LOCAL TEST DESK ARRANGEMENTS
NO. 3 ELECTRONIC SWITCHING SYSTEM

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INTRODUCTION

1. GENERAL INFORMATION

1.01 This document describes Test Desk Arrangements as applied to the No. 3 Electronic Switching System (ESS). This feature enables a local test desk (LTD) No. 14 or No. 16 to test, either locally or remotely, customer lines in a No. 3 ESS office on a dedicated and/or nondedicated basis.

1.02 When this document is reissued, the reasons for reissue will be included in this paragraph.

1.03 This feature, as described in this document, is available with the SO-2, Issue 3, system program.

2. DEFINITION

2.01 The Test Desk Arrangements feature permits testing of customer lines in a local or distant central office from a centralized LTD No. 14 or No. 16. With remote testing of a distant central office, any voice frequency message-type trunk facility, such as carrier, radio, metallic, etc, may be used and can be either dedicated or nondedicated.

2.02 The Test Desk feature is an optional No. 3 ESS feature.

2.03 The No. 3 ESS can be tested by an LTD via one of the following arrangements: on-site dedicated, remote dedicated, remote nondedicated, remote dedicated day and nondedicated night, or remote nondedicated day and night. A test connection to a customer line in a No. 3 ESS office is made through an incoming LTD trunk (SD-3H520, FB519) and in most cases an associated far end remote testing circuit (RTC) (SD-99311). An on-site dedicated LTD requires only a LTD trunk and a remote dedicated LTD, within 1500 ohms, requires only a LTD trunk and a test trunk ringing circuit (SD-96474) to allow ringing of customer lines by the LTD.

2.04 With the exception of the line ferrod test, TOUCH-TONE® test, disconnect request, and some failure tones that are controlled by the local test desk handler (LTDH) program (PR-3H311-02), all other tests and tones are controlled through the RTC 99311. Remote nondedicated test desk arrangements can be provided only if the autoconnect feature is installed.

DESCRIPTION

3. USER OPERATION

3.01 To test customer lines in a No. 3 ESS office via a LTD No. 14 or No. 16, the tester at the LTD must establish a connection to the incoming LTD trunk via a RTC 99311. This can be done either directly over a dedicated facility or indirectly via an autoconnect arrangement.

3.02 When dedicated facilities are used, the RTC 99311 and associated incoming LTD trunk are seized directly by the tester inserting the primary test cord in the test jack associated with these circuits (LTD No. 14) or by operating the associated outgoing trunk (OG) key (LTD No. 16).

3.03 When nondedicated facilities are used, these circuits are seized when the tester dials the appropriate autoconnect trigger number. The tester will then receive high tone, if the circuit is available, and must remain off-hook for at least 10 seconds before going on-hook. If the tester receives a busy tone (60 ipm), the autoconnect is refused. If callback does not occur within 2 minutes after the tester goes on-hook, the autoconnect has failed and the tester must redial the trigger number. The callback number dialed by autoconnect terminates at a jack (LTD No. 14) or an incoming trunk (LTD No. 16) accessible to the LTD position where the call originated. While the callback is taking place, the incoming LTD trunk and RTC 99311 are set up for seizure. When the tester answers the callback by inserting a primary card into the appropriate jack (LTD No. 14) or operates the primary (PRI) or secondary (SEC) key (LTD No. 16), the seizure is completed.

3.04 A RTC 99311 may be shared by two LTDs at different test centers. This can be done by using a 2-party line arrangement or the night closing feature. When the 2-party arrangement is used, one LTD calls the ring party trigger number and the other LTD calls the tip party trigger number. If the RTC 99311 is busy when called, busy tone (60 ipm) is returned to the LTD. When the night closing feature is used, only one of the test centers can have control. One LTD is designated as a day center and the other LTD as a night center. When the day center has operated the

night closing (NC) key, illuminating the supervisory (SP) lamp, either one of the two test centers may seize the RTC 99311. A busy signal (60 ipm) is heard by either test center if an attempt is made to seize the RTC 99311 while it is in a busy condition. The SP lamp remains illuminated until the NC key is operated a second time, releasing the night closing feature.

3.05 To test a customer line, the tester must operate the key pulse (KP) key on the LTD. The No. 3 ESS recognizes this as an origination, and a suitable digit receiver and network path are selected. The sender (S) lamp becomes illuminated when the system is ready to receive digits. The tester then dials the last four digits (five digits when there is more than one office code in the office) of the customer line that is to be tested. After the proper number of digits have been received, the system waits 1 minute for release of the KP key. (If the KP key has not been released before time-out, the LTD is disconnected.) When the KP key is released, the S lamp is extinguished and the LTD is connected to the customer line if it is not busy. If the customer line is busy, the LTD is connected to the no-test vertical and the tester can only monitor and disconnect.

3.06 The tester may then perform any of several tests on the customer line by operating the proper keys on the LTD keyshelf. The tests that require No. 3 ESS system program action (line ferrod test, TOUCH-TONE test, disconnect request) return test results via various conditions of the incoming LTD trunk sleeve lead. After all tests have been completed, the tester can disconnect. Disconnect may be accomplished in one of two ways: by operating the disconnect key associated with the trunk or by operating the KP key. Operation of the disconnect key drops the connection to the RTC 99311 and incoming LTD trunk. Operation of the KP key idles the incoming LTD trunk, network path, and called line, connects a digit receiver, and sets up new network path through the incoming LTD trunk.

3.07 Refer to Section 662-517-500 for LTD operation and test procedures for No. 3 ESS lines.

4. SYSTEM OPERATION

GENERAL INFORMATION

4.01 Customer lines in a No. 3 ESS can be tested by a LTD No. 14 or No. 16 either locally or remotely. The tester at an LTD makes a test connection to the No. 3 ESS through an incoming LTD trunk (FB519) (Figure 1). This connection can be dedicated or nondedicated and may require the use of an interface circuit.

4.02 An on-site dedicated arrangement (Figure 2) does not require an interface circuit. A remote dedicated arrangement with a loop resistance less than or equal to 1500 ohms (Figure 3) requires a test trunk ringing circuit (SD-96474) to allow ringing of customer lines by the tester at the LTD. All other arrangements require the use of a RTC 99311. The RTC 99311 can be connected to the LTD in the following ways: remote dedicated with a loop resistance greater than 1500 ohms (Figure 4), remote nondedicated (Figure 5), remote dedicated day/nondedicated night (Figure 6), or remote nondedicated day/night (Figure 7).

4.03 Each No. 3 ESS office can have up to two LTD trunks, thus allowing two LTDs to test customer lines simultaneously. The LTDH program (PR-3H311-02) is used for control of LTD trunks, some failure tones, and the line ferrod test, TOUCH-TONE test, and disconnect request.

ESTABLISHING A CONNECTION

4.04 When a LTD is connected via a dedicated facility, seizure of the incoming LTD trunk occurs when the tester inserts the primary test cord in the test jack associated with this trunk circuit (LTD No. 14) or by operating the associated outgoing trunk (OG) key (LTD No. 16). When a RTC 99311 is used, the circuit is seized and in turn causes the incoming LTD trunk circuit to be seized.

4.05 When an LTD is connected via a nondedicated facility (using the autoconnect feature), the tester must dial an autoconnect trigger number. This number is recognized by the system program as a callback request and the autoconnect feature then sets up a connection from the RTC 99311 to the LTD associated with the called trigger number.

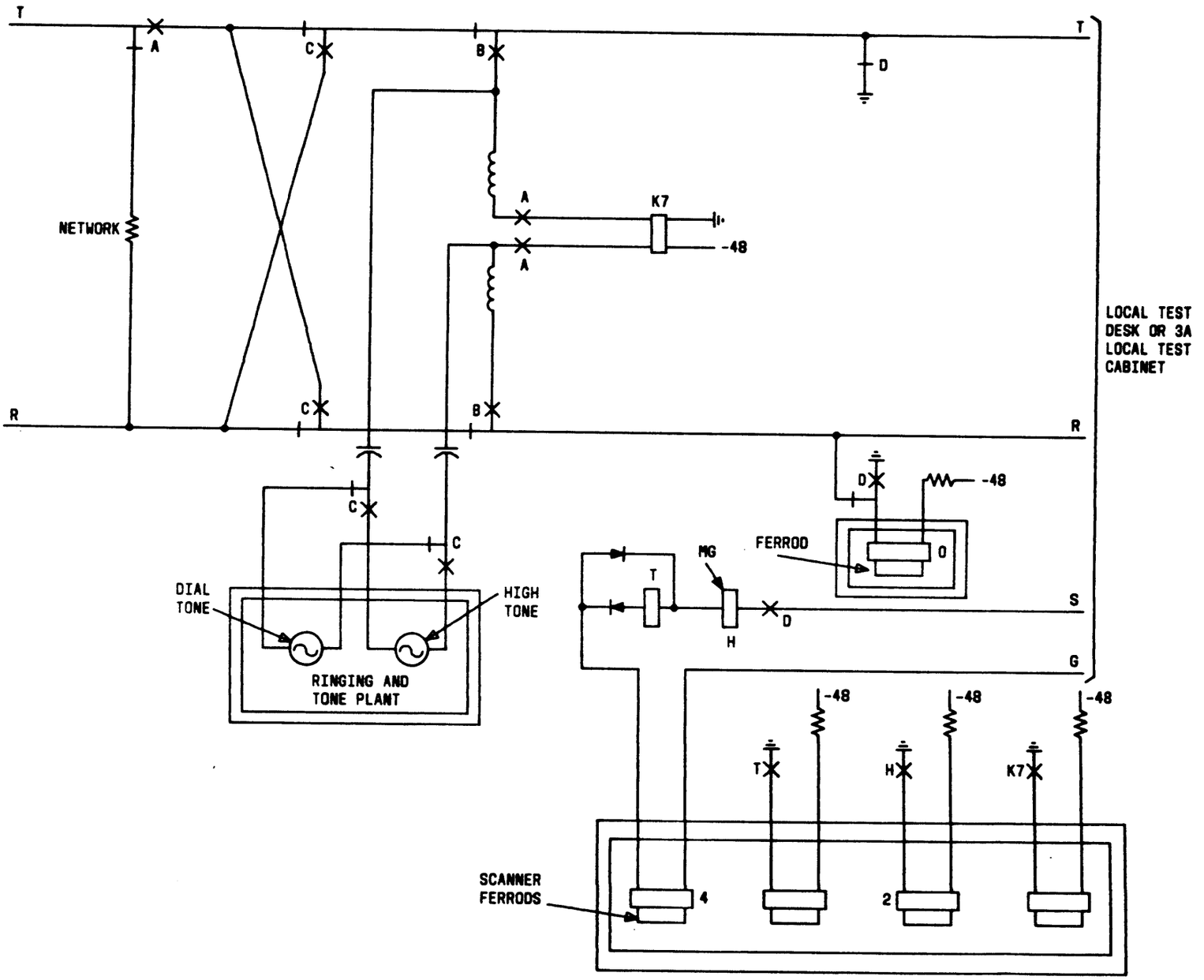


Fig. 1—No. 3 ESS Incoming Local Test Desk Trunk (FB519)

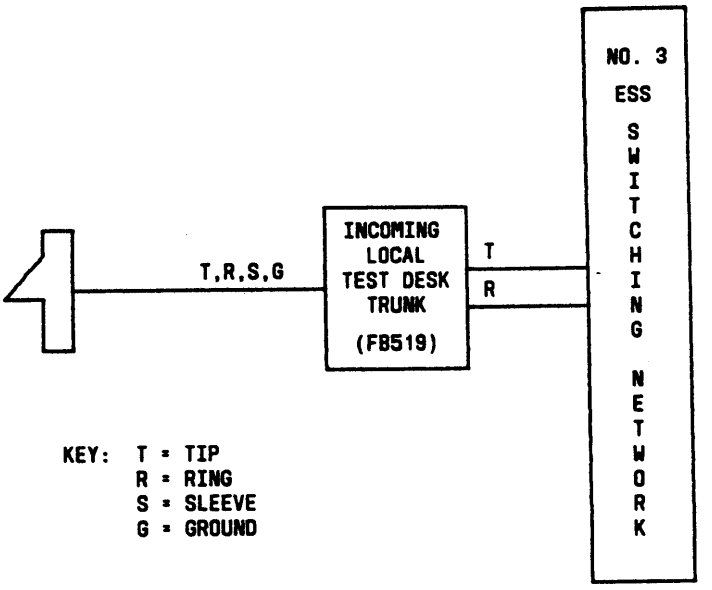


Fig. 2—On-Site Dedicated Local Test Desk

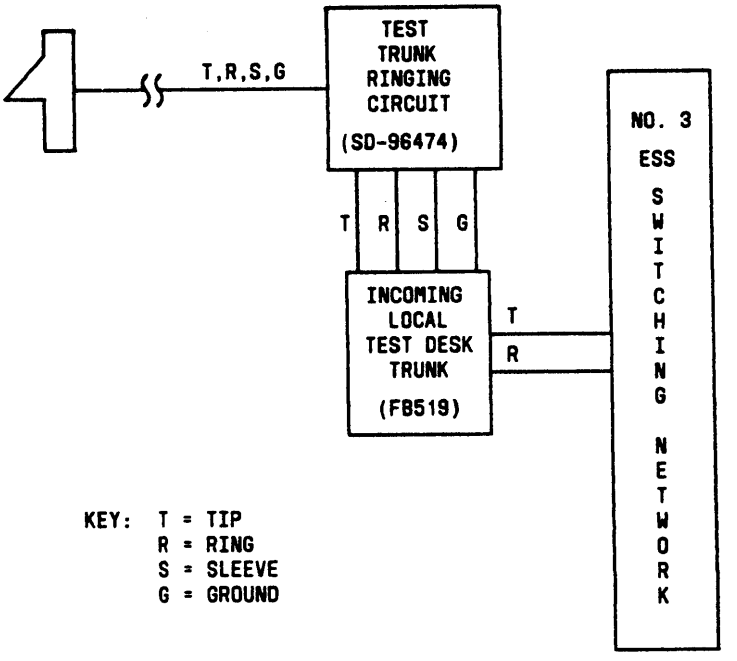


Fig. 3—Remote Dedicated Local Test Desk Within 1500-Ohm Loop

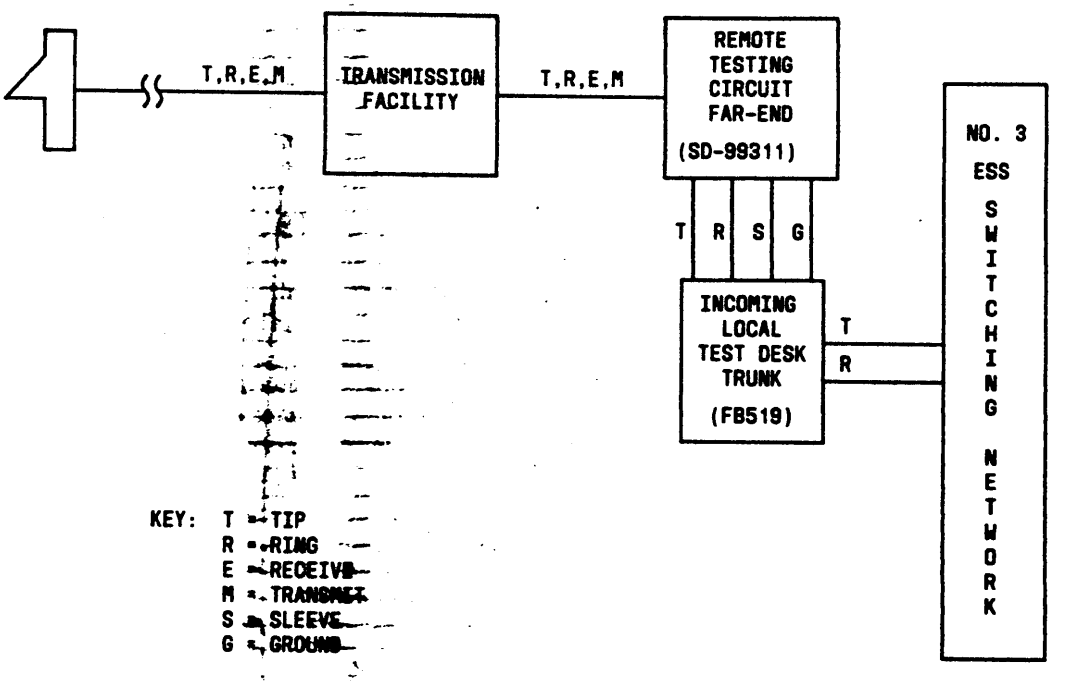


Fig. 4—Remote Dedicated Local Test Desk Beyond 1500-Ohm Loop

The LTD is then rung the same as an incoming call. This callback is then answered by inserting a primary cord into the appropriate jack (LTD No. 14) or by operating the PRI or SEC key (LTD No. 16). The tester must remain off-hook after dialing the trigger number for at least 10 seconds. If callback has not occurred within 2 minutes, the autoconnect has failed or the RTC 99311 is busy and the tester must redial the trigger number. Busy tone is returned if the tester remains off-hook and the autoconnect has failed or the RTC 99311 is busy.

4.06 After the seizure of the RTC 99311 and the incoming LTD trunk has occurred, the tester must operate the KP key. Operation of the KP key causes the supervisory ferrod in the trunk circuit (Figure 1) to saturate. This ferrod, when saturated, indicates an origination to the system program. When the origination is recognized, a multifrequency (MF) receiver and a network path are selected. The receiver is connected to the trunk circuit and put in the proper state.

4.07 The trunk circuit is switched to the bypass state via the peripheral decoder (PD). In this state, the trunk circuit extends the trunk conductors to the line and/or trunk switching circuit and provides a tip-ring reversal. This tip-ring reversal is used so that the end of the wink signal in the receiver results in a ground on the ring lead to the LTD. After the trunk circuit is switched to the bypass state, battery reversal in the receiver at the end of the wink signal causes the S lamp at the LTD to light, indicating to the tester that the system is ready to receive digits. The supervisory ferrod in the trunk circuit is disconnected, and supervision of the LTD is maintained in the digit receiver.

4.08 After the proper number of digits have been received, the trunk circuit is switched to the hold state, the receiver is disconnected and idled, and the path to the customer's line is established (reorder is given if no network path is available). The LTDH program takes control at this point. There is a 1-minute time limit in which the KP key must be released after dialing. If it is not released within the time limit, the LTD is disconnected from the trunk circuit. The tester at the LTD can then reoriginate by operating the KP key. If the LTD is autoconnected and the time-out occurs, the autoconnected path will not be taken down so the tester at the LTD can

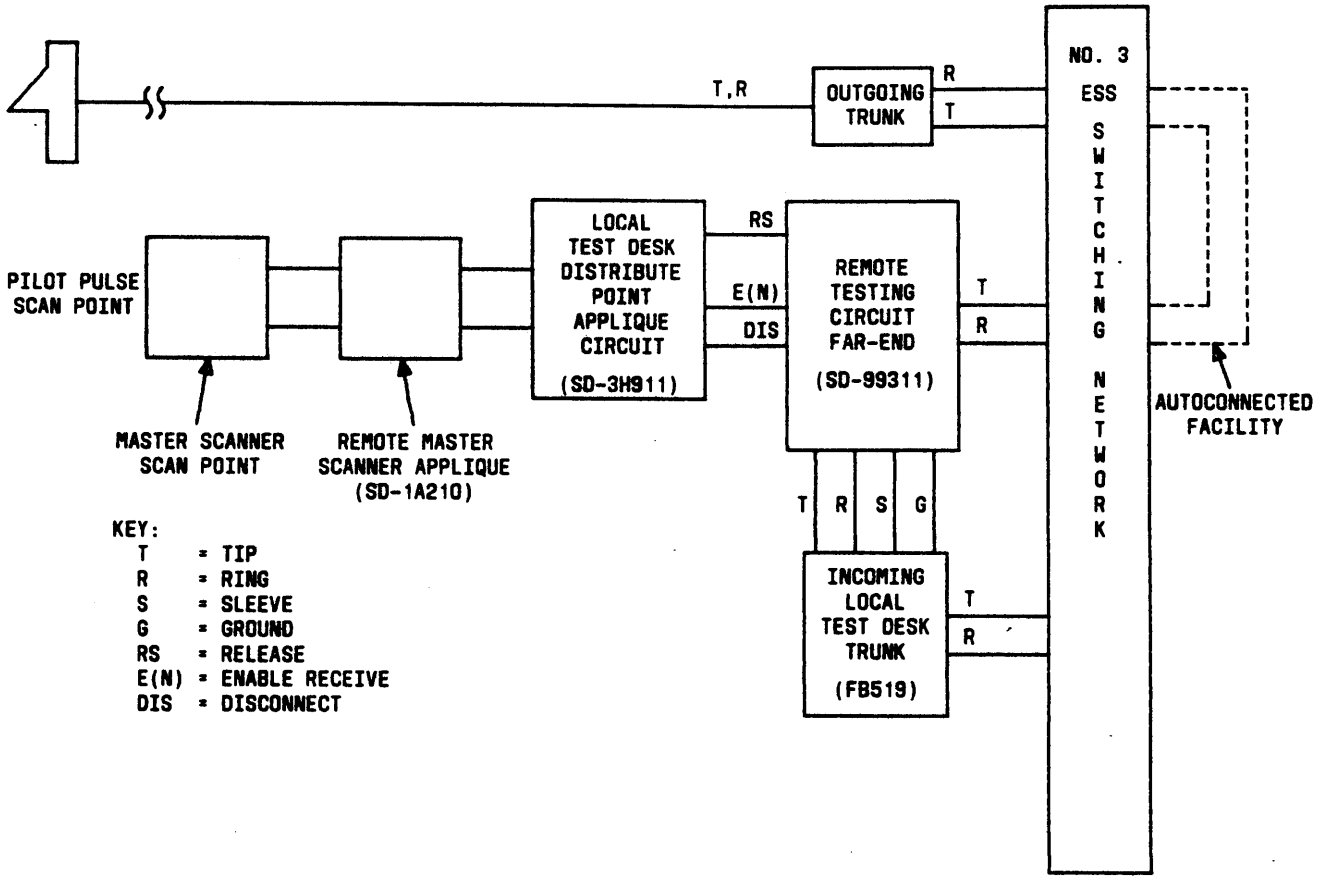


Fig. 5—Remote Nondedicated Local Test Desk

reoriginate. When the KP key is released, a network path is established from the LTD to the called line if the line is idle or to the appropriate no-test vertical if the line is busy (in this case, the tester can only monitor and then disconnect). The trunk circuit is then switched to the test state so that the tester at the LTD has dc access to the customer line.

FAILURE TONES

4.09 If the trunk circuit cannot be connected to a line because there is no available network path, overflow tone is returned to the tester at the LTD. A 60-ipm low tone is returned if the required no-test vertical is busy and a steady high tone is returned when an invalid condition has occurred in translations.

4.10 These failure tones and others must be controlled by the LTDH program because the LTD trunk circuit is different from other trunks in that its supervisory scan point is latched up when the trunk circuit is operated. This prevents disconnect from being detected in the normal manner. The LTDH program uses the directed scan points of the trunk to determine if an on-hook has occurred at the LTD. When the disconnect is recognized, the LTDH program causes the failure tone connection to be torn down. A failure tone connection is timed by the LTDH program, and if 30 seconds elapse without seeing a disconnect request, the connection is taken down by the LTDH program.

TEST PROCEDURES

4.11 The LTDH program provides the software interfaces required to test from an LTD a

line ferrod or a customer's TOUCH-TONE set and to recognize a disconnect request from the LTD. The LTDH program not only responds to the request for these tests but also acknowledges and responds to test results via tones.

Line Ferrod Test

4.12 To test the line ferrod of the called line, the tester operates the Talk (T) key and then the Third Wire Open (3WO) key which opens the sleeve lead at the LTD. When this test request is recognized, the LTDH program has the line's cutoff relay operated, restoring the line ferrod to the line. Operating the T key places a bridge across the tip-ring at the LTD and provides a dc path through the customer line ferrod to ground. If the ferrod is working properly, it will saturate. The LTDH program causes the line ferrod to be scanned, and if it is saturated, switches the incoming trunk circuit to the dial tone state. If the line ferrod does not saturate, no response is heard. Refer to Figure 8 for connections to the line being tested.

4.13 Supervision of the LTD is maintained by a trunk scan point that is saturated during the time dial tone is returned to the tester. Release of the T key opens the current path, causing this ferrod to de-energize. When this is detected by the LTDH program, the trunk circuit is switched to the test (bypass) state. The tester may repeat the test by operating the T key or terminate the test key by releasing the 3WO key. When the release of the 3WO key is detected by the LTDH program, the customer line ferrod is removed from the line and the trunk circuit remains in the test state.

4.14 If the test fails (ie, dial tone is not heard), it may be repeated as above by releasing and reoperating the T key or by releasing and reoperating both the T and 3WO keys. The trunk circuit does not change state if the customer line ferrod fails to saturate.

4.15 This test cannot be performed for the lines that have denied origination or denied termination in offices that have SO-2, Issue 3.3 or earlier system programs. In those offices with SO-2, Issue 4 or later system programs, the following test results occur.

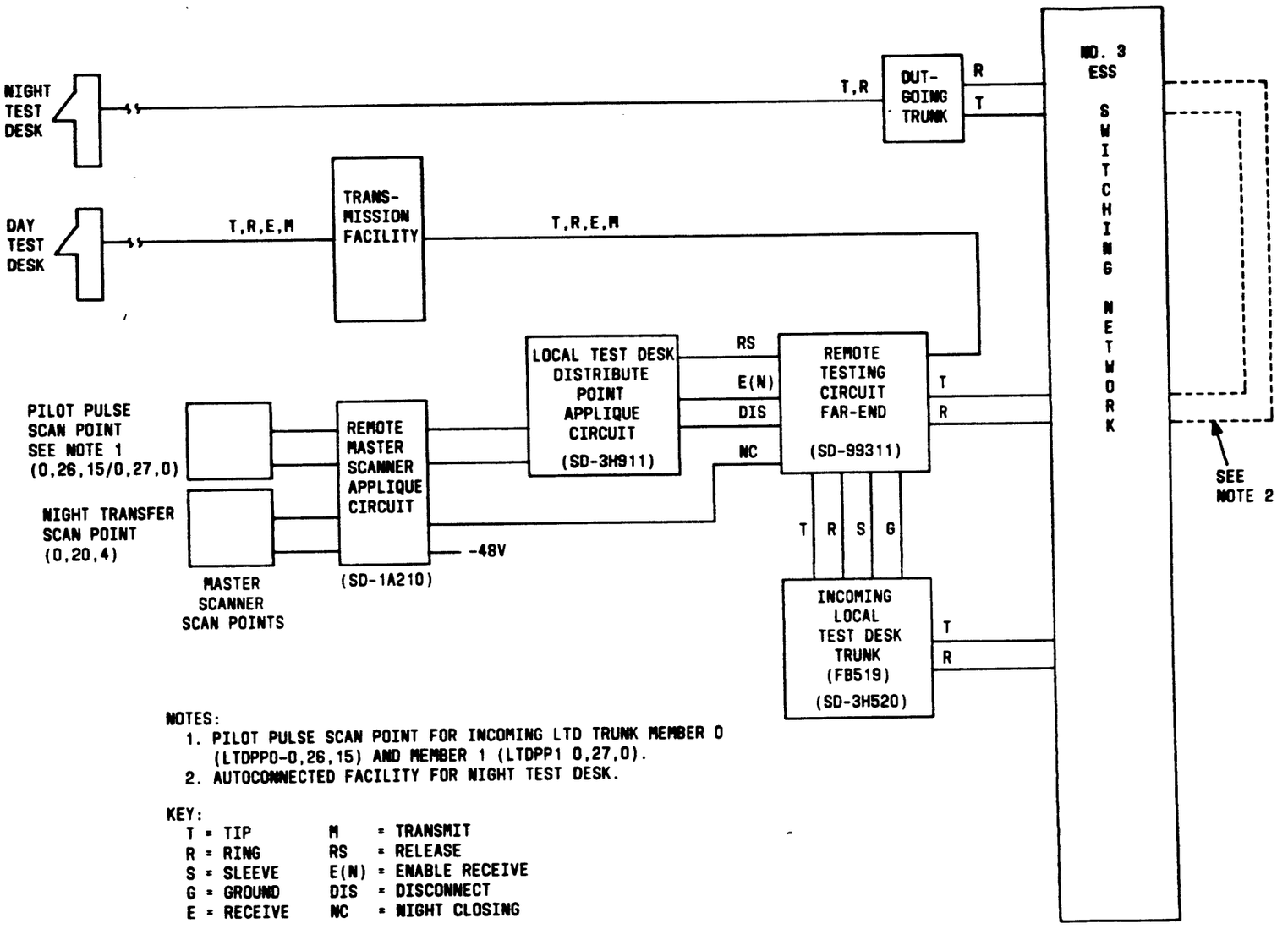
4.16 If the line under test is denied origination, no dial tone is given, but the cutoff relay will be closed so that office battery and ground can be measured. Office records should be checked when this response is given.

4.17 If the line under test is denied termination or has a KEY scan point, a 1-second burst of dial tone is returned. This also indicates that the line ferrod saturated. If the line ferrod does not saturate, no dial tone is heard and no office battery and ground can be measured. Office records should be checked to determine if the line is denied termination or has a KEY scan point.

TOUCH-TONE Test

4.18 To test a customer's TOUCH-TONE station set, the tester needs the assistance of someone at the customer premises who can be the customer. The tester must apply the proper ringing voltage by operating one of a number of ringing keys to alert the customer or repair personnel on the premises and then operate the T key to apply talk battery and ground to the line. The test procedure is described to the customer, if assisting, and the tester then operates the TT key which applies low resistance positive battery to the LTD end of the sleeve lead. When this test request is detected by the LTDH program, the trunk circuit is switched to the hold state. An idle station ringer test circuit (SD-3H520, FB521) is then selected. If a station ringer test circuit is not available or the customer has gone on-hook, the LTD is given overflow tone through the junctor circuit until a test release (TT key released) occurs.

4.19 The Station Ringer Test (SRTH) program (PR-3H316-02) also works in conjunction with the LTDH program. The LTDH program, after a station ringer circuit has been selected, connects the B port of the station ringer to the LTD and then calls the SRTH program to perform the TOUCH-TONE test. The SRTH program then connects port A of the station ringer circuit to the customer and then performs one cycle of the TOUCH-TONE pad test, gives the success/fail tone response, and signals the LTDH program that the station ringer test is completed. The LTD connection to port B of the station ringer test circuit provides the LTD with the capability of hearing inputs from the customer's line and responses from the station ringer test circuit (Figure 9). The tester then has 7 minutes in which to use the station ringer test



NOTES:
1. PILOT PULSE SCAN POINT FOR INCOMING LTD TRUNK MEMBER 0 (LTDPP0-0,26,15) AND MEMBER 1 (LTDPP1 0,27,0).
2. AUTOCONNECTED FACILITY FOR NIGHT TEST DESK.

KEY:

T	= TIP	M	= TRANSMIT
R	= RING	RS	= RELEASE
S	= SLEEVE	E(N)	= ENABLE RECEIVE
G	= GROUND	DIS	= DISCONNECT
E	= RECEIVE	NC	= NIGHT CLOSING

Fig. 6—Remote Dedicated Day/Nondedicated Night Local Test Desk

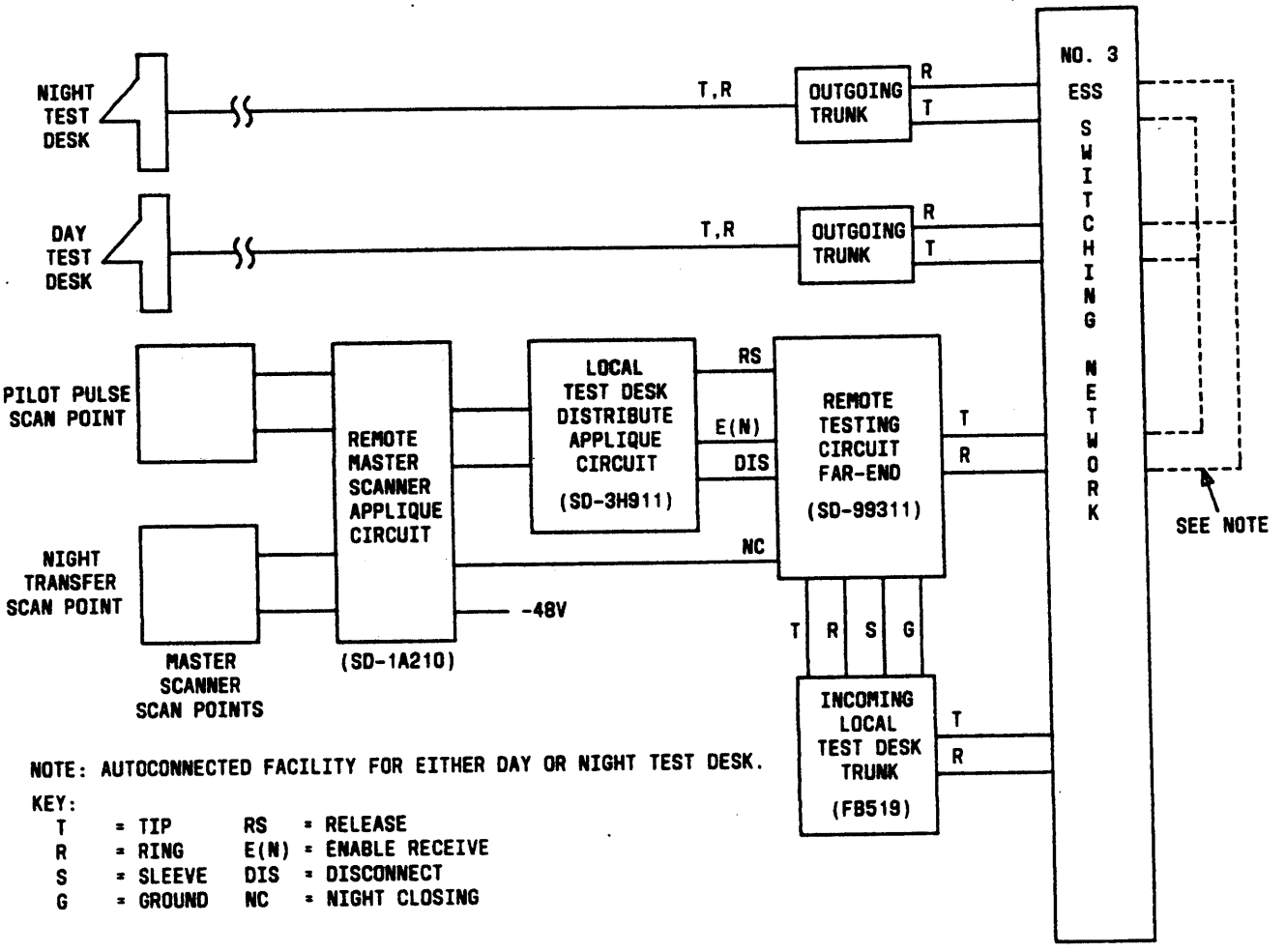
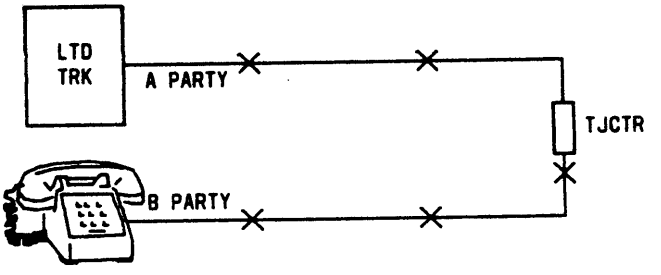


Fig. 7—Remote Nondedicated Day/Nondedicated Night Local Test Desk



NOTE: THE LINE FERROD TEST AND THE TOUCH-TONE TEST USE THE SAME TCR.

Fig. 8—Connections to the Line Under Test for the Line Ferrod Test

circuit before it is automatically disconnected by the SRTH program.

4.20 If the digit sequence 1, 2, 3, ..., 0, is received in numerical order or any other single digit is received (*, #), and the tones are within the proper frequency and amplitude tolerance, the customer and the tester at the LTD hear a success tone: two 500-ms bursts of high tone, separated by 500 ms. If any tone is received in incorrect order or a tone is out of tolerance, a failure tone which consists of a single 500-ms burst of high tone is returned.

4.21 When the tester at the LTD releases the TT key, high resistance negative battery is connected to the test desk and to the sleeve lead. This is recongized by the LTDH program as a test release and the customer line and LTD trunk are disconnected from the station ringer test circuit and reconnected to each other. The tester may repeat the test by so instructing the customer and reoperating the TT key.

Disconnect Request

4.22 Disconnect may be accomplished in one of two ways:

(a) By operating the disconnect key. When this key is operated, low resistance negative battery is connected to the sleeve lead, and tip and ring are opened at the LTD. When this condition is recognized by the LTDH program, the trunk circuit is switched to the idle state, and the network path and the customer line are idled.

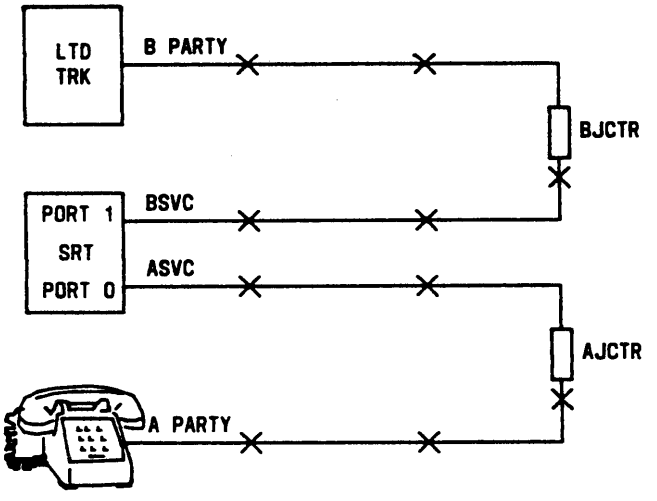
(b) By operating the KP key on the keyshelf. When this key is operated, the same electrical condition of the sleeve lead is maintained; however, tip and ring are not opened at the LTD. Since there is ground on the ring lead at the LTD, the trunk will be seized immediately. In this manner, the maintenance personnel can reoriginate without losing the test trunk connection.

RTC 99311 CONFIGURATIONS

4.23 The RTC 99311 is a one- or two-port device that can have both ports dedicated, one port dedicated and one nondedicated, both ports nondedicated, or use only one port which can be either dedicated or nondedicated. Only one Office Equipment Number (OEN) is needed for a RTC 99311 and that is for a nondedicated arrangement with either one or both ports nondedicated.

Night Transfer Scan Point

4.24 A night transfer scan point is required when a night test desk arrangement is to be used.



NOTE: THE TOUCH-TONE TEST AND THE LINE FERROD TEST USE THE SAME TCR.

Fig. 9—Connections to the Line Under Test for the TOUCH-TONE Test

This scan point must be saturated by operation of the night closing (NC) key at the day center before the night center can be connected to the RTC 99311. The No. 3 ESS can only have one night transfer scan point. This scan point (Figure 10) is a fixed scan point and is designated as LTDNTP in the master scanner. If the No. 3 ESS has two RTC 99311s, only one port of one, but not both, of the RTC 99311s can be designated as a night LTD connection point. When the night transfer scan point is set, either the day center or the night center can seize the RTC 99311. However, the day center must release the NC key before performing any kind of test.

4.25 Optional hardware in the RTC 99311 blocks each port out when the other is in use and returns busy tone (60 ipm) to the blocked port. The RTC 99311 receives 60 ipm from the No. 3 ESS and through the configuration of the night transfer circuitry transmits the 60 ipm through the port that is to be refused. The only place the 60 ipm is actually heard is at the day center when the day center is dedicated and the night center is nondedicated. If the night transfer scan point is not set and the trigger number for the nondedicated night center is dialed, the autoconnect feature will refuse to make the connection because it is defined as being a night center and a night center cannot be connected unless the night transfer scan point is set. When the night transfer scan point is set, the night center can come in via autoconnect. If autoconnect makes the connection and the night center is active, the day center is given 60 ipm through the circuitry of the RTC 99311 if it tries to come in. When both ports are nondedicated, the autoconnect feature routes them to reorder in the No. 3 ESS or refuses to make the connection altogether in the case of the night transfer scan point not being set.

4.26 This night transfer scan point refusal is different than the actual hardware built into the RTC 99311. Normally, a Far End Test Trunk or Line Circuit (SD-99308) is in front of the RTC 99311 (instead of having the autoconnect feature and its associated applique circuits) but is not required for the No. 3 ESS. The tone circuits of the RTC 99311 are not required with autoconnect. This hardware refusal comes into play only if the night center is active. When this occurs, the circuitry of the RTC 99311 puts 60 ipm on the dedicated port that is connected to the day center. Accordingly, if the day center tried to seize the RTC 99311, the tester there would hear 60 ipm. If the night center is not active, then the day center can release the NC key at any time.

AUTOCONNECT

4.27 The No. 3 ESS autoconnect facility provides, via the Autoconnect Port Control (ACPORT) program (PR-3H250-02), a means to obtain a secure switched link to the ESS. The autoconnect is initiated by a user dialing a trigger telephone number that terminates at the ESS. This call is routed to a confirmation tone (high tone) if requested facilities are available or busy tone if the facilities are not available. The calling party must wait for at least 10 seconds of confirmation tone and then go on-hook. If the facilities are available, the ESS calls a prestored return telephone number associated with the dialed trigger number. When the called party answers, a secure connection is made with the No. 3 ESS. If the callback has not occurred within 2 minutes, the autoconnect has failed and the caller must redial the trigger number.

4.28 Local test desk autoconnect is different from a TTY autoconnect in that it is not associated with a TTY controller or an autoconnect line circuit (FB518). To maintain this autoconnect connection, it is necessary for the LTD to automatically generate a pilot pulse (PP) every 60 seconds or whenever a key is operated. If the pilot pulse is not detected by the pilot pulse scan point (Fig. 10) for a period of 2 minutes, the LTDH program causes the connection to be dropped in the same manner as if the disconnect key had been operated. The No. 3 ESS has provisions for two pilot pulse scan points, one for each RTC 99311. These scan points are designated as LTDPP0 and LTDPP1 and should be assigned respectively as scan points 0, 26, 15 and 0, 27, 0. Refer to Section 233-190-033 for details of the autoconnect feature.

CHARACTERISTICS

5. FEATURE ASSIGNMENT

5.01 The Test Desk Arrangements feature is provided on a per-system basis with a maximum of two incoming LTD trunks (SD-3H520, FB519) per system. These trunks can be accessed on a dedicated and/or nondedicated basis.

5.02 This feature is intended for use by maintenance personnel at a centralized repair service

bureau and enables them to test lines in the No. 3 ESS office via a LTD No. 14 or No. 16.

6. LIMITATIONS

6.01 The No. 3 ESS Test Desk Arrangements feature can handle a maximum of two incoming LTD trunk circuits (FB519). Each trunk circuit is independent of the other and can only be assigned to member 0 or 1 of the trunk group to which they are assigned.

6.02 If the trunk circuit is to be accessed by an on-site dedicated facility, no other hardware is required. If the trunk circuit is to be accessed by a remote dedicated facility with a loop resistance less than or equal to 1500 ohms, a test trunk ringing circuit (SD-96474) is required to enable the tester at the LTD to ring the line that is to be tested. If the trunk circuit is to be accessed by remote dedicated/nondedicated facilities with a loop resistance greater than 1500 ohms, a remote test circuit far end (SD-99311) is required.

6.03 The RTC 99311 is a one- or two-port device. The day dedicated and night nondedicated LTD arrangement uses both ports. All other configurations require only one port. The RTC 99311 requires an Office Equipment Number (OEN) assignment only when using a nondedicated arrangement. Use of a nondedicated night center with the day center being either dedicated or nondedicated requires a distributor applique circuit (SD-3H911), a remote master scanner applique circuit (SD-1A210), and two scanner scan points. One scan point is required for the pilot pulse scan point which should be assigned to LTD PP0 0, 26, 15 (trunk group member 0) or to LTD PP1 0, 27, 0 (trunk group member 1). The other scan point is required for a night transfer scan point. ***The night transfer scan point can only be assigned to one RTC 99311 in an office and has the fixed designation and assignment of LTDNTP 0, 20, 4 (refer to Figure 10). This night transfer scan point assignment cannot be assigned to anything else.***

6.04 When a day dedicated/night nondedicated arrangement is provided through the RTC 99311, the NC key at the day center and the night transfer scanpoint must be activated before the night center can be connected. When the night center is connected and active, the day center will be refused access to the RTC 99311. Otherwise, the day center can release the NC key and have access at any time.

6.05 If two RTC 99311s are installed in a No. 3 ESS office and both have nondedicated arrangements, extra hardware is required. Another distributor applique circuit (SD-3H911) and a master scanner scan point (for the pilot pulse scan point) must also be installed.

6.06 The sleeve lead function (SL DTA, SL DTA+1, or SL DTA+2) of the OEN for the RTC 99311, when it is autoconnected, must be correlated with the distribute applique assignments. The sleeve lead DTA must point to the first triplet of the peripheral decoder which drives the distribute point applique used for enabling and disconnecting appliques and pilot pulse detecting.

7. INTERACTIONS

7.01 To provide testing of the No. 3 ESS by a repair service bureau that does not have dedicated facilities to the No. 3 ESS, the autoconnect feature can be used to provide a connection over which test can be performed. Refer to 4.27 and Section 233-190-033 for details.

7.02 The Station Ringer Test (SRTH) program (PR-3H316) and the station ringer test circuit (SD-3H520, FB521) are used when the TOUCH-TONE test is being performed. The station ringer test circuit can be used only 7 minutes before the station ringer test program causes it to be disconnected.

8. RESTRICTION CAPABILITY

8.01 This feature can be restricted by the local operating company by providing only dedicated facilities to the incoming LTD trunks. To provide remote testing by any other repair service bureau, nondedicated facilities via autoconnect would have to be provided.

INCORPORATION INTO SYSTEM

9. COST FACTORS

A. Software

9.01 The trunk group designated for incoming LTD trunks requires two bits (L_T_D, RTE) in the trunk and service circuit group data of the trunk group translator. These two bits are indicated

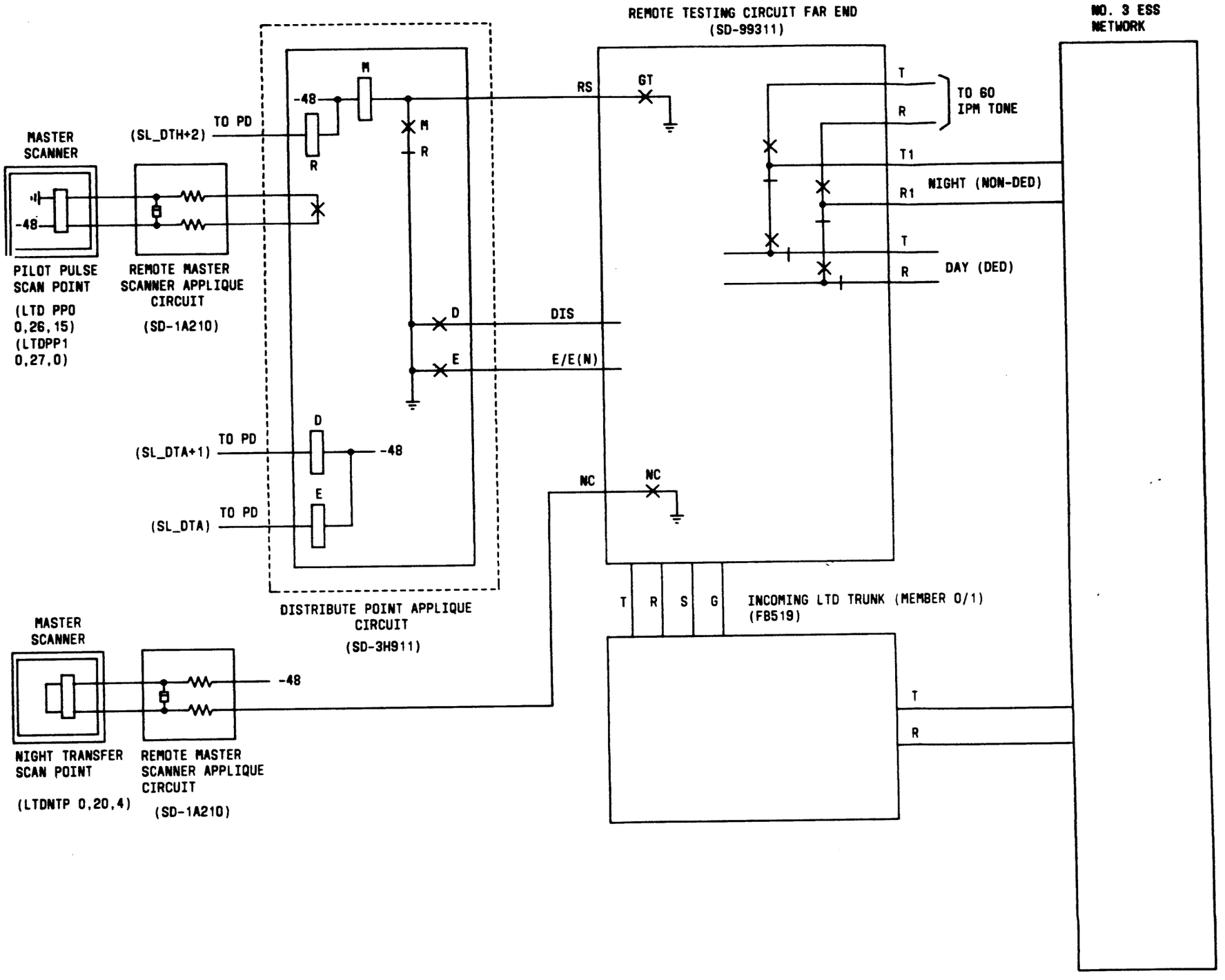


Fig. 10—Pilot Pulse and Night Transfer Scan Point Circuit Connections

in Figure 11. Refer to the No. 3 ESS Data Tables Layout Specification (PA-3H300) for details.

9.02 The Local Test Desk Handler (LTDH) program (PR-3H311) is required only for this feature. Otherwise, standard trunk and line translations are used. The Station Ringer Test (SRTH) program (PR-3H316-02) and, if used, the Autoconnect (ACPORT) program (PR-3H250-02) are used only when needed. The station ringer test program is required only when the TOUCH-TONE test is being performed and the autoconnect program is used when a nondedicated connection is made to the incoming LTD trunk. The autoconnect program will hold the connection up until the local test desk handler program tells it to drop. Refer to Section 233-190-033 for autoconnect software data.

B. HARDWARE

9.03 The minimum hardware required for this feature consists of one each of the following items.

Dedicated Facilities Only

- Remote Test Circuit Far End (SD-99311). This circuit is mounted in the miscellaneous frame and serves as the interface between the LTD and the No. 3 ESS for loops that are beyond 1500 ohms. For offices that are within 1500 ohms of an LTD, a Test Trunk Ringing Circuit (SD-96474) is used instead of an RTC 99311.

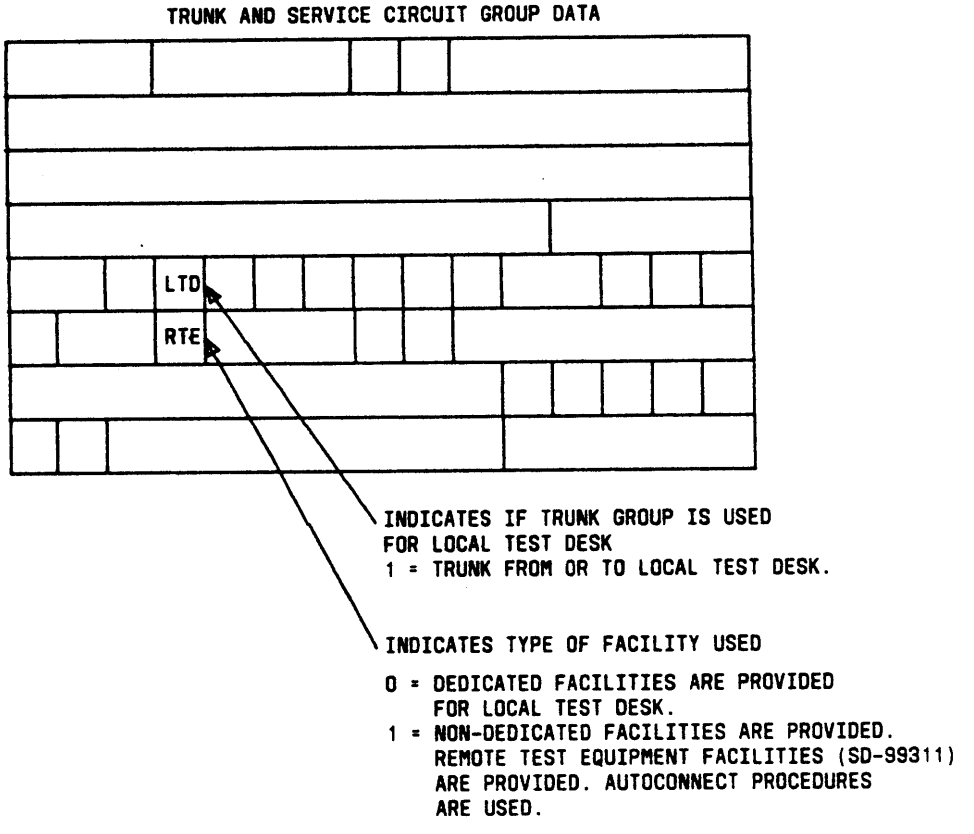


Fig. 11—Trunk Group Data Layout for a Local Test Desk Trunk

- Incoming Local Test Desk Trunk Circuit (SD-3H520, FB519). This circuit is located in the Trunk and Line Test Panel and can only be assigned to member 0 or 1 of the trunk group that is used.

Additional Hardware Required for Nondedicated Facilities

- Distributor Applique Circuit (SD-3H911). This circuit is located in the miscellaneous frame and all four triplets are normally used.

- Remote Master Scanner Applique Circuit (SD-1A210). This circuit is located in the miscellaneous frame and is used to drive the pilot pulse and night transfer master scan points.

- Master Scanner Scan Point. One scan point is required for a pilot pulse scan point and one for a night transfer scan point. The pilot pulse scan points are preassigned (but wiring must be connected at the frame) to LTDPP0 0, 26, 15 and LTDPP1 0, 27, 0 in the master scanner and should be assigned in direct relation to the member number assigned to the incoming LTD trunk. These scan points can be reassigned for other uses but this procedure is not recommended. The night transfer scan point is also preassigned to LTDNTP 0, 20, 4. ***However, this scan point cannot be assigned to anything else and is the only one that can serve as the night transfer scan point (see Figure 10). Only one RTC 99311 can be connected to a nondedicated night center.***

9.04 If two RTC 99311 circuits are required, an additional incoming LTD trunk must be installed. If nondedicated facilities are used, an additional master scanner scan point is required for the pilot pulse detector.

10. DATA ASSIGNMENTS AND RECORDS

10.01 The software for Test Desk Arrangements may be installed through the use of recent change messages. For initial installations or if the changes are too extensive for recent change messages, an ODA run may be used.

10.02 If an ODA run is used to incorporate this feature, the following translation input forms must be completed and sent to the Western Electric Regional Data Center for processing. Refer to the Translation Guide TG-3 for details concerning the completion of these forms.

- ESS 3100—Telephone Number Table
- ESS 3201—Trunk Assignment Table
- ESS 3202-3—Trunk Group Table
- ESS 3204—Trunk Feature Table
- ESS 3303—Route Index Expansion Table
- ESS 3306—Line Class Code Table
- ESS 3500-3, 4—General Information Table.

10.03 The following recent change messages may be used to incorporate this feature.

- RC:CKT/—Used to associate scan points, distributor triplets, and network terminals with the incoming LTD trunk group.
- RC:DP pddd!—Used to define an equipped peripheral decoder.
- RC:GRP/—Used to define the trunk features for a group.
- RC:LCC/—Used to associate an originating major class, a terminating major class, and a screening class with a line class code.
- RC:LINE/—Used to add, change, or remove line information.
- RC:SP/—Used to define, change, or delete a scan point in the master scanner.

Further details about these messages and their use can be found in IM-3H300 and the Recent Change Users Guide. Refer to Section 233-190-033 for those recent change messages required when the autoconnect feature is used in conjunction with this feature.

11. HARDWARE RESTRICTIONS

11.01 Hardware restrictions for this feature consist of the following items:

- The No. 3 ESS office is limited to two incoming LTD trunk circuits (SD-3H520, FB519) because the LTDH program (PR-3H311-02) can only handle two at a time.

- There can only be one night transfer scan point (LTDNTP 0, 20, 4). This scan point is fixed and should not be used for anything else or any other scan point substituted for it.

12. INSTALLATION/ADDITION/DELETION

12.01 The procedures for providing the LTD arrangements feature include making the trunk group assignments through the use of the recent change messages or the ODA run as previously mentioned. Adequate hardware (as described in 9.03) must also be provided. Procedures for determining the required quantities may be found in the Network Design Engineering Practices, 233-060-XXX series. Procedures for the installation of these hardware units may be found in the Installation Engineering Handbook 269 (except for the RTC 99311 which is covered in SD-99311).

13. TESTING

13.01 The trunk(s) associated with the LTD Arrangements feature can be tested at the No. 3 ESS using the maintenance TTY and the Trunk and Test Line Panel. Refer to the No. 3 ESS TOP Maintenance Document, Section 233-142-100 for test procedures.

13.02 For testing of the RTC 99311, refer to installation and test procedures described in SD-99311 and CD-99311.

13.03 Verify the translation information in the No. 3 ESS by entering the appropriate verify messages via the TTY. These messages are as follows:

- VER:GRP—Used to verify trunk group data

- VER:LINE—Used to verify the line origination and terminating translation data

- VER:OE—Used to verify trunk group and member number translations data.

Refer to IM-3H300 for information pertaining to the variable fields of these messages. The OM-3H300 provides the interpretation for the response of these messages.

14. OTHER PLANNING TOPICS

14.01 Consideration should be given to the type of arrangement that would give the best access to the No. 3 ESS office. It is recommended that most offices install a day dedicated/night nondedicated arrangement as this would allow more than two repair service bureaus to access the office and also permit testing if the dedicated facility was inoperative.

ADMINISTRATION

15. MEASUREMENTS

15.01 Standard peg count, usage, overflow, and maintenance busy traffic measurements are available for the circuits associated with the LTD Arrangements feature. The details of these measurements can be found in Section 233-152-135. No other measurements are necessary for this feature.

16. CHARGING

16.01 Charging for this feature is not applicable.

SUPPLEMENTARY INFORMATION

17. GLOSSARY

17.01 The following list identifies abbreviations and terms used in this document which may be unfamiliar to the reader.

- Autoconnect—The autoconnect feature provides a means to obtain a secure switched link to the ESS over nondedicated facilities via a manual or automatic dial-up procedure. The dial-up procedure can be initiated either by the user (manually at a TTY or a LTD) or, when a certain option is specified, by the ESS itself.

- KP (Key Pulse) Key—Operation of this key at a local test desk transfers tip and ring

of the test circuit to the multifrequency keyset circuit and also transfers the sleeve of the test trunk from high resistance to low resistance negative battery to operate a marginal relay in the test trunk.

- LTD (Local Test Desk)—Local test desk, either No. 14 or No. 16, is used by repair service bureau personnel in the testing and maintenance of customer line, cable, and trunk plant in local and distant central office areas.

- MF (Multifrequency) Signaling—A method of sending numerical address information by sending simultaneously a combination of two tones out of a group of six frequencies.

- NC (Night Closing) Key—Operation of this local test desk key provides a means of one test center sharing the remote test equipment of a distant central office with a second test center.

- ODA (Office Data Administration) Run—Mechanism by which software may be changed in the No. 3 ESS. Information from the ODA input forms are inputted into the regional ODA computer, then sent back to the No. 3 ESS.

- OEN (Office Equipment Number)—Terminal location of a line, trunk, or service circuit on the distributing frame.

- OG (Outgoing) Key—Operation of this local test desk key automatically selects the lowest numbered nonbusy trunk in the desired trunk group.

- Pilot Pulse—A tone, sent by the operation of a test key at a local test desk to the remote office equipment, which guards against accidental release of a remote test connection. This signal must be received by the No. 3 ESS at least once every 2 minutes or an autoconnect connection will be torn down.

- PD—Peripheral Decoder

- PRI (Primary) Key—Operation of this local test desk key connects a test trunk to the primary test circuit in the local test desk.

- RTC (Remote Test Circuit)—The circuit at each end of the connecting facility between a local test desk and a distant office. A "near end" RTC transforms local test desk key operations into signals composed of three frequencies. These signals are transmitted to a "far end" RTC at the distant office where they are converted into dc signals. The dc signals then control relays in various test circuits. The test result dc signals are converted to a frequency between 1100 Hz through 1600 Hz and returned to the far end where it is reconverted to a dc signal to activate a voltmilliammeter.

- S (Sender) Lamp—This local test desk lamp lights to indicate a sender is attached and MF pulsing can begin.

- SEC (Secondary) Key—Operation of this local test desk key connects a test trunk to the secondary test circuit in the local test desk.

- SP (Supervisory) Lamp—This local test desk lamp monitors a test trunk connection which has been seized by the local test desk but is not connected to a test circuit.

- T (Talk) Key—Operation of this local test desk key completes the talking path from the position telephone circuit to the test circuit.

- 3WO (Third Wire Open) Key—Operation of this local test desk key disconnects battery from the sleeve of the test circuit. A function of the 3WO key is to release the cutoff relay.

- TT (TOUCH-TONE Test) Key—Operation of this local test desk key connects a customer

line to a test circuit for the purpose of testing the station TOUCH-TONE dial.

- TTY—Teletypewriter
- Wink—A brief off-hook signal sent from the incoming local test desk trunk in the No. 3 ESS to the local test desk to indicate that the No. 3 ESS is ready to receive the called party telephone number.

18. REFERENCES

18.01 The following is a list of documents which may be consulted for further information related to this feature.

PR-3H311—Local Test Desk Handler Program (LTDH)

- PR-3H250—Autoconnect Port Control Program (ACPORT)
- PR-3H316—Station Ringer Test Program (SRTH)
- Section 662-517-500—Local Test Desk Test Procedures No. 3 ESS
- Section 233-152-135—Traffic and Plant Measurements No. 3 ESS
- Section 662-410-500—Local Test Desk—16-Type Operation and Test Procedure
- Section 662-400-500—Local Test Desk—14-Type Operation and Test Procedure
- Section233-190-033—AutoconnectArrangements No. 3 ESS
- Section 233-142-100—TOP Maintenance Document No. 3 ESS
- TG-3 Translation Guide
- Network Design Engineering Practices, 233-060-XXX Series (formerly Traffic Facilities Practices, Division D, Section 13)
- IM-3H300—Input Message Manual No. 3 ESS
- OM-3H300—Output Message Manual No. 3 ESS
- PA-3H300—Office Data Tables Layout Specification No. 3 ESS
- Installation Engineering Handbook 269
- CD and SD-99311—Common Systems Remote Testing Circuit—Far End
- SD-3H520, FB519—Incoming Local Test Desk Trunk Circuit
- SD-3H520, FB521—Station Ringer Test Circuit
- SD-96474—Test Trunk Ringing Circuit
- SD-99308—Far End Test Trunk or Line Circuit

LOCAL TEST DESK ARRANGEMENTS
NO. 3 ELECTRONIC SWITCHING SYSTEM

Comments concerning content, usability, and adequacy of this feature document will be welcomed. This sheet may be removed and mailed directly to Bell System Practices Organization.

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