

LINE FINDERS

LINE TESTS USING INDIVIDUAL MESSAGE RATE TYPE TEST SET

ES-30417-01 (X-61351), SD-31246-01 (J34703A), OR SD-31524-01 (J34718A)

STEP-BY-STEP SYSTEMS

1. GENERAL

1.01 This section describes a method of testing the line circuit and the line finder equipment from any particular line finder terminal using the individual message rate type test set, ES-30417-01, SD-31246-01, or SD-31524-01.

1.02 This section is reissued to incorporate material from the addendum in its proper location. In this process marginal arrows have been omitted.

1.03 The tests covered are:

A. Line Finder Line Test - Flat Rate:

This test checks the operating features of the line circuit and line finders from any particular terminal in a flat-rate line group and provides a means of making a call through test from this particular terminal.

B. Line Finder Line Test - Coin: This test checks the operating features of the line circuit and line finders from any particular terminal in a coin line group and provides a means of making a call through test from this particular terminal.

C. Line Finder Line Test - Message Rate: This test checks the operating features of the line circuit and line finders from any particular terminal in a message rate line group and provides a means of making a call through test from this particular terminal.

D. Line Finder Line Test - Lines Modified for PBX Service: This test checks the operating features of the line circuit and line finders from any particular terminal modified for PBX service and provides a means of making a call through test from this particular terminal.

E. Line Finder Alternating Arrangement Test: This test checks that successive calls are served by alternate finders by transfer of the start lead ground.

1.04 These tests are intended primarily for use in connection with operator or subscriber reports involving originating service.

1.05 Test C applies to lines associated with message rate groups. If for any reason during the dialing or following the completion of dialing, a circuit condition is encountered that causes operation of the line message register, a record of register operations shall be forwarded in accordance with local instructions for the purpose of correcting register records.

1.06 These tests are made from the line finder bank terminal strip.

1.07 These tests should preferably be made during periods of light traffic, so as not to result in enough line finders being taken out of service to cause call blocking conditions.

1.08 The test equipment specified in this section is designed to apply proper marginal tests (simulated critical circuit conditions) when the circuit under test and the test equipment have an applied voltage of 48.5 to 50. In those offices where power plants are normally operated at more than 50 volts, the battery voltage should be reduced and maintained within the required limits while the tests are being made.

1.09 Lettered Steps: The letters a, b, c, etc, are added to a step number to indicate that the steps cover an action which may or may not be required, depending on local conditions. The conditions under which a lettered step or series of steps should be made are given in the action column, and all steps governed by the same condition are designated by the same letter. Where a condition does not apply, the associated step should be omitted.

2. APPARATUS

All Tests

2.01 Line finder test set, X-61351 (ES-30417-01), J34703A (SD-31246-01), or J34718A (SD-31524-01).

2.02 Head telephone set (associated with test set).

2.03 P3K cord, 12 feet long, equipped with two No. 310 plugs (3P15A cord) (for use where battery supply jack is available).

SECTION 226-200-510

2.04 W2M cord, 9 feet long, equipped with a No. 310 plug and two No. 59 cord tips (2W12A cord). For use where battery supply jack is not available.

2.05 W3A cord, 12 feet long (or equivalent), equipped with three KS-6780 connecting clips with three No. 108 cord tips and a No. 310 plug (3W3A cord), for use where line finder bank terminal strip is equipped with soldered wire terminals.

2.06 W3M cord, 15 feet long, equipped with a No. 310 plug and three No. 360 type tools (3W4B cord). In addition three No. 624B (terminal connector) tools are required; for use where line finder bank

terminal strip is equipped with wrapped wire terminals.

2.07 No. 258C (dummy) plugs, as required.

Tests D and E

2.08 Testing cord to be made up locally, as shown in Fig. 1.

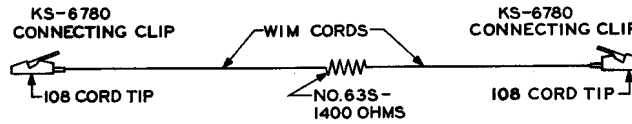


Fig. 1

3. PREPARATION

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
-------------	---------------	---------------------

All Tests

- 1a If battery supply jack is available - Connect test set BAT G (or BAT) jack to 48-V battery supply jack on line finder frame using P3K cord

Note: To avoid possible grounding of battery supply lead, connect cord to test set first and, when disconnecting, remove cord from test set last.

- 2b If battery supply jack is not available - Insert No. 310 plug of W2M cord into BAT G jack

- 3b Connect red (sleeve) conductor of W2M cord to frame ground, white (tip) conductor to equipment side of a convenient fuse (not over 3 amperes)

Note: When disconnecting, remove cord from test set last.

- 4 Connect head telephone set to test set TEL jacks

Note: The TRS key, where provided, shall be left in a normal position except when it is necessary to talk over the line under test. The TCO key, where provided (as in ES-30417-01), shall be operated and left in an un-operated position, except when it is necessary to talk over the line under test.

- 5 Insert plug of W3A or W3M cord into PL jack of test set, connect white (tip), blue or black (ring), and red (sleeve) conductors of cord to tip, ring and sleeve terminals, respectively, of the line under test at bank terminal strip (in Test E, the line under test should be a line associated with any two idle alternating line finders in a subgroup such as 1 and 11, 3 and 13, etc)

BY lamp not lighted

Note: If lamp is lighted, it indicates line under test is busy.

3. PREPARATION

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
<u>Tests D and E</u>		
6	Connect KS-6780 clip of special test cord shown in Fig. 1, to ground at line finder frame	

4. METHOD

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
<u>A. Line Finder Test - Flat Rate</u>		
6c	If testing flat-rate lines - Operate LP key	First choice line finder operates smoothly - Stops on terminals of line used in test Dial tone heard R lamp not lighted <u>Note:</u> If first choice line finder of line under test is busy, the next idle line finder in proper sequence is selected and stops on terminals of line under test.
7d	If testing in line finder group used for concentrating manual lines - Operate LP key	First choice line finder operates smoothly - Stops on terminals of line used in test Ringing induction heard in most cases Operator answers <u>Note:</u> If first choice line finder of line under test is busy, the next idle line finder in proper sequence is selected and stops on terminals of line under test.
8d	Request operator to disconnect when disconnect signal is received, then proceed to Step 10	
9	Dial connector multiple test line in reverse battery group	Test line seized Ringing tripped R lamp lighted during test line loop closures <u>Note:</u> If tripping does not occur during first or second ringing interval, remain on the connection for a short time and if a subscriber or operator answers, operate TRS key and advise that a test is being made. However, when using test set ES-30417-01 provided with a TCO key, the LP key should be restored to release the connection.
10	Restore LP key	Line finder releases
11	Make line finder just tested busy in approved manner	
12	Proceed as in Steps 6c through 11 on as many choices of finders as judged necessary	

SECTION 226-200-510

<u>STEP</u>	<u>ACTION</u>	<u>VERTIFICATION</u>
13	When tests are completed - Restore busied line finders to service	
<u>B. Line Finder Line Test - Coin</u>		
<u>Loop Start Operation - 5-cent Initial Deposit</u>		
6	Operate LP key	First choice line finder operates smoothly - Stops on terminals of line used in test <u>Note:</u> If first choice line finder of line used in test is busy, next idle line finder in proper sequence is selected and stops on terminals of line used in test.
7	Operate C key momentarily	Dial tone heard R lamp not lighted <u>Note:</u> Dial tone may or may not be heard before operating C key, depending on whether the coin trunks are arranged for dial tone before or after deposit of coin.
8	Proceed to Step 12	
<u>Ground Start Operation - 10-cent Initial Deposit</u>		
9	Operate LP key	
10	Operate, hold C key until dial tone is heard	First choice line finder operates smoothly - Stops on terminals of line used in test Dial tone heard R lamp not lighted <u>Note:</u> If first choice line finder of line used in test is busy, next idle line finder in proper sequence is selected and stops on terminals of line used in tests.
11	Dial connector multiple test line in reverse battery group	Test line seized Ringing tripped R lamp not lighted Tone heard during test line loop closures <u>Note:</u> If tripping does not occur during first or second ringing interval, operate the TRS key and remain on the connection for a short time and if the call is answered, advise that a test is being made. However, when using test set ES-30417-01 provided with a TCO key, the LP key should be restored to release the connection.
12	Restore LP key	Line finder releases
13	Make line finder just tested busy in approved manner	

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
14	Repeat Steps 6 through 8 or 9 through 13 on as many choices of finders as judged necessary	
15	When tests are completed - Restore busied line finders to service	
<u>C. Line Finder Line Test - Message Rate</u>		
6	Operate LP key	First choice line finder operates smoothly - Stops on terminals of line used in test Dial tone heard R lamp not lighted <u>Note:</u> If first choice line finder of line used in test is busy, the next idle line finder in proper sequence is selected and stops on terminals of line under test.
7	Dial nonreversing number such as code for test desk or operator	Testman or operator answers R lamp not lighted <u>Note:</u> If for any reason a reversal is encountered, such as reaching a subscriber in a reverse battery connector group which causes the line message register to operate, a record of the register operations shall be forwarded in accordance with local instructions for the purpose of correcting register records.
8	Operate TRS key (or restore TCO key) Advise that test is being made	
9	Restore LP key	Line finder releases
10	Make line finder just tested busy in approved manner	
11	Proceed as in Steps 6 through 10 on as many choices of finders as judged necessary	
12	When tests are completed - Restore busied line finders to service	
<u>D. Line Finder Line Test - Lines Modified for PBX Service</u>		
7	Operate LP key	
8	At line finder bank terminal strip - Hold clip of special cord (Fig. 1) against ring terminal of line used in test	First choice line finder operates smoothly - Stops on terminals of line used in test
9	Remove clip from ring terminal	Dial tone heard R lamp not lighted <u>Note:</u> If first choice line finder of line used in test is busy, next idle line finder in proper sequence is selected and stops on terminals of line used in test.

SECTION 226-200-510

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
10	Dial connector multiple test line in reverse battery group	Test line seized Ringing tripped R lamp lighted during test line loop closures <u>Note:</u> If tripping does not occur during first or second ringing interval, operate the TRS key and remain on the connection for a short time and if a subscriber or operator answers, advise that a test is being made. However, when using test set ES-30417-01 provided with a TCO key, the LP key shall be restored to release the connection.
11	Release LP key	Line finder releases
12	Make line finder just tested busy in approved manner	
13	Proceed as in Steps 7 through 12 on as many choices of finders as judged necessary	
14	When tests are completed - Restore busied line finders to service	

E. Line Finder Alternating Arrangement Test

7	Operate LP key <u>Note:</u> Where testing coin lines arranged for ground start or lines modified for PBX service, it will be necessary to hold the clip of the special cord (Fig. 1) against the ring terminal of the line used for test, until the line finder stops on the bank terminals of this line.	One line finder in subgroup operates smoothly - Stops on terminal of line used in test <u>Note:</u> The No. 1 finder or the first finder in any subgroup may not be seized first, depending on which start lead was used last.
8	Restore LP key	Line finder releases
9	Reoperate LP key, repeat note, Step 7 where necessary	Other line finder in same subgroup operates smoothly - Stops on terminal of line used in test
10	Restore LP key	Line finder releases
11	Repeat Steps 7 through 10 on as many alternating line finders as judged necessary	
12	When tests are completed - Remove all test cords and test equipment	