

**TRUNK TRANSMISSION TESTS**  
**CIRCUITS TERMINATED ON LINE LINK FRAME**  
**USING MASTER TEST FRAME**  
**NO. 5 CROSSBAR OFFICES**

**1. GENERAL**

**PAGE**

**1.01** This section describes the method of making transmission measurements on intercept trunks to switchboards or traffic operating desks, intercept trunks to automatic call distributor (ACD), line circuits to automatic intercept center (AIC), line link pulsing (LLP) line circuits to PBXs and centralized attendant in No. 5 crossbar offices using the master test control circuit SD-25800-01. This section also describes the method of assisting with transmission measurements including loss, message circuit noise, impulse noise, and peak-to-average ratio (P/AR). For the method of making transmission measurements on circuits terminated on trunk link frames, refer to Section 218-246-501.

**1.02** The reasons for reissuing this section are listed below. Revision arrows are used to emphasize the more significant changes. Equipment Test Lists are not affected.

- (a) To revise Tests A, B, D, AA through AC.
- (b) To add paragraphs 1.21 through 1.23.
- (c) To make minor revisions as required.

**1.03** The tests covered are:

|  | <b>PAGE</b> |
|--|-------------|
| <b>A. One-Way 1004-Hz Loss Measurement to 102-Type Test Line.</b> . . . . .  | 10          |
| <b>B. Message Circuit Noise Measurement to 100-Type Test Line.</b> . . . . . | 13          |

|   |    |
|---|----|
| <b>C. Impulse Noise Measurement to 100-Type Test Line.</b> . . . . .                        | 16 |
| <b>D. Two-Way 1004-Hz Loss Measurement and Noise Check to 104-Type Test Line.</b> . . . . . | 17 |

*Note: Tests E Through Z Reserved.*

**ORIGINATING END PROCEDURES**

|   |    |
|---|----|
| <b>AA. One-Way or Two-Way 1004-Hz Loss Measurement to 101-Type Test Line, ACD Offices, AIC, Switchboards, or Traffic Operating Desks.</b> . . . . . | 22 |
| <b>AB. Two-Way Frequency Response Measurement of 101-Type Test Line, ACD Offices, AIC, Switchboards, or Traffic Operating Desks.</b> . . . . .      | 26 |
| <b>AC. Message Circuit Noise Measurement to 101-Type Test Line, ACD Offices, AIC, Switchboards, or Traffic Operating Desks.</b> . . . . .           | 31 |
| <b>AD. Impulse Noise Measurement to 101-Type Test Line, Switchboards, or Traffic Operating Desks.</b> . . . . .                                     | 35 |
| <b>AE. Two-Way P/AR Measurement to 101-Type Test Line, Switchboards, or Traffic Operating Desks.</b> . . . . .                                      | 37 |

**NOTICE**

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

PAGE

*Note: Tests AF Through AZ Reserved*

TERMINATING END PROCEDURES

**BA. Two-Way 1004-Hz Loss Measurement to 101-Type Test Line. . . . . 39**

**BB. Two-Way Frequency Response Measurement to 101-Type Test Line. . . . . 40**

**BC. Message Circuit Noise Measurement to 101-Type Test Line. . . . . 44**

**BD. Impulse Noise Measurement to 101-Type Test Line. . . . . 45**

**BE. Two-Way P/AR Measurement to 101-Type Test Line. . . . . 47**

*Note: Tests BF Through BZ Reserved.*

**1.04** The tests and procedures in this section are identified by a special designation plan. Single test letters A through Z are reserved for tests which require no assistance at the terminating end. Double test letters AA through AZ are reserved for near-end-originated tests that require assistance at the far end. Double test letters BA through BZ are reserved for the assistance required on incoming tests to this office. The second letter of double-lettered tests and procedures identify companion procedures and tests as shown in Table A. The tests and procedures for the far-end offices are given in the trunk transmission sections covering the particular type of far-end office involved.

TABLE A

| NEAR-END TEST | CORRESPONDING FAR-END PROCEDURE |
|---------------|---------------------------------|
| AA            | BA                              |
| AB            | BB                              |
| ++            | ++                              |
| AZ            | BZ                              |

**1.05** Transmission requirements for trunks and line circuits are given on circuit layout cards, in local trunk records, or in appropriate sections of Bell System Practices.

**1.06** General information and requirements for trunk transmission testing can be found in Division 660. (See Section 660-000-000.)

**1.07** When testing intercept trunks *not* equipped with line test (LT) relays, the test connection must be set up through an intraoffice trunk. The intraoffice trunk to be used for the test must be measured first and this measurement recorded. Refer to the section for trunk transmission tests for circuits terminated on trunk link frames in No. 5 crossbar offices.

**1.08** In each test, the transmission loss indicated by the transmission measuring set (TMS) meter includes the loss of the connecting circuits used to complete the test connection.

**1.09** The transmission loss indicated by the TMS meter is the actual measured loss (AML) in dB of the circuit under test and is made under the same conditions as the expected measured loss (EML) was computed. (Refer to paragraph 1.07.)

**1.10** The results of these tests should be entered on the appropriate form.

**1.11** Precautions should be taken when performing these tests so that normal traffic will not be adversely affected.

**1.12** For Tests AB and BB, caution should be taken, when using a continuously variable oscillator, not to sweep through 2400- or 2600-Hz on a trunk that uses a single frequency signaling unit.

**1.13** Using order wire or DDD network, a talking path can be established between originating and terminating locations as required.

**1.14** After the trunk or line circuit under test has been connected to a distant 101-type test line, Tests AA through AE can be performed on the same trunk or line circuit without releasing it from the test line.

1.15 If so directed by the distant originating end, Tests BA through BE can be performed on the trunk under test before releasing it.

1.16 SD-REC1, TMS1, TO, TR, TS, LP, TMS2, and REC2 keys on the test termination circuit (TTC) are in the normal position when the white line on each key is vertical.

1.17 **Lettered Steps:** A letter a, b, c, etc, added to a step number in Parts 3 and 4 of this section indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

1.18 The manner of selecting some circuits and test conditions at the master test frame (MTF) and its associated circuits varies depending on the apparatus options furnished with these circuits. Therefore, where variable means of selection are provided, precise instructions for the selection of circuits and test conditions are not given. Precise instructions for the use of these variable means are given in Section 218-106-301.

1.19 The location statement, At MTF—, is used to refer to all apparatus located on the four basic bays of the MTF.

1.20 The statement between asterisks (\* \_\_ \*) is added after action statements to clarify the readings obtained in the test procedures of Part 4.

1.21 ♦When the office is arranged for ETS, the distributors and scanners associated with the marker and trunk used in the test call must be in service or in a **maintenance-busy** condition - not in an **out-of-service** condition. To change a scanner or distributor from an **out-of-service** to a **maintenance-busy** condition, use the procedure given in Section 218-799-701 - Taking ETS Equipment Out-of-Service.

1.22 When the trunk under test is arranged for ETS, the first completed test call from the MTF will cause the TST bit to be set in the trunk register associated with the selected trunk, enabling

trunk supervisory scanning to be repeated on the FT, CS, and S1 lamps at the MTF trunk test circuit. As long as the TST bit is set in the trunk register, supervision will continue to be repeated on the lamps, even on service calls. The TST bit will remain set in the trunk register until (1) a test call is made from the MTF to another trunk, or (2) the command **STOP:TRK TST** is entered at the maintenance TTY.

1.23 On Issue 76D of SD-25800-01, a group of 18 "class of test" lamps was replaced by a single "start test" lamp designated STT. Since the designation given to the lamp is not specific, the lamp will not be called out in the section, as well as the 18 discontinued lamps, such as DT, ORIG, ITDO, ITNP, OGT, etc.♦

## 2. APPARATUS

2.01 The apparatus required for each test is listed in Table B. The details of each item are covered in the paragraph indicated by the number in parentheses. The calibration and operating procedure for each test set may be found in the section listed with each test set.

♦**Note 1: If another type of measuring set is used in lieu of the recommended set, it should be ascertained that its accuracy is as good or better than that recommended. If another type of set is used, reference should be made to the manufacturer's instruction manual for operating and calibrating procedures pertaining to the set.**♦

2.02 Master test control circuit, SD-25800-01.

2.03 Trunk test circuit, SD-25918-01.

2.04 Jack, lamp, and key circuit, SD-25762-01.

2.05 Voltmeter test circuit, SD-25792-01.

2.06 Telephone, key, and lamp circuit, SD-25744-01.

2.07 Test termination circuit (TTC), SD-96540-01.

2.08 Transmission and noise measuring circuit (TNM), SD-95900-01 (Section 103-231-500).

2.09 23A, 23B, 23C, or 23D transmission measuring set (TMS) J94023A, or J94023D (Section

TABLE B

| APPARATUS                                       | TESTS |    |   |   |    |    |    |    |    |    |    |    |    |    |  |
|---|-------|----|---|---|----|----|----|----|----|----|----|----|----|----|--|
|   | A     | B  | C | D | AA | AB | AC | AD | AE | BA | BB | BC | BD | BE |  |
| Test Circuit (2.02)                             | 1     | 1  | 1 | 1 | 1  | 1  | 1  | 1  | 1  |    |    |    |    |    |  |
| Test Circuit (2.03)                             | 1     | 1  | 1 | 1 | 1  | 1  | 1  | 1  | 1  |    |    |    |    |    |  |
| Test Circuit (2.04)                             | 1     | 1  | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |  |
| Test Circuit (2.05)                             | 1     | 1  | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |  |
| Test Circuit (2.06)                             | 1     | 1  |   | 1 | 1  | 1  | 1  |    |    |    |    |    |    |    |  |
| Test Circuit (2.07)                             | 1     | 1  |   | 1 | 1  | 1  | 1  |    |    |    |    |    |    |    |  |
| Transmission and Noise Measuring Circuit (2.08) | 1     | 1  |   | 1 | 1  | 1  | 1  |    |    | 1  | 1  | 1  |    |    |  |
| Transmission Measuring Set (2.09)               | 1     |    |   | 1 | 1  | 1  |    |    |    | 1  | 1  |    |    |    |  |
| Noise Measuring Set (2.10)                      |       | 1  |   |   |    |    | 1  |    |    |    |    | 1  |    |    |  |
| Impulse Counter (2.11)                          |       |    | 1 |   |    |    |    | 1  |    |    |    |    | 1  |    |  |
| Oscillator (2.12)                               |       |    |   |   |    | 1  |    |    |    |    | 1  |    |    |    |  |
| P/AR Meter Generator (2.13)                     |       |    |   |   |    |    |    |    | 1  |    |    |    |    | 1  |  |
| P/AR Meter Receiver (2.14)                      |       |    |   |   |    |    |    |    | 1  |    |    |    |    | 1  |  |
| Cord (2.15)                                     | 2     | 2  | 1 | 2 | 3  | 3  | 2  | 2  | 1  | 3  | 3  | 2  | 1  | 1  |  |
| Cord (2.16)                                     | 1     | *1 |   | 1 | 1  | 2  | *1 |    | 1  | 1  | 2  | *1 |    | 1  |  |
| Cord (2.17)                                     |       |    | 1 |   |    |    |    | 1  |    |    |    |    | 1  |    |  |
| Cord (2.18)                                     |       |    |   |   |    |    |    |    | 1  |    |    |    |    | 1  |  |
| Cord (2.19)                                     |       | †1 |   |   |    |    | †1 |    |    |    |    | †1 |    |    |  |
| Cord (2.20)                                     |       | 1  |   |   |    |    | 1  |    |    |    |    | 1  |    |    |  |
| Test Receiver (2.21)                            | 1     | 1  | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |  |

\* Required when using 3C NMS.

† Required when using 3A NMS.

103-223-100), J94023B, or J94023C (Section 103-223-101) or equivalent.⚡

2.10 3A or 3C noise measuring set (NMS) (Section 103-611-100 or Section 100-611-101) or equivalent, equipped with C-message weighting network.⚡

2.11 6H impulse counter (IC) J94006H (Section 103-620-101) or equivalent equipped with the C-notched weighting filter.⚡

2.12 KS-19353 L1, KS-19353 L4, or KS-19260 L1 oscillator (Section 103-302-105, 103-302-106, or 103-302-100) or equivalent.⚡

**Note:** The KS-19353 L1 oscillator should be adjusted to desired output level before using and after each change in frequency.

2.13 P/AR meter generator (P/AR GEN) J94027A or J94027E (Section 103-110-110) or equivalent.⚡

2.14 P/AR meter receiver (P/AR RCVR) J94027B (Section 103-110-110) or equivalent.⚡

2.15 Patching cord, P3E cord, 3 feet long, equipped with two 310 plugs (3P7B cord).

2.16 Patching cord, P3E cord, 6 feet long, equipped with two 310 plugs (3P7A cord).

2.17 Patching cord, P2B cord, 6 feet long, equipped with two 310 plugs (2P4C cord).

2.18 Patching cord, W2BS cord, 5 feet long, equipped with one 310 plug (2W33A cord).

2.19 Patching cord, P2AE cord, 4 feet long, equipped with one 310 plug and one 289B plug (2P16A cord).

2.20 Patching cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord) and two KS-6278 connecting clips.

2.21 716D test receiver, equipped with a 310 plug.

### 3. PREPARATION

#### STEP

#### ACTION

#### VERIFICATION

**Note:** All test equipment shall be known to be correctly calibrated.

#### Tests A Through D, AA Through AE

- |   |  |                         |
|---|--|-------------------------|
| 1 | At MTF—<br>Restore all keys and switches.  |                         |
| 2 | Momentarily operate RL key.                | All lamps extinguished. |
| 3 | Connect test receiver to RCVR jack on TTC. |                         |

#### PBX Line Circuits (LLP)

- |   |   |  |
|---|---|--|
| 4 | Select MISC class of test.                              |  |
| 5 | Select completing marker.                               |  |
| 6 | Select INC class of call with LT translator indication. |  |

**SECTION 218-246-502**

| <b>STEP</b> | <b>ACTION</b>   | <b>VERIFICATION</b> |
|-------------|---|---------------------|
| 7           | Operate NGT, NG_ keys for all but selected number group frame when line circuit group is allotted.                              |                     |
| 8           | Set TBT, TBU switches as required to select tens block within the line circuit group for access to the line circuit under test. |                     |
| 9           | Select line in tens block under test.   |                     |
| 10          | Operate LLPT, PBXH, TLK, KY keys.   |                     |
| 11a         | If E and M supervision is provided—<br>Operate E-M key.   |                     |
| 12          | Patch TRK1 jack on TTC to TM1 jack on jack, lamp, and key circuit, using 3-foot long P3E cord.                                  |                     |

**Centralized Attendant Line Circuit (Phase III Centrex)**

|     |   |  |
|-----|---|--|
| 13  | Select MISC class of test.  |  |
| 14  | Select completing marker.   |  |
| 15  | Select INC class of call with X11 translator indication.  |  |
| 16  | Operate NGT, NG_ keys for all but selected number group frame when line circuit group is allotted.                              |  |
| 17  | Set TBT, TBU switches as required to select tens block within the line circuit group for access to the line circuit under test. |  |
| 18  | Select line in tens block under test.   |  |
| 19  | Operate LLPT, PBXH, CATN, DL3, TLK, KY keys.  |  |
| 20  | Select class of service and rate treatment as required for access to selected line circuit.                                     |  |
| 21a | If E and M supervision is provided—<br>Operate E-M, LRR keys.   |  |
| 22  | Patch TRK1 jack on TTC to TM1 jack on jack, lamp, and key circuit, using 3-foot long P3E cord.                                  |  |

| STEP | ACTION | VERIFICATION |
|------|--------|--------------|
|------|--------|--------------|

**Tests A, B, D, AA Through AC**

**AIC Line Circuits (Standard Version)**

- |     |   |  |
|-----|---|--|
| 23  | Select MISC class of test.  |  |
| 24  | Select completing marker.   |  |
| 25  | Select INC class of call with OA or OB translator indication as required.   |  |
| 26  | Operate NGT, NG_ keys for all but selected number group frame when line circuit group is allotted.                              |  |
| 27  | Set TBT, TBU switches as required to select tens block within the line circuit group for access to the line circuit under test. |  |
| 28  | Select the line in tens block under test.   |  |
| 29  | Operate DL4, LLPT, PBXH, TLK, KY keys.  |  |
| 30a | If E and M supervision is provided—<br>Operate E-M key.   |  |
| 31  | Patch TRK1 jack on TTC to TM1 jack on jack, lamp, and key circuit, using 3-foot long P3E cord.                                  |  |

**AIC line Circuits (A & M Version)**

- |     |  |  |
|-----|--|--|
| 32  | Select LT class of test.   |  |
| 33  | Select marker 0 or 1.  |  |
| 34  | Select INC class of call with OA translator indication.  |  |
| 35  | Set AIL switch for access to line circuit under test.  |  |
| 36  | Operate AIRI, DL4, SIL, LTNO, TLK keys.  |  |
| 37a | If E and M supervision is provided—<br>Operate E-M key.  |  |
| 38  | Patch TRK1 jack on TTC to TM1 jack on jack, lamp, and key circuit, using 3-foot long P3E cord. |  |

SECTION 218-246-502

| STEP  | ACTION  | VERIFICATION |
|---|---|--------------|
| <b>Intercept Trunks Terminated in ACD Office</b><br>Refer to paragraph 1.07 |   |              |
| 39b   | If trunk under test is <i>not</i> equipped with a LT relay—<br>Select MISC class of test.   |              |
| 40b   | Select completing marker.   |              |
| 41b   | Select intraoffice trunk to be used for test.   |              |
| 42b   | Operate FS, TS, TLK, KY keys.   |              |
| 43b   | Operate GPA/GPB key as required for selected group when trunk is in an allotted subgroup.   |              |
| 44b   | Select A_ through G_ digits for line number of intercept trunk under test.<br><br><b>Note:</b> If intercept trunk has two line link frame appearances, select appearance No. 1. |              |
| 45b   | Select route advance as required for access to selected trunk.  |              |
| 46b   | Select class of service and rate treatment as required for access to selected route.  |              |
| 47b   | Operate TTC16 key to ON.  |              |
| 48b   | Insert make-busy plug into MMB jack associated with marker selected in Step 40b.  |              |
| 49b   | At marker—<br>Block nonoperated all SA_ relays except SA_ numbered relay corresponding to units digit of line selected in Step 44b.   |              |
| 50b   | At MTF—<br>Patch TRK1 jack on TTC to TM1 jack on jack, lamp, and key circuit, using 3-foot long P3E cord.   |              |
| 51c   | ◆If ETS provided—<br>Operate PCS, PTS keys.◆  |              |
| 52d   | If trunk under test is <i>not</i> equipped with a LT relay and SF signaling is provided—<br>Operate ACDC key.   |              |

| STEP | ACTION  | VERIFICATION     |
|------|---|------------------|
| 53e  | If trunk under test is equipped with a LT relay—<br>Select LT class of test.                                  |                  |
| 54e  | Select marker 0 or 1.   |                  |
| 55e  | Select A_ through D_ digits for line number assigned for first appearance of selected trunk under test.       |                  |
| 56e  | Select office designation of selected trunk.  |                  |
| 57e  | Operate T, IT keys.   |                  |
| 58e  | Operate TTC16 key to ON.  |                  |
| 59e  | Patch TRK1 jack on TTC to TM1 jack on jack, lamp, and key circuit, using 3-foot long P3E cord.                |                  |
| 60f  | If trunk under test is equipped with a LT relay and SF signaling is provided—<br>Operate ITDT key.            | RT lamp lighted. |
| 61g  | If trunk under test is equipped with a LT relay and SF signaling is <i>not</i> provided—<br>Operate ITND key. | RT lamp lighted. |

**Intercept Trunks *Not* Terminated in ACD Office**  
Refer to paragraph 1.07.

|     |   |  |
|-----|---|--|
| 62  | Select MISC class of test.  |  |
| 63  | Select completing marker.   |  |
| 64  | Select intraoffice trunk to be used for test.   |  |
| 65  | Operate FS, TS, TLK, KY keys.   |  |
| 66c | ◆If ETS provided—<br>Operate PCS, PTS keys.◆  |  |
| 67  | Operate GPA/GPB key as required for selected group when trunk is in an allotted subgroup. |  |
| 68  | Select A_ through G_ digits for line number of intercept trunk under test.                |  |

**Note:** If intercept trunk has two line link frame appearances, select appearance No. 1.

SECTION 218-246-502

| STEP | ACTION   | VERIFICATION |
|------|--|--------------|
| 69   | Select route advance as required for access to selected trunk.   |              |
| 70   | Select class of service and rate treatment as required for access to selected route.   |              |
| 71   | Insert make-busy plug into MMB_jack associated with marker selected in Step 63.  |              |
| 72   | At marker—<br>Block nonoperated all SA_ relays except SA_ numbered relay corresponding to units digit of line selected in Step 68. |              |
| 73   | At MTF—<br>Patch TRK1 jack on TTC to TM1 jack on jack, lamp, and key circuit, using 3-foot long P3E cord.                          |              |

4. METHOD

| STEP   | ACTION  | VERIFICATION |
|--|---|--------------|
| <b>A. One-Way 1004-Hz Loss Measurement to 102-Type Test Line</b> |   |              |
|  | <i>Note:</i> Refer to Fig. 1.   |              |
| 74h  | If 23A or 23D TMS is used—<br>At 23A or 23D TMS—<br>Operate function key to MEAS.                         |              |
| 75h  | Operate INPUT key to 900.   |              |
| 76h  | At MTF—<br>Patch MEAS 310 jack on 23A or 23D TMS to REC1 jack on TTC, using 6-foot long P3E cord.         |              |
| 77i  | If 23B or 23C TMS is used—<br>Patch MEAS 900 jack on TTC to REC1 jack on TTC, using 3-foot long P3E cord. |              |
| 78j  | If TNM is used—<br>Patch RCVB or RCV jack on TNM to REC1 jack on TTC, using 3-foot long P3E cord.         |              |
| 79   | Operate SD-REC1 key (horizontal).   |              |

| STEP                 | ACTION   | VERIFICATION   |
|----------------------|--|--|
| <b>Line Circuits</b> |  |  |
| 80k                  | If testing PBX line circuit (LLP)—<br>Select A_ through G_ digits as required for access to 102-type test line in PBX.   |  |
| 81l                  | If testing centralized attendant line circuit (Phase III centrex)—<br>Select A_ through H_ digits as follows:<br>A0; B_, C_, D_—primary office code; E_, F_, G_, H_—directory number assigned to 102-type test line in primary office. |  |
| 82m                  | If testing AIC line circuit—<br>Select A_ through ♦D_♦ digits for access to 102-type test line in AIC.<br><br><b>Note:</b> ♦B_, C_, D_♦ digits must be 10X code.   |  |
| 83n                  | ♦If AIC line circuit terminates at operator position—<br>Select directory number associated with circuit under test.♦  |  |
| 84                   | Momentarily operate ST key.  | 1004-Hz tone heard.<br>♦If AIC line circuit terminates at operator position—<br>Call answered.         |
| 85n                  | If AIC line circuit terminates at operator position—<br>Request operator to connect to 102-type test line.   | 1004-Hz tone heard.♦   |
| 86                   | Operate TMS1 key (horizontal).   | If trunk test circuit is arranged for loop-around testing—<br>At test received—<br>1004-Hz tone heard. |
| 87o                  | If trunk test circuit is <b>not</b> arranged for loop-around testing—<br>Operate TM1 key.  | At test receiver—<br>1004-Hz tone heard.   |
| 88                   | At TMS or TNM—<br>Record TMS or TNM reading.<br>*Far-to-near transmission loss.*   |  |
| 89o                  | If trunk test circuit is <b>not</b> arranged for loop-around testing—<br>At MTF—<br>Restore TM1 key.   |  |

SECTION 218-246-502

| STEP                       | ACTION   | VERIFICATION  |
|----------------------------|--|---|
| 90                         | At MTF—<br>Restore TMS1 key (vertical).  |   |
| 91                         | Momentarily operate RL key.  | All lamps extinguished.   |
| 92                         | Restore all keys and switches.   |   |
| 93                         | Remove all patching cords used for test.   |   |
| <b>ACD Intercept Trunk</b> |  |   |
| 94e                        | If trunk under test is equipped with a LT relay—<br>Operate and hold ±key.   |   |
| 95                         | Momentarily operate ST key.  | Interrupted dial tone heard.<br>If trunk under test is equipped with a LT relay—<br>RT lamp extinguished. |
| 96e                        | If trunk under test is equipped with a LT relay—<br>Release ±key.  |   |
| 97                         | Restore TTC16 key to OFF.  |   |
| 98                         | Using TOUCH-TONE® dial—<br>Key digit 2.  | Interrupted dial tone silenced.<br>1004-Hz tone heard.  |
| 99                         | Operate TMS1 key (horizontal).   | If trunk test circuit is arranged for loop-around testing—<br>At test receiver—<br>1004-Hz tone heard.    |
| 100o                       | If trunk test circuit is <b>not</b> arranged for loop-around testing—<br>Operate TM1 key.  | At test receiver—<br>1004-Hz tone heard.  |
| 101                        | At TMS or TNM—<br>Record TMS or TNM reading.<br>*Far-to-near transmission loss.*   |   |
| 102b                       | If trunk under test is <b>not</b> equipped with a LT relay—<br>Subtract intraoffice trunk transmission loss from reading recorded in Step 101.<br>*Far-to-near intercept trunk transmission loss.* |   |
| 103o                       | If trunk test circuit is <b>not</b> arranged for loop-around testing—<br>At MTF—<br>Restore TM1 key.   |   |

| STEP | ACTION   | VERIFICATION            |
|------|--|-------------------------|
| 104  | At MTF—<br>Restore TMS1 key (vertical).              |                         |
| 105  | Momentarily operate RL key.                          | All lamps extinguished. |
| 106  | At marker—<br>Remove blocking tools from SA_ relays. |                         |
| 107  | At MTF—<br>Remove make-busy plug from MMB jack.      |                         |
| 108  | Restore all keys and switches.                       |                         |
| 109  | Remove all patching cords used for test.             |                         |

#### B. Message Circuit Noise Measurement to 100-Type Test Line

**Note:** Refer to Fig. 1.

- 74h If 3A or 3C NMS is used—  
At 3A or 3C NMS—  
Set FUNCTION switch to NM 900 (3A NMS)  
or NM 600/900 (3C NMS).
- 75h Connect ground to GRD post on NMS, using  
893 cord.
- 76h Set DBRN switch to 85.
- 77h At MTF—  
Patch IN jack on NMS to REC1 jack on TTC,  
using P2AE (3A NMS) or 6-foot long P3E (3C  
NMS) cord.
- 78i If TNM is used—  
Patch RCVB or RCV jack on TNM to REC1  
jack on TTC, using 3-foot long P3E cord.
- 79i Operate NM/A + 40 key if provided.
- 80 Operate SD-REC1 key (horizontal).

#### Line Circuits

- 81j If testing PBX line circuit (LLP)—  
Select A\_ through G\_ digits as required for  
access to 100-type test line in PBX.
- 82k If testing centralized attendant line circuit  
(Phase III centrex)—

SECTION 218-246-502

| STEP | ACTION   | VERIFICATION   |
|------|--|--|
|      | <p>Select A_ through H_ digits as follows:<br/>                     A_ B_ C_ D_—primary office code; E_ F_ G_ H_—directory number assigned to 100-type test line in primary office.</p>                |  |
| 83l  | <p>If testing AIC line circuit—<br/>                     Select A_ through D_ digits for access to 100-type test line in AIC.</p> <p><i>Note:</i> B_ C_ D_ digits must be 10X code.</p>                |  |
| 84m  | <p>◆If AIC line circuit terminates at operator position—<br/>                     Select directory number associated with circuit under test.◆</p>   |  |
| 85   | <p>Momentarily operate ST key.</p>   | <p>◆If AIC line circuit terminates at operator position—<br/>                     Call answered.</p> |
| 86m  | <p>If AIC line circuit terminates at operator position—<br/>                     Request operator to connect to 100-type test line.◆</p>   |  |
| 87   | <p>Operate TMS1 key (horizontal).</p>  |  |
| 88n  | <p>If trunk test circuit is <i>not</i> arranged for loop-around testing—<br/>                     Operate TM1 key.</p>   |  |
| 89h  | <p>If 3A or 3C NMS is used—<br/>                     At 3A or 3C NMS—<br/>                     Adjust DBRN switch for a meter indication between +2 and +9.</p>  |  |
| 90   | <p>At NMS or TNM—<br/>                     Record noise measurement and character of noise.</p> <p><i>Note:</i> NMS or TNM indicates near-end noise; character of noise is heard in test receiver.</p> |  |
| 91n  | <p>If trunk test circuit is <i>not</i> arranged for loop-around testing—<br/>                     At MTF—<br/>                     Restore TM1 key.</p>  |  |
| 92   | <p>At MTF—<br/>                     Restore TMS1 key (vertical).</p>   |  |

| STEP                        | ACTION  | VERIFICATION  |
|-----------------------------|---|---|
| 93                          | Momentarily operate RL key.   | All lamps extinguished.   |
| 94                          | Restore all keys and switches.  |   |
| 95                          | Remove all patching cords used for test.  |   |
| <b>ACD Intercept Trunks</b> |   |   |
| 96e                         | If trunk under test is equipped with a LT relay—<br>Operate and hold ±key.  |   |
| 97                          | Momentarily operate ST key.   | Interrupted dial tone heard.<br>If trunk under test is equipped with a LT relay—<br>RT lamp extinguished. |
| 98e                         | If trunk under test is equipped with a LT relay—<br>Release ±key.   |   |
| 99                          | Restore TTC16 key to OFF.   |   |
| 100                         | Using TOUCH-TONE dial—<br>Key digit 0.  | Interrupted dial tone silenced.   |
| 101                         | Operate TMS1 key (horizontal).  |   |
| 102n                        | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key.   |   |
| 103h                        | If 3A or 3C NMS is used—<br>At 3A or 3C NMS—<br>Adjust DBRN switch for a meter indication between +2 and +9.  |   |
| 104                         | At NMS or TNM—<br>Record noise measurement and character of noise.<br><br><i>Note:</i> NMS or TNM indicates near-end noise; character of noise is heard in test receiver.                       |   |
| 105b                        | If trunk under test is <i>not</i> equipped with a LT relay.<br>Subtract intraoffice trunk noise measurement from reading recorded in Step 104.<br>*Near-end intercept trunk noise measurement.* |   |
| 106n                        | If trunk test circuit is <i>not</i> arranged for loop-around testing—   |   |

| STEP | ACTION   | VERIFICATION            |
|------|--|-------------------------|
|      | At MTF—<br>Restore TM1 key.                          |                         |
| 107  | At MTF—<br>Restore TMS1 key (vertical).              |                         |
| 108  | Momentarily operate RL key.                          | All lamps extinguished. |
| 109  | At marker—<br>Remove blocking tools from SA_ relays. |                         |
| 110  | At MTF—<br>Remove make-busy plug from MMB jack.      |                         |
| 111  | Restore all keys and switches.                       |                         |
| 112  | Remove all patching cords used for test.             |                         |

### C. Impulse Noise Measurement to 100-Type Test Line

**Note:** Refer to Fig. 1.

|     |   |  |
|-----|---|--|
| 23  | At 6H IC—<br>Set DIAL-MEAS switch to MEAS.  |  |
| 24  | Set DBRN dial to required noise reference.  |  |
| 25  | At MTF—<br>Patch MEAS jack on 6H IC to REC1 jack on TTC, using P2B cord.  |  |
| 26  | Operate SD-REC1 key (horizontal).   |  |
| 27b | If testing PBX line circuit (LLP)—<br>Select A_ through G_ digits as required for access to 100-type test line in PBX.  |  |
| 28c | If testing centralized attendant line circuit (Phase III centrex)—<br>Select A_ through H_ digits as follows<br>A0; B_, C_, D_—primary office code; E_, F_, D_—directory number assigned to 100-type test line in primary office. |  |
| 29  | Momentarily operate ST key.   |  |
| 30  | Operate TMS1 key (horizontal).  |  |
| 31d | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key.   |  |

| STEP | ACTION  | VERIFICATION            |
|------|---|-------------------------|
| 32   | At 6H IC—<br>Turn MINUTES control to desired time.  |                         |
| 33   | Momentarily operate reset lever.  |                         |
| 34   | After timing interval (MINUTES controls in 0 position)—<br>Record counter reading.  |                         |
|      | <b>Note:</b> If distant test line returns repetitive on-hook supervision, monitor connection with 716D receiver, observe 6H IC, and determine number of impulses per minute caused by changes in supervision. Multiply by timing interval in minutes and subtract result from recorded counter reading. |                         |
|      | *Counter reading, as corrected when required, indicates impulse counts measured at near end.*   |                         |
| 35d  | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>At MTF—<br>Restore TM1 key.  |                         |
| 36   | At MTF—<br>Restore TMS1 key (vertical).   |                         |
| 37   | Momentarily operate RL key.   | All lamps extinguished. |
| 38   | Restore all keys and switches.  |                         |
| 39   | Remove all patching cords used for test.  |                         |

**D. Two-Way 1004-Hz Loss Measurement and Noise  
Check to 104-Type Test Line**

**Note:** Refer to Fig. 1.

|     |  |  |
|-----|--|--|
| 74h | If 23A or 23D TMS is used—<br>At 23A or 23D TMS—<br>Operate function key to MEAS.      |  |
| 75h | Operate INPUT key to 900.  |  |
| 76h | At MTF—<br>Patch MEAS 310 jack on TMS to REC1 jack on TTC, using 6-foot long P3E cord. |  |

SECTION 218-246-502

| STEP                 | ACTION   | VERIFICATION   |
|----------------------|--|--|
| 77i                  | If 23B or 23C TMS is used—<br>Patch MEAS 900 jack on TTC to REC1 jack on TTC, using 3-foot long P3E cord.  |  |
| 78j                  | If TNM is used—<br>Patch RCVB or RCV jack on TNM to REC1 jack on TTC, using 3-foot long P3E cord.  |  |
| 79                   | Patch SD jack on TTC to 1000-0-900 jack on TTC, using 3-foot long P3E cord.  |  |
| 80                   | Operate SD-REC1 key (horizontal).  |  |
| <b>Line Circuits</b> |  |  |
| 81k                  | If testing PBX line circuit (LLP)—<br>Select A_ through G_ digits as required for access to 104-type test line in PBX.   |  |
| 82l                  | If testing centralized attendant line circuit (Phase III centrex)—<br>Select A_ through H_ digits as follows:<br>A0; B_, C_, D_—primary office code; E_, F_, G_, H_—directory number assigned to 104-type test line in primary office. |  |
| 83m                  | If testing AIC line circuit—<br>Select A_ through ♦D_♦ digits for access to 104-type test line in AIC.<br><br><b>Note:</b> ♦B_, C_, D_♦ digits must be 10X Code.   |  |
| 84n                  | ♦If AIC line circuit terminates at operator position—<br>Select directory number associated with circuit under test.♦  |  |
| 85                   | Momentarily operate ST key.  | 2225-Hz tone heard.<br>♦If AIC line circuit terminates at operator position—<br>Call answered.         |
| 86n                  | If AIC line circuit terminates at operator position—<br>Request operator to connect to 104-type test line.♦  |  |
| 87                   | Operate TMS1 key (horizontal).   | If trunk test circuit is arranged for loop-around testing—<br>At test receiver—<br>2225-Hz tone heard. |

| STEP | ACTION   | VERIFICATION   |
|------|--|--|
| 88o  | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key.  | At test receiver—<br>2225-Hz tone heard.   |
| 89   | When 2225-Hz tone is silenced—<br>Restore SD-REC1 key (vertical) for 3 to 8 seconds, then reoperate (horizontal).  | When SD-REC1 key is reoperated (horizontal)—<br>1004-Hz tone heard for 10-seconds at near-end.   |
|      | <i>Note:</i> Near-to-far transmission loss measured and stored at distant transmission measuring circuit.  |  |
| 90p  | If short burst of 2225-Hz tone is heard <i>before</i> 10-second 1004-Hz tone—<br>Repeat Step 89.   |  |
| 91   | When 1004-Hz tone is heard—<br>At TMS or TNM—<br>Record TMS or TNM reading during 10-second tone.<br>*Far-to-near transmission loss.*                        |  |
| 92q  | If short burst of 2225-Hz tone is heard <i>after</i> 10-second 1004-Hz tone—<br>Add -10 dB to TMS or TNM reading for second 10-second tone.                  |  |
| 93   | When second 10-second 1004-Hz tone is heard—<br>Record TMS or TNM reading during second 10-second tone.<br>*Far-to-near plus near-to-far transmission loss.* |  |
| 94r  | If a far-end noise check is desired—<br>Monitor test call for 5-seconds.   | If steady 2225-Hz tone is heard—<br>Far-end noise does <i>not</i> exceed 41 dBnc.<br>If interrupted 2225-Hz tone is heard—<br>Far-end noise exceeds 41 dBnc. |
| 95   | Subtract reading recorded in Step 91 from reading recorded in Step 93.<br>*Remainder is near-to-far transmission loss.*                                      |  |
| 96o  | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>At MTF—<br>Restore TM1 key.   |  |
| 97   | At MTF—<br>Restore TMS1 key (vertical).  |  |
| 98   | Momentarily operate RL key.  | All lamps extinguished.  |
| 99   | Restore all keys and switches.   |  |

SECTION 218-246-502

| STEP                       | ACTION  | VERIFICATION  |
|----------------------------|---|---|
| 100                        | Remove all patching cords used for test.  |   |
| <b>ACD Intercept Trunk</b> |   |   |
| 101e                       | If trunk under test is equipped with a LT relay—<br>Operate and hold ±key.  |   |
| 102                        | Momentarily operate ST key.   | Interrupted dial tone heard.<br>If trunk under test is equipped with a LT relay—<br>RT lamp extinguished. |
| 103e                       | If trunk under test is equipped with a LT relay—<br>Release ±key.   |   |
| 104                        | Record TTC16 key to OFF.  |   |
| 105                        | Using TOUCH-TONE dial—<br>Key digit 4.  | Interrupted dial tone silenced.<br>2225-Hz tone heard.  |
| 106                        | Operate TMS1 key (horizontal).  | If trunk test circuit is arranged for loop-around testing—<br>At test receiver—<br>2225-Hz tone heard.    |
| 107o                       | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key.   | At test receiver—<br>2225-Hz tone heard.  |
| 108                        | When 2225-Hz tone is silenced—<br>Restore SD-REC1 key (vertical) for 3 to 8 seconds then reoperate (horizontal).                      | When SD-REC1 key is reoperated (horizontal)—<br>1004-Hz tone heard for 10-seconds at near-end.            |
|                            | <b>Note:</b> Near-to-far transmission loss measured and stored at distant transmission measuring circuit.                             |   |
| 109p                       | If short burst of 2225-Hz tone is heard <i>before</i> 10-second 1004-Hz tone—<br>Repeat Step 108.                                     |   |
| 110                        | When 1004-Hz tone is heard—<br>At TMS or TNM—<br>Record TMS or TNM reading during 10-second tone.<br>*Far-to-near transmission loss.* |   |
| 111q                       | If short burst of 2225-Hz tone is heard <i>before</i> 10-second 1004-Hz tone—   |   |

| STEP | ACTION  | VERIFICATION   |
|------|---|--|
|      | Add -10 db to TMS or TNM reading for second 10-second tone.   |  |
| 112  | When second 10-second 1004-Hz tone is heard—<br>Record TMS or TNM reading during second 10-second tone.<br>*Far-to-near plus near-to-far transmission loss.*  |  |
| 113r | If a far-end noise check is desired—<br>Monitor test call for 5-seconds.  | If steady 2225-Hz tone is heard—<br>Far-end noise does <b>not</b> exceed 41 dBrnc.<br>If interrupted 2225-Hz tone is heard—<br>Far-end noise exceeds 41 dBrnc. |
| 114  | Subtract reading taken in Step 110 from reading taken in Step 112.<br>*Remainder is near-to-far transmission loss.*   |  |
| 115b | If trunk under test is <b>not</b> equipped with a LT relay—<br>Subtract twice the intraoffice trunk loss from near-to-far loss obtained in Step 114.<br>*Remainder is intercept trunk near-to-far transmission loss.* |  |
| 116o | If trunk test circuit is <b>not</b> arranged for loop-around test—<br>At MTF—<br>Restore TM1 key.   |  |
| 117  | At MTF—<br>Restore TMS1 key (vertical)  |  |
| 118  | Momentarily operate RL key.   | All lamps extinguished.  |
| 119  | At marker—<br>Remove blocking tools from SA_ relays.  |  |
| 120  | At MTF—<br>Remove make-busy plug from MMB jack.   |  |
| 121  | Restore all keys and switches.  |  |
| 122  | Remove all patching cords used for test.  |  |

SECTION 218-246-502

| STEP | ACTION | VERIFICATION |
|------|--------|--------------|
|------|--------|--------------|

ORIGINATING END PROCEDURES

AA. One-Way or Two-Way 1004-Hz Loss Measurement to 101-Type Test Line, ACD Offices, AIC, Switchboards, or Traffic Operating Desks

**Note:** ♦Refer to♦ Fig. 1.

- |     |   |  |
|-----|---|--|
| 74h | If 23A or 23D TMS is used—<br>At 23A or 23D TMS—<br>Operate function key to MEAS.                         |  |
| 75h | Operate INPUT key to 900.   |  |
| 76h | At MTF—<br>Patch MEAS 310 jack on 23A or 23D TMS to REC1 jack on TTC, using 6-foot long P3E cord.         |  |
| 77i | If 23B or 23C TMS is used—<br>Patch MEAS 900 jack on TTC to REC1 jack on TTC, using 3-foot long P3E cord. |  |
| 78j | If TNM is used—<br>Patch RCV or RCVB jack on TTC to REC1 jack on TTC, using 3-foot long P3E cord.         |  |
| 79  | Patch SD jack on TTC to 1000-0-900 jack on TTC, using 3-foot long P3E cord.                               |  |
| 80  | Operate SD-REC1 key (horizontal).   |  |

Line Circuits

- |     |  |  |
|-----|--|--|
| 81k | If testing PBX line circuit (LLP)—<br>Select A_ through G_ digits as required for access to 101-type test line in PBX.   |  |
| 82l | If testing centralized attendant line circuit (Phase III centrex)—<br>Select A_ through H_ digits as follows:<br>A0; B_, C_, D_—primary office code; E_, F_, G_, H_—directory number assigned to 101-type test line in primary office. |  |
| 83m | If testing AIC line circuit—<br>Select A_ through ♦D_♦ digits for access to 101-type test line in AIC.   |  |

**Note:** ♦B\_, C\_, D\_♦ digits must be 10X code.

| STEP | ACTION   | VERIFICATION   |
|------|--|--|
| 84n  | ♦If AIC line circuit terminates at operator position—<br>Select directory number associated with circuit under test.♦                |  |
| 85   | Momentarily operate ST key.  | ♦If AIC line circuit terminates at operator position—<br>Operator answers.♦<br>Call answered.          |
| 86h  | ♦If AIC line circuit terminates at operator position—<br>Request operator to connect to 101-type test line.                          | Call answered.♦  |
| 87   | Request terminating end to send 0-dBm 1004-Hz tone over line circuit for agreed upon interval.                                       | 1004-Hz tone heard.  |
| 88   | Operate TMS1 key (horizontal).   | If trunk test circuit is arranged for loop-around testing—<br>At test receiver—<br>1004-Hz tone heard. |
| 89o  | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key.  | At test receiver—<br>1004-Hz tone heard.   |
| 90o  | At TMS or TNM—<br>Record TMS or TNM reading.<br>*Far-to-near transmission loss.*   |  |
| 91o  | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TM1 key.  |  |
| 92p  | If trunk test circuit is arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TMS1 key (vertical). |  |
| 93q  | If near-to-far transmission measurement is <i>not</i> required—<br>Omit Steps 94 through 100.  |  |
| 94   | Request terminating end to measure near-to-far transmission loss.  |  |
| 95   | Restore SD-REC1 key (horizontal).  |  |

SECTION 218-246-502

| STEP                    | ACTION  | VERIFICATION   |
|-------------------------|---|--|
| 96p                     | If trunk test circuit is arranged for loop-around testing—<br>Operate TMS1 key (horizontal) for agreed upon interval. |  |
| 97p                     | After agreed upon interval—<br>Restore TMS1 key (vertical).   |  |
| 98o                     | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key for agreed upon interval.    |  |
| 99o                     | After agreed upon interval—<br>Restore TM1 key.   |  |
| 100                     | Obtain and record near-to-far transmission loss measured at terminating end.  |  |
| 101                     | Request terminating end to disconnect.  |  |
| 102                     | Momentarily operate RL key.   | All lamps extinguished.  |
| 103                     | Restore all keys and switches.  |  |
| 104                     | Remove all patching cords used for test.  |  |
| <b>Intercept Trunks</b> |   |  |
| 105r                    | If trunk under test is equipped with a LT relay and terminates in an ACD office—<br>Operate and hold ±key.            |  |
| 106                     | Momentarily operate ST key.   | If trunk under test does <i>not</i> terminate in an ACD office—<br>Call answered.<br>If trunk under test terminates in an ACD office—<br>Interrupted dial tone heard.<br>If trunk under test is equipped with a LT relay and terminates in an ACD office—<br>RT lamp extinguished. |
| 107r                    | If trunk under test is equipped with a LT relay and terminates in an ACD office—<br>Release ±key.                     |  |
| 108s                    | If trunk under test terminates in an ACD office—<br>Restore TTC16 key to OFF.   |  |
| 109s                    | Using TOUCH-TONE dial—<br>Key digit 1.  | Interrupted dial tone silenced.<br>Call answered.  |

| STEP | ACTION   | VERIFICATION   |
|------|--|--|
| 110  | Request terminating end to send 0-dBm 1004-Hz tone over trunk for agreed upon interval.  | 1004-Hz tone heard.  |
| 111  | Operate TMS1 key (horizontal).   | If trunk test circuit is arranged for loop-around testing—<br>At test receiver—<br>1004-Hz tone heard. |
| 112o | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key.  | At test receiver—<br>1004-Hz tone heard.   |
| 113  | At TMS or TNM—<br>Record TMS or TNM reading.<br>*Far-to-near transmission loss.*   |  |
| 114b | If trunk under test is <i>not</i> equipped with a LT relay—<br>Subtract intraoffice trunk transmission loss from reading recorded in Step 113.<br>*Far-to-near intercept trunk transmission loss.* |  |
| 115o | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TM1 key.  |  |
| 116p | If trunk test circuit is arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TMS1 key (vertical).   |  |
| 117q | If near-to-far transmission measurement is <i>not</i> required—<br>Omit Steps 118 through 125b.  |  |
| 118  | Request terminating end to measure near-to-far transmission loss.  |  |
| 119  | Restore SD-REC1 key (vertical).  |  |
| 120p | If trunk test circuit is arranged for loop-around testing—<br>Operate TMS1 key (horizontal) for agreed upon interval.  |  |
| 121p | After agreed upon interval—<br>Restore TMS1 key (vertical).  |  |

SECTION 218-246-502

| STEP | ACTION   | VERIFICATION            |
|------|--|-------------------------|
| 122o | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key for agreed upon interval.   |                         |
| 123o | After agreed upon interval—<br>Restore TM1 key.  |                         |
| 124  | Obtain and record near-to-far transmission loss measured at terminating end.   |                         |
| 125b | If trunk under test is <i>not</i> equipped with a LT relay—<br>Subtract intraoffice trunk loss from reading recorded at terminating end.<br>*Near-to-far intercept trunk transmission loss.* |                         |
| 126  | Request terminating end to disconnect.   |                         |
| 127  | Momentarily operate RL key.  | All lamps extinguished. |
| 128  | At marker—<br>Remove blocking tools from SA_ relays.   |                         |
| 129  | At MTF—<br>Remove make-busy plug from MMB jack.  |                         |
| 130  | Restore all keys and switches.   |                         |
| 131  | Remove all patching cords used for test.   |                         |

**AB. Two-Way Frequency Response Measurement to 101-Type Test Line, ACD Offices, AIC, Switchboards, or Traffic Operating Desks**

**Note:** ♦Refer to♦ Fig. 1.

|     |   |  |
|-----|---|--|
| 74h | If 23A or 23D TMS is used—<br>At 23A or 23D TMS—<br>Operate function key to MEAS.                         |  |
| 75h | Operate INPUT key to 900.   |  |
| 76h | At MTF—<br>Patch MEAS 310 jack on 23A or 23D TMS to REC1 jack on TTC, using 6-foot long P3E cord.         |  |
| 77i | If 23B or 23C TMS is used—<br>Patch MEAS 900 jack on TTC to REC1 jack on TTC, using 3-foot long P3E cord. |  |

| STEP                 | ACTION   | VERIFICATION  |
|----------------------|--|---|
| 78j                  | If TNM is used—<br>Patch RCV or RCVB jack on TTC to REC1 jack on TTC, using 3-foot long P3E cord.  |   |
| 79k                  | If KS-19353 L1 or KS-19353 L4 oscillator is used—<br>At oscillator—<br>Set FUNCTION switch to 900.   |   |
| 80k                  | At MTF—<br>Patch SD jack on TTC to OUTPUT 310 jack on oscillator, using 6-foot long P3E cord.  |   |
| 81l                  | If KS-19260 L1 oscillator is used—<br>Patch SD jack on TTC to OSC 900 jack on TTC, using 3-foot long P3E cord.   |   |
| 82                   | Operate SD-REC1 key (horizontal).  |   |
| <b>Line Circuits</b> |  |   |
| 83m                  | If testing PBX line circuit (LLP)—<br>Select A_ through G_ digits as required for access to 101-type test line in PBX.   |   |
| 84n                  | If testing centralized attendant line circuit (Phase III centrex)—<br>Select A_ through H_ digits as follows:<br>A0; B_, C_, D_—primary office code; E_, F_, G_, H_—directory number assigned to 101-type test line in primary office. |   |
| 85o                  | If testing AIC line circuit—<br>Select A_ through ♦D_♦ digits for access to 101-type test line in AIC.<br><br><b>Note:</b> ♦B_, C_, D_♦ digits must be 10X code.   |   |
| 86p                  | ♦If AIC line circuit terminates at operator position—<br>Select directory number associated with circuit under test.♦  |   |
| 87                   | Momentarily operate ST key.  | ♦If AIC line circuit terminates at operator position—<br>Operator answers.♦<br>Call answered. |
| 88p                  | ♦If AIC line circuit terminates at operator position—<br>Request operator to connect to 101-type test line.  | Call answered.♦   |

SECTION 218-246-502

| STEP | ACTION   | VERIFICATION   |
|------|--|--|
| 89   | Request terminating end to send first required frequency at 0-dBm for agreed upon interval.  | Tone heard.  |
| 90   | Operate TMS1 key (horizontal).   | If trunk test circuit is arranged for loop-around testing—<br>At test receiver—<br>Tone heard. |
| 91q  | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key.  | At test receiver—<br>Tone heard.   |
| 92   | At TMS or TNM—<br>Record TMS or TNM reading.<br>*Far-to-near transmission loss.*   |  |
| 93q  | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TM1 key.  |  |
| 94r  | If trunk test circuit is arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TMS1 key (vertical). |  |
| 95   | Repeat Steps 89 through 94r for all required frequencies.  |  |
| 96s  | If near-to-far transmission loss is <i>not</i> required—<br>Omit Steps 98 through 105.   |  |
| 97   | Request terminating end to measure near-to-far transmission loss.  |  |
| 98   | Restore SD-REC1 key (vertical).  |  |
| 99   | At oscillator—<br>Adjust oscillator to send first required frequency at 0-dBm.   |  |
| 100r | If trunk test circuit is arranged for loop-around testing—<br>Operate TMS1 key (horizontal) for agreed upon interval.                |  |
| 101r | After agreed upon interval—<br>Restore TMS1 key (vertical).  |  |

| STEP                    | ACTION   | VERIFICATION   |
|-------------------------|--|--|
| 102q                    | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key for agreed upon interval. |  |
| 103q                    | After agreed upon interval—<br>Restore TM1 key.  |  |
| 104                     | Obtain and record near-to-far transmission loss measured at terminating end.                                       |  |
| 105                     | Repeat Step 99 through 104 for all required frequencies. (Refer to paragraph 1.12.)                                |  |
| 106                     | Request terminating end to disconnect.   |  |
| 107                     | Momentarily operate RL key.  | All lamps extinguished.  |
| 108                     | Restore all keys and switches.   |  |
| 109                     | Remove all patching cords used for test.   |  |
| <b>Intercept Trunks</b> |  |  |
| 110t                    | If trunk under test is equipped with a LT relay and terminates in an ACD office—<br>Operate ±key.                  |  |
| 111                     | Momentarily operate ST key.  | If trunk under test does <i>not</i> terminate in an ACD office—<br>Call answered.<br>If trunk under test terminates in an ACD office—<br>Interrupted dial tone heard.<br>If trunk under test is equipped with a LT relay and terminates in an ACD office—<br>RT lamp extinguished. |
| 112t                    | If trunk under test is equipped with a LT relay and terminates in an ACD office—<br>Release ±key.                  |  |
| 113u                    | If trunk under test terminates in an ACD office—<br>Restore TTC16 key to OFF.                                      |  |
| 114u                    | Using TOUCH-TONE dial—<br>Key digit 1.   | Interrupted dial tone silenced.<br>Call answered.  |
| 115                     | Request terminating end to send first required frequency at 0-dBm for agreed upon interval.                        | Tone heard.  |

SECTION 218-246-502

| STEP | ACTION   | VERIFICATION   |
|------|--|--|
| 116  | Operate TMS1 key (horizontal).   | If trunk test circuit is arranged for loop-around testing—<br>At test receiver—<br>Tone heard. |
| 117q | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key.  | At test receiver—<br>Tone heard.   |
| 118  | At TMS or TNM—<br>Record TMS or TNM reading.<br>*Far-to-near transmission loss.*   |  |
| 119b | If trunk under test is <i>not</i> equipped with a LT relay—<br>Subtract intraoffice trunk transmission loss from reading recorded in Step 118.<br>*Far-to-near intercept trunk transmission loss.* |  |
| 120q | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TM1 key.  |  |
| 121r | If trunk test circuit is arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TMS1 key (vertical).   |  |
| 122  | Repeat Steps 115 through 121r for all required frequencies.  |  |
| 123s | If near-to-far transmission loss is <i>not</i> required—<br>Omit Steps 124 through 133.  |  |
| 124  | Request terminating end to measure near-to-far transmission loss.  |  |
| 125  | Restore SD-REC1 key (vertical).  |  |
| 126  | At oscillator—<br>Adjust oscillator to send first required frequency at 0-dBm.   |  |
| 127r | If trunk test circuit is arranged for loop-around testing—<br>Operate TMS1 key (horizontal) for agreed upon interval.  |  |

| STEP | ACTION  | VERIFICATION            |
|------|---|-------------------------|
| 128r | After agreed upon interval—<br>Restore TMS1 key (vertical).   |                         |
| 129q | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key for agreed upon interval.  |                         |
| 130q | After agreed upon interval—<br>Restore TM1 key.   |                         |
| 131  | Obtain and record near-to-far transmission loss measured at terminating end.  |                         |
| 132b | If trunk under test is <i>not</i> equipped with a LT relay—<br>Subtract intraoffice trunk transmission loss from reading recorded at terminating end.<br>*Near-to-far intercept trunk transmission loss.* |                         |
| 133  | Repeat Steps 126 through 132b for all required frequencies. (Refer to paragraph 1.12.)  |                         |
| 134  | Request terminating end to disconnect.  |                         |
| 135  | Momentarily operate RL key.   | All lamps extinguished. |
| 136  | At marker—<br>Remove blocking tools from SA_ relays.  |                         |
| 137  | At MTF—<br>Remove make-busy plug from MMB jack.   |                         |
| 138  | Restore all keys and switches.  |                         |
| 139  | Remove all patching cords used for test.  |                         |

**AC. Message Circuit Noise Measurement to 101-Type Test Line, ACD Offices, AIC, Switchboards, or Traffic Operating Desks**

**Note:** ♦Refer to♦ Fig. 1.

|     |  |  |
|-----|--|--|
| 74h | If 3A or 3C NMS is used—<br>At 3A or 3C NMS—<br>Set FUNCTION switch to NM 900 (3A NMS) or NM 600/900 (3C NMS). |  |
| 75h | Connect ground to GRD post on NMS, using 893 cord.   |  |
| 76h | Set DBRN switch to 85.   |  |

SECTION 218-246-502

| STEP | ACTION   | VERIFICATION |
|------|--|--------------|
| 77h  | At MTF—<br>Patch IN jack on NMS to REC1 jack on TTC,<br>using P2AE (3A NMS) or 6-foot long P3E (3C<br>NMS) cord. |              |
| 78i  | If TNM is used—<br>Patch RCV or RCVB jack on TTC to REC1<br>jack on TTC, using 3-foot long P3E cord.             |              |
| 79i  | Operate NM/A +40 key if provided.  |              |
| 80   | Operate SD-REC1 key (horizontal).  |              |

**Line Circuits**

|     |   |  |
|-----|---|--|
| 81j | If testing PBX line circuit (LLP)—<br>Select A_ through G_ digits as required for<br>access to 101-type test line in PBX.   |  |
| 82k | If testing centralized attendant line circuit<br>(Phase III centrex)—<br>Select A_ through H_ digits as follows:<br>A0; B_, C_, D_—primary office code; E_, F_,<br>G_, H_—directory number assigned to 101-type<br>test line in primary office. |  |
| 83l | If testing AIC line circuit—<br>Select A_ through ♦D_♦ digits for access to<br>101-type test line in AIC.<br><br><i>Note:</i> ♦B_, C_, D_♦ digits must be 10X code.   |  |
| 84m | ♦If AIC line circuit terminates at operator<br>position—<br>Select directory number associated with circuit<br>under test.♦   |  |
| 85  | Momentarily operate ST key.   | ♦If AIC line circuit terminates at operator<br>position—<br>Operator answers.♦<br>Call answered. |
| 86m | ♦If AIC line circuit terminates at operator<br>position—<br>Request operator to connect to 101-type test<br>line.   | Call answered.♦  |
| 87n | If far-end noise measurement is required—<br>Request terminating end to connect noise<br>measuring equipment.   |  |

| STEP                    | ACTION  | VERIFICATION            |
|-------------------------|---|-------------------------|
| 88o                     | If far-end noise measurement is <i>not</i> required—<br>Request terminating end to provide a balance termination.   |                         |
| 89                      | Operate TMS1 key (horizontal).  |                         |
| 90p                     | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key.   |                         |
| 91r                     | If 3A or 3C NMS is used—<br>At 3A or 3C NMS—<br>Adjust DBRN switch for a meter indication between +2 and +9.  |                         |
| 92                      | At NMS or TNM—<br>Record noise measurement and character of noise.<br><br><i>Note:</i> NMS or TNM indicates near-end noise; character of noise is heard in test receiver. |                         |
| 93p                     | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TM1 key.                                       |                         |
| 94q                     | If trunk test circuit is arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TMS1 key (horizontal).                                    |                         |
| 95n                     | If far-end noise measurement is required—<br>Obtain and record noise measurement and character of noise from far end.   |                         |
| 96                      | Request terminating end to disconnect.  |                         |
| 97                      | Momentarily operate RL key.   | All lamps extinguished. |
| 98                      | Restore all keys and switches.  |                         |
| 99                      | Remove all patching cords used for test.  |                         |
| <b>Intercept Trunks</b> |   |                         |
| 100r                    | If trunk under test is equipped with a LT relay and terminates in an ACD office—<br>Operate $\pm$ key.  |                         |

## SECTION 218-246-502

| STEP | ACTION  | VERIFICATION   |
|------|---|--|
| 101  | Momentarily operate ST key.   | If trunk under test does <i>not</i> terminate in an ACD office—<br>Call answered.<br>If trunk under test terminates in an ACD office—<br>Interrupted dial tone heard.<br>If trunk under test is equipped with a LT relay and terminates in an ACD office—<br>RT lamp extinguished. |
| 102r | If trunk under test is equipped with a LT relay and terminates in an ACD office—<br>Release ±key.   |  |
| 103s | If trunk under test terminates in an ACD office—<br>Restore TTC16 key to OFF.   |  |
| 104s | Using TOUCH-TONE dial—<br>Key digit 1.  | Interrupted dial tone silenced.<br>Call answered.  |
| 105n | If far-end noise measurement is required—<br>Request terminating end to connect noise measuring equipment.  |  |
| 106o | If far-end noise measurement is <i>not</i> required—<br>Request terminating end to provide a balance termination.   |  |
| 107  | Operate TMS1 key (horizontal).  |  |
| 108p | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key.   |  |
| 109r | If 3A or 3C NMS is used—<br>At 3A or 3C NMS—<br>Adjust DBRN switch for a meter indication between +2 and +9.  |  |
| 110  | At NMS or TNM—<br>Record noise measurement and character of noise.<br><br><i>Note:</i> NMS or TNM indicates near-end noise; character of noise is heard in test receiver.                       |  |
| 111b | If trunk under test is <i>not</i> equipped with a LT relay—<br>Subtract intraoffice trunk noise measurement from reading recorded in Step 110.<br>*Near-end intercept trunk noise measurement.* |  |

| STEP   | ACTION  | VERIFICATION            |
|--|---|-------------------------|
| 112p   | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TM1 key.   |                         |
| 113q   | If trunk test circuit is arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TMS1 key (vertical).  |                         |
| 114h   | If far-end noise measurement is required—<br>Obtain and record noise measurement and character of noise from far end.   |                         |
| 115b   | If trunk under test is <i>not</i> equipped with a LT relay.<br>Subtract intraoffice trunk noise measurement from reading recorded at terminating end.<br>*Far-end intercept trunk noise measurement.* |                         |
| 116  | Request terminating end to disconnect.  |                         |
| 117  | Momentarily operate RL key.   | All lamps extinguished. |
| 118  | At marker—<br>Remove blocking tools from SA_ relays.  |                         |
| 119  | At MTF—<br>Remove make-busy plug from MMB jack.   |                         |
| 120  | Restore all keys and switches.  |                         |
| 121  | Remove all patching cords used for test.  |                         |
| <b>AD. Impulse Noise Measurement to 101-Type Test Line, Switchboards, or Traffic Operating Desks</b> |   |                         |
| <i>Note:</i> ♦Refer to♦ Fig. 1.  |   |                         |
| 23   | Patch MEAS jack on 6H IC to REC1 jack on TTC, using P2B cord.   |                         |
| 24   | At 6H IC—<br>Set DIAL-MEAS switch to MEAS.  |                         |
| 25   | Set DBRN dial to the required noise reference level.  |                         |
| 26   | At MTF—<br>Operate SD-REC1 key (horizontal).  |                         |

## SECTION 218-246-502

| STEP | ACTION   | VERIFICATION   |
|------|--|----------------|
| 27b  | If testing PBX line circuit (LLP)—<br>Select A_ through G_ digits as required for access to 101-type test line in PBX.   |                |
| 28c  | If testing centralized attendant line circuit (Phase III centrex)—<br>Select A_ through H_ digits as follows:<br>A0; B_, C_, D_—primary office code; E_, F_, G_, H_—directory number assigned to 101-type test line in primary office. |                |
| 29   | Momentarily operate ST key.  | Call answered. |
| 30d  | If far-end impulse noise measurement is required—<br>Request terminating end to connect an impulse counter.  |                |
| 31e  | If far-end impulse noise measurement is <i>not</i> required—<br>Request terminating end to provide a balance termination.  |                |
| 32   | Operate TMS1 key (horizontal).   |                |
| 33f  | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key.  |                |
| 34   | At 6H IC—<br>Turn MINUTES control to desired time.   |                |
| 35   | Momentarily operate reset lever.   |                |
| 36   | After timing interval (MINUTES control in 0 position)—<br>Record counter reading.<br>*Counter reading indicates impulse counts at near-end.*   |                |
| 37f  | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>At MTF—<br>Restore TM1 key.   |                |
| 38   | At MTF—<br>Restore TMS1 key.   |                |
| 39d  | If far-end impulse noise measurement is required—<br>Obtain and record impulse count from terminating end.   |                |

| STEP  | ACTION   | VERIFICATION            |
|---|--|-------------------------|
| 40  | Request terminating end to disconnect.   |                         |
| 41  | Momentarily operate RL key.  | All lamps extinguished. |
| 42  | Restore all keys and switches.   |                         |
| 43  | Remove all patching cords used for test.   |                         |
| <b>AE. Two-Way P/AR Measurement to 101-Type Test Line, Switchboards, or Traffic Operating Desks</b> |  |                         |
| <i>Note:</i> ♦Refer to♦ Fig. 1.   |  |                         |
| 23  | At P/AR RCVR—<br>Set IMPEDANCE switch to 900.  |                         |
| 24  | At MTF—<br>Patch INPUT binding posts on P/AR RCVR to REC1 jack on TTC, using W2BS cord.  |                         |
| 25b   | If 27A P/AR GEN is used—<br>Patch SD jack on TTC to 900 ohm 310 jack on 27A P/AR GEN, using 6-foot long P3E cord.  |                         |
| 26c   | If 27E P/AR GEN is used—<br>At 27E P/AR GEN—<br>Operate OUTPUT switch to 900.  |                         |
| 27c   | At MTF—<br>Patch SD jack on TTC to OUTPUT 310 jack on 27E P/AR GEN, using 6-foot long P3E cord.  |                         |
| 28  | Operate SD-REC1 key (horizontal).  |                         |
| 29d   | If testing PBX line circuit (LLP)—<br>Select A_ through G_ digits as required for access to 101-type test line in PBX.   |                         |
| 30e   | If testing centralized attendant line circuit (Phase III centrex)—<br>Select A_ through H_ digits as follows:<br>B0; B_, C_, D,—primary office code; E_, F_, G_, H,—directory number assigned to 101-type test line in primary office. |                         |
| 31  | Momentarily operate ST key.  | Call answered.          |
| 32  | Request terminating end to connect P/AR GEN for agreed upon interval.  |                         |

SECTION 218-246-502

| STEP | ACTION   | VERIFICATION |
|------|--|--------------|
| 33   | Operate TMS1 key (horizontal).   |              |
| 34f  | If trunk test circuit is <b>not</b> arranged for loop-around testing—<br>Operate TM1 key.  |              |
| 35   | At P/AR RCVR—<br>Adjust COARSE and FINE RECEIVED LEVEL ADJ controls until RECEIVED LEVEL meter reads REF LEVEL.                      |              |
| 36   | Record P/AR meter reading.<br>*Meter reading is peak-to-average ratio rating at near end.*   |              |
| 37f  | If trunk test circuit is <b>not</b> arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TM1 key.  |              |
| 38g  | If trunk test circuit is arranged for loop-around testing—<br>After agreed upon interval—<br>At MTF—<br>Restore TMS1 key (vertical). |              |
| 39   | Request terminating end to make P/AR measurements.   |              |
| 40   | Restore SD-REC1 key (vertical).  |              |
| 41g  | If trunk test circuit is arranged for loop-around testing—<br>Operate TMS1 key (horizontal) for agreed upon interval.                |              |
| 42g  | After agreed upon interval—<br>Restore TMS1 key.   |              |
| 43f  | If trunk test circuit is <b>not</b> arranged for loop-around testing—<br>Operate TM1 key for agreed upon interval.                   |              |
| 44f  | After agreed upon interval—<br>Restore TM1 key.  |              |
| 45   | Request and record P/AR meter reading taken at terminating end.  |              |
| 46   | Request terminating end to disconnect.   |              |

| STEP | ACTION                                   | VERIFICATION            |
|------|--|-------------------------|
| 47   | Momentarily operate RL key.              | All lamps extinguished. |
| 48   | Restore all keys and switches.           |                         |
| 49   | Remove all patching cords used for test. |                         |

#### TERMINATING END PROCEDURES

#### BA. Two-Way 1004-Hz Loss Measurement to 101-Type Test Line

**Note:** Refer to Fig. 2.

- 1 When call to 101-type test line is received—  
At MTF—  
Operate TRK or TALK key to TALK.
- 2 Connect test receiver to RCVR jack on TTC.
- 3a If 23A or 23D TMS is used—  
At 23A or 23D TMS—  
Operate function key to MEAS.
- 4a Operate INPUT key to 900.
- 5a At MTF—  
Patch MEAS 310 jack on 23A or 23D TMS to REC1 jack on TTC, using 6-foot long P3E cord.
- 6b If 23B or 23C TMS is used—  
Patch MEAS 900 jack on TTC to REC1 jack on TTC, using 3-foot long P3E cord.
- 7c If TNM is used—  
Patch RCV or RCVB jack on TTC to REC1 jack on TTC, using 3-foot long P3E cord.
- 8 Patch SD jack on TTC to 1000-0-900 jack on TTC, using 3-foot long P3E cord.
- 9 Operate TMS1 key (horizontal).
- 10 When requested by originating end to send 1004-Hz tone at 0dBm—  
Patch TRK1 jack on TTC to TM A-ABX jack on jack, lamp, and key circuit for 101-type test line, using 3-foot long P3E cord for agreed upon interval.

**Note:** When plug is inserted into TM\_ jack, talking path is opened.

**SECTION 218-246-502**

| <b>STEP</b> | <b>ACTION</b>  | <b>VERIFICATION</b> |
|-------------|--|---------------------|
| 11          | After agreed upon interval—<br>Remove plug from TM_ jack being used for test.                          |                     |
| 12          | When requested by originating end to measure tone—<br>Reinsert plug into TM_ jack being used for test. |                     |
| 13          | Operate SD-REC1 key (horizontal).  |                     |
| 14          | At TMS or TNM—<br>Read TMS or TNM meter.   |                     |
| 15          | At MTF—<br>Remove plug from TM_ jack being used for test.  |                     |
| 16          | Report TMS or TNM meter reading to originating end.  |                     |
| 17          | Restore all keys and switches.   |                     |
| 18          | Remove all patch cords used for test.  |                     |

**BB. Two-Way Frequency Response Measurement to 101-Type Test Line**

**Note:** ♦Refer to♦ Fig. 2.

- 1 When call to 101-type test line is received—  
At MTF—  
Operate TRK or TALK key to TALK.
- 2 Connect test receiver to RCVR jack on TTC.
- 3a If 23A or 23D TMS is used—  
At 23A or 23D TMS—  
Operate function key to MEAS.
- 4a Operate INPUT key to 900.
- 5a At MTF—  
Patch MEAS 310 jack on 23A or 23D TMS to REC1 jack on TTC, using 6-foot long P3E cord.
- 6b If 23B or 23C TMS is used—  
Patch MEAS 900 jack on TTC to REC1 jack on TTC, using 3-foot long P3E cord.

| STEP | ACTION  | VERIFICATION |
|------|---|--------------|
| 7c   | If TNM is used—<br>Patch RCV or RCVB jack on TTC to REC1 jack on TTC, using 3-foot long P3E cord.   |              |
| 8d   | If KS-19353 L1 or KS-19353 L4 oscillator is used—<br>At oscillator—<br>Set FUNCTION switch to 900.  |              |
| 9d   | At MTF—<br>Patch SD jack on TTC to OUTPUT 310 jack on oscillator, using 6-foot long P3E cord.   |              |
| 10e  | If KS-19260 L1 oscillator is used—<br>Patch SD jack on TTC on OSC 900 jack on TTC, using 3-foot long P3E cord.  |              |
| 11   | Operate TMS1 key (horizontal).  |              |
| 12   | When requested by originating end to send tone—<br>At oscillator—<br>Adjust oscillator to 0-dBm at requested frequency.   |              |
| 13   | At MTF—<br>Patch TRK1 jack on TTC to TM A-ABX jack on jack, lamp, and key circuit for 101-type test line, using 3-foot long P3E cord for agreed upon interval.<br><br><b>Note:</b> When plug is inserted into TM_ jack, talking path is opened. |              |
| 14   | After agreed upon interval—<br>Remove plug from TM_ jack being used for test.   |              |
| 15   | Repeat Steps 12 through 14 for other frequencies requested by originating end.  |              |
| 16   | When requested by originating end to measure tone—<br>Reinsert plug into TM_ jack being used for test for agreed upon interval.   |              |
| 17   | Operate SD-REC1 key (horizontal).   |              |
| 18   | At TMS or TNM—<br>Read TMS or TNM meter.  |              |

**SECTION 218-246-502**

| <b>STEP</b> | <b>ACTION</b>  | <b>VERIFICATION</b> |
|-------------|--|---------------------|
| 19          | After agreed upon interval—<br>At MTF—<br>Remove plug from TM_ jack being used for test. |                     |
| 20          | Report TMS or TNM meter reading to originating end.                                      |                     |
| 21          | Repeat Steps 16, 18 through 20 for other frequencies as directed by originating end.     |                     |
| 22          | Restore all keys and switches.   |                     |
| 23          | Remove all patch cords used for test.  |                     |

**BC. Message Circuit Noise Measurement to 101-Type Test Line**

*Note:* Refer to Fig. 2.

- 1 When call to 101-type test line is received—  
At MTF—  
Operate TRK or TALK key to TALK.
- 2 Connect test receiver to RCVB jack on TTC.
- 3a If 3A or 3C NMS is used—  
At 3A or 3C NMS—  
Set FUNCTION switch to NM 900 (3A NMS) or NM 600/900 (3C NMS).
- 4a Connect ground to GRD post on NMS, using 893 cord.
- 5a Set DBRN switch to 85.
- 6a At MTF—  
Patch IN jack on NMS to REC1 jack on TTC, using P2AE (3C NMS) or 6-foot long P3E (3C NMS) cord.
- 7b If TNM is used—  
Patch RCV or RCVB jack on TTC to REC1 jack on TTC, using 3-foot long P3E cord.
- 8b Operate NM/A+40 key if provided.
- 9 Operate SD-REC1 key (horizontal).
- 10 Operate TMS1 key (horizontal).

| STEP   | ACTION   | VERIFICATION |
|--|--|--------------|
| 11   | When requested by originating end to measure message circuit noise—<br>Patch TRK1 jack on TTC to TM A-ABX jack on jack, lamp, and key circuit for 101-type test line, using 3-foot long P3E cord for agreed upon interval. |              |
|  | <i>Note:</i> When plug is inserted in TM_ jack, talking path is opened.  |              |
| 12a  | If 3A or 3C NMS is used—<br>At 3A or 3C NMS—<br>Adjust DBRN switch for a meter indication between +2 and +9.   |              |
| 13   | At NMS or TNM—<br>Read NMS or TNM meter.   |              |
|  | <i>Note:</i> NMS or TNM indicates noise at terminating end; character of noise is heard in test receiver.  |              |
| 14   | After agreed upon interval—<br>At MTF—<br>Remove plug from TM_ jack being used for test.   |              |
| 15   | Report NMS or TNM meter reading and character of noise to originating end.   |              |
| 16   | Restore all keys and switches.   |              |
| 17   | Remove all patch cords used for test.  |              |
| <b>BD. Impulse Noise Measurement to 101-Type Test Line</b> |  |              |
|  | <i>Note:</i> ♦Refer to♦ Fig. 2.  |              |
| 1  | When call to 101-type test line is received—<br>At MTF—<br>Operate TRK or TALK key to TALK.  |              |
| 2  | Connect test receiver to RCVR jack on TTC.   |              |
| 3  | When requested by originating end to provide balance termination—<br>Operate TR key.   |              |
| 4  | Patch TRK1 jack on TTC to TM A-ABX jack on jack, lamp, and key circuit for 101-type  |              |

| STEP | ACTION   | VERIFICATION |
|------|--|--------------|
|      | test line, using 3-foot long P3E cord for agreed upon interval.  |              |
|      | <b>Note:</b> When plug is inserted into TM_ jack, talking path is opened.  |              |
| 5    | After agreed upon interval—<br>Remove plug from TM_ jack being used for test.  |              |
| 6    | Restore TR key.  |              |
| 7    | When requested by originating end to measure impulse noise—<br>Patch MEAS jack on 6H IC to REC1 jack on TTC, using P2B cord. |              |
| 8    | At 6H 1C—<br>Set DIAL-MEAS switch to MEAS.   |              |
| 9    | Set DBRN dial to the required noise reference level.   |              |
| 10   | At MTF—<br>Operate SD-REC1 key (horizontal).   |              |
| 11   | Operate TMS1 key (horizontal).   |              |
| 12   | Reinsert plug into TM_ jack being used for test.   |              |
| 13   | At 6H 1C—<br>Turn MINUTES control to desired time.   |              |
| 14   | Momentarily operate reset lever.   |              |
| 15   | After timing interval (MINUTES control in 0 position)—<br>At MTF—<br>Remove plug from TM_ jack being used for test.          |              |
| 16   | Report 6H 1C counter reading to originating end.   |              |
| 17   | Restore all keys and switches.   |              |
| 18   | Remove all patch cords used for test.  |              |

| STEP | ACTION   | VERIFICATION |
|------|--|--------------|
| BE.  | <b>Two-Way P/AR Measurement to 101-Type Test Line</b>  |              |
|      | <i>Note:</i> Refer to Fig. 2.  |              |
| 1    | When call to 101-type test line is received—<br>At MTF—<br>Operate TRK or TALK key to TALK.  |              |
| 2    | Connect test receiver to RCVR jack on TTC.   |              |
| 3    | At P/AR RCVR—<br>Set IMPEDANCE switch to 900.  |              |
| 4    | At MTF—<br>Patch INPUT binding posts on P/AR RCVR to REC1 jack on TTC, using W2BS cord.  |              |
| 5a   | If 27A P/AR GEN is used—<br>Patch SD jack on TTC to 900 ohm 310 jack on 27A P/AR GEN, using 6-foot long P3E cord.  |              |
| 6b   | If 27E P/AR GEN is used—<br>At 27E P/AR GEN—<br>Operate OUTPUT switch to 900.  |              |
| 7b   | At MTF—<br>Patch SD jack on TTC to OUTPUT 310 jack on 27E P/AR GEN using 6-foot long P3E cord.   |              |
| 8    | Operate TMS1 key (horizontal).   |              |
| 9    | When requested by originating end to connect P/AR GEN—<br>Patch TRK1 jack on TTC to TM A-ABX jack on jack, lamp, and key circuit for 101-type test line, using 3-foot long P3E cord. |              |
|      | <i>Note:</i> When plug is inserted into TM <sub>1</sub> jack, talking path is opened.  |              |
| 10c  | If trunk test circuit is <i>not</i> arranged for loop-around testing—<br>Operate TM1 key.  |              |
| 11   | After agreed upon interval—<br>Remove plug from TM <sub>1</sub> jack being used for test.  |              |
| 12   | When requested by originating end to make P/AR measurement—  |              |

SECTION 218-246-502

| STEP | ACTION  | VERIFICATION |
|------|---|--------------|
|      | Reinsert plug into TM_ jack being used for test for agreed upon interval.                                       |              |
| 13   | Operate SD-REC1 key (horizontal).   |              |
| 14   | At P/AR RCVR—<br>Adjust COARSE and FINE RECEIVED LEVEL ADJ controls until RECEIVED LEVEL meter reads REF LEVEL. |              |
| 15   | Record P/AR RCVR reading.   |              |
| 16   | After agreed upon interval—<br>At MTF—<br>Remove plug from TM_ jack being used for test.                        |              |
| 17   | Report P/AR RCVR reading to originating end.  |              |
| 18   | Restore all keys and switches.  |              |
| 19   | Remove all patch cords used for test.   |              |

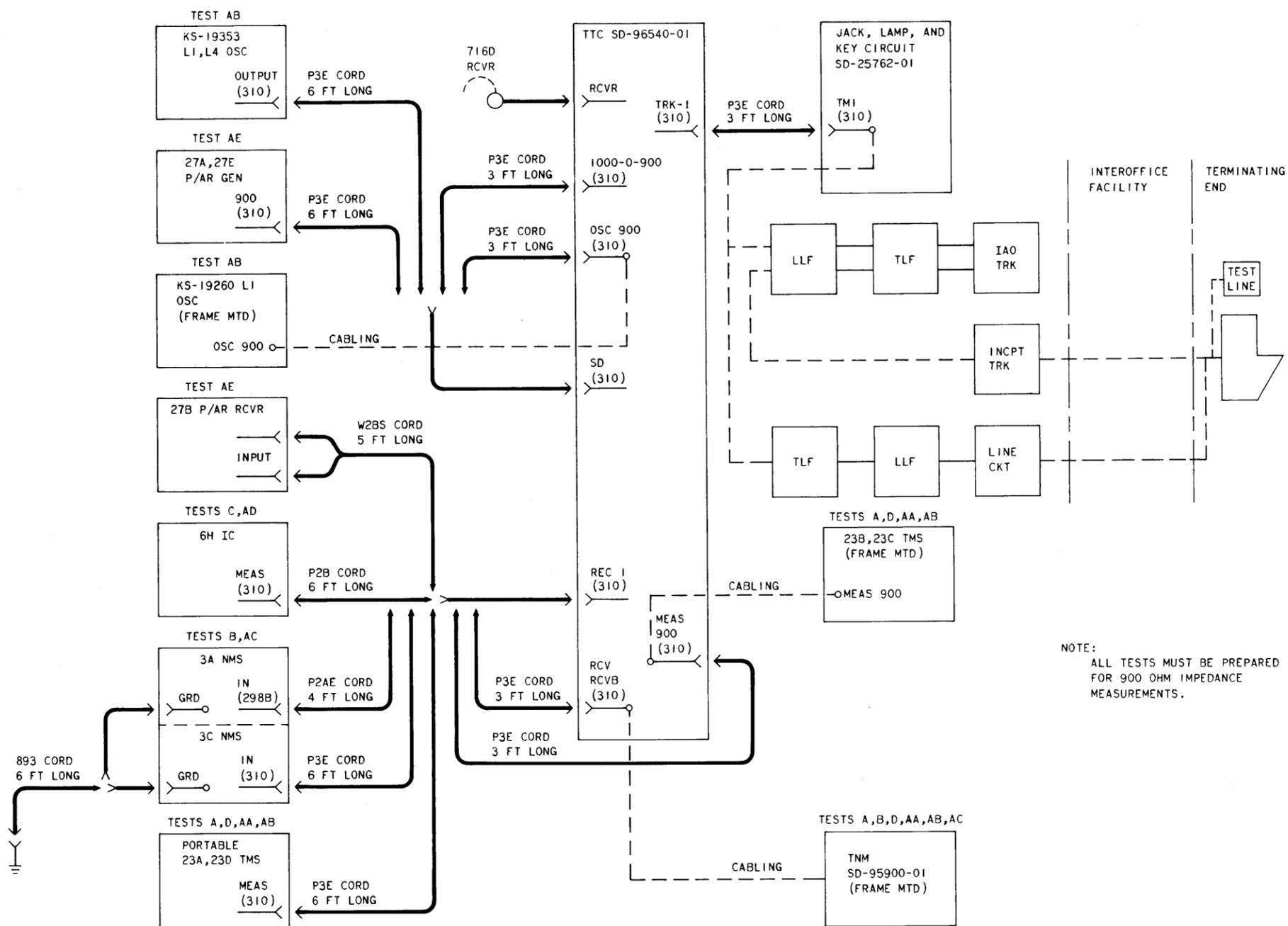
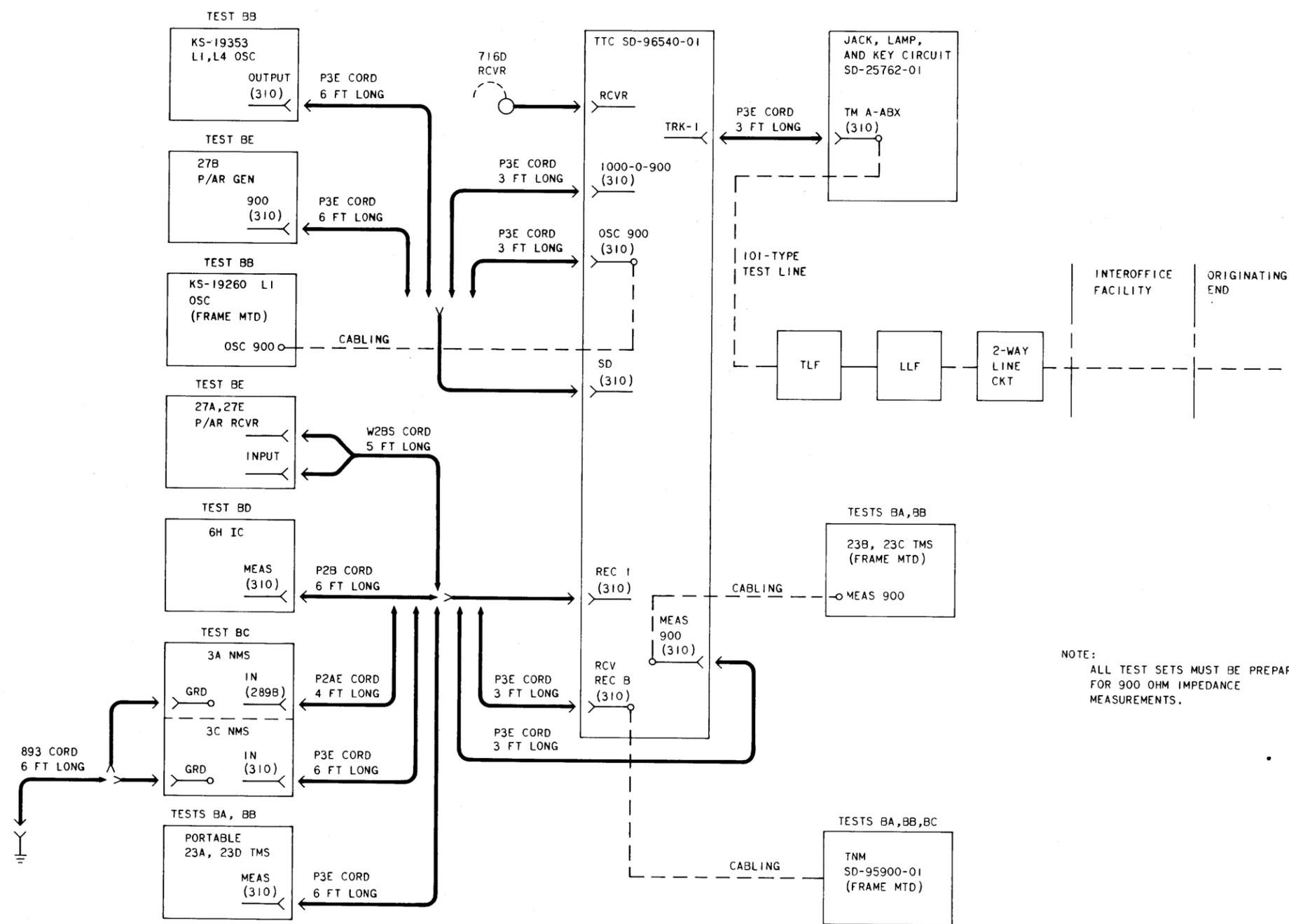


Fig. 1—900-Ohm Termination Diagram for Tests A Through AE





NOTE:  
ALL TEST SETS MUST BE PREPARED FOR 900 OHM IMPEDANCE MEASUREMENTS.

Fig. 2—900-Ohm Termination Diagram for Tests BA Through BE

