Obtain the status of the NT4T24 or NT4T50 pack by entering: STAT DSI CE *b s p* <CR>

25) Determine whether the NT4T24 or NT4T50 pack is man-made-busy.

If the pack	**Go to**
is man-made busy	step 27
is not man-made-busy	step 26

26) Busy the NT4T24 or NT4T50 pack by entering: BUSY DSI CE *b s p* <CR>

27) Download the NT4T24 or NT4T50 pack by entering: DNLD DSI CE *b s p* <CR>

28) Determine whether the NT4T24 or NT4T50 pack was successfully downloaded.

If the pack	**Go to**
was successfully downloaded	step 30
was not successfully downloaded	step 29

29) Determine whether this NT4T24 or NT4T50 pack has been downloaded once or twice.

If the pack	Go to
was downloaded once	step 24
was downloaded twice	step 57

30) Test the link or module by entering: TEST DSLK *site* CE *b s p lk* <CR> or TEST DSI *site* CE *b s p* <CR>. For a DSI module, both links must be tested.

31) Determine whether the link or module passed the test.

If the link or module	Go to
passed the test	step 32
did not pass the test	step 33

32) Return the busied link or module to service by entering: RTS DSLK *site* CE *b s p lk* <CR> or RTS DSI *site* CE *b s p* <CR>
Go to step 50.

33) Replace the NT6X50 pack. (MP 1250)

34) Test the link or module by entering: TEST DSLK *site* CE *b s p lk* <CR> or TEST DSI *site* CE *b s p* <CR>. For a DSI module, both links must be tested.

35) Determine whether the link or module passed the test.

If the link or module	Go to
passed the test	step 36
did not pass the test	step 37

36) Return the busied link or module to service, by entering: RTS DSLK *site* CE *b s p lk* <CR> or RTS DSI *site* CE *b s p* <CR>
Go to step 50.

37) Restore the original NT6X50 pack. (MP 1250)

38) Abort DED overlay and load NED overlay by entering: ****OVLY NED <CR>

39) Test the MLI pack (NT4T05) connected to the DSI module by entering: TEST MLI CE *b s p* <CR>

40) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 45
did not pass the test	step 41

41) Replace the NT4T05 pack. (MP 1250)

42) Test the MLI pack (NT4T05) connected to the DSI module by entering: TEST MLI CE *b s p* <CR>

43) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 45
did not pass the test	step 44

44) Check the cable connecting the DSI to the MLI. If the connections are correct, restore the original NT4T05 pack (MP 1250) and contact the next level of support for assistance before continuing this procedure.
Go to step 58.

45) Abort NED overlay and load DED overlay by entering: ****OVLY DED <CR>

46) Test the link or module by entering: TEST DSLK *site* CE *b s p lk* <CR> or TEST DSI *site* CE *b s p* <CR>. For a DSI module, both links must be tested.

47) Determine whether the link or module passed the test.

If the link or module	Go to
passed the test	step 49
did not pass the test	step 48

48) Contact the next level of support for assistance before continuing with this procedure.
Go to step 58.

49) Return the busied link or module to service by entering: RTS DSLK *site* CE *b s p lk* <CR> or RTS DSI *site* CE *b s p* <CR>

50) Determine whether the link or module is assigned a CCS7 SNL link or a DLC link.

If the link or module	Go to
is assigned a CCS7 SNL link or a DLC link	step 51
is not assigned a CCS7 SNL link or a DLC link	step 58

51) Determine whether the assigned link is a CCS7 link or a DLC link.

If the assigned link	**Go to**
is a CCS7 SNL link	step 52
is a DLC link	step 54

52) Abort DED overlay and load SND overlay by entering: ****OVLY SND <CR>

53) Return the busied SNL to service, by entering: RTS SNL *n x* <CR>
Go to step 58.

54) Abort DED overlay and load IOD overlay by entering: ****OVLY IOD <CR>

55) Enable the DLC link by entering: ENBL DLC *n* <CR>
Go to step 58.

56) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

57) Contact the next level of technical support for assistance.

58) This procedure is complete.

Clear Digital Carrier Module (DCM) fault (#1)

1) Determine whether the peripheral equipment loop is in service.

If the peripheral equipment loop	Go to
is in service	step 2
is not in service	step 22

2) Load DED overlay by entering: OVLY DED <CR>

3) Determine whether the DCM is system-made-busy.

If the DCM	Go to
is system-made-busy	step 4
is not system-made-busy	step 7

4) Busy the DCM by entering: BUSY DCM PE *b s p* <CR>

5) Replace the Signaling Converter pack (NT2T31) (MP 1250).

CAUTION
Unplug the Carrier Interface pack (NT2T32) before removing any other pack. Plug in after replacing the pack.

6) Test the DCM by entering: TEST DCM PE *b s p* <CR>

Note 1: Make sure cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the device under test.

Note 2: If the DCM is man-made-busy, this test can take up to 7 minutes to complete.

Go to step 10.

7) Test the DCM by entering: TEST DCM PE *b s p* <CR>

Note 1: Make sure cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the device under test.

Note 2: If the DCM is man-made-busy, this test can take up to 7 minutes to complete.

8) Determine whether the DCM passed the test.

If the DCM	**Go to**
passed the test	step 23
did not pass the test	step 9

9) Busy the DCM by entering: BUSY DCM PE *b s p* <CR>

CAUTION
All subscribers calls associated with the busied DCM are disconnected.

Go to step 5.

10) Determine whether the DCM passed the test.

If the DCM	**Go to**
passed the test	step 11
did not pass the test	step 13

11) Return the DCM to service by entering: RTS DCM PE *b s p* <CR>

12) Determine whether the DCM remains in service.

If the DCM	**Go to**
remains in service	step 23
does not remain in service	step 15

13) Replace the Carrier Interface pack (NT2T32) (MP 1250).

CAUTION
Unplug the DCM Carrier Interface pack before removing any other pack. Plug in after replacing other pack.

14) Test the DCM by entering: TEST DCM PE *b s p* <CR>
Go to step 16.

15) Use carrier system documentation to test and repair carrier line fault.
Go to step 17.

16) Determine whether the DCM passed the test.

If the DCM	Go to
passed the test	step 17
did not pass the test	step 18

17) Return the DCM to service by entering: RTS DCM PE *b s p* <CR>
Go to step 12.

18) Replace Network Interface pack (NT2T30) (MP 1250).

CAUTION
Unplug the Carrier Interface pack before removing any other pack. Plug in after replacing the pack.

19) Test the DCM by entering: TEST DCM PE *b s p* <CR>

Note 1: Make sure cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the device under test.

Note 2: If the DCM is man-made-busy, this test can take up to 7 minutes to complete.

20) Determine whether the DCM passed the test.

If the DCM	Go to
passed the test	step 17
did not pass the test	step 21

21) One of the replacement packs is faulty.

Note: *Check peripheral loop controlling DCM. If it is disabled, replacing packs will not clear the fault.*

Go to step 5.

22) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

23) This procedure is complete.

Download DSI

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the NT4T24 (Span Interface Controller) or NT4T50 (CALEA Interface) to be downloaded by entering: BUSY DSI CE *b s p* <CR>

   Note: *A Digital Signal Interface (DSI) module consists of an NT4T24 (Span Interface Controller) pack or NT4T50 (CALEA Interface) pack and an NT6X50 (DS-1 Interface pack). The DSI is downloaded by way of the NT4T24 pack.*

3) Download the NT4T24 or NT4T50 by entering: DNLD DSI CE *b s p* <CR>

4) Determine whether the NT4T24 or NT4T50 downloaded successfully.

If the NT4T24 or NT4T50	Go to
downloaded	step 5
did not download	step 6

5) Return the NT4T24 or NT4T50 to service by entering: RTS DSI CE *b s p* <CR>
   Go to step 17.

6) Download the NT4T24 or NT4T50 again by entering: DNLD DSI CE *b s p* <CR>

7) Determine whether the NT4T24 or NT4T50 downloaded successfully.

If the NT4T24 or NT4T50	Go to
downloaded	step 5
did not download	step 8

8) Reseat the NT4T05 by pulling the pack from the backplane, waiting a few seconds, and then pushing the pack back in the slot until it is reseated.

9) Download the NT4T24 or NT4T50 by entering: DNLD DSI CE *b s p* <CR>

10) Determine whether the NT4T24 or NT4T50 downloaded successfully.

If the NT4T24 or NT4T50	Go to
downloaded	step 11
did not download	step 12

11) Return the NT4T24 or NT4T50 to service by entering: RTS DSI CE b s p <CR>
Go to step 17.

12) Determine whether the NT4T24 or NT4T50 has been reseated.

If the NT4T24 or NT4T50	Go to
has been reseated	step 14
has not been reseated	step 13

13) Reseat the NT4T24 or NT4T50 by pulling the pack from the backplane, waiting a few seconds, and then pushing the pack back in the slot until it is reseated.
Go to step 9.

14) Determine whether the NT4T24 or NT4T50 has been replaced.

If the NT4T24 or NT4T50	Go to
has been replaced	step 16
has not been replaced	step 15

15) Replace the NT4T24 or NT4T50 pack (see MP 1250).
Go to step 9.

16) Contact the next level of technical support for assistance.

17) This procedure is complete.

Clear a Digital Signal Interface (DSI) link fault

1) Load DED overlay by entering: OVLY DED <CR>

Note: *Make sure cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the device under test.*

2) Determine whether the DSLK is busy.

If the DSLK	Go to
is busy	step 4
is not busy	step 3

CAUTION
All calls associated with the busied DSI are taken out of service.

3) Busy the DSLK by entering: BUSY DSLK CE *b s p lk* <CR>

4) Test the DSLK by entering: TEST DSLK CE *b s p lk* <CR>

Note: *This test could take up to 7 minutes to complete.*

5) Determine whether the DSLK passed the test.

If the DSLK	Go to
passed the test	step 6
did not pass the test	step 9

6) Use carrier system documentation to test and repair carrier line fault.

7) Return the DSLK to service by entering: RTS DSLK CE *b s p lk* <CR>

8) Determine whether the DSLK returned to service.

If the DSLK	Go to
returned to service	step 10
did not return to service	TP 5205

9) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

10) This procedure is complete.

Clear DCM fault (#2)

1) Load DED overlay by entering: OVLY DED <CR>

Note: *Make sure cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the device under test.*

2) Determine whether the DCM is busy.

If the DCM	Go to
is busy	step
is not busy	step

CAUTION
All calls associated with the busied DCM are taken out of service.

3) Busy the DCM by entering: BUSY DCM PE *b s p* <CR>

4) Test the DCM by entering: TEST DCM PE *b s p* <CR>

Note: *This test could take up to 7 minutes to complete.*

5) Determine whether the DCM passed the test.

If the DCM	Go to
passed the test	step
did not pass the test	step

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

7) Use carrier system documentation to test and repair carrier line fault.

8) Return the DCM to service by entering: RTS DCM PE *b s p* <CR>

9) This procedure is complete.

Respond to spared DSI condition

When OMM message DSI555 displays, indicating a spared DSI condition, the following tables show impact of the sparing on DSLK traffic. This information can be used by the craftsperson to ascertain impact of sparing on call connections and to assist in error correction.

Table 5210-A
Duplex mode MLI maintenance activity effect on digital signaling link (DSLK) traffic (active MLI/PELP taken out of service)

Action taken on the active MLI	Status of the inactive MLI PELPs			
	Both PELPs are in service	Only PELP assigned to DSLK 0 is in service	Only PELP assigned to DSLK 1 is in service	Both PELPs are out of service
MLI is taken out of service	Spared (see Note) Calls remain	Spared DSLK 0 calls are stable	Not spared Calls are dropped	Not spared Calls are dropped
PELP assigned to DSLK 0 is in service; PELP assigned to DSLK 1 is taken out of service	Spared Calls are stable	Not spared DSLK 0 calls are stable	Not spared DSLK 0 calls are stable	Not spared DSLK 0 calls are stable
PELP assigned to DSLK 1 is in service; PELP assigned to DSLK 0 is taken out of service	Spared Calls are stable	Not spared DSLK 1 calls are stable	Not spared DSLK 1 calls are stable	Not spared DSLK 1 calls are stable
PELP assigned to DSLK 1 is out of service; PELP assigned to DSLK 0 is taken out of service	Not applicable	Spared DSLK 0 calls are stable	Not spared Calls are dropped	Not spared Calls are dropped

Note: *"Spared" is analogous to "switched." When sparing occurs, all traffic on the active PELP is switched to the backup PELP, which then becomes active.*

Table 5210-B
Duplex mode MLI maintenance activity effect on digital signaling link (DSLK) traffic (inactive MLI/PELP returned to service)

Action taken on the inactive MLI	**Status of the active MLI PELPs**		
	Both PELPs are in service	**Only PELP assigned to DSLK 0 is in service**	**Both PELPs are out of service**
MLI is returned to service	Not spared (see Note) Calls are stable	Spared DSLK 0 calls are stable; Calls can be made on DSLK 1	Spared Calls can be made on both DSLKs
PELP assigned to DSLK 0 is returned to service; PELP assigned to DSLK 1 is out of service	Not spared Calls are stable	Not spared DSLK 0 calls are stable	Spared Calls can be made on DSLK 0
PELP assigned to DSLK 1 is returned to service; PELP assigned to DSLK 0 is out of service	Not spared Calls are stable	Not spared DSLK 0 calls are stable	Not spared No calls can be made
PELP assigned to DSLK 0 is returned to service; PELP assigned to DSLK 1 is in service	Not spared Calls are stable	Spared DSLK 0 calls are stable; Calls can be made on DSLK 1	Spared Calls can be made on both DSLKs
PELP assigned to DSLK 1 is returned to service; PELP assigned to DSLK 0 is in service	Not spared Calls are stable	Spared DSLK 0 calls are stable; Calls can be made on DSLK 1	Not applicable

Note: *"Spared" is analogous to "switched." When sparing occurs, all traffic on the active PELP is switched to the backup PELP, which then becomes active.*

Clear Digital Signal Interface (DSI) link fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the specified DSI link by entering: BUSY DSLK CE *b s p lk* <CR>

3) Test the DSI link by entering: TEST DSLK CE *b s p lk* <CR>

4) Determine whether the problem still exists.

If the problem	Go to
still exists	step 5
does not exist	step 6

5) Refer to the system printout, find any related DEDXXX messages, and follow the associated trouble procedure.

6) Return the DSI link to service by entering: RTS DSLK CE *b s p lk* <CR>

7) This procedure is complete.

Test for trunk continuity faults

1) Load Overlay CKT by entering: OVLY CKT <CR>

2) Obtain status by entering: LIST TRK COTF

   Note: *COTF provides the status only for trunks that have failed the continuity test.*

3) Determine whether any trunks have failed the continuity test.

If all trunks	Go to
passed the test	step 5
did not pass the test	step 4

4) Refer to Test Procedure TP 5150.

5) This procedure is complete.

Clear LCE line or ISDN line card (LPK) fault

1) Load Overlay PED by entering: OVLY PED <CR>

2) Obtain status of line pack by entering: STAT LPK LCE/RSC/RSE *b s lsg l* <CR>

3) Busy the line pack by entering: BUSY LPK LCE/RSC/RSE *b s lsg l* <CR>

4) Test the line pack by entering: TEST LPK LCE/RSC/RSE *b s lsg l* <CR>

5) Determine whether the line pack passed the test.

If the line pack	Go to
passed the test	step 6
did not pass the test	step 8

6) Return the line pack to service by entering: RTS LPK LCE/RSC/RSE *b s lsg l* <CR>

7) Ensure that the line pack returned to service by entering: STAT LPK LCE/RSC/RSE *b s lsg l* <CR>
Go to step 17.

8) Determine whether the line pack is an NT6X21AC and also if the message PED932/PED933 displays.

If the line pack	Go to
is an NT6X21AC and PED932/PED933 displays	step 10
is not an NT6X21AC	step 9

9) Determine whether the line pack is an NTBX27 and also if the message PED079/PED085/PED095 displays.

If the line pack	Go to
is an NTBX27 and PED079/PED085/PED095 displays	step 11
is not an NTBX27	step 14

10) Ensure that a functioning M5000-Series business set is attached to the loop.
Go to step 12.

11) Ensure that the network terminator (NT1) is attached to the U-loop.

12) Test the line pack by entering: TEST LPK LCE/RSC/RSE *b s lsg l* <CR>

13) Determine whether the line pack passed the test.

If the line pack	Go to
passed the test	step 15
is not an NTBX27	step 14

14) Replace the line pack (MP 1255).
Go to step 4.

15) Return the line pack to service by entering: RTS LPK LCE/RSC/RSE *b s lsg l* <CR>

16) Ensure that the line pack returned to service by entering: STAT LPK LCE/RSC/RSE *b s lsg l* <CR>

17) This procedure is complete.

Clear interface fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Determine whether the fault is associated with a Line Concentrating Module (LCM), SCM-10S, or an SCM-10U.

If the fault is associated with	Go to
an LCM	step 3
an SCM-10S	step 6
an SCM-10U	step 9

3) Busy the specified Line Concentrating Module Controller (LCMC) by entering: BUSY LCMC LCE *b s* <CR>

4) Test the specified LCMC by entering: TEST LCMC LCE *b s* <CR>

5) Return the specified LCMC to service by entering: RTS LCMC LCE *b s* <CR>
Go to step 12.

6) Busy the specified SCM-10S Control Complex (SCSC) by entering: BUSY SCSC SCE *b s* <CR>

7) Test the specified SCM-10S Control Complex by entering: TEST SCSC SCE *b s* <CR>

8) Return the specified SCM-10S Control Complex to service by entering: RTS SCSC SCE *b s* <CR>
Go to step 12.

9) Busy the specified SCM-10U Controller by entering: BUSY SCUC (*site*) SCE *b s* <CR>

10) Test the specified SCM-10U Controller (SCUC) by entering: TEST SCUC (*site*) SCE *b s* <CR>

11) Return the specified SCM-10U Controller to service by entering: RTS SCUC (*site*) SCE *b s* <CR>

12) Determine whether errors are still reported.

If errors	Go to
are still reported	step 13
are no longer reported	step 21

13) Replace the peripheral loop cable.

14) Abort DED overlay and load NED overlay by entering: **** OVLY NED <CR>

15) Busy the peripheral loop by entering: BUSY PELP CE 1 *s p l* <CR>

16) Test the peripheral loop by entering: TEST PELP CE 1 *s p l* <CR>

17) Determine whether the peripheral loop passed the test.

If the peripheral loop	**Go to**
passed the test	step 18
did not pass the test	step 20

18) Return the peripheral loop to service by entering: RTS PELP CE 1 *s p l* <CR>

19) Determine whether errors are still reported.

If errors	**Go to**
are still reported	step 20
are no longer reported	step 21

20) Determine whether the problem is in the LCM Control Unit (LCMC).

If the problem	**Go to**
is in the LCMC	TP 6023
is not in the LCMC (and, thus, is probably in the SCM-10S or SCM-10U control complex)	TP 7035

21) This procedure is complete.

Clear LCM, RLCM, OPM, OPAC, RSLE, or RSLM control unit fault

1) Determine whether the fault is associated with either an RSLE or an RSLM.

If the fault	Go to
is associated with an RSLE or an RSLM	step 49
is not associated with an RSLE or an RSLM	step 2

2) Load Overlay DED by entering: OVLY DED <CR>

Note: *Make sure that cables (diloop cables, peripheral loop cables, and so on) are firmly connected to the device under test.*

3) Obtain the status of the Line Concentrating Module Controller (LCMC) by entering: STAT LCMC (*site*) LCE/CLCE *b s* <CR>

4) Determine whether the LCM is off of an RSC-S.

If the LCM	Go to
is off of an RSC-S	step 5
is not off of an RSC-S	step 8

5) Determine whether the DS1Ls serving the LCM are in service.

If the DS1Ls	Go to
are in service	step 13
are not in service	step 6

6) Return DS1Ls to service by entering: RTS DS1L *site* CRSC 1 1 *p l* <CR>

7) Determine whether the DS1Ls returned to service.

If the DS1Ls	Go to
returned to service	step 13
did not return to service	step 82

8) Determine whether the PE loops serving the LCM are in service.

If the PE loops	Go to
are in service	step 13
ar not in service	step 9

9) Abort Overlay DED and load Overlay NED by entering: **** OVLY NED <CR>

10) Return the PE loops to service by entering: RTS PELP CE *b s p l* <CR>

Note: *Devices that are SMB must be MMB before returning to service.*

11) Determine whether the PE loops returned to service.

If the PE loops	Go to
returned to service	step 12
did not return to service	step 82

12) Abort Overlay NED and load Overlay DED by entering: **** OVLY DED <CR>

13) Determine whether the LCMC is man-made-busy.

If the LCMC	Go to
is man-made-busy	step 15
is not man-made-busy	step 14

14) Busy the LCMC by entering: BUSY LCMC (*site*) LCE/CLCE *b s* <CR>

15) Test the LCMC by entering: TEST LCMC (*site*) LCE/CLCE *b s* <CR>

16) Determine whether the LCMC passed the test.

If the LCMC	Go to
passed the test	step 22
did not pass the test	step 17

17) Place the LCMC in the offline state by entering: OFFL LCMC (*site*) LCE/CLCE *b s* <CR>

CAUTION
The LCMC may not pass the test due to a faulty mate LCMC. Messages may directly or indirectly indicate the faulty LCMC. For example, when LCM735 messages are output for line packs in only an odd- or even-numbered line subgroup, the controlling LCMC may be faulty.

18) Replace the LCM Processor pack (NT6X51) (MP 1250).

CAUTION
The NT6X51DA pack supports a 64 kbps data rate between the host and an RLCM, OPAC or OPM. The NT6X51DA must only be installed at sites configured to support that data rate.

19) Busy the LCMC by entering: BUSY LCMC (*site*) LCE/CLCE *b s* <CR>

20) Test the LCMC by entering: TEST LCMC (*site*) LCE/CLCE *b s* <CR>

21) Determine whether the LCMC passed the test.

If the LCMC	Go to
passed the test	step 22
did not pass the test	step 24

22) Return the LCMC to service by entering: RTS LCMC (*site)* LCE/CLCE *b s* <CR>

23) Ensure that the LCMC has returned to service by entering: STAT LCMC (*site*) LCE/CLCE *b s* <CR>
Go to step 84.

24) Place the LCMC in the offline state by entering: OFFL LCMC (*site*) LCE/CLCE *b s* <CR>

25) Reinstall the original LCM Processor pack (NT6X51) (MP 1250).

CAUTION
The NT6X51DA pack supports a 64 kbps data rate between the host and an RLCM, OPAC or OPM. The NT6X51DA must only be installed at sites configured to support that data rate.

26) Replace the Digroup Control pack (NT6X52) (MP 1338).

27) Busy the LCMC by entering: BUSY LCMC (*site*) LCE/CLCE *b s* <CR>

28) Test the LCMC by entering: TEST LCMC (*site*) LCE/CLCE *b s* <CR>

29) Determine whether the LCMC passed the test.

If the LCMC	Go to
passed the test	step 30
did not pass the test	step 32

30) Return the LCMC to service by entering: RTS LCMC (*site)* LCE/CLCE *b s* <CR>

31) Ensure that the LCMC has returned to service by entering: STAT LCMC (*site*) LCE/CLCE *b s* <CR>
Go to step 84.

32) Place the LCMC offline by entering: OFFL LCMC (*site)* LCE/CLCE *b s* <CR>

33) Remove the replacement NT6X52 pack and install the original pack (MP 1338).

34) Replace the LCM Power Converter pack (NT6X53) (MP 1271)

35) Determine whether the LCMC passed the test (in MP 1271).

If the LCMC	Go to
passed the test	step 36
did not pass the test	step 37

36) Ensure that the LCMC has returned to service by entering: STAT LCMC (*site*) LCE/CLCE *b s* <CR>
Go to step 84.

37) Busy the LCMC by entering: BUSY LCMC (*site*) LCE/CLCE *b s* <CR>

38) Busy the mate LCMC by entering: BUSY LCMC (*site*) LCE/CLCE *b s* IMED <CR>

39) Download the LCMC by entering: DNLD LCMC (*site*) LCE/CLCE *b s* <CR>

Note: *If the PE loops associated with the LCMC are faulty, the LCMC cannot be downloaded or returned to service.*

40) Return the LCMC that was downloaded in Step 39 to service by entering: RTS LCMC (*site*) LCE/CLCE *b s* <CR>

Note: *If the PE loops associated with the LCMC are faulty, the LCMC cannot be downloaded or returned to service.*

41) Test the LCMC by entering: TEST LCMC (*site*) LCE/CLCE *b s* <CR>

42) Determine whether the LCMC passed the test.

If the LCMC	**Go to**
passed the test	step 43
did not pass the test	step 44

43) Ensure that the LCMC has returned to service by entering: STAT LCMC (*site*) LCE/CLCE *b s* <CR>
Go to step 84.

44) Determine whether the fault is in a remote.

If the fault	**Go to**
is in a remote	step 46
is not in a remote	step 45

45) Abort Overlay DED by entering: ****
Perform TP 4069.

46) Check span line

Note: *Specific tests are determined by local operating company procedures.*

47) Determine whether the problem still exists.

If the problem	**Go to**
still exists	step 83
does not exist	step 48

48) Ensure that the LCMC has returned to service by entering: STAT LCMC (*site*) LCE/CLCE *b s* <CR>
Go to step 84.

49) Load Overlay DED by entering: OVLY DED <CR>

Note: *Make sure that cables (diloop cables, peripheral loop cables, and so on) are firmly connected to the device under test.*

50) Busy the suspected faulty RSLE or RSLM Processor pack by entering: BUSY RSLC *site* RSE *b s p* <CR> (*p* can be 5 or 8 for an RSLE shelf and 5 or 7 for an RSLM shelf).

51) Determine whether the corresponding LCM Power Converter pack (NT6X53) LED is lit.

If the corresponding NT6X53 LED	**Go to**
is lit	step 52
is not lit	step 57

52) Determine whether the equipment being checked is an RSLM Type A shelf.

If the equipment	**Go to**
is an RSLM Type A shelf	step 83
is not an RSLM Type A shelf	step 76

53) Determine whether either CB1 or CB3 is in the OFF position.

If either CB1 or CB3	**Go to**
is in the OFF position	step 54
is not in the OFF position	step 55

54) Operate CB1 or CB3 or both to the ON position.
Go to step 78.

55) Operate CB1 to the OFF position.

56) Replace the LCM Power Converter pack (NT6X53) (MP 1271)
Go to step 81.

57) For a RSLE shelf: Reseat the corresponding Matrix pack (NT9Y16) and Processor pack (NT9Y22). For a RSLM shelf: Operate the Enable switch on the Switching Matrix pack (NT9Y12) to the DISABLE position, and reseat that pack, then reseat the Processor pack (NT9Y14). Then operate the Enable switch on the Switching Matrix pack (NT9Y12) to the ENABLE position.

58) Test the Processor pack by entering: TEST RSLC *site* RSE *b s p* <CR> (*p* can be 5 or 8 for a RSLE shelf and 5 or 7 for a RSLM shelf.

59) Determine whether the Processor pack passed the test.

If the Processor pack	**Go to**
passed the test	step 60
did not pass the test	step 62

60) Return the Processor pack to service by entering: RTS RSLC *site* RSE *b s p* <CR> (*p* can be 5 or 8 for an RSLE shelf and 5 or 7 for an RSLM shelf).

61) Obtain the status of the RSLC by entering: STAT RSLC *site* RSE *b s p* <CR>
Go to step 84.

62) Replace the Processor pack (NT9Y22 for an RSLE shelf or NT9Y14 for an RSLM shelf) (MP 1250).

63) Test the Processor pack by entering: TEST RSLC *site* RSE *b s p* <CR> (*p* can be 5 or 8 for an RSLE shelf and 5 or 7 for an RSLM shelf).

64) Determine whether the Processor pack passed the test.

If the Processor pack	Go to
passed the test	step 60
did not pass the test	step 64

65) Remove the replacement Processor pack and install the original Processor pack.

66) For an RSLE shelf: Replace the Matrix pack (NT9Y16) (MP 1250). For an RSLM shelf: Operate the Enable switch on the Switching Matrix pack (NY9Y12) to the DISABLE position. Replace the Switching Matrix pack and operate the Enable switch on the new pack to the ENABLE position (MP 1250).

67) Test the Processor pack by entering: TEST RSLC *site* RSE *b s p* <CR> (*p* can be 5 or 8 for an RSLE shelf and 5 or 7 for an RSLM shelf).

68) Determine whether the Processor pack passed the test.

If the Processor pack	Go to
passed the test	step 60
did not pass the test	step 68

69) Remove the replacement Matrix pack and install the original pack (MP 1250).

70) Test the Processor pack by entering: TEST RSLC *site* RSE *b s p* <CR> (*p* can be 5 or 8 for an RSLE shelf and 5 or 7 for an RSLM shelf).

71) Determine whether the Processor pack passed the test.

If the Processor pack	Go to
passed the test	step 60
did not pass the test	step 72

72) Determine whether the faulty remote is an RSLM.

If the faulty remote	Go to
is an RSLM	step 83
is not an RSLM	step 73

73) Replace the DHI and Clock pack (NT9Y17) or DHI pack (NT9Y20) associated with the faulty Processor (MP 1250).

74) Test the Processor pack by entering: TEST RSLC *site* RSE *b s p* <CR> (*p* can be 5 or 8 for an RSLE shelf).

75) Determine whether the Processor pack passed the test.

If the Processor pack	Go to
passed the test	step 60
did not pass the test	step 83

76) Determine whether the corresponding circuit breaker for the shelf is in the OFF position.

If the corresponding circuit breaker	Go to
is in the OFF position	step 77
is not in the OFF position	step 79

77) Operate the circuit breaker to the On position.

78) Determine whether the breakers hold.

If the breakers	Go to
hold	step 57
do not hold	step 80

79) Operate the circuit breaker to the Off position.

80) Replace the LCM Power Converter pack (NT6X53) for that shelf (MP 1271).

81) Determine whether the LCM Power Converter (NT6X53) LED is lit.

If the NT6X53 LED	Go to
is lit	step 83
is not lit	step 57

82) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.
Go to step 84.

83) Contact the next level of technical support for assistance.

84) This procedure is complete.

Clear Digroup Control pack (NT6X52) fault

1) Load DED overlay by entering: OVLY DED <CR>

   Note: *Make sure cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the device under test.*

2) Test the specified pack by entering: TEST LCMC LCE *b s* <CR>

3) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 4
failed the test	step 17

4) Busy the pack by entering: BUSY LCMC LCE *b s* <CR>

5) Reseat the pack following procedure MP 1338. After returning the pack to service, repeat the test.

6) Determine whether the pack still fails the test.

If the pack	Go to
still fails the test	step 7
no longer fails the test	step 22

7) Busy the pack by entering: BUSY LCMC LCE *b s* <CR>

8) Return the pack to service by entering: RTS LCMC LCE *b s* <CR>

9) Test the specified pack by entering: TEST LCMC LCE *b s* <CR>

10) Determine whether the pack still fails the test.

If the pack	Go to
still fails the test	step 11
no longer fails the test	step 22

11) Busy the pack by entering: BUSY LCMC LCE *b s* <CR>

12) Replace the Digroup Control pack (MP 1338).

13) Return the pack to service by entering: RTS LCMC LCE *b s* <CR>

14) Test the specified pack by entering: TEST LCMC LCE *b s* <CR>

15) Determine whether the pack still fails the test.

If the pack	Go to
still fails the test	step 16
no longer fails the test	step 22

16) Contact the next level of technical support for assistance.

17) Determine whether one-way transmission problems exist.

Note: *Because of the complexity of the network, several hours may be required to detect a bad channel. Thus, a problem may affect subscribers before the system can report the fault.*

If one-way transmission problems	Go to
exist	step 18
do not exist	step 22

18) Busy the pack by entering: BUSY LCMC LCE *b s* <CR>

19) Replace the Digroup Control pack (MP 1338).

20) Return the pack to service by entering: RTS LCMC LCE *b s* <CR>

21) Determine whether one-way transmission problems exist.

If one-way transmission problems	Go to
exist	TP 6060
do not exist	step 22

22) This procedure is complete.

Clear Bus Interface Circuit (BIC) card (NT6X54) fault

1) Make sure cables (diloop cables, peripheral loop cables) are firmly connected to the device under test.

2) Load DED overlay by entering: OVLY DED <CR>

3) Determine if any line subgroups are system-made-busy by entering: STAT LSG OOS <CR>

4) Determine whether any line subgroups are system-made-busy.

If any line subgroups	Go to
are system -made-busy	step 5
are not system-made-busy	step 6

5) Enter: BUSY LSG LCE *b s lsg* <CR>

6) Determine whether the fault is associated with either an RSLE or an RSLM.

If the fault	Go to
is associated either with an RSLE or with an RSLM	step 14
is not associated either with an RSLE or with an RSLM	step 7

7) Test the LCE line subgroups and lines by entering: TEST LCMC LCE *b s* LSGL <CR>

8) Determine whether the BIC card passed the test.

If the BIC card	Go to
passed the test	step 14
did not pass the test	step 9

9) Replace BIC card (MP 1255)

   Note: *Check for blown 48V, +5V, +15V fuses before replacing the BIC card.*

10) Test the LCE line subgroups and lines by entering: TEST LCMC LCE *b s* LSGL <CR>

11) Determine whether the BIC card passed the test.

If the BIC card	Go to
passed the test	step 12
did not pass the test	TP 6023

12) Return busied line subgroups to service by entering: RTS LSG LCE *b s lsg* <CR>

13) Ensure that the line subgroups have been returned to service by entering: STAT LSG LCE *b s lsg l* <CR>
Go to step 21.

14) Test the RSLC by entering: TEST RSLC *site* RSE *b s p* <CR> (*p* can be 5 or 8 for an RSLE shelf and 5 or 7 for an RSLM shelf).

15) Determine whether the BIC card passed the test.

If the BIC card	Go to
passed the test	step 19
did not pass the test	step 16

16) Replace BIC card (MP 1255)

Note: *Check for blown 48V, +5V, +15V fuses before replacing the BIC card.*

17) Test the RSLC by entering: TEST RSLC *site* RSE *b s p* <CR> (*p* can be 5 or 8 for an RSLE shelf and 5 or 7 for an RSLM shelf).

18) Determine whether the BIC card passed the test.

If the BIC card	Go to
passed the test	step 19
did not pass the test	TP 6023

19) Return busied line subgroups to service by entering: RTS LSG *site* RSE *b s lsg* <CR>

20) Ensure that the line subgroups have been returned to service by entering: STAT LSG *site* RSE *b s lsg l* <CR>

21) This procedure is complete.

Clear an ISDN Drawer Controller (IDC) card (NT6X54) fault

1) Make sure cables (diloop cables, peripheral loop cables) are firmly connected to the device under test.

2) Load DED overlay by entering: OVLY DED <CR>

3) Obtain the status of the IDC by entering: STAT IDC LCE/RSC/RSE *b s lsg* <CR>

4) Determine whether the IDC is in man-made-busy state.

If the IDC	Go to
is in man-made-busy state	step 6
is not in man-made-busy state	step 5

5) Enter: BUSY IDC LCE/RSC/RSE *b s lsg* <CR>

6) Test the IDC by entering: TEST IDC *site* LCE/RSC/RSE *b s lsg* <CR>

7) Determine whether the IDC passed the test.

If the IDC	Go to
passed the test	step 12
did not pass the test	step 8

8) Replace IDC card (MP 1248)

Note: *Check for blown 48V, +5V, and +15V fuses before replacing the IDC card.*

9) Test the IDC by entering: TEST IDC *site* LCE/RSC/RSE *b s lsg* <CR>

10) Determine whether the IDC passed the test.

If the IDC	Go to
passed the test	step 12
did not pass the test	step 11

11) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

12) Return busied IDC to service by entering: RTS IDC LCE/RSC/RSE *b s lsg* <CR>

13) Ensure that the IDC has returned to service by entering: STAT IDC LCE/RSC/RSE *b s lsg* <CR>

14) This procedure is complete.

Clear EDCH (NTBX02) fault

1) Load DED overlay by entering: OVLY DED <CR>

2) Test the EDCH by entering: TEST EDCH MVIE *b s p* <CR>

3) Determine whether the EDCH pack passed the test.

If the EDCH pack	Go to
passed the test	step 4
did not pass the test	step 5

4) Return the EDCH pack to service by entering: RTS EDCH MVIE *b s p* <CR>
Go to step 11.

5) Busy the EDCH pack by entering: BUSY EDCH MVIE *b s p* <CR>

6) Remove the EDCH pack and replace it with the new EDCH pack (MP 1250).

7) Test the EDCH pack by entering: TEST EDCH MVIE *b s p* <CR>

8) Determine whether the EDCH pack passed the test.

If the EDCH pack	Go to
passed the test	step 10
did not pass the test	step 9

9) Contact the next level of technical support for assistance.

10) Return the EDCH pack to service by entering: RTS EDCH MVIE *b s p* <CR>

11) This procedure is complete.

Clear Line Concentrating Equipment (LCE),Remote Subscriber Line Equipment (RSLE),or Remote Subscriber Line Module (RSLM) line card (LPK) fault

Note: *If the faulty line card is located in a PE bay, perform procedure TP 5053 rather than this procedure.*

1) Load PED overlay by entering: OVLY PED <CR>

2) Determine whether the LPK is located in an RSLE shelf or in an RSLM shelf.

If the LPK	Go to
is located in an RSLE shelf or in an RSLM shelf	step 3
is not located in an RSLE shelf or in an RSLM shelf	step 9

3) Obtain the LPK status by entering: STAT LPK *site* RSE *b s lsg l* <CR>

4) Determine whether the LPK is in service.

If the LPK	Go to
is in service	step 5
is not in service	step 7

5) Test the LPK by entering: TEST LPK *site* RSE *b s lsg l* <CR>

6) Determine whether the LPK passed the test.

If the LPK	Go to
passed the test	step 25
did not pass the test	step 20

7) Return the LPK to service by entering: RTS LPK *site* RSE *b s lsg l* <CR>

8) Determine whether the LPK returned to service.

If the LPK	Go to
returned to service	step 5
did not return to service	step 21

9) Obtain the LPK status by entering: STAT LPK *(site)* LCE/CRSC/CLCE *b s lsg l* <CR>

10) Determine whether the LPK is in service.

If the LPK	Go to
is in service	step 11
is not in service	step 13

11) Test the LPK by entering: TEST LPK (*site*) LCE/CRSC/CLCE *b s lsg l* <CR>

12) Determine whether the LPK passed the test.

If the LPK	Go to
passed the test	step 25
did not pass the test	step 15

13) Return the LPK to service by entering: RTS LPK (*site*) LCE/CRSC/CLCE *b s lsg l* <CR>

14) Determine whether the LPK returned to service.

If the LPK	Go to
returned to service	step 11
did not return to service	step 16

15) Busy the LPK by entering: BUSY LPK *(site)* LCE/CRSC/CLCE *b s lsg l* <CR>

16) Replace the LPK (MP 1255)

Note: *If multiple LPKS are replaced, and the fault continues to exist, use TP 6060 to clear a possible Bus Interface Circuit (BIC) card fault.*

17) Return the LPK to service by entering: RTS LPK (*site*) LCE/CRSC/CLCE *b s lsg l* <CR>

18) Test the LPK by entering: TEST LPK *(site)* LCE/CRSC/CLCE *b s lsg l* <CR>

19) Determine whether the LPK passed the test.

If the LPK	Go to
passed the test	step 25
did not pass the test	step 15

20) Busy the LPK by entering: BUSY LPK *site* RSE *b s lsg l* <CR>

21) Replace the LPK (MP 1255)

22) Return the LPK to service by entering: RTS LPK *site* RSE *b s lsg l* <CR>

23) Test the LPK by entering: TEST LPK *site* RSE *b s lsg l* <CR>

24) Determine whether the LPK passed the test.

If the LPK	Go to
passed the test	step 25
did not pass the test	step 20

25) This procedure is complete.

Clear Ringing Generator pack (NT6X30 or NT6X60) fault

Note 1: This procedure must be performed by craftspersons who are <u>thoroughly</u> familiar with DMS-10 operation and maintenance.

Note 2: Certain Ringing Generator faults require that the circuit breaker be reset before testing the Ringing Generator packs. The craftsperson may elect to perform this procedure twice, following it as written the first time. If the fault still doesn't clear, follow it the second time resetting the circuit breakers before each test.

1) Determine whether the problem is associated with either an RSLM shelf or an RSLE shelf.

If the problem	Go to
is associated with an RSLM or and RSLE shelf	step 51
is not associated with an RSLM or and RSLE shelf	step 2

2) Check the ringing generator circuit breakers in the Frame Supervisory Panel (FSP)

Note 1: Make sure cables, such as diloop cables and peripheral loop cables, are firmly connected to the device under test.

Note 2: For 6X30: the DMS-10 LCE circuit breakers 5 and 6 correspond to ringing generators 0 and 1, and the RSLE/RLSM circuit breakers 1 and 2 correspond to ringing generators 0 and 1. For 6X60: circuit breakers 2 and 3 correspond to ringing generators 0 and 1 in an RLCM; circuit breakers 6 and 8 correspond to ringing generators in an OPAC.

3) Determine whether the breaker for the failed Ringing Generator is in the OFF position.

If the breaker	Go to
is in the OFF position	step 4
is not in the OFF position	step 9

4) Operate the breaker to the ON position.

5) Determine whether the breaker holds.

If the breaker	Go to
holds	step 6
does not hold	step 9

6) Load Overlay DED by entering: OVLY DED <CR>

7) Test the specified LCM Ringing Generator pack by entering: TEST LRNG *(site)* LCE *b u* (REP *n*) <CR>

8) Determine whether the LCM Ringing Generator pack passed the test.

If the pack	Go to
passed the test	step 11
did not pass the test	step 9

9) Busy the specified LCM Ringing Generator pack by entering: BUSY LRNG *(site)* LCE *b u* <CR>

10) Replace the LCM Ringing Generator pack (MP 1250)

Note: *Refer to the NTP entitled DIP Switch Settings for Printed Circuit Packs and Balance Networks (297-3601-316) for DIP switch settings.*

11) Return the specified LCM Ringing Generator pack to service by entering: RTS LRNG *(site)* LCE *b u* <CR>

12) If the breaker is in the OFF position, operate the breaker to the ON position.

13) Test the LCM Ringing Generator pack by entering: TEST LRNG *(site)* LCE *b u* (REP *n*) <CR>

14) Determine whether the LCM Ringing Generator passed the test.

If the ringing generator	Go to
passed the test	step 123
did not pass the test	step 15

15) Identify the faulty shelf by removing the RA and RB fuses one shelf at a time. Observe the LEDs.

16) Test the specified LCM Ringing Generator pack by entering: TEST LRNG *(site)* LCE *b u* (REP *n*) <CR>

17) Determine whether the LCM Ringing Generator pack passed the test.

If the pack	Go to
passed the test	step 18
did not pass the test	step 19

18) Replace the RA and RB fuses.
Go to step 28.

19) Determine whether all shelves have been checked.

If all shelves	Go to
have been checked	step 20
have not been checked	step 23

20) Busy one LCM control unit at a time by entering: BUSY LCMC *(site)* LCE *b s* (IMED)

21) Unseat the 6X53 and observe the LEDs.

22) Test the specified LCM Ringing Generator pack by entering: TEST LRNG *(site)* LCE *b u* (REP *n*) <CR>
Go to step 24.

23) Repeat Steps 15 and 16.

24) Determine whether the LCM Ringing Generator pack passed the test.

If the pack	Go to
passed the test	step 25
did not pass the test	step 28

25) Replace the Power Converter pack (NT6X53) (MP 1271).

26) Test the specified LCM Ringing Generator pack by entering: TEST LRNG *(site)* LCE *b u* (REP *n*) <CR>

27) Determine whether the LCM Ringing Generator pack passed the test.

If the pack	Go to
passed the test	step 123
did not pass the test	step 28

28) Remove the -48V fuse for all the drawers in the faulty shelf.

Note: *There may be more than one faulty drawer. This process will indicate other faulty drawers.*

29) Replace the -48V fuse for each drawer and note when the LED lights. When the LED lights for a given drawer, remove those fuses and go to the next drawer.

Note: *This should isolate all drawers at fault.*

30) Re-insert the fuses for the faulty drawer(s) and unplug the controller cable on the back of the faulty line drawers.

Note: *The controller cable is the center cable labeled C and D.*

31) Test the specified LCM Ringing Generator pack by entering: TEST LRNG *(site)* LCE *b u* (REP *n*) <CR>

32) Determine whether the LCM Ringing Generator pack passed the test.

If the pack	**Go to**
passed the test	step 33
did not pass the test	step 122

33) Unseat the 6x54 in the isolated drawer(s).

34) Re-connect the controller cable.

35) Test the specified LCM Ringing Generator pack by entering: BUSY LRNG LCE *b p* <CR>

36) Determine whether the LCM Ringing Generator pack pass the test.

If the pack	**Go to**
passed the test	step 37
did not pass the test	step 122

37) Reseat the NT6X54 in the isolated drawer(s).

38) Test the specified LCM Ringing Generator pack by entering: BUSY LRNG LCE *b p* <CR>

39) Determine whether the LCM Ringing Generator pack passed the test.

If the pack	**Go to**
passed the test	step 123
did not pass the test	step 40

40) Unseat the line cards in the suspect subgroup(s) one at a time to determine if there is a faulty line card.

Note: *Test the Ringing Generator pack each time a line card is unseated. A passed test indicates a faulty line card.*

41) Replace the faulty line card (MP 1255).

42) Test the specified LCM Ringing Generator pack by entering: BUSY LRNG LCE *b p* <CR>

43) Determine whether the LCM Ringing Generator pack passed the test.

If the pack	**Go to**
passed the test	step 123
did not pass the test	step 44

44) Replace the Bus Interface Circuit (BIC) card (NT6X54). (MP 1255)

45) Test the specified LCM Ringing Generator pack by entering: BUSY LRNG LCE *b p* <CR>

46) Determine whether the LCM Ringing Generator pack passed the test.

If the pack	**Go to**
passed the test	step 123
did not pass the test	step 47

47) Check the ringing generator circuit breakers in the Frame Supervisory Panel (FSP).

Note: *Make sure cables, such as diloop cables and peripheral loop cables, are firmly connected to the device under test.*

48) Determine whether the breaker for the failed Ringing Generator is in the OFF position.

If the breaker	**Go to**
is in the OFF position	step 49
is not in the OFF position	step 122

49) Operate the breaker to the ON position.

50) Determine whether the breaker holds.

If the breaker	**Go to**
holds	step 6
does not hold	step 122

51) Load Overlay DED by entering: OVLY DED <CR>

52) Obtain the status of the Ringing Generator by entering: STAT LRNG *site* RSE *b s/r* <CR>

53) Determine whether the ringing generator is in service.

If the ringing generator	Go to
is in service	step 73
is not in service	step 54

54) Busy the Ringing Generator by entering: BUSY LRNG *site* RSE *b s/r* <CR> or, for an RSLM Type A shelf: BUSY LRNG *site* RSE *b s/r* <CR>

55) Test the Ringing Generator by entering: TEST LRNG *site* RSE *b s/r* <CR>

56) Determine whether the Ringing Generator passed the test.

If the Ringing Generator	Go to
passed the test	step 57
did not pass the test	step 58

57) Return the Ringing Generator to service by entering: RTS LRNG *site* RSE *b s* <CR>
Go to step 123.

58) Determine whether the Ringing Generator's circuit breaker, located in the Frame Supervisory Panel (FSP), is in the ON position.

If the breaker	Go to
is in the ON position	step 59
is not in the ON position	step 60

59) Place the circuit breaker in the OFF position.
Go to step 68.

60) Place the circuit breaker in the ON position.

61) Determine whether the circuit breaker holds.

If the circuit breaker	Go to
holds	step 64
does not hold	step 62

62) Visually inspect the rear of the FSP for shorts or loose wires.

63) Determine whether any shorts or loose wires are found.

If shorts or loose wires	Go to
are found	step 122
are not found	step 67

64) At the base DMS-10, test the Ringing Generator by entering: TEST LRNG *site* RSE *b s/r* <CR>

65) Determine whether the Ringing Generator passed the test.

If the Ringing Generator	Go to
passed the test	step 66
did not pass the test	step 67

66) Return the Ringing Generator to service by entering: RTS LRNG *site* RSE *b s* <CR>
Go to step 123.

67) Place the Ringing Generator's circuit breaker in the OFF position.

68) Replace the Ringing Generator (NT6X30) (MP 1250).

Note: *Verify switch settings on the new Ringing Generator pack before inserting it. (See NTP 297-3601-316, DIP Switch Settings for Printed Circuit Packs and Balance Networks.)*

69) Place the Ringing Generator's circuit breaker in the ON position.

70) Determine whether the circuit breaker holds.

If the circuit breaker	Go to
holds	step 71
does not hold	step 86

71) At the base DMS-10, test the Ringing Generator by entering: TEST LRNG *site* RSE *b s/r* <CR>

72) Determine whether the Ringing Generator passed the test.

If the Ringing Generator	Go to
passed the test	step 66
did not pass the test	step 86

73) Determine whether the equipment is an RSLM Type A shelf.

If the equipment	Go to
is an RSLM Type A shelf	step 74
is not an RSLM Type A shelf	step 75

74) At the base DMS-10, test the Ringing Generator by entering: TEST LRNG *site* RSE *b s/r* <CR>
Go to step 77.

75) At the base DMS-10, busy the Ringing Generator by entering: BUSY LRNG *site* RSE *b s* <CR>

76) Test the Ringing Generator by entering: TEST LRNG *site* RSE *b s/r* <CR>
Go to step 79.

77) Determine whether the Ringing Generator passed the test.

If the Ringing Generator	**Go to**
passed the test	step 123
did not pass the test	step 78

78) Busy the Ringing Generator by entering: BUSY LRNG *site* RSE *b s* IMED <CR>
Go to step 80.

79) Determine whether the Ringing Generator passed the test.

If the Ringing Generator	**Go to**
passed the test	step 85
did not pass the test	step 80

80) Place the Ringing Generator's circuit breaker in the OFF position.

81) Replace the Ringing Generator (NT6X30).

82) Place the Ringing Generator's circuit breaker in the ON position.

83) Test the Ringing Generator by entering: TEST LRNG *site* RSE *b s/r* <CR>

84) Determine whether the Ringing Generator passed the test.

If the Ringing Generator	**Go to**
passed the test	step 85
did not pass the test	step 86

85) Return the Ringing Generator to service by entering: RTS LRNG *site* RSE *b s* <CR>
Go to step 123.

86) Identify the faulty shelf by removing the RA and RB fuses one shelf at a time. Observe the LEDs.

87) Test the specified LCM Ringing Generator pack by entering: TEST LRNG *(site)* LCE *b u* (REP *n*) <CR>

88) Determine whether the LCM Ringing Generator pack passed the test.

If the LCM Ringing Generator	Go to
passed the test	step 89
did not pass the test	step 90

89) Replace the RA and RB fuses.
Go to step 99.

90) Determine whether all shelves have been checked.

If all shelves	Go to
have been checked	step 91
have not been checked	step 94

91) Busy one LCM control unit at a time by entering: BUSY LCMC *(site)* LCE *b s* (IMED) <CR>

92) Unseat the 6X53 and observe the LEDs.

93) Test the specified LCM Ringing Generator pack by entering: TEST LRNG *(site)* LCE *b u* (REP *n*) <CR>
Go to step 95.

94) Repeat Steps 86 and 87.

95) Determine whether the LCM Ringing Generator passed the test.

If the LCM Ringing Generator	Go to
passed the test	step 96
did not pass the test	step 99

96) Replace the Power Converter pack (NT6X53) (MP 1271).

97) Test the specified LCM Ringing Generator pack by entering: TEST LRNG *(site)* LCE *b u* (REP *n*) <CR>

98) Determine whether the LCM Ringing Generator passed the test.

If the LCM Ringing Generator	Go to
passed the test	step 123
did not pass the test	step 99

99) Remove the -48V fuse for all the drawers in the faulty shelf.

Note: *There may be more than one faulty drawer. This process will indicate other faulty drawers.*

100) Replace the -48V fuse for each drawer and note when the cycling of the LEDs begins. When the LED lights for a given drawer, remove those fuses and go to the next drawer.

Note: *This should isolate all drawers at fault.*

101) Re-insert the fuses for the faulty drawer(s) and unplug the controller cable on the back of the faulty line drawers.

Note: *The controller cable is the center cable labeled C and D.*

102) Test the specified LCM Ringing Generator pack by entering: TEST LRNG *(site)* LCE *b u* (REP *n*) <CR>

103) Determine whether the LCM Ringing Generator passed the test.

If the LCM Ringing Generator	Go to
passed the test	step 104
did not pass the test	step 122

104) Unseat the 6x54 in the isolated drawer(s).

105) Re-connect the controller cable.

106) Test the specified LCM Ringing Generator pack by entering: BUSY LRNG LCE *b p* <CR>

107) Determine whether the LCM Ringing Generator passed the test.

If the LCM Ringing Generator	Go to
passed the test	step 108
did not pass the test	step 122

108) Reseat the 6x54 in the isolated drawer(s).

109) Test the specified LCM Ringing Generator pack by entering: BUSY LRNG LCE *b p* <CR>

110) Determine whether the LCM Ringing Generator passed the test.

If the LCM Ringing Generator	Go to
passed the test	step 123
did not pass the test	step 111

111) Unseat the line cards in the suspect subgroup(s) one at a time to determine if there is a faulty line card.

Note: *Test the Ringing Generator pack each time a line card is unseated. A passed test indicates a faulty line card.*

112) Replace the faulty line card (MP 1255).

113) Test the specified LCM Ringing Generator pack by entering: BUSY LRNG LCE *b p* <CR>

114) Determine whether the LCM Ringing Generator passed the test.

If the LCM Ringing Generator	Go to
passed the test	step 123
did not pass the test	step 115

115) Replace the Bus Interface Circuit (BIC) card (NT6X54) (MP 1255).

116) Test the specified LCM Ringing Generator pack by entering: BUSY LRNG LCE *b p* <CR>

117) Determine whether the LCM RInging Generator pack passed the test.

If the pack	Go to
passed the test	step 123
did not pass the test	step 118

118) Check the ringing generator circuit breakers in the Frame Supervisory Panel (FSP)

Note: *Make sure cables, such as diloop cables and peripheral loop cables, are firmly connected to the device under test.*

119) Determine whether the breaker for the failed Ringing Generator is in the OFF position.

If the breaker	Go to
is in the OFF position	step 120
is not in the OFF position	step 122

120) Operate the breaker to the ON position.

121) Determine whether the breaker holds.

If the breaker	Go to
holds	step 6
does not hold	step 122

122) Contact the next level of technical support for assistance.

123) This procedure is complete.

Clear REM ringing shelf fault

1) Determine which pack has failed by locating the lit LED on the REM ringing shelf.
2) Replace pack (MP 1250). The LED will go out.
3) Press RINGING ALARM RESET button.
4) This procedure is complete.

Clear REM ringing shelf fault

1) Replace blown fuse.
2) Determine whether the fuse holds.

If the fuse	Go to
holds	step 5
does not hold	step 3

3) Check for short circuits or crosses between REM ringing shelf and peripheral bay.
4) Refer back to Step 1 or call your next level of technical support.
5) Press RINGING ALARM RESET button.
6) This procedure is complete.

Clear Remote Equipment Module (REM) fault

1) Determine whether any ALM021 messages, indicating ringing faults, display.

If ALM021 messages	Go to
display	step 20
do not display	step 2

2) Determine whether the REM is busied.

If the REM	Go to
is busied	step 5
is not busied	step 3

3) Load Overlay DED by entering: OVLY DED <CR>

4) Busy REM by entering: BUSY REM PE *b s p* <CR>

5) Replace first-choice pack for this fault (see the Message-to-faulty pack matrix at the end of this procedure) (MP 1250).

6) Test REM by entering: TEST REM PE *b s p* <CR>

7) Determine whether the REM passed the test.

If the REM	Go to
passed the test	step 12
did not pass the test	step 8

8) Determine whether the message, DED942 displays.

If DED942	Go to
displays	step 9
does not display	step 13

9) Replace Remote Alarm pack (NT2T47) (MP 1278).

10) Test REM by entering: TEST REM PE *b s p* <CR>

11) Determine whether the REM passed the test.

If the REM	Go to
passed the test	step 12
did not pass the test	step 13

12) Return the REM to service by entering: RTS REM PE *b s p* <CR>
Go to step 21.

13) Replace second choice circuit pack for this fault (see the Message-to-faulty pack matrix at the end of this procedure) (MP 1250).

14) Test REM by entering: TEST REM PE *b s p* <CR>

15) Determine whether the REM passed the test.

If the REM	Go to
passed the test	step 16
did not pass the test	step 17

16) Return REM to service by entering: RTS REM PE *b s p* <CR>
Go to step 21.

17) Replace the third- and fourth-choice circuit packs for this fault (see the Message-to-faulty pack matrix at the end of this procedure).
Go to step 13.

18) Determine whether the fault has cleared.

If the fault	Go to
has cleared	step 21
has not cleared	step 19

19) Either one of the replacement packs is bad, or one of the packs at the remote site is faulty.

20) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

21) This procedure is complete.

Message-to-faulty pack matrix					
Unit Type	**OMM Message**	**1st Choice**	**2nd Choice**	**3rd Choice**	**4th Choice**
OCM	DED913	2T36	2T35	2T34	
	DED914	2T36	2T35	2T34	
	DED915	2T35	2T36	2T34	
	DED916	2T32	2T34	2T35	2T36
	DED917	2T35	2T36	2T32	2T34
	DED918	2T35	2T36	2T32	2T34
	DED919	2T34	2T35	2T36	2T32
	DED920	2T34	2T35	2T36	2T32
	DED923	2T34	2T35	2T36	2T32
	DED924	2T34	2T35	2T36	2T32
RCM	DED930	2T32	2T39		
	DED934	2T38	2T39	2T32	2T37
	DED935	2T38	2T39	2T32	2T37
	DED936	2T38	2T37	2T39	2T32
	DED938	2T37	2T38	2T39	2T32
	DED939	2T37	2T38	2T39	2T32
	DED940	2T38	2T39	2T32	2T37
	DED941	2T38	2T39	2T32	2T37
	DED942	2T38	2T39	2T32	2T37
	DED944	2T37	2T39	2T38	2T32
	DED948	2T39	2T37	2T38	2T32
	DED949	2T39	2T37	2T38	2T32

Clear Remote Equipment Module (REM) fault

1) Determine whether other DED or REM messages for these REMs display.

If other DED or REM messages	Go to
display	step 2
do not display	step 3

2) Correct these faults using the procedure indicated with the message in the Output Message Manual.
Go to step 9.

3) Load Overlay DED by entering: OVLY DED <CR>

4) Test a REM by entering: TEST REM PE *b s p* <CR>

5) Determine whether the REM passed the test.

If the REM	Go to
passed the test	step 6
did not pass the test	step 8

6) Return the REM to service by entering: RTS REM PE *b s p* <CR>

7) Determine whether both REMs have been tested.

If both REMs	Go to
have been tested	step 9
have not been tested	step 4

8) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

9) This procedure is complete.

Clear Remote Equipment Module (REM) faults

1) Determine whether a DED934 or DED913 message displays.

If a DED934 or DED913 message	Go to
displays	step 2
does not display	step 3

2) Perform TP 7003.

3) Use TP 2003 to clear converter fault.

4) Return REM to service by entering: RTS REM PE *b s p* <CR>

5) This procedure is complete.

Clear Remote Equipment Module (REM) fault

1) Determine whether a carrier fault was found.

If a carrier fault	Go to
was found	step 3
was not found	step 2

2) Perform TP 7003.

3) Load Overlay DED by entering: OVLY DED <CR>

4) Return REM to service by entering: RTS REM PE *b s p* <CR>

5) This procedure is complete.

Clear Remote Equipment Module (REM) fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Obtain status of REM by entering: STAT REM PE *b s p* <CR>

3) Determine whether the REM is in busy state.

If the REM	Go to
is in busy state	step 5
is not in busy state	step 4

4) Busy REM by entering: BUSY REM PE *b s p* <CR>

5) Replace Network Buffer pack (NT2T34) (MP 1250).

CAUTION
Unplug the Carrier Interface pack before removing any other pack. Plug in after replacing the other pack.

6) Test REM by entering: TEST REM PE *b s p* <CR>

7) Determine whether the REM passed the test.

If the REM	Go to
passed the test	step 8
did not pass the test	step 10

8) Return REM to service by entering: RTS REM PE *b s p* <CR>

9) Determine whether the REM returned to service.

If the REM	Go to
returned to service	step 22
did not return to service	step 21

10) Determine whether the message, DED921 or DED922 displays.

If DED921 or DED922	Go to
displays	step 11
does not display	step 21

11) Determine whether the other peripheral loop on the pack is used for analog shelves and the REM.

If the other peripheral loop on the pack	Go to
is used for analog shelves and the REM	step 13
is not used for analog shelves and the REM	step 12

12) Busy REM by entering: BUSY REM PE *b s p* <CR>
Go to step 14.

13) Busy peripheral loop by entering: BUSY PELP CE *b s p l* <CR>

14) Replace Network pack (TP 4106).

15) Test REM by entering: TEST REM PE b s p <CR>

16) Determine whether the REM passed the test.

If the REM	Go to
passed the test	step 18
did not pass the test	step 17

17) One of the replacement packs is faulty.
Go to step 3.

18) Return peripheral loop to service by entering: RTS PELP CE *b s p l* <CR>

19) Return REM to service by entering: RTS REM PE *b s p* <CR>

20) Determine whether the REM returned to service.

If the REM	Go to
returned to service	step 22
did not return to service	step 21

21) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

22) This procedure is complete.

Clear Remote Equipment Module (REM) fault

1) Load Overlay NED by entering: OVLY NED <CR>

2) Test the REM on the same peripheral loop as the one shown in the printout by entering: TEST REM PE *b s p* <CR>

3) Determine whether the REM passed the test.

If the REM	Go to
passed the test	step 5
did not pass the test	step 4

4) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.
Go to step 6.

5) Return REM to service by entering: RTS REM PE *b s p* <CR>

6) This procedure is complete.

Clear Remote Equipment Module (REM) fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Obtain status of REM by entering: STAT REM PE *b s p* <CR>

3) Determine whether the REM is busy.

If the REM	Go to
is busy	step 5
is not busy	step 4

4) Busy the REM by entering: BUSY REM PE *b s p* <CR>
Go to step 7.

5) Determine whether the message, REM205 displays.

If REM205	Go to
displays	step 6
does not display	step 7

6) Determine whether the message, REM205 is followed by the message, REM305 for the same REM.

If REM205	Go to
is followed by REM305 for the same REM	step 11
is not followed by REM305 for the same REM	step 4

Note: *The REM305 message indicates that a transient fault has cleared and the REM has been returned to service.*

7) Test the REM by entering: TEST REM PE *b s p* <CR>

8) Determine whether the REM passed the test.

If the REM	Go to
passed the test	step 10
did not pass the test	step 9

9) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

10) Return the REM to service by entering: RTS REM PE *b s p* <CR>

11) This procedure is complete.

Clear Remote Equipment Module (REM) alarm pack fault

1) Determine whether a catastrophic alarm has been reported at a REM site.

If a catastrophic alarm at a REM site	Go to
has been reported	step 2
has not been reported	step 3

2) Replace fuse on Circuit Breaker pack (NT2T26).
Go to step 7.

3) Replace Remote Alarm pack (NT2T47) (MP 1278).

4) Load Overlay DED by entering: OVLY DED <CR>

5) Test the REM by entering: TEST REM PE *b s p* <CR>

6) Determine whether the test display indicates a REM fault.

If the test display	Go to
indicates a REM fault	TP 7003
does not indicate a REM fault	step 11

7) Determine whether the fuse holds.

If the fuse	Go to
holds	step 11
does not hold	step

8) Replace Remote Alarm pack (NT2T47) (MP 1278).

9) Replace fuse on Circuit Breaker pack (NT2T26).

10) Determine whether the fuse holds.

If the fuse	Go to
holds	step 11
does not hold	step 12

11) This procedure is complete.

12) Check for wiring faults in the REM remote shelf.

Clear SCM processor set fault

1) Load Overlay SCM by entering: OVLY SCM <CR>

2) Query the status of the SCM by entering: STAT SCM PE *b s p* <CR>

3) Determine whether the SCM error message indicates a pack in the active Processor set.

If the SCM error message	Go to
indicates a pack in the active Processor set	step 4
does not indicate a pack in the active Processor set	step 5

4) Switch Subscriber Carrier Modules by entering: SWCH SCM PE *b s* <CR>

CAUTION
Switching Processor set activity of an in-service SCM may result in the mishandling of some calls.

5) Busy the Processor set before testing by entering: BUSY SCMP PE *b s p* <CR>

6) Test the inactive Processor set by entering: TEST SCMP PE *b s p* <CR>

7) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 9

8) Fault cleared. Return the Processor to service by entering: RTS SCMP PE *b s p* <CR>
Go to step 26.

9) Replace the pack indicated in the error message (MP 1250).

10) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 11

11) Replace one of its associated packs in the same Processor set (MP 1250).

12) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 13

13) Replace the other pack in the Processor set (MP 1250).

14) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 15

15) Faulty spare pack; obtain and install another spare (MP 1250).

16) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 17

17) Inspect pack connectors for all three Processor set packs.

18) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 19

19) Inspect wiring and SCM shelf backplane.

20) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 21

21) Possible Time Switch fault; see TP 7017 to test Time Switch.

22) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 23

23) Possible Digroup fault; see TP 7018 to test Digroup.

24) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 25

25) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

26) This procedure is complete.

Clear SCM protection switch faults

1) Load Overlay SCM by entering: OVLY SCM <CR>
2) Busy the Protection Switch by entering: BUSY SCPS PE *b s p* <CR>
3) Test Protection Switch by entering: TEST SCPS PE *b s p* <CR>
4) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 5
does not display	step 6

5) Return the SCM Protection Switch to service by entering: RTS SCPS PE *b s p* <CR>
Go to step 19.
6) Possible fault on DS-1 line; clear fault using manufacturer's documentation.
7) Test Protection Switch by entering: TEST SCPS PE *b s p* <CR>
8) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 9
does not display	step 10

9) Return the SCM Protection Switch to service by entering: RTS SCPS PE *b s p* <CR>
Go to step 19.
10) Replace Protection Switch pack.
11) Test Protection Switch by entering: TEST SCPS PE *b s p*
12) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 13
does not display	step 14

13) Return the SCM Protection Switch to service by entering: RTS SCPS PE *b s p* <CR>
Go to step 19.
14) Replace Protection Switch pack.
15) Test Protection Switch by entering: TEST SCPS PE *b s p*

16) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 17
does not display	step 18

17) Return the SCM Protection Switch to service by entering: RTS SCPS PE *b s p* <CR>
Go to step 19.

18) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

19) This procedure is complete.

Clear time switch and MUX loop fault

1) Load Overlay SCM by entering: OVLY SCM <CR>
2) Query the status of the SCM by entering: STAT SCM PE *b s p* <CR>
3) Busy Time Switch before testing by entering: BUSY SCTS PE *b s p* <CR>
4) Test the Time Switch by entering: TEST SCTS PE *b s p* <CR>
5) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 6
does not display	step 7

6) Return Time Switch to service by entering: RTS SCTS PE *b s p* <CR> Go to step 26.
7) Replace the indicated Time Switch card (MP 1250).
8) Test the Time Switch by entering: TEST SCTS PE *b s p* <CR>
9) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 6
does not display	step 10

10) Inspect backplane connector of indicated circuit pack.
11) Test the Time Switch by entering: TEST SCTS PE *b s p* <CR>
12) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 6
does not display	step 13

13) Inspect wiring between SCM backplane and MUX loop cable.
14) Test the Time Switch by entering: TEST SCTS PE *b s p* <CR>
15) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 6
does not display	step 16

16) Inspect the MUX loop and associated wiring.

17) Test the Time Switch by entering: TEST SCTS PE *b s p* <CR>

18) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 6
does not display	step 19

19) Test the network equipment (TP 4003).

20) Test the Time Switch by entering: TEST SCTS PE *b s p* <CR>

21) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 6
does not display	step 22

22) Spare pack may be faulty; obtain and install another spare (MP 1250).

23) Test the Time Switch by entering: TEST SCTS PE *b s p* <CR>

24) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 6
does not display	step 25

25) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

26) This procedure is complete.

Clear digroup/protection line faults

1) Load Overlay SCM by entering: OVLY SCM <CR>

2) Query the status of the SCM by entering: STAT SCM PE *b s p* <CR>

3) Determine whether the status response is INS SWCH.

If the status response	Go to
is INS SWCH	step 4
is not INS SWCH	step 5

4) Clear fault on faulty DS-1 line (see documentation from manufacturer).

5) Busy the Digroup before testing by entering: BUSY SCDG PE *b s p* <CR>

CAUTION
Removal of a Digroup pack from service decreases the traffic capacity of the SCM by one-half.

6) Test Digroup by entering: TEST SCDG PE *b s p* <CR>

7) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 9

8) Return Digroup to service by entering: RTS SCDG PE *b s p* <CR>
Go to step 22.

9) Replace the indicated Digroup (MP 1250).

10) Test Digroup by entering: TEST SCDG PE *b s p* <CR>

11) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 12

12) Faulty spare pack; obtain and install another spare.

13) Test Digroup by entering: TEST SCDG PE *b s p* <CR>

14) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 15

15) Inspect the Digroup backplane connector and the shelf wiring to Protection Switch and DS-1 line connector.

16) Test Digroup by entering: TEST SCDG PE *b s p* <CR>

17) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 18

18) Possible fault in B-Word Processor; see TP 7015 for testing Processor set.

19) Test Digroup by entering: TEST SCDG PE *b s p* <CR>

20) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 21

21) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

22) This procedure is complete.

Clear SCM Pad/Ring pack (NT6X80) fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex in the shelf that contains the faulty SCM Pad/Ring pack (NT6X80) by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

3) Replace the faulty SCM Pad/Ring pack (NT6X80, position 19) (MP 1250).

4) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

5) Determine whether a fault is found.

If a fault	Go to
is found	step 6
is not found	step 7

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

7) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

   Note 1: Use the appropriate command for the Control Complex:
   SCM-10S = SCSC
   SCM-10U = SCUC.

   Note 2: Before returning the units to service, re-seat the NT6X80 pack.

8) This procedure is complete.

Clear RCT line power fail alarm

1) Load Overlay SCM by entering: OVLY SCM <CR>

2) Query status of the Remote Concentrating Terminal by entering: STAT RCT PE *b s* <CR>

3) Determine whether a common power failure occurred.

If a common power failure	Go to
occurred	TP 7025
did not occur	step 4

4) Determine whether the repeater fuse is blown.

If the repeater fuse	Go to
is blown	step 6
is not blown	step 5

5) Fault is on the span line. Refer to NTP 368-2101-503 for fault clearing.

6) Replace Digroup or Protection Switch pack associated with blown fuse.

7) Determine whether the fuse holds.

If the fuse	Go to
holds	step 8
does not hold	step 9

8) Determine whether the alarm cleared.

If the alarm	Go to
cleared	step 13
did not clear	step 9

9) Check pack connector (on backplane) of Digroup or Protection Switch pack associated with blown fuse. Replace repeater fuse.

10) Determine whether the fuse holds.

If the fuse	Go to
holds	step 11
does not hold	step 9

11) Determine whether the alarm cleared.

If the alarm	**Go to**
cleared	step 13
did not clear	step 12

12) Check power wiring of Digroup or Protection Switch pack associated with blown fuse. Replace repeater fuse.

13) This procedure is complete.

Clear RCT driver and buffer faults

1) Replace the pack indicated in the SCM error message.

2) Load Overlay SCM by entering: OVLY SCM <CR>

3) Test the RCT by entering: TEST RCT PE *b s* <CR>

4) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 30
does not display	step 5

5) Replace the alternative pack given in the message.

6) Test the RCT by entering: TEST RCT PE *b s* <CR>

7) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 30
does not display	step 8

8) Replace the Address Controller card.

9) Test the RCT by entering: TEST RCT PE *b s* <CR>

10) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 30
does not display	step 11

11) Replace the QPP414 Local Switch pack.

12) Test the RCT by entering: TEST RCT PE *b s* <CR>

13) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 30
does not display	step 14

14) Replace the QPP420 Alarm pack.

15) Test the RCT by entering: TEST RCT PE *b s* <CR>

16) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 30
does not display	step 17

17) Spare pack may be faulty. Try a new spare pack.

18) Test the RCT by entering: TEST RCT PE *b s* <CR>

19) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 30
does not display	step 20

20) Check and correct, if needed, buffer pack connector wiring and shelf backplane wiring.

21) Test the RCT by entering: TEST RCT PE *b s* <CR>

22) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 30
does not display	step 23

23) Check and correct, if needed, wiring between line pack shelf and common equipment shelf.

24) Test the RCT by entering: TEST RCT PE *b s* <CR>

25) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 30
does not display	step 26

26) Replace all line cards on the shelf.

27) Test the RCT by entering: TEST RCT PE *b s* <CR>

28) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 30
does not display	step 29

29) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

30) This procedure is complete.

Clear RCT ringing generator alarm

1) Go to RCT indicated in SCM message and turn on QPP420 ALM REM display at RCT.

2) Determine whether the RMJ/RMN lamp is lit.

If the RMJ/RMN lamp	Go to
is lit	step 4
is not lit	step 3

3) Check with DMS-10 office and confirm type and site of alarm.

4) Determine whether the RING GEN fail lamp is lit.

If the RNG GEN fail lamp	Go to
is lit	step 5
is not lit	step 6

5) Replace faulty ringing generator (QPP426, QPP430, QPP435). Refer to the DMS-1 NTP entitled *Control Concentrator Terminal - Circuit Pack Installation* (363-2011-205).
Go to step 7.

6) Determine whether a fuse alarm displays.

If a fuse alarm	Go to
displays	step 17
does not display	step 19

7) Determine whether a RING GEN fail lamp is lit.

If a RNG GEN fail lamp	Go to
is lit	step 8
is not lit	step 16

8) Check and repair, if needed, pack connector on shelf backplane.

9) Determine whether a RNG GEN fail lamp is lit.

If a RNG GEN fail lamp	Go to
is lit	step 10
is not lit	step 14

10) Check backplane wiring of pack associated with fuse alarm.

11) Determine whether a RNG GEN fail lamp is lit.

If a RNG GEN fail lamp	Go to
is lit	step 14
is not lit	step 12

12) Determine whether a RMJ/RMN lamp is lit.

If RMJ/RMN lamp	Go to
is lit	step 14
is not lit	step 13

13) Turn off QPP420 ALM REM display at the RCT.
Go to step 20.

14) Check for shorted RING SYNC lead to buffers. Replace fuse.

15) Determine whether fuse holds.

If fuse	Go to
holds	step 12
does not hold	step 16

16) Check for shorted ringing distribution wires. Replace fuse.

17) Determine whether fuse holds.

If fuse	Go to
holds	step 12
does not hold	step 18

18) Check power shelf transformer. Replace fuse.
Go to step 12.

19) Contact the next level of technical support for assistance.

20) This procedure is complete.

Clear RCT common power alarm

1) Go to indicated RCT and turn on the QPP420 ALM REM display.

2) Determine whether the CPF lamp is lit.

If the CPF lamp	Go to
is lit	step 4
is not lit	step 3

3) Check with DMS-10 office and confirm type and site of alarm.

4) Determine whether the CDM PWR fuse is blown.

If the CDM PWR fuse	Go to
is blown	step 7
is not blown	step 5

5) Reset and measure QPC85 voltages.

6) Determine whether the QPC85 voltages are acceptable.

If the voltages	Go to
are acceptable	step 9
are not acceptable	step 13

7) Possible transient fault; replace fuse.

8) Determine whether the fuse holds.

If the fuse	Go to
holds	step 5
does not hold	step 9

9) Replace QPP420 and reset alarm.

10) Determine whether the alarm cleared.

If the alarm	Go to
cleared	step 12
did not clear	step 11

11) Turn off QPP420 ALM REM.
Go to step 13.

12) Check backplane wiring and pack connector of QPP420 ALM REM.

13) Reset alarm.

14) Determine whether the alarm cleared.

If the alarm	Go to
cleared	step 12
did not clear	step 15

15) Replace QPC85 and measure voltage.

16) Determine whether the QPC85 voltage is acceptable.

If the QPC85 voltage	Go to
is acceptable	step 19
is not acceptable	step 17

17) Reset alarm.

18) Determine whether the alarm cleared.

If the alarm	Go to
cleared	step 12
did not clear	step 19

19) Replace the circuit packs associated with the QPC85 until the fault clears.

20) Reset alarm.

21) Determine whether the alarm cleared.

If the alarm	Go to
cleared	step 12
did not clear	step 22

22) Check backplane wiring and pack connectors of QPC85 and all other packs.

23) Reset alarm.

24) Determine whether the alarm cleared.

If the alarm	Go to
cleared	step 12
did not clear	step 25

25) Faulty spare pack(s). Try other spares.

26) Reset alarm.

27) This procedure is complete.

Clear RCT battery failure

1) Determine whether QPP420 ALM REM display at RCT indicates BAT alarm.

If BAT alarm	Go to
is indicated	step 3
is not indicated	step 2

2) Turn off QPP420 ALM REM display.

3) Determine whether the J7209C Northern Telecom power bay is provisioned.

If the J7209C	Go to
is provisioned	step 5
is not provisioned	step 4

4) Refer to maintenance documents of power plant.
Go to step 12.

5) Replace QPY352A control card in the rectifier.

6) Determine whether the alarm cleared

If the alarm	Go to
cleared	step 10
did not clear	step 7

7) Replace QPY353A card in rectifier.

8) Determine whether the alarm cleared.

If the alarm	Go to
cleared	step 10
did not clear	step 9

9) Check for shorted alarm leads, alarm relay failure.

10) Adjust rectifier for correct operation using NTP 363-2011-214.

11) Turn off QPP420 REM display.

12) This procedure is complete.

Clear RCT ringing distribution fuse alarm

1) At RCT, turn on QPP420 ALM REM.

2) Determine whether an alarm is indicated.

If an alarm	Go to
is indicated	step 4
is not indicated	step 3

3) Check with DMS-10 office and confirm type and site of alarm.

4) Determine whether a fuse on the QPP442 RNG DIST has blown.

If the fuse	Go to
has blown	step 6
has not blown	step 5

5) Replace QPP442 at RCT.
Go to step 4.

6) Replace fuse on QPP442 RNG DIST.

7) Determine whether the fuse has blown.

If the fuse	Go to
has blown	step 12
has not blown	step 8

8) Test each line on the affected line shelf for shorted TG and RG. Repair as needed.

9) Determine whether the alarm still exists.

If the alarm	Go to
exists	step 11
does not exist	step 10

10) At RCT, turn off QPP420 ALM REM.
Go to step 20.

11) Ring each subline on affected shelf; if a pack needs replacing see NTP 363-2011-206, and NTP 363-2011-213 for testing the new pack.
Go to step 17.

12) Replace QPP412 or QPP496 buffer pack on affected shelf.

13) Replace fuse on QPP442 RNG DIST.

14) Inspect ringing distribution wiring for shorts and repair as required.

15) Determine whether the fuse holds.

If the fuse	Go to
holds	step 16
does not hold	step 8

16) Determine whether the alarm still exists.

If the alarm	Go to
exists	step 8
does not exist	step 10

17) Inspect alarm wiring and repair, if needed.

18) Determine whether the alarm still exists.

If the alarm	Go to
exists	step 19
does not exist	step 10

19) Replace fuse on QPP420 alarm pack.
Go to step 20.

20) This procedure is complete.

Clear RCT span line-address controller faults

1) Load Overlay SCM by entering: OVLY SCM <CR>

2) Query the status of the SCM by entering: STAT SCM PE *b s* <CR>

3) Busy the Digroup related to the SCM fault message by entering: BUSY SCDG PE *b s p* <CR>

Note: *Busying a Digroup pack decreases the normal traffic handling capacity of the SCM by about one-half.*

4) Determine whether a single Digroup fault exists.

If a single Digroup fault	Go to
exists	step 5
does not exist	step 27

5) Replace the Digroup pack indicated in the output message.

6) Test the RCT by entering: TEST RCT PE *b s* <CR>

7) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 9

8) Return the Digroup to service by entering: RTS SCDG PE *b s p* <CR> Go to step 50.

9) Replace the repeater (QPP436 or QPP437) associated with the SCM output message.

10) Test the RCT by entering: TEST RCT PE *b s* <CR>

11) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 12

12) Check the operation of other repeaters in the span line. Check the span-line error rate.

13) Test the RCT by entering: TEST RCT PE *b s* <CR>

14) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 15

15) Replacement pack may be faulty; try installing a new Digroup pack.

16) Test the RCT by entering: TEST RCT PE *b s* <CR>

17) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 18

18) Check and repair, if needed, the alarm wiring in the RCT.

19) Test the RCT by entering: TEST RCT PE *b s* <CR>

20) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 21

21) Check and repair, if needed, the alarm relay in the RCT.

22) Test the RCT by entering: TEST RCT PE *b s* <CR>

23) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 24

24) Check and repair, if needed, the connector wiring associated with the indicated pack.

25) Test the RCT by entering: TEST RCT PE *b s* <CR>

26) Determine whether the message, SCM001 displays.

If SCM001	Go to
displays	step 8
does not display	step 49

27) Determine whether a double Digroup fault is indicated.

If a double Digroup fault	**Go to**
is indicated	step 28
is not indicated	step 40

28) Replace the Protection Switch card.

29) Test the RCT by entering: TEST RCT PE *b s* <CR>

30) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 31

31) Replace the Alarm pack (QPP420).

32) Test the RCT by entering: TEST RCT PE *b s* <CR>

33) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 34

34) Replace the repeater packs.

35) Test the RCT by entering: TEST RCT PE *b s* <CR>

36) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 37

37) Check and correct, if needed, the span line operation and error rate.

38) Test the RCT by entering: TEST RCT PE *b s* <CR>

39) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 15

40) Replace the RCT Address Controller (QPP417).

41) Test the RCT by entering: TEST RCT PE *b s* <CR>

42) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 43

43) Replace the associated Digroup card.

44) Test the RCT by entering: TEST RCT PE *b s* <CR>

45) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 46

46) Replace the Protection Switch card.

47) Test the RCT by entering: TEST RCT PE *b s* <CR>

48) Determine whether the message, SCM001 displays.

If SCM001	**Go to**
displays	step 8
does not display	step 46

49) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

50) This procedure is complete.

Clear fault in the DS-1 link interface

1) Determine whether the link is connected to a SLC-96 or to an RCU.

Note: *The fault is in the interface between the SCM-10S or SCM-10U and the DS-1 link. Refer to Figures 7029-1 and 7029-2.*

If the link	Go to
is connected to a SLC-96	step 2
is connected to an RCU	step 5

2) Replace the specified DS-1 Interface pack (NT6X85). Do not busy the pack. Upon removing the pack, the protection link automatically takes control of the link connected to the pack.

CAUTION
Busying the T-1 span line or DS-1 Interface pack (NT6X85) serving a SLC-96 will result in the loss of service to the SLC-96 shelf to which the T-1 span is connected. To restore the SLC-96 shelf to service after maintenance is performed, refer to TP 7051.

3) Determine whether the fault still exists.

If the fault	Go to
still exists	step 4
does not exist	step 8

4) Suspect fault is in the LIU/TAU pack at the SLC-96 or in the outside plant equipment. Follow TP 7050 to replace LIU/TAU, or follow the appropriate procedure to clear the outside plant trouble.
Go to step 8.

5) Replace the specified DS-1 Interface pack (NT6X85). Do not busy the pack. Upon removing the pack, channel reassignment automatically takes control of the link connected to the pack.

6) Determine whether the fault still exists.

If the fault	Go to
still exists	step 7
does not exist	step 8

7) Suspect fault is in the Digroup pack at the RCU or in the outside plant equipment. Follow TP 7050 to replace the Digroup pack or follow the appropriate procedure to clear the outside plant trouble.

8) This procedure is complete.

Figure 1-1: Interfaces to SCM-10S

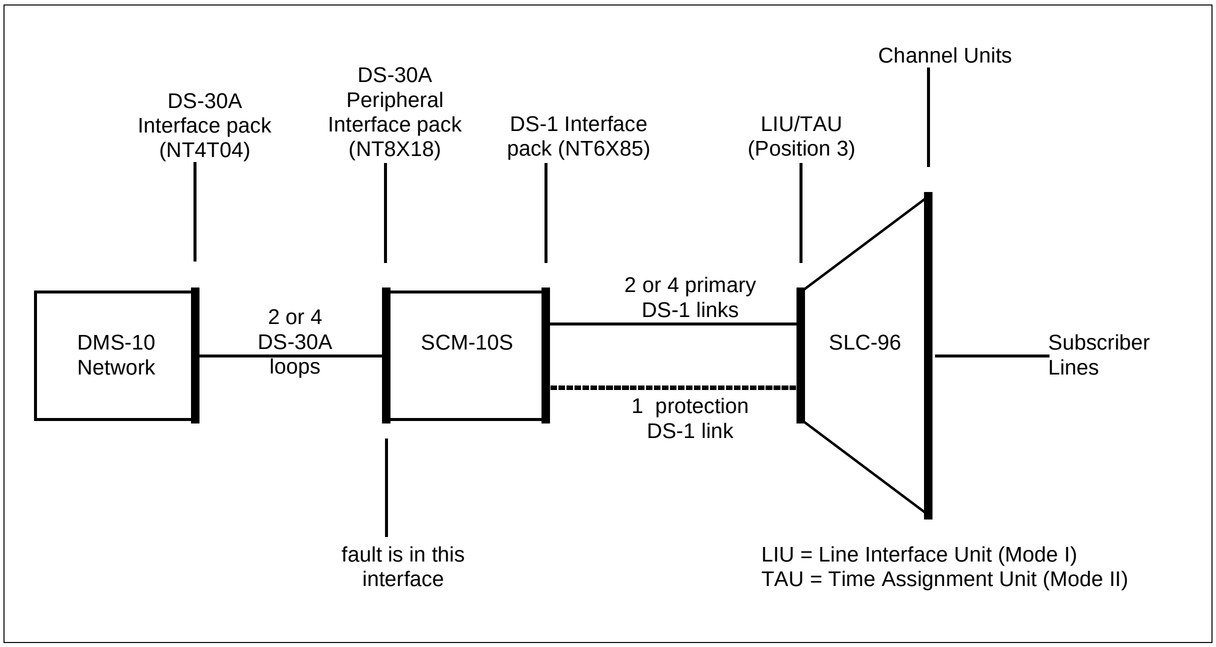
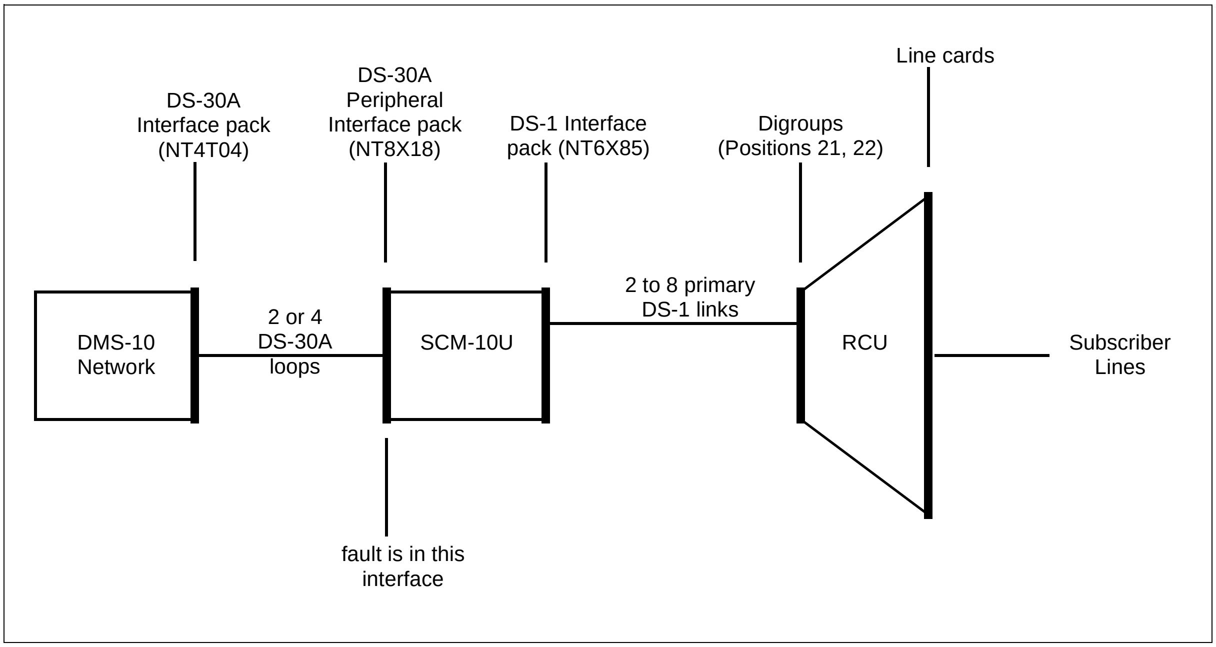


Figure 1-2: Interfaces to SCM-10U



Clear SCM-10S or SCM-10U fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC

3) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC

4) Determine whether the SCM-10 Control Complex passed the test.

If the SCM-10 Control Complex	Go to
passed the test	step 5
did not pass the test	step 6

5) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

6) Return the Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

   Note 1: Use the appropriate command for Control Complex:
   SCM-10S = SCSC
   SCM-10U = SCUC

   Note 2: Before returning the units to service, re-seat the NT6X80 pack.

7) This procedure is complete.

Clear SCM-10S or SCM-10U fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

3) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC (*site*) SCE *b s* <CR>

4) Determine whether a fault is present.

If a fault	Go to
is present	step 5
is not present	step 21

5) Power down the SCM-10 shelf by operating the Power switch on the NT2X70 pack to the OFF position. (The associated breaker in the Frame Supervisory Panel will trip.)

6) Unseat the NT6X80.

7) Operate the Power switch on the NT2X70 faceplate to the ON position.

8) Press and hold in the Power Reset button on the NT2X70AD faceplate while turning on the appropriate circuit breaker in the Frame Supervisory Panel.

9) Seat the NT6X80.

10) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC (*site*) SCE *b s* <CR>

11) Determine whether a fault is present

If a fault	Go to
is present	step 12
is not present	step 21

12) Reseat the Master Processor pack (NT6X45-Position 8).

13) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

14) Determine whether a fault is present.

If a fault	Go to
is present	step 15
is not present	step 21

15) Replace the Master Processor pack (NT6X45-Position 8).

16) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC (*site*) SCE *b s* <CR>

17) Determine whether a fault is present.

If a fault	**Go to**
is present	step 18
is not present	step 21

18) Place the original Master Processor pack back in Position 8 on the SCM-10 shelf, and replace the DS-30A Peripheral Interface pack (NT8X18-Position 22) (MP 1250).

19) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC (*site*) SCE *b s* <CR>

20) Determine whether a fault is present.

If a fault	**Go to**
is present	step 22
is not present	step 21

21) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site)* SCE *b s* <CR>

Note: *Before returning the units to service, re-seat the NT6X80 pack.*

Go to step 23.

22) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

23) This procedure is complete.

Clear SCM-10S, SCM-10U, RSCS or ESMA fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex, remote switching center (RSCS), or ESMA controller by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR> or BUSY RSCC (*site*) RSC *b s* <CR> or BUSY ESMC (*site*) MVIE *b s* <CR>.

3) Replace the indicated Signaling Processor pack:
SCM 10S and SCM 10U-NT6X45, Position 12 (MP 1250) or
RSCS-NTMX77, Position 3/25 (MP 1250) or
ESMA-NTAX74, Position 3/25 (MP 1250)

4) Test the SCM-10 Control Complex, RSCS, or ESMA controller by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC (*site*) SCE *b s* <CR> or TEST RSCC (*site*) RSC *b s* <CR> or TEST ESMC (*site*) MVIE *b s* <CR>.

5) Determine whether a fault exists.

If a fault	**Go to**
exists	step 6
does not exist	step 14

6) Place the original Signaling Processing pack:
SCM 10S and SCM 10U-NT6X45 in Position 12 or
RSCS-NTMX77 in Position 3/25 or
ESMA-NTAX74 in Position 3/25

7) Replace the Interface pack:
SCM 10S and SCM 10U-NT8X18, Position 22 (MP 1250) or
RSCS-NTMX87, Position 9/16 (MP1250) or
ESMA-NT8X18, Position 9/19 (MP 1250)

8) Test the SCM-10 Control Complex, RSCS, or ESMA controller by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC (*site*) SCE *b s* <CR> or TEST RSCC (*site*) RSC *b s* <CR> or TEST ESMC (*site*) MVIE *b s* <CR>

9) Determine whether a fault exists.

If a fault	**Go to**
exists	step 10
does not exist	step 14

10) Replace remaining SCM-10U/SCM-10S, RSCS, or ESMA packs one at a time. Inspect the SCM-10U/SCM-10S, RSCS, or ESMA backplane for shorts, bent pins, and broken wires.

11) Test the SCM-10 Control Complex, RSCS, or ESMA controller by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR> or TEST RSCC (*site*) RSC *b s* <CR> or TEST ESMC (*site*) MVIE *b s* <CR>.

12) Determine whether a fault exists.

If a fault	Go to
exists	step 13
does not exist	step 14

13) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

14) Return the SCM-10 Control Complex, RSCS, or ESMA controller to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR> or RTS RSCC (*site*) RSC *b s* <CR> or RTS ESMC (*site*) MVIE *b s* <CR>.

Note: *Before returning the units to service, re-seat the NT6X80 pack.*

15) This procedure is complete.

Clear peripheral loop fault

1) Load Overlay DED by entering: OVLY DED <CR>
2) Busy the Control Complex by entering the appropriate BUSY command (SCSC, SCUC, RSCC, or ESMC)
3) Replace the DS-30A Peripheral Interface pack (NT8X18) in the SCM-10 shelf (MP 1288).
4) Test the Controller by entering the appropriate TEST command (SCSC, SCUC, RSCC, or ESMC)
5) Determine whether a fault exists.

If a fault	Go to
exists	step 6
does not exist	step 21

6) Place the original DS-30A Peripheral Interface pack back into the shelf (MP 1288).
7) Return the Control Complex to service by entering the appropriate RTS command (SCSC, SCUC, RSCC, or ESMC)

   Note: *Before returning the units to service, re-seat the NT6X80 pack.*

8) Abort Overlay DED and load Overlay NED by entering: **** OVLY NED <CR>
9) Busy the connected DS-30A Interface pack (NT4T04) by entering: BUSY D3A CE *b s p* <CR>
10) Test the DS-30A Interface pack by entering: TEST D3A CE *b s p* <CR>
11) Determine whether a fault exists.

If a fault	Go to
exists	step 12
does not exist	step 21

12) Replace the DS-30A Interface pack (MP 1298).
13) Test DS-30A Interface pack by entering: TEST D3A CE *b s p* <CR>

14) Determine whether a fault exists.

If a fault	**Go to**
exists	step 15
does not exist	step 21

15) Place the original DS-30A Interface pack back into the shelf (MP 1298).

16) Test DS-30A Interface pack by entering: TEST D3A CE *b s p* <CR>

17) Replace the DS-30A Interface cable.

18) Test the peripheral loop by entering: TEST PELP CE *b s p l* <CR>

19) Determine whether a fault exists.

If a fault	**Go to**
exists	step 20
does not exist	step 21

20) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

21) Return any MMB devices back to service.

22) This procedure is complete.

Clear SCM-10S or SCM-10U control complex fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Determine the status of the reporting controller by entering: STAT SCSC ALL <CR>

3) Busy the SCM-10 Control Complex by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

4) Reseat the indicated processors (NT6X45 in positions 8 and 12) (TP 7039)

5) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

6) Determine whether the control complex passed the test.

If the control complex	Go to
passed the test	step 7
did not pass the test	step 23

7) Download the SCM-10 Control Complex by entering: DNLD SCSC SCE *b s* <CR> or DNLD SCUC (*site*) SCE *b s* <CR>

8) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

Note: *Before returning the units to service, re-seat the NT6X80 pack.*

9) Determine whether the problem still exists.

If the problem	Go to
exists	step 10
does not exist	step 21

10) Busy the SCM-10 Control Complex by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

11) Replace the Master Processor pack (NT6X45 in position 8) (MP 1250)

12) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC (*site*) SCE *b s* <CR>

13) Determine whether the problem still exists.

If the problem	Go to
exists	step 14
does not exist	step 24

14) Place the original Master Processor pack back into Position 8 of the SCM-10 shelf, and replace the Signaling Processor pack located in position 12 (MP 1250).

15) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC (*site*) SCE *b s* <CR>

16) Determine whether the problem still exists.

If the problem	Go to
exists	step 17
does not exist	step 24

17) Place the original Signaling Processor pack back into Position 12 of the SCM-10 shelf, and change the Master Processor Memory pack (NT6X47) located in position 10 (MP 1250).

18) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC (*site*) SCE *b s* <CR>

19) Determine whether the problem still exists.

If the problem	Go to
exists	step 20
does not exist	step 23

20) Place the original Master Processor Memory pack (NT6X47) back into Position 10 of the SCM-10 shelf, and change the Signaling Processor Memory pack located in position 11 (MP1250).

21) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC (*site*) SCE *b s* <CR>

22) Determine whether the problem still exists.

If the problem	Go to
exists	step 23
does not exist	step 24

23) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

24) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

Note: *Before returning the units to service, re-seat the NT6X80 pack.*

25) This procedure is complete.

Clear SCM-10 fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

3) Replace the faulty pack identified by the fault message.

4) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

5) Determine whether a fault is found.

If a fault	Go to
is found	step 6
is not found	step

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

7) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

   Note 1: Use the appropriate command for the Control Complex:
   SCM-10S = SCSC
   SCM-10U = SCUC.

   Note 2: Before returning the units to service, re-seat the NT6X80 pack.

8) This procedure is complete.

Clear SCM-10S or SCM-10U control complex fault

1) Analyze the messages that follow SCS799 or SCU799 to determine the faulty packs.

2) Perform TP 7035.

Clear Master Processor pack (NT6X45) fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

3) Replace the indicated Master Processor pack (NT6X45 in position 8) (MP 1250).

4) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

5) Determine whether the SCM-10 Control Complex passed the test.

If a SCM-10 Control Complex	Go to
passed the test	step
did not pass the test	step 6

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

7) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

   Note 1: Use the appropriate command for the Control Complex:
   SCM-10S = SCSC
   SCM-10U = SCUC.

   Note 2: Before returning the units to service, re-seat the NT6X80 pack.

8) This procedure is complete.

Clear SCM-10S or SCM-10U fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

3) Reseat the indicated Master Processor pack (NT6X45 in position 8 and 12).

4) Verify that the IOI drive has downloaded information to the SCM-10 Control Complex.

5) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

6) Determine whether a fault is present.

If a fault	Go to
is present	step
is not present	step

7) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

8) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

   Note 1: Use the appropriate command for the Control Complex:
   SCM-10S = SCSC
   SCM-10U = SCUC.

   Note 2: Before returning the units to service, re-seat the NT6X80 pack.

9) This procedure is complete.

Clear Master Processor Memory pack (NT6X47) fault

1) Determine whether the fault is in an SCM-10S/10U or on an HIE shelf.

If the fault is	Go to
in an SCM-10S/10U	step 2
on an HIE shelf	step 8

2) Load Overlay DED by entering: OVLY DED <CR>

3) Busy the SCM-10 Control Complex by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

4) Replace the Master Processor Memory pack (NT6X47 in position 10) (MP 1250).

5) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC (*site*) SCE *b s* <CR>

6) Determine whether the SCM-10 Control Complex passed the test.

If the SCM-10 Control Complex	Go to
passed the test	step 7
did not pass the test	step 17

7) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>
Go to step 18.

8) Load Overlay DED by entering: OVLY DED <CR>

9) Busy the Line Concentrating Module Controller (LCMC) associated with LCA 0 by entering: BUSY LCMC *site* LCE *b s* <CR>

10) Operate the Power On/Off switch on the Power Converter pack (NT2X70) in position 25 to the Off position.

11) Determine whether circuit breaker CB1 on the Frame Supervisory Panel trips (MAJ LED lights).

If the CB1 circuit breaker	Go to
tripped	step 13
did not trip	step 12

12) Operate circuit breaker CB1 in the FSP of the RLCM to the Off position.

13) Replace the Master Processor Memory pack (NT6X47) (MP 1250).

14) <u>At the same time</u>, depress the Reset button on the Power Converter pack (NT2X70) in position 25 and operate CB1 on the FSP to the ON position.

15) Return the LCMC to service by entering: RTS LCMC *site* LCE *b s* <CR>

16) Determine whether the LCMC returned to service.

If the LCMC	**Go to**
returned to service	step 18
did not return to service	step 17

17) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

18) This procedure is complete.

Clear Signaling Processor pack (NT6X45) fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

3) Replace the Signaling Processor pack (NT6X45 in position 12). (MP 1250).

4) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

5) Determine whether the SCM-10 Control Complex passed the test.

If the SCM-10 Control Complex	Go to
passed the test	step
did not pass the test	step 6

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

7) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

   Note 1: Use the appropriate command for the Control Complex:
   SCM-10S = SCSC
   SCM-10U = SCUC.

   Note 2: Before returning the units to service, re-seat the NT6X80 pack.

8) This procedure is complete.

Clear Signaling Processor Memory pack (NT6X46) fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

3) Replace the Signaling Processor Memory pack (NT6X46 in position 11). (MP 1250).

4) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

5) Determine whether the SCM-10 Control Complex passed the test.

If the SCM-10 Control Complex	Go to
passed the test	step
did not pass the test	step 6

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

7) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

8) This procedure is complete.

Clear Channel Supervision Message pack (NT6X42) fault

1) Load Overlay DED by entering: OVLY DED <CR>
2) Busy the SCM-10 Control Complex on the shelf that contains the faulty Channel Supervision Message pack (NT6X42) by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

3) Replace the faulty Channel Supervision Message pack (NT6X42) (MP 1250).
4) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

5) Determine whether a fault is present.

If a fault	Go to
is present	step 6
is not present	step

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.
7) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

8) This procedure is complete.

Clear Message Interface pack (NT6X43) or Message Interface and Tone pack (NT6X69) fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex on the shelf that contains the faulty NT6X43 or NT6X69 by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

3) Replace the faulty NT6X43 or NT6X69 pack (MP 1250).

4) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

5) Determine whether a fault is present.

If a fault	Go to
is present	step 6
is not present	step

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

7) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

8) This procedure is complete.

Clear Speech Bus Formatter pack (NT6X41) fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex on the shelf that contains the faulty Speech Bus Formatter pack (NT6X41) by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

3) Replace the faulty Speech Bus Formatter pack (NT6X41, position 21) (MP 1250).

4) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

5) Determine whether a fault is present.

If a fault	Go to
is present	step 6
is not present	step

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

7) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

8) This procedure is complete.

Clear Time Switch pack (NT6X44) fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex on the shelf that contains the faulty Time Switch pack (NT6X44) by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

Note: *Use the appropriate command for the Control Complex:*
SCM-10S = SCSC
SCM-10U = SCUC.

3) Replace the faulty Time Switch pack (NT6X44, position 14) (MP 1250).

4) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

Note: *Use the appropriate command for the Control Complex:*
SCM-10S = SCSC
SCM-10U = SCUC.

5) Determine whether a fault is present.

If a fault	**Go to**
is present	step 6
is not present	step

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

7) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

Note: *Use the appropriate command for the Control Complex:*
SCM-10S = SCSC
SCM-10U = SCUC.

8) This procedure is complete.

Clear A-bit Message pack (NT6X86) fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex on the shelf that contains the faulty A-bit Message pack (NT6X86) by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

3) Replace the faulty A-bit Message pack (NT6X86, position 13) (MP 1250).

4) Test the SCM-10 Control Complex by entering: TEST SCSC SCE *b s* <CR> or TEST SCUC *(site)* SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

5) Determine whether a fault is present.

If a fault	Go to
is present	step 6
is not present	step

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

7) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

   Note: *Use the appropriate command for the Control Complex:*
   SCM-10S = SCSC
   SCM-10U = SCUC.

8) This procedure is complete.

Clear SLC-96 fault

1) The SLC-96 is reporting a major alarm condition at the remote site. Analyze the alarm indicators at the remote site to determine the problem, then follow appropriate Bell System Practice trouble-clearing procedures.

2) This procedure is complete.

Clear fault in DS-1 link interface

1) Load Overlay DED by entering: OVLY DED <CR>

2) Obtain the status of the DS-1 link in the original trouble message by entering: STAT D1LK SCE *b s p u* <CR>

   Note: *The fault is in the interface between the DS-1 link and the receive side of the SLC-96 or RCU. Refer to Figure 7050-1 or 7050-2.*

3) Busy the DS-1 link in the original trouble message by entering: BUSY D1LK SCE *b s p u* <CR>

CAUTION
Busying the T-1 span line or DS-1 Interface pack (NT6X85) serving a SLC-96 will result in the loss of service to the SLC-96 shelf to which the T-1 span is connected. To restore the SLC-96 shelf to service after maintenance is performed, refer to TP 7051.

Note: *Messages SCS150 and SCU150 indicate a local alarm failure. A D1LK connected to a SLC-96 should be made SMB. A non-signaling D1LK connected to an RCU should be made SMB. A signaling D1LK should be made SMB only in response to messages SCU161 or SCU170.*

4) Determine whether the DS-1 link is connected to a SLC-96.

If the DS-1 link	**Go to**
is connected to a SLC-96	step 6
is not connected to a SLC-96	step 5

5) Replace the digroup pack according to DP 5100 in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (NTP 363-2051-501).
   Go to step 12.

6) Obtain the status of SLC-96 shelves by entering: STAT SLSH ALL <CR>

7) Replace the corresponding LIU or TAU pack according to the appropriate Bell System Practice procedure.

Note: *Older model SLC-96s use LIU packs for Mode 1 and TAU packs for Mode 2. Series 5 SLC-96s use LIU packs; the mode is determined by dip-switches on the packs.*

8) Test the DS-1 link by entering: TEST D1LK SCE *b s p u* <CR>

9) Determine whether the fault is still present.

If the fault	Go to
is present	step 11
is not present	step 10

10) Return the link to service by entering: RTS D1LK SCE *b s p u* <CR>

11) Perform TP 7051.

12) Suspect faulty outside plant equipment. Refer to appropriate trouble-clearing procedure. Also refer to TP 7029.

13) This procedure is complete.

Figure 1-3: Interfaces to SCM-10S

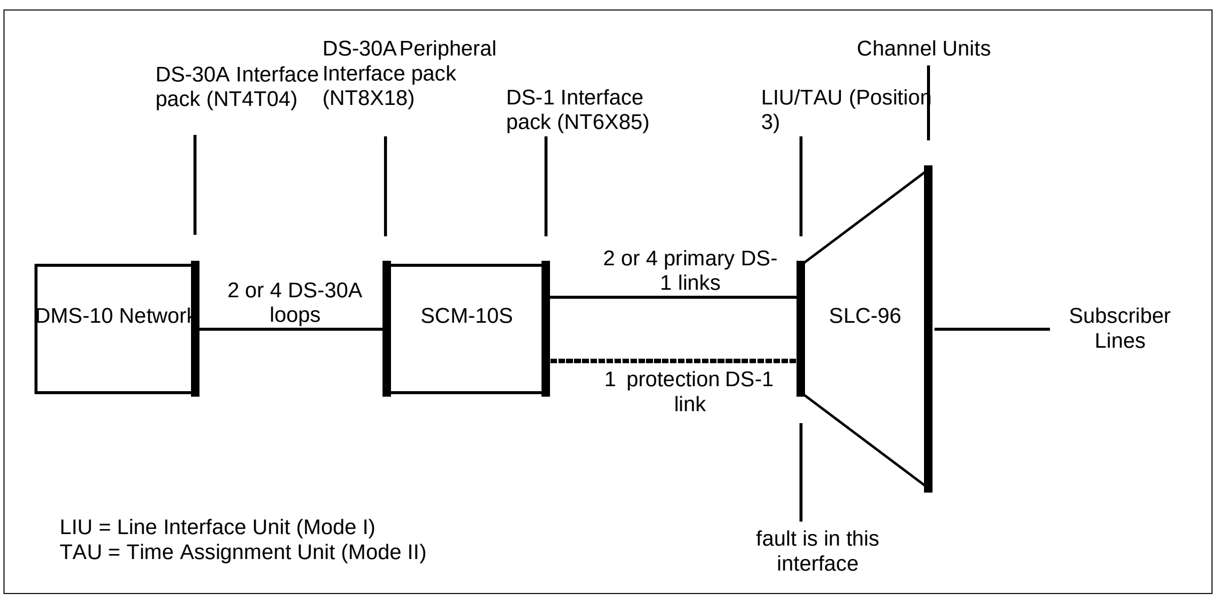
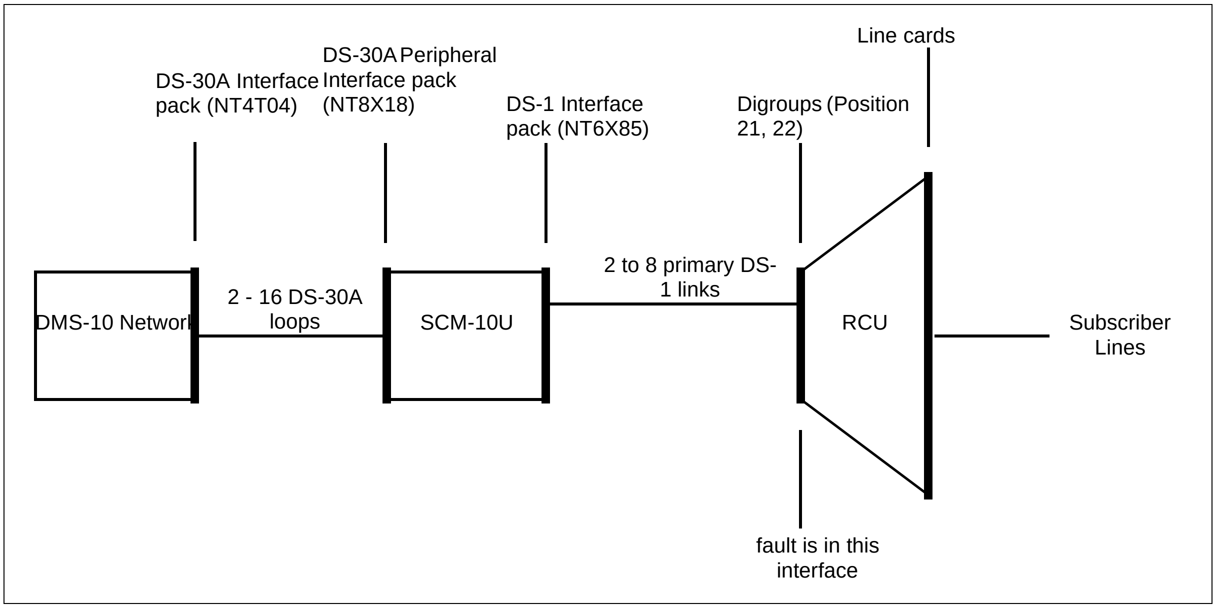


Figure 1-4: Interfaces to SCM-10U



Clear SLC-96 shelf fault

1) Load Overlay DED by entering: OVLY DED <CR>
2) Obtain the status of the SLC-96 shelf by entering: STAT SLSH *site* SLE *b cb sh* <CR>
3) Determine whether alarms are indicated.

If alarms	Go to
are indicated	step 4
are not indicated	step

4) Determine the cause of the alarms, and clear them at the remote location.
5) If the SLC-96 shelf is man-made busy, return the shelf to service by entering: RTS SLSH *site* SLE *b cb sh* <CR>
6) If the RTS SLSH command was entered in step 5, determine whether the SLC-96 shelf returned to service.

If the SLC-96 shelf	Go to
returned to service	step 8
did not return to service	step 7

7) Refer to the TTY printouts and the Output Message Manual to determine the next course of action or contact the next level of technical support for assistance.
8) This procedure is complete.

Clear SLC-96 shelf fault

1) Load Overlay DED by entering: OVLY DED <CR>
2) Obtain the status of the SLC-96 shelf by entering: STAT SLSH *site* SLE *b cb sh* <CR>
3) Determine whether alarms are indicated.

If alarms	Go to
are indicated	step
are not indicated	step 7

4) Determine the cause of the alarms, and clear them at the remote location.
5) If the SLC-96 shelf is man-made busy, return the shelf to service by entering: RTS SLSH *site* SLE *b cb sh* <CR>
6) If the RTS SLSH command was entered in step , determine whether the SLC-96 shelf returned to service.

If the SLC-96 shelf	Go to
returned to service	step 13
did not return to service	step 12

7) Determine whether the SLC-96 is indirectly out of service.

If the SLC-96	Go to
is indirectly out of service	step 9
is not indirectly out of service	step 8

8) Determine whether any DS-1 links are out of service.

If any DS-1 links	Go to
are out of service	TP 7029
are not out of service	step 12

9) Clear the fault in a higher order device.
10) Return the SLC-96 shelf to service by entering: RTS SLSH *site* SLE *b cb sh* <CR>
11) Determine whether the SLC-96 shelf returned to service.

If the SLC-96 shelf	Go to
returned to service	step 13
did not return to service	step 12

12) Refer to the TTY printouts and the Output Message Manual to determine the next course of action or contact the next level of technical support for assistance.

13) This procedure is complete.

Clear SLC-96 channel unit fault

Note: *For TR08 equipment other than a SLC96 and for all GR303 equipment, please refer to the vendor documentation for procedures for clearing the trouble indicated in the associated DMS-10 output message.*

1) Load Overlay PED, load the overlay by entering: OVLY PED IMED <CR>
2) Busy the faulty Channel Unit pack by entering: BUSY SLPK *site* SLE *b cb cu* <CR>
3) Replace the pack. (MP 1250)
4) Return the pack to service by entering: RTS SLPK *site* SLE *b cb cu* <CR>
5) Test the pack by entering: TEST SLPK *site* SLE *b cb cu* <CR>
6) Determine whether the Channel Unit pack passed the test.

If the Channel Unit pack	Go to
passed the test	step
did not pass the test	step 7

7) Ensure that the Channel Test Unit (CTU) (Position 2, Shelf C) is receiving power from the Power Unit in Shelf D.
8) Determine whether the Shelf D Power Unit is faulty.

If the Shelf D Power Unit	Go to
is faulty	step 10
is not faulty	step 9

9) Place the original Channel Unit pack back in the shelf and replace the CTU.

   Note: *The CTU must be replaced because if if is faulty or is not powered, the DMS-10 may indicate a fault in a Channel Unit pack.*

   Go to step 11.
10) Replace the Power Unit pack according to the appropriate Bell System Practices procedure.
11) Test the Channel Unit pack by entering: TEST SLPK *site* SLE *b cb cu* <CR>

12) Determine whether the Channel Unit pack passed the test.

If the Channel Unit pack	Go to
passed the test	step 14
did not pass the test	step 13

13) Contact the next level of support for assistance.

14) This procedure is complete.

Clear protection link fault

1) The protection link serving the SLC-96 is either unequipped or out of service. If the protection link is equipped, test it using Overlay DED. Review the test results for necessary action.
2) This procedure is complete.

Clear SLC-96 fault

1) Load Overlay DED by entering: OVLY DED <CR>
2) Busy the SLC-96 by entering: BUSY SLC *site* SLE *b cb* <CR>
3) Test the SLC-96 by entering: TEST SLC *site* SLE *b cb* <CR>
4) Determine whether a fault is present.

If a fault	Go to
is present	step 5
is not present	step 6

5) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.
6) Return the SLC-96 to service by entering: RTS SLC *site* SLE *b cb* <CR>
7) Determine whether a fault is present.

If a fault	Go to
is present	TP 7039
is not present	step 8

8) This procedure is complete.

Clear ESMA fault (ESMA350)

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the ESMA Control Complex by entering: BUSY ESMC (*site*) MVIE *b s p* <CR>

3) Test the ESMA Control Complex by entering: TEST ESMC (*site*) MVIE *b s p* <CR>.

4) Determine whether the ESMA Control Complex passed the test.

If the ESMA Control Complex	Go to
passed the test	step 6
did not pass the test	step 5

5) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

6) Return the Control Complex to service by entering: RTS ESMC (*site*) MVIE *b s p* <CR>

7) This procedure is complete.

Clear DS-30A Interface pack (D3A) or Subscriber Remote Interface (SRI) fault

1) Load Overlay NED by entering: OVLY NED <CR>

2) Busy the specified DS-30A Interface pack by entering: BUSY D3A CE *b s p* <CR>

3) If the pack is an NT4T04AL (or later series), download the pack by entering: DNLD D3A CE *b s p* <CR>

4) Test the pack by entering: TEST D3A CE *b s p* <CR>

5) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 12
did not pass the test	step 6

6) Replace the DS-30A Interface pack. (MP 1298)

7) If the pack is an NT4T04AL (or later series), download the pack by entering: DNLD D3A CE *b s p* <CR>

8) Test the pack by entering: TEST D3A CE *b s p* <CR>

9) Determine whether the fault still exists.

If the fault	Go to
exists	step 11
does not exist	step 10

10) Return the DS-30A Interface pack to service by entering: RTS D3A CE *b s p* <CR>
Go to step 13.

11) Place the original DS-30A Interface pack back on the shelf.

12) Return the pack to service by entering: RTS D3A CE *b s p* <CR>

13) Test the in-service pack by entering: TEST D3A CE *b s p* <CR>

14) Determine whether pack passed the test.

If the pack	Go to
passed the test	step 25
did not pass the test	step 15

15) Abort Overlay NED and load Overlay DED by entering: **** OVLY DED <CR>

16) Busy the SRI pack by entering: BUSY SRI PE *b s p* <CR>

17) Test the SRI pack by entering: TEST SRI PE *b s p* <CR>

18) Determine whether the fault still exists.

If the fault	Go to
exists	step 19
does not exist	step 23

19) Replace the SRI pack. (MP 1250)

20) Test the SRI pack by entering: TEST SRI PE *b s p* <CR>

21) Determine whether pack passed the test.

If the pack	Go to
passed the test	step 23
did not pass the test	step 22

22) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

23) Return the SRI pack to service by entering: RTS SRI PE *b s p* <CR>

24) Determine whether the SRI links also returned to service.

If the SRI links	Go to
returned to service	step 25
did not return to service	TP 6023

25) This procedure is complete.

Clear Subscriber Remote Interface (SRI) link fault

Note: *This fault is usually attributable to noise or problems in the outside plant. Generally, these conditions are temporary. But if the conditions persist and no problem is found in the outside plant, the following procedure should be performed.*

1) Load Overlay DED by entering: OVLY DED <CR>
2) Busy the specified SRI link by entering: BUSY SRLK PE *b s p u* <CR>
3) Test the SRI link by entering: TEST SRLK IE/PE *b s p u* <CR>.
4) Determine whether the SRI link passed the test.

If the SRI link	Go to
passed the test	step 6
did not pass the test	step 5

5) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.
6) Return the SRI link to service by entering: RTS SRLK PE *b s p u* <CR>
7) This procedure is complete.

Clear Subscriber Remote Interface (SRI) link fault

Note 1: This fault is usually attributable to noise or problems in the outside plant. Generally, these conditions are temporary. But if the conditions persist and no problem is found in the outside plant, the following procedure should be performed.

Note 2: Troubleshooting T1 link problems is not covered in the DMS-10 NTPs because of the variety of outside plant equipment used (for example, aerial cable, buried cable, microwave, fiber optics, etc.). Determining troubleshooting procedures for this equipment is the responsibility of the operating company.

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy either the specified SRI link by entering BUSY SRLK PE *b s p u* <CR> or the DS1L by entering BUSY DS1L *(site)* RSC/MVIE *b s p u* <CR>

3) Test either the SRI link by entering TEST SRLK PE *b s p u* <CR> or the DS1L by entering TEST DS1L *(site)* RSC/MVIE *b s p u* <CR>

4) Determine whether the link passed the test.

If the link	Go to
passed the test	step 5
did not pass the test	step 55

5) Return to service either the SRI link by entering RTS SRLK PE *b s p u* <CR> or the DS1L by entering RTS DS1L *(site)* RSC/MVIE *b s p u* <CR>

6) Determine whether the problem still exists.

If the problem	Go to
exists	step 7
does not exist	step 56

7) Busy either the SRI link by entering BUSY SRLK PE *b s p u* <CR> or the DS1L by entering BUSY DS1L *(site)* RSC/MVIE *b s p u* <CR>

8) Busy either the SRI pack by entering BUSY SRI PE *b s p* <CR> or both DS1Ls of the pack by entering BUSY DS1L *(site)* RSC-MVIE *b s p u* <CR>

CAUTION
The other link on the pack may feed another office. Busying the pack will busy both links on the pack.

9) Replace either the SRI pack (NT4T09) or the PCM Quad Carrier pack (NTMX87) at the base DMS-10 switch (MP 1250).

10) Test either the SRI pack by entering TEST SRI PE *b s p* <CR> or the DS1L by entering TEST DS1L *(site)* RSC/MVIE *b s p u* <CR>

11) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 12
did not pass the test	step 55

12) Return to service either the SRI pack by entering RTS SRI PE *b s p* <CR> or the DS1L links by entering RTS DS1L *(site)* RSC/MVIE *b s p u* <CR>

13) Determine whether the problem still exists.

If the problem	**Go to**
exists	step 14
does not exist	step 56

14) Determine whether the link connects to an RDT.

If the link	**Go to**
connects to an RDT	step 42
does not connect to an RDT	step 15

15) Examine the appropriate circuit breaker in the RSLE or RSLM shelf FSP or circuit breakers 8 and 9 in the RLCM Frame Supervisory Panel (FSP).

Note 1: In an OPSM equipped with an RSLM Type A shelf, circuit breaker CB2 in the FSP serves the office repeater cards. In an OPSM with an RSLM Type B shelf, Fuse A in the FSP serves the office repeater cards.

Note 2: Circuit breakers 8 and 9 in the RLCM FSP serve the office repeater cards in the FSP and the talk battery. If either device fails, the circuit breakers trip and the span line (SRI link) goes out of service.

16) Determine whether the breakers are holding or if the fuse is good.

If	Go to
the breakers are holding and the fuse is good	step 18
the breakers are not holding and the fuse is not good	step 17

17) Either the talk battery or an office repeater card is faulty. Take appropriate action.
Go to step 56.

18) Determine whether the problem is associated with an RSLE or an RSLM site.

If the problem	Go to
is associated with an RSLE or an RSLM site	step 31
is not associated with an RSLE or an RSLM site	step 19

19) Busy either the SRI link by entering BUSY SRLK PE *b s p u* <CR> or the DS1L by entering BUSY DS1L *(site)* RSC/MVIE *b s p u* <CR>

20) Replace either the associated DS-1 Interface pack (NT6X50) at the RLCM (MP 1250) or the pack supporting the DS1L at the RDT.

21) Return to service either the SRI link by entering RTS SRLK PE *b s p u* <CR> or the DS1L by entering RTS DS1L *(site)* RSC/MVIE *b s p u* <CR>

22) Determine whether the problem still exists.

If the problem	Go to
exists	step 23
does not exist	step 56

23) Busy the associated LCM control unit by entering: BUSY LCMC *site* LCE *b s* <CR>

24) Replace the LCM Processor pack (NT6X51). (MP 1250)

CAUTION
The NT6X51DA pack supports a 64 kbps data rate between the host and an RLCM, OPAC or OPM. The NT6X51DA must only be installed at sites configured to support that data rate.

25) Test the LCM control unit by entering: TEST LCMC *site* LCE *b s* <CR>

26) Determine whether the problem still exists.

If the problem	Go to
exists	step 27
does not exist	step 30

27) Replace the Digroup Control pack (NT6X52) (MP 1250).

28) Test the LCM control unit by entering: TEST LCMC *site* LCE *b s* <CR>

29) Determine whether the problem still exists.

If the problem	Go to
exists	step 40
does not exist	step 30

30) Return to service the LCM control unit by entering: RTS LCMC *site* LCE *b s* <CR>
Go to step 56.

31) For an RSLM shelf, busy the associated Switching Matrix pack by entering: BUSY RSLC *site* RSE *b s p* <CR>. For an RSLE shelf, busy the Dual Host Interface by entering: BUSY SRLK PE *b s p u* <CR>

32) For an RSLM shelf, replace the Switching Matrix pack (NY9Y12). For an RSLE shelf, replace the Dual Host Interface pack (NT9Y17 or NT9Y20) (MP 1250).

CAUTION
Before removing an NT9Y12 or an NT9Y17 pack, the faceplate switch must be in the down (Disable) position.

33) Restore faceplate switch to the up (Enable) position (on NT9Y12 and NT9Y17 only) and, for an RSLE shelf, enter: RTS SRLK PE *b s p u* <CR>

34) Test the RSLC by entering: TEST RSLC *site* RSE *b s p* <CR>

35) Determine whether the problem still exists.

If the problem	Go to
exists	step 37
does not exist	step 36

36) For an RSLM shelf only, return the RSLC to service by entering: RTS RSLC *site* RSE *b s p* <CR>
Go to step 56.

37) Replace the new Switching Matrix pack (NT9Y12 on an RSLM shelf) or the new Dual Host Interface pack (NT9Y17 or NT9Y20 on an RSLE shelf) with the original pack.

CAUTION
Before removing an NT9Y12 or an NT9Y17 pack, the faceplate switch must be in the down (Disable) position.

38) Determine whether the link is a DS1L.

If the link	Go to
is a DS1L	step 42
is not a DS1L	step 39

39) Abort Overlay DED and load Overlay NED by entering: <CR> OVLY NED IMED <CR>

40) If NTYP = CLAS in OVLY CNFG (SYS)
Busy the associated DS-30A port by entering BUSY D3AP CE b s p p <CR>
If NTYP = 10EN in OVLY CNFG (SYS)
Busy the associated Network Interface pack port by entering BUSY IFPP CE b s p p <CR>

41) If NTYP = CLAS in OVLY CNFG (SYS)
Test the associated DS-30A port by entering TEST D3AP CE b s p p <CR>
If NTYP = 10EN in OVLY CNFG (SYS)
Test the associated Network Interface pack port by entering TEST IFPP CE b s p p <CR>

42) Switch controllers by entering: SWCH RSCC/ESMC *(site)* RSC/MVIE *b s p* <CR>
Go to step 52.

43) Determine whether the problem still exists.

If the problem	**Go to**
exists	step 44
does not exist	step 49

44) Busy the associated DS-30A Interface pack by entering: BUSY D3A CE *b s p* <CR>

CAUTION
Other ports on the pack may feed other offices. Busying the pack will busy all ports on the pack.

45) Replace the DS-30A Interface pack (NT4T04) (MP 1250).

46) Test the DS-30A Interface pack by entering: TEST D3A CE *b s p* <CR>

47) Determine whether the problem still exists.

If the problem	**Go to**
exists	step 50
does not exist	step 48

48) Return the DS-30A Interface pack to service by entering: RTS D3A CE *b s p* <CR>

49) Return the DS-30A port to service by entering: RTS D3A CE *b s p p* <CR>
Go to step 52.

50) Replace the new DS-30A Interface pack (NT4T04) with the original pack.

51) The fault is in the outside plant. Take appropriate action.
Go to step 56.

52) Determine whether the problem still exists.

If the problem	**Go to**
exists	step 54
does not exist	step 53

53) For an RSLM shelf, return the RSLC to service by entering: RTS RSLC *site* RSE *b s p* <CR>
Go to step 56.

54) Contact the next level of technical support for assistance.

55) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

56) This procedure is complete.

Clear peripheral loop fault in an ESMA

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the ESMA Control Complex by entering: BUSY ESMC (*site*) MVIE *b s p* <CR>

3) Replace the DS-30A Peripheral Interface pack (NT8X18) in the ESMA shelf (MP 1572).

4) Test the ESMA Controller by entering: TEST ESMC (*site*) MVIE *b s p* <CR>

5) Determine whether a fault exists.

If a fault	Go to
exists	step 6
does not exist	step 21

6) Place the original DS-30A Peripheral Interface pack back into the shelf (MP 1572).

7) Return the ESMA Control Complex to service by entering: RTS ESMC (*site*) MVIE *b s p* <CR>

8) Abort Overlay DED and load Overlay NED by entering: **** OVLY NED <CR>

9) Busy the connected DS-30A Interface pack (NT4T04) by entering: BUSY D3A CE *b s p* <CR>

10) Test the DS-30A Interface pack by entering: TEST D3A CE *b s p* <CR>

11) Determine whether a fault exists.

If a fault	Go to
exists	step 12
does not exist	step 21

12) Replace the DS-30A Interface pack (MP 1298).

13) Test DS-30A Interface pack by entering: TEST D3A CE *b s p* <CR>

14) Determine whether a fault exists.

If a fault	Go to
exists	step 15
does not exist	step 21

15) Place the original DS-30A Interface pack back into the shelf (MP 1298).

16) Test DS-30A Interface pack by entering: TEST D3A CE *b s p* <CR>

17) Replace the DS-30A Interface cable.

18) Test the peripheral loop by entering: TEST PELP CE *b s p l* <CR>

19) Determine whether a fault exists.

If a fault	Go to
exists	step 20
does not exist	step 21

20) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

21) Return any MMB devices back to service.

22) This procedure is complete.

Clear ESMA fault

1) Load Overlay DED by entering: OVLY DED <CR>
2) Busy the ESMA Control Complex by entering: BUSY ESMC (*site*) MVIE *b s p* <CR>
3) Test the ESMA Control Complex by entering: TEST ESMC (*site*) MVIE *b s p* <CR>
4) Determine whether the fault still exists.

If the fault	Go to
exists	step 5
does not exist	step 20

5) Power down the ESMA shelf by operating the Power switch on the NTMX72 pack to the OFF position. (The associated breaker in the Frame Supervisory Panel will trip.)
6) Unseat the NTMX72 pack.
7) Reseat the NTMX72 pack
8) Press and hold in the Power Reset button on the NTMX72 faceplate while turning on the appropriate circuit breaker in the Frame Supervisory Panel.
9) Test the ESMA Control Complex by entering: TEST ESMC (*site*) MVIE *b s p* <CR>
10) Determine whether the fault still exists.

If the fault	Go to
exists	step 11
does not exist	step 20

11) Unseat the processor pack (NTAX74) in position 3 or 25.
12) Reseat the processor pack (NTAX74).
13) Test the ESMA Control Complex by entering: TEST ESMC *(site)* MVIE *b s p* <CR>
14) Determine whether the fault still exists.

If the fault	Go to
exists	step 15
does not exist	step 19

15) Replace the processor pack (NTAX74 - position 3 or 25).

16) Test the ESMA Control Complex by entering: TEST ESMC (*site*) MVIE *b s p* <CR>

17) Determine whether the fault still exists.

If the fault	Go to
exists	step 18
does not exist	step 19

18) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

19) Return the SCM-10 Control Complex to service by entering: RTS ESMC (*site)* MVIE *b s p* <CR>

20) This procedure is complete.

Clear Subscriber Remote Interface (SRI) link fault

Note 1: This fault is usually attributable to noise or problems in the outside plant. Generally, these conditions are temporary. But if the conditions persist and no problem is found in the outside plant, the following procedure should be performed.

Note 2: Troubleshooting T1 link problems is not covered in the DMS-10 NTPs because of the variety of outside plant equipment used (for example, aerial cable, buried cable, microwave, fiber optics, etc.). Determining troubleshooting procedures for this equipment is the responsibility of the operating company.

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy either the specified SRI link by entering BUSY SRLK PE *b s p u* <CR> or the DS1L by entering BUSY DS1L *(site)* RSC/MVIE *b s p u* <CR>

3) Test either the SRI link by entering TEST SRLK PE *b s p u* <CR> or the DS1L by entering TEST DS1L *(site)* RSC/MVIE *b s p u* <CR>

4) Determine whether the link passed the test.

If the link	Go to
passed the test	step 5
did not pass the test	step 46

5) Return to service either the SRI link by entering RTS SRLK PE *b s p u* <CR> or the DS1L by entering RTS DS1L *(site)* RSC/MVIE *b s p u* <CR>

6) Determine whether the problem still exists.

If the problem	Go to
exists	step 7
does not exist	step 47

7) Busy either the SRI link by entering BUSY SRLK PE *b s p u* <CR> or the DS1L by entering BUSY DS1L *(site)* RSC/MVIE *b s p u* <CR>

8) Busy either the SRI pack by entering BUSY SRI PE *b s p* <CR> or both DS1Ls of the pack by entering BUSY DS1L *(site)* RSC-MVIE *b s p u* <CR>

CAUTION
The other link on the pack may feed another office. Busying the pack will busy both links on the pack.

9) Replace either the SRI pack (NT4T09) or the PCM Quad Carrier pack (NTMX87) at the base DMS-10 switch (MP 1250).

10) Test either the SRI pack by entering TEST SRI PE *b s p* <CR> or the DS1L by entering TEST DS1L *(site)* RSC/MVIE *b s p u* <CR>

11) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 12
did not pass the test	step 46

12) Return to service either the SRI pack by entering RTS SRI PE *b s p* <CR> or the DS1L links by entering RTS DS1L *(site)* RSC/MVIE *b s p u* <CR>

13) Determine whether the problem still exists.

If the problem	Go to
exists	step 14
does not exist	step 47

14) Determine whether the problem is associated with an RSLE or an RSLM site.

If the problem	Go to
is associated with an RSLE or RSLM site	step 34
is not associated with an RSLE or RSLM site	step 15

15) Busy either the SRI link by entering BUSY SRLK PE *b s p u* <CR> or the DS1L by entering BUSY DS1L RSC/MVIE *b s p u* <CR>

16) Replace either the associated DS-1 Interface pack (NT6X50) at the RLCM (MP 1250) or the pack supporting the DS1L at the RDT.

17) Return to service either the SRI link by entering RTS SRLK PE *b s p u* <CR> or the DS1L by entering RTS DS1L *(site)* RSC/MVIE *b s p u* <CR>

18) Determine whether the problem still exists.

If the problem	Go to
exists	step 19
does not exist	step 47

19) Determine whether the problem is associated with an RDT.

If the problem	Go to
is associated with an RDT	step 20
is not associated with an RDT	step 21

20) Switch the ESMA active unit by entering: SWCH ESMC MVIE *b s p* <CR>
Go to step 44.

21) Busy either the SRI link by entering BUSY SRLK PE *b s p u* <CR> or the DS1L by entering BUSY DS1L *(site)* RSC/MVIE *b s p u* <CR>

22) Power down the associated Power Converter pack (NT2X70) by operating the Enable switch on the faceplate to the DISABLE position.

Note: *Link Control Card 1 (position 17) is powered by the converter in position 25. Link Control Card 2 (position 18) is powered by the converter in position 22.*

23) Determine whether the associated circuit breaker on the Frame Supervisory Panel (FSP), CB4 for the position 22 pack and CB1 for the position 25 pack, trips and if the MAJ LED on the FSP lights.

If	Go to
the breaker trips and the LED lights	step 24
the breaker does not trip and the LED does not light	step 31

24) Replace the associated Link Control Card (NT6X73) at the RLCM (MP 1250).

25) Operate the Enable switch on the Power Converter pack to the ENABLE position.

26) Determine whether the Power Converter pack is in Position 22 or in Position 25.

If the pack is	Go to
in Position 22	step 27
in Position 25	step 28

27) At the same time, depress the Reset button on the pack faceplate and operate CB4 on the FSP to the ON position.
Go to step 29.

28) At the same time, depress the Reset button on the pack faceplate and operate CB1 on the FSP to the ON position.

29) Return to service either the SRI link by entering RTS SRLK PE *b s p u* <CR> or the DS1L by entering RTS DS1L *(site)* RSC/MVIE *b s p u* <CR>

30) Determine whether the problem still exists.

If the problem	Go to
exists	step 45
does not exist	step 47

31) Determine whether the Power Converter pack in position 22 or in position 25.

If the pack	Go to
is in Position 22	step 33
is in Position 25	step 32

32) Operate the circuit breaker for that pack (CB1 on the FSP) to the OFF position.
Go to step 24.

33) Operate the circuit breaker for that pack (CB4 on the FSP) to the OFF position.
Go to step 24.

34) Determine whether the site is an RSLM shelf.

If the site	Go to
is an RSLM shelf	step 35
is not an RSLM shelf	step 40

35) Busy the associated RSLC by entering: BUSY RSLC *site* RSE *b s p* <CR>

36) Replace the Switching Matrix pack (NT9Y12) (MP 1250).

CAUTION
Before removing a NT9Y12 or NT9Y17 pack, the Enable switch must be in the DISABLE position.

37) Test the associated RSLC by entering: TEST RSLC *site* RSE *b s p* <CR>

38) Determine whether the problem still exists.

If the problem	Go to
exists	step 45
does not exist	step 39

39) Return the RSLC to service by entering: RTS RSLC *site* RSE *b s p u* <CR> Go to step 47.

40) Busy either the associated SRI pack by entering BUSY SRI PE *b s p* <CR> or the DS1L link by entering BUSY DS1L *(site)* RSC *b s p u* <CR>

41) Replace the Dual Host Interface pack (NT9Y17 or NT9Y20) (MP 1250).

CAUTION
Before removing a NT9Y12 or NT9Y17 pack, the Enable switch must be in the DISABLE position.

42) Return to service either the SRI pack by entering RTS SRI PE *b s p* <CR> or the DS1L link by entering RTS DS1L *(site)* RSC *b s p u* <CR>

43) Test the associated RSLCs by entering: TEST RSLC *site* RSE *b s 5* <CR> and: TEST RSLC *site* RSE *b s 8* <CR>

44) Determine whether the problem still exists.

If the problem	Go to
exists	step 45
does not exist	step 47

45) Contact the next level of technical support for assistance.

46) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

47) This procedure is complete.

Clear ESMA control complex fault

1) Load Overlay DED by entering: OVLY DED <CR>
2) Determine the status of the reporting controller by entering: STAT ESMA ALL <CR>
3) Busy the ESMA Control Complex by entering: BUSY ESMC (*site*) MVIE *b s p* <CR>
4) Reseat the indicated processors (NTAX74 in positions 3 and 52) (TP 7039)
5) Test the ESMA Control Complex by entering: TEST ESMC *(site)* MVIE *b s p rom* <CR>
6) Determine whether the pack passed the test.

If the pack	**Go to**
passed the test	step 7
did not pass the test	step 17

7) Download the ESMA Control Complex by entering: DNLD ESMC (*site*) MVIE *b s p* <CR>
8) Return the ESMA Control Complex to service by entering: RTS ESMC (*site*) MVIE *b s p* <CR>
9) Determine whether the fault still exists.

If the fault	**Go to**
exists	step 10
does not exist	step 19

10) Busy the ESMA Control Complex by entering: BUSY ESMC (*site*) MVIE *b s p* <CR>
11) Replace the processor pack (NTAX74 in position 3 or 25) (MP 1250).
12) Test the ESMA Control Complex by entering: TEST ESMC (*site*) MVIE *b s p* <CR>
13) Determine whether the fault still exists.

If the fault	**Go to**
exists	step 14
does not exist	step 18

14) Place the original processor pack back into Position 3 or 25 of the ESMA shelf, and replace the Signaling Processor pack located in position 11 or 17 (MP 1250).

15) Test the ESMA Control Complex by entering: TEST ESMC (*site*) MVIE *b s p* <CR>

16) Determine whether the fault still exists.

If the fault	Go to
exists	step 17
does not exist	step 18

17) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

18) Return the ESMA Control Complex to service by entering: RTS ESMC (*site*) MVIE *b s p* <CR>

19) This procedure is complete.

Clear a Remote Maintenance Module (RMM) fault associated with a test, RTS, or DNLD command

1) Load Overlay DED by entering: OVLY DED <CR>

2) Repeat the RMM test, return to service, or download command by entering: TEST/RTS/DNLD RMM *site* LCE *b s* <CR>

3) Determine whether the command executed successfully (printout “PASSED” for TEST, hardware status for RTS, or DED406 for DNLD).

If the command	Go to
executed successfully	step 22
did not execute successfully	step 4

4) Obtain the status of Line Concentrating Module Controller being used to communicate with the RMM by entering: STAT RMM *site* LCE *b s* <CR>

5) Determine whether both LCMCs are in-service (INS).

If both LCMCs	Go to
are in service	step 6
are not in service	step 10

6) Busy one of the LCMCs by entering: BUSY LCMC *site* LCE *b s* <CR>
Go to step 9.

7) Return the out-of-service LCMC to service by entering: RTS LCMC *site* LCE *b s* <CR>

8) Return the RMM to service by entering: RTS LCMC *site* LCE *b s* <CR>

9) Repeat the RMM test, return-to-service, or download command by entering: TEST/RTS/DNLD RMM *site* LCE *b s* <CR>

10) Determine whether the command executed successfully (printout “PASSED” for TEST, hardware status for RTS, or DED406 for DNLD).

If the command	Go to
executed successfully	step 11
did not execute successfully	step 12

11) Return the busied LCMC to service, if necessary by entering: RTS LCMC *site* LCE *b s* <CR>
Go to step 22.

12) On the RMM at the remote site (RLCM) or OPM), reseat the RMM Control (NT6X74) and Codec and Tone (NT2X59) packs.

13) Repeat the RMM test (TEST), return-to-service (RTS), or download (DNLD) command.

14) Determine whether the command executed successfully (printout “PASSED” for TEST, hardware status for RTS, or DED406 for DNLD).

If the command	Go to
executed successfully	step 11
did not execute successfully	step 15

15) Reset the packs on the RMM shelf, from left to right.

Note: *Do not reset the Multi-Output Power Converter (NT2X09) or the Common Feature Power Converter (NT2X06) packs as part of this procedure. If these packs are faulty, refer to TP 7067.*

Go to step 13.

16) Determine whether all packs on the RMM shelf (except for the power converter packs) reset.

If the packs	Go to
reset	step 17
did not reset	step 15

17) Obtain the status of each RMM pack by entering: STAT RMPK *site* LCE *b s p* <CR>

18) Replace faulty RMM packs (MP 1250).

CAUTION
To avoid damaging the Multi-Output Power Converter pack (NT2X09) or the Common Feature Power Converter pack (NT2X06), use MP 1340 to replace these packs.

19) Repeat the RMM test, return-to-service, or download command by entering: TEST / RTS / DNLD RMM *site* LCE *b s* <CR>

20) Determine whether the command executed successfully (printout "PASSED" for TEST, hardware status for RTS, or DED406 for DNLD).

If the command	Go to
executed successfully	step 11
did not execute successfully	step 21

21) Contact the next level of technical support for assistance.

22) This procedure is complete.

Clear a Remote Maintenance Module (RMM) to DMS-10 interface fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the RMM by entering: BUSY RMM *site* LCE *b s* <CR>

3) Return the RMM to service by entering: RTS RMM *site* LCE *b s* <CR>

4) Determine whether the RMM returned to service.

If the RMM	Go to
returned to service	step 28
did not return to service	step 5

5) Download the RMM Control pack (NT6X74) in the RMM by entering: DNLD RMM *site* LCE *b s* <CR>

6) Return the RMM to service by entering: RTS RMM *site* LCE *b s* <CR>

7) Determine whether the RMM returned to service.

If the RMM	Go to
returned to service	step 28
did not return to service	step 8

8) Obtain the status of the Line Concentrating Module Controller used to communicate with the RMM by entering: STAT RMM *site* LCE *b s* <CR>

9) Determine whether both LCMCs are in service.

If the LCMCs	Go to
are in service	step 12
are not in service	step 10

10) Return the out-of-service LCMC to service by entering: RTS LCMC *site* LCE *b s* <CR>

11) Return the RMM to service by entering: RTS LCMC *site* LCE *b s* <CR> Go to step 15.

12) Busy one of the LCMCs by entering: BUSY LCMC *site* LCE *b s* <CR>

13) Return that LCMC to service by entering: RTS LCMC *site* LCE *b s* <CR>

14) Return the RMM to service by entering: RTS RMM *site* LCE *b s* <CR>

15) Determine whether the RMM returned to service.

If the RMM	Go to
returned to service	step 28
did not return to service	step 16

16) Determine which DS-30A Interface pack (NT4T04) is being used to communicate with the RMM through the LCMC. Obtain the LCMC location by entering: STAT LCMC *site* LCE *b s* <CR>

Note: *The location of the active DS-30A Interface pack to be busied is indicated by the peripheral loop (PELP) that is in the active state.*

17) Abort Overlay DED and load Overlay NED by entering: **** OVLY NED <CR>

18) Busy the DS-30A Interface pack (NT4T04) used to communicate with the RMM through the LCMC by entering: BUSY D3A CE *b s p* <CR>

19) Return that DS-30A Interface pack to service by entering: RTS D3A CE *b s p* <CR>

20) Abort Overlay NED and load Overlay DED by entering: **** OVLY DED <CR>

21) Return the RMM to service by entering: RTS RMM *site* LCE *b s* <CR>

22) Determine whether the RMM returned to service.

If the RMM	Go to
returned to service	step 28
did not return to service	step 23

23) Busy the RMM by entering: BUSY RMM *site* LCE *b s* <CR>

24) Replace the RMM Control pack (NT6X74) at the remote *site* (RLCM or OPM) (MP 1250).

25) Return the RMM to service by entering: RTS RMM *site* LCE *b s* <CR>

26) Determine whether the RMM returned to service.

If the RMM	Go to
returned to service	step 28
did not return to service	step 27

27) Contact the next level of technical support for assistance.

28) This procedure is complete.

Clear Remote Maintenance Module (RMM) fault

1) Determine whether an OPM or RLCM is causing the message to display.

If the message is displaying for	Go to
an OPM	step 2
an RLCM	step 7

2) Pull and reseat the power connector to the Booster Fan Unit.

3) Determine whether the fault was corrected.

If the fault	Go to
was corrected	step 8
was not corrected	step 4

4) Pull and replace the fuse for the Battery Control Unit.

5) Determine whether the fault was corrected.

If the fault	Go to
was corrected	step 8
was not corrected	step 6

6) Perform TP 7065.
Go to step 8.

7) Contact the next level of support for assistance.

8) This procedure is complete.

Clear Remote Maintenance Module (RMM) power converter fault (NT2X06 or NT2X09)

1) Determine whether the Frame Fail LED on the Frame Supervisory Panel is lit.

If the Frame Fail LED	Go to
is lit	step 2
is not lit	step 3

2) Check the power source for the RLCM or OPM bay.

3) Reset the power converter pack by momentarily depressing the Reset button on the pack faceplate.

4) Determine whether the Converter Fail LED on the power converter pack is lit.

If the Converter Fail LED	Go to
is lit	step 5
is not lit	step 17

5) Determine whether circuit breaker 5 (CB5) at the top of the bay is tripped.

If CB5	Go to
is tripped	step 6
is not tripped	step 17

6) Switch circuit breaker 5 ON.

7) Determine whether circuit breaker 5 holds.

If CB5	Go to
holds	step 8
does not hold	step 13

8) Reset the power converter pack by momentarily depressing the Reset button on the pack faceplate.

9) Determine whether the Converter Fail LED on the power converter pack is lit.

If the Converter Fail LED	Go to
is lit	step 10
is not lit	step 17

10) Replace power converter pack (MP 1340).

CAUTION
Use MP 1340 to avoid damaging the Common Feature Power Converter (NT2X06) and the Multi-Output Power Converter (NT2X09) packs during replacement.

11) Determine whether circuit breaker 5 holds.

If CB5	Go to
holds	step 17
does not hold	step 12

12) Contact the next level of technical support for assistance.

13) Replace faulty power converter pack (MP 1340).

CAUTION
Use MP 1340 to avoid damaging the Common Feature Power Converter (NT2X06) and the Multi-Output Power Converter (NT2X09) packs during replacement.

14) Switch circuit breaker 5 ON.

15) Determine whether circuit breaker 5 holds.

If CB5	Go to
holds	step 17
does not hold	step 16

16) Check for wiring fault between the breaker and the power converter it feeds.
Go to step 19.

17) Determine whether any output messages relating to power failure display.

If power failure messages	**Go to**
display	step 18
do not display	step 19

18) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

19) This procedure is complete.

Clear ac power fault in an OPM or OPAC

1) Determine if commercial ac power is being supplied to the OPM or OPAC by using a multimeter to check the power at the commercial breaker box inside the OPM or inside the ac power pedestal on the OPAC.

2) Contact the power company to determine if power is being supplied to the OPM or OPAC.

3) Determine whether power is being supplied to the OPM or OPAC.

If the power	Go to
is being supplied	step 4
is not being supplied	step 7

4) Determine whether the dc power supplied to the OPM or OPAC is within the limits provided in the Table in this procedure entitled, “OPM/OPAC battery string low voltage limit guidelines”.

If the dc power	Go to
is within the limits	step 5
is not within the limits	step 8

5) Determine which Overlay is running by entering: OVLY <CR>

6) Determine whether Overlay RBCD has been loaded by the switch.

If Overlay RBCD	Go to
has been loaded	step 11
has not been loaded	step 9

7) Request that the power company restore power.

8) Use the probable fault column of in the Table in this procedure entitled, “OPM/OPAC battery string low voltage limit guidelines” to correct the dc power fault.

9) Abort the current overlay and load overlay RBCD by entering: OVLY RBCD IMED <CR>

   Note: *If the MOAS feature is configured, the maintenance overlay (MTC) must be aborted to allow RBCD to be loaded.*

10) Determine whether the message, RMM375 displays.

If RMM375	Go to
displays	step 44
does not display	step 11

11) Determine whether the main breaker is tripped at the OPM or OPAC.

If the main breaker at the OPM or OPAC	Go to
is tripped	step 12
is not tripped	step 15

12) Determine whether the breaker can be reset.

If the breaker	Go to
can be reset	step 13
cannot be reset	step 14

13) Reset the breaker.

14) Determine whether the message, RMM375 displays.

If RMM375	Go to
displays	step 44
does not display	step 15

15) Determine whether the rectifier breakers are tripped.

If the rectifier breakers	Go to
are tripped	step 16
are not tripped	step 19

16) Determine whether the breakers can be reset.

If the breakers	Go to
can be reset	step 17
cannot be reset	step 18

17) Reset the breakers.

18) Determine whether the message, RMM375 displays.

If RMM375	Go to
displays	step 44
does not display	step 19

Note: *Craftspersons able to contact the Central Office can periodically check for the presence of alarm messages and should follow this procedure as written. Craftspersons unable to easily contact the Central Office should assume there is no printout on the terminal. This eliminates trips between the OPM/OPAC and the Central Office to repeatedly check on the status of alarm messages.*

19) Determine whether the ac and/or dc breakers located on the rectifier are tripped.

If the breakers	**Go to**
are tripped	step 20
are not tripped	step 23

20) Determine whether the breakers can be reset.

If the breakers	**Go to**
can be reset	step 21
cannot be reset	step 22

21) Reset the breakers.

22) Determine whether the message, RMM375 displays.

If RMM375	**Go to**
displays	step 44
does not display	step 23

23) Determine whether the rectifier fuses are blown.

If the fuses	**Go to**
are blown	step 24
are not blown	step 25

24) Replace the fuses.

25) Determine whether the message, RMM375 displays.

If RMM375	**Go to**
displays	step 44
does not display	step 26

26) Reseat the Battery Charge Controller (BCC) packs (NT8X02).

27) Determine whether the message, RMM375 displays.

If RMM375	**Go to**
displays	step 44
does not display	step 28

28) Replace one of the BCC packs (MP 1250).

29) Determine whether the message, RMM375 displays.

If RMM375	Go to
displays	step 44
does not display	step 30

30) Return the first BCC pack to its original position and replace the second BCC pack (MP 1250).

31) Determine whether the message, RMM375 displays.

If RMM375	Go to
displays	step 44
does not display	step 32

32) Return the second BCC to its original position (MP 1250).

33) Reset any tripped breakers in the following order: main breaker, rectifier breaker, and ac and/or dc breakers.

34) Determine whether the message, RMM375 displays.

If RMM375	Go to
displays	step 44
does not display	step 35

35) Reseat the Miscellaneous Scan Detection pack (NT0X10) in position 8 on the Remote Maintenance Module shelf.

36) Determine whether the message, RMM375 displays.

If RMM375	Go to
displays	step 44
does not display	step 37

37) Replace the Miscellaneous Scan Detection pack (NT0X10) in position 8 on the Remote Maintenance Module shelf (MP 1250).

38) Determine whether the message, RMM375 displays.

If RMM375	Go to
displays	step 44
does not display	step 39

39) Reset any tripped breakers in the following order: main breaker, rectifier breaker, and ac and/or dc breakers.

40) Determine whether the message, RMM375 displays.

If RMM375	Go to
displays	step 44
does not display	step 41

41) Replace the rectifier(s).

Note: *For information on replacing the rectifiers in the OPM, refer to NTPs J2427A-1 Switching Mode Rectifier -48V/25A - Descriptions, Maintenance, and Ordering Information (169-2011-200) and J2427B-1 Switching Mode Rectifier for Remotes -48V/25A - Description, Installation, Maintenance, and Ordering Information (169-2021-200). For a procedure used to replace the rectifiers in the OPAC, refer to NTP 297-2702-520, OPAC Maintenance Guide.*

42) Determine whether the message, RMM375 displays.

If RMM375	Go to
displays	step 44
does not display	step 43

43) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

44) This procedure is complete.

The following table provides low voltage limits that can be used to detect faults in the OPM/OPAC battery backup system hardware. The listed fault probably exists when a battery string is at the indicated location, under the indicated state, and the measured voltage at the string location is less than the low voltage limit. The voltage may be measured at the OPM/OPAC using a voltmeter or at a terminal by entering the Overlay RBCD measure (MEAS) command. (Refer to the NTP entitled *Maintenance Diagnostic Input Manual* (297-3601-506) for information on the complete format and use of the MEAS command.

OPM/OPAC battery string low voltage guidelines			
String location	**Battery backup system state**	**Low voltage limit**	**Probable fault**
Load bus	Normal battery rotation mode (no recent battery string discharge)	-51 V	Faulty battery string or rectifier
Load bus	Battery Charger Controller packs (NT8X02) are not operating (for example, ac power failure has occurred)	-47 V	Faulty battery string or rectifier
Charge bus	Battery string pair has been on the charge bus for six or more hours	-56 V	Faulty battery string or rectifier
Open circuit condition	Battery string pair moved from the load bus to the open condition as part of the normal battery rotation mode and has been on the load bus for at least one hour. Batteries have been completely charged.	-50.5 V	Battery strings are at least half discharged

Clear SCM-10S or SCM-10U hardware fault

1) Determine the procedure to follow.

If the circuit pack is	Perform
NT2X70	MP 1335
NT6X41	TP 7045
NT6X42	TP 7043
NT6X43	TP 7044
NT6X44	TP 7046
NT6X45	TP 7041
NT6X46	TP 7042
NT6X47	TP 7040
NT6X69	TP 7044
NT6X80	TP 7019
NT6X85	TP 7029
NT6X86	TP 7047
NT8X18	TP 7034

Clear a temperature or door alarm in an OPM or OPAC

1) Determine whether the alarm message indicates a door alarm (FDR or SDR).

If the alarm message	Go to
indicates door alarm	step 2
does not indicate a door alarm	step 3

2) Determine whether the alarm is caused by a scheduled or authorized entry into the OPM or OPAC.

If the alarm	Go to
is caused by a scheduled or authorized entry	step 51
is not caused by a scheduled or authorized entry	step 3

3) Check the Miscellaneous Scan Detection pack (NT0X10) on the Remote Maintenance Module shelf in the OPM/OPAC. (TP 7076)

4) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 5
does not display	step 51

Note: *Craftspersons able to contact the Central Office can periodically check for the presence of alarm messages and should follow this procedure as written. Craftspersons unable to easily contact the Central Office should assume the alarm message is still present . This eliminates trips between the OPM/OPAC and the Central Office to repeatedly check on the status of the alarm messages.*

5) Determine whether the alarm message indicates a door alarm (FDR or SDR) or a temperature alarm (HTMP or LTMP).

If the alarm message	Go to
indicates a door alarm	step 6
indicates a temperature alarm	step 47

6) Determine whether the message is an HTMP or an LTMP alarm.

If the message is	Go to
an HTMP alarm	step 7
an LTMP alarm	step 30

7) Determine whether the unit being serviced is an OPM or an OPAC.

If the unit is	Go to
an OPM	step 8
an OPAC	step 13

8) Determine whether the Environmental Control Unit (ECU) dampers are closed.

If ECU dampers	Go to
are closed	step 9
are not closed	step 13

9) Heat both ECU sensors with a heat gun.

10) Determine whether the dampers open.

If the dampers	Go to
open	step 13
do not open	step 11

11) Replace the ECU.

12) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 13
does not display	step 51

13) Determine whether the OPM/OPAC filters are blocked.

If the OPM/OPAC filters	Go to
are blocked	step 14
are not blocked	step 16

14) Clean or replace the filters.

15) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 16
does not display	step 51

16) Determine whether the OPM/OPAC fans are running.

If the OPM/OPAC fans	Go to
are running	step 19
are not running	step 17

17) Check or replace the fans.

18) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 19
does not display	step 51

19) Determine whether the heaters run continuously.

If the heaters	Go to
run continuously	step 20
do not run continuously	step 30

20) Determine whether the unit being serviced is an OPM or an OPAC.

If the unit being serviced	Go to
is an OPM	step 22
is an OPAC	step 19

21) Check the sensors in the OPAC.
Go to step 23.

22) Check the sensors in the ECU.

23) Determine whether either sensor is defective.

If a sensor	Go to
is defective	step 24
is not defective	step 30

24) Determine whether the unit being serviced an OPM or OPAC.

If the unit is	Go to
an OPM	step 26
an OPAC	step 25

25) Replace the sensors.
Go to step 29.

26) Spray coolant onto both ECU sensors to close the dampers. Carefully heat the sensors with a heat gun to open the dampers.

27) Determine whether the dampers operate correctly.

If the dampers	Go to
operate correctly	step 30
do not operate correctly	step 28

28) Replace the ECU.

29) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 50
does not display	step 51

30) Determine whether the OPM/OPAC doors are firmly shut.

If the OPM/OPAC doors	Go to
are firmly shut	step 33
are not firmly shut	step 31

31) Check the door hinges and handle. Close and lock the doors.

32) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 33
does not display	step 51

33) Determine whether the unit being serviced an OPM or OPAC.

If the unit is	Go to
an OPM	step 35
an OPAC	step 34

34) Check the sensors in the OPAC.
Go to step 36.

35) Check the sensors in the ECU.

36) Determine whether either sensor is defective.

If a sensor	Go to
is defective	step 37
is not defective	step 44

37) Determine whether the unit being serviced an OPM or OPAC.

If the unit is	Go to
an OPM	step 39
an OPAC	step 38

38) Replace the sensors.
Go to step 44.

39) Carefully heat the sensors with a heat gun to open the dampers. Spray coolant onto both ECU sensors to close the dampers.

40) Determine whether the dampers operate correctly.

If the dampers	Go to
operate correctly	step 42
do not operate correctly	step 41

41) Replace the ECU.
Go to step 50.

42) Spray additional coolant onto both ECU sensors.

43) Determine whether the heaters are running.

If the heaters	Go to
are running	step 46
are not running	step 44

44) Replace the defective heaters.

45) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 46
does not display	step 51

46) Determine whether the OPM/OPAC doors are damaged.

If the OPM/OPAC doors	Go to
are damaged	step 48
are not damaged	step 47

47) Close and lock the OPM/OPAC doors.
Go to step 49.

48) Repair the OPM/OPAC doors.

49) Determine whether the alarm message still displays.

If the alarm message	**Go to**
displays	step 50
does not display	step 51

50) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

51) This procedure is complete.

Clear a Battery Charge Controller (BCC) alarm in an OPM

1) Check the operation of the Miscellaneous Scan Detection pack (NT0X10) on the Remote Maintenance Module shelf of the suspected faulty OPM. (TP 7076)

2) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 3
does not display	step 10

3) At the OPM, physically isolate each battery string and measure each with a voltmeter using the TB strip on the back wall of the OPM. Refer to TP 7068 for a guideline.

4) Turn down and turn up the F/P switch.

5) Check circuit breakers 2 and 6 (CB2 and CB6) on the Frame Supervisory Panel.

6) Determine whether the BCC fuse is blown.

If the BCC fuse	Go to
is blown	step 7
is not blown	step 9

7) Replace the BCC fuse.

8) Determine whether the alarm message still displays?

If the message	Go to
displays	step 9
does not display	step 10

Note: *Operating company personnel able to contact the Central Office can periodically check for the presence of alarm messages and should follow this procedure as written. Craftspersons unable to easily contact the Central Office should assume the alarm message is still present. This eliminates trips between the OPM and the Central Office to repeatedly check on the status of the alarm message.*

9) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

10) This procedure is complete.

Clear a Frame Supervisory Panel (FSP) alarm in an OPM or Modular Supervisory Panel (MSP) alarm in an OPAC

1) Check the Miscellaneous Scan Detection pack (NT0X10) on the Remote Maintenance Module. (TP 7076)

2) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 3
does not display	step 12

3) Determine whether any other ALM02X alarm messages display.

If other ALM02X alarm messages	Go to
display	step 4
do not display	step 6

4) Refer to the Trouble Procedures associated with those alarms.

5) After performing any trouble procedures pertinent to the ALM02X alarm messages that displayed, determine whether any ALM02X alarm messages display.

If other ALM02X alarm messages	Go to
display	step 6
do not display	step 12

6) Determine whether the OPM or OPAC fans are operating correctly.

If the OPM or OPAC fans are operating	Go to
correctly	step 8
incorrectly	step 7

7) Replace the defective fans.
Go to step 12.

8) Determine whether any fuses are blown/breakers are tripped.

If	Go to
fuses are blown/breakers are tripped	step 9
no fuses are blown/breakers are tripped	step 10

9) Replace blown fuses and reset tripped breakers.

10) Determine whether any ALM02X alarm messages still display.

If ALM02X alarm messages	Go to
display	step 11
do not display	step 12

Note: *Craftspersons able to contact the Central Office can periodically check for the presence of alarm messages and should follow this procedure as written. Craftspersons unable to easily contact the Central Office should follow this procedure as though the alarm message is always present. This eliminates unnecessary trips between the OPM or OPAC and the Central Office to repeatedly check on the status of the maintenance terminal.*

11) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

12) This procedure is complete.

Clear a rectifier limit alarm in an OPM

Note: *The ALM02X RCL0 or RCL1 message indicates the voltage for Rectifier 0 or 1 reached the current limit. This condition occurs when excessive current load is placed on the rectifier.*

1) Check the Miscellaneous Scan Detection pack (NT0X10) on the Remote Maintenance Module shelf. (TP 7076)

2) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 3
does not display	step 15

3) Load Overlay RBCD by entering: OVLY RBCD <CR>

4) Obtain the status (location) of each battery string pair in the OPM by entering: STAT BCU *site* LCE *b* <CR>

5) Place an equipped battery string pair (identified by the variable pr) that is on the charge or load bus in the open circuit condition by entering: BSPR OPEN *site* LCE *b pr* <CR>

6) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 3
does not display	step 12

7) Determine whether the battery string pair identified in step 5 was originally on the charge bus.

If the battery string pair	Go to
was originally on the charge bus	step 9
was not originally on the charge bus	step 8

8) Place that battery string pair back on the load bus by entering: BSPR LOAD *site* LCE *b pr* <CR>
Go to step 10.

9) Place that battery string pair back on the charge bus by entering: BSPR CHRG *site* LCE *b pr* <CR>

10) Determine whether each equipped battery string pair has been placed in the open circuit condition.

If all battery string pairs	**Go to**
have been placed in the open circuit condition	step 11
have not been placed in the open circuit condition	step 5

11) Determine whether the alarm message still displays.

If the alarm message	**Go to**
displays	TP 7068
does not display	step 15

12) Obtain the voltages of each battery string in the pair (specified as pr) by entering: MEAS BSPR *site* LCE *b pr* <CR>

13) Refer to Table 7068-A in TP 7068 for low voltage measurement guidelines. Determine whether any battery strings are faulty.

If any battery string	**Go to**
is faulty	step 14
is not faulty	step 15

14) Replace any faulty battery strings.
Go to step 8.

15) This procedure is complete.

Clear a fan alarm in an OPM

1) Check the Miscellaneous Scan Detection pack (NT0X10) on the Remote Maintenance Module shelf. (TP 7076)

2) Determine whether the alarm message still displays.

If the alarm message	Go to
displays	step 3
does not display	step 12

3) Determine whether a fan is blocked at the OPM.

If a fan	Go to
is blocked	step 4
is not blocked	step 8

4) Clear the fan vent and blades.

5) Determine whether the fan operates correctly.

If the fan	Go to
operates correctly	step 7
does not operate correctly	step 6

6) Replace the fan.
Go to step 8.

7) Determine whether the alarm message still displays.

Note: *Craftspersons able to contact the Central Office can periodically check for the presence of alarm messages and should follow this procedure as written. Craftspersons unable to easily contact the Central Office should assume the alarm message is still present. This eliminates trips between the OPM and the Central Office to repeatedly check on the status of the alarm messages.*

If the alarm message	Go to
displays	step 8
does not display	step 12

8) Determine whether the Environmental Control Unit (ECU) circuit breaker is tripped.

If the ECU circuit breaker	**Go to**
is tripped	step 9
is not tripped	step 10

9) Examine the ECU, determine the cause of the short circuit, and correct it.

10) Determine whether the alarm message still displays.

If the alarm message	**Go to**
displays	step 11
does not display	step 12

11) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

12) This procedure is complete.

Clear Digital 4-Channel Digitone Receiver (NT2X48BB) faults

1) Load SED overlay by entering: OVLY SED <CR>

Note: *Make sure cables (diloop cables, peripheral loop cables, etc.) are firmly connected to the device under test.*

2) Test the remote Digitone receiver unit by entering: TEST RDTR *site* LCE *b s p u* <CR>

Note: *This test may take up to 5 minutes to perform if no fault is found. If a fault is found, the test may take up to 15 minutes.*

3) Determine whether the Digitone receiver unit passed the test.

If the Digitone receiver unit	Go to
passed the test	step 4
did not pass the test	step 5

4) Abort overlay and log out by entering: LOGO <CR>
Go to step 14.

5) Determine whether a pack fault is indicated by error messages displayed.

If a pack fault	Go to
is indicated	step 6
is not indicated	step 12

6) Obtain the status of the remote Digitone receiver pack by entering: STAT RDPK *site* LCE *b s p* <CR>

7) Determine whether the pack is man-made-busy (MMB).

If the pack	Go to
is MMB	step 9
is not MMB	step 8

8) MMB the remote Digitone receiver pack by entering: BUSY RDPK *site* LCE *b s p* <CR>

9) Replace the remote Digitone receiver pack (MP 1250).

10) Test the remote Digitone receiver pack by entering: TEST RDPK *site* LCE *b s p* <CR>

11) Determine whether the pack passed the test.

If the pack	Go to
passed the test	step 13
did not pass the test	step 12

12) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

13) Return the remote Digitone receiver pack to service by entering: RTS RDPK *site* LCE *b s p* <CR>

14) This procedure is complete.

Move SCM-10S or SCM-10U controller from data transfer (DXFR) mode

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the SCM-10 Control Complex that is in DXFR mode by entering: BUSY SCSC SCE *b s* <CR> or BUSY SCUC (*site*) SCE *b s* <CR>

3) Reseat all packs on the associated NT6X0201 Controller Array shelf except the NT6X85 DS-1 Interface pack and the NT2X70 Power Converter pack.

4) Download the SCM-10 Control Complex by entering: DNLD SCSC SCE *b s* <CR> or DNLD SCUC (*site*) SCE *b s* <CR>

5) Return the SCM-10 Control Complex to service by entering: RTS SCSC SCE *b s* <CR> or RTS SCUC (*site*) SCE *b s* <CR>

6) Determine whether the output message, SCS814 or SCU814 displays, indicating that the controller is out of data transfer mode.

If SCS814 or SCU814	Go to
displays	step 8
does not display	step 7

7) Contact the next level of technical support for assistance.

8) This procedure is complete.

Clear Outside Plant Subscriber Module (OPSM) faults

1) Determine whether the status LED is lit.

If the status LED	Go to
is lit	step 13
is not lit	step 2

2) Determine whether any fuse has blown in the Power and Maintenance Module (PMM).

If a fuse	Go to
has blown	step 3
has not blown	step 6

3) Determine whether the blown fuse is related to the OPSM Cabinet Controller pack.

If the blown fuse	Go to
is related to the the OPSM Cabinet Controller pack	step 4
is not related to the OPSM Cabinet Controller pack	step 8

4) Replace the fuse(s).

5) Determine whether the new fuse holds.

If the new fuse	Go to
holds	RP 0530
does not hold	MP 1341

6) Determine whether any breakers have tripped to the OFF position.

If breakers	Go to
have tripped to the OFF position	step 7
have not tripped to the OFF position	step 12

7) Determine whether the breaker is related to the OPSM Cabinet Controller pack.

If the breaker	Go to
is related to the OPSM Cabinet Controller pack	step 10
is not related to the OPSM Cabinet Controller pack	step 8

8) Determine whether the breaker or the blown fuse is related to any OPSM Cabinet Controller display code (see the OPSM Cabinet Controller display codes cross-reference table located at the end of this procedure).

If the breaker or blown fuse	Go to
is related to any OPSM Cabinet Controller display code	step 13
is not related to any OPSM Cabinet Controller display code	step 9

9) Take corrective action according to TP related to the faulty hardware. Go to step 16.

10) Restore breaker to the “ON” position.

11) Determine whether the breaker holds.

If the breaker	Go to
holds	step 12
does not hold	MP 1341

12) Determine whether the STATUS LED is lit.

If the STATUS LED	Go to
is lit	step 13
is not lit	RP 0530

13) Obtain correct TP number (from the OPSM Cabinet Controller display codes cross-reference table located at the end of this procedure) required to clear fault, according to code numbers displayed and recorded while performing RP 0530.

Note: *Codes “H” and “J” provide a warning that the OPSM is operating outside an acceptable temperature range. The implication is that the external temperature is either above (“H”) or below (“J”) normal limits. Code “H” gives an early warning of a total shut-down.*

14) Perform corrective action indicated.

15) Determine whether any faults remain.

If any faults	Go to
remain	step 13
do not remain	step 16

16) This procedure is complete.

OPSM Cabinet Controller display codes cross-reference		
Code	**Trouble Procedure**	**Equipment**
0	-	(All OK)
1	-	Right circ. fans
2	7079	Cntr. circ. fan
3	7079	Left circ. fan
4	7080	Exhaust fans
5	-	Right h.e. fans
6	-	Left h.e. fans
7	7081	A/D conv.
8	7082	Equip. heater
9	7083	Batt. heater
A	7084	Damper
B	7085	Lower sensor
C	7085	Upper sensor
D	7085	Batt. sensor
E	7086	Bat. string #1
F	7086	Bat. string #2
G	7086	Bat. string #3
H	-	-
J	-	-
-	-	End of tests

Clear Outside Plant Subscriber Module (OPSM) circulation fan alarm fault

1) Determine whether any fuse (M1-M3) is blown.

If a fuse	Go to
is blown	step 2
is not blown	step 6

2) Replace the fuse.

3) Determine whether the fuse holds.

If the fuse	Go to
holds	step 4
does not hold	step 7

4) Wait 2 minutes, then check the OPSM status (RP 0534).

5) Determine whether the LED display still indicates a circulation fan fault.

If a circulation fan fault	Go to
is indicated	step 7
is not indicated	step 8

6) Clean the fan filter (RP 0503).
Go to step 9.

7) Remove fuse in Power and Maintenance Module (PMM) for faulty fan unit. (See the PMM fuse allocation table located at the end of this procedure).
Go to step 9.

8) Determine whether any faults remain.

If faults	Go to
remain	TP 7078
do not remain	step 25

9) Remove the two screws holding fan assembly at rear of Power and Cooling Unit (PCU).

10) Remove snap-in connector from front of fan assembly.

11) Withdraw fan assembly and remove ground wire.

12) Manually operate fan vane to ensure full, unimpeded operation.

13) Replace snap-in connector at front of fan assembly, leaving fan assembly external to PCU.

Note: *Fan assembly must be held level.*

14) Replace appropriate fuse in PMM.

15) Determine whether the fuse holds.

If the fuse	Go to
holds	step 16
does not hold	step 21

16) Perform RP 0530.

17) Determine whether the fan failure fault clears.

If the fan failure fault	Go to
clears	step 18
does not clear	step 21

18) Insert fan assembly and secure with 2 screws.

Note: *Ensure that the front edge of fan assembly is located under ridge inside the PCU.*

19) Replace snap-in connector.

20) Perform RP 0530.
Go to step 25.

21) Replace fan assembly with new assembly and reconnect ground wire.

22) Replace appropriate fuse in PMM.

23) Determine whether the fuse holds.

If the fuse	Go to
holds	RP 0530
does not hold	step 24

24) Contact the next level of technical support for assistance.

25) This procedure is complete.

PMM fuse allocations	
Fuse #	**Assignment**
M1	Left circulation fan
M2	Center circulation fan
M3	Blank fuse

Clear Outside Plant Subscriber Module (OPSM) exhaust fan alarm fault

1) Determine whether the M4 fuse is blown.

If the fuse	Go to
is blown	step 2
is not blown	step 4

2) Replace the M4 fuse.
3) Determine whether the M4 fuse holds.

If the fuse	Go to
holds	RP 0530
does not hold	step 4

4) Remove fuse M4 from PMM.
5) Disconnect lead-out wires from exhaust fan.
6) Remove exhaust fan unit.
7) Replace exhaust fan unit with new unit.
8) Reconnect lead-out wires to exhaust fan.
9) Insert M4 fuse in PMM.
10) Determine whether the M4 fuse holds.

If the fuse	Go to
holds	RP 0530
does not hold	step 11

11) Contact the next level of technical support for assistance.
12) This procedure is complete.

Clear Outside Plant Subscriber Module (OPSM) A/D fault

1) Determine whether the +15 V fuse (#10) for the NT9Y00 pack has blown.

If the +15 V fuse	Go to
has blown	step 2
hasn't blown	step 7

2) Replace blown fuse (#10) in PMM.

3) Determine whether the replacement fuse has blown.

If the replacement fuse	Go to
has blown	step 4
hasn't blown	step 9

4) Replace the OPSM Cabinet Controller pack (NT9Y00) (See MP 1341).

5) Replace the +15 V fuse (#10).

6) Determine whether the new fuse holds.

If the new fuse	Go to
holds	RP 0530
does not hold	step 11

7) Determine whether the RSLM is in service.

If the RSLM	Go to
is in service	step 8
is not in service	step 10

8) Replace the OPSM Cabinet Controller pack (NT9Y00) (See MP 1341).
Go to RP 0530.

9) Wait 40 seconds.
Go to RP 0530.

10) Clear RSLM fault.
Go to TP 7101.

11) Contact the next level of technical support for assistance.

12) This procedure is complete.

Clear Outside Plant Subscriber Module (OPSM) equipment heater fault

1) Determine whether ac power is present in the unit by checking the main power indicator lamp.

If ac power	Go to
is present	step 3
is not present	step 2

2) Restore ac power to OPSM.
Go to step 22.

3) Determine whether the PCU heater breaker (CB5) is in the OFF position.

If the CB5 breaker is	Go to
in the OFF position	step 4
is in the ON position	step 7

4) Operate CB5 breaker on PMM to the ON position.

5) Determine whether the CB5 breaker has tripped to the OFF position.

If the CB5 breaker	Go to
tripped to the OFF position	step 14
did not trip to the OFF position	step 6

6) Test the OPSM by performing RP 0530.
Go to step 22.

7) Access the heater by withdrawing line drawers to the forward position.

8) Check the physical alignment of the heater clip and diode located on sensor. The diode mounted to the underside of the temperature sensor must rest in the V-shaped end of the insulated clip. Re-align if necessary.

Note: *The heater is located above the bottom shelf (Power and Cooling Unit). The temperature sensor is located on top of the heater.*

9) Test the OPSM by performing RP 0530.

Note: *During the heater portion of the self test, the craftsperson should notice an increase in temperature due to the heater.*

10) Determine whether any fault exists.

If a fault	Go to
exists	step 11
does not exist	step 22

11) Replace temperature sensor.

12) Test the OPSM by performing RP 0530.

Note: *During the heater portion of the self test, the craftsperson should notice an increase in temperature due to the heater.*

13) Determine whether any fault exists.

If a fault	Go to
exists	step 14
does not exist	step 22

14) Switch OFF the circuit breaker CB5 (HTR) in the Power and Cooling Unit (PCU).

15) Access heater by withdrawing line drawers to the forward position and remove wires from the heater.

16) Unscrew base of heater and remove.

17) Replace heater element.

18) Reconnect wires.

19) Push line drawers back into place.

20) Operate circuit breaker CB5 (HTR) in the PCU to the ON position.

21) Test the OPSM by performing RP 0530.

22) This procedure is complete.

Clear Outside Plant Subscriber Module (OPSM) battery heater fault

1) Determine whether main power indicator lamp is ON, indicating ac is present.

If ac	Go to
is present	step 3
is not present	step 2

2) Restore power to OPSM.
Go to step 22.

3) Determine whether the PCU heater breaker (CB5) is on.

If CB5	Go to
is ON	step 6
is OFF	step 4

4) Operate CB5 breaker on PMM to “ON” position.

5) Determine whether the PCU heater breaker (CB5) trips to the OFF position.

If CB5	Go to
trips to the OFF position	step 11
does not trip to the OFF position	step 21

6) Visually inspect the temperature sensor mounted to the heater in the MDF compartment. Make sure the two-wire connector is snug.

7) Replace the temperature sensor mounted on the battery heater.

8) Proceed to RP 0530.

Note: *During the heater portion of the self test, the craftsperson should notice an increase in temperature due to the heater.*

9) Determine whether the PCU heater failure still exists.

If PCU heater failure	Go to
exists	step 10
does not exist	step 22

10) Replace the temperature sensor with the original.

11) Switch off circuit breaker CB5 (“HTR”) in the PCU.

12) Isolate all battery strings by switching off PMM breakers “BAT-1,” “BAT-2" and “BAT-3.”

13) Disconnect and remove all batteries from all battery shelves.

14) Remove all battery shelves to expose heaters.

15) At rear of battery compartment, remove panel covering heaters.

16) Disconnect heater wires and remove heater elements.

17) Replace with new heater elements.

18) Reconnect wires and replace covering panel.

19) Replace battery trays and batteries.

20) Reconnect batteries and operate breakers “BAT-1,” “BAT-2" and “BAT-3" on PMM to “ON” position.

21) Perform RP 0530.

22) This procedure is complete.

Clear Outside Plant Subscriber Module (OPSM) damper fault

1) Determine whether M5 fuse on the PMM has blown.

If the fuse	Go to
has blown	step 2
has not blown	step 4

2) Replace the fuse.

3) Determine whether M5 fuse on the PMM has blown.

If the fuse	Go to
has blown	step 4
has not blown	RP 0530

4) Remove the M5 fuse from the PMM.

5) Remove wires from damper motor.

6) Carefully dismantle the damper motor mechanism.

7) Install the replacement damper motor.

8) Reconnect wires and replace M5 fuse on the PMM.

9) Determine whether the new fuse holds.

If the fuse	Go to
holds	RP 0530
does not hold	step 10

10) Contact the next level of technical support for assistance.

11) This procedure is complete.

Clear Outside Plant Subscriber Module (OPSM) temperature sensor fault

1) Determine whether the display panel displays “b.”

If display panel	Go to
displays b	step 2
does not display b	step 12

2) Remove fuses M1 and M2 from PMM. (Stops fans in PCU.)

3) Remove snap-in connector from left (located on right) and center fan trays.

4) Remove left and center tray assembly by removing the two retaining screws.

5) Remove ground wire from each fan tray assembly.

Note: *The lower temperature sensor is located inside the Power and Cooling Module (PCU), under the heater assembly. The fan tray assemblies must be removed for access.*

6) Withdraw connector from LOWER temperature sensor.

7) Remove temperature sensor and replace with new sensor.

8) Push on connector for temperature sensor.

9) Replace fuses M1, M2, and M3 in PMM.

10) Insert line drawers.

11) Perform RP 0530.
Go to step 26.

12) Determine whether the display panel displays “C.”

If display panel	Go to
displays C	step 13
does not display C	step 17

13) Withdraw connector from temperature sensor located at the top of the cabinet above the rear door.

14) Remove temperature sensor and replace with new sensor.

15) Push on connector for temperature sensor.

16) Perform RP 0530.
Go to step 26.

17) Operate breaker “BAT-3" on the PMM to the OFF position.

18) Disconnect leads of batteries in string #3.

19) Remove batteries and battery tray in string #3

Note: *Extreme caution is to used when physically removing batteries from the tray. The raised edge (along the front of tray) should have an insulating strip. If not insulated, be sure to add a strip of electrical tape to avoid shorting battery contacts against the raised edge of tray upon removal and insertion.*

20) Withdraw connector from temperature sensor.

Note: *The battery compartment has two temperature sensors. One is mounted to the heater assembly and only senses a temperature rise during the heater portion of the self test. This sensor should not be removed. The other temperature sensor senses the ambient temperature inside the battery compartment and is mounted to the underside of the middle battery string tray. This sensor should be replaced if the cabinet controller displays “d”.*

21) Remove temperature sensor and replace with new sensor.

22) Replace batteries and battery tray in string #3.

23) Reconnect battery leads.

24) Operate breaker “BAT-3" on the PMM to the ON position.

25) Perform RP 0530.

26) This procedure is complete.

Clear Outside Plant Subscriber Module (OPSM) battery string failure

1) Determine whether any battery string breaker is tripped to the OFF position.

If any battery string breaker	Go to
is tripped to the OFF position	step 3
is not tripped to the OFF position	step 2

Note: *If there has been an extended commercial AC outage (longer than 1 hour) within the last 24 hours, turn up any tripped breaker and delay this test procedure for another 24 hours.*

2) After referring to the table below, operate appropriate breaker in PMM to OFF position.

String	Breaker
1 (Code E)	BAT-1
2 (Code F)	BAT-2
3 (Code G)	BAT-3

3) Reset the breaker to the ON position.

4) Determine whether the breaker holds.

If the breaker	Go to
holds	RP 0530
does not hold	step 5

5) Disconnect leads of batteries in appropriate string.

6) Measure each battery in the suspected bad string with a Midtronics 2600 Battery Tester, or comparable meter capable of measuring battery capacity (internal impedance).

7) Determine whether any battery measures 80% or less capacity.

If a battery	Go to
measures 80% or less capacity	step 8
does not measure 80% or less capacity	step 11

8) Replace those batteries.

9) Determine whether the remaining batteries measure at least 90% capacity.

If the remaining batteries	Go to
measure at least 90% capacity	step 11
do not measure at least 90% capacity	step 10

10) Replace the entire battery string.

11) Reconnect battery leads.

12) After referring to the table below, operate appropriate breaker in PMM to ON position.

String	Breaker
1 (Code E)	BAT-1
2 (Code F)	BAT-2
3 (Code G)	BAT-3

13) Determine whether the breaker holds.

If the breaker	Go to
holds	RP 0530
does not hold	step 14

14) Contact the next level of technical support for assistance.

Clear an Outside Plant Module (OPM) fuse alarm

Note: *The following procedure is to be used when an ALM021/ALM022 output message indicates a failure in battery charge controllers 0 or 1 (source = BCF0 or BCF1). This failure can be caused by marginal, old, or non-standard batteries equipped in the battery string and can occur when commercial ac is restored after a lengthy power outage. The following procedure entails replacing the fuse, placing a safe charge into the batteries, and then reconnecting the batteries to the LOAD bus.*

1) Load Overlay RBCD by entering OVLY RBCD <CR> and enter the BSPR command to move the battery string pair, or pairs, associated with the blown fuse(s) to the OPEN bus.
2) Replace the 10-A fuse(s) in the NT8X02, Battery Charge Controller pack.

   Note: *Overlay RBCD should be loaded manually before this step is performed. Otherwise, when the fuse alarm clears the overlay will load automatically and move all battery string pairs back to the LOAD bus.*

3) Move the battery string pair from the OPEN bus to the CHRG bus. Leave the battery string pair there for a minimum of 7 hours up to a maximum of 24 hours.
4) If the 10-amp fuse blows again, turn off one of the rectifiers.
5) Repeat steps 2 and 3. If, after performing step 3, the fuse blows again, then the battery string associated with the fuse must be replaced.
6) Move the battery string pair to the LOAD bus from the CHRG bus. If one of the rectifiers had been turned off, it can now be turned on.
7) This procedure is complete.

Clear ESMA fault

1) Load Overlay DED by entering: OVLY DED <CR>
2) Busy the ESMA Control Complex by entering: BUSY ESMC (*site*) MVIE *b s p* <CR>
3) Replace the faulty pack identified by the fault message.
4) Test the ESMA Control Complex by entering: TEST ESMC (*site*) MVIE *b s p* <CR>.
5) Determine whether the fault still exists.

If the fault	Go to
exists	step 6
does not exist	step 7

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.
7) Return the ESMA Control Complex to service by entering: RTS ESMC (*site*) MVIE *b s p* <CR>
8) This procedure is complete.

Clear ESMA fault

1) Load Overlay DED by entering: OVLY DED <CR>
2) Busy the ESMA Control Complex by entering: BUSY ESMC (*site*) MVIE *b s p* <CR>
3) Reseat the indicated processors (NTAX74 in positions 3 and 25).
4) Verify that the IOI drive has downloaded information to the ESMA Control Complex.
5) Test the ESMA Control Complex by entering: TEST ESMC (*site*) MVIE *b s p* <CR>.
6) Determine whether the fault still exists.

If the fault	**Go to**
exists	step
does not exist	step

7) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.
8) Return the ESMA Control Complex to service by entering: RTS ESMC (*site*) MVIE *b s p* <CR>
9) This procedure is complete.

Download processor packs

1) Load Overlay DED by entering: OVLY DED <CR>
2) Busy the processor pack to be downloaded by entering the appropriate BUSY command.
3) Download the processor pack by entering the appropriate DNLD command.
4) Determine whether the processor pack downloaded successfully.

If the processor pack	Go to
downloaded successfully	step 5
did not download successfully	step 6

5) Return the processor pack to service by entering the appropriate RTS command.
   Go to step 15.
6) Download the processor pack again by entering the appropriate DNLD command.
7) Determine whether the processor pack downloaded successfully.

If the processor pack	Go to
downloaded successfully	step 5
did not download successfully	step 8

8) Reseat the processor pack following the appropriate procedure shown in Table TP 7095-A.
9) Download the processor pack again by entering the appropriate DNLD command.
10) Determine whether the processor pack downloaded successfully.

If the processor pack	Go to
downloaded successfully	step 11
did not download successfully	step 12

11) Return the processor pack to service by entering the appropriate RTS command.
    Go to step 15.

12) Determine whether the processor pack has been replaced.

If the processor pack	Go to
has been replaced	step 14
has not been replaced	step 13

13) Replace the processor pack by following the appropriate procedure shown in Table 7095-B.
Go to step 2.

14) Contact the next level of technical support for assistance.

15) This procedure is complete.

<table>
<tr><th colspan="2">Table 7095-A
Processor pack reseating procedure</th></tr>
<tr><th>Pack</th><th>Procedure</th></tr>
<tr><td>LCMC (NT6X52)</td><td rowspan="7">Pull the pack from the backplane, wait a few seconds, and then push the pack back in the slot until it is reseated.</td></tr>
<tr><td>RMM (NT6X74)</td></tr>
<tr><td>ESAC (NT6X45)</td></tr>
<tr><td>ESAC (NTMX45)</td></tr>
<tr><td>RSCC (NTMX77)</td></tr>
<tr><td>ESMA (NTAX74)</td></tr>
<tr><td>DSI (NT4T24/NT4T50)</td></tr>
<tr><td>SCSC (NT6X45)</td><td></td></tr>
<tr><td>SCUC (NT6X45)</td><td>Pull the following packs from the backplane, in the order shown below:

NT6X45 (Master Processor) in slot 8
NT6X47 (Master Processor Memory) in slot 9 (if provisioned)
NT6X47 (Master Processor Memory) in slot 10
NT6X45 (Signaling Processor) in slot 12
NT6X46 (Signaling Processor Memory) in slot 11

Wait 60 - 90 seconds, and then push the packs back in the slot until they are reseated, in the order shown above.</td></tr>
</table>

Table 7095-B
Processor pack replacement procedure

Pack	Procedure
LCMC (NT6X52)	Perform MP 1338
RMM (NT6X74)	Perform MP 1250
ESAC (NT6X45)	
RSCC (NTMX77)	
ESMA (NTAX74)	
DSI (NT4T24/NT4T50)	
SCSC (NT6X45)	
SCUC (NT6X45)	Pull the following packs from the backplane, in the order shown below: NT6X45 (Master Processor) in slot 8 NT6X47 (Master Processor Memory) in slot 9 (if provisioned) NT6X47 (Master Processor Memory) in slot 10 NT6X45 (Signaling Processor) in slot 12 NT6X46 (Signaling Processor Memory) in slot 11 Replace the NT6X45 Master Processor pack (in slot 8) following procedure MP 1250, then push the remaining packs back into the slot until they are reseated, in the order shown above.

Clear ESMA fault (DED839 and ESMA795)

1) Load Overlay DED by entering: OVLY DED <CR>

2) Obtain status of the ESMA Control Complex by entering: STAT ESMC (*site*) MVIE *b s p* <CR>

3) Test the standby ESMA Control Complex by entering: TEST ESMC (*site*) MVIE *b s p* <CR>

4) Determine whether the control complex passed the test.

If the control complex	Go to
passed the test	step 5
did not pass the test	step 7

5) Perform switch of activity by entering: SWCH ESMC (*site*) MVIE *b s p* <CR>

6) Determine whether the switch occurred.

If the switch	Go to
occurred	step 15
did not occur	step 7

7) Busy the standby ESMA unit by entering: BUSY ESMC (*site*) MVIE *b s p* <CR>

8) Test the standby ESMA unit by entering: TEST ESMC (*site*) MVIE *b s p* <CR>

9) Determine whether the unit passed the test.

If the unit	Go to
passed the test	step 10
did not pass the test	step 14

10) Return to service the standby ESMA unit by entering: RTS ESMC (*site*) MVIE *b s p* <CR>

11) Perform switch of activity by entering: SWCH ESMC (*site*) MVIE *b s p* <CR>

12) Determine whether the switch occurred.

If the switch	Go to
occurred	step 15
did not occur	step 13

13) Contact the next level of technical support for assistance.

14) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

15) This procedure is complete.

Pre-SWACT query failure

1) Load Overlay DED, if it is not already loaded, by entering: OVLY DED <CR>.

2) Determine whether, in message DED839, the *mate state* is *jam_inac*, *overload*, *inv_data*, *tst_fail*, or undefined.

If the message	Go to
contains this information	step 6
does not contain this information	step 3

3) Determine whether, in message DED839, the *mate state* displayed.

If this portion of the message	Go to
did display	step 4
did not display	step 6

4) Determine whether, in message DED839, the *mate state* is *cc_lnk_oos* or *imc_lnk_oos*.

If the message	Go to
contains this information	step 16
does not contain this information	step 5

5) Determine whether, in message DED839, the *diag id* printed.

If the message	Go to
contains this information	step 23
does not contain this information	step 6

6) Busy the standby controller by entering: BUSY SCUC SCE *b s* <CR> or BUSY SCSC SCE *b s* <CR>.

7) Return the standby controller to service by entering: RTS SCUC SCE *b s* <CR> or RTS SCSC SCE *b s* <CR>.

8) Switch controller activity by entering: SWCH SCUC SCE *b s* <CR> or SWCH SCSC SCE *b s* <CR>.

9) Determine whether the switch of activity was successful.

If the switch of activity	Go to
was successful	step 30
was not successful	step 10

10) Busy the standby controller by entering: BUSY SCUC SCE *b s* <CR> or BUSY SCSC SCE *b s* <CR>.

11) Check the NT6X69 and NT8X18 packs associated with the standby controller and ensure that the packs are properly seated in their card guides and that any wiring is not loose. Then test the packs by entering: TEST SCUC SCE *b s* <CR> or TEST SCSC SCE *b s* <CR>. If the test passes and the packs are properly seated, then it may be necessary to replace the packs; for replacement procedures, refer to the index located at the back of this NTP.

12) Download the standby controller by entering: DNLD SCUC SCE *b s* <CR> or DNLD SCSC SCE *b s* <CR>.

13) Return the standby controller to service by entering: RTS SCUC SCE *b s* <CR> or RTS SCSC SCE *b s* <CR>.

14) Switch controller activity by entering: SWCH SCUC SCE *b s* <CR> or SWCH SCSC SCE *b s* <CR>.

15) Determine whether the switch of activity was successful.

If the switch of activity	Go to
was successful	step 30
was not successful	step 29

16) Busy the standby controller by entering: BUSY SCUC SCE *b s* <CR> or BUSY SCSC SCE *b s* <CR>.

17) Check the NT6X69 and NT8X18 packs associated with the standby controller's messaging port and ensure that the packs are properly seated in their card guides and that any wiring is not loose. Then test the packs by entering: TEST SCUC SCE *b s* <CR> or TEST SCSC SCE *b s* <CR>. If the test passes and the packs are properly seated, then it may be necessary to replace the packs; for replacement procedures, refer to the index located at the back of this NTP.

18) (For Classic Network Only) Check the DS30A pack and PELP associated with the standby controller by aborting Overlay DED and loading Overlay NED (**** OVLY NED <CR>) and then entering: TEST D3A CE *b s p* <CR>, TEST D3AP CE *b s p* <CR>, and TEST PELP CE *b s p l* <CR>. Also ensure that the packs are properly seated in their card guides and that there is no loose wiring. Replace any faulty hardware; for replacement procedures, refer to the index located at the back of this NTP.
(For Expanded Network Only) Check the DS30A pack and PELP associated with the standby controller by aborting Overlay DED and loading Overlay NED (**** OVLY NED <CR>) and then entering: TEST IFPK CE b s p <CR>, TEST IFPP CE b s p <CR>, and TEST PELP CE b s p l <CR>. Also ensure that the packs are properly seated in their card guides and that there is no loose wiring. Replace any faulty hardware; for replacement procedures, refer to the index located in the back of this NTP.

19) Reload Overlay DED by entering: **** OVLY DED <CR>.

20) Return the standby controller to service by entering: RTS SCUC SCE *b s* <CR> or RTS SCSC SCE *b s* <CR>.

21) Switch controller activity by entering: SWCH SCUC SCE *b s* <CR> or SWCH SCSC SCE *b s* <CR>.

22) Determine whether the switch in activity was successful.

If the switch in activity	Go to
was successful	step 30
was not successful	step 29

23) Busy the standby controller by entering: BUSY SCUC SCE *b s* <CR> or BUSY SCSC SCE *b s* <CR>.

24) Look in the DED839 message-diag id table located at the end of this procedure for an entry that corresponds with the *diag id* that printed in the message. Repair or replace the hardware indicated for the *diag id*; for replacement procedures, refer to the index located at the back of this NTP.

25) If a pack was replaced in the previous step, test the standby controller by entering: TEST SCUC SCE *b s* <CR> or TEST SCSC SCE *b s* <CR>.

26) Return the standby controller to service by entering: RTS SCUC SCE *b s* <CR> or RTS SCSC SCE *b s* <CR>.

27) Switch controller activity by entering: SWCH SCUC SCE *b s* <CR> or SWCH SCSC SCE *b s* <CR>.

28) Determine whether the switch in activity was successful.

If the switch in activity	Go to
was successful	step 30
was not successful	step 29

29) Contact the next level of technical support for assistance.

30) This procedure is complete.

DED839 message diag id	
diag id	**Possible Hardware Affected**
89	NT6X44
8c	NT6X41, 6X42
84	NT6X69
c7	NT6X44, 6X43
9b	NT6X44
de	NT6X80
b5	NT6X43
03	NT6X41
51	NT6X86

Clear faults in communication path to ESA controller

1. If any SRI*xxx* messages printed out immediately before the ESA922 message, use appropriate telco procedures to clear the outside plant faults indicated in the messages. If such messages did not display, go to the next step.

2. Suspect intermittent communication path problems. Because data corruption could be occurring at a level below the SRI*xxx* message threshold level but high enough to cause missed messages, first use appropriate telco outside plant procedures to correct any span line faults that might exist. If the span line troubleshooting indicates SRI faults, perform the appropriate SRI error correction procedures (TP7057 - TP7063). If no span line faults currently exist, perform TP7103 to clear any ESAC faults. If the fault is corrected, exit from this procedure; if the fault is not corrected, go to the next step.

3. Perform the appropriate procedure to clear any controller (for example, NT6X50 or NT9Y14) faults. If the ESAC fault still exists, call TAS.

Clear Remote Subscriber Line Equipment (RSLE), Remote Subscriber Line Module (RSLM), Outside Plant Subscriber Module (OPSM), Remote Line Concentrating Module (RLCM), or Outside Plant Module (OPM) Emergency Stand-Alone pack (ESAC) fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Determine whether the fault is associated with either an RSLE or an RSLM.

If the fault	Go to
is associated with an RSLE or an RSLM	step 4
is not associated with an RSLE or and RSLM	step 3

3) Obtain the status of the ESAC by entering: STAT ESAC *site* LCE *b s* <CR> Go to step 5.

4) Obtain the status of the shelf with the faulty ESAC by entering: STAT RSLE/RSLM *site* RSE *b s* <CR>

5) Clear all RSLC or remote LCMC faults (TP 6023) and ensure that the shelf is not in the ESA mode before proceeding.

6) Busy the ESA pack by entering: BUSY ESAC *site* RSE *b s p* / LCE *b s* <CR>

7) Test the ESA pack by entering: TEST ESAC *site* RSE *b s p* / LCE *b s* <CR>

8) Determine whether the ESA pack passed the test.

If the ESA pack	Go to
passed the test	step 9
did not pass the test	step 13

9) Return the ESA pack to service by entering: RTS ESAC *site* RSE *b s p* / LCE *b s* <CR>

10) Test the ESA pack by entering: TEST ESAC *site* RSE *b s p* / LCE *b s* <CR>

11) Determine whether the ESA pack passed the test.

If the ESA pack	Go to
passed the test	step 31
did not pass the test	step 12

12) Busy the ESA pack by entering: BUSY ESAC *site* RSE *b s p* / LCE *b s* <CR>

13) Reseat the ESA pack (NT9Y15 / NT9Y19) or RLCM / OPM ESA packs (NT6X45, NT6X47, NT6X75 and NTMX45).

14) Download the ESA pack by entering: DNLD ESAC *site* RSE *b s p* / LCE *b s* <CR>

15) Return the ESA pack to service by entering: RTS ESAC *site* RSE *b s p* / LCE *b s* <CR>

16) Determine whether the ESA pack returned to service.

If the ESA pack	Go to
returned to service	step 17
did not return to service	step 20

17) Test the ESA pack by entering: TEST ESAC *site* RSE *b s p* / LCE *b s* <CR>

18) Determine whether the ESA pack passed the test.

If the ESA pack	Go to
passed the test	step 31
did not pass the test	step 19

19) Busy the ESA pack by entering: BUSY ESAC *site* RSE *b s p* / LCE *b s* <CR>

20) Replace the ESA pack (NT9Y15 / NT9Y19) or RLCM / OPM ESA pack (NT6X45, NT6X47, NT6X75 or NTMX45).

21) Download the ESA pack by entering: DNLD ESAC *site* RSE *b s p* / LCE *b s* <CR>

22) Return the ESA pack to service by entering: RTS ESAC *site* RSE *b s p* / LCE *b s* <CR>

23) Determine whether the ESA pack returned to service.

If the ESA pack	Go to
returned to service	step 24
did not return to service	step 27

24) Test the ESA pack by entering: TEST ESAC *site* RSE *b s p* / LCE *b s* <CR>

25) Determine whether the ESA pack passed the test.

If the ESA pack	Go to
passed the test	step 31
did not pass the test	step 26

26) Busy the ESA pack by entering: BUSY ESAC *site* RSE *b s p* / LCE *b s* <CR>

27) Replace the ESA pack with the original ESA pack (NT9Y15/NT9Y19/ NT6X45, NT6X47, NT6X75 or NTMX45).

28) Determine whether the fault is associated with either an RLCM or an OPM.

If the fault	Go to
is associated with either an RLCM or an OPM	step 29
is not associated with either an RLCM or an OPM	step 30

29) Determine whether all ESA packs (NT6X45, NT6X47, NT6X75, NTMX45) have been tested.

If the packs	Go to
have been tested	step 30
have not been tested	step 20

30) Contact the next level of technical support for assistance.

31) This procedure is complete.

Clear Remote Subscriber Line Equipment (RSLE) or Remote Subscriber Line Module (RSLM) Remote Maintenance pack (RMP) fault

1) Load Overlay PED by entering: OVLY PED (IMED) <CR>

2) Determine whether the message, PED551 RMP displays as PED is loading.

If PED551	Go to
displays	step 3
does not display	step 6

3) Busy the RMP pack by entering: BUSY RMP *site* RSE *b s 6* <CR>

CAUTION
Busying an RMP on an RSLM Type A shelf will cease all call processing by that shelf. Busying an RMP on an RSLM Type B shelf with the ESAC INS will cease all call processing when entering the ESA mode. In both cases, the IMED option has to be used with the BUSY command.

Note: *For an RSLE shelf, the RSLC controlling the RMP must be INS.*

4) Reseat the RMP pack (NT9Y13BA).

5) Return the RMP to service by entering: RTS RMP *site* RSE *b s 6* <CR> Go to step 10.

6) Test the RMP by entering: TEST RMP *site* RSE *b s 6*

Note: *For an RSLE shelf, the RSLC controlling the RMP must be INS.*

7) Determine whether the RMP pack passed test test.

If the RMP pack	Go to
passed the test	step 8
did not pass the test	step 3

8) Determine whether the pack is located on an RSLM Type A shelf.

If the pack	Go to
is located on an RSLM Type A shelf	step 9
is not located on an RSLM Type A shelf	step 27

9) Determine whether the RSLM Type A shelf is processing calls.

If the RSLM shelf	Go to
is processing calls	step 27
is not processing calls	step 3

10) Determine whether an RMP INS ENBL message displays.

If an RMP INS ENBL message	Go to
displays	step 15
does not display	step 11

11) Busy the RMP pack by entering: BUSY RMP *site* RSE *b s 6* <CR>

CAUTION
Busying an RMP on an RSLM Type A shelf will cease all call processing by that shelf. Busying an RMP on an RSLM Type B shelf with the ESAC INS will cease all call processing when entering the ESA mode. In both cases, the IMED option has to be used with the BUSY command.

12) Replace the RMP pack (NT9Y13BA) (MP 1250).

13) Return the RMP to service by entering: RTS RMP *site* RSE *b s 6* <CR>

14) Determine whether an RMP INS ENBL message displays.

If an RMP INS ENBL message	Go to
displays	step 15
does not display	step 17

15) Test the RMP by entering: TEST RMP *site* RSE *b s 6* <CR>

16) Determine whether the RMP pack passed the test.

If the RMP pack	Go to
passed the test	step 19
did not pass the test	step 17

17) Reinstall the original RMP pack.

18) Return the RMP to service by entering: RTS RMP *site* RSE *b s 6* <CR>
Go to step 21.

19) Determine whether the pack is located on an RSLM Type A shelf.

If the pack	Go to
is located on an RSLM Type A shelf	step 20
is not located on an RSLM Type A shelf	step 27

20) Determine whether the RSLM Type A shelf is processing calls.

If the RSLM shelf	Go to
is processing calls	step 27
is not processing calls	step 26

21) Determine whether an RMP INS ENBL message displays.

If an RMP INS ENBL message	Go to
displays	step 22
does not display	step 26

22) Test the RMP by entering: TEST RMP *site* RSE *b s 6* <CR>

23) Determine whether the RMP pack passed the test.

If the RMP pack	Go to
passed the test	step 24
did not pass the test	step 26

24) Determine whether the pack is located on an RSLM Type A shelf.

If the pack	Go to
is located on an RSLM Type A shelf	step 25
is not located on an RSLM Type A shelf	step 27

25) Determine whether the RSLM Type A shelf is processing calls.

If the RSLM shelf	Go to
is processing calls	step 27
is not processing calls	step 26

26) Contact the next level of technical support for assistance.

27) This procedure is complete.

Clear Remote Subscriber Line Equipment (RSLE) Clock fault

1) Read the error message carefully! It indicates which DHI and Clock pack (NT9Y17) may be faulty. Then locate the suspect NT9Y17 pack indicated in the output message.

Note: *The NT9Y17 pack is located on shelf 3, slot 10 on the RSLE Control shelf; the mate NT9Y17 pack is located either on shelf 3, slot 11 (1 Dshelf configuration) or on shelf 1, slot 11 (2 Dshelf configuration.*

2) Load Overlay DED by entering: OVLY DED (IMED) <CR>

3) Determine whether the suspect NT9Y17 pack is located on shelf 3, slot 10.

If the NT9Y17	Go to
is located on shelf 3, slot 10	step 4
is not located on shelf 3, slot 10	step 5

4) Request the status of the processor pack (NT9Y22) associated with the suspect NT9Y17 pack by entering: STAT RSLC *site* RSE *b* 3 5 <CR>
Go to step 6.

5) Request the status of the processor pack (NT9Y22) associated with the suspect NT9Y17 pack by entering: STAT RSLC *site* RSE *b* 3 8 <CR> (if the NT9Y17 is located on shelf 3, slot 11) or STAT RSLC *site* RSE *b* 1 8 <CR> (if the NT9Y17 is located on shelf 1, slot 11)

6) Busy the SRI link or links (SRLK) identified in the status report generated in the preceding step by entering: BUSY SRLK *site* RSE *b s p u* <CR>

7) Operate the switch on the faceplate of the suspect NT9Y17 pack to the disable (down) position.

8) Replace the suspect NT9Y17 pack (MP 1250).

9) Operate the switch on the faceplate of the new NT9Y17 pack to the enable (up) position.

10) Return to service the SRI link or links (SRLK) that were busied in Step 6 by entering: RTS SRLK *site* RSE *b s p u* <CR>

11) Determine whether the problem still exists.

If the problem	Go to
exists	step 12
does not exist	step 19

12) Busy the SRI link or links (SRLK) just returned to service by entering: BUSY SRLK *site* RSE *b s p u* <CR>

13) Operate the switch on the faceplate of the NT9Y17 pack just installed to the disable (down) position and replace the pack with the original NT9Y17 pack.

14) Operate the switch on the faceplate of this NT9Y17 pack to the enable (up) position.

15) Determine the location of the Matrix pack (NT9Y16) associated with the original suspect NT9Y17 pack. Replace this NT9Y16 pack.

Note: *The Matrix pack (NT9Y16) located in shelf 3, slot 4 is associated with the NT9Y17 pack located in slot 10 of shelf 3. The NT9Y16 pack associated with the mate NT9Y17 pack in shelf 1 or 3, slot 11 is on the same shelf as that NT9Y17 in slot 7.*

16) Return to service the SRI link or links (SRLK) that were busied in Step 12 by entering: RTS SRLK *site* RSE *b s p u* <CR>

17) Determine whether the problem still exists.

If the problem	Go to
exists	step 18
does not exist	step 19

18) Contact the next level of technical support for assistance.

19) This procedure is complete.

Clear SWACT back recovery fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Obtain the status of the active and standby controllers by entering: STAT SCUC SCE *b s* <CR> or STAT SCSC SCE *b s* <CR>.

3) Busy the standby controller by entering: BUSY SCUC SCE *b s* <CR> or BUSY SCSC SCE *b s* <CR>.

4) Return the standby controller to service by entering: RTS SCUC SCE *b s* <CR> or RTS SCSC SCE *b s* <CR>.

5) Switch controller activity using the IMED option by entering: SWCH SCUC SCE *b s* IMED <CR> or SWCH SCSC SCE *b s* IMED <CR>.

6) If the switch in activity was successful, switch controller activity twice to clear the controller registers by entering: SWCH SCUC SCE *b s* <CR> or SWCH SCSC SCE *b s* <CR>. You have completed the procedure. If the switch in activity was not successful, busy the standby controller, if it is not out-of-service, by entering: BUSY SCUC SCE *b s* <CR> or BUSY SCSC SCE *b s* <CR>.

7) Check the NT6X69 and NT8X18 packs associated with the standby controller's messaging port and ensure that the packs are properly seated in their card guides and that any wiring is not loose. Then test the packs by entering: TEST SCUC SCE *b s* <CR> or TEST SCSC SCE *b s* <CR>. If the test passes and the packs are properly seated, then it may be necessary to replace the packs; for replacement procedures, refer to the index located at the back of this NTP.

8) (For Classic Network Only) Check the DS30A pack and PELP associated with the standby controller by aborting Overlay DED and loading Overlay NED (**** OVLY NED <CR>) and then entering: TEST D3A CE *b s p* <CR>, TEST D3AP CE *b s p* <CR>, and TEST PELP CE *b s p l* <CR>. Also ensure that the packs are properly seated in their card guides and that there is no loose wiring. Replace any faulty hardware; for replacement procedures, refer to the index located at the back of this NTP.
(For Expanded Network Only) Check the DS30A pack and PELP associated with the standby controller by aborting Overlay DED and loading Overlay NED (**** OVLY NED <CR>) and then entering: TEST IFPK CE b s p <CR>, TEST IFPP CE b s p <CR>, and TEST PELP CE b s p l <CR>. Also ensure that the packs are properly seated in their card guides and that there is no loose wiring. Replace any faulty hardware; for replacement procedures, refer to the index located in the back of this NTP.

9) Return the standby controller to service by entering: RTS SCUC SCE *b s* <CR> or RTS SCSC SCE *b s* <CR>.

10) Switch controller activity using the IMED option by entering: SWCH SCUC SCE *b s* IMED <CR> or SWCH SCSC SCE *b s* IMED <CR>.

11) If the switch in activity was successful, switch controller activity twice to clear the controller registers by entering: SWCH SCUC SCE *b s* <CR> or SWCH SCSC SCE *b s* <CR>.

12) If the switch in activity was successful, you have completed the procedure. If the switch in activity was not successful, call TAS.

Clear Remote Subscriber Line Equipment (RSLE) inter-link loop around failure

1) Determine whether multiple DED902 messages are displaying or only a single DED902 message is displaying.

If	Go to
multiple DED902 messages are displaying	step 2
a single DED902 message is displaying	step 15

2) Load Overlay DED by entering: OVLY DED (IMED) <CR>

3) Busy the NT9Y22 RSLC pack listed first in the DED902 message by entering: BUSY RSLC *site* RSE *b s p* <CR>.

4) If the RSLC pack (NT9Y22) made busy in step 3 is located in slot 5, replace the RSLE Matrix pack (NT9Y16) located in slot 4; if the NT9Y22 is located in slot 8, replace the NT9Y16 located in slot 7 (MP 1250).

5) Return the NT9Y22 to service by entering: RTS RSLC *site* RSE *b s p* <CR>

6) Determine whether message DED902 displays.

If DED902	Go to
displays	step 7
does not display	step 42

7) Busy the NT9Y22 RSLC pack listed first in the DED902 message by entering: BUSY RSLC *site* RSE *b s p* <CR>.

8) Replace the NT9Y16 pack replaced in step 4 with the original NT9Y16 pack (MP 1250).

9) Replace the NT9Y22 pack (MP 1250).

10) Return the NT9Y22 to service by entering: RTS RSLC *site* RSE *b s p* <CR>

11) Determine whether message DED902 displays.

If DED902	Go to
displays	step 12
does not display	step 42

12) Busy the NT9Y22 RSLC pack that was replaced in step 9 by entering: BUSY RSLC *site* RSE *b s p* <CR>.

13) Replace the NT9Y22 pack with the original NT9Y22 pack (MP 1250).

14) Return the NT9Y22 to service by entering: RTS RSLC *site* RSE *b s p* <CR>
Go to step 41.

15) Load Overlay DED by entering: OVLY DED (IMED) <CR>

16) Busy the NT9Y22 RSLC pack listed first in the DED902 message by entering: BUSY RSLC *site* RSE *b s p* <CR>

17) Replace the NT9Y22 pack (MP 1250).

18) Return the NT9Y22 to service by entering: RTS RSLC *site* RSE *b s p* <CR>

19) Determine whether message DED902 displays.

If DED902	Go to
displays	step 20
does not display	step 42

20) Busy the NT9Y22 RSLC pack that was replaced in step 18 by entering: BUSY RSLC *site* RSE *b s p* <CR>

21) Replace the NT9Y22 pack with the original NT9Y22 pack (MP 1250).

22) If the RSLC pack (NT9Y22) made busy in step 22 is located in slot 5, replace the RSLE Matrix pack (NT9Y16) located in slot 4; if the NT9Y22 is located in slot 8, replace the NT9Y16 located in slot 7 (MP 1250).

23) Return the NT9Y22 to service by entering: RTS RSLC *site* RSE *b s p* <CR>

24) Determine whether message DED902 displays.

If DED902	Go to
displays	step 25
does not display	step 42

25) Busy the NT9Y22 RSLC pack listed first in the DED902 message by entering: BUSY RSLC *site* RSE *b s p* <CR>.

26) Replace the NT9Y16 pack replaced in step 23 with the original NT9Y16 pack (MP 1250).

27) Return the NT9Y22 to service by entering: RTS RSLC *site* RSE *b s p* <CR>

28) Determine whether message DED902 displays.

If DED902	**Go to**
displays	step 29
does not display	step 42

29) Busy the NT9Y22 RSLC pack identified in the DED902 message as “TO” by entering: BUSY RSLC *site* RSE *b s p* <CR>.

30) If the RSLC pack (NT9Y22) made busy in step 30 is located in slot 5, replace the RSLE Matrix pack (NT9Y16) located in slot 4; if the NT9Y22 is located in slot 8, replace the NT9Y16 located in slot 7 (MP 1250).

31) Return the NT9Y22 to service by entering: RTS RSLC *site* RSE *b s p* <CR>

32) Determine whether message DED902 displays.

If DED902	**Go to**
displays	step 33
does not display	step 42

33) Busy the NT9Y22 RSLC pack identified in step 30 by entering: BUSY RSLC *site* RSE *b s p* <CR>.

34) Replace the NT9Y16 pack replaced in step 31 with the original NT9Y16 pack (MP 1250).

35) Replace the NT9Y22 RSLC pack (MP 1250).

36) Return the NT9Y22 to service by entering: RTS RSLC *site* RSE *b s p* <CR>

37) Determine whether message DED902 displays.

If DED902	**Go to**
displays	step 38
does not display	step 42

38) Busy the NT9Y22 RSLC pack that was replaced in step 36 by entering: BUSY RSLC *site* RSE *b s p* <CR>.

39) Replace the NT9Y22 pack with the original NT9Y22 pack (MP 1250).

40) Return the NT9Y22 to service by entering: RTS RSLC *site* RSE *b s p* <CR>

41) Contact the next level of technical support for assistance.

42) This procedure is complete.

Clear RCU line card fault

1) Determine whether a PED or RCU message referenced this procedure.

If the message displaying is	Go to
a PED message	step 4
an RCU message	step 2

2) Load Overlay CKT by entering: OVLY CKT <CR>

3) Calculate the line subgroup and line numbers from the shelf, card, and unit value of the RCU alarm message by entering: CALC ULIN (*site*) *s c u* <CR>

4) Abort current overlay and load Overlay PED by entering: **** OVLY PED <CR>

5) Busy the RCU line pack by entering: BUSY ULPK *site* UCE *b lsg l* <CR>

6) Test the RCU line pack by entering: TEST ULPK *site* UCE *b lsg l* <CR>

7) Determine whether the RCU line pack passed the test.

If the RCU line pack	Go to
passed the test	step
did not pass the test	step 9

8) Return the RCU line pack to service by entering: RTS ULPK *site* UCE *l lsg l* <CR>
Go to step 14.

9) Replace the faulty line card. Refer to DP 5101 in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501).

10) Test the RCU line pack by entering: TEST ULPK *site* UCE *b lsg l* <CR>

11) Determine whether the RCU line pack passed the test.

If the RCU line pack	Go to
passed the test	step 13
did not pass the test	step 12

12) Suspect fault in Line Card Carrier pack and perform TP 7142.

13) Return the RCU line pack to service by entering: RTS ULPK *site* UCE *l lsg l* <CR>

14) This procedure is complete.

Clear Control Equipment or Line Card Carrier fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Determine whether fault is on the Control Equipment (CE) or Line Card Carrier (LCC) pack by entering: STAT USHF ALL <CR>

3) Compare *s c u* location from the RCU alarm to the "STAT USHF" printout which shows CE.

4) Determine whether the fault is in the Control equipment or in the Line Card Carrier equipment.

If the fault is in	**Go to**
the Control equipment	step 5
the Line Card Carrier equipment	step 8

5) Replace the faulty CE pack. Refer to DP 5102 in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501).

6) Determine whether the alarm still exists.

If the alarm	**Go to**
exists	step 7
does not exist	step 20

7) Suspect fault is in another CE pack or in the RCU itself. Refer to DP 5100 in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501).

8) Load Overlay CKT by entering: OVLY CKT <CR>

9) Calculate the line subgroup and line numbers from the shelf, card, and unit value of the RCU alarm message by entering: CALC ULIN (*site*) *s c u* <CR>

10) Abort Overlay CKT and load Overlay PED by entering: ****OVLY PED <CR>

11) Busy each RCU line pack on the Line Carrier Card (LCC) by entering: BUSY ULPK *site* UCE *b lsg l* <CR>

12) Test each RCU line pack on the LCC by entering: TEST ULPK *site* UCE *b lsg l* <CR>

13) Determine whether the RCU line packs passed the test.

If the RCU line packs	**Go to**
passed the test	step 14
did not pass the test	step 15

14) Return each RCU line pack to service by entering: RTS ULPK *site* UCE *b lsg l* <CR>
Go to step 20.

15) Replace the faulty Line Card Carrier. Refer to DP 5102 in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501)

16) Test each RCU line pack on the LCC by entering: TEST ULPK *site* UCE *b lsg l* <CR>

17) Determine whether the RCU line packs passed the test.

If the RCU line packs	**Go to**
passed the test	step 19
did not pass the test	step 18

18) Suspect fault is in another CE pack or in the RCU itself. Refer to DP 5100 in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501).

19) Return each RCU line pack to service by entering: RTS ULPK *site* UCE *b lsg l* <CR>

20) This procedure is complete.

Clear configuration fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Determine whether fault is on the Control Equipment (CE) or Line Card Carrier (LCC) pack by entering: STAT USHF ALL <CR>

3) Compare *s c u* location from the RCU alarm to the “STAT USHF” printout which shows CE.

4) Determine whether the fault is in the Control equipment or in the Line Card Carrier equipment.

If the fault is in	Go to
the Control equipment	step
the Line Card Carrier equipment	step

5) Refer to DP 5103 in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501) to clear the fault.

6) Determine whether the alarm still exists.

If the alarm	Go to
exists	step
does not exist	step 17

7) Suspect fault is in another CE pack or in the RCU itself. Refer to DP 5100 in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501).

8) Load Overlay CKT by entering: OVLY CKT <CR>

9) Calculate the line subgroup and line numbers from the shelf, card, and unit value of the RCU alarm message by entering: CALC ULIN (*site*) *s c u* <CR>

10) Abort Overlay CKT and load Overlay PED by entering: ****OVLY PED <CR>

11) Obtain the status of the RCU line packs by entering: STAT ULPK *site* UCE *b lsg l* <CR>

12) Refer to DP 5103 in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501) to replace the faulty line card.

13) Test each RCU line pack on the LCC by entering: TEST ULPK *site* UCE *b lsg l* <CR>

14) Determine whether the RCU line packs passed the test.

If the RCU line packs	Go to
passed the test	step 16
did not pass the test	step

15) Suspect fault in a CE pack or the RCU itself. Refer to DP 5100 in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501) to check this further.

16) Return each RCU line pack to service by entering: RTS ULPK *site* UCE *b lsg l* <CR>

17) This procedure is complete.

Clear DS-1 link fault

1) Perform TP 7029.
2) Determine whether the fault has cleared.

If the fault	Go to
has cleared	step 8
has not cleared	step 3

3) Perform TP 7050.
4) Determine whether the fault has cleared.

If the fault	Go to
has cleared	step 8
has not cleared	step 5

5) Refer to DP 5104 in the NTP entitled DMS-1 *Urban Fault Clearing Procedures* (363-2051-501).
6) Determine whether the fault has cleared.

If the fault	Go to
has cleared	step 8
has not cleared	step 7

7) Suspect fault in outside plant equipment. Refer to DP 5100 in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501).
8) This procedure is complete.

Clear Special Service Module (SSM) fault

1) Refer to DP 5106 in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501).

2) This procedure is complete.

Clear RCU coded alarms

Refer to the appropriate DP in the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501) as shown in Table 7146-A. Perform TP 7142 for final fault clearing.

Table 7146-A
RCU coded alarms and fault clearing procedures

Code	DP#
101 to 103	5120
112	5121
120 to 131	5122
140 to 144	5123
150 to 159	5124
160 to 169	5125
171 to 195	5126
200 to 400	5127
710 to 901	5128

Clear RCU fault

1) Refer to the NTP entitled *DMS-1 Urban Fault Clearing Procedures* (363-2051-501).

2) This procedure is complete.

Clear RCU fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Busy the specified unit of the RCU by entering: BUSY RCU *site* UCE *b s* <CR> A Control Complex by entering: BUSY ESMC (*site*) MVIE *b s p* <CR>

3) Return to service the specified unit of the RCU by entering: RTS RCU *site* UCE *b s* <CR>

4) Determine whether the RCU returns to service

If the RCU	**Go to**
returns to service	step 6
does not return to service	step 5

5) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

6) This procedure is complete.

Clear RCU fault

1) Load Overlay DED by entering: OVLY DED <CR>

2) Obtain the status of the RCU and the DS-1 links to it by entering: STAT RCU *site* UCE *b s* <CR>

3) Busy the DS-1 links connected to the RCU by entering: BUSY D1LK SCE *b s p u* <CR>

4) Test the DS-1 links by entering: TEST D1LK SCE *b s p u* <CR>

5) Determine whether the DS-1 links pass the test.

If the DS-1 links	Go to
pass the test	step 6
do not pass the test	step 8

6) Return the DS-1 links to service by entering: RTS D1LK SCE *b s p u* <CR>

7) Determine whether the DS-1 links return to service

If the DS-1 links	Go to
return to service	step
do not return to service	step

8) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

9) This procedure is complete.

Clear RCU fault

1) After waiting several minutes, load Overlay DED by entering: OVLY DED <CR>

2) Return the RCU to service by entering: RTS RCU *site* UCE *b s* <CR>

3) Determine whether the fault has been cleared.

If the fault	Go to
has been cleared	step 12
has not been cleared	step 4

4) Refer to the NTP entitled *DMS-1 Fault Clearing Procedures* (363-2051-501) to clear the fault.

5) Determine whether the fault has been cleared.

If the fault	Go to
has been cleared	step 12
has not been cleared	step 6

6) Load Overlay DED by entering: OVLY DED <CR>

7) Busy the standby SCU Control Complex by entering: BUSY SCUC (*site*) SCE *b s* <CR>

CAUTION
This step will cause all RCUs connected to the SCU to be taken out of service.

8) Busy the active SCU Control Complex by entering: BUSY SCUC (*site*) SCE *b s* <CR>.

9) Return both SCU Control Complexes to service by entering: RTS SCUC (*site*) SCE *b s* <CR>

10) Determine whether the fault has been cleared.

If the fault	Go to
has been cleared	step 12
has not been cleared	step 11

11) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

12) This procedure is complete.

Subscriber Carrier Module (SCM) trap messages

Trap messages indicate either fatal or non-fatal conditions. Because the SCM controller doesn't pass this level of information to the DMS-10 switch, the craftsperson must examine the all of the output messages displayed along with the trap message to determine the severity of the condition. Usually, trap messages for fatal situations are accompanied by messages like SCS/SCU871, “The designated SCI control complex has dropped activity and will be made system-made-busy; DED will be scheduled to run.” To determine the action that should be taken in response to a trap message, the craftsperson should refer to the trouble procedure references associated with other messages related to the trap condition.

Clear Star Hub fuse/battery failures

1) Determine whether any circuit breakers on the Frame Supervisory Panel (FSP) are in the OFF position.

If circuit breakers on the FSP	Go to
are in the OFF position	step 5
are all in the ON position	step 2

2) Determine whether any fuses on the FSP are blown.

If fuses on the FSP	Go to
are blown	step 4
are all operational	step 3

3) Contact the next level of support for help in determining the next course of action.

4) Replace the fuse.
Go to step 6.

5) Switch breaker(s) to the ON position.

6) Load Overlay DED by entering: OVLY DED (IMED) <CR>

7) Test the Star Hub by entering TEST HUBC *site* HUBE *b s p* <CR>

8) Determine whether the Star Hub passed the test.

If the Star Hub	Go to
passed the test	step 10
did not pass the test	step 9

9) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

10) This procedure is complete.

Clear disabled 1600-bpi disk fault

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Place the indicated disk drive in the man-made-busy state by entering: DSBL DISK A/B <CR>

   Note: *If both disk drives are disabled by the system, busy and test Disk A.*

3) Test the indicated disk drive by entering: TEST DISK A/B <CR>

4) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 5
does not display	step 17

5) Determine whether both disk drives were disabled by the system.

If both disk drives	Go to
were disabled by the system	step 6
were not disabled by the system	step 10

6) Switch the active and inactive IOI packs by entering: SWCH LIOI <CR>

7) Place disk drive B in the man-made-busy state by entering: DSBL DISK B <CR>

8) Test the disk drive by entering: TEST DISK B <CR>

9) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 10
does not display	step 17

10) Determine whether the AMA system is in down state (DOWN).

If the AMA system is	Go to
DOWN	step 11
not DOWN	step 12

11) Enable the AMA system, including both disk drives, by entering: ENBL AMA <CR>
    Go to step 15.

12) Determine whether both disk drives are enabled.

If	Go to
one disk drive is enabled	step 13
two disk drives are enabled	step 14

13) Enable and update the disabled disk drive by entering: ENBL DISK A/B UPDT <CR>
Go to step 18.

14) Enable Disk A by entering: ENBL DISK A <CR>

15) Obtain the status of the disk drives by entering: STAT LIOI <CR>

16) Determine whether either disk drive is disabled.

If	Go to
either disk drive is disabled	step 17
both disk drives are enabled	step 18

17) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

18) This procedure is complete.

Clear 1600-bpi disk fault

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Obtain the status of the IOI packs and devices by entering: STAT LIOI <CR>

3) Place the faulty (FALT) disk drive in the man-made-busy state by entering: DSBL DISK A/B <CR>

4) Test the man-made-busy disk drive by entering: TEST DISK A/B <CR>

5) Determine whether the message, MTD001 displays.

If MTD001	**Go to**
displays	step
does not display	step 9

6) Check the cable that connects the disk and AMA tape drive and tighten the cable if necessary.

7) Repeat the test command by entering: TEST DISK A/B <CR>

8) Determine whether the message, MTD001 displays.

If MTD001	**Go to**
displays	step 9
does not display	step 26

9) Determine the number of disabled disk drives.

If the number of disabled disk drives	**Go to**
is one	step 11
is two	step 10

10) Enable Disk A by entering: ENBL DISK A <CR>
Go to step 9.

11) Enable and update the disabled disk drive by entering: ENBL DISK A / B UPDT <CR>

12) Determine whether the original message that displayed was AMA256 or MTD600.

If the message	**Go to**
was AMA256	step 13
was MTD600	step

13) Switch the active and standby IOI packs by entering: SWCH LIOI <CR>

14) Disable the disk drive that was not disabled in Step 3 by entering: DSBL DISK A/B <CR>

15) Repeat Steps 4 through 9.
Go to step 27.

16) Determine whether the disk drive is disabled.

If the disk drive	Go to
is disabled	step 27
is not disabled	step 17

17) Test the active IOI pack by entering: TEST LIOI *n* <CR>

18) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 22
does not display	step 19

19) Reseat the IOI pack (MP 1250).

20) Test the IOI pack by entering: TEST LIOI *n* <CR>

21) If the test fails, replace the IOI pack. (MP 1250)

22) Switch the active and inactive IOI packs by entering: SWCH LIOI <CR>

23) Test the second IOI pack by entering: TEST LIOI *n* <CR>

24) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 27
does not display	step 25

25) Perform Steps 19 through 21.

26) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

27) This procedure is complete.

Clear 1600-bpi disk formatting error

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Obtain the status of the IOI packs and devices by entering: STAT LIOI <CR>

3) Determine whether one or both disk drives have failed format (FBAD).

If a drive	Go to
has failed format	step 6
doesn't have failed format	step

4) Disable both disks by entering: DSBL DISK A <CR> DSBL DISK B <CR>

5) Format Disk A by entering: FRMT DISK A DIR <CR>

CAUTION
Formatting a disk destroys all billing data on the disk. When the format command is entered, the DMS-10 should be monitored. Formatting requires 10 to 12 minutes to complete, and the process cannot be aborted by the craftsperson.

Go to step 7.

6) Disable the faulty disk by entering: DSBL DISK A / B <CR>

7) Format and update the failed-format disk drive by entering: FRMT DISK A/B UPDT <CR>

8) Determine whether the disk drive has been formatted.

If the drive	Go to
has been formatted	step 14
has not been formatted	step 7

9) Determine whether the message, MTDXXX (MTD631 or MTD631) is displaying.

If the message	Go to
is displaying	step 10
is not displaying	step 13

10) Reseat the disk drive. (MP 1250)

11) Determine whether a trouble message is still displaying.

If a trouble message	Go to
is displaying	step 12
is not displaying	step 14

12) Replace the disk drive. (MP 1250)
Go to step 14.

13) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

14) This procedure is complete.

Clear 1600-bpi magnetic tape unit fault - billing data dump halted

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Obtain the status of the IOI packs and devices by entering: STAT LIOI <CR>

3) Determine whether an AMA tape (NTRA) is mounted in the tape drive.

If an AMA tape (NTRA)	Go to
is mounted in the tape drive	step 11
is not mounted in the tape drive	step 4

4) Mount an AMA tape in the tape drive. (MP 1280)

5) Depress the load and on-line buttons.

6) Test the AMA tape by entering: TEST NTRA <CR>

7) Determine whether the message, MTD001 (passed) displays.

If MTD001	Go to
displays	step 8
does not display	step 21

8) Enable the AMA tape by entering: ENBL NTRA <CR>

9) Seize the AMA tape by entering: AMA SEIZ *header* <CR>

10) Copy the billing data from the disk (usually Disk B) onto the tape by entering: AMA COPY *header* <CR>
Go to step 18.

11) Place the AMA tape in a man-made-busy state by entering: DSBL NTRA <CR>

12) Manually unload the tape and mount a new AMA tape in the tape drive. (MP 1280)

13) Place the AMA tape in a released state by entering: ENBL NTRA <CR>

14) Obtain the status of the AMA tape (NTRA) by entering: STAT LIOI <CR>

15) Determine whether the AMA tape is in released (RLSE) state.

If the AMA tape	Go to
is in released state	step 16
is not in released state	step 21

16) Determine whether billing data on the disk drive should be copied onto the AMA tape.

If the billing data on the disk drive	**Go to**
should be copied onto the AMA tape	step 17
should not be copied onto the AMA tape	step 20

17) Copy the billing data from the disk (usually Disk B) onto the tape by entering: AMA COPY *header* <CR>

18) Place the AMA tape in a released state by entering: ENBL NTRA <CR>

19) Manually unload the tape and mount a new AMA tape in the tape drive. (MP 1280)

20) Seize the AMA tape for use by the DMS-10 (to allow billing data to be placed on tape) by entering: AMA SEIZ *header* <CR>
Go to step 22.

21) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

22) This procedure is complete.

Clear 1600-bpi magnetic tape unit fault - AMA data not dumped

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Obtain the status of the AMA tape by entering: STAT LIOI <CR>

3) Determine whether the AMA tape is in a disabled (DSBL) or released (RLSE) state.

If the AMA tape is in	Go to
released state	step 5
disabled state	step 4

4) Place the tape in a released state by entering: ENBL NTRA <CR>

5) Seize the tape for use by the DMS-10 (to allow billing data to be placed on the tape) by entering: AMA SEIZ *header* <CR>

Note 1: When the HDR option is used, the expiration date is ignored if the HDR1 label is already on the tape.

Note 2: *header* may be: HDR - all three labels will be placed on tape; NHR2 - HDR2 will be placed on tape; NEXP - the DMS-10 will not validate the tape expiration date; HDR must be used alone. NHR2 and NEXP may be used together.

6) Determine whether AMA700, AMA701, or AMA702 displays.

If AMA700, AMA701, or AMA702	Go to
displays	step 7
does not display	step 8

7) The tape drive is faulty and should be repaired. Refer to the manufacturer's documentation.

8) This procedure is complete.

Clear disabled 1600-bpi AMA system or disk fault

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Determine whether a total billing media outage occurred.

If a total billing media outage	Go to
occurred	step 3
did not occur	step 5

3) Enable the AMA system by entering: ENBL AMA <CR>

4) Determine whether an MTD001 (passed) message displays.

If an MTD001 message	Go to
displays	step 15
does not display	step 5

5) Determine whether an MTD618, MTD619, or MTD620 message displays.

If an MTD618, MTD619, or MTD620 message	Go to
displays	step 6
does not display	step 14

6) Determine whether any disk drives are disabled.

If any disk drives	Go to
are disabled	step 7
are not disabled	step 9

7) Test Disk A by entering: TEST DISK A <CR>

8) Determine whether an MTD001 (passed) message displays.

If MTD001	Go to
displays	step 9
does not display	step 14

9) Enable Disk A by entering: ENBL DISK A <CR>

10) Test the disk drive that is not restored by entering: TEST DISK A/B <CR>

11) Determine whether an MTD001 (passed) message displays.

If MTD001	Go to
displays	step 15
does not display	step 12

12) The 1600-bpi inverter may be faulty and should be checked. Refer to the manufacturer's documentation.

13) Determine whether other messages display.

If other messages	Go to
display	step 14
do not display	step 15

14) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

15) This procedure is complete.

Clear 800-bpi magnetic tape unit faults

1) Determine whether the correct tape is being used.

If the tape	Go to
is correct	step
is not correct	step 2

2) Obtain the correct tape.

3) Load Overlay MTD by entering: OVLY MTD <CR>

4) Seize the MTU by entering: SEIZ MTU *n* <CR>

5) Determine whether the printout displays MTD001.

If the printout	Go to
displays MTD001	step 7
does not display MTD001	step

6) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

7) This procedure is complete.

Clear 1600-bpi magnetic tape unit fault - incorrect state

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Obtain the status of the AMA tape by entering: STAT LIOI <CR>

3) Determine whether the AMA tape (NTRA) is in “not ready” state (NRDY).

If the AMA tape	Go to
is NRDY	step 6
is not NRDY	step 4

4) Test the AMA tape by entering: TEST NTRA <CR>

5) Determine whether the message, MTD001 (passed) displays.

If MTD001	Go to
displays	step 13
does not display	step 12

6) Determine whether the AMA tape is in “seized” state (SEIZ) or “released” state (RLSE).

If the AMA tape	Go to
is SEIZ	step 8
is RLSE	step 7

7) Clear the AMA tape unit faults. (TP 8008)

8) Depress the on-line button on the AMA tape drive.

9) Place the AMA tape in a released state by entering: AMA RLSE <CR>

10) Copy all the billing data from the disk (usually Disk B) onto the AMA tape by entering: AMA COPY *header* <CR>

11) Remove the tape and mount a new AMA tape in the tape drive. (MP 1280) Go to step 13.

12) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

13) This procedure is complete.

Clear 1600-bpi (secondary) IOI pack (NT3T90) or disk fault - lack of hardware response

1) Determine whether the message displaying is MTD603 or MTD604.

If the message displaying is	Go to
MTD603 or MTD604	step 2
is not MTD603 or MTD604	step 5

2) Determine whether an IOI pack is located in the position indicated in the command entered.

If an IOI pack	Go to
is located in the specified position	step 5
is not located in the specified position	step 3

3) Insert an IOI pack in the indicated location. (MP 1250)

4) Determine whether the trouble message still displays.

If the trouble message	Go to
displays	step 5
does not display	step 15

5) Load Overlay MTD by entering: OVLY MTD <CR>

6) Obtain the status of the IOI packs by entering: STAT LIOI <CR>

7) Determine whether the IOI pack is enabled (ENBL).

If the IOI pack	Go to
is enabled	step 10
is not enabled	step 8

8) Enable the IOI pack by entering: ENBL LIOI *n* <CR>

9) Determine whether the trouble message still displays.

If the trouble message	Go to
displays	step 10
does not display	step 15

10) Test the IOI pack by entering: TEST LIOI *n* <CR>

11) Determine whether the message, MTD001 displays.

If MTD001	**Go to**
displays	step 15
does not display	step 12

12) Reseat the indicated IOI pack. (MP 1250)

13) Determine whether the trouble message still displays.

If the trouble message	**Go to**
displays	step 14
does not display	step 15

14) Abort Overlay MTD by entering: ****. Replace the IOI pack. (MP 1286)

15) This procedure is complete.

Clear 1600-bpi disk fault - read or write error

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Obtain the status of the disk drive by entering: STAT LIOI <CR>

3) Determine whether the disk drive is disabled.

If the disk drive	Go to
is disabled	step 5
is not disabled	step 4

4) Place the disk drive in the man-made-busy state by entering: DSBL DISK A/B <CR>

5) Test the disk drive by entering: TEST DISK A/B <CR>

6) Determine whether MTD001 message displayed.

If MTD001	Go to
displayed	step 7
did not display	step 13

7) Format and update the disk drive by entering: FRMT DISK A/B UPDT <CR>

CAUTION
Formatting a disk destroys all billing data on the disk. When the format command is entered, the DMS-10 should be monitored. Formatting requires approximately 15 minutes to complete, and the process cannot be aborted by the craftsperson.

8) Obtain the status of the disk drive by entering: STAT LIOI <CR>

9) Determine whether the disk drive is disabled.

If the disk drive	Go to
is disabled	step 11
is not disabled	step 10

10) Place the disk drive in the man-made-busy state by entering: DSBL DISK A/B <CR>

11) Test the disk drive by entering: TEST DISK A/B <CR>

12) Determine whether MTD001 message displayed.

If MTD001	**Go to**
displayed	step 15
did not display	step 14

13) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

14) Replace the disk drive. (MP 1250)

15) This procedure is complete.

Clear 1600-bpi switch IOI command failure

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Obtain the status of the IOI packs by entering: STAT LIOI <CR>

3) Determine whether the disabled IOI pack is faulty.

If the disabled IOI pack	Go to
is faulty	step 4
is not faulty	step 6

4) Switch the active and inactive IOI packs by entering: SWCH LIOI <CR>

5) Determine whether an MTD001 message displays.

If an MTD001 message	Go to
displays	step 9
does not display	step 6

6) Reseat the faulty IOI pack. (MP 1250)

7) Switch the active and inactive IOI packs by entering: SWCH LIOI <CR>

8) Determine whether an MTD001 message displays.

If an MTD001 message	Go to
displays	step 9
does not display	step 11

9) Enable the AMA tape by entering: ENBL NTRA <CR>

10) Determine whether the AMA tape is enabled.

If the AMA tape	Go to
is enabled	step 12
is not enabled	step 11

11) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

12) This procedure is complete.

Clear 1600-bpi test disk command failure

1) Load Overlay MTD by entering: OVLY MTD <CR>
2) Obtain the status of the IOI devices by entering: STAT LIOI <CR>
3) Determine whether the AMA system is operational.

If the AMA system is	Go to
not operational	step 4
operational	step 8

4) Enable the AMA system by entering: ENBL AMA <CR>
5) Determine whether message MTD001 displays.

If MTD001	Go to
displays	step 6
does not display	step 8

6) Test the disk drive that has failed by entering: TEST DISK A/B <CR>
7) Determine whether message MTD001 displays.

If MTD001	Go to
displays	step 9
does not display	step 8

8) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.
9) This procedure is complete.

Clear 800-bpi magnetic tape unit (MTU) faults

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Obtain the status of the MTU by entering: STAT MTU <CR>

3) Determine whether the MTU is inactive.

If the MTU	Go to
is inactive	step 4
is not inactive	step 6

4) Switch MTU off-line by pressing ON-LINE button.

5) Determine whether the ON-LINE light went out.

If the ON-LINE light	Go to
went out	step 4
did not go out	step 9

6) Switch the active AMA hardware by entering: SWCH AMA <CR>

7) Obtain the status of the MTU by entering: STAT MTU <CR>

8) Determine whether the MTU is inactive.

If the MTU	Go to
is inactive	step 9
is active	step 32

9) Disable the MTU by entering: DSBL MTU *n* <CR>

10) Operate enable switch on Magnetic Tape Controller (MTC) pack (NT3T10) to disable position associated with this MTU.

11) Switch OFF breaker at top of MTU bay; ON-LINE light goes out.

12) Switch ON breaker at top of MTU bay; ON-LINE light stays out.

13) Operate enable switch on MTC pack to enable position.

14) Remove power by pressing POWER button; POWER light goes out.

15) Remove tape from all tape rollers, capstan, and heads.

16) Manually rewind tape onto supply reel and remove supply reel.

17) Place scratch tape reel on hub.

18) Thread tape.

19) Wind 3 or 4 turns on take-up reel.

20) Press LOAD switch.

21) Check that tape is correctly positioned on rollers and guides.

22) Press LOAD switch again.

23) Close dust cover.

24) Press ON-LINE switch

25) Press POWER button.

26) Switch MTU on-line by pressing ON-LINE button.

27) Load MTD overlay by entering: OVLY MTD <CR>

28) Enter: STAT MTU <CR>

29) Determine whether the status is RLSE.

If the status	Go to
is RSLE	step 30
is not RSLE	step 34

30) Enter: TEST MTU *n* <CR>

CAUTION
Testing an MTU will write over billing data on tape. Ensure that scratch tape is installed before performing this step.

31) Determine whether the MTU passed the test.

If the MTU	Go to
passed the test	step 33
did not pass the test	step 32

32) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

33) Replace scratch tape with a working tape (MP 1280).

34) Seize the MTU by entering: SEIZ MTU *n* (NHR2) (NEXP) <CR>

35) This procedure is complete.

Clear disabled 1600-bpi disk fault - possible power fault

1) Clear any faults associated with the Power Converter pack (NT3T89) on the 1600-bpi AMA bay IOI shelf. (TP 2004)

2) Determine whether the output message that referenced this procedure still displays.

If the output message	Go to
displays	step 3
does not display	step 12

3) Load Overlay MTD by entering: OVLY MTD <CR>

4) Place the disk drive in the man-made-busy state by entering: DSBL DISK A/B <CR>

5) Test the disk drive by entering: TEST DISK A/B <CR>

6) Determine whether the message MTD001 displays.

If MTD001	Go to
displays	step 12
does not display	step 7

7) Reseat the disk drive (MP 1250).

8) Test the disk drive by entering: TEST DISK A/B <CR>

9) Determine whether the message MTD001 displays.

If MTD001	Go to
displays	step 12
does not display	step 10

10) Replace the disk drive. (MP 1250).

11) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

12) This procedure is complete.

Clear active 1600-bpi (secondary) IOI pack (NT3T90) fault

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Determine whether the original trouble message displaying is MTD705, MTD706, or MTD707?

If the message displaying	Go to
is MTD707	step 9
is MTD705 or MTD706	step 3

3) Enable an IOI pack by entering: ENBL LIOI *n* <CR>

4) Obtain the status of the IOI packs by entering: STAT LIOI <CR>

5) Determine whether the IOI pack is enabled.

If the IOI pack	Go to
is enabled	step 9
is not enabled	step 6

6) Enable the other IOI pack by entering: ENBL LIOI *n* <CR>

7) Obtain the status of the IOI packs by entering: STAT LIOI <CR>

8) Determine whether the IOI pack is enabled.

If the IOI pack	Go to
is enabled	step 9
is not enabled	step 16

9) Test the IOI pack by entering: TEST LIOI *n* <CR>

10) Determine whether the message, MTD001 (passed) displayed.

If MTD001	Go to
displayed	step 11
did not display	step 17

11) Switch the active and inactive IOI packs by entering: SWCH LIOI <CR>

12) Obtain the status of the IOI packs by entering: STAT LIOI <CR>

13) Determine whether the active and inactive IOI packs switch.

If the active and inactive IOI packs	Go to
switch	step 14
do not switch	step 18

14) Test the active IOI pack by entering: TEST LIOI *n* <CR>

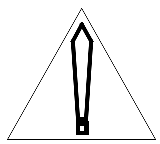
15) Determine whether the message, MTD001 (passed) displayed.

If MTD001	Go to
displayed	step 23
did not display	step 17

16) Replace the inactive IOI pack. (MP 1250)
Go to step 23.

17) Switch the active and inactive IOI packs by entering: SWCH LIOI <CR>

18) Reseat the disabled IOI pack. (MP 1250)



CAUTION
Reseating or removing an active IOI pack will cause a system initialization.

19) Switch the active and inactive IOI packs by entering: SWCH LIOI <CR>

20) Test the IOI pack by entering: TEST LIOI *n* <CR>

21) Determine whether the message, MTD001 (passed) displayed.

If MTD001	Go to
displayed	step 23
did not display	step 22

22) Abort Overlay MTD by entering: ****. Replace the IOI pack. (MP 1286)

23) This procedure is complete.

Clear 800-bpi magnetic tape unit (MTU) faults

1) Load MTD overlay by entering: OVLY MTD <CR>
2) Obtain status of MTU *n* by entering: STAT MTU <CR>
3) Determine whether the status of the MTU is MAN-DSBL.

If the status of the MTU	Go to
is MAN-DSBL	step 8
is not MAN-DSBL	step 4

4) Determine whether the status of the MTU is SYS-DSBL.

If the status of the MTU	Go to
is SYS-DSBL	step 5
is not SYS-DSBL	step 6

5) Disable MTU *n* by entering: DSBL MTU *n* <CR>
   Go to step 8.
6) Determine whether the status of the MTU is RLSE or OFFL.

If the status of the MTU	Go to
is RLSE	step 12
is OFFL	step 7

7) If ON-LINE LED is not lit, press ON-LINE button on MTU.
   Go to step 23.
8) Enable MTU *n* by entering: ENBL MTU *n* <CR>
9) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 12
does not display	step 10

10) Determine whether the LED on Magnetic Tape Controller (MTC) pack (NT3T10) is on and the enable switch is in the DISABLE position.

If the MTC pack	Go to
is disabled	step 13
is not disabled	step 11

11) Replace Magnetic Tape Controller pack (MP 1250).
    Go to step 2.
12) Determine whether the MTU unit is a tape drive or a BMC.

If the MTU	Go to
is a tape drive	step 14
is a BMC	step 15

13) Operate switch to ENABLE position.
Go to step 2.

14) Replace AMA tape (MP 1280).

15) Test MTU n by entering: TEST MTU *n* <CR>

CAUTION
Testing an MTU will write over billing data on tape. Ensure that the AMA tape has been replaced before performing this test.

16) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 17
does not display	step 22

17) Seize Magnetic Tape Unit (MP 1290).

18) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 19
does not display	step 22

19) Obtain status of MTUs by entering: STAT MTU <CR>

20) Switch active status between tape drives by entering:
SWCH AMA <CR>

21) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 23
does not display	step 22

22) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

23) This procedure is complete.

Clear 1600-bpi AMA system seize failure

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Obtain the status of the AMA tape by entering: STAT LIOI <CR>

3) Determine whether the AMA tape is in error hold (EHLD) state.

If the AMA tape	Go to
is in EHLD state	step 4
is not in EHLD state	step 10

4) Put the AMA tape in a man-made-busy state by entering: DSBL NTRA <CR>

5) Enable the AMA tape by entering: ENBL NTRA <CR>

6) If an MTD617 message prints out, disregard this message.

7) Seize the AMA tape by entering: AMA SEIZ (*header*) <CR>

8) Determine whether a trouble message displays.

If a trouble message	Go to
displays	step 9
does not display	step 17

9) Determine whether message, MTD902 or MTD904 displays.

If either MTD902 or MTD904	Go to
displays	step 15
does not display	step 16

10) Determine whether the tape is in released (RLSE) state.

If the tape	Go to
is in RLSE state	step 12
is not in RLSE state	step 11

11) Determine whether the AMA tape is in seized (SEIZ) state.

If the tape	Go to
is in SEIZ state	step 17
is not in SEIZ state	step 16

12) Seize the AMA tape for billing by entering: AMA SEIZ (header) <CR>

13) Determine whether the AMA tape is in seized (SEIZ) state.

If the tape	Go to
is in SEIZ state	step 17
is not in SEIZ state	step 14

14) Determine whether the AMA tape is in error hold (EHLD) state.

If the AMA tape	Go to
is in EHLD state	step 4
is not in EHLD state	step 16

15) Contact the next level of technical support for assistance.

16) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

17) This procedure is complete.

Clear 1600-bpi disk data dump failure

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Test the disk drive that was receiving billing data by entering: TEST DISK A/B <CR>

3) Determine whether the message, MTD001 (passed) displays.

If MTD001	Go to
displays	step 4
does not display	step 11

4) Test the other disk drive by entering: TEST DISK A/B <CR>

5) Determine whether the message, MTD001 (passed) displays.

If MTD001	Go to
displays	step 6
does not display	step 11

6) Release the AMA system by entering: AMA RLSE <CR>

7) Determine whether all of the billing data was dumped from the disk to the AMA tape.

If the billing data	Go to
was dumped from the disk to the AMA tape	step 11
was not dumped from the disk to the AMA tape	step 8

8) Re-thread the AMA tape and copy all the billing data from the disk to the AMA tape by entering: AMA COPY (*header*) <CR>

9) Determine whether all AMA records were copied to the tape.

If all AMA records	Go to
were copied to the tape	step 12
were not copied to the tape	step 10

10) Contact the next level of technical support for assistance.

11) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

12) This procedure is complete.

Clear magnetic tape unit faults

1) Determine whether the MTU has power.

If the MTU	Go to
has power	step 2
does not have power	step 19

2) Replace cable interface (NT3T11)

3) Test MTU (see MP 1503 for 800 BPI; see Overlay MTD for other tape drives).

4) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 13
does not display	step 5

5) Determine whether the display indicates an MTU fault.

If an MTU fault	Go to
is indicated	step 6
is not indicated	step 25

6) Reinstall original cable interface and replace cable (NT3T12).

7) Test MTU (see MP 1503 for 800 BPI; see Overlay MTD for other tape drives).

8) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 13
does not display	step 9

9) Determine whether the display indicates an MTU fault.

If an MTU fault	Go to
is indicated	step 10
is not indicated	step 25

10) Reinstall original cable and replace Magnetic Tape Controller (NT3T10).

11) Test MTU (see MP 1503 for 800 BPI; see Overlay MTD for other tape drives).

12) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 13
does not display	step 17

13) Enable MTU by entering: ENBL MTU *n* <CR>

14) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 15
does not display	step 25

15) Seize magnetic tape unit (MP 1290).

16) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 26
does not display	step 25

17) Determine whether the message, MTD202 displays.

If MTD202	Go to
displays	step 18
does not display	step 25

18) One of replacement packs or cables is faulty. Repeat procedure.

19) Switch ON breaker at top of bay.

20) Press POWER SWITCH.

21) Load tape on MTU.

22) Press LOAD switch; tape is taut.

23) Press LOAD switch again; tape is advanced to load point.

24) Press ON-LINE switch.
Go to step 4.

25) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

26) This procedure is complete.

Clear AMA RLSE command failure

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Obtain the status of the AMA tape by entering: STAT LIOI <CR>

3) Determine whether the message referencing this procedure was MTD928, MTD929, or MTD930.

If the message referencing this procedure is	Go to
MTD930	step 7
MTD928 or MTD929	step 4

4) Determine whether the AMA tape is in released (RLSE) state.

If the AMA tape	Go to
is in released state	step 5
is not in released state	step 9

5) Replace the AMA tape. (MP 1280)

6) Copy the billing data from the disk onto the new AMA tape by entering: AMA COPY (*header*) <CR>

   Note: *header may be: HDR - All three labels will be placed on tape; NHR2 - HDR2 will be placed on tape; NEXP - The DMS-10 will not validate the tape expiration date. HDR must be used alone. NHR2 and NEXP may be used together.*

   Go to step 10.

7) Determine whether the AMA tape is in an error hold (EHLD) state.

If the AMA tape	Go to
is in error hold state	step 8
is not in error hold state	step 9

8) Clear the AMA tape unit faults. (TP 8008)

9) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

10) This procedure is complete.

Clear AMA copy command failure

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Test the active IOI pack by entering: TEST LIOI *n* <CR>

3) Determine whether the message, MTD001 (passed) displays.

If MTD001	Go to
displays	step 4
does not display	step 5

4) Copy billing data from the disk to the AMA tape by entering: AMA COPY (header) <CR>
Go to step 16.

5) Record the output messages that resulted from the TEST LIOI *n* command. These will be used to troubleshoot the IOI pack.

6) Disable the active IOI pack and force the inactive IOI pack online by entering: DSBL LIOI *n* EMER <CR>

CAUTION
Reseating or removing an active IOI pack will cause a system Initialization.

7) Determine whether the message, MTD001 (passed) displays.

If MTD001	Go to
displays	step 8
does not display	step 15

8) Test the active IOI pack by entering: TEST LIOI *n* <CR>

9) Determine whether the message, MTD001 (passed) displays.

If MTD001	Go to
displays	step 10
does not display	step 11

10) Copy billing data from the disk to the AMA tape by entering:
AMA COPY (header) <CR>
Go to step 16.

11) Check AMA system cables.

12) Test the active IOI pack by entering: TEST LIOI *n* <CR>

13) Determine whether the message, MTD001 (passed) displays.

If MTD001	Go to
displays	step 14
does not display	step 15

14) Copy billing data from the disk to the AMA tape by entering: AMA COPY (header) <CR>
Go to step 16.

15) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

16) This procedure is complete.

Clear 800-bpi magnetic tape unit faults

1) Test the MTU (MP 1503).

2) Determine whether MTD001 and/or MTD020 display.

If MTD001 and/or MTD020	Go to
display	step 3
do not display	step 7

3) Enable the Magnetic Tape Unit by entering: ENBL MTU *n* <CR>

4) Determine whether MTD001 displays.

If MTD001	Go to
displays	step 5
does not display	step 7

5) Seize magnetic tape unit. (MP 1290)

6) Determine whether MTD001 displays.

If MTD001	Go to
displays	step 8
does not display	step 7

7) Refer to the TTY printouts and the Output Message Manual to determine the next course of action.

8) This procedure is complete.

Clear 1600-bpi magnetic tape unit fault

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Test the AMA tape by entering: TEST NTRA <CR>

3) Determine whether the message, MTD001 (passed) displays.

If MTD001	Go to
displays	step 13
does not display	step 4

4) Check the cable connection between the disk and AMA tape and tighten the connection if necessary.

5) Test the AMA tape by entering: TEST NTRA <CR>

6) Determine whether the message, MTD001 (passed) displays.

If MTD001	Go to
displays	step 7
does not display	step 18

7) Determine whether the original message that displayed was AMA254, AMA257, or MTD978.

If message that displayed originally was	Go to
either AMA254 or AMA257	step 10
MTD978	step 8

8) Repeat the command which caused MTD978 message to print out.

9) Determine whether the command was successfully executed.

If the command	Go to
was successfully executed	step 19
was not successfully executed	step 18

10) Obtain the status of the AMA system by entering: STAT LIOI <CR>

11) Determine whether at least one disk drive is enabled.

If at least one disk drive	Go to
is enabled	step 13
is not enabled	step 12

12) Enable the AMA system by entering: ENBL AMA <CR>

13) Place the AMA tape in a released state by entering: ENBL NTRA <CR>

CAUTION
The ENBL NTRA command places the AMA tape in a released state so that billing data cannot be transferred to the tape. The data should be recovered by copying the data on the disk onto a new tape.

14) Manually unload the tape and place a new AMA tape on the tape drive. (MP 1280)

15) Copy all the billing data from the disk onto the AMA tape by entering: AMA COPY *header* <CR>

16) Manually unload the tape with copied data and place a new tape on the tape drive. (MP 1280)

17) Seize the AMA tape for use by the DMS-10 by entering: AMA SEIZ *header* <CR>
Go to step 19.

18) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

19) This procedure is complete.

Clear disabled 1600-bpi magnetic tape unit or disk fault

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Determine whether the disabled AMA device is a disk drive or a tape drive

If the disabled device is	Go to
a tape drive	step 3
a disk drive	step 14

3) Determine whether an AMA tape is mounted on the tape drive.

If a tape	Go to
is mounted on the tape drive	step 5
is not mounted on the tape drive	step 4

4) Mount an AMA tape on the tape drive. (MP 1280)

5) Place the AMA tape in a released state by entering: ENBL NTRA <CR>

6) Obtain the status of the AMA tape by entering: STAT LIOI <CR>

7) Determine whether the AMA tape is enabled (ENBL).

If the AMA tape	Go to
is enabled	step 8
is not enabled	step 10

8) Seize the tape for use by the DMS-10 by entering: AMA SEIZ (*header*) <CR>

9) If appropriate, repeat the command that caused the trouble message to display.
Go to step 24.

10) Test the AMA tape by entering: TEST NTRA <CR>

11) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 5
does not display	step 12

12) Check cable connections in the AMA system and repeat the test command.

13) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 24
does not display	step 23

14) Enable Disk A by entering: ENBL DISK A <CR>

15) Determine whether the disk drive is enabled (ENBL).

If the disk drive	Go to
is enabled	step 16
is not enabled	step 18

16) Enable and update Disk B by entering: ENBL DISK B UPDT <CR>

17) Determine whether the disk drive is enabled (ENBL).

If the disk drive	Go to
is enabled	step 22
is not enabled	step 19

18) Test Disk A by entering: TEST DISK A <CR>
Go to step 20.

19) Test Disk B by entering: TEST DISK B <CR>
Go to step 21.

20) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 14
does not display	step 12

21) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 16
does not display	step 12

22) If appropriate, repeat the command that caused the trouble message to display.
Go to step 24.

23) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

24) This procedure is complete.

Clear 1600-bpi (secondary) IOI pack (NT3T90) fault - pack does not respond correctly

1) Load Overlay MTD by entering: OVLY MTD <CR>

2) Obtain the status of the IOI packs and devices by entering: STAT LIOI <CR>

3) Determine whether either IOI pack is disabled.

If either IOI pack	Go to
is disabled	step 4
is not disabled	step 17

4) Determine whether both IOI packs are disabled.

If both IOI packs	Go to
are disabled	step 5
are not disabled	step 6

5) Enable one IOI pack by entering: ENBL LIOI *n* <CR>.

6) Switch the active and inactive IOI packs by entering: SWCH LIOI <CR>

7) Obtain the status of the IOI packs and devices by entering: STAT LIOI <CR>

8) Determine whether the IOI pack that was disabled is now active.

If the IOI pack	Go to
is active	step 9
is disabled	step 12

9) Test the active IOI pack by entering: TEST LIOI *n* <CR>

10) Determine whether the message, MTD001 displays.

If MTD001	Go to
displays	step 11
does not display	step 21

11) Determine whether both IOI packs have been tested.

If both IOI packs	Go to
have been tested	step 22
have not been tested	step 6

12) Reseat the disabled IOI pack. (MP 1250)

13) Repeat the swich command by entering: SWCH LIOI <CR>

14) Determine whether the IOI pack that was disabled is now active.

If the IOI pack	Go to
is active	step 16
is not active	step 15

15) Test the IOI pack by entering: TEST LIOI *n* <CR>
Go to step 13.

16) Replace the disabled IOI pack. (MP 1250)
Got to step 9.

17) Determine whether Disk A or Disk B is disabled.

If Disk A or Disk B	Go to
is disabled	step 20
is not disabled	step 18

18) Determine whether the AMA tape is disabled.

If the AMA tape	Go to
is disabled	step 19
is not disabled	step 22

19) Test the disabled AMA tape by entering: TEST NTRA <CR>
Go to step 10.

20) Test the disabled disk drive(s) by entering: TEST DISK A/B <CR>
Go to step 10.

21) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

22) This procedure is complete.

Clear an inverter alarm in a 1600-bpi AMA bay

1) Determine whether the power switch of the 500 VA Inverter Assembly is OFF.

If the power switch	Go to
is on	step 2
is off	step 3

2) Turn the inverter power switch OFF.

3) Determine whether the -48 B2 breaker of fuse for the 1600-bpi AMA by inverter is ON.

If the breaker	Go to
is on	step 5
is off	step 4

4) Reset or turn on the -48V B2 power feed.

5) Turn the inverter power switch ON.

6) Press the inverter's RESET button, if equipped.

7) Determine whether the voltage and amperage measurements are normal.

If the measurements	Go to
are normal	step 9
are not normal	step 8

8) Use the manufacturer's documentation to troubleshoot the inverter.
Go to step 37.

9) Determine whether the inverter alarm message is still present.

If the inverter alarm message	Go to
is present	step 10
is not present	step 37

10) Use the SD1T85 to check the alarm wiring within the inverter.

11) Determine whether the alarm wiring conforms to requirements.

If the alarm wiring	Go to
conforms to requirements	step 14
does not conform to requirements	step 12

12) Rewire the alarm wiring.

13) Determine whether the inverter alarm message is still present.

If the inverter alarm message	**Go to**
is present	step 14
is not present	step 37

14) Use the SD1T85 to check the alarm wiring within the inverter.

15) Determine whether the alarm wiring conforms to requirements.

If the alarm wiring	**Go to**
conforms to requirements	step 18
does not conform to requirements	step 16

16) Rewire the alarm wiring.

17) Determine whether the inverter alarm message is still present.

If the inverter alarm message	**Go to**
is present	step 14
is not present	step 37

18) Check the P2 connector near the Power and Cooling Module.

19) Determine whether the P2 connector is plugged in.

If the P2 connector	**Go to**
is plugged in	step 22
is not plugged in	step 20

20) Plug in the P2 connector.

21) Determine whether the inverter alarm message is still present.

If the inverter alarm message	**Go to**
is present	step 22
is not present	step 37

22) Check the AMA bay-to-alarm shelf cross-connections at the MDF.

23) Determine whether the the IP35 and IPG35 designations (ALPT 56) are correctly wired as system alarm inputs from the inverter.

If the alarm inputs	**Go to**
are correctly wired	step 26
are not correctly wired	step 24

24) Plug in the P2 connector.

25) Determine whether the inverter alarm message is still present.

If the inverter alarm message	Go to
is present	step 26
is not present	step 37

26) Check the Alarm Processor pack (MP 1262).

27) Determine whether the Alarm Processor pack requires service.

If the pack	Go to
requires service	step 30
does not require service	step 28

28) Replace the Alarm Processor pack (MP 1262).

29) Determine whether the inverter alarm message is still present.

If the inverter alarm message	Go to
is present	step 30
is not present	step 37

30) Load Overlay ALT by entering: OVLY ALT <CR>

31) Busy the Alarm Signal Distribution pack by entering: BUSY 0 <CR>

32) Test the Alarm Signal Distribution pack by entering: TEST 0 <CR>

33) Determine whether the Alarm Signal Distribution pack passed the test.

If the pack	Go to
passed the test	step 35
did not pass the test	step 34

34) Replace the Alarm Signal Distribution pack (MP 1263).

35) Determine whether the inverter alarm message is still present.

If the inverter alarm message	Go to
is present	step 36
is not present	step 37

36) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

37) This procedure is complete.

Clear a fan alarm in a 1600-bpi AMA bay

1) Determine whether the 1600-bpi AMA bay is configured in the office.

If the bay	Go to
is configured in the office	step 2
is not configured in the office	step

2) At the MDF, wire IP38 to IPG38 to prevent fan alarm generation.
Go to step 37.

3) Press Power and Cooling Module fuse buttons A, B, F1, F2, and F3.

4) Determine whether an alarm response was generated for each action in the previous step.

If an alarm response	Go to
was generated	step 8
was not generated	step 5

5) Determine whether the AMA bay has power.

If the bay	Go to
has power	step 8
does not have power	step 6

6) Use the circuit breakers or fuses at the Power Distribution Panel to restore power to the AMA bay.

7) Determine whether the alarm message is still present.

If the message	Go to
is present	step 8
is not present	step 37

8) Inspect the position of the 3 fan air displacement vanes in the Power and Cooling Module.

9) Determine whether any vanes are horizontal or are near-horizontal.

If the vanes	Go to
are horizontal	step 10
are not horizontal	step 11

10) Determine whether any fuses are blown.

If fuses	Go to
are blown	step 15
are not blown	step 11

11) Determine whether the alarm cable (ED0T26-38GR2 or equivalent) is securely connected to the Power and Cooling Module.

If the alarm cable	Go to
is securely connected	step 13
is not securely connected	step 12

12) Tighten cable connections.

13) Determine whether the alarm cable from the MDF is cross-connected to the alarm shelf inputs IP38 and IPG38.

If the alarm cable	Go to
is cross-connected	step 30
is not cross-connected	step 14

14) Make appropriate cross-connection corrections.
Go to step 30.

15) Replace blown fuses on AMA bay Power and Cooling Module as required.

16) Determine whether the fuses hold.

If the fuses	Go to
hold	step 17
do not hold	step 18

17) Determine whether the alarm message is still present.

If the message	Go to
is present	step 11
is not present	step 37

18) Determine whether the fan blades/vents are blocked or restricted.

If the fan blades/vents	Go to
are blocked or restricted	step 19
are not blocked or restricted	step 23

19) Remove Power and Cooling Module fuses wired to fans.

20) Remove grillwork panel to access and clear obstruction.

21) Reinstall intact F1, F2, or F3 fuses.

22) Determine whether fan and vanes are operating correctly.

If the fan and vanes	Go to
are operating correctly	step 37
are not operating correctly	step 23

23) Open front of Power and Cooling Module and replace fan unit (MP 1295).

24) Reinsert fuses on AMA bay Power and Cooling Module.

25) Determine whether the fuses hold.

If the fuses	Go to
hold	step 26
do not hold	step 27

26) Determine whether the alarm message is still present.

If the message	Go to
is present	step 8
is not present	step 37

27) Open front door of Power and Cooling Module and inspect circuitry for faults. Make appropriate corrections.

28) Determine whether the alarm message is still present.

If the message	Go to
is present	step 29
is not present	step 37

29) Replace Power and Cooling Module. Contact Nortel Networks Technical Support.
Go to step 37.

30) Ensure that electrical continuity exists between Power and Cooling Module C connector pins 47 and 48, applied to alarm scan points IP38 and IPG38.

31) Check the Alarm Processor pack (TP3315) and replace if needed (MP 1262).

32) Check and replace, if needed, the Alarm Signal Distribution pack (MP 1263).

33) Determine whether the alarm message is still present.

If the message	Go to
is present	step 34
is not present	step 37

34) Replace cable that connects the MDF and the alarm shelf.

35) Determine whether the alarm message is still present.

If the message	Go to
is present	step 36
is not present	step 37

36) Refer to the TTY printouts and the *Output Message Manual* to determine the next course of action.

37) This procedure is complete.

Clear IBSR fault

1) Load overlay CNFG.
2) Perform QUE IBSR command. Note values for MINT MAJT
3) Load overlay SHEL.
4) Perform “!ls -lt /ibsr/primary/standard” command.
5) Determine whether any files are older than MIN/MAJ alarm thresholds (MINT, MAJT) set in OVLY CNFG IBSR.

If files are	**Go to**
older than MIN/MAJ alarm	step 6
newer than MIN/MAJ alarm	step 8

6) Perform retrieval for billing files as determined by Telco.
7) Determine if alarm cleared.

If alarm	**Go to**
cleared	step 19
did not clear	step 8

8) Load overlay SHEL.
9) Perform “!ls -lt /ibsr/primary/error” command.
10) Determine whether any error files exist.

If error files	**Go to**
exist	step 11
do not exist	step 13

11) Perform retrieval of error files as determined by Telco.
12) Determine if alarm cleared.

If alarm	**Go to**
cleared	step 19
did not clear	step 13

13) Load overlay ODQ.
14) Perform “LIST STOR” command.

15) Determine if “SPACE USED BY PRIMARY AMA FILES” is greater than 60% of 2Gb (1,288,490,188 bytes).

If files space used is	**Go to**
greater than 1,288,490,188	step 16
less than 1,288,490,188	step 18

16) Perform retrieval of billing files are determined by Telco.

17) Determine if alarm cleared.

If alarm	**Go to**
cleared	step 19
did not clear	step 18

18) Contact next level of technical support for assistance.

19) This procedure is complete.

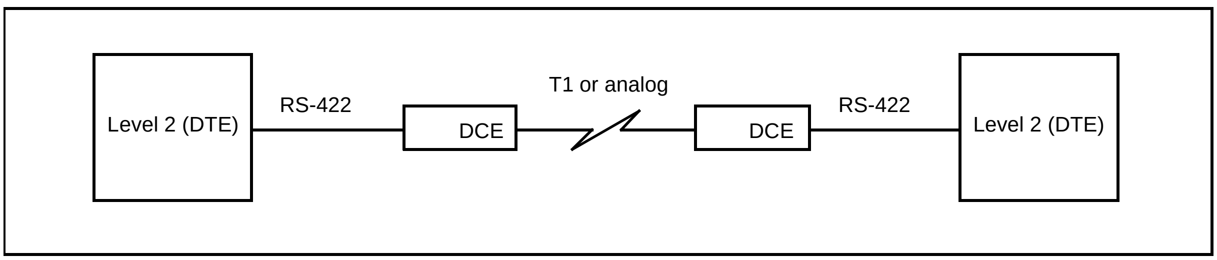
CCS7 transmission troubleshooting guide

CCS7 Level 1 configurations

For a description of the components of the Common Channel Signaling #7 (CCS7) network, see Section 6 in NTP 297-3601-100, *General Description*.

The Level 1 connection between Level 2 packs in a CCS7 network requires a dedicated channel that normally runs at 56 Kbps and three basic types of equipment as shown in Figure 1: data terminal equipment (DTE), data communications equipment (DCE), and interconnecting cables. In the DMS-10 switch the LAN Application Controller (NT4T20) pack always acts as the DTE. The DCE, on the other hand, may be either a Digital Carrier Module (DCM), modem, channel bank, or a drop/insert unit. Although the type of DCE on each end of a link can be different (for example, one end may use a channel bank while the other uses a DCM), a more reliable and maintainable connection can be achieved by using the same kind of equipment (with matching loopback capabilities and protocols) on both ends. Each of the possible types of DCE interface is briefly described in the following paragraphs.

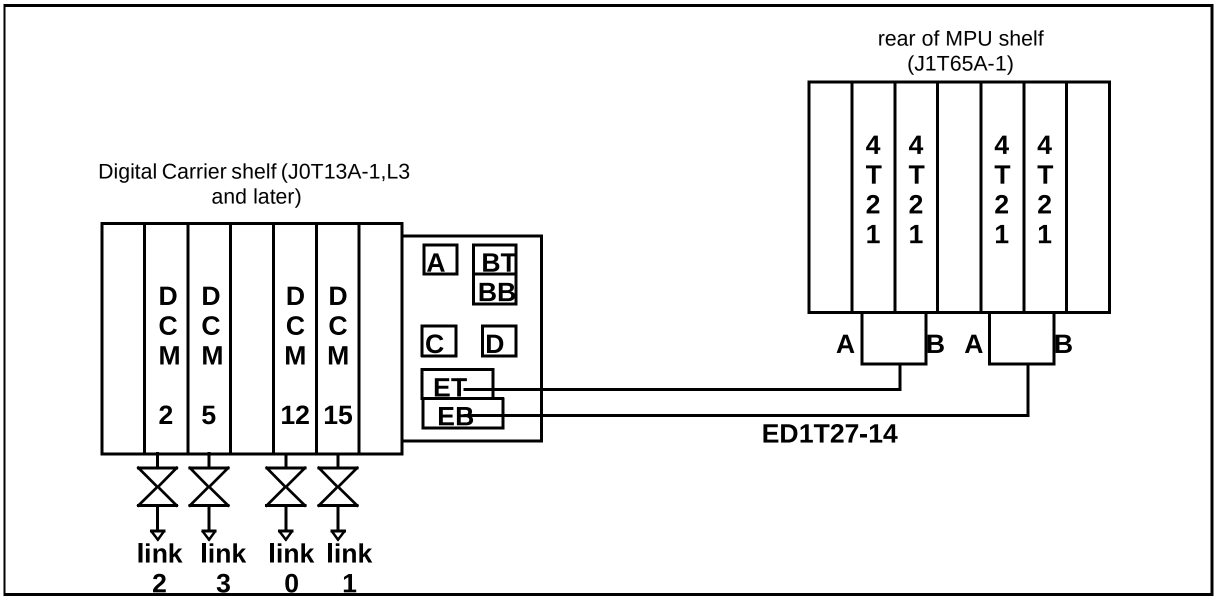
Figure 1-5: Level 2 to level 2 connection



Digital Carrier Module (DCM) interface

The DCM is housed in the Peripheral Equipment (PE) bay. On each DCM shelf, modules located in slots 2, 5, 12, and 15 are capable of accepting a CCS7 data link on channel 1 only. A special cable (ED1T27-14) is used to connect a pair of DCMs (2 and 5, or 12 and 15) to two NT4T21 paddleboards. As shown in Figure 2, connector ET on the wing panel of the DCM shelf is used for DCMs 12 and 15, while connector EB is used for DCMs 2 or 12. On the other end of the cable, connector A is wired either to DCM 2 or 12 and connector B is wired either to DCM 5 or 15. The DS1 signal is sent to a T1 facility for transmission to the far end office.

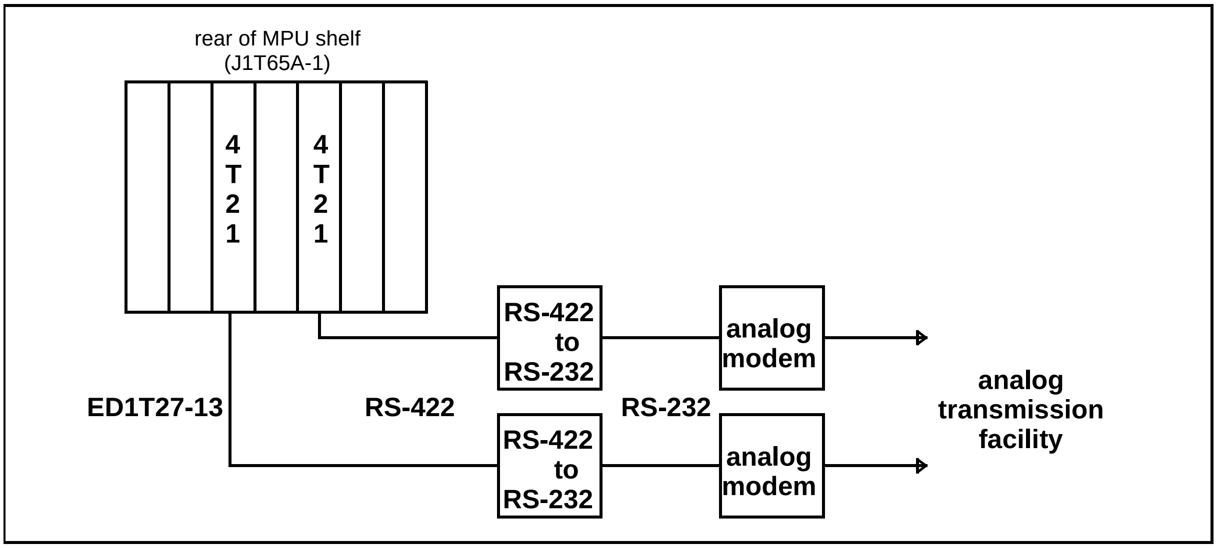
Figure 1-6: MPU to DCM interconnection



Modem interface

By converting the RS-422 signal from the NT4T21 paddleboard into RS-232 format, as shown in Figure 3, an analog modem can be used for transmission on the CCS7 data link. Generally, a 4.8 Kbps modem is used.

Figure 1-7: Analog modem interface



Channel bank DCE options

Channel banks provide a more flexible way to multiplex the 56 Kbps data link from an NT4T20 onto a T1 span since any combination of channels in the T1 span can be used for CCS7 data links. There are 24 slots in a channel bank, and each slot corresponds to its respective channel in the DS1 frame.

Channel unit cards provisioned in the channel bank are used to interface voice frequency (VF) and digital data devices to the T1 span. Digital data channel units are available that are compatible with many physical layer formats. Some of the most common formats used for CCS7 data links are:

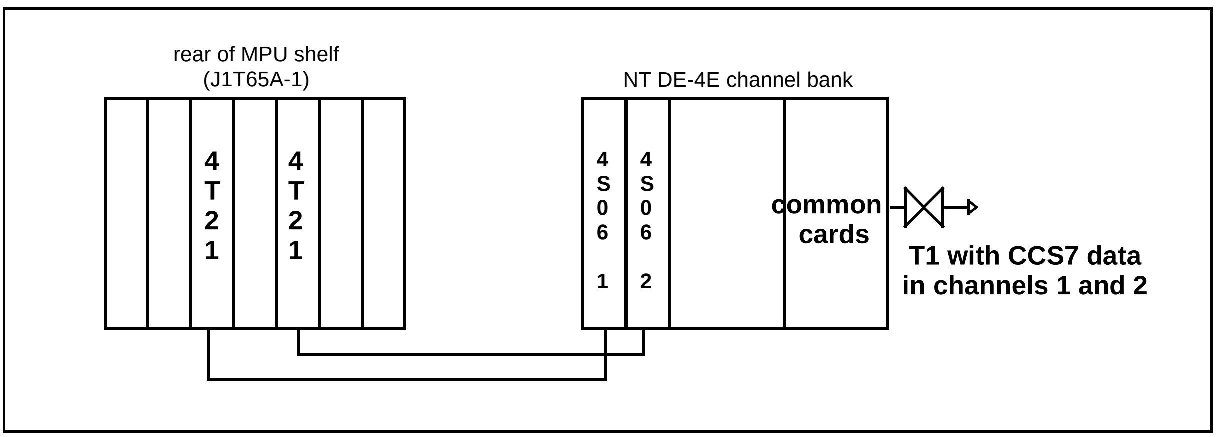
- RS-422
- OCU-DP (office channel unit - data port)
- V.35
- DS0-DP (DS0 - data port)

Each of these interface options is discussed in the following paragraphs.

RS-422 compatible channel bank interface

A direct connection between the NT4T21 paddleboard and a channel unit is possible if the channel unit is able to accept an RS-422 interface. An NT4S06 channel unit provisioned either in an NT DE-4E channel bank or Smart channel bank is one such unit, as shown in Figure 4. It is able to directly connect the NT4T20 to the channel bank with a 36-pin to 25-pin cable. The NT4S06 provides local loopback capability, and also remote loopback if an NT4S06 is used on the far end. It does not, however, provide any form of bit error rate testing (BERT).

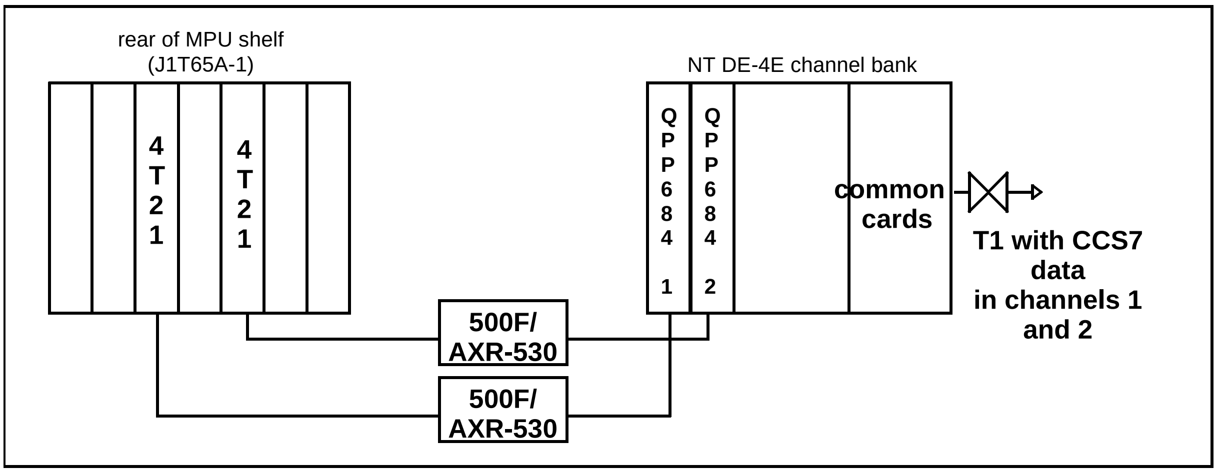
Figure 1-8: RS-422 compatible channel bank interface



OCU-DP compatible channel bank interface

OCU-DP is a 4-wire interface standard which requires a channel service unit (CSU)/ data service unit (DSU) between the NT4T21 paddleboard and the channel bank to translate the RS-422 signal. There are several OCU-DP compatible channel units for both the NT DE-4E channel bank and the AT & T D4 channel bank. There are also a number of CSU/DSUs that convert RS-422 to OCU-DP format. One combination, shown in Figure 5, is the QPP684 channel unit in an NT DE-4E (non-smart) bank and rack-mounted General DataComm GDC 500F/AXR-530 CSU/DSU.

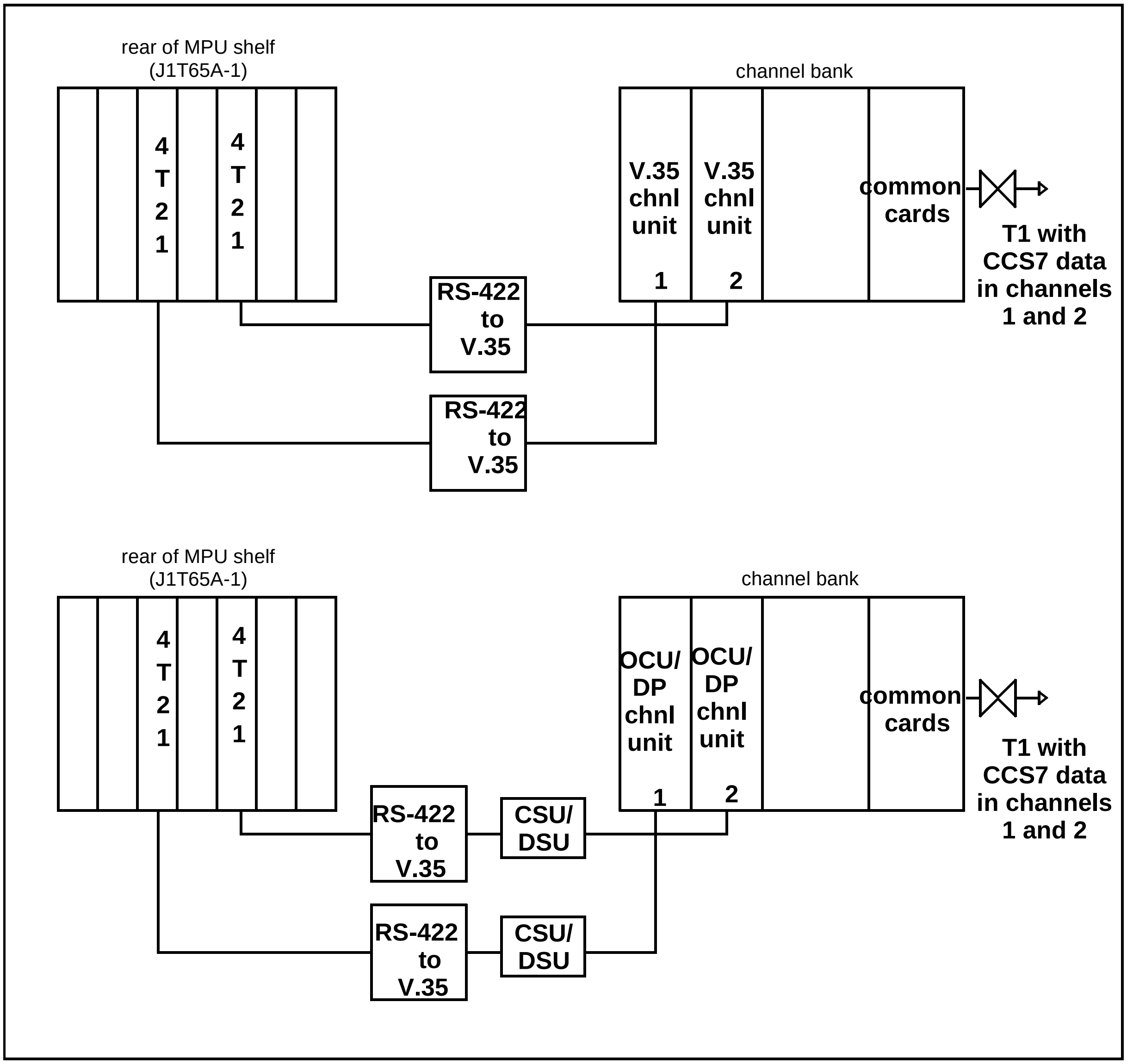
Figure 1-9: OCU-DP compatible channel bank



V.35 compatible channel bank interface

The native RS-422 line format can be converted from the NT4T21 paddleboard into a V.35 format for use either of a V.35 compatible channel unit or a V.35 compatible CSU/DSU. Two generic variations of this configuration are shown in Figure 6: the version at the top of the illustration shows an interface converter and a V.35 compatible channel unit; the version at the bottom of the illustration shows an interface converter, V.35 compatible CSU/DSU, and an OCU-DP compatible channel unit.

Figure 1-10: V.35 compatible channel bank interface

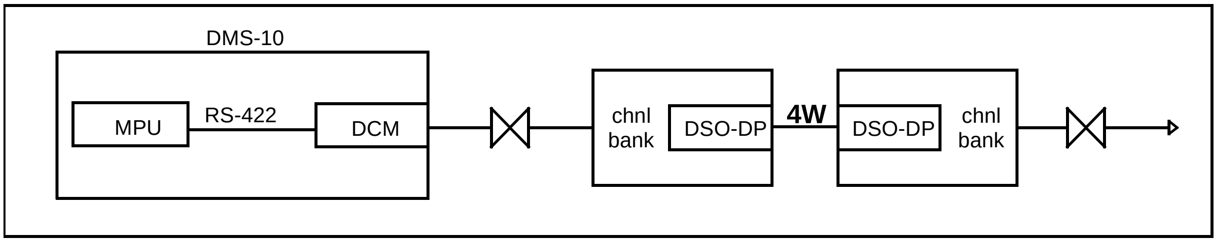


DS0-DP

DS0-DP channel units are not used to connect a CCS7 DTE to the transmission facility, but rather to provide a tandem function such as switching timeslots or T1 spans. DS0-DPs are also used to provide monitor and loopback access to a CCS7 link for maintenance purposes. Figure 7 shows how DS0-DP channel units can be used with the DCM interface option. The channel banks may be colocated with the CCS7 terminal or may instead be located in a tandem office.

One advantage in using the DS0-DP channel unit is that it is usually equipped with maintenance access jacks which can be bridged to allow monitoring of the link with a CCS7 test set, or looped back for bit error rate testing.

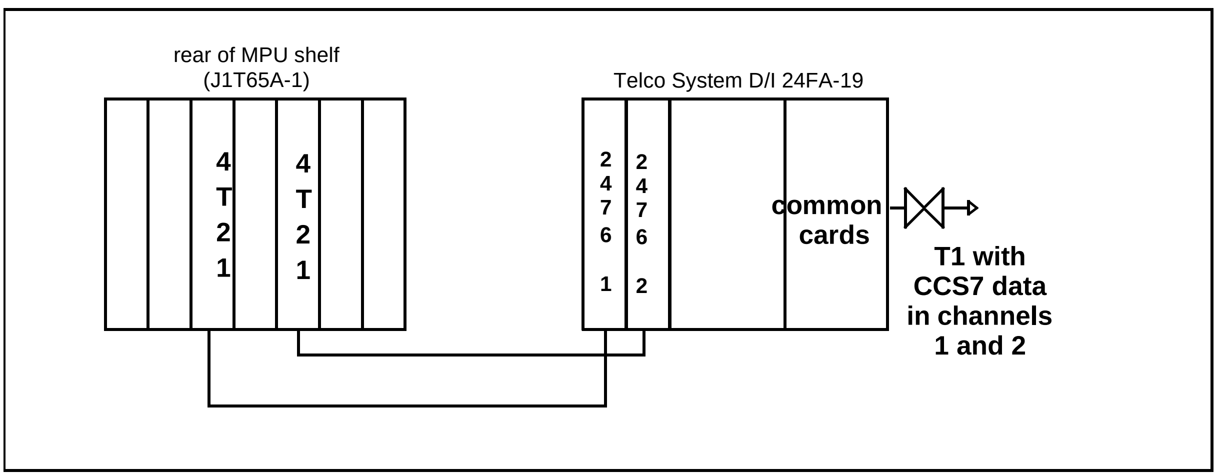
Figure 1-11: DSO-DP compatible channel bank interface



Drop/insert unit interface

As shown in Figure 8, drop/insert units can be used in a fashion similar to the channel bank for multiplexing a CCS7 link into a T1 signal.

Figure 1-12: Drop/insert interface



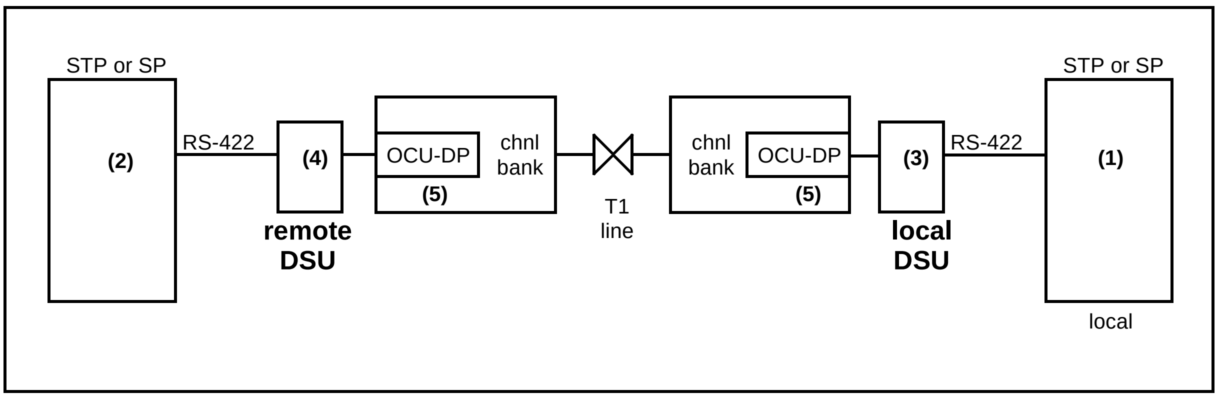
Testing CCS7 links using loopbacks

Loopbacks can be used either with or without a bit error rate test (BERT) (see Overlay TLT in NTP 297-3601-506, *Maintenance Diagnostic Input Manual*). If BERT capabilities are available and if a BERT is run for a significant period of time, the telco can obtain an objective and reliable measurement of the integrity of the transmission path between the BERT source and the loopback point. If BERT capabilities are not available, the quality of the transmission path can still be determined by looping back the link at various points and monitoring the CCS7 error counts. CCS7 Level 2 performs rigorous error checking on every signal unit that is received off of the link, and since signal units are constantly sent even if no user data is being transmitted, in effect a form of BERT is always running on a CCS7 link.

The following paragraphs describe the types of loopbacks commonly available using the transmission equipment configuration shown in Figure 9.

> ***Note:*** None of the loopback tests described can be performed by the DMS-10 switch.

Figure 1-13: Loopbacks



Local link interface loopback (1)

This loopback is initiated by connecting the output of the link transmitter at the DTE to the link receiver. The link interface output is blocked during this loopback. With this loopback in effect, all transmitted data is looped back to the link interface receiver.

Remote link interface loopback (2)

When this loopback is operated, all incoming data is echoed back onto the signaling link. This loopback is operated by connecting the receive and transmit lines. No test statistics such as bit errors and errored seconds are collected during this loopback by the remote link interface.

Local DSU loopback (3)

This loopback test checks the performance of the local DSU and its associated DTE. In some cases, this test also loops the line side back to the far end, allowing both ends to test the two segments of the transmission path. This loopback test is non-standard (from a Bellcore requirements perspective) and is usually initiated and terminated using a switch on the DSU. Some models allow the loopback to be initiated from the DTE by asserting the local loopback circuit of the RS-422 interface (pin 18).

Remote DSU loopback (4)

The remote loopback checks the performance of the local and remote DSUs, the local DTE, and the communications line. It is initiated from the local DSU using a switch on the unit or by asserting the Remote Loopback circuit of the RS-422 interface (pin 21), and through a proprietary interface causes the remote DSU to loop back.

OCU loopback (5)

The OCU loopback is generally initiated through a faceplate switch.

Monitoring integrity of CCS7 links

There are two primary methods that can be used to monitor the integrity of DMS-10 CCS7 links: watching for link failure and recovery as indicated, respectively, by *CCS2xx* and *CCS100* output messages; observing the signal unit error rate in the SGER counter in operational message (OPM) block “S7L2" (see Section 4 of NTP 297-3601-456, *Operational Measurements*, for more information).

Link alignment failure

A *CCS2xx* output message indicates that a Signaling Network Link (SNL) will not align. This occurs when the link is busied and remains out-of-service after an attempt is made to return it to service. During the time that the link is out-of-service, it tries to align once per second by going into either the *normal alignment* or *emergency alignment* state and sending *link status signal units* (LSSU) between two NT4T20 packs. If the LSSUs are received for a sufficient period of time with an error rate below an acceptable threshold (*emergency alignment* state has shorter duration than *normal alignment* state), the link goes into the aligned state. If the threshold is exceeded, the link remains in the out-of-service state and tries periodically to align.

There are two general causes for this type of error: a break in the circuit between the two level-2 packs; excessive errors on the link. The following are specific causes for these errors to be investigated:

- incorrect cable pin-out
- NT4T21 paddleboard in the wrong location on the rear of the essaging shelf (J1T65)
- if DCMs are used to carry the link, the NT2T32 (Carrier Interface) pack has switches set incorrectly (for example, #2 switch is set to the ON position when it should be set to OFF position)

- Signaling Transfer Point (STP) links are going to the wrong DPC
- NT4T20 packs are defective
- links are not attached to the DCM, or are not attached to the correct DCM

If there are two links to the same destination point code (DPC), the cables on the back of the NT4T21 paddleboards can be rolled to determine which end of the link has the fault. In addition, the ET and EB connectors at the DCM shelf can be rolled to determine which end has the problem. Finally, the spans can be rolled as can the DCMs for problem resolution.

Bouncing links

In this error condition, the links align initially, then fail, and then realign later. The links may remain out of service for a few seconds or for several hours before coming back into service. Also characteristic of this type of error is the randomness of the time of day the link fails and returns to service. There is no reasonable correlation between this type of error condition and any other observable event in the local or remote office.

There are several causes for this error condition:

- excessive errors on the link (output message CCS204): indicates bit errors are occurring on the receive side of the CCS7 link
- watchdog timeout received (output message CCS220): indicates that the NT4T20 has not received a signal unit within about 200 milliseconds. This is usually caused either by a break in the transmission path or by the far end stopping transmission.
- watchdog timeout transmitted (output message CCS221): indicates that the NT4T20 has not transmitted a signal unit within about 200 milliseconds. Since the Level 2 firmware is responsible for transmitting signal units, the error indicates a problem either with the NT4T20 hardware or firmware
- far end reports out of alignment (output message CCS203): indicates that the far end has detected a fault and has initiated the link outage. Usually, other link failure messages (for example, CCS204) will already have printed at the far end.

The following procedure can be used to determine the source of the errors:

- Verify that the cable pin out is correct.
- Verify that there are no diodes on the NT4T21s at each end of the link.
- If the DCM is used, and only one NT4T20 is attached to the DCM cable, verify that a terminator is on the unused DCM cable connector (ED1T27-18).
- Verify that the correct version of Level 2 firmware is installed (version 3.2 or later).

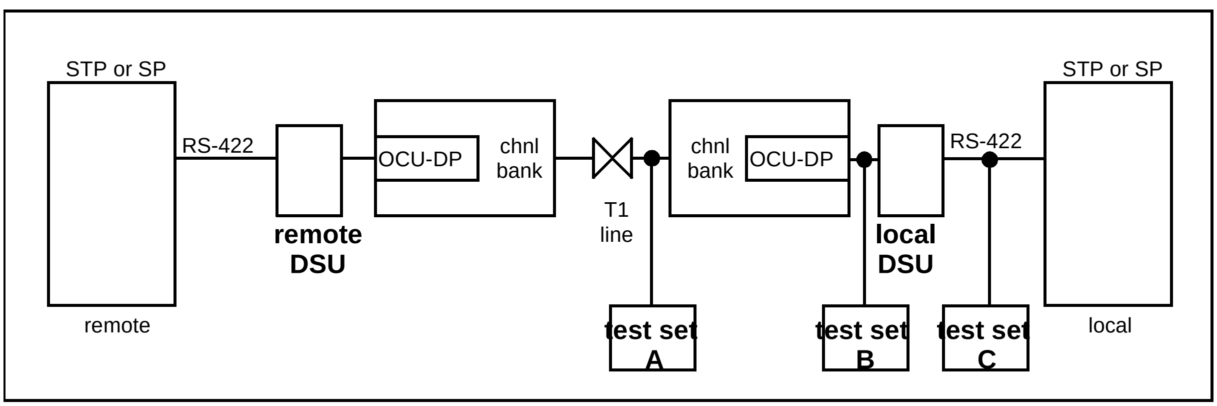
- If a T1 span is used to transmit the CCS7 link, verify that all 4 wires of the span are terminated correctly, either at the DCM, channel bank or drop/insert unit, depending on the configuration. Use an oscilloscope to verify that a signal is present on all 4 wires. (It is possible to have a break in one of the wires and the equipment still syncing to the signal on the pair wire).
- Sectionalize the link by establishing loopbacks at various points and either run a BERT test (see Overlay TLT in NTP 297-3601-506, *Maintenance Diagnostic Input Manual*) or allow the link to align, monitoring for signal unit errors either through operational measurements or by using a test set.

Signal unit errors

Monitoring the SGER count in the “S7L2" OPM block when test sets (that can monitor a CCS7 link at the DS-1, DS-0, and RS-422 level and can reliably count signal unit errors) are placed at various points in a link helps to determine where errors are occurring. An SGER counter is assigned to each link and pegs each time the link detects a CRC error, abort, signal unit too short, signal unit too long, or non-aligned octet. With a link aligned between the local and remote office, each test set counts the number of signal unit errors. The individual test set error counts can then be compared and the location at which the error is introduced can be determined. For example, in Figure 10, in the direction towards the local STP or SP, if all three test sets (A, B, C) detect the same number of signal unit errors, the error is introduced by the remote end or the T1. If test sets B and C detect more errors than test set A, the channel bank is introducing the errors. If test set C detects more errors than A or B, the DSU is the probable source.

The same strategy can be used at the remote end in either the transmit or receive direction. It is helpful to draw a diagram showing the transmission path and test set locations, determine which direction to investigate, and then examine the counters of the test sets.

Figure 1-14: Signal unit errors



Bit Error Rate Testing (BERT) problem analysis and response

Note: *Before performing the following procedure, refer to the defined telco process for responding to BERT errors to determine whether corrective action is required. For complete information about the BERT feature and its use with the DMS-10 switch, see Section 9, “Bit Error Rate Testing,” in NTP 297-3601-500, General Maintenance Information.*

1) Determine whether any corrective action is required.

If corrective action	Go to
is required	step 3
is not required	step 2

2) Log the BERT results information.
Go to step 13.

3) Following procedure MP 1250, replace the first pack listed in the BERT Equipment List.

4) Using the BERT overlay (see NTP 297-3601-311, *Data Modification Manual*, Overlay BERT), retest the path on which the error was found.

5) Determine whether the path passed the test.

If the path	Go to
passed the test	step 13
did not pass the test	step 6

6) Following procedure MP 1250, restore the pack that was removed.

7) Determine whether all packs on the equipment list have been tested.

If all packs on the equipment list	Go to
have been tested	step 9
have not been tested	step 8

8) Following procedure MP 1250, replace the next pack listed in the BERT Equipment List.
Go to step 4.

9) Determine whether there is any external equipment on the path.

If external equipment	Go to
is on the path	step 10
is not on the path	step 12

10) Test the external equipment following the manufacturer's instructions.

11) Determine whether all problems with the external equipment have been corrected.

If all problems with the external equipment	Go to
have been corrected	step 13
have not been corrected	step 12

12) Contact the next level of technical support for assistance.

13) This procedure is complete.

AIN trouble locating and clearing procedures

This chapter contains step-by-step instructions and procedures designed to assist operating company first-level maintenance personnel in locating and resolving faults related to the Advanced Intelligent Network (AIN) service on the DMS-10 switch. For a description of the Advanced Intelligent Network, see NTP 297-3601-105, *Features and Services Description*.

AIN faults generally fall into one of the following categories:

- Customer expected to receive dial tone but didn't hear dial tone (see page 3)
- Customer should not receive dial tone but heard dial tone (see page 6).
- Customer cannot call out (see page 8)
- Customer should not be allowed to call out (see page 10)
- Customer can not be called (see page 11)
- Customer should not be called (see page 15)
- Customer expected to receive an announcement but no announcement was heard (see page 17)
- Customer was not able to activate or deactivate their AIN service (see page 19)

When an AIN trigger was not encountered, follow the test steps for the trigger listed below to determine why the trigger was not encountered.

- Off-hook immediate (OHI) trigger (see page 22)
- Off-hook delay (OHD) trigger (see page 24)
- Shared inter-office trunk (SIT) trigger (see page 28)
- PODP feature code (FCD) trigger (see page 30)
- Customized dialing plan (CDP) trigger (see page 32)
- PODP N11 (N11) trigger (see page 34)
- PODP 3-through-10 digit (DIG) trigger (see page 35)
- Local Number Portability trigger (see page 38)
- Termination attempt (TA) trigger (see page 42)

When an AIN trigger was encountered but the AIN call didn't complete, then see “AIN call triggers but doesn't complete” (page 45).

Additional information that may be used in locating and resolving faults may be found in the following sections:

- CCS7 network problems (see page 48)
- Output Message Manual (see page 49)
- AIN Operational Measurements (see page 50)
- AIN announcements (see page 52)
- AIN debug tools provided by the DMS-10 switch (see page 54)

Customer expected to receive dial tone but didn't hear dial tone

Definition

This complaint means that the customer cannot get dial tone when he/she goes off-hook.

Application

Use this procedure to locate and correct the difficulty being reported by the customer who cannot get dial tone in order to make an outgoing call. The features of AIN software and the service control point (SCP) database may be preventing the caller from receiving dial tone.

This applies to the off-hook immediate (OHI) trigger for lines.

Possible causes

Possible causes of the problem include:

- congestion at the service switching point (SSP)
- incorrect or incomplete data
- activation of automatic code gapping (ACG)
- protocol or application errors caused by incorrect transaction capability application part (TCAP) messages
- SCP data entry or service logic program (SLP) error
- OHI trigger

Action

Use the following step-by-step instructions to determine why the customer can't get dial tone:

- Does the customer subscribe to the off-hook immediate (OHI) trigger?

  No: Go to step 9.

- Use the translation verification (TRVR) function to trace the call from the originator. Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  No: collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, did the call encounter the OHI trigger?

  No: Go to step 10.
- Is the off-hook immediate (OHI) trigger currently active? Use overlay ODQ to query the trigger status.

  No: Go to step 10.
- Perform the step-by-step instructions for the OHI trigger. See “Off-hook immediate (OHI) trigger” on page 22. Was the fault cleared?

  Yes: No further action is required.
- From the call trace, determine the response for the OHI trigger:

  Analyze Route: Go to step 7.

  Disconnect: Go to step 8.

  Send to resource: Go to Step 9.

  If the response is a response other than those shown above, see “AIN call triggers but doesn't complete” on page 45.
- The response from the OHI query was an “analyze route” message. The call is being routed to a destination. Determine if this is the correct response for the AIN service being provided. Contact the AIN service provider for assistance. Was it correct? If the response was correct, inform the customer that calls to their number are currently being routed according to the AIN service being provided.

  No: Inform the AIN service provider to resolve this problem.
- The response from the OHI query was a “disconnect” message. The SCP is instructing the DMS-10 switch to disconnect this call.

  Determine if this is the correct response for the AIN service being provided. Contact the AIN service provider for assistance. Was it correct?

  Yes: Inform the customer that calls from his/her number are currently being disconnected according to the AIN service being provided.

  No: Inform the AIN service provider to resolve this problem.

- The response from the OHI query was a “send to resource” message. The SCP is instructing the DMS-10 switch to play an announcement.

  Determine if this is the correct response for the AIN service being provided. Contact the AIN service provider for assistance. Was it correct?

  Yes: Inform the customer that calls from his/her number are currently being routed to an announcement according to the AIN service being provided.

  No: Inform the AIN service provider to resolve this problem.
- The customer either does not subscribe to the off-hook immediate trigger, the trigger is inactive, or the call did not encounter the OHI trigger when the caller went off-hook.

  Does the customer subscribe to any switch-based feature that is preventing the caller from receiving dial tone (such as deny origination, manual line, or automatic line), or is the customer's line currently suspended from service?

  Yes: Inform the customer. No further action is required.
- Check the line status and verify the hardware. Were there any line or hardware faults?

  Yes: Follow the appropriate procedure to resolve.

  No: Refer to next level of support for assistance in clearing this problem.

Customer should not receive dial tone but heard dial tone

Definition

This complaint means that a caller received dial tone at a station when the AIN service should have prevented this from occurring (for example, when calls are restricted to certain times of the day).

Application

Use this procedure to locate and correct the difficulty being reported by the customer who received dial tone and was able to make an outgoing call. The features of AIN software and the service control point (SCP) database should have prevented the caller from receiving dial tone.

This applies to the off-hook immediate (OHI) trigger for lines.

Possible causes

Possible causes of the problem include:

- incorrect data or incomplete data entry
- protocol or application errors caused by incorrect transaction capability application part (TCAP) messages
- SCP data entry or service logic program (SLP) error

Action

Use the following step-by-step instructions to determine why the customer received dial tone:

- Perform the step-by-step instructions for the OHI trigger. See "Off-hook immediate (OHI) trigger" on page 22. Was the fault cleared?

  Yes: no further action is required.
- Is the off-hook immediate (OHI) trigger currently inactive?

  No: Refer to next level of support for assistance in clearing this problem.
- The off-hook immediate (OHI) trigger is currently inactive.

  To provide the AIN service, should the OHI trigger be used in combination with a switch-based feature (for example, deny origination)?

  No: Refer to next level of support for assistance in clearing this problem.
- Is the station option for the switch-based feature assigned to the subscriber's line profile?

  No: Assign the station option.

  Yes: Refer to next level of support for assistance in clearing this problem.

Customer cannot call out

Definition

This complaint means that the customer was unable to make an outgoing call because the AIN service prevented the call from being placed.

Application

Use this procedure to locate and correct the difficulty being reported by the customer who cannot complete outgoing calls using the features of AIN software and the service control point (SCP) database to query for routing and billing information.

This applies to the off-hook delay (OHD) trigger for lines, customized dialing plan (CDP) trigger for business groups, public office dialing plan (PODP) feature code (FCD) trigger for lines, shared inter-office trunk (SIT) trigger, PODP 3-through-10 digit (DIG) trigger, PODP N11 (N11) trigger, and Local Number Portability (LNP) trigger.

Possible causes

Possible causes of the problem include:

- congestion at the service switching point (SSP)
- incorrect data or incomplete data entry
- inability of the customer to activate AIN service
- activation of automatic code gapping (ACG)

- protocol or application errors caused by incorrect transaction capability application part (TCAP) messages
- SCP data entry or service logic program (SLP) error

Action

Use the following step-by-step instructions to determine why the customer can't call out:

- Use the translation verification (TRVR) function to trace the call from the originator to the destination that the customer was trying to reach.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, determine whether the call encountered a trigger. Was a trigger encountered?

  No: Go to step 9.
- An AIN trigger was encountered. From the call trace, determine which trigger was encountered. Perform the step-by-step instructions for the trigger described later in this section. Was the fault cleared?

  Yes: Inform the customer. No further action is required.
- Was a response received from the SCP? If not, follow the instructions for “AIN call triggers but doesn't complete” on page 47.
- Determine if the SCP instructed the DMS-10 switch to a) Disconnect the call or b) Play an announcement and then disconnect the call. Was either of these responses received?

  Yes: Verify with the AIN service provider that this was a correct response for the service being provided and inform the customer.
- If the response was an analyze route message, then using the TRVR function, trace the call using the various response options. Determine “where” the call is being routed to. Is this correct for the AIN service? Take whatever corrective action is necessary and inform the customer.
- If the response was a send to resource message indicating “play and collect”, then determine a) what the customer entered, if anything, and b) what information the SCP is expecting. Use the TRVR command and enter the information. Go to step 4.
- If the response was a continue message, TRVR will continue processing. Was another trigger encountered?

  Yes: Go back to step 3.

  No: Go to step 10.

- No trigger was encountered.
- Check the trace output by the translation verification function. Was the call routed correctly according to the destination digits?

  Yes: Inform the customer. No further action is required.

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

Customer should not be allowed to call out

Definition

This complaint means that a person was able to make an outgoing call when the AIN service should have prevented this call from being placed (for example, toll call restriction).

Application

Use this procedure to locate and correct the difficulty being reported by the customer who can complete an outgoing call when the AIN service should have prevented the call from being placed by using the features of AIN software and the service control point (SCP) database.

This applies to the off-hook delay (OHD) trigger for lines, customized dialing plan (CDP) trigger for business groups, and public office dialing plan (PODP) feature code (FCD) trigger for lines.

Possible causes

Possible causes of the problem include:

- incorrect data or incomplete data entry
- inability of the customer to activate AIN service
- SCP data entry or service logic program (SLP) error

Action

Use the following step-by-step instructions to determine why the customer can call out:

- Follow the test procedures “Off-hook delay (OHD) trigger” on page 24 to determine whether the OHD trigger is working. This will include testing the FCD or CDP trigger.

Customer cannot be called

Definition

This complaint means that the customer has subscribed to an AIN service but cannot receive any incoming calls.

Application

Use this procedure to locate and correct the difficulty being reported by the customer who cannot receive incoming AIN calls using the features of AIN software and the SCP database.

This applies to customers using subscribed triggers, including the termination attempt (TA) trigger for lines, customized dialing plan (CDP) trigger for business groups, and public office dialing plan (PODP) feature code (FCD) trigger for lines. This also applies to calls encountering the PODP 3-through-10 digit (DIG) trigger, and the Local Number Portability (LNP) trigger.

Possible causes

Possible causes of this problem are the same as the causes of “Customer can not call out” problems covered in the previous section and can include:

- Congestion at the SSP
- incorrect data or incomplete data entry
- inability of the customer to activate AIN service
- activation of ACG
- protocol or application errors caused by incorrect TCAP messages
- SCP data entry or SLP error

Action

Use the following step-by-step instructions to determine why the customer can't be called:

- Use the translation verification (TRVR) function to trace the call from the originator to the customer's directory number (DN) or directory number/call type (DN/CT).

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, determine whether the call reached the customer's DN or DN/CT. Did the call trace reach the customer's DN or DN/CT?

  Yes: Proceed to step 5.
- From the call trace performed in step 1, did the call encountered a 3-through-10 digit (DIG) trigger?

  Note: *More than one DIG trigger may have been encountered.*

No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

- At least one 3-through-10 digit (DIG) trigger was encountered.

  A DIG trigger is preventing calls from terminating to the customer's line. Collect all relevant information and printouts and refer to AIN service provider for assistance in clearing this problem. No further action is required.

- The call has reached the customer's directory number (DN) or directory number/ call type (DN/CT).

  Examine the call trace performed in step 1 and determine whether the customer subscribes to the termination attempt (TA) trigger. Is the termination attempt (TA) trigger subscribed to?

  No: Go to step 8.

- Perform the step-by-step instructions for the TA trigger. See “Termination attempt (TA) trigger” on page 42. Was the fault cleared?

  Yes: Inform the customer. No further action is required.

- Determine the response for the “termination attempt” trigger.

  Authorize termination: Go to step 8.

  Forward Call: Go to step 9.

  Disconnect: Go to step 10.

  Send To Resource: Go to Step 11.

  Other: See “AIN call triggers but doesn't complete” on page 45.

- The response from the TA query was an “authorize termination” message or the TA trigger was not subscribed to.

  Examine the call trace performed in step 1.

  Does the customer subscribe to any switch-based feature that is preventing the call from terminating to the customer's line (such as call forwarding, deny termination, or selective call acceptance/rejection), or is the customer's line currently suspended from service?

  Yes: Inform the customer. No further action is required.

  No: Refer to next level of support.

- The response from the TA query was a “forward call” message. The call is being forwarded to another destination.

  Determine if this is the correct response for the AIN service being provided. Contact the AIN service provider for assistance. Was it correct?

  Yes: Inform the customer that calls to his/her number are currently being forwarded according to the AIN service being provided. If the service can be deactivated by the customer, assist in deactivating the service. See “PODP feature code (FCD) trigger” on page 30 or “Customized dialing plan (CDP) trigger” on page 32.

No: Inform the AIN service provider to resolve this problem.

- The response from the TA query was a “disconnect” message. The SCP is instructing the DMS-10 switch to disconnect this call.

  Determine if this is the correct response for the AIN service being provided. Contact the AIN service provider for assistance. Was it correct?

  Yes: Inform the customer that calls to his/her number are currently being disconnected according to the AIN service being provided. If the service can be deactivated by the customer, assist in deactivating the service. See “PODP feature code (FCD) trigger” on page 30 or “Customized dialing plan (CDP) trigger” on page 32.

  No: Inform the AIN service provider to resolve this problem.

- The response from the TA query was a “send to resource” message. The SCP is instructing the DMS-10 switch to play an announcement. Is it a “terminating announcement” message?

  No: Go to step 13.

- The SCP is instructing the DMS-10 switch to play an announcement and then disconnect this call.

  Determine if this is the correct response for the AIN service being provided. Contact the AIN service provider for assistance. Was it correct?

  Yes: Inform the customer that calls to his/her number are currently being disconnected after an announcement according to the AIN service being provided. If the service can be deactivated by the customer, assist in deactivating the service. See “PODP feature code (FCD) trigger” on page 30 or “Customized dialing plan (CDP) trigger” on page 32.

  No: Inform the AIN service provider to resolve this problem. Inform the customer. No further action is required.

- The SCP is instructing the DMS-10 switch to play an announcement and then collect information from the caller.

  Determine if this is the correct response for the AIN service being provided. Contact the AIN service provider for assistance. Was it correct?

  Yes: Inform the customer that calls to his/her number are currently being intercepted and the caller is played an announcement according to the AIN service being provided. The caller must then enter information, such as a PIN code, in order to complete the call. Ask the AIN service provider to determine what information is expected and have the customer inform all of his/her callers.

  No: Inform the AIN service provider to resolve this problem. Inform the customer. No further action is required.

Customer should not be called

Definition

This complaint means that the customer received an incoming call when they have subscribed to an AIN service that should have prevented the call from terminating (for example, Do Not Disturb).

Application

Use this procedure to locate and correct the difficulty being reported by the customer who received an unexpected incoming AIN call.

This applies to customers using subscribed triggers, including the termination attempt (TA) trigger for lines, customized dialing plan (CDP) trigger for business groups, and public office dialing plan (PODP) feature code (FCD) trigger for lines.

Possible causes

Possible causes of this problem include:

- incorrect or incomplete data
- customer cannot activate AIN service
- SCP data or SLP error

Action

Use the following step-by-step instructions to determine why the customer received an incoming call:

- Use the translation verification (TRVR) function to trace the call from the originator to the customer's directory number (DN) or directory number/call type (DN/CT).

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- Examine the call trace performed in step 1 and determine whether the customer subscribes to the termination attempt (TA) trigger. Is the termination attempt (TA) trigger subscribed to?

  No: Determine whether the TA station option should be added to the customer's line profile and inform the customer. No further action is required.
- From the call trace, determine whether the call triggered using the termination attempt (TA) trigger. Did the call encounter the TA trigger?

  No: Follow the instructions in “Termination attempt (TA) trigger” on page 44 to determine why the call didn't trigger. No further action is required.

- The customer may use either the FCD or CDP trigger to activate and deactivate the TA trigger for the AIN service being provided.

  If the customer has a residential or IBS line then follow the instructions in "PODP feature code (FCD) trigger" on page 30 to validate the FCD trigger.

  If the customer has an EBS line then follow the instructions in "Customized dialing plan (CDP) trigger" on page 32 to validate the CDP trigger.

  Is the FCD or CDP trigger working?

  No: Follow the instructions for the appropriate trigger to determine why the trigger doesn't work. No further action is required.
- The response must have been an "authorize termination" message in order for the call to terminate to the customer's line.

  Is the authorize termination message the correct response for the AIN service being provided? Contact the AIN service provider for assistance.

  No: Inform the AIN service provider to resolve this problem.

  Yes: Inform the customer. Instruct the customer on how to activate and deactivate the AIN service.

Customer expected to receive an announcement but no announcement was heard

Definition

This complaint means that the customer expected to receive an announcement but no announcement was heard.

Application

Use this procedure to locate and correct the difficulty being reported by the customer who did not hear an announcement.

This applies to all triggers.

Possible causes

Possible causes of this problem include:

- incorrect data or incomplete data entry
- announcement device not set up correctly or out of service
- SCP data entry or SLP error

Action

Use the following step-by-step instructions to determine why the customer did not hear an announcement.

- Use the translation verification (TRVR) function to trace the call from the originator using the number dialed by the customer.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

- xamine the call trace performed and determine whether the call encountered a trigger. Was a trigger encountered?

  Yes: Go to step 4.

- Should a trigger be encountered for the call scenario or AIN service being provided?

  No: This is not an AIN problem; however, check that the announcement device is working. For more information see “AIN announcements” on page 52. No further action is required.

  Yes: Follow the step-by-step instructions for the trigger that should have been encountered. Repeat these step-by-step instructions, starting at step 1, if the customer still doesn't hear the announcement after the corrective action has been completed (that is, after the trigger can be encountered).

- From the call trace, verify that a query message was sent to the AIN database and that a Send to Resource message was received. Was a Send to Resource message received?

  Yes: Go to step 8.

- Was a message received from the AIN database?

  No: See “AIN call triggers but doesn't complete” on page 45. If after the corrective action an announcement still isn't heard, repeat these step-by-step instructions starting at step 1.

- Verify with the AIN service provider that the message received was correct. Was it correct?

  No: The AIN service provider must correct the problem. No further action is required.

- Determine whether another trigger might be encountered. Can another trigger be encountered?

  Yes: Go back to step 2 to continue processing triggers.

  No: No announcement is required for the AIN service being provided. Inform the customer. No further action is required.

- A Send to Resource message was received from the AIN database. Verify that the AIN announcement equipment is working and in service. See “AIN announcements” on page 52 for additional instructions.

Customer was not able to activate or deactivate their AIN service

Definition

This complaint means that the customer was not able to activate or deactivate their AIN service.

Application

Use this procedure to locate and correct the difficulty being reported by the customer whose feature activation/deactivation codes don't work.

This applies to the PODP feature code (FCD) trigger for residential or IBS customers, and to the customized dial plan (CDP) trigger for EBS business customers. This also applies to the off-hook immediate (OHI) trigger, off-hook delay (OHD) trigger, and the termination attempt (TA) trigger because they may be turned on or off by the AIN database in response to the customer dialing an activation or deactivation code.

Possible causes

Possible causes of this problem include:

- incorrect data or incomplete data entry
- SCP data entry or SLP error

Action

Use the following step-by-step instructions to determine why the customer did not hear an announcement.

- Use the translation verification (TRVR) function to trace the call from the originator using the service code as dialed by the customer.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- Examine the call trace performed and determine whether the call encountered the FCD/CDP trigger. Was a trigger encountered?

  No: Follow the step-by-step instructions for “PODP feature code (FCD) trigger” on page 30 or “Customized dialing plan (CDP) trigger” on page 32. Go back to step 1 to verify correct operation of the AIN service.

- As part of the response message, can the AIN database update the trigger status of the OHI, OHD or TA triggers? You may need to contact the AIN service provider for this information.

  Yes: Follow the step-by-step instructions for the OHI, OHD or TA trigger contained in “Off-hook immediate (OHI) trigger” on page 21, “Off-hook delay (OHD) trigger” on page 24 and “Termination attempt (TA) trigger” on page 44 respectively.

  No: This generally indicates a problem at the SCP. Either there is a data entry error or an error in the service logic program.

AIN call doesn't trigger

Definition

This complaint means that the customer cannot access the SCP database to obtain routing and billing information. The call may or may not complete.

Application

Use this procedure to locate and correct the difficulty being reported by the customer who cannot access the SCP database because the call doesn't trigger (that is, no query was sent to the SCP when one was expected). This applies to all AIN triggers.

Use the procedures listed in this section to locate and correct a fault associated with a known trigger.

Possible causes

The possible causes of the problem and the corrective action are dependent on the trigger that was encountered.

Action

Use the following step-by-step instructions to determine why the call doesn't trigger:

- Use the translation verification (TRVR) function to trace the call from the originator to the destination.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

  For more information see “Translation verification (TRVR)” on page 54.
- Examine the call trace. Determine whether a trigger (or last trigger if more than one) was encountered or not (that is, was a message sent to the database). Did the call encounter a trigger?

  Yes: See “AIN call triggers but doesn't complete” on page 45.

- Determine which trigger (or last trigger if more than one) should have been encountered. Step-by-step instructions are provided on the following pages based on each trigger type.

AIN triggers

Off-hook immediate (OHI) trigger

The following test procedures are recommended to verify that the off-hook immediate (OHI) trigger is operational. The OHI trigger should have been encountered.

Test steps:

- Determine whether the customer subscribes to an AIN service that requires the OHI trigger. Is the OHI trigger required?

  No: Inform the customer. No further action is required.
- Check that the customer's line profile is assigned the "OHI xx" station option, where xx is the service logic host route (SLHR) number. Load overlay DN and enter “QUE STN <DN>” or “QUE DNCT <DN> <call type>”. Is the option assigned?

  No: Add the OHI station option using overlay DN.
- Check that the SLHR number indicated in step 2 is correct (that is, it indicates the SCP where the AIN service logic resides and not a different SCP). Is it correct?

  No: Change the SLHR number by deleting the station option and reassigning it using overlay DN.
- Check that the SLHR number indicated in step 2 is assigned. If it is not, an AIN message will be output indicating the SLHR is incorrect. To confirm, load overlay AIN and enter “QUE SLHR”. Is the SLHR assigned?

  No: Assign the SLHR using the “NEW SLHR” command in overlay AIN.
- Check that the administrative state code (ADSC) for the OHI trigger is ON for the SLHR number indicated in step 2. Load overlay AIN and enter “QUE ADSC”. Is it ON?

  No: Contact AIN service provider to determine when the ADSC for the OHI trigger may be turned on. Either turn it on now or inform the customer. No further action is required.
- See if the OHI trigger is currently active (this trigger may have been turned off by the SCP). Load overlay ODQ and enter “LIST DN <DN> STN AINS”. Is the OHI trigger currently active?

  Yes: Go to step 13.

- Can the AIN service be activated or deactivated by the SCP (for example, based on time of day) or by the customer (through the use of a feature access code)?

  If the trigger status is under SCP control, then go to step 8.

  If the trigger status is under customer control, then go to step 9.

  If neither (that is, trigger status should always be active), then delete the station option and reassign it using overlay DN. This will reactivate the trigger. No further action is required.
- The AIN service is currently inactive and under SCP control. Contact the AIN service provider to determine whether the trigger status is correct or not. Is the status correct?

  No: Delete the station option and reassign it using overlay DN. This will reactivate the trigger. No further action is required.

  Yes: Inform the customer. No further action is required.
- The AIN service is currently inactive and the customer can activate the service. Is the customer a member of an EBS group?

  Yes: Go to step 11.
- Try to activate the AIN service. This will likely use the FCD trigger. Is the FCD trigger working correctly?

  No: See “PODP feature code (FCD) trigger” on page 30.

  Yes: Go to step 12.
- Try to activate the AIN service. This will likely use the CDP trigger. Is the CDP trigger working correctly?

  No: See “Customized dialing plan (CDP) trigger” on page 32.
- The AIN service is currently inactive. Instruct the customer on how to activate and deactivate the AIN service. No further action is required.
- The activation status is active.

  Use the “LIST AIN NSCT ALL” command in overlay SND to determine if automatic code gapping (ACG) is in effect. Is ACG in effect?
- For ACG to block a call, the following must occur:
- NSC matches the DN
  TRNS TYPE equals the SLHR TRNS TYPE
  The GAP time (remaining) has not expired.

  Yes: Refer to network management group to change the ACG interval or to deactivate ACG.
- Are there any AIN or TCP messages printed?

  Yes: Follow the action described (if applicable).

- Use the translation verification (TRVR) function to trace the call from the originator.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  Yes: Correct the problem or collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

Off-hook delay (OHD) trigger

The customer goes off-hook, receives dial tone, and dials a number. After dialing is complete, it was expected that the OHD trigger should have been encountered.

Test steps:

- Determine whether the customer subscribes to an AIN service that requires the OHD trigger. Is the OHD trigger required?

  No: Inform the customer. No further action is required.
- Check that the customer's line profile is assigned the “OHD xx” station option, where xx is the service logic host route (SLHR) number. Load overlay DN and enter “QUE STN <DN>” or “QUE DNCT <DN> <call type>”.

  No: Add the OHD station option using overlay DN.
- Check that the SLHR number indicated in step 2 is correct (that is, it indicates the SCP where the AIN service logic resides and not a different SCP). Is it correct?

  No: Change the SLHR number by deleting the OHD station option and reassigning it using overlay DN.
- Check that the SLHR number indicated in step 2 is assigned. If it is not, an AIN message will be output indicating the SLHR is incorrect. To confirm, load overlay AIN and enter “QUE SLHR”. Is the SLHR assigned?

  No: Assign the SLHR using the “NEW SLHR” command in overlay AIN.
- Check that the administrative state code (ADSC) for the OHD trigger is ON for the SLHR number indicated in step 2. Load overlay AIN and enter “QUE ADSC”. Is it ON?

  No: Contact the AIN service provider to determine when the ADSC for the OHD trigger may be turned on. Either turn it on now or inform the customer. No further action is required.
- See if the OHD trigger is currently active (this trigger may have been turned off by the SCP). Load overlay ODQ and enter “LIST DN <DN> STN AINS”. Is the OHD trigger active?

  Yes: Go to step 13.

- Can the AIN service be activated or deactivated by the SCP (for example, based on time of day) or by the customer (through the use of a feature access code)?

  If the trigger status is under SCP control, then go to step 8.

  If the trigger status is under customer control, then go to step 9.

  If neither (that is, trigger status should always be active), then delete the station option and reassign it using overlay DN. This will reactivate the trigger. No further action is required.
- The AIN service is currently inactive and under SCP control. Contact the AIN service provider to determine whether the trigger status is correct or not. Is the status correct?

  No: Delete the station option and reassign it using overlay DN. This will reactivate the trigger. No further action is required.

  Yes: Inform the customer. No further action is required.
- The AIN service is currently inactive and the customer can activate the service. Is the customer a member of an EBS group?

  Yes: Go to step 11.
- Try to activate the AIN service. This will likely use the FCD trigger. Is the FCD trigger working correctly?

  No: See “PODP feature code (FCD) trigger” on page 30.

  Yes: Go to step 12.
- Try to activate the AIN service. This will likely use the CDP trigger. Is the CDP trigger working correctly?

  No: See “Customized dialing plan (CDP) trigger” on page 32.
- The AIN service is currently inactive. Instruct the customer on how to activate and deactivate the AIN service. No further action is required.
- The activation status is active.

  Check the dialed digits. Was a switch-based feature access code dialed?

  Yes: The call will not trigger when a switch-based feature access code is dialed. Inform the customer. No further action is required.
- Check the dialed digits (minus any prefix digits such as 1, 10xxx, or 101xxxx). Does the number match an entry in the escape code list?
  [Load overlay AIN and enter “QUE ESCL”]

  Yes: The call will not trigger when a number matches an entry in the escape code list. Inform the customer. No further action is required.

- Check that the office translators are set up to translate the dialed digits. Use the translation verification (TRVR) function. From the call trace, examine the destination reached. Is the destination a line (DN), RCFA, CFRA, route, or standard route?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, was a route reached?

  No: Go to step 6.
- Check the following list of valid route types for the OHD trigger: ALCK, CAMA, CAM2, EAOS, EAS, EQA, ICP, IDAL, ISUP, LEAS, LTRK, OS, ROTL, TSPS, TSTL.

  Is the route type valid?

  No: This route type is not valid for the OHD trigger to be encountered. Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

  Yes: Go to step 20,
- From the call trace, was a standard route reached?

  No: Go to step 20.
- Check the following list of valid standard route types for the OHD trigger: VCDN, DNIC, DNCH.

  Is the standard route type valid?

  No: This standard route type is not valid for the OHD trigger to be encountered. Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- Use the “LIST AIN NSCT ALL” command in overlay SND to determine if automatic code gapping (ACG) is in effect. Is ACG in effect?
- For ACG to block a call, the following must occur:
- NSC matches the DN
  TRNS TYPE equals the SLHR TRNS TYPE
  The GAP time (remaining) has not expired.

  Yes: Refer to network management group to change the ACG interval or to deactivate ACG.
- Are there any AIN or TCP messages printed?

  Yes: Follow the action described (if applicable).

- Use the translation verification (TRVR) function to trace the call from the originator using the digits dialed by the customer.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  Yes: Correct the problem or collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

Shared inter-office trunk (SIT) trigger

This section is divided into two parts, the first is for a DMS-10 switch set up as an end office and the second is for a DMS-10 SSP.

Test steps for a DMS-10 end office:

- The SIT trigger is based on equal access signalling between the end office and the SSP. The first stage of this signalling is KP+0ZZ+XXX(X)+ ST. SIT will use a “dummy” carrier and 0ZZ agreed upon by the end office and SSP. Check that the carrier indicated in the 0ZZ-XXX(X) has been created. Load overlay EQA and enter “QUE CARR XXXX”.

  No: Create a new carrier using overlay EQA and inform the SSP office so that their translations are expecting the correct 0ZZ-XXX(X).
- Use the translation verification (TRVR) function to check that the office translators are set up to translate the digits designated to encounter the SIT trigger.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*).

  Did we encounter SSAC in the address translator? This is necessary so that the carrier specified by the screen translator will be used.

  No: Use overlay TRNS to modify the address translator to include the SSAC action after translating the called digits.
- Does the screen translator encountered in step 2 match the one specified in step 1?

  No: Either use overlay EQA to change the screen translator number or use overlay TRNS to create a new screen translator whose number corresponds to the one designated by the carrier (at the SCRN subprompt in overlay EQA).
- Did we terminate to a route in step 2 which uses the outgoing proper outgoing TG to the SSP?

  No: Use overlay ROUT to either create the route or modify it to use the proper TG.

- Are there any XLTxxx, AIN, TCPxxx or other messages printed?

  Yes: Follow any action described in the message text or any maintenance procedure indicated.
- Test steps for a DMS-10 SSP:
- Use overlay TG to query the incoming TG used for SIT to verify that the NXX, LATA and TGID are set, SIT is set to “YES”, the SLHR is set.

  No: Use overlay TG to change any data necessary. The NXX and LATA should be those of the end office.
- Check that the SLHR number indicated in step 1 is correct (that is, it indicates the SCP where the AIN service logic resides and not a different SCP). Is it correct?

  No: Use overlay TG to change the SLHR number.
- Check that the SLHR number indicated in step 2 is assigned. If it is not, an AIN message will be output indicating the SLHR is incorrect. To confirm, load overlay AIN and enter “QUE SLHR”. Is the SLHR assigned?

  No: Assign the SLHR using the “NEW SLHR” command in overlay AIN.
- Check that the administrative state code (ADSC) for the SIT trigger is ON for the SLHR number indicated in step 2. Load overlay AIN and enter “QUE ADSC”. Is it ON?

  No: Contact the AIN service provider to determine when the ADSC for the FCD trigger may be turned on. Either turn it on now or inform the customer. No further action is required.
- Use the translation verification (TRVR) function to check that the starting translator specified by the incoming TG in step 1 can translate the 0ZZ XXX(X) sent from the end office.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*).

  Did we encounter the PSIT action after translating the 0ZZ XXX(X) digits?

  No: Use overlay TRNS to modify the prefix or address translator to include the PSIT action after translating the 0ZZ XXX(X) digits.
- Are there any XLTxxx, AIN, TCPxxx or other messages printed?

  Yes: Follow any action described in the message text or any maintenance procedure indicated.

PODP feature code (FCD) trigger

The customer goes off-hook, receives dial tone, and dials an AIN service's vertical service code (for example, *XX) and if applicable, additional digits. After dialing is complete, it was expected that the FCD trigger should have been encountered.

Test steps:

- Determine whether the customer subscribes to an AIN service that requires the FCD trigger. Is the FCD trigger required?

  No: Inform the customer. No further action is required.
- Check that the customer's line profile is assigned the “FCD xx” station option, where xx is the service logic host route (SLHR) number. Load overlay DN and enter “QUE STN <DN>” or “QUE DNCT <DN> <call type>”.

  No: Add the FCD station option using overlay DN.
- Check that the SLHR number indicated in step 2 is correct (that is, it indicates the SCP where the AIN service logic resides and not a different SCP). Is it correct?

  No: Change the SLHR number by deleting the FCD station option and reassigning it using overlay DN.
- Check that the SLHR number indicated in step 2 is assigned. If it is not, an AIN message will be output indicating the SLHR is incorrect. To confirm, load overlay AIN and enter “QUE SLHR”. Is the SLHR assigned?

  No: Assign the SLHR using the “NEW SLHR” command in overlay AIN.
- Check that the administrative state code (ADSC) for the FCD trigger is ON for the SLHR number indicated in step 2. Load overlay AIN and enter “QUE ADSC”. Is it ON?

  No: Contact the AIN service provider to determine when the ADSC for the FCD trigger may be turned on. Either turn it on now or inform the customer. No further action is required.
- Use the translation verification (TRVR) function to check that the office translators are set up to translate the vertical service code (*XX) plus any subsequent digits.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  Do the dialed digits translate to the “FCD” test and the “Perform FCD” action (PFCD)? Is the subsequent digit collection mode set up correctly for the AIN service to be provided (that is, IMED, FIX n, VAR, or NORM)?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- Is the subsequent digit collection mode set up as IMED, FIX n, or VAR?

  Yes: Go to step 9.

- The subsequent digit collection type is NORM. Examine the trace output following the PFCD action. Do the subsequent digits comply with the subscriber's normal dialing plan? (that is, Do the digits translate to a valid route, station, or RCFA?)

  No: Inform the customer that after dialing the vertical service code (*XX), that they must then dial a valid number according to their normal dialing plan.

  Note: *Members of an EBS group must dial the public network escape code (direct-outward-dialing) to access the public network dial plan.*

- Use the “LIST AIN NSCT ALL” command in overlay SND to determine if automatic code gapping (ACG) is in effect. Is ACG in effect?

  Note: *For ACG to block a call, the following must occur:*

  NSC matches the DN
  TRNS TYPE equals the SLHR TRNS TYPE
  The GAP time (remaining) has not expired.

  Yes: Refer to network management group to change the ACG interval or to deactivate ACG.

- Are there any XLTxxx, AIN, TCPxxx or other messages printed?

  Yes: Follow any action described in the message text or any maintenance procedure indicated.

Customized dialing plan (CDP) trigger

The customer goes off-hook, receives dial tone, and dials an AIN service's vertical service code (for example, *XX) or intercom code (for example, station-to-station). After dialing is complete, it was expected that the CDP trigger should have been encountered.

Test steps:

- Determine whether the customer's (EBS) business group subscribes to an AIN service that requires the CDP trigger. Is the CDP trigger required?

  No: Inform the customer. No further action is required.

- Query the customer's business group data to see if it assigned the CDP option. Load overlay HUNT and enter “QUE EBS n”. Is CDP assigned to the group?

  No: Add CDP to the EBS group.

- Check that the customer's line profile is not assigned the “NCDP” station option. Load overlay DN and enter “QUE STN <DN>” or “QUE DNCT <DN> <call type>”.

  No: If appropriate, delete the NCDP station option using overlay DN.

- Check that the SLHR number indicated in step 2 is correct (that is, it indicates the SCP where the AIN service logic resides and not a different SCP). Is it correct?

  No: Change the SLHR number using overlay HUNT.
- Check that the SLHR number indicated in step 2 is assigned. If it is not, an AIN message will be output indicating the SLHR is incorrect. To confirm, load overlay AIN and enter “QUE SLHR”. Is the SLHR assigned?

  No: Assign the SLHR using the “NEW SLHR” command in overlay AIN.
- Check that the administrative state code (ADSC) for the CDP trigger is ON for the SLHR number indicated in step 2. Load overlay AIN and enter “QUE ADSC”. Is it ON?

  No: Contact the AIN service provider to determine when the ADSC for the CDP trigger may be turned on. Either turn it on now or inform the customer. No further action is required.
- Use the translation verification (TRVR) function to check that the office translators are set up to translate a) the vertical service code (*XX) plus any subsequent digits, b) station-to-station digits, and c) the public network escape code (direct-outward dialing).

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  Do the dialed digits translate to either the “CDP” test and the “Perform CDP” action (PCDP) or the “Set CDP” action (SCDP)? Is the subsequent digit collection mode set up correctly for the AIN service to be provided (that is, IMED, FIX n, VAR, or NORM)?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- Is the subsequent digit collection mode set up as IMED, FIX n, or VAR?

  Yes: Go to step 10.
- The subsequent digit collection type is NORM. Examine the trace output following the PCDP action. Do the subsequent digits comply with the subscriber's normal dialing plan? (that is, Do the digits translate to a valid route, station, or RCFA?)

  No: Inform the customer that after dialing the vertical service code (*XX), that they must then dial a number according to their normal dialing plan.

  Note: *Members of an EBS group must dial the public network escape code (direct-outward-dialing) to access the public network dial plan.*
- Use the “LIST AIN NSCT ALL” command in overlay SND to determine if automatic code gapping (ACG) is in effect. Is ACG in effect?

Note: *For ACG to block a call, the following must occur:*

NSC matches the DN
TRNS TYPE equals the SLHR TRNS TYPE
The GAP time (remaining) has not expired.

Yes: Refer to network management group to change the ACG interval or to deactivate ACG.

- Are there any XLTxxx, AIN, TCPxxx or other messages printed?

  Yes: Follow any action described in the message text or any maintenance procedure indicated.

PODP N11 (N11) trigger

The customer dialed an N11 service code. It was expected that the N11 trigger should have been encountered.

Test steps:

- Use the translation verification (TRVR) function to trace the call from the originator to the N11 service code. Was the call trace successful?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, examine the destination digits printed. There should be the exactly three digits, N-1-1, where N is a number from 2 through 9. Is this correct? In addition, were the digits translated in the public office dial plan (that is, PRFX/ ADDR and not the EBSP)?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- Check that the N11 service code is assigned. Load overlay AIN and enter “QUE N11". Is the N11 service code assigned?

  No: Add the N11 service code using the “NEW N11" command in overlay AIN.
- Check that the service logic host route (SLHR) number indicated in step 3 is correct (that is, it indicates the SCP where the AIN service logic resides and not a different SCP). Is it correct?

  No: Change the SLHR number using the “CHG N11" command in overlay AIN.
- Check that the SLHR number indicated in step 3 is assigned. If it is not, an AIN message will be output indicating the SLHR is incorrect. To confirm, load overlay AIN and enter “QUE SLHR”. Is the SLHR assigned?

  No: Assign the SLHR using the “NEW SLHR” command in overlay AIN.

- Check that the administrative state code (ADSC) for the N11 trigger is ON for the SLHR number indicated in step 3. Load overlay AIN and enter “QUE ADSC”. Is it ON?

  No: Contact AIN service provider to determine when the ADSC for the N11 trigger may be turned on. Either turn it on now or inform the customer. No further action is required.
- Does the originator have a line appearance in this office and if so, are they on a multiparty line or ONI line?

  Yes. Only lines where the ANI is known may encounter the N11 trigger. When the ANI for a line is not known, then this line can not access the AIN service. Inform the customer. No further action is required.

  Note: *This problem may be resolved by using “circle digit dialing”. Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.*

- Use the “LIST AIN NSCT ALL” command in overlay SND to determine if automatic code gapping (ACG) is in effect. Is ACG in effect?

  Note: *For ACG to block a call, the following must occur:*

  NSC matches the DN
  TRNS TYPE equals the SLHR TRNS TYPE
  The GAP time (remaining) has not expired.

  Yes: Refer to network management group to change the ACG interval or to deactivate ACG.
- Are there any AIN or TCP messages printed?

  Yes: Follow the action described (if applicable).

  No: Refer to next level of support.
- Use the translation verification (TRVR) function to trace the call from the originator to the N11 service code with AIN triggering enabled.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  Yes: Correct the problem or collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

PODP 3-through-10 digit (DIG) trigger

The customer dialed a number in the North American Numbering Plan (NANP). It was expected that the 3-through-10 digit (DIG) trigger should have been encountered.

Test steps:

- Use the translation verification (TRVR) function to trace the call from the originator to the destination. Was the call trace successful?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, examine the destination reached. Is the destination a line (DN), RCFA, CFRA, route, or standard route?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, was a route reached?

  No: Go to step 6.
- Refer to the following list of valid route types for the 3-through-10 digit trigger: ALCK, CAMA, CAM2, EAOS, EAS, EQA (secondary route types of EAIC or EIOC), ICP, IDAL, ISUP (ISUP route type set to IEAS, ITOL, or IEQA; if IEQA, secondary route types must be EAIC, EOAO, or EOIC), LEAS, LTRK, OS, ROTL, TIE, TSPS, TSTL.

  Is the route type valid?

  No: This route type is not valid for a DIG trigger to be encountered. Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, identify the destination reached. In the destination (DEST) prompting sequence in overlay ROUT, check the minimum (MIN) and optional (OPT) digits. Does the MIN plus OPT digits equal seven (7) or ten (10)?

  No: The number must be a valid NANP number (that is, 7 or 10 digits). Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

  Yes: Go to step 8.
- From the call trace, was a standard route reached?

  No: Go to step 8.
- Refer to the following list of valid standard route types for the 3-through-10 digit trigger: VCDN, DNIC, DNCH, LNP.

  Is the standard route type valid?

  No: This standard route type is not valid for a DIG trigger to be encountered. Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

- Check that the DIG number is assigned. Load overlay AIN and enter “QUE DIG”. Is the DIG number assigned?

  No: Add the DIG number using the “NEW DIG” command in overlay AIN.
- Check that the service logic host route (SLHR) number indicated in step 8 is correct (that is, it indicates the SCP where the AIN service logic resides and not a different SCP). Is it correct?

  No: Change the SLHR number using the “CHG DIG” command in overlay AIN.
- Check that the SLHR number indicated in step 8 is assigned. If it is not, an AIN message will be output indicating the SLHR is incorrect. To confirm, load overlay AIN and enter “QUE SLHR”. Is the SLHR assigned?

- No: Assign the SLHR using the “NEW SLHR” command in overlay AIN.
- Check that the administrative state code (ADSC) for the DIG trigger is ON for the SLHR number indicated in step 8. Load overlay AIN and enter “QUE ADSC”. Is it ON?

  No: Contact AIN service provider to determine when the ADSC for the DIG trigger may be turned on. Either turn it on now or inform the customer. No further action is required.
- Does the originator have a line appearance in this office and if so, are they on a multiparty line or ONI line?

  Yes. Only lines where the ANI is known may encounter the DIG trigger. When the ANI for a line is not known, then this line can not access the AIN service. Inform the customer. No further action is required.

  Note: *This problem may be resolved by using “circle digit dialing”. Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.*

- Use the “LIST AIN NSCT ALL” command in overlay SND to determine if automatic code gapping (ACG) is in effect. Is ACG in effect?

  Note: *For ACG to block a call, the following must occur:*

  NSC matches the DN
  TRNS TYPE equals the SLHR TRNS TYPE
  The GAP time (remaining) has not expired.

  Yes: Refer to network management group to change the ACG interval or to deactivate ACG.
- Are there any AIN or TCP messages printed?

  Yes: Follow the action described (if applicable).

- Use the translation verification (TRVR) function to trace the call from the originator to the destination with AIN triggering enabled.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, does the output indicate why the call doesn't trigger?

  Yes: Correct the problem or collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, was a LNP trigger encountered?

  No: Go to step 18.

  Yes: Load overlay CNFG and enter “QUE AIN”. Is the PATL set to YES? If PATL is YES, go to step 18. If PATL is NO, change PATL to YES and go to step 15.
- From the call trace, was a less significant DIG trigger encountered (that is, 10 --> 6 --> 3)?

  Yes: Go to step 8 and continue with the next DIG trigger encountered.

  No: Refer to next level of support.

Local Number Portability trigger

The customer dialed a number in the North American Numbering Plan (NANP). It was expected that the 6-through-10 digit Local Number Portability (LNP) trigger should have been encountered.

Test steps:

- Use the translation verification (TRVR) function to trace the call from the originator to the destination. Was the call trace successful?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, examine the destination reached. Is the destination a route, or standard route?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, was a route reached?

  No: Go to step 6.

- Refer to the following list of valid route types for the LNP trigger: CAMA, CAM2, EAS, ISUP (ISUP route type must be set to IEAS or ITOL), LTRK.

  Is the route type valid?

  No: This route type is not valid for a LNP trigger to be encountered. Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

- From the call trace, identify the destination reached. In the destination (DEST) prompting sequence in overlay ROUT, check the minimum (MIN) and optional (OPT) digits. Does the MIN plus OPT digits equal seven (7) or ten (10)?

  No: The number must be a valid NANP number (that is, 7 or 10 digits). Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

  Yes: Go to step 8.

- From the call trace, was a standard route reached?

  Yes: Go to step 7.

  No: LNP triggers may only be encountered for routes or standard routes.

- Refer to the following list of valid standard route types for the LNP trigger: VCDN, DNIC, DNCH, LNP.

  Is the standard route type valid?

  No: This standard route type is not valid for a LNP trigger to be encountered. Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

- Check that the LNP number is assigned. Load overlay AIN and enter “QUE LNP”. Is the LNP number assigned?

  No: Add the LNP number using the “NEW LNP” command in overlay AIN.

  Note that for calls that translate to standard routes, LNP triggers must be 6 or 7 digits for proper operation. This includes thousands groups that are ported in (THGP PRTI = YES).

- Check that the service logic host route (SLHR) number indicated in step 8 is correct (that is, it indicates the SCP where the AIN service logic resides and not a different SCP). Is it correct?

  No: Change the SLHR number using the “CHG LNP” command in overlay AIN.

- Check that the SLHR number indicated in step 8 is assigned. If it is not, an AIN message will be output indicating the SLHR is incorrect. To confirm, load overlay AIN and enter “QUE SLHR”. Is the SLHR assigned?

  No: Assign the SLHR using the “NEW SLHR” command in overlay AIN.

- Check that the administrative state code (ADSC) for the LNP trigger is ON for the SLHR number indicated in step 8. Load overlay AIN and enter “QUE ADSC”. Is it ON?

  No: Contact AIN service provider to determine when the ADSC for the DIG trigger may be turned on. Either turn it on now or inform the customer. No further action is required.
- Use the “LIST AIN NSCT ALL” command in overlay SND to determine if automatic code gapping (ACG) is in effect. Is ACG in effect?

  Note: *For ACG to block a call, the following must occur:*

  NSC matches the DN
  TRNS TYPE equals the SLHR TRNS TYPE
  The GAP time (remaining) has not expired.

  Yes: Refer to network management group to change the ACG interval or to deactivate ACG.
- Are there any AIN or TCP messages printed?

  Yes: Follow the action described (if applicable).
- Use the translation verification (TRVR) function to trace the call from the originator to the destination with AIN triggering enabled.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, does the output indicate why the call doesn't trigger?

  Yes: Correct the problem or collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.
- From the call trace, was a DIG trigger encountered?

  Yes: Go to the procedure for the DIG trigger.
- From the call trace, was Query on Release (QoR) active for the LNP trigger encountered?

  No: Go to step 20.

  If simulating a QoR release message, enter the returned release cause value.
- From the call trace, was a LNP query launched?

  No: Load overlay CNFG and enter “QUE LNP”. Is the entry for the release cause value in the ALNP table set to YES? If it is YES, go to step 20. If ALNP is NO or the release cause value, change it to YES and go to step 15.

- From the call trace, was a less significant LNP trigger encountered (that is, 10 --> 7 --> 6)?

  Yes: Go to step 8 and continue with the LNP trigger encountered.

  No: Refer to next level of support.

Termination attempt (TA) trigger

The call terminates to the customer's directory number (DN) or directory number/call type (DN/CT) without encountering the TA trigger (call is subject to other features that the customer subscribes to).

Test steps:

- Determine whether the customer subscribes to an AIN service that requires the TA trigger. Is the TA trigger required?

  No: Inform the customer. No further action is required.
- Check that the customer's line profile is assigned the “TA CFWY/CFWN xx” station option, where xx is the service logic host route (SLHR) number. Load overlay DN and enter “QUE STN <DN>” or “QUE DNCT <DN> <call type>”. Is the option assigned?

  No: Add the TA option using overlay DN.
- Check that the SLHR number indicated in step 2 is correct (that is, it indicates the SCP where the AIN service logic resides and not a different SCP). Is it correct?

  No: Change the SLHR number by deleting the station option and reassigning it using overlay DN.
- Check that the SLHR number indicated in step 2 is assigned. If it is not, an AIN message will be output indicating the SLHR is incorrect. To confirm, load overlay AIN and enter “QUE SLHR”. Is the SLHR assigned?

  No: Assign the SLHR using the “NEW SLHR” command in overlay AIN.
- Check that the administrative state code (ADSC) for the TA trigger is ON for the SLHR number indicated in step 2. Load overlay AIN and enter “QUE ADSC”. Is it ON?

  No: Contact AIN service provider to determine when the ADSC for the TA trigger may be turned on. Either turn it on now or inform the customer. No further action is required.
- See if the TA trigger is currently active (this trigger may have been turned off by the SCP). Load overlay ODQ and enter “LIST DN <DN> STN AINS”. Is the trigger currently active?

  Yes: Go to step 13.

- Can the AIN service be activated or deactivated by the SCP (for example, based on time of day) or by the customer (through the use of a feature access code)?

  If the trigger status is under SCP control, then go to step 8.

  If the trigger status is under customer control, then go to step 9.

  If neither (that is, trigger status should always be active), then delete the station option and reassign it using overlay DN. This will reactivate the trigger. No further action is required.
- The trigger is currently inactive and under SCP control. Contact the AIN service provider to determine whether the trigger status is correct or not. Is the status correct?

  No: Delete the station option and reassign it using overlay DN. This will reactivate the trigger. No further action is required.

  Yes: Inform the customer. No further action is required.
- The trigger is currently inactive and the customer can activate the service. Is the customer a member of an EBS group?

  Yes: Go to step 11.
- Try to activate the AIN service. This will likely use the FCD trigger. Is the FCD trigger working correctly?

  No: See “PODP feature code (FCD) trigger” on page 30.

  Yes: Go to step 12.
- Try to activate the AIN service. This will likely use the CDP trigger. Is the CDP trigger working correctly?

  No: See “Customized dialing plan (CDP) trigger” on page 32.
- The AIN service is currently inactive. Instruct the customer on how to activate and deactivate the AIN service. No further action is required.
- The activation status is active.

  Use the “LIST AIN NSCT ALL” command in overlay SND to determine if automatic code gapping (ACG) is in effect. Is ACG in effect?

  Note: *For ACG to block a call, the following must occur:*

  NSC matches the DN
  TRNS TYPE equals the SLHR TRNS TYPE
  The GAP time (remaining) has not expired.

  Yes: Refer to network management group to change the ACG interval or deactivate ACG.
- Are there any AIN, TCPxxx or other messages printed?

  Yes: Follow any action described in the message text or any maintenance procedure indicated.

- Use the translation verification (TRVR) to trace the call from the originator to the customer's DN.

  Load overlay QTRN and enter the appropriate TRVR command (see NTP 297-3601-311, *Data Modification Manual*). Was the call trace successful?

  Yes: Correct the problem or collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

  No: Collect all relevant information and printouts and refer to translations group for assistance in clearing this problem.

AIN call triggers but doesn't complete

Definition

This complaint means that the customer's call didn't complete. From analysis of the problem, it was determined that an AIN trigger was encountered and a query message was sent to the SCP.

Application

Use this procedure to locate and correct the difficulty being reported by the customer whose call didn't complete after an AIN trigger was encountered. This applies to all AIN triggers.

Possible causes

The possible causes of the problem and the corrective action are dependent on the type of response from the SCP, or whether no response was received.

No response from the SCP (T1 time-out)

A time-out has occurred before the response to the query message was received from the SCP. Indicated by an AIN message and the TMOT counter in the operational measurement (OPM) block “AIN”.

The time-out is the configured value “DQTM” defined in the AIN section of overlay CNFG.

Action:

- Check that the signaling transfer point (STP) used for routing TCAP messages to the SCP has been set up to handle the global title value (GTV) and translation type (TT) defined in the service logic host route.
- Using overlay SND, check that the SCP can receive TCAP queries from the DMS-10 switch and the application program can send a TCAP response message back to the DMS-10 switch.
- Determine if there has been a Common Channel Signaling #7 (CCS7) network problem; see TP 9000 in this NTP.

- Decide whether the current time-out value (DQTM) is acceptable or should be increased.

Query messages rejected by the STP

The signaling transfer point (STP) received the query message but was unable to act on it. It returned an error message back to the DMS-10 SSP, which printed out the following message:

TCP265 <return cause> 014 <point code>
return code = 000

This indicates that the translation type (TT) does not match anything set up at the STP. Check the service logic host route and/or add the TT to the STP database.

return code = 001

This indicates that the number used to populate the TCAP query for the global title value (GTV) hasn't been updated at the STP. Check the service logic host route and/or add the GTV to the STP database.

Caller is reconnected back to dial tone

The SCP has instructed the DMS-10 switch to disconnect the call. The originating facility is a line (the customer does not subscribe to the OHI trigger) and the office is set up to provide dial tone after disconnect timing (the DTDT prompt in the CP prompting sequence in overlay CNFG is set to YES).

Contact the AIN service provider to determine whether the disconnect response message is valid for the AIN service being provided. If it is valid, then the service worked as intended. If it was not valid, then it is up to the AIN service provider to correct (SCP data entry or SLP error).

Caller is routed to the disconnect timing treatment

The SCP has instructed the DMS-10 switch to disconnect the call. The originating facility is a line where the customer does not subscribe to the OHI trigger and the office is not set up to provide dial tone after disconnect timing (the DTDT prompt in the CP prompting sequence in overlay CNFG is set to NO).

Contact the AIN service provider to determine whether the disconnect response message is valid for the AIN service being provided. If it is valid, then the service worked as intended. If it was not valid, then it is up to the AIN service provider to correct (SCP data or SLP error).

Call was routed to AIN Disconnect (AIND) treatment

The SCP instructed the DMS-10 switch to disconnect the call. The originating facility is either a trunk or it is a line where the customer subscribes to the OHI trigger.

Contact the AIN service provider to determine whether the disconnect response message is valid for the AIN service being provided. If it is valid, then the service worked as intended. If it was not valid, then it is up to the AIN service provider to correct (SCP data entry or SLP error).

Call was routed to AIN Final (AINF) treatment

There could be a number of reasons for calls to be routed to the AIN Final (AINF) treatment, but generally it indicates something wrong with validating or handling the response message.

If an AIN, TCP or other message is printed, follow any action specified in the message text or any maintenance procedure indicated.

Use the translation verification (TRVR) function to trace the call, collect all relevant information and printouts, and refer to translations group for assistance in clearing this problem.

Call was routed to another generic condition treatment

Again, there could be a number of reasons for this error, but this generally indicates something wrong with processing the response message after it has been validated.

If an AIN or other message is printed, follow any action specified in the message text or any maintenance procedure indicated.

Ensure that the DMS-10 SSP is set up for dialable number translations (see the Service Order Procedures in the DMS-10 *Data Modification Manual*, NTP 297-3601-311).

Use the translation verification (TRVR) function to trace the call, collect all relevant information and printouts, and refer to translations group for assistance in clearing this problem.

Protocol errors and data errors

If the DMS-10 SSP detects a protocol error in the message received from the SCP, a TCP1xy message will be printed.

If the SCP detects a protocol error or data error in a query message it returns a “Reject” or “Return Error” message to the DMS-10 switch. Indicated by a TCP3xy or TCP4xx message respectively, as well as the REID counter in the operational measurement (OPM) block “AIN”.

Use a protocol analyzer to aid in isolating the messages. If the problem cannot be found, refer to next level of support.

Call doesn't terminate following an “Authorize Termination”

Check that a call from the “calling party” can terminate to the called party's line without the TA trigger assigned. Other switch-based features assigned to the called party's line may prevent the call from terminating.

> ***Note:*** *The “calling party” information may be changed by the SCP and may not be the same as the true originating party. This may effect the screening list features.*

CCS7 network problems

For problem relating to the CCS7 network (for example, point code unavailability, congestion, signaling link failure, invalid information received, etc.), see TP 9000 in this NTP.

This rest of this section covers common problems with AIN components external to the DMS-10 switch in the CCS7 network.

Signaling transfer point (STP)

The signaling transfer point (STP) is used for routing TCAP messages to the SCP.

Ensure that the STP has been set up to handle the global title value (GTV) and translation type (TT) defined in the service logic host route, and the AIN subsystem number defined in the office configuration.

Service control point (SCP)

Common problems that can occur at the SCP include:

- data entry error

  The data at the SCP doesn't correspond with the data at the DMS-10 switch. This could be either customer profile data or routing and billing information. Both the DMS-10 database and the SCP database must match. Contact the AIN service provider for assistance in clearing this problem.

- Programming logic error

  The service logic program (SLP) providing the AIN service may contain a programming error. The AIN service being provided is not functioning as specified.

  Possible causes are listed below. Contact AIN service provider to resolve.

- Wrong response message was received by the DMS-10 switch.
- Incorrect parameter(s) and/or data returned.
- Protocol error and/or data error detected in the message received from the SCP.

• SCP is overloaded

The SCP overload control will send an ACG message to the DMS-10 switch to activate ACG controls. Use the “LIST AIN NSCT ALL” command in overlay SND to determine if ACG is currently in effect. If ACG is in effect, then refer to the AIN network management group to change the ACG interval or to deactivate ACG controls.

For ACG to block a call, the following must occur:

- NSC matches the DN
- TRNS TYPE equals the SLHR TRNS TYPE
- The GAP time (remaining) has not expired.

Output Message Manual

Output messages are listed in the output message manual. These message describe a problem that was encountered by the DMS-10 switch.

AIN and LNP error messages

AINxxx and LNPxxx output messages indicate a problem that was encountered by the DMS-10 SSP when handling an AIN or LNP call.

Where applicable, a corrective action has been included in the message text. If provided, follow the action described in the message.

TCAP error messages

TCPxxx output messages describe a problem that was encountered by the DMS-10 TCAP sub-system.

Translation error messages

XLTxxx output messages describe a problem that was encountered by the DMS-10 switch during translations.

Where applicable, a corrective action has been included in the message text. Follow the action described in the message. Otherwise, collect all relevant information and printouts and refer to the translations group for assistance in clearing this problem.

AIN Operational Measurements

Operational measurements indicate some form of activity. Some of these measurements indicate that a problem was encountered (that is, in an ideal situation, these measurements would always be zero). Monitoring these measurements is one method that could be used by the operating company in locating and resolving faults.

This section covers the following measurements in operational measurement block "AIN" (see NTP 297-3601-456, *Operational Measurements*, for more information):

NMBL

Network management, such as SCP overload controls (ACG), has been activated. This may indicate that the SCP is overloaded. An ACG message was received by the DMS-10 switch.

Use the "LIST AIN NSCT ALL" command in overlay SND to determine if ACG is currently in effect. If ACG is in effect for the call, then refer to network management group to change the ACG interval or to deactivate ACG controls.

TMOT

A time-out has occurred before the response to the query message was received from the SCP. See "No response from the SCP (T1 time-out)" on page 45 for further details.

INCM

A message was received from the SCP that was either undecipherable or contained bad data. See the TCP1xy message for additional information. Report fault to AIN service provider; If they are unable to resolve, refer to next level of support.

INCS

A message was received from the SCP that contained an incomplete or out of sequence set of commands. This is an AIN application error. Report fault to AIN service provider; If they are unable to resolve, refer to next level of support.

REID

A "Return Error" or "Reject" message was received from the SCP. See "Protocol errors and data errors" on page 47 for further details.

WPKG

AMA data in a TCAP parameter has been discarded because it arrived in either the wrong package type, in the wrong component type, or without an AMAslpID. This is an AIN application error. Report fault to AIN service provider; If they are unable to resolve, refer to next level of support.

MAXL

AMA data has been discarded because the AMA data in the TCAP parameters has exceeded the maximum possible AMA record length that can be stored by the DMS-10 switch. Please call Nortel Networks technical support to report this situation

LNPQ

The number of calls that encounter an LNP trigger that result in an LNP SCP query being launched.

LNPF

The number of calls that encounter an LNP trigger that result in an LNP SCP query being launched, but the query fails due to T1 timer expiration, or because the response contained a fatal application or protocol error.

LNPP

The number of calls that encounter an LNP trigger that result in an LNP SCP query being launched, and the SCP's response contained an LRN and not the dialed number. This is the number of ported DNs that were called.

MISR

The number of calls that encounter an LNP trigger that result in an LNP SCP query being launched, but the call associated with the LNP query encountered an ISUP REL message with a cause value of 26. This is the number of misrouted calls to ported numbers.

UNAL

The number of calls that encounter an unallocated/vacant number indication in the donor switch following an LNP query in this or another switch as indicated by the TCNI in the FCI parameter with no “ported number” GAP.

LRNI

The number of calls that encounter an unallocated/vacant number indication when the switch's own LRN has been detected after an LNP query in this or another switch as indicated by the TCNI in the FCI parameter and with a “ported number” GAP.

QORA

The number of QoR routing attempts undertaken.

QORF

The number of QoR routing attempts that result in a subsequent LNP query.

QORI

The number of QoR routing attempts that encounter interworking with non-ISUP facilities.

AIN announcements

AIN announcements are provided by equipment external to the DMS-10 switch. The operating company will be required to provide the equipment that will be used to voice AIN service announcements.

No announcement heard

The DMS-10 switch received a Send To Resource message which instructed it to play an announcement to the caller, but no announcement was heard. This will generally fall into one of the following categories:

- No AIN trunk group assigned

  An AIN message will be output indicating that the AIN announcement trunk group number has not been assigned. Follow the action as described in the message.
- No trunks equipped

  An AIN message will be output that indicates “all trunks are busy”. This problem may be corrected by provisioning trunks to the announcement equipment.
- All trunks busy. See “No trunks equipped” above.
- Insufficient number of tone and digit sender (TDS) packs equipped.

  An AIN message will be output to indicate that a tone and digit sender (TDS) resource was not available. This problem may be corrected by provisioning additional TDS packs.
- A TRK070 message is output

  This message indicates that an MF string was successfully sent to the announcement equipment, but the equipment did not respond within 1.5 seconds. This problem falls into one of the following categories:
  - The announcement number sent to the announcement equipment isn't supported. Check the announcement number as described in “Calculating announcement number” later in this section.
  - The announcement equipment didn't understand the information sent to it and discarded the message. Check the structure of the MF string sent to the announcement equipment.
  - Check the cables from the trunk pack to the announcement unit via the main distribution frame (MDF).
  - Load overlay TG. Check that the AIN announcement trunk group is configured correctly.

- Announcement contains ‘silence'.

  Check with the AIN service provider if the announcement number is correct or record the announcement.

Wrong announcement voiced

This fault indicates that the wrong announcement was voiced to the caller. This means that the announcement number sent to the AIN announcement equipment was not the correct number.

It is the responsibility of the operating company to correlate the announcement Identifier in the Send To Resource message received from the SCP with the announcement number to be played.

In addition, it is possible that the announcement unit could be playing a non-AIN announcement (for example, a CLASS announcement). Make sure that the start and stop signals (defined in the AIN prompting sequence in overlay CNFG) match those used by the announcement device for AIN announcements.

Calculating announcement number

The announcement number is calculated as follows:

Announcement number = “STR Announcement Id.” + “Message Base”

where “STR Announcement Id.” is the announcement number provided by the AIN database and “Message base” is the MSGB field in the AIN prompting sequence of overlay CNFG. MSGB acts as an offset from zero (0) to separate AIN from non-AIN announcements (for example, CLASS announcements) which may have a predefined range.

For example, if the announcement device is to provide AIN, CLASS and audichron announcements, then the CLASS and audichron announcements may already use announcement numbers 0 through 499, so the AIN announcements must be recorded starting with announcement number 500 (MSGB = 500). Therefore, if the AIN database provides an “STR Announcement Id.” of 45, then announcement number 545 should be played.

MF information to be sent to the announcement device

The structure of the MF string is shown in the following example:
<start signal> + <n-digit Ann. No.> [+ optional digits] + <stop signal>
where:
“start signal” is the STRT field in the AIN prompting sequence of overlay CNFG. Default is KP.
“stop signal” is the STOP field in the AIN prompting sequence of overlay CNFG. Default is ST.

"n" is the number of digits that comprise the announcement number. It is the MSGD field in the AIN prompting sequence of overlay CNFG. Leading zeros shall be inserted. Default is 5 (that is, 5-digit announcement number). "optional digits" may be provided in the Send To Resource message received from the SCP. They may include voice back digits, time and date stamp, etc. These digits are forwarded to the announcement equipment which must decode this information. Contact the AIN service provider for the format of these digits so that the announcement equipment can be programmed to decode them.

AIN debug tools provided by the DMS-10 switch

Test queries

Overlay SND allows the craft personnel to formulate and send test queries to the SCP and to view the response from the SCP. Note that an actual query message is sent to the SCP. This may be used for basic query/response sanity testing. Refer to the DMS-10 *Maintenance Diagnostic Input Manual*, NTP 297-3601-506, for further information.

Translation verification (TRVR)

The translation verification tool (TRVR) is a diagnostic tool used to display the translation and routing sequence of a simulated call through the DMS-10 switch.

TRVR DN|DNCT|TG command

The crafts-person inputs the call origination (directory number, directory number/call type, or incoming trunk group number), call destination digits (for example, dialed digits), and any additional information as described in the DMS-10 *Data Modification Manual*, NTP 297-3601-311.

The translation verification function will display the characteristics of the call originator, the translation and routing sequence, and the characteristics of the call termination.

TRVR AIN ON|OFF command

When the TRVR AIN ON command has been issued, then the TRVR DN|DNCT|TG command described above will also formulate and send test queries to the SCP and display information about the response from the SCP. Where appropriate, the crafts-person will be prompted for additional information or asked to select a particular action if an Analyze Route or Forward Call response message is received.

TRVR DNT command

The purpose of the Dialable Number Translation (DNT) function is to convert a 10-digit number (area code and directory number) returned from the SCP into the digits that the subscriber would normally dial in order to reach that destination. Use TRVR DNT to verify that a 10-digit number returned from the SCP can be reached.

TRVR DNT determines whether any digits are to be removed (for example, delete the area code) and/or added (for example, add the “public network escape” code for EBS business groups and/or “1" for toll calls). TRVR DNT will then translate these digits to verify that the destination can be reached.

To set up the DMS-10 SSP for DNT, follow the appropriate Service Order Procedure in the DMS-10 *Data Modification Manual*, NTP 297-3601-311.

Call processing message trace

The Call Processing Trace (CPT) overlay is intended for use by Nortel development, installation, and technical assistance engineers only. This overlay is not available to all customers. This overlay provides a number of message trace capabilities including the following.

AIN trace capability

The TRAC ON AIN command will initiate tracing of all AIN query, response, conversation, update request, and ACG messages sent between the DMS-10 switch and the SCP. It prints basic information about the AIN query and response messages.

TCAP trace capability

The TRAC ON TCAP command can be used to trace various aspects of the TCAP system. This command provides more detailed information about the AIN TCAP messages that are sent between the DMS-10 switch and the SCP.

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Symbols

Numbers-

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DMS-10 Family

600-Series Generics

Maintenance and Test Manual - Part 2 of 2

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