

REPAIR SERVICE BUREAU
ANALYZING AND INTERPRETING MESSAGES
ON THE AUTOMATIC LINE INSULATION TEST (ALIT)
TELETYPEWRITER CHANNEL
NO. 3 ELECTRONIC SWITCHING SYSTEM

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NOTICE

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1. GENERAL

1.01 This section provides an approach for analyzing and interpreting messages on the Automatic Line Insulation Test (ALIT) Teletypewriter (TTY) channel to aid in locating many of the network and line malfunctions that occur in the No. 3 ESS system. Refer to Section 662-517-500 for test procedures used in testing customer lines connected to the No. 3 ESS System.

1.02 This section is reissued to:

- Include additional input and output messages for the No. 3 ESS.
- Correct technical errors.
- Delete input and output messages not needed by the tester at the Local Test Desk (LTD).

Since this reissue covers a general revision, arrows generally used to indicate changes have been omitted.

1.03 Refer to Input Message Manual IM-3H300-01 and Output Message Manual OM-3H300-01 for the complete group of messages used on the ALIT TTY. The format and use of each message, as well as cautions, as contained in the message manual, take precedence over this section. References will include the message manual and message index (ie, IM-3H300 OP:LINE or OM-3H300 RMV LINE).

1.04 Various automatic diagnostic tests are performed by the No. 3 ESS System. Network apparatus (trunks, service circuits, links, junctors, etc) having high error rates are removed from service and a TTY printout is generated on the maintenance TTY in the central office. **Customer lines having high error rates are not removed from service.** Instead, the line error is printed out on the ALIT TTY and the maintenance TTY. The customer line is identified by its telephone number (TN).

1.05 An automatic line insulation test (ALIT) program is provided to permit the automatic testing of line insulation values in the No. 3 ESS office. When an ALIT failure is detected, a TST LINE ERR output message identifying the failure will be printed out on the ALIT TTY in the repair service bureau (RSB). Additional messages are printed at the start and end of the test cycle to identify the type of test, range, and the originating office.

1.06 In addition to the automatic line insulation test (ALIT), the No. 3 ESS provides printouts at the ALIT TTY on the following types of line failures:

- Power Cross (PX)
- Restore Verify Failure (RVF)
- Ringing Continuity Failure (EA RC)
- Coin Failures
 - (a) STUCK COIN Control Error
 - (b) Coin Line Circuit Failure (EA CLC)
 - (c) No Coin Control Failures (EA NCC)
- High and Wet State (HAW)
 - (a) Permanent Signals
 - (b) Partial Dials
 - (c) Maintenance Busy (manual request)
 - (d) Power Cross (PX)
- Programmed ALIT (TST LINE ERR)
- Continuity Failure (EA CONT)
- Low Leakage Resistance Failure (EA LLR)
- TOUCH-TONE® Receiver Errors (EA TTR)
- Network Controller Error (EA NWC).

1.07 The line information printed out by the ALIT TTY frequently is the result of a solid trouble condition on a customer line. By giving the printout information prompt attention, a customer-reported trouble could be prevented and duplicate trouble printouts on the ALIT TTY could be reduced. Troubles indicated by the ALIT TTY printouts should be handled with the following priorities.

- Power Cross (PX)
- Restore Verify Failure (RVF)
- Coin Failures (STUCK COIN, EA CLC, and EANCC)
- Ringing Continuity Failures (EA RC)
- Programmed ALIT (TST LINE ERR)
- High and Wet List (HAW)

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- Continuity Failures (EA CONT)
- Low Leakage Resistance Failure (EA LLR)
- Line Cutoff Failure (EA LCO)
- TOUCH-TONE® Receiver Errors (EA TTR)
- Network Controller Error (EA NWC).

Local conditions and priorities may cause the priority list to differ for certain repair service bureaus. A description of trouble conditions is provided in paragraphs 1.08 through 1.18.

1.08 Power Cross Failure: A power cross failure (PX) indicates there is false ac or dc power on a line terminal. The power cross test is performed by applying a power cross test circuit to the line via a test vertical and network path. The power cross test is performed on all lines that are being connected to a customer dial pulse receiver or to a ringing service unit. If a line fails the power cross test, the line is removed from service for about 20 seconds (to give the line a chance to recover) and the power cross test is then retried. If the retry test passes, the line is restored to service and a REPT LINE—TRBL EA PX output message is printed out on the ALIT TTY. If the retry test fails, the line is left out of service (and placed in the high and wet state) and an RMV LINE PX output message is printed out on the ALIT TTY immediately. The line should be tested immediately from the LTD by accessing the line through a no-test trunk and making the FEMF test. Accidentally crossing a customer line with conductors used for supplying power (greater than 50 volts) while testing may cause a PX failure and remove the line from service. If the line is in the high and wet state (HAW), it should be tested as soon as possible. When the line is tested and found OK, it must be restored to service using the RST:LINE input message at the ALIT TTY.

1.09 Restore Verify Failure: A restore verify failure (RVF) indicates that current is not flowing in a line scan point during the verify test. The cutoff contacts of the line are restored (closed), and a verify test is made by connecting a restore-verify test circuit to the line via a test vertical and network path. The test circuit in the No. 3 ESS provides a loop closure for loop start lines and a ground for ground start lines. If a restore verify failure occurs, the line may not have originating service. A REPT LINE---TRBL EA RVF output message is printed out immediately on the ALIT TTY. The line should be tested from the LTD.

1.10 Continuity Failure: A continuity failure indicates that current is not flowing in a tip-ring loop formed partly by a path in the network. The problem may be in the network or in the circuits connected to the network completing the current loop. There are two sources of continuity failure.

- (a) **Supervision continuity failure**—indicates that supervision failed to transfer from one circuit to another along a network path.
- (b) **Transmitter continuity failure**—indicates that DC current is not flowing from an MF or DP transmitter, through a network path, to an outgoing or 2-way trunk just prior to outputting digits.

A continuity failure may involve a full path between two connected circuits or, in the case of a supervision continuity failure, may involve a half path between a junctor and a connected circuit. If a line is involved in three consecutive continuity failures, a REPT LINE---TRBL EA CONT output message is printed out on the ALIT TTY. The line should be tested from the LTD.

Note: If several continuity failures occur in a short time, the No. 3 ESS system considers the line a "Showering Line." The line is automatically removed from service for about 20 seconds to lessen its effect on call processing. It is then returned to service automatically.

1.11 Ringing Continuity Failure: A ringing continuity failure indicates that ringing current is not flowing from a ringing circuit, through a network path, to a line when it should be. Ringing continuity failures are generally caused by open lines which do not provide a complete ac circuit for the applied ringing potential. Ringing continuity failures may be caused by an open circuit in the central office or in the outside plant, certain data lines, answering sets, and lines with portable sets and no permanently connected ringer or nonworking lines in ESS translations. If a line is involved in three consecutive ringing continuity failures, a REPT LINE---TRBL EA RC output message is printed out on the ALIT TTY. The line should be tested from the LTD.

1.12 Low Leakage Resistance: A low leakage resistance failure (LLR) indicates that an idle line looks off-hook to a ringing circuit before ringing current is applied. The line is scanned to verify that it is idle (on-hook) before a failure is reported. If three consecutive low leakage resistance failures occur involving the same line, a REPT LINE---TRBL EA LLR output message is printed out on the ALIT TTY. The line should be tested from the LTD.

1.13 Line Cutoff Failure: A line cutoff failure (LCO) indicates that a line scan point looks off-hook after the line's cutoff contacts have been opened. The cutoff contacts may be stuck closed. If a line is involved in three consecutive line cutoff failures, a REPT LINE---TRBL EA LCO output message is printed out on the ALIT TTY. The line should be tested from the LTD using the Line Ferrod Test in Section 662-517-500.

1.14 TOUCH-TONE® Receiver Error: A TOUCH-TONE receiver error (TTR) indicates that an illegal TOUCH-TONE digit is present at a TOUCH-TONE receiver. A legal digit consists of exactly 1-out-of-4 low tones and 1-out-of-4 high tones. The cause may be a defective TOUCH-TONE receiver at the No. 3 ESS central office or a defective line or TOUCH-TONE station equipment. If a line is involved in three consecutive TOUCH-TONE receiver errors, a REPT LINE---TRBL EA TTR output message is printed out on the ALIT TTY. The line should be tested from the LTD using the TOUCH-TONE Test in Section 662-517-500.

1.15 Network Controller Error: A network controller error (NWC) indicates that the network controller order failed to execute correctly from both system control 0 (SYC 0) and system control 1 (SYC 1). The problem is probably in the unduplicated portion of the network control. If a line is involved in three consecutive network controller errors, a REPT LINE---TRBL EA NWC output message is printed out on the ALIT TTY. The line should be tested from the LTD. If the line is found to be OK, notify the central office personnel of a possible central office trouble.

1.16 STUCK COIN Control Error: A STUCK COIN control error indicates that a coin control circuit continued to detect the presence of a coin after applying coin collect or coin return voltage to a connected coin line. A REPT LINE---TRBL STUCK COIN output message is printed out immediately on the ALIT TTY. The message may be caused by a defective coin relay, full money box, shorted carbon block at CDF protector, station protector, station ground fault, or a defective coin control circuit in the central office. An attempt should be made to verify coin failures from the LTD or LTC to determine if the trouble still exists or if the trouble is inside the office or in the outside plant. Testing coin lines which generate coin trouble output messages is important since the cause of trouble may be cleared after one or more coin failure messages have been received. A shorted carbon block at the CDF may test clear from the LTD and still be detected as a coin failure. Carbon blocks or protector units should be replaced when repeated coin station troubles are detected by the system and the trouble cannot be measured from the LTD.

1.17 No Coin Control Error: A no coin control error (NCC) indicates that a coin control circuit failed to detect the presence of a coin about to be collected. Collect voltage was applied from the coin control circuit to a connected coin line, and the coin that was supposed to be there was not detected. If a line is involved in three consecutive no coin control errors, a REPT LINE---TRBL EA NCC output message is printed out on the ALIT TTY. The coin line should be tested from the LTD.

1.18 Coin Line Circuit Failure: A coin line circuit failure (CLC) indicates that a dial tone first (DTF) coin line circuit failed to provide a loop closure to hold supervision at the junctor when placed in the +48 supervision state. No dial tone is received at the coin station. The dial tone first line is connected to an operator, and +48 supervision is returned to the line to disable the TOUCH-TONE pad. If a line is involved in three consecutive coin line circuit errors, a REPT LINE---TRBL ER CLC output message is printed out at the ALIT TTY. The coin line should be tested from the LTD.

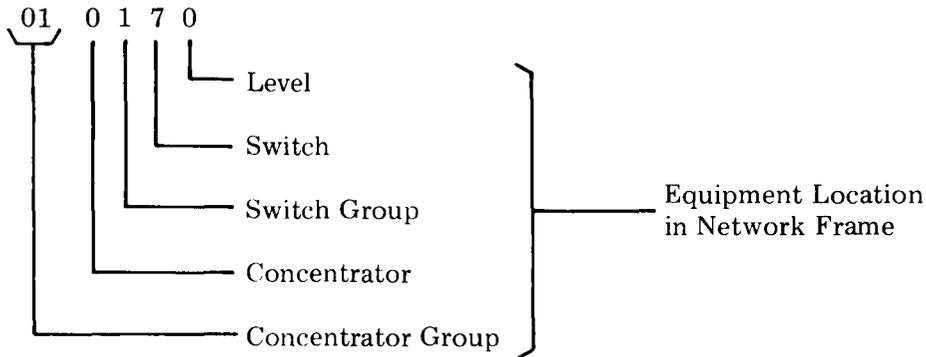
OFFICE EQUIPMENT NUMBER (OEN)

1.19 The office equipment number (OEN) is a 6-digit number used to designate the location of lines, trunks, and service circuits on the combined distributing frame (CDF) in the No. 3 ESS central office. The OEN also describes the location of associated equipment in the network frame. The format of the OEN is:

OEN = AA BCDE

DIGIT	EQUIPMENT IN NETWORK FRAME
AA (0 through 15)	Concentrator group
B (0 through 1)	Concentrator
C (0 through 2)	Switch group
D (0 through 7)	Switch
E (0 through 7)	Level

1.20 A typical OEN assignment, as it appears on an office record, is 01 0170. The meaning to the central office personnel is:



The OEN must be shown in its proper sequence on all work orders and office records. The repair service bureau (RSB) personnel must be able to recognize and be able to locate the OEN on all work orders, RSB records, and on the ALIT TTY input/output messages.

Note: The OEN 01 0170 may appear on the TTY printout as 1 0170. (The first digit to the left may be dropped if 0.)

PERMANENT SIGNAL AND PARTIAL DIAL TREATMENT

A. Permanent Signals

1.21 Permanent signals occur when no digits are received by a customer digit receiver within 10 to 16 seconds after an off-hook condition. The time-out period is 10 seconds during periods of heavy traffic. Permanent signals also occur if a line fails to disconnect after a call is torn down. The customer receives an announcement, receiver off-hook tone, and then an operator challenge is initiated to alert the customer. Either of these three switched connections may be omitted on an optional basis. If action is not taken by the customer, the line is placed in the high and wet state. Lines placed in the high and wet state are scanned for on-hook only, and network paths are not occupied.

B. Partial Dial Calls

1.22 Partial dial calls are calls that are not completely dialed and therefore time out after the reception of one digit. The time-out period is normally 10 seconds. Partial dial calls are routed to tone or announcement and then given permanent signal treatment, if necessary.

C. High and Wet State

1.23 In the No. 3 ESS, lines with a permanent signal or partial dial condition are placed in a high and wet state. Lines placed in the high and wet state are scanned for on-hook only, and network paths are not tied up. There is no limit to the number of lines that can be placed in a high and wet state.

1.24 The RSB personnel may request a printout of all permanent signal lines presently in the high and wet state (HAW) by typing in the following message:

OP:LINE:STAT HAW!

on the ALIT TTY. The resulting printout is as follows:

```

46 OP LINE 1 0225 TN 534 5573 STAT HAW
           2 0147 TN +534 3915 STAT HAW
           3 0113 TN 534 5589 STAT HAW
           4 1145 TN 534 3995 STAT HAW
OP LINE STAT COMPL

```

D. Tests

1.25 A printout of the telephone numbers of all permanent signal lines presently in the high and wet state should be manually requested using the OP:LINE input message. These lines should be tested at the LTD at the start of each day. The permanent signal list should not be requested too early as numerous receiver-off-hook (ROH) conditions may appear. Only solid tested troubles should be dispatched.

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Note: Some subscriber lines may appear consistently on the high and wet list. A record of these lines should be maintained to prevent needless testing at the LTD.

PLUG-UP PROCEDURE (TROUBLE INTERCEPT)

1.26 When a subscriber requests a line to be routed to trouble intercept, due to a temporary trouble condition, the RSB personnel will notify the trouble intercept operator of the trouble condition. A list of the telephone numbers of the trouble intercept operators is found in Section ___-___-___ (to be filled in by RSB personnel).

1.27 The subscriber line is then put on plug-up by RSB personnel using the RMV:LINE input message via the ALIT TTY. The RSB personnel must obtain the OEN of the line from the line record card or by using the VER:LINE:TN nxx xxxx! input message. The RMV:LINE input message is then typed in using both the OEN and TN for identification.

Example: To place TN 555 2738 on plug-up.

- (1) Obtain the OEN for 555 2738 from the line record card or type in the following input message at the ALIT TTY.

Type In: VER:LINE:TN 555 2738!

Response:

```
M 37 VER LINE
      TN 555 2738
      OE 5 0 2 2 0 ——— OEN of the line
      OESP 5 17 0
      RTI 0
      LCC 1FR
      LCI 8
      RAX 0
      OMAJ 8
      SCR 0
      TMAJ 8
      END
```

- (2) Type in the RMV:LINE input message as follows:

Type In: RMV:LINE 5 0220, TN 555 2738: PLUGUP!

Response: PF—followed by an RMV LINE output message which includes the removal reason or a removal failure reason. Refer to RMV LINE output message, Part 7.

The subscriber line should now be on trouble intercept unless there is an RMV LINE message failure.

1.28 A list of lines on trouble intercept must be maintained by the RSB. The TN of the line, trouble condition, trouble intercept operator, the person placing the line on plug-up and the date, and the person removing the line from plug-up, and the date should be included.

2. NO. 3 ESS SYSTEM FEATURES AND CAPABILITIES

2.01 Various features and capabilities are available to No. 3 ESS subscribers on an optional basis. The system determines what features are provided to an individual subscriber by consulting translation tables.

TERMINAL HUNTING

2.02 The following hunting arrangements are available for hunting an idle line:

- Series Completion
- Multiline Hunting (MLH).

A. Series Completion

2.03 The series completion arrangement is available for individual line customers who desire completion to other lines via a hunt. If the party being called has series completion and is busy, the call is routed to another directory number in the office. If the new party has series completion and is busy, a new directory number is found. The process continues until an idle line is found or until the last line of the series completion chain is reached and found busy. Up to eight lines can be handled by series completion. It is recommended that more than 12 lines should be handled by multiline hunting. The telephone numbers in the series completion chain need not be consecutive, but the same office code must be used.

2.04 *Remote Make-Busy:* The remote make-busy feature in No. 3 ESS may be used to make a line(s) in the series completion chain busy to incoming calls. The remote make-busy feature is activated by a key on the customer's premises. A line is considered busy in the series completion process if the scan point associated with the key is found to be set, in which case a new telephone number is reached and the process continues.

B. Multiline Hunting

2.05 The multiline hunting (MLH) arrangement refers to a method of selecting an idle line from a group in the central office, as distinguished from a PBX, which refers to a type of equipment on the customer premises. In general, a multiline hunting group (MLHG) is associated with a PBX on the customer premises, or it could be associated with any group of individual lines in the central office. A 2-digit MLHG number (00 through 63) is used to identify a particular *group* of lines. Lines associated with an MLHG are identified within the group by 2-digit member numbers (00 through 63).

2.06 A selection status block in the No. 3 ESS is associated with each MLHG. The block contains one selection status bit per MLHG member. The translation for the listed telephone number specifies a first hunt member or a last hunt member. The hunt process involves searching for an idle member in the selection status block starting with the first hunt member's selection bit and ending at the last hunt member's selection bit. If an idle member in the hunt range is found, the selection bit is marked busy, the terminal equipment number is retrieved from the member list, and the call is completed to the selected member's terminal.

2.07 *No Hunt:* In the No. 3 ESS, a telephone number is assigned to each member in the MLHG. Associated with each member's telephone number in translations is the member number (considered the first hunt member) and the last hunt member number. The last hunt member number may be the same as the member number thus creating a "no hunt" telephone number. *Incoming calls to these telephone numbers do not cause hunting to occur.* Telephone numbers received from no-test and local test desk trunks are completed to the member number specified in translations on a "no hunt"

basis (ie, the last hunt member number is ignored). **Thus, a local test desk connection to an MLHG telephone number does not cause hunting to occur.**

2.08 In the No. 3 ESS, the MLHG includes two features which affect the hunting process: night stop and stop hunt. A dial-up arrangement that replaces PBX keys is used to activate the night stop and stop hunt features in the No. 3 ESS. The dial-up arrangement provides "key" control over existing working lines from a PBX. The dial-up procedure by the customer is as follows:

DIAL TONE + ACCESS CODE + DIAL TONE + MLHG SECURITY CODE + ACTION CODE + SERVICE CODE

ACCESS CODE = 67

MLHG SECURITY CODE = 00 through 63 = Assigned multiline hunt group number.

ACTION CODE = 1 = Activate the service
2 = Deactivate the service

SERVICE CODE = 1-7 for remote make-busy (RMB) service
8 for stop hunt service
9 for night stop service

2.09 Night Stop Feature: If a telephone number within the MLHG is dialed when the night stop feature is activated, the normal hunting sequence for that MLHG is ignored. Instead of starting the hunting sequence with the member number associated with the telephone number dialed and continuing until the last hunt member is reached, the hunting starts with the first member of the MLHG (00) and stops with the "night stop" member.

2.10 Stop Hunt Feature: When the stop hunt feature is activated, all hunt groups associated with the MLHG will start at their normal member but will not hunt past the "stop hunt" member.

2.11 Night Make-Busy Feature: The night stop feature may be used to provide the "night make-busy" feature. When the "night make-busy" feature is activated, all incoming calls to that MLHG are completed to a preselected line. This line in the No. 3 ESS would be defined as member 0, and also as the night stop member. The listed telephone number for the MLHG would specify member 1 as the first hunt member. When the night stop feature is activated, all calls for the MLHG are completed to member 0 on a no-hunt basis (first hunt member number is the same as the night stop member number). With the night stop feature deactivated, all calls using the telephone number assigned to member 0 are completed to member 0.

CLASSES OF SERVICE

2.12 All customer lines have class-of-service translation information associated with them. This information is stored in the translation area of program store in the No. 3 ESS. The classes of service provide information which identifies privileges, restrictions, and treatments associated with a customer line.

A. Major Class

2.13 The major class includes any special originating and terminating actions required for a particular line or telephone number (TN). The major class is divided into originating and terminating classes. Table A gives the originating and terminating classes for No. 3 ESS. Major classes of service are identified on the VER LINE output message (requested using the VER:LINE:TN input message on the ALIT TTY). Refer to Part 6, DETAILED INPUT MESSAGES, for the format and use of the VER:LINE input message.

B. Screening Class

2.14 The screening class is an indication of the type of treatment given to various types of calls. The screening class is used to distinguish various types of service, eg, local, extended area, metropolitan, and WATS, and to obtain the routing and charging information for each. Screening classes are identified on the VER LINE output message (requested using the VER:LINE input message on the ALIT TTY). Refer to Part 6, DETAILED INPUT MESSAGES, for the format and use of the VER:LINE input message.

C. Line Class Code

2.15 The line class code identifies a subgrouping of telephone customers which is used for rate distinctions. The subgrouping may distinguish between individual and party; between business, residence, and coin; between flat rate and message rate; and between restricted and extended area service. The line class code is identified on the LINE CLASS CODE TABLE, ESS FORM 3306. A VER LINE output message, requested using the VER:LINE input message, can be used to determine the line class code (LCC) assigned to a specific telephone number. Refer to Part 6, DETAILED INPUT MESSAGE, for the format and use of the VER:LINE input message.

CUSTOM CALLING SERVICE

2.16 Standard service in the No. 3 ESS consists of the ability to accept and derive appropriate routing for all telephone numbers used in current practice using dial pulse signaling and 20-Hz ringing. Custom services are used to supplement the standard services and include the following:

- TOUCH-TONE® Calling
- Speed Calling
- 3-Way Calling
- Call Forwarding
- Call Waiting.

2.17 ***TOUCH-TONE Calling:*** TOUCH-TONE calling requires the system to accept originations from TOUCH-TONE dialing stations in addition to originations from conventional dial stations. When a line classed as TOUCH-TONE originates a call, the No. 3 ESS connects signal-receiving equipment capable of recognizing either frequency pairs or dial pulse.

TABLE A
ORIGINATING AND TERMINATING MAJOR CLASSES

MAJOR CLASS	ASSIGNMENT	ORIG	TERM
00	Unassigned	✓	✓
01	Denied Service		
02	Spare		
03	Spare		
04	Two-Party-Ring	✓	✓
05	Two-Party-Tip	✓	✓
06	Individual Traffic		✓
07	Free Individual		✓
08	Individual (Single Party, PBX, or MLHG)	✓	✓
09	Hotel, Motel	✓	
10	Manual	✓	
11	Spare		
12	Spare		
13	Spare		
14	Spare		
15	Spare		
16	Multiparty — Party 1	✓	✓
17	Multiparty — Party 2		✓
18	Multiparty — Party 3		✓
19	Multiparty — Party 4		✓
20	Multiparty — Party 5		✓
21	Multiparty — Party 6		✓
22	Multiparty — Party 7		✓
23	Multiparty — Party 8		✓
24	Coin First (Prepay Ground Start)	✓	✓
25	Coin Dial Tone First	✓	✓
26	Spare		
27	Spare		
28	Intercept		✓
29	Auto-Connect	✓	✓
30	Denied Service	✓	✓
31	Special Routing		✓

- 2.18 Speed Calling:** This service allows a customer to originate calls to frequently called numbers by dialing one or two digits instead of the full seven or more digits. For each customer who subscribes to speed calling, the system retains a list of unique numbers assigned to each abbreviated code. Speed calling lists may contain either 8 or 30 entries or both. Individual entries may be changed by the subscriber. A list of the speed calling numbers (1-digit or 2-digit) with the associated telephone numbers is maintained in the No. 3 ESS. The list may be requested using the VER:SCN input message. Refer to Part 6, DETAILED INPUT MESSAGES, for the format and use of the VER:SCN input message.
- 2.19 3-Way Calling:** By subscribing to this feature, a customer can add a third party to an existing connection by alerting the system with a momentary on-hook, and then dialing the telephone number for the added party.
- 2.20 Call Forwarding:** When activated by the station user, this feature automatically routes calls intended for a subscriber line to another subscriber line the user has designated. Forwarded calls may be toll charged if the forwarded-to party is in a different rate area. The VER:CFV:TN input message may be used to verify the call forwarding number associated with a customer telephone number.
- 2.21 Call Waiting:** This feature permits a subscriber who is in the talking state of an established call to be notified of an incoming call. The customer may then elect to receive the second call, via a switchhook flash while holding the existing connection.

3. AUTOMATIC LINE INSULATION TEST (ALIT) TTY CHANNEL

3.01 The automatic line insulation test (ALIT) TTY channel, also referred to as the local test desk (LTD) TTY, is a limited maintenance send/receive TTY. Its primary purpose is to transmit information pertaining to line troubles to the local or remote repair service bureau.

NO. 3 ESS AUTOCONNECT

3.02 The No. 3 ESS AUTOCONNECT facility provides a means of providing a secure switched link from the NO. 3 ESS CO to the ALIT TTY. The AUTOCONNECT is initiated by dialing a "trigger" telephone number. This call is routed to a confirmation tone (high tone) if the requested facilities are available, or busy tone if the facilities are not available. The calling party, after listening to 10 seconds of the confirmation tone, hangs up. The No. 3 ESS calls a prestored return telephone number associated with the dialed "trigger" telephone number. The called party answers and a secure connection has been made with the No. 3 ESS.

3.03 A time-out feature allows for an autoconnect line to disconnect automatically if the TTY channel remains idle (no input message characters typed) for a specified period of time (about 3 minutes maximum).

3.04 The autoconnect facilities will also automatically initiate a connection to the TTY when an output message of a particular class is to be printed out. The TTY will automatically disconnect after a specified time period.

PROCEDURE TO ACTIVATE THE ALIT TTY (AUTOCONNECT)

3.05 At the ALIT TTY, lift the telephone receiver and dial the assigned "trigger" telephone number for the ALIT TTY. Listen for high tone or busy tone. If busy tone is received, hang up and try again later. If high tone is heard, listen for 10 seconds and then hang up. The ALIT TTY will be connected to the No. 3 ESS and is in service. Input messages may be typed into the TTY. If no input messages are typed on the TTY for approximately 3 minutes, the autoconnect facility will time out and disconnect the ALIT TTY.

INPUT MESSAGE CONTROL CHARACTERS

3.06 A group of TTY characters have been reserved for use in controlling the TTY keyboard and carriage. The control characters and their significance are described as follows:

- (a) **Execute (!):** The exclamation point is the execute character for the end of an input message. It tells the system that the input message has been completed and that the message should be processed. It is typed at the end of a one-line input message and at the end of the last line of a multiline input message. The execute character is followed one space later by an input message acknowledgment, which is returned by the system.
- (b) **Colon (:):** The colon is used to separate the action field of an input message from the other fields. Its proper use is indicated in the input message format.
- (c) **Space:** The space is used to separate the smaller fields within the identity and data fields. After the first space or colon, all spaces used repetitively are ignored as a control character by the system except that successive spaces may be used to prevent a **time-out**.
- (d) **Abandon (&):** The ampersand is used for No. 3 ESS TTY channels as the "line abandon" character. If a mistake is made on any line of input or if an "informational comment" is inserted before the "?" or "/", the "&" may be typed to cause the program to completely ignore the line. The program will respond with a carriage return and line feed. Any previous lines of a continued input message sequence will remain unaffected.
- (e) **Continue (/):** The virgule (slash) is the "continued input" indication for the No. 3 ESS. This character ends a line of input and instructs the program to input this line and that another related data line will be immediately inserted. If the line is in the correct format and consistent with preceding lines, the machine will respond with a carriage return and line feed. If the data on the line is inconsistent with preceding input lines, the system will print the response NG (no good) after the line, give a carriage return and line feed and then print an error message. The error number of the message indicates the type of error encountered. After any type of message failure response printed by the TTY, the reason for the error should be corrected and the entire message sequence reinputted. Any previous lines of a message sequence are discarded by the ESS if a line error is found.

3.07 The line feed, carriage return, and vertical tab carriage positioning keys should not be used while typing an input message.

4. AUTOMATIC LINE INSULATION TEST (ALIT) PROGRAM

4.01 The Automatic Line Insulation Test (ALIT) program provides automatic testing of line insulation in the No. 3 ESS. The ALIT program is started at a specified time each day and is run to completion. A TST:LINE input message is provided to change the type of test and resistance ranges from the ALIT TTY. The ALIT program may be started and stopped using the TST:LINE input message. No facilities are provided at the LTD to control the ALIT program.

4.02 The ALIT program also performs line ferrod restore verify tests. The test restores line ferrods left disconnected by program errors and detects line ferrods which cannot be reconnected due to hardware faults.

4.03 The TST:LINE input message is also used to perform the line insulation test of a specified line. The resistance range and type of test may be specified. The line is identified by the office equipment number (OEN). If the resistance range and type of test is different from the daily ALIT program, the ALIT program runs the test specified for a single line and then reverts back to the resistance range and type of test specified in the daily ALIT program.

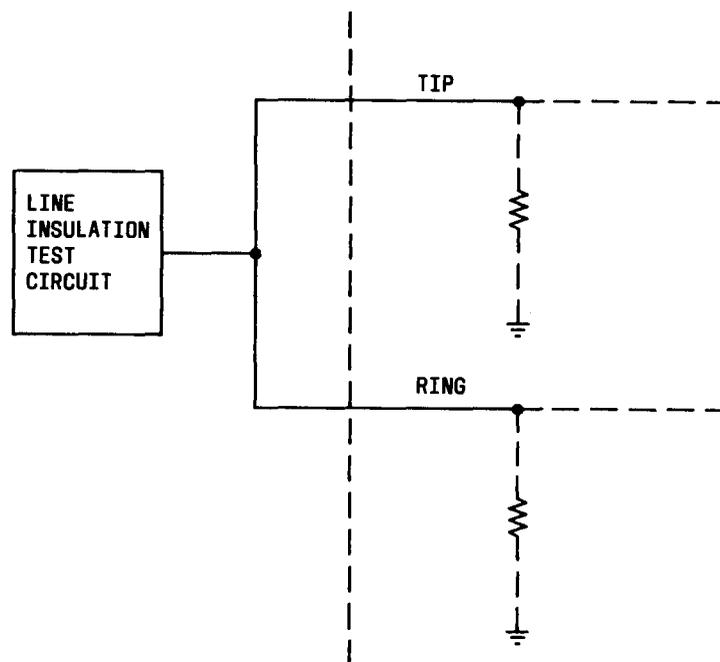
LINE TESTS—LINE INSULATION TEST (LIT)

4.04 The ALIT program will connect the line insulation test circuit in sequence to every nonbusy line in the office with the exception of ground start PBX and coin lines and lines used with autoconnect circuits. Starting with OEN 00 0001, unless otherwise specified, the program sequences through the networks searching for the next nonbusy lines until all lines have been tested. Connections are not made to unequipped or unassigned terminals, trunk or service circuit terminals, busy line terminals, or noncutover terminals.

4.05 When an idle line is found, the line is connected to the LIT, disconnecting the line ferrod. A check is then made to determine the type of line ferrod. If the line ferrod is wired in a ground start arrangement, a restore verify test is performed. If the line is loop start, the insulation test is performed. The LIT circuit is scanned to determine the condition of the line—if the insulation test is performed. The LIT circuit is scanned to determine the condition of the line—if the insulation test does not fail, a restore verify test is performed on the line. If the insulation test failed, a retest is performed and a TST LINE----ERR output message is printed.

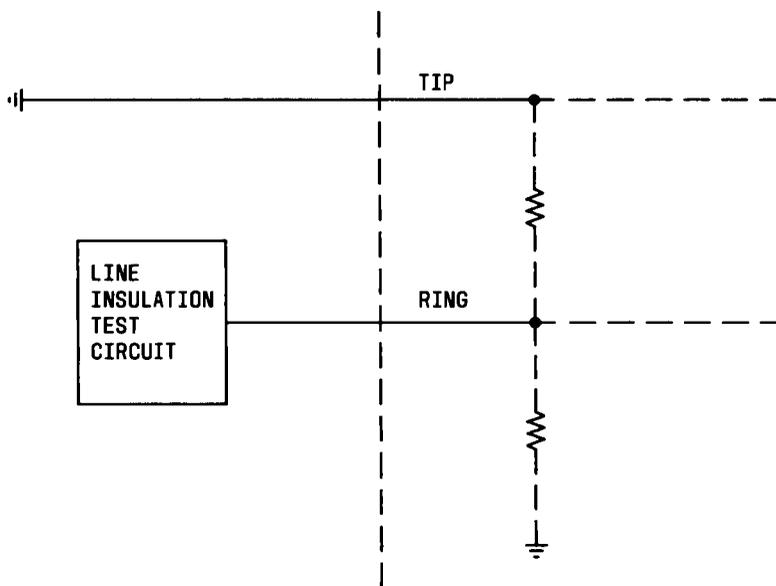
4.06 The LIT circuit performs three types of tests with respect to the way in which the insulation test is connected to the line under test. Each type of test may be made in three different ranges of resistance. An initial test is performed, and, in the event of a failure, a retest is performed. If a general test (all three types of tests in sequence) is made, a retest is not performed. The connection of the line insulation test circuit to the tip and ring of the line for each test is shown in Fig. 1, 2, and 3.

4.07 The following insulation tests are performed on loop start lines.



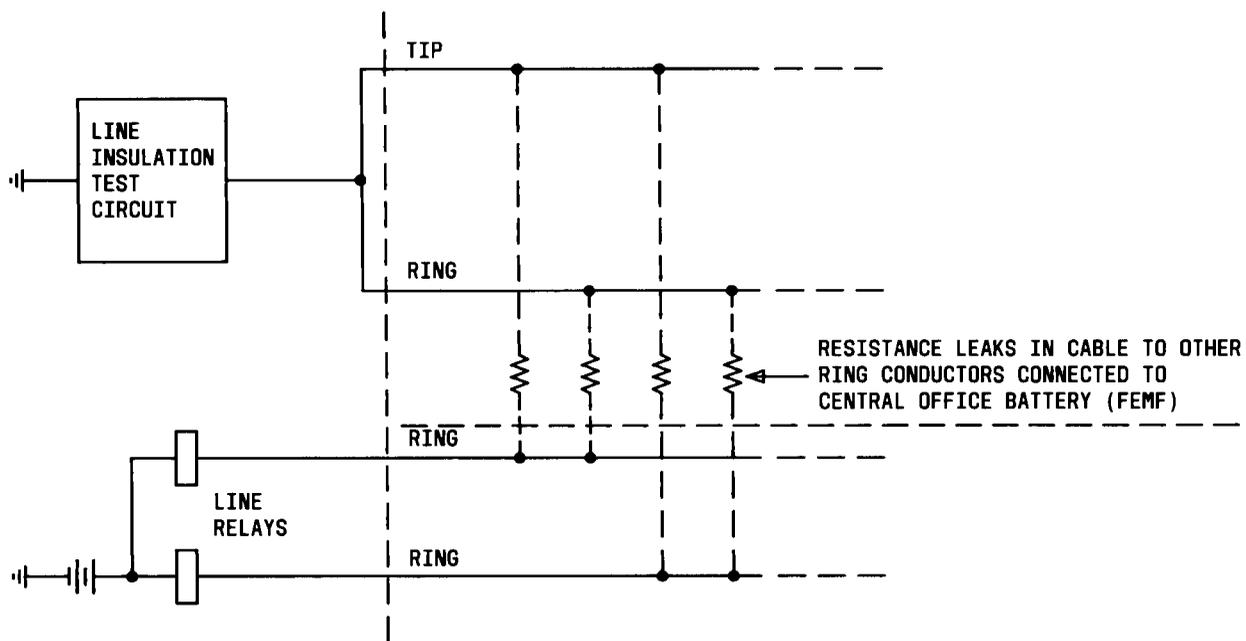
TEST CONDITION MEASURES COMBINED TIP TO GROUND AND RING TO GROUND RESISTANCE

Fig. 1—Tip and Ring to Ground (TRG) Test



TEST CONDITION MEASURES COMBINED SHORT CIRCUIT AND RING TO GROUND RESISTANCE

Fig. 2—Short Circuit and Ring to Ground (SRG) Test



TEST CONDITION MEASURES COMBINED TIP TO BATTERY AND RING TO BATTERY (FEMF) VOLTAGE (RESISTANCE LEAKS)

Fig. 3—Foreign Potential on Tip or Ring (FEMF) Test

- **Short Circuit and Ring to Ground (SRG):** This test detects leakage (insulation failure) between ring and tip or ring and ground. If a failure is detected, a retest is performed to determine if the leakage is between ring and ground. This test is used to detect trouble in drop wire and inside wire at the subscriber premises (leaks between tip and ring) and in open wire conductors (leaks from ring to ground).
 - **Tip and Ring to Ground (TRG):** This test will detect leakage between tip and ring to ground. If a failure is detected, a retest is performed to determine if the leakage occurs between ring and ground. This test checks for trouble in cable terminals and cable sheaths (leaks from tip or ring to ground).
 - **Foreign Electromotive Force (FEMF):** This test will detect the presence of a foreign potential on tip or ring. If a foreign potential is detected, a retest is performed to determine if the foreign voltage is on the ring. This test is used to detect defects in underground and overhead cable sheaths (leaks from tip or ring to battery). Such defects admit moisture which causes leaks from the line under test to battery in the ring conductor of other lines in the same cable. Leaks to ground or across cable pairs are also present under these conditions. Leaks to battery are normally caused by cable troubles, whereas leaks to ground and across pairs may occur at other components of the line.
- 4.08** The type of test performed by the LIT circuit is selected by the TST:LINE input message. The following tests or combinations of tests may be selected:

SRG

TRG

TRG and SRG

FEMF

SRG and FEMF

TRG and FEMF

SRG and TRG and FEMF.

- 4.09** Test ranges are selected from three ranges, 80 Kohms, 320 Kohms, or 2.56 Mohms. The higher ranges (320 Kohms or 2.56 Mohms) will detect the first stages of insulation leakage which do not presently affect service. Lower test (80 Kohms) ranges will detect only faults currently causing service problems. The high test ranges would normally be specified during dry weather while the low ranges would be used during wet weather conditions.

ALIT OUTPUT MESSAGES

- 4.10** Each time the ALIT program is started, a TST LINE START output message is printed to report the ALIT was started. If a line fails the ALIT test, a TST LINE---ERR output message is printed. When all lines have been tested, a TST LINE---COMPL output message is printed.
- 4.11** The ALIT tests are aborted when 128 line faults have been detected. After the 128th failure, only the restore verify test is performed. This number is sufficient to identify a faulty cable without flooding the TTY with messages. If the ALIT tests have been aborted, a TST LINE---ABT output message is generated.

5. VERIFICATION REQUEST INPUT MESSAGES

5.01 The following verification request messages are provided in an abbreviated form. For additional explanation and examples, refer to Part 6, DETAILED INPUT MESSAGES. Table B lists the recent change (RC) messages which are on a one-to-one correspondence with verification (VER:) request input messages.

VERIFICATION OF SINGLE PARTY OR COIN LINE

5.02 To verify a line when the telephone number (TN) is known, type the input message:

VER:LINE:TN nxx—xxxx!

5.03 To verify a line when the office equipment number (OEN) is known, type the input message:

VER:LINE:OE aa bcde!

5.04 The resulting VER LINE output message will list the latest line data assigned by the RC:LINE input message.

VERIFICATION OF 2-PARTY LINE

5.05 To verify a 2-party line when the telephone number (TN) is known, type the input message:

VER:TWOPTY:TN nxx—xxxx

5.06 To verify a 2-party line when the office equipment number (OEN) is known, type the input message:

VER:TWOPTY/

TABLE B

CORRESPONDENCE OF VERIFICATION REQUEST MESSAGES WITH RECENT CHANGE MESSAGES

VERIFICATION MESSAGES*	RECENT CHANGE MESSAGES	AFFECTED LINES, GROUPS, OR SERVICES
VFY:LINE/	RC:LINE/	Single party lines
VFY:TWOPTY/	RC:TWOPTY/	Two party lines
VFY:MPTY/	RC:MPTY/	Multiparty lines
VFY:GRP/	RC:MLHG/	Multiline hunt group
VFY:MTL/	RC:MTL/	Line within a multiline hunt group
VFY:SCN/	RC:SCN/	Customer speed calling list
VFY:CFN/	RC:CFN/	Customer call forwarding

* Additional verification messages are included in PART 6, DETAILED INPUT MESSAGES and in IM3H300-01.

OE aa bcde/

PTY p/

END!

- 5.07** The resulting VER TWOPTY output message will list the latest line data assigned by the RC:TWOPTY input message.

VERIFICATION OF MULTIPARTY LINE

- 5.08** To verify a multiparty line when the telephone number (TN) is known, type the input message:

VER:MPTY:TN nxx—xxxx!

- 5.09** To verify a multiparty line when the office equipment number (OEN) and party number (PTY p) is known, type the input message:

VER:MPTY/

OE aa bcde/

PTY p

END!

- 5.10** To verify a multiparty line when only the office equipment number (OEN) is known, type input message:

VER:MPTY:OE aa bcde!

- 5.11** The resulting VER MPTY output message will list the latest data assigned the line by the RC:MPTY input message.

VERIFICATION OF MULTILINE HUNTING GROUP (MLHG)

- 5.12** To verify MLHG group data only, when the MLHG number is known, type the input message:

VER:GRP nnn!

- 5.13** To verify the MLHG group data and data for all group members when the MLHG number is known, type the input message:

VER:GRP nnn; ALL!

- 5.14** To verify MLHG data and data for a particular group member when the MLHG number and terminal number (TER) are known, type the input message:

VER:GRP nnn:TER mmm!

- 5.15** To verify data for a particular MLHG group member when the MLHG number and terminal number (TER) are known, type the input message:

VER:GRP nnn; STD:TER mmm!

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- 5.16 The resulting VER GRP output message will list the latest MLHG data or member data assigned by the RC:MLHG input message.

VERIFICATION OF MULTILINE HUNTING GROUP (MLHG) MEMBER

- 5.17 To verify an MLHG member when the telephone number is known, type the input message:

VER:MTL:TN nxx—xxxx!

- 5.18 To verify an MLHG member when the office equipment number (OEN) is known, type the input message:

VER:MTL:OE aa bcde

- 5.19 The resulting VER MTL output message will list the latest MLHG member data assigned by the RC:MTL input message.

VERIFICATION OF CALL FORWARDING NUMBER (CFN)

- 5.20 To verify a customer call forwarding number (CFN) when the telephone number (TN) is known, type the input message:

VER:CFN:TN nxx—xxxx!

- 5.21 The resulting VER CFN will list the telephone number (TN) and the call forwarded number (CFN). If the customer has call forwarding and no call forwarding number is assigned, CFN UNAS (call forwarding number is unassigned) is provided.

VERIFICATION OF CUSTOMER'S SPEED—CALLING NUMBERS

- 5.22 To verify a customer's speed calling numbers (SCN) when the telephone number (TN) is known, type the input message:

VER:SCN:TN nxx—xxxx!

- 5.23 The resulting VER SCN output message will contain the telephone number, group number, 1- and/or 2-digit speed call list number, and a tabular output of the abbreviated dial number (1- and/or 2-digit), and the speed calling telephone numbers.

6. DETAILED INPUT MESSAGES

TOPICAL INDEX

- 6.01 Table C is a topical index of input messages for the ALIT TTY.

INPUT MESSAGE ACKNOWLEDGMENTS

- 6.02 Table D lists the input message acknowledgment that is printed out in response to an input message. The acknowledgment will indicate whether the input message was accepted or rejected and the reason.

OP:LINE INPUT MESSAGE

Request State of the Line Information

TABLE C
TOPICAL INDEX FOR INPUT MESSAGES

TOPIC	FUNCTION	INPUT MESSAGE
Abbreviated Dial List	Verify one or all lines in a customer's abbreviated dial list (1-digit or 2-digit).	VER:SCN
Busy a Line	Busy a line given the TN or OEN. (Place the line in the out-of-service state and open the cut-off contacts.)	RMV:LINE
Code Index	Verify a code index for a single line.	VER:CDI
High and Wet State	Print lines in high and wet state.	OP:LINE (HAW)
Intercept	Place line on intercept (plugup).	RMV:LINE (PLUGUP)
Line Insulation Test	Perform line insulation test on a specified line.	TST:LINE
Line Status (Busy-Idle)	Find status of customer line given the TN or OEN.	OP:LINE (STAT)
Line Class Code	Verify line class code for a line.	VER:LCC
Multiline Hunt Group (MLHG)	Obtain information on multiline hunt groups.	VER:GRP
Out of Service	Print list of lines in an out-of-service state.	OP:LINE (OSS)
Permanent Signal	Print permanent signal lines in high and wet state (HAW).	OP:LINE (HAW)
Plug-up List	Print list of lines on plug-up (intercept).	OP:LINE (PLUGUP)
Plug up a Line	Remove a line from service and place it on the plug-up list (intercept).	OP:LINE (PLUGUP)
Remove from Service	Remove a line from service (make busy).	RMV:LINE
Restore to Service	Restore a line to service (make idle).	RST:LINE
Route Index	Verify a route index for a single line.	VER:RI
Office Equipment Number (OEN)	Read or change status of customer line given OEN.	OP:LINE (STAT)
Test a Single OEN	Start ALIT test to test a single specified line.	TST:LINE
2-Party Service	Verify 2-party telephone service	VER:TWOPTY
Verify Line Information	Verify line information (major class, line class code, type of service, etc).	VER:LINE

TABLE D
INPUT MESSAGE ACKNOWLEDGMENT

ACKNOWLEDGMENT	MEANING
PF (Printout Follows)	The request was accepted. The appropriate program was initiated. A printout of the state information will follow.
IP (In Progress)	The request was accepted and is in progress. A printout of the state information will follow after a time delay. (A message may not follow. The request may be rejected for validity reasons.)
RL (Retry Later)	The multiscan function was denied. Repeat the request later.
?I (?Identification)	The line identification is in error or the message is constructed incorrectly. Check for the correct format per Input Message Manual IM-3H300-01; then try again. If the message fails again, check for incorrect line identification.
WT	Wait — the request was accepted and is in progress. A printout will follow.

6.03 This message provides state of the line information. The request may ask for the state of a single line or a list of all lines in an out-of-service state (out-of-service, plugged-up, or high and wet). The list may also be restricted to lines in a specific concentrator group and/or lines in a specific out-of-service state. The message is used in three formats:

OP:LINE (a bcde):STAT!

or

OP:LINE:STAT!

or

OP:LINEa:STAT f!

The control letters in the variable field have the following meaning:

a bcde is the OFFICE EQUIPMENT NUMBER (OEN) of the line.

a = concentrator group (1 through 15)

b = concentrator (0 through 1)

c = switch group (0 through 2)

d = switch (0 through 7)

e = level (0 through 7)

blank = list all lines in an out-of-service state.

a only = list all lines in concentrator group "a" (1 through 15).

f is the state requested:

blank—list all lines in an out-of-service state (out-of-service, plugged-up, or high and wet).

OOS—restrict list to out-of-service or plugged-up lines.

PLUGUP—restrict list to plugged-up lines.

HAW—restrict list to high and wet lines.

Example 1: To request the in-service state of a specific line with OEN 02 0101.

Type In: OP:LINE 2 0101:STAT!

Response: PF—Printout Follows:

OP:LINE 2 0101 TN 555 2323 IDLE

or

OP:LINE 2 0101 TN 555 2323 BSY

Refer to OP LINE output message in Part 7.

Example 2: To request *all lines* in an out-of-service state.

Type in: OP:LINE:STAT!

Response: PF—Printout Follows:

```

14 OP LINE 3 0143 TN 253 2970 STAT HAW
      3 0253 TN 253 2424 STAT HAW
      4 1044 TN 000 0000 STAT OOS
      OP LINE STAT COMPL

```

Refer to OP LINE output message in Part 7.

Example 3: To request the state of lines in concentrator group 5.

Type In: OP:LINE 5:STAT!

Response: PF—Printout Follows:

```

23 OP LINE 5 0142 TN 555 2369 STAT HAW
      5 1021 TN 555 5348 STAT OOS
      5 1074 TN 555 7391 STAT PLUGUP
      5 0273 TN 555 2141 STAT OOS
      OP LINE STAT COMPL

```

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Refer to OP LINE output message in Part 7.

Example 4: To request a list of all lines in an out-of-service (OOS) state.

Type In: OP:LINE:STAT OSS!

Response: PF—Printout Follows:

```
26 OP LINE 5 1021 TN 555 5348 STAT OOS
          5 0273 TN 555 2141 STAT OOS
          4 1044 TN 555 1641 STAT OOS
OP LINE STAT COMPL
```

Refer to OP LINE output message in Part 7.

Example 5: To request the list of all lines in the high and wet state.

Type In: OP:LINE:STAT:HAW!

Response: PF—Printout Follows:

```
31 OP LINE 5 0142 TN 555 2369 STAT HAW
          3 0143 TN 253 2970 STAT HAW
          4 0253 TN 253 2424 STAT HAW
OP LINE STAT COMPL
```

Refer to OP LINE output message in Part 7.

Example 6: To request the list of all lines on plug-up (intercept).

Type In: OP:LINE:STAT:PLUGUP!

Response: PF—Printout Follows:

```
38 OP LINE 51074 TN 555 7391 STAT PLUGUP
38 OP LINE STAT COMPL
```

Refer to OP LINE output message in Part 7.

OP:NW:STAT INPUT MESSAGE

Request State of the Network Information

6.04 This message provides output network state information. A list of network links that are currently out-of-service is generated. This includes junctor B-links, wire B-links, and A-links as well as test vertical test circuits, test vertical test multiples, junctor test verticals and wire test verticals.

Example: To determine the status of the test verticals.

Type In: OP:NW:STAT!

Response: IP—IN Progress. A printout will follow:

```
11 OP NW STAT
    TV STAT COMPL ALL OK
    JC STAT COMPL ALL OK
    RLNK STAT COMPL ALL OK
    ALNK 3 122 STAT OOS
    OP NW STAT COMPL
```

Refer to OP NW STAT output message in Part 7.

OP:OFR INPUT MESSAGE

Request Printout of Office Records and Add a Remark to be Associated With a Telephone Number

6.05 This message and its associated keywords are used to: (1) request a printout of office records (2) add a remark to be associated with a telephone number. Each appropriate keyword and its data should be entered along with the continuation character (/), with the last keyword being (END!) or the last keyword and data followed by the execution character (!). The format of the message is as follows:

```
OP:OFR/

FORM aaaaaa OR all (Default 3100)
HDR yes OR no/ (Default no)
NUM bbbb/
TN nxx abcd OR all/
OE aa bcde OR all/
RMK oooooooooooooo/
END!
```

Each key word and key word data is explained as follows:

FORM aaaaaa OR all = used to specify the office record FORM number. If 'all' is specified then each form is printed in its entirety. If this key word is not specified, it is default to 3171 if the OE key word was specified if not it is defaulted to 3100.

= 3100 = Directory number form.

= 3107-1 = Supplementary information form.

= 3171 = Office equipment number form.

HDR yes OR no = used to specify if the HEADER associated with this form should be printed. YES print it, NO do not print it. If the number of items to print (NUM) is greater than or equal to 20 the header is always printed. Less than 20 a default of 'no' is assigned unless specified otherwise.

NUM bbbb = used to specify the number of consecutive items that will be printed out. This key word ignored if 'all' is used to print an entire form. (default = 1)

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TN nxx abcd OR all = used to specify the telephone number which is used as follows: (1) to print office record forms 3100, 3107-1, 3107-2 or (2) to add remarks (see RMK key word).

= If a remark is to be added only the TN and RMK key words are needed. If an office record is to be printed consider the following:

= If 'all' is specified then the information for every telephone number is printed. If 'all' is not specified the telephone numbers are listed in order up to the number of TNs specified by the NUM key word or up to a thousands group boundary (whichever occurs first). Unassigned hundreds groups are skipped.

OE aa bcde OR all = used to specify the office equipment number (OEN) which is used by the office record 3171 form.

= a = concentrator group (1 through 15).

= b = concentrator (0 through 1).

= c = switch group (0 through 2).

= d = switch (0 through 7).

= e = input level (0 through 7).

= The number of office equipment numbers listed in order is specified by the (NUM) key word. If 'all' is specified then the information for all office equipment numbers is printed.

RMK ooooooooooooo = 1 to 13 alphanumeric characters that will appear in the 'REMARKS' field of the output record 3100-R form.

END = end of message.

Two types of remarks can be used with the 3100-R form:

1. General Remark

Any remark not exceeding 13 characters is a general remark. A maximum of 31 TNs per 100s group may have a general remark. The TN may be assigned or unassigned.

2. Unassigned Remark

The date will automatically be saved with the remark providing the TN is unassigned (including intercept with TMAJ = 28; and special routing with TMAJ = 31). The date is an aid for aging disconnects. Refer to Table E for the abbreviated form of unassigned remarks.

Note 1: Unassigned RMKs do not use any space allocated to general RMKs if the TN is unassigned.

Note 2: Unassigned RMKs are distinguished from general RMKs when printed on the 3100-R in that unassigned RMKs are indented one space before they are printed in the REMARKS column.

TABLE E

UNASSIGNED RMKs

VAC	Vacant
RD	Resident disconnect
BD	Business disconnect
RC	Resident change
BC	Business change
DNA	Do not assign
PLA	Plant assignment
NP	Nonpublished
MAN	Manual
ICP	Intercept
DLL	Dial long lines
PC	Public coin
SPC	Semipublic coin
RSV	Reserve

EXAMPLE:

ESS 3100-R

NO. 3 ESS

TN 258-3820

BASE & CONTROL: 026R80

TELEPHONE NUMBER

OFFICE: 803 258 SPF

DATE 10/19/78

	OFFICE EQUIP				EQUIP/FEATURES		MLH GROUP						S U P L 1	S U P L 2	REMARKS (13)
TN	CGCS	L	P	R	L	G TE	ECEC	EEB	H	T	L	R	R	REG (MR)	
EU	OROWSE	T	A	C	SETS	SLSL	SSL	M	E	H	M	T			
LM	NPNGWV	Y	X	C	TLCX	M2F1	LCN	L	R	T	B	I			
3820															
3921	030054			1FR											
3822	030225			1FR											
3823	011154			1FR											
3824															
3825															
3826	030356			1FR											
3827															RC 7-27-78
3828	031054			1FR											
3829	010254			1FR											
3830	020054			1FR											
3831	030154			1FR											
3832															
3833	011254			1FR											
3834	021054			1FR											
3835	031154			1FR											
3836	010054			1FR											
3837	020164			1FR											
3838	030264			1FR											
3839															

REFER TO OP OFR OUTPUT MESSAGE IN PART 7.

OP:TRK INPUT MESSAGE**Request State of Trunk Circuits Information**

6.06 This message is used to output trunk state information. The request may ask for the state of a single trunk or a list of all trunks in an out-of-service state (locked-out, disabled, or high and wet). The message may be in two formats:

OP:TRK:(a,b):STAT!

or

OP:TRK:STAT!

The variable field has the following meaning:

a = the GROUP NUMBER (128 through 255) of the trunk.

b = the MEMBER NUMBER (0 through 127) of the trunk.

blank = list *all* trunks in an out-of-service state.

Example: To request the list of trunk circuits in an out-of-service state.

Type In: OP:TRK:STAT!

Response: IP—In Progress. A printout will follow.

12 OP TRK STAT COMPL ALL OK

RMV:LINE INPUT MESSAGE**Remove a Line From Service**

6.07 This message is used to remove a customer line or unassigned office equipment number (OEN) from service. The customer line is identified by both TN and OEN. The line will be placed in an out-of-service state, and its cutoff contact will be opened. The line will not be used to originate or terminate calls. In addition to removing the customer line from service, the line can also be placed on the plug-up list (intercept) which causes terminating calls to be routed to intercept rather than receiving busy tone. The message may be in two formats:

RMV:LINE (a, bcde), TN f g!

or

RMV:LINE (a, bcde), TN f g:PLUGUP!

The control letters in the variable field have the following meaning:

a bcde = the OFFICE EQUIPMENT NUMBER (OEN) of the line

a = concentrator group (1 through 15)

b = concentrator (0 through 1)

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c = switch group (0 through 2)

d = switch (0 through 7)

e = level (0 through 7)

f g = the TELEPHONE NUMBER (TN) of the line. (Use first party for a multiparty line.)

Note: The f g is not required for unassigned terminals.

PLUGUP = In addition to being removed from service, the line is also placed on the plug-up list which causes terminating calls to be routed to intercept rather than receiving busy tone.

Example 1: To remove a customer line from service using OEN 02 1113 and TN 555 6343.

Type In: RMV:LINE 2 1113 TN 555 6343!

Response: PF—Printout Follows:

or

Response: IP—The request was accepted and is in progress. A busy line is camped-on for 5 minutes and removed from service if it becomes idle during that time period. The STOP:CKT CMP input message may be used to cancel the camp-on activity.

40 RMV LINE 2 1113 TN 555 6343

Refer to RMV LINE output message in Part 7.

Example 2: To remove a customer line from service and place it on the plug-up list using OEN 02 1112 and TN 555 6343.

Type In: RMV:LINE 2 1112 TN 555 6343:PLUGUP!

Response: PF—Printout Follows:

or

Response: IP—The request was accepted and is in progress. A busy line is camped-on for 5 minutes and removed from service if it becomes idle during that time period. The STOP:CKT CMP input message may be used to cancel the camp-on activity.

47 RMV LINE 2 1112 TN 555 6343 PLUGUP

Refer to RMV LINE output message in Part 7.

RST:LINE INPUT MESSAGE

To Restore a Line to Service

6.08 This message is used to restore a customer line or unassigned terminal to service. The line will be placed in the in-service idle state, its cutoff contact will be closed, and a restore verify test will be performed. If the line was plugged-up, it will be removed from the plug-up list. The line is

identified by both the office equipment number (OEN) and telephone number (TN). The message is used in two formats:

RST:LINE (a, bcde), TN f g!

or

RST:LINE (a, bcde), TN f g:action-option!

The control letters in the variable field have the following meaning:

a bcde = the OFFICE EQUIPMENT NUMBER (OEN) of the line

a = concentrator group (1 through 15)

b = concentrator (0 through 1)

c = switch group (0 through 2)

d = switch (0 through 7)

e = level (0 through 7)

f g = the TELEPHONE NUMBER (TN) of the line. (Use first party for a multiparty line.)

Note: The f g is not required for unassigned terminals.

action-option = UCL—indicates an unconditional restoral. The cutoff contact of an unassigned terminal is closed.

Note: The cutoff contact of an unassigned terminal is not closed unless the request is unconditional.

Example: To restore a customer line to service which is plugged-up (using OEN 02 0112 and TN 555 6348).

Type In: RST:LINE 2 0112 TN 555 6348!

Response: PF—Printout Follows:

33 RST LINE 2 0112 TN 555 6348

Refer to RST LINE output message in Part 7.

TST:LINE INPUT MESSAGE

Perform LIT on a Single Line

6.09 This message is used to perform the line insulation test (LIT) on a specified line. The line is identified by the office equipment number (OEN). The type of test and the resistance range can be specified. If none are requested, the test and range parameters assigned to the daily automatic line insulation test (ALIT) are used. The tests and ranges for the line insulation test are as follows:

TESTS

SRG—short and ring to ground

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TRG—tip and ring to ground

FEMF—foreign electromotive force

Range—80K

—320K

—2.56M

The format of the message is as follows:

TST:LINE a bcde f g!

The control letters in the variable field have the following meaning:

a bcde = the OFFICE EQUIPMENT NUMBER (OEN) of the line

a = concentrator group (1 through 15)

b = concentrator (0 through 1)

c = switch group (0 through 2)

d = switch (0 through 7)

e = level (0 through 7)

f = type of test

1 = SRG

2 = TRG

3 = SRG and TRG

4 = FEMF

5 = SRG and FEMF

6 = TRG and FEMF

7 = SRG and TRG and FEMF

g = resistance range

= 80K

= 320K

= 2.56M.

Example: To perform the LIT test using the SRG and TRG test and the 80K resistance range on a specific line identified by OEN 02 1234.

Type In: TST:LINE 2 1243 3 80K!

Response: IP—In Progress. A printout will follow:

44 TST LINE START

44 TST LINE 2 1243 TN 555 6363 ERR SRG (or TRG) (if line fails the LIT test)

or

44 TST LINE 2 1243 TN 555 6363 OK (if line passes the LIT test)

44 TST LINE 0 0000 TN 000 0000 000000 COMPL

Refer to TST LINE output message, Part 7.

VER:CFN:TN INPUT MESSAGE

To Identify A Call Forwarding Telephone Number

6.10 The VER:CFN:TN input message is used to verify the call forwarding telephone number associated with a customer telephone number. The format of the message is as follows:

The nxx—xxxx = 7-digit telephone number of the customer line.

Typical Complaint: A customer reports receiving calls intended for another telephone number (555-7868).

Example: To determine if the telephone number (555-7868) has been call forwarded and to which telephone number.

Type In: VER:CFN:TN 555-7868!

Response: PF—Printout Follows.

33 VER CFN TN 555-7868
CFN 555-9898

Telephone number to which call
was forwarded

or

33 VER CFN TN 555-7868
CFN UNAS

Customer has call forwarding
service, but no call forwarding
telephone number is assigned

VER:GRP INPUT MESSAGE

To Verify a Multiline Hunt Group (MLHG)

6.11 This message verifies group data and member data for PBX/MLH groups, service circuit groups, and trunk groups. The message is used in four formats:

VER:GRP nnn!

or

VER:GRP nnn:ALL!

or

VER:GRP nnn:TER mmm!

or

VER:GRP nnn:STD:TERmmm!

The first form of this message verifies the group data only. The second form verifies the group data and the member data for every member allocated to the group. The third form verifies the group data and the data for the specified member. The fourth form verifies the data for the specified member number. The control letters in the variable field have the following meaning:

nnn = 1- to 3-digit group number in decimal. Range is 0 through whatever the maximum group number is for the office (maximum is 255).

mmm = 1- to 3-digit member number in decimal. Range is 0 through whatever the maximum member number is for the group (maximum is 127).

Typical Complaint: Customer complains of being unable to dial long distance on a specific line in a PBX or MLHG.

Example 1: If the group number (001) is known.

Type In: VER:GRP 001!

Response: PF—Printout Follows:

```
M 17 VER GRP 1
      SSBA 0041477
      MLI 16
      LCI 3
      LCC TCK
      RAX 0
      OMAJ 30
      SCR 0
      BTN 528 2501
      GSZ 11
      HSZ 5
      SCHED H
      GST
      END
```

Refer to VER GRP output message in Part 7.

Example 2: To verify all members of an MLHG when the group number (009) is known:

Type In: VER:GRP 009; All!

Response: PF—Printout Follows:

M 13 VER GRP 1 ALL
SSBA 0041477
MLI 16
LCI 3
LCC TCK
RAX 0
OMAJ 30
SCR 0
BTN 528 2501
GSZ 11
HSZ 5
SCHED H
GST
SPR 6

TER 0
OE 1 0 0 3 7
TN 528 2501
DRB 0

TER 1
OE 2 1 2 6 7
TN 528 2502
DRB 0

TER 2
OE 3 0 0 0 7
TN 528 2503
DRB 0

TER 3
OE 4 0 1 1 7
TN 528 2504
DRB 0

TER 4
OE 5 1 1 4 7
TN 528 2505
DRB 0

TER 5
OE 6 1 1 1 6
TN 528 2506
DRB 0

TER 6 UNAS

TER 7 UNAS

TER 8 UNAS

TER 9 UNAS

TER 10 UNAS

TER 11 UNAS
END

Refer to the VER GRP output message in Part 7.

Example 3: To verify a member of an MLHG when the group number (001) and member number (TER 002) are known.

Type In: VER:GRP 001;TER 002!

Response: PF—Printout Follows:

```

M 25 VER GRP 1 TER 0002
      SSBA 0041477
      MLI 16
      LCI 3
      LCC TBK
      RAX 0
      OMAJ 30
      SCR 0
      BTN 528 2501
      GSZ 11
      HSZ 5
      SCHED H
      GST
      SPR 6
      OE 3 0 0 0 7
      TN 528 2503
      DRB 0
      END

```

Refer to VER GRP output message in Part 7.

Example 4: To verify the data for a specified member of an MLHG when the group number (001) and member number (TER 001) are known.

Type In: VER:GRP 001;STD:TER 001!

Response: PF—Printout Follows:

```

M 20 VER GRP 1 STD TER 0001
      SPR 6
      OE 2 1 2 6 7
      TN 528 2502
      DRB 0
      END

```

Refer to the VER GRP output message, Part 7.

VER:LINE INPUT MESSAGE

To Verify a Line Using a Telephone Number (TN) or Office Equipment Number (OEN)

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6.12 The VER:LINE input message is used to verify the office equipment for the customer line originating and terminating translations. The first form of this message verifies a specific party of a party line given the office equipment number (OEN). The second form verifies any type of line given the telephone number (TN). The third form verifies the same data as the second form, given the office equipment number (OEN). The formats of the input messages are as follows:

VER:LINE

OE aa bcde/ (Required, this format)

PTY p/

END! (Required, this format)

or

VER:LINE:TN nxx xxxx (END! not required this format)

or

VER:LINE:OE aa bcde (END! not required, this format)

or

VER:LINE/

TN nxx-xxxx/ (Required, this format)

LIST nnn/ (see message VER:OE)

END! (Required, this format)

Each key word and key word data is explained as follows:

TN nxx-xxxx = telephone number (TN) in decimal.

OE aa bcde = office equipment number (OEN) in decimal.

a = concentrator group (1 through 15)

b = concentrator (0 through 1)

c = switch group (0 through 2)

d = switch (0 through 7)

e = input level (0 through 7)

PTY p = party number in decimal

p = 1 through 8 indicates party of multiparty line

p = 1 indicates ring party

p = 2 indicates tip party

END = end of message.

Example 1: To verify the tip party of a 2-party line with OEN 01 1155.

Type In: VER:LINE/

Type In: OE 01 1155/

Type In: PTY 2

Type In: END!

Response: PF—Printout Follows:

```

M 33 VER LINE
      TN 555 3100
      OE 0 1 1 1 5 5
      RTI 0
      LCC D04
      LCI 8
      RAX 0
      OMAJ 8
      SCR 0
      TMAJ 8
      TTC
      END

```

Refer to VER LINE output message in Part 7.

Example 2: To verify a line using the given OEN 06 1116

Type In: VER:LINE:OE 06 1116!

Response: PF—Printout Follows:

```

M 45  VER LINE
      TN 528 2506
      CUT
      HML 1
      TER 5
      LHT 5
      LCC TCK
      LCI 3
      RAX 0
      OMAJ 30
      SCR 0
      TMAJ 8
      OE 6 1 1 1 6
      DRB 0
      GST
      END

```

Refer to VER LINE output message in Part 7.

VER:MPTY INPUT MESSAGE

To Verify a Multiparty Line

6.13 The VER:MPTY input message is used to verify the office equipment for the customer multiparty line's originating and terminating translations. The message is used in three formats. The first form of this message verifies a specific party line given the office equipment number (OEN). The second form verifies the line given the telephone number (TN). The third form verifies the same data as the second form, given the office equipment number (OEN). The format of the input message is as follows.

VER:MPTY

OE aa bcde/ (Required, this format)

PTY p/

END! (Required, this format)

or

VER:MPTY:TN nxx-xxxx! (End, not required, this format)

or

VER:MPTY:OE aa bcde! (End, not required, this format)

Each key word and key word data is explained as follows.

TN nxx-xxxx = telephone number (TN) in decimal

OE aa bcde = office equipment number (OEN) in decimal

a = concentrator group (1 through 15)

b = concentrator (0 through 1)

c = switch group (0 through 2)

d = switch (0 through 7)

e = input level (0 through 7)

PTY p = party number in decimal

p = 1 through 8 indicates party of multiparty line

END = end of message.

Example: To verify the party number and number of parties on a multiparty line, given TN 555-3929.

Type In: VER:MPTY:TN 555-3929!

Response: PF—Printout Follows:

```

M 53 VER MPTY
TN 555 3929 — TN of the line
OE 3 1204 — OE of the line
OESP 3 20 4
RTI 0
LCC 4FR
LCI 16
RAX 0
OMAJ 16
SCR 4
TMAJ 16
PTY 1 4
END | — number of parties
    | — party number
    
```

Refer to VER MPTY output message in Part 7.

VER:MTL INPUT MESSAGE

To Verify a Multiline Hunt Terminal

6.14 The VER:MTL input message is used to verify the office equipment for the customer line originating and terminating translations. The message is used in three formats. The first form of this message verifies specific party line given the office equipment number (OEN). The second form verifies the line given the telephone number (TN). The third form verifies the same data as the second form, given the office equipment number (OEN). The formats of the input messages are as follows:

VER:MTL/

OE aa bcde/ (Required, this format)

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PTY p/

END! (Required, this format)

or

VER:MTL:TN nxx-xxxx! (End, not required, this format)

or

VER:MTL:OE aa bcde! (End, not required, this format).

Each key word and key word data is explained as follows:

TN nxx-xxxx = telephone number (TN) in decimal

OE aa bcde = office equipment number (OEN) in decimal

a = concentrator group (1 through 15)

b = concentrator (0 through 1)

c = switch group (0 through 2)

d = switch (0 through 7)

e = input level (0 through 7)

PTY P = party number in decimal

p = 2 indicates tip party

END = end of message.

Example: To verify the multiline hunt terminal with TN 555-6363.

Type In: VER:MTL:TN 555-6363!

Response: PF—Printout Follows:

```

M 46 VER MTL
      TN 555 6363
      CUT
      HML 1
      TER 5
      LHT 5
      LCC TBK
      LCI 3
      RAX 0
      OMAJ 30
      SCR 0
      TMAJ 8
      OE 6 1 1 1 6
      DRB 0
      GST
      END

```

Refer to the VER MTL output message, Part 7.

VER:OE INPUT MESSAGE

To Verify a Line Using a Telephone Number (TN) or Office Equipment Number (OEN)

6.15 The VER:OE input message is used to verify customer line originating and terminating translations. The first form of this message verifies any type of terminal given the office equipment number (OEN). If PTY p is not specified and the line is a party line, then party 1 is verified. The second form verifies any type of line given the telephone number (TN). The third form verifies the same data as the first form with PTY p not specified. The formats of the input messages are as follows:

VER:OE/

OE a bcde (Required, this format)

PTY p

END! (Required, this format)

or

VER:OE:TN nxx-xxxx (END! not required, this format)

or

VER:OE:OE a bcde (END! not required, this format).

Note 1: If the OEN specified is a trunk or service circuit, the group and member number will be printed.

Note 2: The first form of this message is linked. The first input line is followed by 1- or 2-message segments, each consisting of a key word and key word data followed by the continue execute character "/". The segment may be entered in any order, but "END!" must be the last input line. All required key words must be entered.

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Each key word and key word data is explained as follows:

TN nxx-xxxx = telephone number (TN) in decimal

OE a bcde = office equipment number (OEN) in decimal

a = concentrator group (1 through 15)

b = concentrator (0 through 1)

c = switch group (0 through 2)

d = switch (0 through 7)

e = input level (0 through 7)

PTY p = party number in decimal

p = 1 through 8 indicates party of multiparty line

p = 1 indicates ring party

p = 2 indicates tip party

END = end of message.

No more segments will be accepted for this message. "END" must be followed by the standard execute character "!".

Example: To verify translations associated with a line identified by OEN 02 0270.

Type In: VER:LINE OE 02 0270!

Response: PF—Printout Follows:

```
M 53 VER LINE
      TN 534 3000 —— TN of the line
      OE 2 0 2 7 0 —— OEN of the line
      OESP 2 19 8
      RTI 0
      LCC 1FR
      LCI 8
      RAX 0
      OMAJ 8
      SCR 0
      TMAJ 8
      END
```

Refer to VER OE output message, Part 7.

VER:SCN:TN INPUT MESSAGE

To Verify a Speed-Calling List

6.16 The VER:SCN:TN input message is used to verify the speed calling list associated with a customer telephone number. The format of the message is as follows:

VER:SCN:TN nxx—xxxx!

The nxx—xxxx = 7-digit telephone number of the customer line.

Typical Complaint: Customer cannot reach the correct telephone number assigned to the customer's speed calling list.

Example: To verify the speed call list for a customer with TN 555 3878.

Use: IM 3H300-01, VER:SCN:TN

Type In: VER:SCN:TN 555 3878!

Response: Valid: PF—Printout Follows:

```

30 VER SCN
   TN 555 3878
   GRP
   ESL
   ESF
   01 1 919 787 6363
   02      555 6432
   03      555 1372
   04 1 704 653 1414
      etc

```

Note: If no speed calling numbers are printed, then the customer does not have any speed calling numbers assigned.

Refer to VER SCN output message in Part 7.

VER:THDIG INPUT MESSAGE

To Verify a Thousands Digit

6.17 The VER:THDIG input message is used to verify a thousands digit that indicates routing to another office. The format of the message is as follows:

VER:THDIG (nxx,t)!

The nxx = 3 digit office code in decimal. Range is 200 through 999.
The t = 1 digit thousands digit in decimal. Range is 0 through 9.

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Example: To verify the thousands digit with an office code of 258 and a thousands digit of 1.

Type In: VER:THDIG (258,3)! WT-NG

Response: M 21 VER ERR 4223

Refer to VER THDIG output message in Part 7.

VER:TWOPTY INPUT MESSAGE

To Verify a 2-Party Line

6.18 The VER:TWOPTY input message is used to verify the office equipment for the customer line originating and terminating translations. The message is used in three formats. The first form of this message verifies a specific party line given the office equipment number (OEN). The second form verifies the line given the telephone number (TN). The third form verifies the same data as the second form, given the office equipment number (OEN). The formats of the input messages are as follows:

VER:TWOPTY/

OE aa bcde/ (Required, this format)

PTY p/

END! (Required, this format)

or

VER:TWOPTY:TN nxx—xxxx! (END, not required this format)

VER:TWOPTY:OE aa bcde! (END, not required this format)

Each key word and key word data is explained as follows:

TN nxx-xxxx = telephone number (TN) in decimal

OE aa bcde = office equipment number (OEN) in decimal

a = concentrator group (1 through 15)

b = concentrator (0 through 1)

c = switch group (0 through 2)

d = switch (0 through 7)

e = input level (0 through 7)

PTY p = party number in decimal

p = 1 indicates ring party

p = 2 indicates tip party

END = end of message.

Example: To verify the ring party of a 2-party line with OEN 11 0166.

Type In: VERTWOPTY/

Type In: OE 11 0166/

Type In: PTY 1/

Type In: END!

Response: PF—Printout Follows:

```

M 15 VER LINE
      TN 555-6262
      OE 11 0166
      RTI 0
      LCC 2FR
      LCI 1
      RAX 0
      OMAJ 8
      SCR 0
      TMAJ 8
      TTC
      END

```

Refer to VER TWOPTY output message in Part 7.

7. DETAILED OUTPUT MESSAGES

ABT LTD OUTPUT MESSAGE

Disconnection of LTD

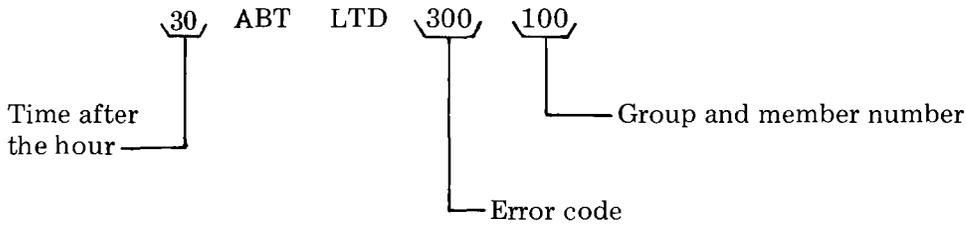
7.01 The ABT LTD output message indicates that the LTD was disconnected due to an error condition which would interfere with the test procedures of the LTD. The format of the message is as follows:

```
tt ABT LTD code 00000
```

The variable field has the following meaning:

- code = The error condition code that describes the reason for disconnecting the LTD.
- = The error codes: 0-20 indicate peripheral failures
- = The error codes: 100-400 indicate translation failures.

Example:



7.02 Action to be taken: Notify the central office personnel.

ADM ERR OUTPUT MESSAGE

Printout of Error Code

7.03 The ADM ERR output message is an error code in response to a distribute (allocation), office record, output (tape), recent change, traffic, or verify input message. The error would have been encountered on the previous input message. The format of the message is as follows:

tt ADM ERR nnnn

or

tt ADM ERR nnnn kw

or

tt ADM ERR nnnn kw xxxx

The variable field has the following meaning:

nnnn = error number.

kw = keyword is an optional parameter on the message. KW is a keyword that can be associated with the error number.

xxxx = can be a variable number. The number is associated with the keyword inputted from the message in error. This field is explained in the error number descriptions that use it; there may be one or more variables.

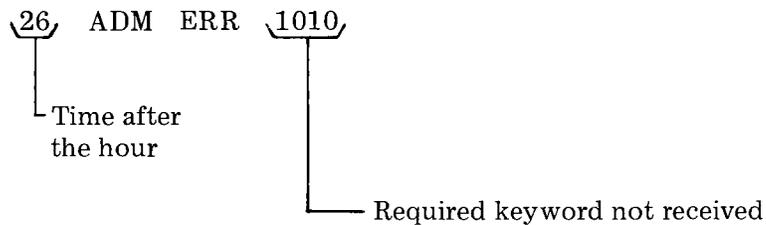
Definitions of error numbers are as follows:

0000 = Default error code.

1010 = Required keyword not received.

1011 = Incorrect keyword data.

- 1012 = Invalid keyword.
- 1013 = 'NO' is not allowed for this keyword.
- 1014 = Keyword has an out of range subfield.
- 1015 = Keyword data is out of range.
- 1016 = Translation entry does not exist.
- 1017 = Invalid combination of keywords or unable to determine the recent change from the keywords specified.
- 1018 = Requires exactly one keyword. Either one or more than one keyword has been specified.
- 1050 = Repeat later, the line or circuit is busy.
- 1106 = Error in attempting to read the tape or index was out of range.
- 1120 = Back office data or past office data is in progress.

Example:

7.04 Action to be taken: Correct the message and retype.

OP LINE OUTPUT MESSAGE**Printout of Line State Information**

7.05 The OP LINE output message is used to print out line state information on request using the OP:LINE input message. If the request is for information on a single line, the line is identified by both telephone number (TN) and office equipment number (OEN). If the request is for a list of lines, the output message is terminated by a completion message. The format of the message is as follows.

```
tt OP LINE a bcde TN f g STAT h
```

```
OP LINE STAT r
```

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The variable field has the following meaning:

a bdce = The office equipment number (OEN) of the line.

a = concentrator group (1 through 15).

b = concentrator (0 through 1).

c = switch group (0 through 2).

d = switch (0 through 7).

e = level (0 through 7).

fg = the telephone number (TN) of the line preceded by a + for a multiparty line).

h = state of the line.

IDLE = the line is in the in-service IDLE state.

BSY = the line is in the in-service BUSY state.

OOS = the line is in the OUT-OF-SERVICE state and may be faulty. It is not being used to originate or terminate calls and its cutoff contact is open.

PLUGUP = the line is in the PLUGGED-UP out-of-service state. This is also the same as the OSS state except that the line is also on the plug-up list which causes terminating calls to be routed to intercept rather than receiving busy tone.

HAW = the line is in the HIGH and WET out-of-service state and may be faulty. It is not being used to originate or terminate calls while the permanent signal condition exists. If the line returns to an on-hook state, it will be automatically placed back in the in-service idle state.

r = COMPLETION REPORT.

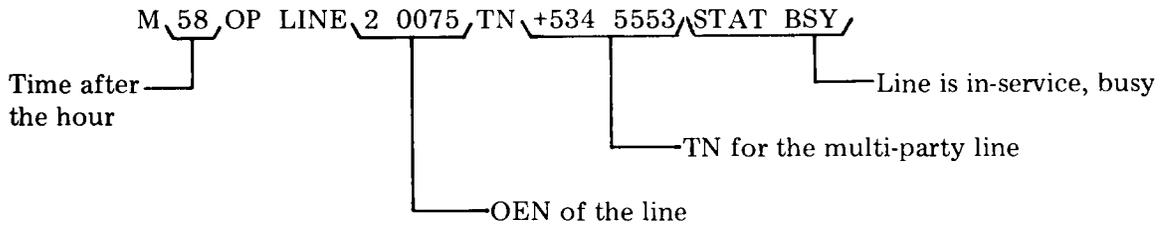
COMPL = the requested list of out-of-service lines has been completed.

COMPL ALL = all requested lines are OK. None of them are in the requested out-of-service states.

NOT START = a similar request is now active. Wait until its completion and then repeat the request.

ABT = an abort request was received. The requested output has been aborted.

Example: The response from an OP LINE input message requesting the status of a specific line is:



7.06 Action to be taken: None.

OP NW STAT OUTPUT MESSAGE

Printout of State of the Network Information

7.07 This message is generated in response to the OP:NW:STAT input message. A list of network links that are currently out-of-service is generated. This includes junctor B-links, wire B-links, and A-links as well as test vertical test circuits, test vertical test multiples, junctor test verticals, and wire test verticals. The format of the message is as follows:

```
tt OP NW STAT
   TV t STAT s
   JC gj STAT s
   BLNK gj STAT s
   ALNK g b c d STAT s
OP NW STAT r
```

The control letters in the variable field have the following meaning:

t is the TEST VERTICAL TYPE

TC n = test vertical test circuit.

TM m = test vertical test multiple

JC g = junctor test vertical

BLNK = wire test vertical.

n is the TEST VERTICAL test circuit (TV TC).

Where 0 = wire TV TC, low concentrator group.

1 = junctor TV TC, low concentrator group.

2 = wire TV TC, high concentrator group.

3 = junctor TV TC, high concentrator group.

m is the TEST VERTICAL TEST MULTIPLE (TV TM).

Where 0 = wire TV TM, even concentrator groups.

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1 = junctor TV TM, odd concentrator groups.

2 = wire TV TM, even concentrator groups.

3 = junctor TV TM, odd concentrator groups.

g—is the CONCENTRATOR GROUP (1 through 15) of the link.

j—is the JUNCTOR SWITCH NUMBER (0 through 31) of the line.

b—is the CONCENTRATOR (0 through 1) of the link.

c—is the OUTPUT SWITCH NUMBER (0 through 7) of the link.

d—is the OUTPUT SWITCH LEVEL (0 through 7) of the link.

s—is the STATE.

OOS = The link is in an OUT-OF-SERVICE state and may be faulty. It is not being used to perform its normal call handling functions.

COMPL ALL OK = All links in this class are OK. None are out-of-service.

r—is the COMPLETION REPORT.

COMPL = The requested list of out-of-service network links has been completed.

NOT START = A similar request is not active. Wait until its completion and then repeat the request.

ABT = An abort request was received. The requested output has been aborted.

Example:

```
04 OP NW STAT
    TV STAT COMPL ALL OK
    JC STAT COMPL ALL OK
    BLNK STAT COMPL ALL OK
    ALNK 3 122 STAT OOS
```

7.08 Action to be taken: None.

OP OFR OUTPUT MESSAGE

Printout of Office Record Request

7.09 The OP OFR output message is the response message to the OP:OFR input message requesting a printout of a printout of an office record. The format of the message is as follows:

tt OP OFR

This message is followed by a printout in the office record format or the following message.

ADM ERR nnnn

Look up nnnn in the ADM ERR output message (paragraph 7.03) for details.

Terms used in the office record format:

TEL NUM—Telephone Number

OFFICE EQUIP—Office Equipment Number

CON GRP—Concentrator Group

CON—Concentrator

SWG—Switch Group

SW—Switch

LEV—Level

PTY—Party Number

RAX—Rate Area

LCC—Line Class Code

EQUIPMENT FEATURES—Equipment Features

GST—Ground Start

EL—Essential Line

TTC—TOUCH-TONE

ESX—Call Waiting

ESM—Call Forwarding

CL2—Change Speed Calling—Two Digit

ESF—Speed Calling—Two Digit

CL1—Change Speed Calling—One Digit

ESL—Speed Calling—One Digit

ESC—3-Way Calling

BLN—Special Toll Billing

MLH GROUP—Multiline Hunt Group

HML—Group Number

TER—Multiine Hunt Group Terminal Number

LHT—Last Hunt Terminal

RMB—Random Make Busy

RTI—Route Index or Return Telephone Index

SOFT MSG REG (MR)—Software Message Register

SUPPL1—Supplementary Information, Form 3107-1R

SUPPL2—Supplementary Information, Form 3107-2R.

Example:

EXAMPLE:

ESS 3100-R

NO. 3 ESS

TN 258-3820

BASE & CONTROL: 026R80
OFFICE: 803 258 SPF

TELEPHONE NUMBER
DATE 10/19/78

	OFFICE EQUIP	L	P	R	L	G	TE	ECEC	EEB	H	T	L	R	R	S	S	REMARKS	
TN	CGCS	L	P	R	L	G	TE	ECEC	EEB	H	T	L	R	R	SOFT MSG REG (MR)	U	U	(13)
EU	OROWSE	T	A	C	SETS	SLSL	SSL	M	E	H	M	T			L	L		
LM	NPNGWV	Y	X	C	TLCX	M2F1	LCN	L	R	T	B	I			1	2		
3820																		
3921	030054				1FR													
3822	030225				1FR													
3823	011154				1FR													
3824																		
3825																		
3826	030356				1FR													
3827																		RC 7-27-78
3828	031054				1FR													
3829	010254				1FR													
3830	020054				1FR													
3831	030154				1FR													
3832																		
3833	011254				1FR													
3834	021054				1FR													
3835	031154				1FR													
3836	010054				1FR													
3837	020164				1FR													
3838	030264				1FR													
3839																		

REFER TO OP OFR OUTPUT MESSAGE IN PART 7.

7.10 Action to be taken: None.

OP TRK OUTPUT MESSAGE

Printout of State of Trunks Information

7.11 This message is generated in response to the OP:TRK input message. The printout may provide the state of a single trunk (idle, busy, locked-out) or a list of all trunks in an out-of-service state (locked-out). The format of the message is as follows:

```
tt OP TRK a b STAT c
   OP TRK STAT 4
```

The control letters in the variable field have the following meaning:

a is the GROUP NUMBER (128 through 255) of the trunk.

b is the MEMBER NUMBER (0 through 127) of the trunk.

c is the STATE of the trunk:

IDLE = The trunk is in the in-service IDLE state.

BSY = The trunk is in the in-service BUSY state.

LKO = The trunk is in the LOCKED-OUT out-of-service state and is suspected of being faulty. It is not selected by call processing programs to perform its normal call handling functions. Two-way or incoming trunks in the LKO state will accept incoming calls.

LKO BSY = The trunk is in the LOCKED-OUT out-of-service state but is now BUSY handling another incoming call.

DSA = The trunk is in the DISABLED out-of-service state and is suspected of being faulty. It is not selected by call processing programs to perform its normal call handling functions and, in addition, all supervision is ignored. Thus, no incoming calls will be accepted on this trunk.

HAW = The trunk is in the HIGH AND WET out-of-service state and may be faulty. It is not being used to perform its normal call handling functions while the permanent signal condition exists. If the trunk returns to an on-hook state, it will be automatically placed back in the in-service idle state.

INVD = The trunk is in an INVALID state. This may be the result of an error in translations or a program bug.

r is the COMPLETION REPORT.

COMPL = The requested list of the out-of-service trunks has been completed.

COMPL ALL OK = All trunks are OK. None are out-of-service.

NOT START = A similar request is now active. Wait until its completion and then repeat the request.

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ABT = An abort request was received. The requested output has been aborted.

Example:

```
04 OP TRK 132 0 STAT DSA
   OP TRK STAT COMPL
```

7.12 Action to be taken. None.

REPT LINE OUTPUT MESSAGES

General

7.13 These messages are used to report trouble with a line. ***Suspected faulty lines are not automatically removed from service.*** The lines are identified by the office equipment number (OEN) and the telephone number (TN). The format of the message is as follows:

```
tt REPT LINE a bcde TN f g TRBL h
```

The variable field has the following meaning:

a bcde = the office equipment number (OEN) of the line.

a = concentrator group (1 through 15).

b = concentrator (0 through 1).

c = switch group (0 through 2).

d = switch (0 through 7).

e = level (0 through 7).

f g = the telephone number (TN) of the line (preceded by a + for a multiparty line).

h = TROUBLE REASON.

PX—The line experienced a POWER CROSS failure. The line was removed from service for less than 30 seconds and then passed a retry of the power cross test.

RVF—The line experienced a RESTORE VERIFY failure. The customer may no longer have originating service.

LCRV—The line experienced a LINE CIRCUIT RESTORE VERIFY failure. The customer may no longer have originating service.

STUCK COIN—The line experienced a STUCK COIN control error. A coin may be stuck in the coin phone.

EA CONT—The error analysis routine suspected the line of being faulty because it was involved in several Continuity failures.

EA RC—The error analysis routine suspected the line of being faulty because it was involved in several Ringing Continuity failures.

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7.17 Points to remember:

- REPT LINE---EA LLR output messages result from terminating calls.
- LLRs are call attempt failures.

7.18 Action to be taken:

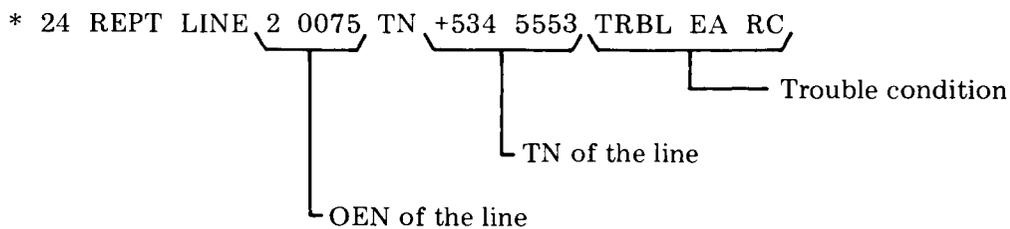
- (1) Collect all REPT LINE—ER LLR output messages
- (2) Check for previous LLR failures
- (3) Identify PBX boards that may be leaving cords up
- (4) Refer TNs with LLR printouts to the LTD analyzer for appropriate tests.

REPT LINE---EA RC OUTPUT MESSAGE

Ringling Continuity Failure on Customer Line

7.19 The REPT LINE---EA RC output message is printed when a telephone number (TN) that is printed in the data field fails to get ringing current on a terminating call. The printout occurs when the calling party abandons the call and the ESS monitoring device has been unable to detect a sufficient potential of ringing current on the line. The line is identified by office equipment number (OEN) and telephone number (TN).

Example:



7.20 Points to remember:

- Only results from unanswered terminating calls; therefore, it should be considered a call attempt failure.
- Message results when the ESS system cannot “see” a telephone.
- It is a good indication of an “open out” condition.

Several EA RC output messages occurring during a short time period on different OENs can be an indication of a cut cable.

- Probable causes of trouble are:

- (a) Open coils on the frame

- (b) Open drop wire or cable
- (c) Defective switches or ringing trunks in the central office
- (d) Lines put into translation too soon, or not removed properly when service has been discontinued (service order activity)
- (e) Key sets with small capacitors

Note: The 400B unit is a primary cause. This unit will cause false RC failures due to its design. It should be replaced with 400G or 400H key sets in key systems generating false alarms.

- (f) Installation, repair, or cable activity
- (g) Lines with portable sets only.

Note: Lines with portable sets can be repaired by placing a GB 123CR capacitor as close to the station apparatus as possible.

7.21 Action to be taken:

- (1) Collect all TST LINE----EA RC output messages.
- (2) Test for open condition from the LTD.
- (3) Verify translations and assignment records to assure validity. (Remove any nonworking lines).
- (4) Secure a list of station or cable activity.
- (5) Analyze the OENs for a possible central office problem.

REPT LINE----RVF OUTPUT MESSAGES

Restore Verify Failure on Customer Line

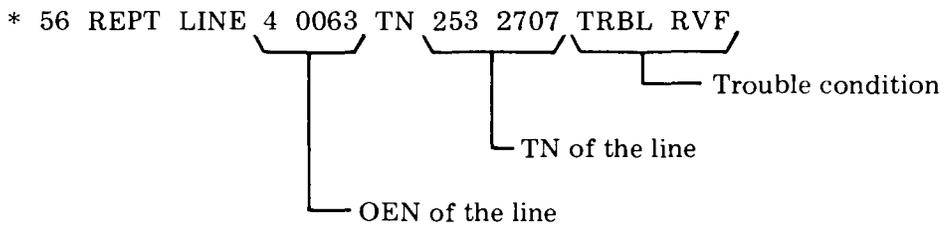
7.22 This message results from a failure when the ESS system tests a line to ensure it will be able to generate an origination later. These failures are generally attributed to line troubles within the office. The customer may no longer have originating service. However, some trouble conditions can occur in which the REPT LINE---RVF output message is generated and the customer can originate calls.

7.23 This type of trouble can be caused by outside maintenance personnel by improper use of a breakdown set. When cable repair personnel use a breakdown set on a pair without having the pair blocked at the frame, the high voltage and current will damage the line ferrod. Usually one of the two windings of the line ferrod is burnt short. If this happens, the circuitry is still operational and the customer can originate calls, but the sensitivity of the line ferrod is impaired.

7.24 The No. 3 ESS system will detect such a condition with the restore verify test and generate a REPT LINE----RVF output message to identify the line. There are no tests that can detect this trouble condition from the LTD. The CO maintenance personnel must measure the windings of the ferrod. Repairing this condition requires replacement of the line ferrod which is time consuming. The subscriber must be moved to a new line or put out of service for the duration of the repair.

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Example:



7.25 Points to remember:

- REPT LINE----RVF output messages are generally associated with central office network troubles.
- Troubles resulting in a restore verify failure can be caused by the improper use of a breakdown set (could result in shorted windings of a line ferrod).
- Customer may still be able to originate calls.
- Shorted windings on the line ferrod cannot be detected from the LTD. CO personnel must measure line ferrods.
- Possible causes of troubles are:
 - (a) Defective line ferrod.
 - (b) Defective cutoff switch not closing through to the line ferrod.
 - (c) Translations not marked correctly or the line ferrod is wired wrong. For example, if the translations indicate loop start and the line ferrod is wired ground start. Translations may be obtained using the VER:LINE or VER:OE input message.
 - (d) Tip ground on blown coil on CDF.
 - (e) Troubles in restore verify test circuit.

7.26 Action to be taken:

- (1) Collect all REPT LINE----RVF output messages.
- (2) Check for previous RVF failures. Refer no trouble found (NTF) indications to the central office.
- (3) Verify the OEN of the line. Check translation information to determine if the line is ground start or loop start. Compare translation information with line record card.
- (4) Refer TNs to LTD analyzer for appropriate tests.

REPT LINE----PX OUTPUT MESSAGE

Power Cross Failure on Customer Line

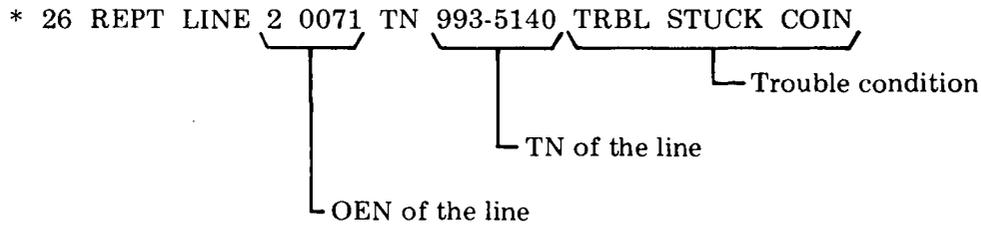
7.27 Power Cross (PX) tests are made on both originating and terminating calls prior to completion of the call. The line is tested for the presence of a foreign potential in excess of 50 volts (ac or dc). If detected, the line is removed from service for about 20 seconds to give the line a chance to recover. The calling party receives busy tone. After 20 seconds, the power cross test is retried. If

REPT LINE---STUCK COIN OUTPUT MESSAGE

Stuck-Coin-on-Collect Failure on Coin Line

7.32 The REPT LINE—STUCK COIN output message is printed when a coin line with a **stuck coin** on collect or return condition is detected by the coin operator program. A coin may be stuck in the coin phone. The coin line is identified by office equipment number (OEN) and telephone number (TN).

Example:



7.33 Points to remember:

- Signifies a definite coin problem was encountered.
- Probable causes of trouble are:
 - (a) Bent coin
 - (b) Full money box
 - (c) Defective coin chute
 - (d) Defective coin relay
 - (e) Sets out of limits (coin phone loop resistance too high)
 - (f) Reversed coin phone circuit to coin phone
 - (g) Defective coin phone circuit to coin phone.

7.34 Action to be taken:

- (1) Collect all TST LINE---STUCK COIN output messages.
- (2) Test and/or dispatch on coin station failures. Perform the following tests:
 - (a) Coin ground closure test
 - (b) Coin ground resistance test
 - (c) Coin relay current flow test.

Note: When performing a coin line test and a short circuit is observed with no ground present, a totalizer could be off normal and in a fraud condition.

RMV LINE OUTPUT MESSAGE

Line is Removed From Service

7.35 This message is used to report the removal of a line from service or the failure of a removal request. The line may be removed either by a manual request or due to a power cross, permanent signal, or an unassigned line going off-hook. The line is identified by office equipment number (OEN) or telephone number (TN). The format of the message is as follows:

```
tt RMV LNE a bcde TN f g h
```

The variable field has the following meaning:

a bcde = the office equipment number (OEN) of the line

a = concentrator group (1 through 15)

b = concentrator (0 through 1)

c = switch group (0 through 2)

d = switch (0 through 7)

e = level (0 through 7)

f g = the telephone number (TN) of the line (preceded by a + for a multiparty line)

h = REMOVAL REASON or FAILURE REASON

blank = the line was removed from service by a TTY input request

PX = the line experienced a POWER CROSS failure.

DANGER: The line may have HIGH VOLTAGE on it. The line should be tested for the presence of high voltage immediately.

RXG—The line experienced a ring cross to ground failure. The line is removed from service to prevent the line scan point from being destroyed.

PLUGUP—In addition to being removed from service, the line is also placed on the plug-up list which causes terminating calls to be routed to intercept rather than receiving busy tone.

PLUGUP STOPPED LIST FULL—The plugup list is full. If the line should be plugged-up, repeat the request later.

STOPPED BSY—The line remained busy for 5 minutes since the request was received to remove it from service. The request has been aborted. If the line should be removed, repeat the request.

UNAS—An unassigned terminal went off-hook. The terminal is removed from service to prevent further problems. Check if this is the result of an error in translation. Use VER LINE input message.

Example:

M 33 RST LINE 1 1251 TN 555 6363 (blank)

Restored to service
by a TTY request

TN of the line

OEN of the line

7.38 Action to be taken: None.

TST LINE ABT OUTPUT MESSAGE**ALIT is Aborted**

7.39 This message is used to report the aborting of the automatic line insulation tests (ALIT). The reason for the abort is determined by the abort code. The line under test at the time of abort is identified by the office equipment number (OEN) and telephone number (TN). The format of the message is as follows:

tt TST LINE a bcde TN f g ABT h

The variable field has the following meaning:

a bcde = the office equipment number (OEN) of the line under test during the abort.

a = concentrator group (1 through 15).

b = concentrator (0 through 1).

c = switch group (0 through 2).

d = switch (0 through 7).

e = level (0 through 7).

f = the telephone number (TN) of the line.

g = TEST and RANGE.

g = 00tr.

= t—test as specified on input.

= r—range as specified on input.

g = 000s—LIT error during self-check.

s = 1—40K-80K selection circuit open.

= 2—20K selection circuit open.

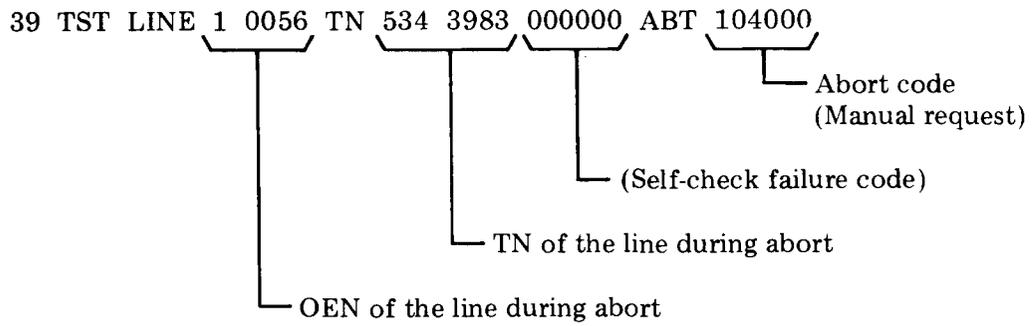
= 3—80K—160K—320K selection circuit open.

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- = 4—640K—1.28M—2.56M selection circuit open.
- = 5—20K—40K selection circuit open.
- = 6—80K selection transistor.
- = 7—80K selection transistor.
- = 10—320K selection transistor.
- = 11—160K selection transistor.
- = 12—640K selection transistor.
- = 13—1.28M selection transistor.
- = 14—2.56M selection transistor.

- h = ABORT CODE.

- = 100001—error in input message field.
- = 100002—fail translations for LIT circuit.
- = 100004—PPD error during self-check sequence.
- = 100010—LIT error during self-check sequence.
- = 100020—a manual request was made on a line that was busy.
- = 100040—error found in line data during test.
- = 100100—PPD error during test mode setup.
- = 100200—error found in line data during restore verify.
- = 100400—an excess of 128 failures has been found.
- = 101000—a manual request was made on a terminal that is not a line.
- = 102000—an access of 256 failures in selection paths and TCRs.
- = 104000—an abort requested by TTY or system.
- = 110000—a peripheral error during connect or disconnect.
- = 120000—set junctor failure.



7.40 Action to be taken: With the exception of ABORT CODE 100400 or 102000, all TST LINE ABT output messages should be brought to the attention of the central office personnel immediately. ABORT CODE 100400 identifies a terminal that is not a line. The line should be verified using the VER LINE input message. ABORT CODE 102000 identifies a manual request to abort the ALIT test.

TST LINE COMPL OUTPUT MESSAGE

ALIT is Completed

7.41 This message is used to report the completion of the automatic line insulation test (ALIT). The format of the message is as follows:

tt TST LNE a bcde TN f h COMPL

The variable field has the following meaning:

a bcde = the office equipment number (OEN) of the last line under test.

a = concentrator group (1 through 15)

b = concentrator (0 through 1)

c = switch group (0 through 2)

d = switch (0 through 7)

e = level (0 through 7)

f = the telephone number (TN) of the last line under test

h = TEST AND RANGE

h = 00tr

= t—test as specified on input

= r—range as specified on input.

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Example:

39 TST LINE 1 0056 TN 534 3983 174031 COMPL

└─ OEN of last line under test

└─ TN of last line under test

└─ Test and range

7.42 Action to be taken: None.

TST LINE ERR OUTPUT MESSAGE

Line Insulation Test (LIT) Failure on Customer Line

7.43 The TST LINE ERR output message is printed when a line failure is detected by the automatic line insulation test (ALIT) program. The message identifies the line by office equipment number (OEN) and telephone number (TN). The range and type of test that was failed is given. The format of the message is as follows:

tt TST LINE a bcde TN f g ERR h

The variable field has the following meaning:

a bcde = the office equipment number (OEN) of the line that failed.

a = concentrator group (1 through 15)

b = concentrator (0 through 1)

c = switch group (0 through 2)

d = switch (0 through 7)

e = level (0 through 7)

f = the telephone number (TN) of the line that failed

g = TEST RESULTS

	RANGE	LOW 80K	MEDIUM 320K	HIGH 2.56M
g -	1	less than 80K	less than 320K	less than 2.56M
	3	less than 40K	less than 160K	less than 1.28M
	7	less than 20K	less than 80K	less than 640K

Note: The LOW, MEDIUM, or HIGH cross-connect option is selected and handwired by central office personnel. The central office personnel should be contacted to determine which cross-connection option is being used or to request that the cross-connection option be changed.

h = TEST

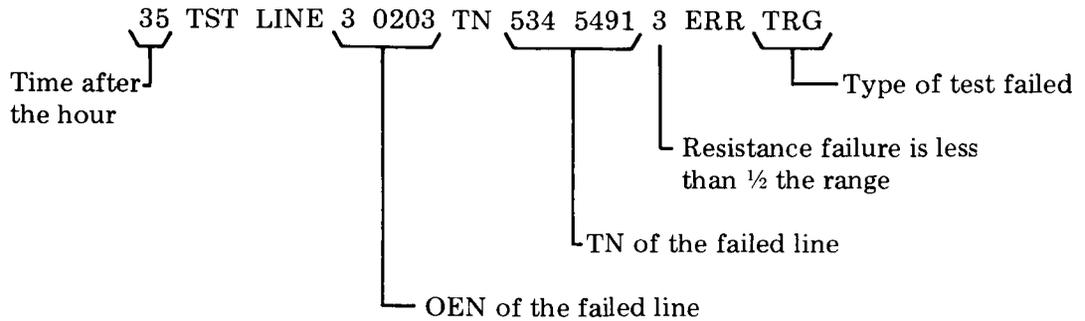
= h-SRG—Short and Ring to Ground

= h-TRG—Tip and Ring to Ground

= h-FEMF—Foreign Electromotive Force

= h-RVF—Restore Verify Failure.

Example:



7.44 Points to remember:

- The ALIT program is set to run at a predetermined time (normally during a low-use time period).
- The sensitivity of the test depends on the range (HIGH, MEDIUM, LOW) provided by the cross-connection option provided in the central office.

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- Tests performed on ground start lines are restore verify tests only.

7.45 Possible causes of trouble are:

- (a) Shorts, crosses, or ground in outside plant or central office equipment
- (b) Foreign electromotive force (FEMF)
- (c) Line translation errors
- (d) Restore verify error
- (e) Ferreed cutoff contact in central office shorted, open, or crossed.

7.46 Action to be taken:

- (1) Collect all TST LINE output messages.
- (2) Analyze the TST LINE output messages for type of failure and test failure range using Table F.
- (3) Forward trouble to LTD analyzer for appropriate tests. Refer to Section 662-517-500.
 - (a) Test central office line ferrod on restore verify tests
 - (b) Test central office ferreed cutoff contacts.

TABLE F

ALIT TEST AND FAILURE RANGES

TYPE OF TEST	DIGIT ON TST LINE PRINTOUT	RANGE OF TEST FAILURE
SRG	1	½ to full range
	3	¼ to ½ range
	7	¼ range or less
TRG	1	½ to full range
	3	¼ to ½ range
	7	¼ range or less
FEMF	1	½ to full range
	3	¼ to ½ range
	7	¼ range or less
RVF	1	½ to full range
	3	¼ to ½ range
	7	¼ range or less

TST LINE START OUTPUT MESSAGE**ALIT is Started**

7.47 This message is used to report the start of the line insulation test (LIT) program. The routine may have been started manually by TTY request or automatically during the nightly routine tests. The format of the message is as follows.

tt TST LINE START

7.48 Action to be taken: None.

VER CFN TN OUTPUT MESSAGE**Verification of Call Forwarding Telephone Number**

7.49 This message is the response message to the VER:CFN:TN input message requested that the call forwarding telephone number associated with a customer telephone number be printed. The message provides the customer telephone number and the call forwarding telephone number if it is assigned. The format of the message is as follows:

tt CFN TN nxx-xxxx

CFN e f g h

CUT

CFN UNAS (Indicates unassignment)

ERR nnnn tt nn (Indicates error)

END

The key words and data fields have the following meaning:

nxx-xxxx = Customer telephone number.

CFN e f g h = Call forwarding telephone number.

CUT = Hundreds group is in precut state.

CFN UNAS = The customer has call forwarding service, but no call forwarding telephone number is assigned.

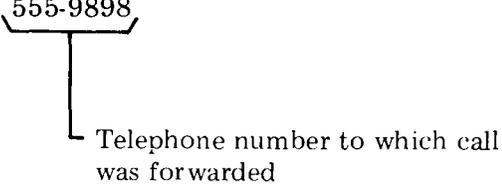
ERR nnnn TT NN = An error has occurred.

Note: Look up nnnn in output message ADM ERR nnnn in paragraph 7.03 for details. Fields TT and NN (if present) are defined in output message ADM ERR nnnn.

END = End of message.

Example:

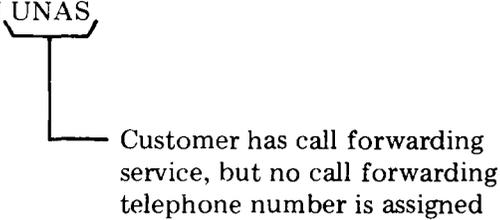
33 VER CFN TN 555-7868
CFN 555-9898



Telephone number to which call
was forwarded

or

33 VER CFN TN 555-7878
CFN UNAS



Customer has call forwarding
service, but no call forwarding
telephone number is assigned

7.50 Action to be taken: Customer will have to assign the forwarding telephone number before the call will be forwarded.

VER GRP OUTPUT MESSAGE

Verification of PBX/MLH Features

7.51 The VER GRP output message is printed out in response to one of four VER:GRP input messages. This message is the response message to a PBX/MLH, service circuit, or trunk group and/or member number verify request. The message specifies all characteristics of the line using key word parameters and data fields. If any key word and its data are not printed, then that data does not exist. The VER GRP output message is printed in four formats. The first form of this message is printed if just the group data is to be verified. The second form is printed if the group data and the data for all members in the group is to be verified. The third form is printed if the group data and the data for the specified member only is to be verified. The fourth form is printed if the data for the specified member only is to be verified. The format of the message is as follows:

tt VER GRP nnn
 or
 tt VER GRP nnn ALL
 or
 tt VER GRP nnn TER mmm
 or
 tt VER GRP nnn STD TER mmm

SSBA nnnn	(PBX/MLHG,SVC,TRK)
SPR nnn	"
GSZ nnn	"
SCHED t	"
LCC lcc	(PBX/MLH)
RAX n	"
SCR nn	"
OMAJ nn	"
LCI nn	"
MLI nnn	"
BTN nxx xxxx	"
HSZ nn	"
EHT nn	"
NST nn	"
ESC	"
EL	"
GST	"
TTC	"
BLN	"
SOB	"
CHL	"
ESL nnn	"
CHF	"
ESF nnn	"
CKT nn	(SVC,TRK)
DR n	(TRK)
DISC n	"
OTYP n	"
ST n	"
TOTANI nn	"
TBL nn	"
SCR nn	"
DIG	"
THDIG n	"
CODE nxx	"
NDE n	"
EM	"
OMF	"
ODP	"
OLP	(TRK)

(Continued)

	(TRK)
LP	”
TDM	”
INBD	”
STP	”
AUDB	”
BYLK	”
IMF	”
CHGE	”
RTEQ	”
MWS	”
SNGWK	”
LTD	”
NT	”
*****	(Second form only)
TER nnn	(Second form only)
OE gg c w s i	(PBX/MLH, tone or announcement service members)
DRB n	(PBX/MLH member)
SP ss rr pp	(Regular service or trunk members)
DP p ddd t	(REGULAR SERVICE OR TRUNK MEMBERS)
abc UNAS	(Indicates unassignment)
ERR nnnn tt mm	(Indicates error)
NO MEM	(Indicates error)
TER nnn UNAL mmm	(Indicates unallocation)
TER nnn UNAS	(Indicates unassignment)
END	

The definitions of the key words and data fields are as follows:

SCHEd t	Traffic schedule
LCC lcc	Line class code
RAX n	Rate area data
SCR nn	Screening class
OMAJ nn	Originating major class
LCI nnn	Line class code index
MLI nnn	Member list index
BTN nxx xxxx	Bill to number
HSZ nn	Last huntable terminal number
EHT nn	Stop hunt terminal
NST nn	Night stop terminal
ESC	Three way calling
EL	Essential line
GST	Ground start
TTC	Touch-Tone calling
BLN	Special toll billing (QZ billing, ONI)
SOB	Service observing
CHL	Change 1 digit speed calling
ESL nnn	1 Digit speed calling index
CHF	Change 2 digit speed calling
ESF nnn	2 Digit speed calling index
SSBA xxxx	Call store status block address
CKT nn	Circuit code
DR n	Direction of traffic
DISC n	Type of disconnect supervision
OTYP n	Outgoing trunk type
ST n	Start dial
TOTANI nn	Terminal office test access number index
TBL nn	One-digit table number
DIG	Three-digit xla used on 1st 3 digits
THDIG n	Thousands digit
CODE nxx	Office code
NDE n	Number of digits expected
EM	E & M supervision
OMF	Multifrequency outputting
ODP	Dial pulse outputting
OLP	Overlap outputting
LP	Long loop outputting
TDM	Tandem
INBD	Inband signaling
STP	Stop-go
AUDB	Audible
BYLK	Bylink trunk from step-by-step office
IMF	Multifrequency inpulsing
CHGE	Charge
RTEQ	Remote test equipment facilities
MWS	Multi wink signaling
SNGWK	Wink (used by 911 for ringback)
LTD	Trunk from or to local test desk
NT	No test trunk
TER nnn	Terminal number
OE gg c w s i	Office equipment number
DRB n	Remote make busy key number
SP ss rr pp	Scan point number
DP p ddd t	Distributor triplet

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GSZ nnn

The number of terminals allocated to the group (largest member number; includes spares).

SPR nnn

Number of spares as indicated by the first word of the member list. No check is made to insure that this corresponds to the number of unassigned terminals in the member list.

SCR nn

Screening class

abc UNAS

abc is not assigned.

abc = BTN=> Bill to number office code

= GRP=>Group number

ERR nnnn tt nn

An error has occurred.

Look up nnnn in output message ADM ERR nnnn in paragraph 7.03 for details. Fields TT and NN (if present) are defined under output message ADM ERR nnnn.

NOC n UNAS

The incoming digit translation code (ID XLN) in "GROUP DATA" does not point to an assigned NOC.

NO MEM

According to the first word of the member list there are no working members in the group. (ie, all members are spares)

TER NNN UNAL mmm

Terminal number nnn is not allocated. The largest number allocated is mmm.

TER nnn UNAS

Terminal number nnn is allocated but not assigned.

END End of message.

Example 1:

VER:GRP 001;ALL!WT-PF

M 13 VER GRP 1 ALL
SSBA 0041477
MLI 16
LCI 3
LCC TCK
RAX 0
OMAJ 30
SCR 0
BTN 528 2501
GSZ 11
HSZ 5
SCHED H
GST
SPR 6

TER 0
OE 1 0 0 3 7
TN 528 2501
DRB 0

TER 1
OE 2 1 2 6 7
TN 528 2502
DRB 0

TER 2
OE 3 0 0 0 7
TN 258 2503
DRB 0

TER 3
OE 4 0 1 1 7
TN 528 2504
DRB 0

TER 4 UNAS

TER 5 UNAS

TER 6 UNAS

TER 7 UNAS

TER 8 UNAS

TER 9 UNAS
END

Example 2:

VER:GRP 1 TER 5!WT-PF

M 35 VER GRP 1
SSBA 0041477
MLI 16
LCI 3
LCC TCK
RAX 0
OMAJ 30
SCR 0
BTN 528 2501
GSZ 11
HSZ 5
SCHED H
GST
END

VER LINE OUTPUT MESSAGE

Verification of Customer Line Features

7.52 The VER LINE output message is printed out in response to the VER:LINE:TN input message to verify a customer line. The message specifies all characteristics of a line using key word parameters and data fields. If any key word and its data are not printed, then that data does not exist. The format and explanation of the key word parameters and data fields for the VER LINE output message are the same as the VER OE output message in paragraph 7.47. Refer to VER OE output message for an explanation of the key words and data for the VER LINE output message.

Example:

VER:LINE:TN 5282182!WT-PF

M 59 VER LINE
TN 528 2182
CUT
OE 1 0 2 4 3
OESP 1 18 3
RTI 8
LCC DOT
LCI 37
RAX 0
OMAJ 30
SCR 0
TMAJ 30
END

VER MPTY OUTPUT MESSAGE**Verification of Multiparty Line Features**

7.53 The VER MPTY output message is printed out in response to the VER:MPTY input message to verify a multiparty line. The message specifies all characteristics of the multiparty line using key word parameters and data fields. If any key word and its data are not printed, then that data does not exist. The format and explanation of the VER MPTY output message are the same as the VER OE output message in paragraph 7.47. Refer to the VER OE output message for an explanation of the key words and data for the VER MPTY output message.

Example:

```

M 55 VER MPTY
  TN 555 3030 -- TN of the line
  OE 5 1 1 0 5 -- OEN of the line
  OESP 3 21 4
  RTI 0
  LCC 4FR
  LCI 16
  RAX 0
  OMAJ 16
  PTY 3 4
  END

```

└─── Number of parties

└─── Party number

VER MTL OUTPUT MESSAGE**Verification of Multiline Hunt Terminal Features**

7.54 The VER MTL output message is printed out in response to the VER:MTL:TN input message to verify a multiline hunt group (MLHG) member. The message specifies all characteristics of the MLHG member using key word parameters and data fields. If any key word and its data are not printed, that data does not exist. The format and explanation of the VER MTL output message are the same as the VER OE output message in paragraph 7.47. Refer to the VER OE output message for an explanation of the key words and data for the VER MTL output message.

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Example:

VER:MTL:TN 5282506!WT-PF

M 46 VER MTL
TN 528 2506
CUT
HML 1
TER 5
LHT 5
LCC TBK
LCI 3
RAX 0
OMAJ 30
SCR 0
TMAJ 8
OE 6 1 1 1 6
DRB 0
GST
END

VER OE OUTPUT MESSAGE

Verification of Customer Line Features

7.55 This message is printed out in response to one of the following verify request input messages.

VER:OE

VER:LINE

VER:TWOPTY

VER:MTL

VER:MPTY

Note: The VER:OE input message can be used to verify a line (LINE), a 2-party line (TWOPTY), a multiline hunt terminal (MTL), or a multiparty line (MPTY). However, VER:LINE..., VER:TWOPTY..., etc, are provided as a convenience to the user.

The VER OE output message specifies all characteristics of a line using key word parameters and data fields. If any key word and its data are not printed, the data does not exist. The format of the message is as follows:

tt VER OE

GRP nnn TER mmm

TN nxx xxxx

OE gg c w s i

UNAS LINE

UNAS PTY

TLT

OESP ss rr pp

RTI nnn

SP ss rr pp

BSY

SER nxx xxxx

CUT

TN TRIG

LCC lcc

RAX n

SCR nn

OMAJ nn

TMAJ nn

LCI nnn

TPY p n

HML nn

TER nn

LHT nn

DRB n

CDI nnn

ESX

TRC

ESC

EL

GST

TTC

ESL nnn

CHL

ESF nnn

CHF

SOB

ESM nnnn

SMR nnnn

HLN e f g h

DPM p ddd t

DP p ddd t

DPU p ddd t

DPCN p ddd t o

CONNECT dt REC

BLN

BTN nxx xxxx

abc UNAS

(Indicates unassignment)

ERR nnnn tt nn

(Indicates an error)

END

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The definitions of the key words and data fields are as follows:

NO LINE	This is not a line.
GRP nnn TER mmm	OE is assigned to group and member.
TN nxx xxxx	Telephone number.
OE gg c w s i	Office equipment number.
UNAS LINE	This is an unassigned line.
UNAS PTY	OE is assigned but specified pty is unas.
TLT	Test line terminal.
RTI nnn	Route index.
BSY	Busy treatment (see KSP below).
SER nxx xxxx	Series completion directory number.
CUT	Hundreds group marked as awaiting cutover.
TN TRIG	Trigger number for auto connect.
LCC lcc	Line class code.
RAX n	Rate area data.
SCR nn	Screening class.
OMAJ nn	Originating major class.
TMAJ nn	Terminating major class.
LCI nnn	Line class code index.
HML nn	Multi-line hunt group number.
TER nn	Terminal number.
LHT nn	Last hunt terminal.
DRB n	Remote make busy key number.
ESX	Call waiting.
TRC	Trace.
ESC	Three way calling.
EL	Essential line.
GST	Ground start.
TTC	Touch-Tone calling.
ESL nnn	1 digit speed calling index.
CHL	Change 1 digit speed calling.
ESF nnn	2 digit speed calling index.
CHF	Change 2 digit speed calling.
SOB	Service observing.
ESM nnnn	Call forwarding index.
SMR nnnn	Software message register index.
HLN e f g h	Hot line telephone number.
DPM p ddd t	Distributor triplet for message register.
DP p ddd t	Distributor triplet for sleeve lead.
DPU p ddd t	Distributor triplet for noise immunity line.
DPCN p ddd t o	Distributor point for coin line.
BLN	Special toll billing (QZ billing, ONI).
WATS	Outwats billing number
BTN nxx xxxx	Bill to number.

OESP ss rr pp

Scan point number for the telephone number OE.

SS ss rr pp

Key scan point number for returning a busy tone or reorder tone. If BSY is printed, the busy tone is returned.

PTY p n

Part number and number of parties

p = party number (1 through 8) from tape (P=0 implies a mistake on tape)

n = => number of parties not determined since no originating data exists

= 0=> ERROR: originating translation data indicates nonparty but the line class code table indicates party of p

= 2=> 2 parties

= 4=> 4 parties

= 8=> 4 parties.

CDI nnn

Code index for routing all calls to the thousands group of the telephone number to another office. (Implies split office code.)

CONNECT dt REC

Connect a dt type receiver to the 2-party line.

dt = ** => Error

= DP => Dial pulse

= NO => Attach no receiver

= TT => Touch-Tone

abc UNAS

abc is not assigned.

abc = BTN => Bill to number office code

= HML => PBX/MLH group

= HND => Hundreds group

= OCD => Telephone number office code

= OE => terminal equipment

= TER => PBX/MLH group terminal number

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= THD => Thousands group

= TN => Telephone number.

ERR nnnn tt nn

An error has occurred.

Look up nnnn in output message ADM ERR nnnn in paragraph 7.03 for details. Fields TT and NN (if present) are defined under output message ADM ERR nnnn.

END End of message

VER SCN OUTPUT MESSAGE

Verification of Speed-Calling Numbers Associated With a Customer Line

7.56 The VER SCN output message is the response message to the VER:SCN input message requesting verification of all speed-calling numbers associated with a customer (line or PBX/MLH), or a specific speed-call list be printed. If no speed-calling numbers are printed, the customer does not have any speed-calling numbers assigned. The format of the message is as follows.

tt VER SCN

TN nxx-xxxx

GRP nnn

ESL nn

ESF nnn

The definitions of the key word and data fields are as follows:

TN nxx xxxx = Customer telephone number

GRP nnn = PBX/MLH group number

ESL nn = 1-digit speed-call list index

ESF nnn = 2-digit speed-call list index.

The tabular output of this message is as follows. If no speed numbers are printed, the customer does not have any speed-calling numbers assigned.

ADN	SCN
nn	e f g h

nn = Speed-calling abbreviated dial numbers.

e f g h = Speed-calling telephone numbers.

The form may be any one of the following:

```

p npa nxx xxxx
  npa nxx xxxx
    p nxx xxxx
      nxx xxxx
where p = prefix (0 or 1)

```

ERR nnnn SCN = An error has occurred in the digit speed-calling list. Look up nnnn in ADM ERR output message in paragraph 7.03 for details.

ERR nnnn TT NN = An error has occurred. Look up nnnn in ADM ERR output message in paragraph 7.03 for details. Fields TT and NN (if present) are defined under ADM ERR output message.

END = End of message.

Example:

```

30  VER SCN
    TN 555 6262
    GRP
    ESL
    ESF
    01  1 919 787 6363
    02           555 6432
    03           555 1372
    04  1 704 655 1818
    05           555 7018
           etc

```

VER THDIG OUTPUT MESSAGE

Verification of Thousands Digit

7.57 The VER THDIG output message is the reponse message to the VER:THDIG input message requesting verification of a thousands digit. The first form of the message is printed if the thousands digit indicates routing to another office. The second form is printed if the office code is not assigned. The third form is printed if the thousands digit is not assigned. The format of the message is as follows:

tt VER THDIG nxx t CDI ccc

or

tt VER THDIG nxx t OCD UNAS

or

tt VER THDIG nxx t THD UNAS

The variable field has the following meaning:

nxx = Office code

t = Thousands digit

ccc = Code index used to route the call to another office

Example:

VER:THDIG (258,3)! WT-NG

M 21 VER ERR 4223

VER TWOPTY OUTPUT MESSAGE

Verification of a 2-Party Line

7.58 The VER TWOPTY output message is the response message to the VER:TWOPTY input message requesting verification of a 2-party line. The message specifies all characteristics of the 2-party line using key word parameters and data fields. If any key word and its data are not printed, then that data does not exist. The format and explanation of the VER TWOPTY output message are the same as the VER OE output message in paragraph 7.47. Refer to the VER OE output message for an explanation of the key words and data for the VER TWOPTY output message.

Example:

VER:TWOPTY:TN 534 5361!WT-PF

M 51 VER TWOPTY
TN 534 5361
OE 4 1 2 5 6
OESP 4 22 14
RTI 0
LCC 2FR
LCI 10
RAX 0
OMAJ 4
SCR 2
TMAJ 4
PTY 1 2
CONNECT DP REC
END