TOLL SWITCHING TRUNKS
TRANSMISSION TESTS
USING MANUAL TEST FRAME SD-68587-01
NO. 4A AND 4M TOLL SWITCHING SYSTEMS

1. GENERAL

1.01 This section describes methods of making transmission measurements on toll completing trunks and methods of assisting in the making of transmission measurements, using the manual test frame (MTF) SD-68587-01. The transmission measurements covered in this section include loss, message circuit noise, impulse noise, frequency response, and peak-to-average ratio (PAR).

1.02 This issue affects the Equipment Test List.

1.03 The tests covered are:

A. One-Way 1000 HZ Loss Measurement to 102-Type Test Line

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

C. Impulse Noise Measurement and Noise Check to 100-Type Test Line

D. Two-Way 1000 HZ Loss Measurement and Noise Check to 104-Type Test Line

E. Two-Way 1000 HZ Loss Measurement Using Loop Around Test Line (No TDF Patch or One TDF Patch)

F. Two-Way 1000 HZ Loss Measurement Using Loop Around Test Line (Two TDF Patches)

ORIGINATING END PROCEDURES

AA. Two-Way 1000 HZ Loss Measurement: This test checks the trunk loss measurement to a 101-type test line for toll completing trunks.

AB. Two-Way Frequency Response Measurement: This test checks frequency response measurements to a 101-type test line for toll completing trunks.

AC. Message Circuit Noise Measurement: This test checks the trunk noise measurements to a 101-type test line for toll completing trunks.

AD. Message Circuit Impulse Noise Measurement: This test checks the trunk impulse noise measurements to a 101-type test line for toll completing trunks.

AE. Two-Way PAR Measurement: This test checks the trunk peak-to-average ratio noise measurements to a 101-type test line for toll completing trunks.

TERMINATING END PROCEDURES

BA. Two-Way 1000 HZ Loss Measurement

BB. Two-Way Frequency Response Measurement

BC. Message Circuit Noise Measurement

BD. Impulse Noise Measurement

BE. Two-Way PAR Measurement

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 lettered procedures 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 tests and procedures. For example:

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

1.05 When performing Tests AA through AE and the companion procedures BA through BE to switchboards or traffic operating desks, a separate talking circuit is required for communication with the assistant at the far-end traffic test location.

1.06 Certain keys have built-in lamps that light when the key is operated and extinguish when the key is released. The circuitry for these lamps is through the contacts of the key. The steps marked with an asterisk are of this type, and the lighting and extinguishing of the lamp should be observed with operation and release of the key. Some key lamps may be lighted and extinguished by other means when the key is operated and released. The lighting and extinguishing of these lamps will be listed in the verification.

1.07 A number of the key-lamp assemblies may either light steady or flash upon key operation. A steady lamp indicates the desired operation has taken place. A flashing lamp indicates the desired operation has not taken place, normally due to lockout conditions.

1.08 Transmission requirements for trunks are shown on circuit layout cards, local trunk records, or the appropriate section of the practices.

1.09 In each test, the transmission loss indicated by the transmission measuring circuit provided includes the loss of the connecting circuits used to complete the test connection.

1.10 The transmission loss indicated by the transmission measuring circuit provided 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.

1.11 The results of these tests should be entered on the proper form.

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

1.13 After the trunk under test has been connected to a 101-type test line, Tests AA through AE, and the companion procedures BA through BE, can be performed on the same trunk without releasing the trunk from the test line.

1.14 Tests C, AD, and BD are not applicable to trunks containing N, O, or ON carrier.

1.15 The trunk distributing frame (TDF) patch jacks can be used only with A-ACCESS portion of the MTF on outgoing tests and with the B-ACCESS portion of the MTF on incoming tests.

1.16 Test F requires the use of two TDF patch jacks and two MTFs. It is intended for use on circuit order testing and precutover testing where Test E cannot be used, because the switching system is not available to these trunks.

1.17 When performing Tests AA through AE to a switchboard or desk, a transfer of test call to a supervisory and test circuit is required.

1.18 Before performing any tests in this section, all test sets to be used should be calibrated in accordance with standard instructions.

1.19 ***Lettered Steps:*** A letter a, b, c, etc., added to a step number in Part 3 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 performed 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.

1.20 For return loss and office balance procedures, refer to Section 660-473- series.

2. APPARATUS

2.01 The apparatus required for each test is listed in Table A. A more descriptive name and additional information on each item is covered in the paragraph indicated by the number in parentheses.

Calibrating and operating procedures for each set may be found in the section listed with each set.

2.02 23CR transmission measuring set (bay mounted) J94023CR (Section 103-223-101).

Note: The 23CR transmission measuring set is provided as an option. If the 23CR TMS is not provided, the transmission measuring circuit, part of SD-95900-01, should be provided.

2.03 3CR noise measuring set (bay mounted) J94003CR (Section 103-611-101).

Note: The 3CR noise measuring set is provided as an option. If the 3CR NMS is not provided, the noise measuring circuit, part of SD-95900-01, should be provided.

2.04 6HR impulse noise counter (bay mounted) J94006HR (Section 103-620-101).

2.05 KS-19260, L1 oscillator (bay mounted) (Section 103-302-100).

2.06 27E PAR generator J94027E, or 27A PAR generator J94027A (Section 103-110-110).

2.07 27B PAR meter receiver J94027B (Section 103-110-110).

2.08 Patching cord, P5L cord, 10 feet long, equipped with a 425A plug and five No. 30 Mueller alligator clips with No. 32 black insulators (W5F cord) for use in making patches on the trunk distributing frame (TDF).

2.09 Patching cord, P3E cord, 6 feet long, equipped with 310 plugs (3P7A cord) for connecting to PAR generator.

2.10 Patching cord, W2DL cord, 5 feet 6 inches long, equipped with 310 plug and two 35-type cord tips (2W42A cord) for use in connecting to PAR receiver.

2.11 Receiver, for monitoring on 3CR NMS or 6H IC—723A receiver equipped with W2FS cord.

TABLE A

APPARATUS

APPARATUS	TESTS															
	A	B	C	D	E	F	AA	AB	AC	AD	AE	BA	BB	BC	BD	BE
Transmission Measuring Set (2.02)	1			1	1	1	1	1				1	1			
Noise Measuring Set (2.03)		1							1					1		
Impulse Noise Counter (2.04)			1							1					1	
Oscillator (2.05)				1				1					1			
PAR Generator (2.06)											1					1
PAR Meter Receiver (2.07)											1					1
Testing Cord (2.08)	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
Testing Cord (2.09)								1			1		1			1
Testing Cord (2.10)											1					1
Receiver (2.11)														1		

3. METHOD

STEP	ACTION	VERIFICATION
	A. One-Way 1000 HZ Loss Measurement to 102-Type Test Line	
1a	If testing the trunk using the trunk test connector— Determine from the office records the location (on the trunk test connector) of the trunk to be tested.	
2a	At the manual test frame (MTF)— Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to the location (on the trunk test connector) of the trunk to be tested.	
3b	If testing the trunk using the trunk distributing frame (TDF) patch jack— At the TDF— Using the W5F cord, connect the outgoing link frame appearance of the trunk to be tested to the OG (TR, TR1) jack associated with the MTF being used. ***Note:*** Both ends of the patch are made on the vertical side of the TDF.	
4	At the MTF— Operate the class key* required for the trunk under test.	
5c	If the trunk under test is equipped with an A pad— Operate A PD CL key*.	
6d	If the trunk under test is CX or LP class and requires dial pulsing delay— Operate XDD key*.	
7a	If testing the trunk using the trunk test connector— Operate the ITT key* if the trunk under test is on the intertoll (IT) train.	
8b	If testing trunk using the TDF patch jack— Insure that the ITT key is released.	
9e	If trunk under test has been made busy by means of a make-busy plug— Operate M & SB-OVRD key*.	

STEP	ACTION	VERIFICATION
	Note: The maintenance and service busy override (M & SB-OVRD) feature will not override a maintenance busy on outgoing trunk circuit SD-68514-01.	
10a	If testing trunk using the trunk test connector— Operate an OTRK___ key* (A or B-ACCESS).	
11b	If testing trunk using the TDF patch jack— Operate an OTRK___ key* (A-ACCESS only).	
12b	Momentarily depress the OPJV___ key* associated with the outgoing patch jack vertical being used on the TDF.	KP lamp lighted. If trunk under test does not require outpulsing— Test call completes.
MF and DCKP Trunks		
13a	If testing the trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
14	Momentarily depress KP key.	
15	Keypulse digits required to reach 102-type test line at terminating end.	
16	Momentarily depress ST-KS key.	KP lamp extinguished. Test call completes to 102-type test line.
17	Operate MON key*.	1000 HZ tone heard on handset on MTF.
18	Proceed with Step 29.	
Dial Pulse Trunks		
19a	If testing the trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
20	Operate DT key*.	KP lamp extinguished.
21	Dial digits required to reach 102-type test line at terminating end.	
22	Momentarily depress ED key.	If ringing is not required for trunk under test— Test call completes to 102-type test line. If ringing is required for trunk under test— RING lamp lighted.
23f	If ringing is required for the trunk under test—	RING lamp extinguished. Test call completes to 102-type test line.

STEP	ACTION	VERIFICATION
	Momentarily depress RING key when RING lamp lights.	
24	Operate MON key*.	1000 HZ tone heard on handset on MTF.
25	Proceed with Step 29.	
Switchboard Trunks		
26a	If testing the trunk using the trunk test connector— Momentarily depress ST key.	Call completes to operator.
27	Operate TEL key*.	Trunk under test cut through to handset on MTF.
28	Request connection to 102-type test line.	1000 HZ tone heard on handset on MTF.
	Note: When testing a trunk to a switchboard, request the operator to restore the TALK key to normal.	
29	Operate RCV key* and TMS key*.	Far-to-near loss measurement registered on transmission measuring circuit provided.
30	Record loss measurement.	
31c	If the trunk under test is equipped with an A pad— Operate PAD SW key*.	Far-to-near loss measurement remains the same as recorded in Step 30.
32c	Restore PAD SW key*.	
33	Restore RCV key* and TMS key*.	
34g	If no further tests are to be performed— Operate RN key*.	Trunk under test disconnected from MTF.
35g	Restore all keys and switches.	All lamps extinguished.
36b	If testing the trunk using the TDF patch jack— At the TDF— Remove patch cord.	

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

1a	If testing the trunk using the trunk test connector— Determine from the office records the location	

STEP	ACTION	VERIFICATION
	(on the trunk test connector) of the trunk to be tested.	
2a	At the manual test frame (MTF)— Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to the location (on the trunk test connector) of the trunk to be tested.	
3b	If testing the trunk using the trunk distributing frame (TDF) patch jack— At the TDF— Using the W5F cord, connect the outgoing link frame appearance of the trunk to be tested to the OG (TR, TR1) jack associated with the MTF being used. ***Note:*** Both ends of the patch are made on the vertical side of the TDF.	
4	At the MTF— Operate the class key* required for the trunk under test.	
5c	If the trunk under test is equipped with an A pad— Operate A PD CL key*.	
6d	If the trunk under test is CX or LP class and requires dial pulsing delay— Operate XDD key*.	
7a	If testing the trunk using the trunk test connector— Operate the ITT key*, if the trunk under test is on the intertoll (IT) train.	
8b	If testing trunk using the TDF patch jack— Insure that the ITT key is released.	
9e	If trunk under test has been made busy by means of a make-busy plug— Operate M & SB-OVRD key*. ***Note:*** The maintenance and service busy override (M & SB-OVRD) feature will not override a maintenance busy on outgoing trunk circuit SD-68514-01.	
10a	If testing trunk using the trunk test connector— Operate an OTRK___ key* (A or B-ACCESS).	

STEP	ACTION	VERIFICATION
11b	If testing trunk using the TDF patch jack— Operate an OTRK___ key* (A-ACCESS only).	
12b	Momentarily depress the OPJV___ key* associated with the outgoing patch jack vertical being used on the TDF.	KP lamp lighted. If trunk under test does not require outpulsing— Test call completes.
MF and DCKP Trunks		
13a	If testing the trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
14	Momentarily depress KP key.	
15	Keypulse digits required to reach 100-type test line at terminating end.	
16	Momentarily depress ST-KS key.	KP lamp extinguished. Test call completes to 100-type test line.
17	Operate MON key*.	Circuit noise, if any, heard on handset on MTF.
18	Proceed with Step 29g.	
Dial Pulse Trunks		
19a	If testing the trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
20	Operate DT key*.	KP lamp extinguished.
21	Dial digits required to reach 100-type test line at terminating end.	
22	Momentarily depress ED key.	If ringing is not required for trunk under test— Test call completes to 100-type test line. If ringing is required for trunk under test— RING lamp lighted.
23f	If ringing is required for trunk under test— Momentarily depress RING key when RING lamp lights.	RING lamp extinguished. Test call completes to 100-type test line.
24	Operate MON key*.	Circuit noise, if any, heard on handset on MTF.
25	Proceed with Step 29g.	

STEP	ACTION	VERIFICATION
Switchboard Trunks		
26a	If testing the trunk using the trunk test connector— Momentarily depress ST key.	Call completes to operator.
27	Operate TEL key*.	Trunk under test cut through to handset on MTF.
28	Request connection to 100-type test line. ***Note:*** When testing a trunk to a switchboard, request the operator to restore the TALK key to normal.	Circuit noise, if any, heard on handset on MTF.
29g	If MTF is equipped with transmission and noise measuring circuit SD-95900-01— Operate NSE (A+40) key* and RCV key*.	Far-to-near noise measurement registered on noise measuring circuit provided.
30h	If office is not equipped with transmission and noise measuring circuit SD-95900-01— Operate NSE key* and RCV key*.	Far-to-near noise measurement registered on 3CR noise measuring circuit.
31	Record noise measurement and character of noise.	
32	Restore NSE (A+40) key* or NSE key* and RCV key*.	
33i	If no further tests are to be performed— Operate RN key*.	Trunk under test disconnected from MTF.
34i	Restore all keys and switches.	All lamps extinguished.
35b	If testing trunk using TDF patch jack— At the TDF— Remove patch cord.	
C. Impulse Noise Measurement and Noise Check to 100-Type Test Line		
	Note: Test C is not applicable to trunks containing N, O, or ON carrier.	
1a	If testing the trunk using the trunk test connector— Determine from the office records the location (on the trunk test connector) of the trunk to be tested.	
2a	At the manual test frame (MTF)— Operate the TTH, TH, H, T, and U sections	

STEP	ACTION	VERIFICATION
	of the trunk selector switch to correspond to the location (on the trunk test connector) of the trunk to be tested.	
3b	If testing the trunk using the trunk distributing frame (TDF) patch jack— At the TDF— Using the W5F cord, connect the outgoing link frame appearance of the trunk to be tested to the OG (TR, TR1) jack associated with the MTF being used.	
	Note: Both ends of the patch are made on the vertical side of the TDF.	
4	At the MTF— Operate the class key* required for the trunk under test.	
5c	If the trunk under test is equipped with an A pad— Operate A PD CL key*.	
6d	If the trunk under test is CX or LP class and requires dial pulsing delay— Operate XDD key*.	
7a	If testing the trunk using the trunk test connector— Operate the ITT key*, if the trunk under test is on the intertoll (IT) train.	
8b	If testing trunk using the TDF patch jack— Insure that the ITT key is released.	
9e	If trunk under test has been made busy by means of a make-busy plug— Operate M & SB-OVRD key*.	
	Note: The maintenance and service busy override (M & SB-OVRD) feature will not override a maintenance busy on outgoing trunk circuit SD-68514-01.	
10a	If testing trunk using the trunk test connector— Operate an OTRK___ key* (A or B-ACCESS).	
11b	If testing trunk using the TDF patch jack— Operate an OTRK___ key* (A-ACCESS only).	

STEP	ACTION	VERIFICATION
12b	Momentarily depress the OPJV___ key* associated with the outgoing patch jack vertical being used on the TDF.	KP lamp lighted. If trunk under test does not require outpulsing— Test call completes.
MF and DCKP Trunks		
13a	If testing the trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
14	Momentarily depress KP key.	
15	Keypulse digits required to reach 100-type test line at terminating end.	
16	Momentarily depress ST-KS key.	KP lamp extinguished. Test call completes to 100-type test line.
17	Operate MON key*.	Circuit noise, if any, heard on handset on MTF.
18	Proceed with Step 29g.	
Dial Pulse Trunks		
19a	If testing trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
20	Operate DT key*.	KP lamp extinguished.
21	Dial digits required to reach 100-type test line at terminating end.	
22	Momentarily depress ED key.	If ringing is not required for trunk under test— Test call completes to 100-type test line. If ringing is required for trunk under test— RING lamp lighted.
23f	If ringing is required for trunk under test— Momentarily depress RING key when RING lamp lights.	RING lamp extinguished. Test call completes to 100-type test line.
24	Operate MON key*.	Circuit noise, if any, heard on handset on MTF.
25	Proceed with Step 29g.	
Switchboard Trunks		
26a	If testing trunk using the trunk test connector— Momentarily depress ST key.	Call completes to operator.

STEP	ACTION	VERIFICATION
27	Operate TEL key*.	Trunk under test cut through to handset on MTF.
28	Request connection to 100-type test line. ***Note:*** When testing a trunk to a switchboard, request the operator to restore the TALK key to normal.	Circuit noise, if any, heard on handset on MTF.
29g	If test line returns momentary on-hook pulses— Monitor the connection to determine the number of pulses per minute.	
30	Operate RCV key* and IMP CTR key*.	Noise pulses can be registered on 6HR impulse noise counter.
31	At 6HR impulse noise counter— Set the DBRN dial to the required noise threshold level.	
32	Set the MINUTES switch to the required timing interval. ***Note:*** To insure accurate timing intervals of 3 minutes or less, first adjust the timer to at least 5 minutes and then return timer to the desired value.	
33	Momentarily operate RESET key to zero counter.	6HR records all impulses above the reference level, including impulses due to changes in supervision.
34	At termination of timing interval— Record impulse counter reading. ***Note:*** If test line returns momentary on-hook pulses, deduct the number of pulses for each minute as determined in Step 29g from the counter reading.	
35	Restore the 6HR impulse counter to the normal condition.	
36	Restore RCV key* and IMP CTR key*.	
37h	If no other tests are to be performed— Operate RN key*.	Trunk under test disconnected from MTF.
38h	Restore all keys and switches.	All lamps extinguished.

STEP	ACTION	VERIFICATION
39b	If testing trunk using TDF patch jack— At the TDF— Remove patch cord.	

D. Two-Way 1000 HZ Loss Measurement and Noise Check to 104-Type Test Line

1a	If testing the trunk using the trunk test connector— Determine from the office records the location (on the trunk test connector) of the trunk to be tested.	
2a	At the manual test frame (MTF)— Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to the location (on the trunk test connector) of the trunk to be tested.	
3b	If testing the trunk using the trunk distributing frame (TDF) patch jack— At the TDF— Using the W5F cord, connect the outgoing link frame appearance of the trunk to be tested to the OG (TR, TR1) jack associated with the MTF being used. ***Note:*** Both ends of the patch are made on the vertical side of the TDF.	
4	At the MTF— Operate the class key* required for the trunk under test.	
5c	If the trunk under test is equipped with an A pad— Operate A PD CL key*.	
6d	If the trunk under test is CX or LP class and requires dial pulsing delay— Operate XDD key*.	
7a	If testing the trunk using the trunk test connector— Operate the ITT key*, if the trunk under test is on the intertoll (IT) train.	
8b	If testing trunk using the TDF patch jack— Insure that the ITT key is released.	

STEP	ACTION	VERIFICATION
9e	If trunk under test has been made busy by means of a make-busy plug— Operate M & SB-OVRD key*. ***Note:*** The maintenance and service busy override (M & SB-OVRD) feature will not override a maintenance busy on outgoing trunk circuit SD-68514-01.	
10a	If testing trunk using the trunk test connector— Operate an OTRK___ key* (A or B-ACCESS).	
11b	If testing trunk using the TDF patch jack— Operate an OTRK___ key* (A-ACCESS only).	
12b	Momentarily depress the OPJV___ key* associated with the outgoing patch jack vertical being used on the TDF.	KP lamp lighted. If trunk under test does not require outpulsing— Test call completes.
MF and DCKP Trunks		
13a	If testing trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
14	Operate MON key*.	
15	Momentarily depress KP key.	
16	Keypulse digits required to reach 104-type test line at terminating end.	
17	Momentarily depress ST-KS key.	KP lamp extinguished. Trunk under test completes to 104-type test line. When connection to 104-type test line is completed, a momentary burst of 2225 HZ tone is heard in handset, or SUP lamp momentarily lighted.
18	Proceed with Step 29.	
Dial Pulse Trunks		
19a	If testing trunk using the trunk test connector— Momentarily operate ST key.	KP lamp lighted.
20	Operate MON key*.	
21	Operate DT key*.	KP lamp extinguished.
22	Dial digits required to reach 104-type test line at terminating end.	

STEP	ACTION	VERIFICATION
23	Momentarily depress ED key.	If ringing is required for trunk under test— RING lamp lighted. If ringing is not required for trunk under test— Trunk under test completes to 104-type test line. When connection to 104-type test line is completed, a momentary burst of 2225 HZ tone is heard in handset, or SUP lamp momentarily lighted.
24f	If ringing is required for trunk under test— Momentarily depress RING key when RING lamp lights.	RING lamp extinguished. Trunk under test completes to 104-type test line. When connection to 104-type test line is completed, a momentary burst of 2225 HZ tone is heard in handset, or SUP lamp momentarily lighted.
25	Proceed with Step 29.	
Switchboard Trunks		
26a	If testing trunk using the trunk test connector— Momentarily depress ST key.	Call completes to operator.
27	Operate TEL key*.	Trunk under test cut through to handset on MTF.
28	Request connection to 104-type test line. ***Note:*** When testing a trunk to a switchboard, request the operator to restore the TALK key to normal.	When operator completes connection to 104-type test line, a momentary burst of 2225 HZ tone is heard in handset, or SUP lamp momentarily lighted.
29	Operate RCV key* and TMS key*.	Trunk under test cut through to transmission measuring circuit provided.
30	After burst of 2225 HZ tone is heard, or after SUP lamp has momentarily lighted— Operate SEND key for approximately 3 seconds. ***Note:*** Near-to-far transmission loss is measured and stored at the distant transmission measuring circuit.	Approximately 2 seconds after SEND key is released— Far-to-near loss is registered on transmission measuring circuit provided for a 10-second interval. If SUP lamp lights momentarily, and far-to-near loss is not registered on transmission measuring circuit provided for a 10-second interval— Restore test frame to normal and repeat Steps 1 through 30 as required for trunk under test. Approximately 2 seconds after completion of far-to-near reading— Total of far-to-near plus near-to-far loss is registered on transmission measuring circuit provided for a 10-second interval.

STEP	ACTION	VERIFICATION
		Note: If SUP lamp lights momentarily between the first and the second transmission readings, add 10 dB to the TMS meter indication for the second 10-second tone.
31	Record the first 10-second reading as the far-to-near loss of the trunk under test and the second 10-second reading as the near-to-far loss. *Note:* The difference between the first and second readings is the near-to-far loss of the trunk under test.	
32g	If a near-to-far noise check is required— After the second 10-second interval of 1000 HZ tone— Restore RCV key* and TMS key*, and monitor connection for 5 seconds.	If SUP lamp is lighted or steady 2225 HZ tone is heard in test frame handset— Near-to-far noise does not exceed 41 dBrnc. If SUP lamp flashes or interrupted 2225 HZ tone is heard in test frame handset— Near-to-far noise exceeds 41 dBrnc.
33c	If trunk under test is equipped with an A pad— Operate RN key*.	Trunk under test disconnected from MTF.
34c	Repeat Steps 1 through 12b.	Trunk under test reconnected to MTF.
35c	Operate PAD SW key*.	
36c	Repeat Steps 13a through 31.	Transmission measurements remain the same as recorded in Step 31.
37c	Restore PAD SW key*.	
38	Restore RCV key* and MON key*.	
39h	If no further tests are to be performed— Operate RN key*.	Trunk under test disconnected from MTF.
40h	Restore all keys and switches.	All lamps extinguished.
41b	If testing trunk using TDF patch jacks— At the TDF— Remove patch cord.	

E. Two-Way 1000 HZ Loss Measurement Using Loop Around Test Line (No TDF Patch or One TDF Patch)

Note: The trunk distributing frame (TDF) patch jack can only be used with the A-ACCESS

STEP	ACTION	VERIFICATION
	portion of the manual test frame (MTF) on outgoing tests.	
	Far-to-Near Results	
1a	If testing trunk using the trunk test connector— Determine from the office records the location (on the trunk test connector) of the trunk to be tested.	
2a	At the MTF— Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to the location (on the trunk test connector) of the trunk to be tested.	
3b	If testing trunk using the TDF patch jack— At the TDF— Using W5F cord, connect the outgoing link frame appearance of the trunk to be tested to the OG (TR, TR1) jack associated with the MTF being used. ***Note:*** Both ends of the patch are made on the vertical side of the TDF.	
4	At the MTF— Operate the class key* required for the trunk to be tested.	
5c	If the trunk under test is equipped with an A pad— Operate A PD CL key*.	
6d	If testing CX or LP class trunk which requires dial pulsing delay— Operate XDD key*.	
7a	If testing trunk using the trunk test connector— Operate ITT key* when trunk under test is on the intertoll (IT) train.	
8b	If testing trunk using the TDF patch jack— Insure that ITT key is released.	
9a	If testing trunk using the trunk test connector— Operate an OTRK___ key* (A or B-ACCESS).	
10b	If testing trunk using the TDF patch jack— Operate an OTRK___ key* (A-ACCESS only).	

STEP	ACTION	VERIFICATION
11e	If trunk under test has been made busy by means of a make-busy plug— Operate M & SB-OVRD key*. ***Note:*** The maintenance and service busy override (M & SB-OVRD) feature will not override a maintenance busy on outgoing trunk circuit SD-68514-01.	
MF and DCKP Trunks		
12b	If testing trunk using the TDF patch jack— Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	KP lamp lighted.
13a	If testing trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
14	Momentarily depress KP key.	
15	Keypulse digits required to reach 102-type test line at terminating end.	
16	Momentarily depress ST-KS key.	KP lamp extinguished. Test call completes to 102-type test line.
17	Operate MON key*.	1000 HZ tone heard on handset on MTF.
18	Proceed with Step 31.	
Dial Pulse Trunks		
19b	If testing trunk using the TDF patch jack— Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	KP lamp lighted.
20a	If testing trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
21	Operate DT key*.	
22	Dial digits required to reach 102-type test line at terminating end.	
23	Momentarily depress ED key.	If ringing is not required for trunk under test— Test call completes to 102-type test line. If ringing is required for trunk under test— RING lamp lighted.

STEP	ACTION	VERIFICATION
24f	If ringing is required for trunk under test—Momentarily depress RING key when RING lamp lights.	KP lamp extinguished. Test call completes to 102-type test line.
25	Operate MON key*.	1000 HZ tone heard on handset on MTF.
26	Proceed with Step 31.	
Switchboard Trunks		
27b	If testing trunk using the TDF patch jack—Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	Call completes to operator.
28a	If testing trunk using the trunk test connector—Momentarily depress ST key.	Call completes to operator.
29	Operate TEL key*.	Trunk under test cut through to handset on MTF.
30	Request connection to 102-type test line. ***Note:*** When testing a trunk to a switchboard, request the operator to restore the TALK key to normal.	1000 HZ tone heard on handset on MTF.
31	Operate RCV key* and TMS key*.	Far-to-near loss measurement registered on transmission measuring circuit provided.
32	Record loss measurement.	
33	Operate and release RN key.	Trunk under test disconnected from MTF.
34	Repeat Steps 1a through 33 for all trunks in the group to be tested.	
Connection of Reference Trunk to First Appearance of Loop Around Test Line		
35	Select one of the trunks, whose far-to-near loss has been measured, as the reference trunk. ***Note:*** The reference trunk should be stable, and its measured far-to-near loss within ± 1.0 dB of the expected measured loss (EML).	
36	Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to the location (on the trunk test connector) of the reference trunk.	

STEP	ACTION	VERIFICATION
37e	If reference trunk has been made busy by means of a make-busy plug— At B-ACCESS portion of MTF— Operate M & SB-OVRD key*. *Note:* The maintenance and service busy override (M & SB-OVRD) feature will not override a maintenance busy on outgoing trunk circuit SD-68514-01.	
38	Operate an OTRK___ key* (B-ACCESS only).	
MF and DCKP Trunks		
39	Momentarily depress ST key.	KP lamp lighted.
40	Momentarily depress KP key.	
41	Keypulse digits required to reach first appearance of loop around test line.	
42	Momentarily depress ST-KS key.	KP lamp extinguished. Test call completes to first appearance of loop around test line.
43	Proceed with Step 54a.	
Dial Pulse Trunks		
44	Momentarily depress ST key.	KP lamp lighted.
45	Operate DT key*.	KP lamp extinguished.
46	Dial digits required to reach first appearance of loop around test line.	
47	Momentarily depress ED key.	If ringing is not required for trunk under test— Test call completes to first appearance of loop around test line. If ringing is required for trunk under test— RING lamp lighted.
48f	If ringing is required for trunk under test— Momentarily depress RING key, when RING lamp lights.	RING lamp extinguished. Test call completes to first appearance of loop around test line.
49	Proceed with Step 54a.	
Switchboard Trunks		
50	Momentarily depress ST key.	Call completes to operator.

STEP	ACTION	VERIFICATION
51	Operate TEL key*.	Reference trunk cut through to handset on MTF.
52	Request connection to first appearance of loop around test line. ***Note:*** When testing a trunk to a switchboard, request the operator to restore the TALK key to normal.	Reference trunk connected to first appearance of loop around test line.
53	Restore TEL key*.	
	Connection of Trunk Under Test to Second Appearance of Loop Around Test Line	
54a	If testing trunk using the trunk test connector— Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to the location (on the trunk test connector) of the trunk to be tested.	
55b	If testing the trunk using the TDF patch jack— At the TDF— Using the W5F cord, connect the outgoing link frame appearance of the trunk to be tested to the OG (TR, TR1) jack associated with the MTF being used.	
56	At A-ACCESS portion of MTF— Operate OTRK___ key*.	
	MF and DCKP Trunks	
57b	If testing trunk using the TDF patch jack— Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	KP lamp lighted.
58a	If testing trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
59	Momentarily depress KP key.	
60	Keypulse digits required to reach second appearance of loop around test line.	
61	Momentarily depress ST-KS key.	KP lamp extinguished. Test call completes to second appearance of loop around test line.
62	Proceed with Step 75.	

STEP	ACTION	VERIFICATION
Dial Pulse Trunks		
63b	If testing trunk using the TDF patch jack—Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	KP lamp lighted.
64a	If testing trunk using the trunk test connector—Momentarily depress ST key.	KP lamp lighted.
65	Operate DT key*.	KP lamp extinguished.
66	Dial digits required to reach second appearance of loop around test line.	
67	Momentarily depress ED key.	If ringing is not required for trunk under test— Test call completes to second appearance of loop around test line. If ringing is required for trunk under test— RING lamp lighted.
68f	If ringing is required for trunk under test—Momentarily depress RING key, when RING lamp lights.	RING lamp extinguished. Test call completes to second appearance of loop around test line.
69	Proceed with Step 75.	
Switchboard Trunks		
70b	If testing trunk using the TDF patch jack—Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	Call completes to operator.
71a	If testing trunk using the trunk test connector—Momentarily depress ST key.	Call completes to operator.
72	Operate TEL key*.	Trunk under test cut through to handset on MTF.
73	Request connection to second appearance of loop around test line. ***Note:*** When testing a trunk to a switchboard, request the operator to restore the TALK key to normal.	Trunk under test connected to second appearance of loop around test line.
74	Restore TEL key*.	

STEP	ACTION	VERIFICATION
Near-to-Far Results		
75	At B-ACCESS portion of MTF— Operate SEND key*.	
76	At A-ACCESS portion of MTF— Operate RCV key* and TMS key*.	Near-to-far loss of trunk connected to the B-ACCESS portion of MTF plus far-to-near loss of trunk connected to A-ACCESS portion of MTF is registered on transmission measuring circuit provided.
77	Subtract far-to-near loss of trunk connected to A-ACCESS portion of MTF as determined in Step 32.	Transmission loss in both directions has been obtained for the trunk connected to B-ACCESS portion of MTF.
78c	If trunks under test are equipped with A pads— At B-ACCESS portion of MTF— Operate PAD SW key*.	Reading on transmission measuring circuit remains the same.
79c	Restore PAD SW key*.	
80c	At A-ACCESS portion of MTF— Operate PAD SW key*.	Reading on transmission measuring circuit remains the same.
81c	Restore PAD SW key*.	
82	Record loss measurement obtained in Step 77 as the near-to-far loss of the reference trunk.	
83	At B-ACCESS portion of MTF— Restore SEND key*.	
84	At A-ACCESS portion of MTF— Restore RCV key* and TMS key*.	
85	At B-ACCESS portion of MTF— Operate RCV key* and TMS key*.	
86	At A-ACCESS portion of MTF— Operate SEND key*.	Near-to-far loss of trunk connected to A-ACCESS portion of MTF plus far-to-near loss to trunk connected to B-ACCESS portion of MTF is registered on transmission measuring circuit provided.
87	Subtract far-to-near loss of trunk connected to B-ACCESS portion of MTF as determined in Step 32.	Transmission loss in both directions has been obtained for trunk connected to A-ACCESS portion of MTF.
88c	If trunks under test are equipped with A pads—	Reading on transmission measuring circuit remains the same.

STEP	ACTION	VERIFICATION
	At A-ACCESS portion of MTF— Operate PAD SW key*.	
89c	Restore PAD SW key*.	
90c	At B-ACCESS portion of MTF— Operate PAD SW key*.	Reading on transmission measuring circuit remains the same.
91c	Restore PAD SW key*.	
92	Record loss measurement obtained in Step 87 as the near-to-far loss of the trunk under test.	
93	At A-ACCESS portion of MTF— Restore SEND key*.	
94	At B-ACCESS portion of MTF— Restore RCV key* and TMS key*.	
95	At A-ACCESS portion of MTF— Operate RN key*.	Trunk disconnected from A-ACCESS portion of MTF.
96	Restore OTRK___ key*.	
97a	If testing trunk using the trunk test connector— Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to the location (on the trunk test connector) of the next trunk to be tested.	
98b	If testing trunk using the TDF patch jack— At the TDF— Move patch cord to next trunk to be tested.	
99	At A-ACCESS portion of MTF— Operate OTRK___ key*.	
100	Repeat Steps 39 through 53 for next trunk to be tested. Substitute "Proceed with Step 101" where "Proceed with Step 54a" is used.	
101	At A-ACCESS portion of MTF— Operate SEND key*.	
102	At B-ACCESS portion of MTF— Operate RCV key* and TMS key*.	Near-to-far loss of trunk connected to A-ACCESS portion of MTF plus far-to-near loss of reference trunk is registered on transmission measuring circuit provided.
103	Subtract far-to-near loss of reference trunk.	Result is near-to-far loss of trunk under test.
104	Record loss measurement.	

STEP	ACTION	VERIFICATION
105c	If the trunk under test is equipped with an A pad— At A-ACCESS portion of MTF— Operate PAD SW key*.	Reading on transmission measuring circuit remains the same.
106c	Restore PAD SW key*.	
107c	At B-ACCESS portion of MTF— Operate PAD SW key*.	Reading on transmission measuring circuit remains the same.
108c	Restore PAD SW key*.	
109	At A-ACCESS portion of MTF— Restore SEND key*.	
110	At B-ACCESS portion of MTF— Restore RCV key* and TMS key*.	
111	At A-ACCESS portion of MTF— Operate and release RN key.	Trunk under test disconnected from MTF.
112	Restore OTRK___ key*.	
113a	If testing trunk using the trunk test connector— Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to the location (on the trunk test connector) of the trunk to be tested.	
114b	If testing trunk using the TDF patch jack— At TDF— Move patch cord to next trunk to be tested.	
115	At A-ACCESS portion of MTF— Repeat Steps 99 through 114b for each trunk to be tested.	
116	After last trunk has been tested— At A-ACCESS portion of MTF— Operate RN key*.	Last trunk tested is disconnected from MTF.
117b	If testing trunk using the TDF patch jack— At the TDF— Remove patch cord.	
118	At B-ACCESS portion of MTF— Operate RN key*.	Reference trunk disconnected from MTF.
119	At MTF— Restore all keys and switches.	All lamps extinguished.

STEP	ACTION	VERIFICATION

F. Two-Way 1000 HZ Loss Measurement Using Loop Around Test Line (Two TDF Patches)

Note: The trunk distributing frame (TDF) patch jack can only be used with the A-ACCESS portion of the manual test frame (MTF) on outgoing tests. This test uses two TDF patch jacks and two MTFs.

Far-to-Near Results

1	At the TDF— Using W5F cord, connect the outgoing link frame appearance of the trunk to be tested to the OG (TR, TR1) jack associated with MTF-0. *Note:* Both ends of the patch are made on the vertical side of the TDF.	
2	At MTF-0— Operate class key* required for the trunk to be tested.	
3a	If the trunk under test is equipped with an A pad— Operate A PD CL key*.	
4b	If testing CX or LP class trunk requiring dial pulsing delay— Operate XDD key*.	
5	Insure that ITT key is released.	
6	At A-ACCESS portion of MTF-0— Operate OTRK___ key*.	

MF and DCKP Trunks

7	Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	KP lamp lighted.
8	Momentarily depress KP key.	
9	Keypulse digits required to reach 102-type test line at the terminating end.	
10	Momentarily depress ST-KS key.	KP lamp extinguished. Test call completes to 102-type test line.
11	Operate MON key*.	1000 HZ tone heard on handset on MTF.

STEP	ACTION	VERIFICATION
12	Proceed with Step 23.	
Dial Pulse Trunks		
13	Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	KP lamp lighted.
14	Operate DT key*.	KP lamp extinguished.
15	Dial digits required to reach 102-type test line at terminating end.	
16	Momentarily depress ED key.	If ringing is not required for trunk under test— Test call completes to 102-type test line. If ringing is required for trunk under test— RING lamp lighted.
17c	If ringing is required for trunk under test— Momentarily depress RING key, when RING lamp lights.	RING lamp extinguished. Test call completes to 102-type test line.
18	Operate MON key*.	1000 HZ tone heard on handset on MTF.
19	Proceed with Step 23.	
Switchboard Trunks		
20	Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	Call completes to operator.
21	Operate TEL key*.	Trunk under test cut through to handset on MTF.
22	Request connection to 102-type test line. ***Note:*** When testing a trunk to a switchboard, request the operator to restore the TALK key to normal.	1000 HZ tone heard on handset on MTF.
23	Restore TEL key* or MON key*.	
24	Operate RCV key* and TMS key*.	Far-to-near loss measurement registered on transmission measuring circuit provided.
25	Record loss measurement.	
26	Operate and release RN key.	Trunk under test disconnected from MTF.

STEP	ACTION	VERIFICATION
27	Repeat Steps 1 through 26 for all trunks in the group to be tested.	
	Connection of Reference Trunk to First Appearance of Loop Around Test Line	
28	Select one of the trunks, whose far-to-near loss has been measured, as the reference trunk. ***Note:*** The reference trunk should be stable, and its measured far-to-near loss within $\pm$1.0 dB of the expected measured loss (EML).	
29	At the TDF— Using W5F cord, connect the outgoing link frame appearance of the reference trunk to the OG (TR, TR1) jack associated with MTF-0.	
30	At A-ACCESS portion of MTF-0— Operate OTRK___ key*.	
	MF and DCKP Trunks	
31	Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on TDF.	KP lamp lighted.
32	Momentarily depress KP key.	
33	Keypulse digits required to reach first appearance of loop around test line.	
34	Momentarily depress ST-KS key.	KP lamp extinguished. Test call completes to first appearance of loop around test line.
35	Proceed with Step 46.	
	Dial Pulse Trunks	
36	Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	KP lamp lighted.
37	Operate DT key*.	KP lamp extinguished.
38	Dial digits required to reach first appearance of loop around test line.	
39	Momentarily depress ED key.	If ringing is not required for trunk under test—

STEP	ACTION	VERIFICATION
		Test call completes to first appearance of loop around test line. If ringing is required for trunk under test— RING lamp lighted.
40c	If ringing is required for trunk under test— Momentarily depress RING key when RING lamp lights.	RING lamp extinguished. Test call completes to first appearance of loop around test line.
41	Proceed with Step 46.	
Switchboard Trunks		
42	Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	Call completes to operator.
43	Operate TEL key*.	Reference trunk cut through to handset on MTF.
44	Request connection to first appearance of loop around test line. ***Note:*** When testing a trunk to a switchboard, request the operator to restore the TALK key to normal.	Reference trunk connect to first appearance of loop around test line.
45	Restore TEL key*.	
Connection of Trunk Under Test to Second Appearance of Loop Around Test Line		
46	At the TDF— Using a second W5F cord, connect the outgoing link frame appearance of the next trunk to be tested to the OG (TR, TR1) jack associated with MTF-1.	
47	At MTF-1— Operate class key* required for the trunk to be tested.	
48	If the trunk under test is equipped with an A pad— Operate A PD CL key*.	
49	If testing CX or LP class trunk requiring dial pulsing delay— Operate XDD key*.	
50	Insure that ITT key is released.	

STEP	ACTION	VERIFICATION
51	At the A-ACCESS portion of MTF-1— Operate OTRK___ key*.	
MF and DCKP Trunks		
52	Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	KP lamp lighted.
53	Momentarily depress KP key.	
54	Keypulse digits required to reach second appearance of loop around test line.	
55	Momentarily depress ST-KS key.	KP lamp extinguished. Test call completes to second appearance of loop around test line.
56	Proceed with Step 67.	
Dial Pulse Trunks		
57	Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	KP lamp lighted.
58	Operate DT key*.	KP lamp extinguished.
59	Dial digits required to reach second appearance of loop around test line.	
60	Momentarily depress ED key.	If ringing is not required for trunk under test— Test call completes to second appearance of loop around test line. If ringing is required for trunk under test— RING lamp lighted.
61c	If ringing is required for trunk under test— Momentarily depress RING key when RING lamp lights.	RING lamp extinguished. Test call completes to second appearance of loop around test line.
62	Proceed with Step 67.	
Switchboard Trunks		
63	Momentarily depress OPJV___ key* associated with outgoing patch jack vertical being used on the TDF.	Call completes to operator.
64	Operate TEL key*.	Trunk under test cut through to handset on MTF.

STEP	ACTION	VERIFICATION
65	Request connection to second appearance of loop around test line. ***Note:*** When testing a trunk to switchboard, request the operator to restore the TALK key to normal.	Trunk under test connected to second appearance of loop around test line.
66	Restore TEL key*.	
Near-to-Far Results		
67	At MTF-0— Operate SEND key*.	
68	At MTF-1— Operate RCV key* and TMS key*.	Near-to-far loss of trunk connected to MTF-0 plus far-to-near loss of trunk connected to MTF-1 registered on transmission measuring circuit provided.
69	Subtract far-to-near loss of trunk connected to MTF-1 as recorded in Step 25.	Transmission loss in both directions has been obtained for trunk connected to MTF-0.
70c	If trunks under test are equipped with A pads— At MTF-0— Operate PAD SW key*.	Reading on transmission measuring circuit remains the same.
71c	Restore PAD SW key*.	
72c	At MTF-1— Operate PAD SW key*.	Reading on transmission measuring circuit remains the same.
73c	Restore PAD SW key*.	
74	Record loss measurement obtained in Step 69 as the near-to-far loss of the reference trunk.	
75	At MTF-0— Restore SEND key*.	
76	Operate RCV key* and TMS key*.	
77	At MTF-1— Restore RCV key* and TMS key*.	
78	Operate SEND key*.	Near-to-far loss of trunk connected to MTF-1 plus far-to-near loss of trunk connected to MTF-0 registered on transmission measuring circuit provided.
79	Subtract far-to-near loss of trunk connected to MTF-0 as recorded in Step 25.	Transmission loss in both directions has been obtained for trunk connected to MTF-1.

STEP	ACTION	VERIFICATION
80c	If trunks under test are equipped with A pads— At MTF-1— Operate PAD SW key*.	Reading on transmission measuring circuit remains the same.
81c	Restore PAD SW key*.	
82c	At MTF-0— Operate PAD SW key*.	Reading on transmission measuring circuit remains the same.
83c	Restore PAD SW key*.	
84	Record loss measurement obtained in Step 79 as the near-to-far loss of the trunk under test.	
85	At MTF-1— Restore SEND key*.	
86	At MTF-0— Restore RCV key* and TMS key*.	
87	At MTF-1— Operate RN key*.	Trunk under test disconnected from MTF.
88	Restore OTRK___ key*.	
89	At TDF— Move patch cord in OG jack associated with MTF-1 to next trunk to be tested.	
90	At MTF-1— Operate OTRK___ key*.	
91	Repeat Steps 52 through 66 for next trunk to be tested. Substitute "Proceed with Step 92" where "Proceed with Step 67" is used.	
92	At MTF-1— Operate SEND key*.	
93	At MTF-0— Operate RCV key* and TMS key*.	Near-to-far loss of trunk connected to MTF-1 plus far-to-near loss of reference trunk is registered on transmission measuring circuit provided.
94	Subtract far-to-near loss of reference trunk.	Result is near-to-far loss of trunk under test.
95	Record loss measurement.	
96c	If the trunk under test is equipped with an A pad—	Reading on transmission measuring circuit remains the same.

STEP	ACTION	VERIFICATION
	At MTF-1— Operate PAD SW key*.	
97c	Restore PAD SW key*.	
98c	At MTF-0— Operate PAD SW key*.	Reading on transmission measuring circuit remains the same.
99c	Restore PAD SW key*.	
100	Restore RCV key* and TMS key*.	
101	At MTF-1— Restore SEND key*.	
102	Operate and release RN key.	Trunk under test disconnected from MTF.
103	Restore OTRK___ key*.	
104	Repeat Steps 89 through 103 for each trunk to be tested.	
105	After last trunk has been tested— At MTF-1— Operate RN key*.	Last trunk under test is disconnected from MTF.
106	Restore all keys and switches.	All lamps extinguished.
107	At MTF-0— Operate RN key*.	Reference trunk is disconnected from MTF.
108	Restore all keys and switches.	All lamps extinguished.
109	At the TDF— Remove both patch cords.	

ORIGINATING END PROCEDURES

AA. Two-Way 1000 HZ Loss Measurement

1a	If testing the trunk using the trunk test connector— Determine from the office records the location (on the trunk test connector) of the trunk to be tested.	
2a	At the manual test frame (MTF)— Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to the location (on the trunk test connector) of the trunk to be tested.	

STEP	ACTION	VERIFICATION
3b	If testing the trunk using the trunk distributing frame (TDF) patch jack— At the TDF— Using the W5F cord, connect the outgoing link frame appearance of the trunk to be tested to the OG (TR, TR1) jack associated with the MTF being used. ***Note:*** Both ends of the patch are made on the vertical side of the TDF.	
4	At the MTF— Operate the class key* required for the trunk under test.	
5c	If the trunk under test is equipped with an A pad— Operate A PD CL key*.	
6d	If the trunk under test is CX or LP class and requires dial pulsing delay— Operate XDD key*.	
7a	If testing the trunk using the trunk test connector— Operate the ITT key* if the trunk under test is on the intertoll (IT) train.	
8b	If testing trunk using the TDF patch jack— Insure that the ITT key is released.	
9e	If trunk under test has been made busy by means of a make-busy plug— Operate M & SB-OVRD key*. ***Note:*** The maintenance and service busy override (M & SB-OVRD) feature will not override a maintenance busy on outgoing trunk circuit SD-68514-01.	
10a	If testing trunk using the trunk test connector— Operate an OTRK___ key* (A or B-ACCESS).	
11b	If testing trunk using the TDF patch jack— Operate an OTRK___ key* (A-ACCESS only).	
12b	Momentarily depress the OPJV___ key* associated with the outgoing patch jack vertical being used on the TDF.	KP lamp lighted. If trunk under test does not require outpulsing— Test call completes.

STEP	ACTION	VERIFICATION
MF and DCKP Trunks		
13a	If testing trunk using the trunk test connector—Momentarily depress ST key.	KP lamp lighted.
14	Momentarily depress KP key.	
15	Keypulse digits required to reach 101-type test line.	
16	Momentarily depress ST-KS key.	KP lamp extinguished. Call completes to 101-type test line and call answered.
17	Operate TEL key*.	Trunk under test cut through to handset on MTF.
18	Proceed with Step 29.	
Dial Pulse Trunks		
19a	If testing trunk using the trunk test connector—Momentarily depress ST key.	KP lamp lighted.
20	Operate DT key*.	KP lamp extinguished.
21	Dial digits required to reach 101-type test line.	
22	Momentarily depress ED key.	If ringing is not required for trunk under test— Call completes to 101-type test line and call answered. If ringing is required for trunk under test— RING lamp lighted.
23c	If ringing is required for trunk under test—Momentarily depress RING key when RING lamp lights.	RING lamp extinguished. Call completes to 101-type test line and call answered.
24	Operate TEL key*.	Trunk under test cut through to handset on MTF.
25	Proceed with Step 29.	
Switchboard Trunks		
26a	If testing trunk using the trunk test connector—Momentarily depress ST key.	Call answered by operator.
27	Operate TEL key*.	Trunk under test cut through to handset on MTF.

STEP	ACTION	VERIFICATION
28	Request transfer to supervisory circuit for contact with terminating end test assistant. *Note:* When testing a trunk to a switchboard, request the operator to restore the TALK key to normal.	Call transferred to test assistant at terminating end.
29	Request terminating end to apply 1000 HZ tone at 0 dBm for an agreed upon interval.	
30	Restore TEL key*.	
31	Operate RCV key* and TMS key*.	Far-to-near loss measurement registered on transmission measuring circuit provided.
32	Record loss measurement.	
33c	If the trunk under test is equipped with an A pad— Operate PAD SW key*.	Far-to-near loss measurement remains the same as in Step 31.
34c	Restore PAD SW key*.	
35	Restore RCV key* and TMS key*.	
36	Operate TEL key*.	
37d	If terminating end trunk is equipped with an A pad— Request terminating end to switch pad and apply 1000 HZ at 0 dBm for interval agreed upon.	
38d	Restore TEL key*.	
39d	Operate RCV key* and TMS key*.	Far-to-near loss measurement remains the same as in Step 31.
40d	Restore RCV key* and TMS key*.	
41d	Operate TEL key*.	
42	Request terminating end to measure 1000 HZ tone.	
43	Restore TEL key*.	
44	Operate SEND key* for an agreed upon interval.	Terminating end TMS registers near-to-far loss measurement.
45	Operate TEL key*.	

STEP	ACTION	VERIFICATION
46	Obtain and record near-to-far loss measurement from terminating end.	
47c	If the trunk under test is equipped with an A pad— Request terminating end to measure 1000 HZ tone again.	
48c	Restore TEL key*.	
49c	Operate PAD SW key*.	
50c	Operate SEND key* for an agreed upon interval.	Terminating end TMS registers near-to-far loss.
51c	Restore PAD SW key*.	
52c	Restore SEND key*.	
53c	Operate TEL key*.	
54c	Verify with terminating end that TMS reading was the same as recorded in Step 46.	
55	Request terminating end to disconnect.	
56	Momentarily operate RN key*.	Trunk under test disconnected from MTF.
57	Restore all keys and switches.	All lamps extinguished.
58b	If testing trunk using TDF patch jacks— At the TDF— Remove patch cord.	

AB. Two-Way Frequency Response Measurement

1a	If testing the trunk using the trunk test connector— Determine from the office records the location (on the trunk test connector) of the trunk to be tested.	
2a	At the manual test frame (MTF)— Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to the location (on the trunk test connector) of the trunk to be tested.	
3b	If testing the trunk using the trunk distributing frame (TDF) patch jack— At the TDF— Using the W5F cord, connect the outgoing	

STEP	ACTION	VERIFICATION
	link frame appearance of the trunk to be tested to the OG (TR, TR1) jack associated with the MTF being used. ***Note:*** Both ends of the patch are made on the vertical side of the TDF.	
4	At the MTF— Operate the class key* required for the trunk under test.	
5c	If the trunk under test is equipped with an A pad— Operate A PD CL key*.	
6d	If the trunk under test is CX or LP class and requires dial pulsing delay— Operate XDD key*.	
7a	If testing the trunk using the trunk test connector— Operate the ITT key* if the trunk under test is on intertoll (IT) train.	
8b	If testing trunk using the TDF patch jack— Insure that the ITT key is released.	
9e	If trunk under test has been made busy by means of a make-busy plug— Operate M & SB-OVRD key*. ***Note:*** The maintenance and service busy override (M & SB-OVRD) feature will not override a maintenance busy on outgoing trunk circuit SD-68514-01.	
10a	If testing trunk using the trunk test connector— Operate an OTRK___ key* (A or B-ACCESS).	
11b	If testing trunk using the TDF patch jack— Operate an OTRK___ key* (A-ACCESS only).	
12b	Momentarily depress the OPJV___ key* associated with the outgoing patch jack vertical being used on the TDF.	KP lamp lighted. If trunk under test does not require outpulsing— Test call completes.
MF and DCKP Trunks		
13a	If testing trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
14	Momentarily depress KP key.	

STEP	ACTION	VERIFICATION
15	Keypulse digits required to reach 101-type test line at the terminating end.	
16	Momentarily depress ST-KS key.	KP lamp extinguished. Call completes to 101-type test line and call answered.
17	Operate TEL key*.	Trunk under test cut through to handset on MTF.
18	Proceed with Step 29.	
Dial Pulse Trunks		
19a	If testing trunk using the trunk test connector—Momentarily depress ST key.	KP lamp lighted.
20	Operate DT key*.	KP lamp extinguished.
21	Dial digits required to reach 101-type test line at the terminating end.	
22	Momentarily depress ED key.	If ringing is not required for trunk under test— Call completes to 101-type test line and call answered. If ringing is required for trunk under test— RING lamp lighted.
23e	If ringing is required for trunk under test—Momentarily depress RING key when RING lamp lights.	RING lamp extinguished. Call completes to 101-type test line and call answered.
24	Operate TEL key*.	Trunk under test cut through to handset on MTF.
25	Proceed with Step 29.	
Switchboard Trunks		
26a	If testing trunk using the trunk test connector—Momentarily depress ST key.	Call answered by operator.
27	Operate TEL key*.	Trunk under test cut through to handset on MTF.
28	Request transfer to supervisory circuit for contact with assistant to perform test. ***Note:*** When testing a trunk to a switchboard, request the operator to restore TALK key to normal.	Call transferred to test assistant at terminating end.

STEP	ACTION	VERIFICATION
29	Request terminating end to connect first frequency at 0 dBm for an agreed upon interval.	
30	Restore TEL key*.	
31	Operate RCV key* and TMS key*.	Far-to-near loss registered on transmission measuring circuit provided.
32	Record loss measurement.	
33	Restore RCV key* and TMS key*.	
34	Operate TEL key*.	
35	Request terminating end to connect next frequency.	
36	Restore TEL key*.	
37	Operate RCV key* and TMS key*.	Far-to-near loss registered on transmission measuring circuit provided.
38	Record loss measurement.	
39	Restore RCV key* and TMS key*.	
40	Repeat Steps 34 through 39 for all required frequencies.	
41f	If near-to-far measurement is required— Request terminating end to set up equipment to measure near-to-far loss at required frequencies.	
42f	Using 3P7A cord, connect TMS and OSC jacks.	Output of KS-19260 oscillator connected to transmission measuring circuit provided.
43f	Adjust oscillator output at first frequency at 0 dBm.	
44f	Remove cord from TMS and OSC jacks.	
45f	Restore TEL key*.	
46f	Operate OSC key* for interval agreed upon.	Near-to-far loss registers on TMS at terminating end.
47f	Operate TEL key*.	
48f	Obtain and record near-to-far loss registered at terminating end.	

STEP	ACTION	VERIFICATION
49f	Adjust oscillator to send the next required frequency.	
50f	Restore TEL key*.	
51f	Operate OSC key* for interval agreed upon.	Near-to-far loss registered on TMS at terminating end.
52f	Operate TEL key*.	
53f	Obtain and record near-to-far loss registered at terminating end.	
54f	Repeat Steps 49f through 53f for all required frequencies.	
55	Request terminating end to disconnect from trunk under test.	
56	Operate RN key*.	Trunk under test disconnected from MTF.
57	Restore all keys and switches.	All lamps extinguished.
58b	If testing trunk using TDF patch jack— At TDF— Remove patch cord.	

AC. Message Circuit Noise Measurement

1a	If testing the trunk using the trunk test connector— Determine from the office records the location (on the trunk test connector) of the trunk to be tested.	
2a	At the manual test frame (MTF)— Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to the location (on the trunk test connector) of the trunk to be tested.	
3b	If testing the trunk using the trunk distributing frame (TDF) patch jack— At the TDF— Using the W5F cord, connect the outgoing link frame appearance of the trunk to be tested to the OG (TR, TR1) jack associated with the MTF being used. *Note:* Both ends of the patch are made on the vertical side of the TDF.	

STEP	ACTION	VERIFICATION
4	At the MTF— Operate the class key* required for the trunk under test.	
5c	If the trunk under test is equipped with an A pad— Operate A PD CL key*.	
6d	If the trunk under test is CX or LP class and requires dial pulsing delay— Operate XDD key*.	
7a	If testing the trunk using the trunk test connector— Operate the ITT key* if the trunk under test is on the intertoll (IT) train.	
8b	If testing trunk using the TDF patch jack— Insure that the ITT key is released.	
9e	If trunk under test has been made busy by means of a make-busy plug— Operate M & SB-OVRD key*. ***Note:*** The maintenance and service busy override (M & SB-OVRD) feature will not override a maintenance busy on outgoing trunk circuit SD-68514-01.	
10a	If testing trunk using the trunk test connector— Operate an OTRK___ key* (A or B-ACCESS).	
11b	If testing trunk using the TDF patch jack— Operate an OTRK___ key* (A-ACCESS only).	
12b	Momentarily depress the OPJV___ key* associated with the outgoing patch jack vertical being used on the TDF.	KP lamp lighted. If trunk under test does not require outpulsing— Test call completes.
MF and DCKP Trunks		
13a	If testing trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
14	Momentarily depress KP key.	
15	Keypulse digits required to reach 101-type test line.	
16	Momentarily depress ST-KS key.	KP lamp extinguished. Call completes to 101-type test line and call answered.

STEP	ACTION	VERIFICATION
17	Operate TEL key*.	Trunk under test cut through to handset on MTF.
18	Proceed with Step 29f.	
Dial Pulse Trunks		
19a	If testing trunk using the trunk test connector—Momentarily depress ST key.	KP lamp lighted.
20	Operate DT key*.	KP lamp extinguished.
21	Dial digits required to reach 101-type test line.	
22	Momentarily depress ED key.	If ringing is not required for trunk under test— Call completes to 101-type test line and call answered. If ringing is required for trunk under test— RING lamp lighted.
23e	If ringing is required for trunk under test—Momentarily depress RING key when RING lamp lights.	RING lamp extinguished. Call completes to 101-type test line and call answered.
24	Operate TEL key*.	Trunk under test cut through to handset on MTF.
25	Proceed with Step 29f.	
Switchboard Trunks		
26a	If testing trunk using the trunk test connector—Momentarily depress ST key.	Call answered by operator.
27	Operate TEL key*.	Trunk under test cut through to handset on MTF.
28	Request transfer to supervisory circuit for contact with assistant to perform test. ***Note:*** When testing a trunk to a switchboard, request the operator to restore TALK key to normal.	Call transferred to test assistant at terminating end.
29f	If only near-end noise measurement required—Request connection to a balance termination for interval agreed upon.	Circuit noise heard on handset on MTF.

STEP	ACTION	VERIFICATION
30g	If both near-end and far-end noise measurements required— Request connection to a noise measuring set.	Circuit noise heard on handset on MTF.
31	Restore TEL key*.	
32h	If office is equipped with transmission and noise measuring circuit SD-95900-01— Operate NSE (A+40) key* and RCV key*.	Far-to-near noise measurement registered on noise measuring circuit provided.
33i	If office is not equipped with transmission and noise measuring circuit SD-95900-01— Operate NSE key* and RCV key*.	Far-to-near noise measurement registered on 3CR noise measuring circuit.
34	Record near-end noise measurement and character of noise.	
35	Restore NSE (A+40) key* or NSE key* and RCV key*.	
36	Operate TEL key*.	
37g	If both near-end and far-end noise measurement required— Obtain and record far-end noise measurement and character of noise.	
38	Request terminating end to disconnect from trunk under test.	
39	Operate RN key*.	Trunk under test disconnected from MTF.
40	Restore all keys and switches.	All lamps extinguished.
41	If testing trunk using TDF patch jacks— At TDF— Remove patch cord.	

AD. Message Circuit Impulse Noise Measurement

Note: Test AD is not applicable to trunks containing N, O, or ON carrier.

1a	If testing the trunk using the trunk test connector— Determine from the office records the location (on the trunk test connector) of the trunk to be tested.	
2a	At the manual test frame (MTF)— Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to	

STEP	ACTION	VERIFICATION
	the location (on the trunk test connector) of the trunk to be tested.	
3b	If testing the trunk using the trunk distributing frame (TDF) patch jack— At the TDF— Using the W5F cord, connect the outgoing link frame appearance of the trunk to be tested to the OG (TR, TR1) jack associated with the MTF being used. ***Note:*** Both ends of the patch are made on the vertical side of the TDF.	
4	At the MTF— Operate the class key* required for the trunk under test.	
5c	If the trunk under test is equipped with an A pad— Operate A PD CL key*.	
6d	If the trunk under test is CX or LP class and requires dial pulsing delay— Operate XDD key*.	
7a	If testing the trunk using the trunk test connector— Operate the ITT key* if the trunk under test is on the intertoll (IT) train.	
8b	If testing trunk using the TDF patch jack— Insure that the ITT key is released.	
9e	If trunk under test has been made busy by means of a make-busy plug— Operate M & SB-0VRD key*. ***Note:*** The maintenance and service busy override (M & SB-OVRD) feature will not override a maintenance busy on outgoing trunk circuit SD-68514-01.	
10a	If testing trunk using the trunk test connector— Operate an OTRK___ key* (A or B-ACCESS).	
11b	If testing trunk using the TDF patch jack— Operate an OTRK___ key* (A-ACCESS only).	
12b	Momentarily depress the OPJV___ key* associated with the outgoing patch jack vertical being used on the TDF.	KP lamp lighted. If trunk under test does not require outpulsing— Test call completes.

STEP	ACTION	VERIFICATION
MF and DCKP Trunks		
13a	If testing trunk using the trunk test connector—Momentarily depress ST key.	KP lamp lighted.
14	Momentarily depress KP key.	
15	Keypulse digits required to reach 101-type test line.	
16	Momentarily depress ST-KS key.	KP lamp extinguished. Test call completes to 101-type test line and call answered.
17	Operate TEL key*.	Circuit under test cut through to handset on MTF.
18	Proceed with Step 29f.	
Dial Pulse Trunks		
19a	If testing trunk using the trunk test connector—Momentarily depress ST key.	KP lamp lighted.
20	Operate DT key*.	KP lamp extinguished.
21	Dial digits required to reach 101-type test line.	
22	Momentarily depress ED key.	If ringing is not required for trunk under test— Test call completes to 101-type test line and call answered. If ringing is required for trunk under test— RING lamp lighted.
23e	If ringing is required for trunk under test—Momentarily depress RING key when RING lamp lights.	RING lamp extinguished. Test call completes to 101-type test line and call answered.
24	Operate TEL key*.	Trunk under test cut through to handset on MTF.
25	Proceed with Step 29f.	
Switchboard Trunks		
26a	If testing trunk using the trunk test connector—Momentarily depress ST key.	Call answered by operator.
27	Operate TEL key*.	Trunk under test cut through to handset on MTF.

STEP	ACTION	VERIFICATION
28	Request connection to supervisory circuit for contact with assistant to perform test. ***Note:*** When testing a trunk to a switchboard, request the operator to restore the TALK key to normal.	Call transferred to test assistant at terminating end.
29f	If only near-end measurement is required— Request connection to a balance termination for interval agreed upon.	Circuit noise heard on handset on MTF.
30g	If both near-end and far-end measurements are required— Request connection to a 6H or 6HR impulse counter for interval agreed upon.	Circuit noise heard on handset on MTF.
31	Restore TEL key*.	
32	Operate RCV key* and IMP CTR key*.	Noise pulses can be registered on 6HR impulse counter.
33	At 6HR impulse noise counter— Set the DBRN dial to the required noise threshold level.	
34	Set the MINUTES switch to the required timing interval. ***Note:*** To insure accurate timing intervals of 3 minutes or less, first adjust the timer to at least 5 minutes and then return it to the desired value.	
35	Momentarily operate RESET key to zero impulse counter.	6HR records all impulses above the reference level.
36	At termination of timing interval— Record impulse counter reading.	
37	Restore RCV key* and IMP CTR key*.	
38	Restore impulse counter to normal condition.	
39	Operate TEL key*.	
40	Obtain and record far-end measurement and character of noise.	
41	Request terminating end to disconnect from trunk under test.	
42	Operate RN key*.	Trunk under test disconnected from MTF.

STEP	ACTION	VERIFICATION
43	Restore all keys and switches.	All lamps extinguished.
44	If testing trunk using the TDF patch jack— At TDF— Remove patch cord.	

AE. Two-Way PAR Measurement

1a	If testing the trunk using the trunk test connector— Determine from the office records the location (on the trunk test connector) of the trunk to be tested.	
2a	At the manual test frame (MTF)— Operate the TTH, TH, H, T, and U sections of the trunk selector switch to correspond to the location (on the trunk test connector) of the trunk to be tested.	
3b	If testing the trunk using the trunk distributing frame (TDF) patch jack— At the TDF— Using the W5F cord, connect the outgoing link frame appearance of the trunk to be tested to the OG (TR, TR1) jack associated with the MTF being used. ***Note:*** Both ends of the patch are made on the vertical side of the TDF.	
4	At the MTF— Operate the class key* required for the trunk under test.	
5c	If the trunk under test is equipped with an A pad— Operate A PD CL key*.	
6d	If the trunk under test is CX or LP class and requires dial pulsing delay— Operate XDD key*.	
7a	If testing the trunk using the trunk test connector— Operate the ITT key* if the trunk under test is on the intertoll (IT) train.	
8b	If testing trunk using the TDF patch jack— Insure that the ITT key is released.	

STEP	ACTION	VERIFICATION
9e	If trunk under test has been made busy by means of a make-busy plug— Operate M & SB-OVRD key*. ***Note:*** The maintenance and service busy override (M & SB-OVRD) feature will not override a maintenance busy on outgoing trunk circuit SD-68514-01.	
10a	If testing trunk using the trunk test connector— Operate an OTRK___ key* (A or B-ACCESS).	
11b	If testing trunk using the TDF patch jack— Operate an OTRK___ key* (A-ACCESS only).	
12b	Momentarily depress the OPJV___ key* associated with the outgoing patch jack vertical being used on the TDF.	KP lamp lighted. If trunk under test does not require outpulsing— Test call completes.
MF and DCKP Trunks		
13a	If testing trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
14	Momentarily depress KP key.	
15	Keypulse digits required to reach 101-type test line.	
16	Momentarily depress ST-KS key.	KP lamp extinguished. Test call completes to 101-type test line and call answered.
17	Operate TEL key*.	Trunk under test cut through to handset on MTF.
18	Proceed with Step 29.	
Dial Pulse Trunks		
19a	If testing trunk using the trunk test connector— Momentarily depress ST key.	KP lamp lighted.
20	Operate DT key*.	KP lamp extinguished.
21	Dial digits required to reach 101-type test line.	
22	Momentarily depress ED key.	If ringing is not required for trunk under test— Test call completes to 101-type test line and call answered.

STEP	ACTION	VERIFICATION
		If ringing is required for trunk under test—RING lamp lighted.
23e	If ringing is required for trunk under test—Momentarily depress RING key when RING lamp lights.	RING lamp extinguished. Test call completes to 101-type test line and call answered.
24	Operate TEL key*.	Trunk under test cut through to handset on MTF.
25	Proceed with Step 29.	
Switchboard Trunks		
26a	If testing trunk using the trunk test connector—Momentarily depress ST key.	Call answered by operator.
27	Operate TEL key*.	Trunk under test cut through to handset on MTF.
28	Request connection to supervisory circuit for contact with assistant to perform test. ***Note:*** When testing a trunk to a switchboard, request the operator to restore the TALK key to normal.	Call transferred to test assistant at terminating end.
29	Request terminating end to connect PAR generator for interval agreed upon.	
30	Restore TEL key*.	
31	Using 2W42A cord, connect the RCV jack associated with the ACCESS portion being used on the MTF to the INPUT binding posts of the PAR meter receiver.	
32	At PAR meter receiver— Set IMPEDANCE switch to 600.	
33	Adjust RECEIVED LEVEL ADJ (COARSE and FINE) controls to make the RECEIVED LEVEL meter read at the REF LEVEL line.	Meter reading is PAR measurement for originating end.
34	Record PAR meter reading.	
35	Remove cord connecting RCV jack and PAR receiver.	
36f	If 27A PAR generator is used at originating end to obtain far-end PAR measurement— Using 3P7A cord, connect the SEND jack,	

STEP	ACTION	VERIFICATION
	associated with the ACCESS portion being used on the MTF, to the 600-310 jack of the PAR generator.	
37f	Request terminating end to obtain PAR measurement for interval agreed upon.	
38f	Obtain and record far-end PAR measurement.	
39f	Remove cord connecting SEND jack and PAR generator.	
40g	If 27E PAR generator is used at originating end to obtain far-end PAR measurement— Using 3P7A cord, connect the SEND jack, associated with the ACCESS portion being used on the MTF, to the OUTPUT jack of the PAR generator.	
41g	Operate switch S1 to 600.	
42g	Request terminating end to obtain PAR measurement for interval agreed upon.	
43g	Obtain and record far-end PAR measurement.	
44g	Remove cord connecting SEND jack and PAR generator.	
45	Request terminating end to disconnect from trunk under test.	
46	Momentarily depress RN key*.	Trunk under test disconnected from MTF.
47	Restore all keys and switches.	All lamps extinguished.
48b	If testing trunk using the TDF patch jack— At the TDF— Remove patch cord.	

TERMINATING END PROCEDURES

BA. Two-Way 1000 HZ Loss Measurement

Note: The trunk distributing frame (TDF) patch jacks can only be used with the B-ACCESS portion of the manual test frame (MTF) on incoming tests.

1a	If testing trunk using the TDF patch jack— At the TDF— Using W5F cord, connect the incoming link	

STEP	ACTION	VERIFICATION
	frame appearance of the trunk to be tested to the INC (TR, TR1) jack associated with the MTF being used. ***Note:*** Both ends of the patch are made on the vertical side of the TDF.	
2a	At the B-ACCESS portion of the MTF— Momentarily depress IPJV___ key* associated with incoming patch jack vertical being used on the TDF.	
3a	Manually condition the incoming trunk to insure continuity of the transmission path through the trunk.	
4	Originating end seizes trunk.	ITRK___ lamp starts flashing at all MTFs.
5	At B-ACCESS portion of MTF being used— Operate ITRK___ key.	At MTF being used— ITRK___ lamp stops flashing and remains lighted. At all other MTFs— ITRK___ lamps extinguished.
6	Operate TEL key*.	Trunk under test is cut through to handset on MTF, and talk path of trunk is established.
7	To verify the incoming trunk pad or pad control arrangement— Momentarily hold operated PAD CHK key.	While PAD CHK key is operated— If 500 lamp lighted— Trunk is arranged to signal forward for the removal of A pad in the outgoing trunk. If OPN lamp lighted— Trunk is not arranged to signal forward for the removal of A pad in the outgoing trunk, or switching pads are provided in the incoming trunk.
8b	If OPN lamp lighted— Momentarily hold operated BAT CHK key.	While BAT CHK key is operated— If BATT lamp lighted— Incoming trunk is equipped with switching pads. If OPN lamp lighted— Incoming trunk is not equipped with switching pads.
9	Restore TEL key*.	
10	When originating end requests that 1000 HZ be sent— Operate SEND key* for interval agreed upon.	Transmission loss registered at originating end.

STEP	ACTION	VERIFICATION
11	After time allowed for Step 10— Restore SEND key*.	
12c	If incoming trunk is equipped with A pad— When originating end requests that 1000 HZ be sent again with pad switched— Operate PAD SW key*.	
13c	Restore TEL key*.	
14c	Operate SEND key* for interval agreed upon.	Transmission loss reading is within 0.1 dBm of reading in Step 10.
15c	After time allowed for Step 14c— Restore SEND key*.	
16c	Restore PAD SW key*.	
17	When originating end requests measurement— Operate RCV key* and TMS key*.	Transmission loss registered on transmission measuring circuit provided.
18	Record TMS reading.	
19c	If incoming trunk is equipped with A pad— Operate PAD SW key*.	Transmission loss reading is within 0.1 dBm of reading in Step 17.
20c	Restore PAD SW key*.	
21	Restore RCV key* and TMS key*.	
22	When originating end requests disconnect— Restore all keys and switches to normal.	All lamps extinguished.
23a	If testing trunk using the TDF patch jack— At the TDF— Remove patch cord.	

BB. Two-Way Frequency Response Measurement

Note: The trunk distributing frame (TDF) patch jacks can only be used with the B-ACCESS portion of the manual test frame (MTF) on incoming tests.

1a	If testing trunk using the TDF patch jack— At the TDF— Using W5F cord, connect the incoming link frame appearance of the trunk to be tested to the INC (TR, TR1) jack associated with the MTF being used.	

STEP	ACTION	VERIFICATION
	Note: Both ends of the patch are made on the vertical side of the TDF.	
2a	At the B-ACCESS portion of the MTF— Momentarily depress IPJV___ key* associated with incoming patch jack vertical being used on the TDF.	
3a	Manually condition the incoming trunk to insure continuity of the transmission path through the trunk.	
4	Originating end seizes trunk.	ITRK___ lamp starts flashing at all MTFs.
5	At B-ACCESS portion of MTF being used— Operate ITRK___ key.	At MTF being used— ITRK___ lamp stops flashing and remains lighted. At all other MTFs— ITRK___ lamp extinguished.
6	Operate TEL key*.	Trunk under test is cut through to handset on MTF and talk path of trunk is established.
7	Using 3P7A cord, connect TMS and OSC jacks.	Output of KS-19260 oscillator connected to transmission measuring circuit provided.
8	Adjust oscillator output at first frequency for 0 dBm.	
9	Remove cord from TMS and OSC jacks.	
10	When originating end requests that the first required frequency be sent— Operate OSC key* and SEND key* for interval agreed upon.	Transmission loss registered at originating end.
11	After time allowed for Step 10— Restore OSC key* and SEND key*.	
12	Adjust oscillator for next required frequency.	
13	When originating end requests that the next required frequency be sent— Operate OSC key* and SEND key* for interval agreed upon.	Transmission loss registered at originating end.
14	After time allowed for Step 13— Restore OSC key* and SEND key*.	
15	Repeat Steps 12 through 14 for all required frequencies.	

STEP	ACTION	VERIFICATION
16	When requested by originating end to measure first frequency— Operate RCV key* for interval agreed upon.	Transmission loss registered on transmission measuring circuit provided.
17	After time allowed for Step 16— Restore RCV key*.	
18	Report reading to originating end.	
19	Repeat Steps 16 through 18 for all required frequencies.	
20	When originating end requests disconnect— Restore all keys and switches.	All lamps extinguished.
21	If testing trunk using the TDF patch jack— At the TDF— Remove patch cord.	

BC. Message Circuit Noise Measurement

Note: The trunk distributing frame (TDF) patch jacks can only be used with the B-ACCESS portion of the manual test frame (MTF) on incoming tests.

1a	If testing trunk using the TDF patch jack— At the TDF— Using W5F cord, connect the incoming link frame appearance of the trunk to be tested to the INC (TR, TR1) jack associated with the MTF being used. ***Note:*** Both ends of the patch are made on the vertical side of the TDF.	
2a	At the B-ACCESS portion of the MTF— Momentarily depress IPJV___ key* associated with incoming patch jack vertical being used on the TDF.	
3a	Manually condition the incoming trunk to insure continuity of the transmission path through the trunk.	
4	Originating end seizes trunk.	ITRK___ lamp starts flashing at all MTFs.
5	At B-ACCESS portion of MTF being used— Operate ITRK___ key.	At MTF being used— ITRK___ lamp stops flashing and remains lighted. At all other MTFs— ITRK___ lamp extinguished.

STEP	ACTION	VERIFICATION
6	Operate TEL key*.	Trunk under test is cut through to handset on MTF and talk path of trunk is established.
7b	If MTF is equipped with transmission and noise measuring circuit SD-95900-01— When originating end requests termination and noise reading— Operate RCV key* and NSE (A+40) key* for interval agreed upon.	Far-to-near noise measurement registered on noise measuring circuit provided.
8b	Determine character of noise by operating the MON key*, and monitoring the circuit using the handset on MTF.	
9c	If MTF is not equipped with transmission and noise measuring circuit SD-95900-01— When originating end requests termination and noise reading— Operate RCV key* and NSE key* for interval agreed upon.	Far-to-near noise measurement registered on 3CR noise measuring circuit.
10c	Determine character of noise using the 723A receiver equipped with a W2FS cord inserted into the AC MON jack. ***Note:*** The 723A receiver equipped with 2W46A cord, for use with the 3A noise measuring set, cannot be used with the 3CR noise measuring set.	
11b	After time allowed for Step 7b— Restore RCV key* and NSE (A+40) key*.	
12c	After time allowed for Step 9c— Restore RCV key* and NSE key*.	
13	Report noise measurement and character of noise to originating end.	
14d	If no further tests are to be performed— When originating end requests disconnect— Restore all keys and switches.	All lamps extinguished.
15a	If testing trunk using the TDF patch jack— At the TDF— Remove patch cord.	

BD. Impulse Noise Measurement

Note: The trunk distributing frame (TDF) patch jacks can only be used with the B-ACCESS

STEP	ACTION	VERIFICATION
	portion of the manual test frame (MTF) on incoming calls.	
1a	If testing trunk using the TDF patch jack— At the TDF— Using W5F cord, connect the incoming link frame appearance of the trunk to be tested to the INC (TR, TR1) jack associated with the MTF being used. ***Note:*** Both ends of the patch are made on the vertical side of the TDF.	
2a	At the B-ACCESS portion of the MTF— Momentarily depress IPJV___ key* associated with incoming patch jack vertical being used on the TDF.	
3a	Manually condition the incoming trunk to insure continuity of the transmission path through the trunk.	
4	Originating end seizes trunk.	ITRK___ lamp starts flashing at all MTFs.
5	At B-ACCESS portion of MTF being used— Operate ITRK___ key.	At MTF being used— ITRK___ lamp stops flashing and remains lighted. At all other MTFs— ITRK___ lamp extinguished.
6	Operate TEL key*.	Trunk under test is cut through to handset on MTF and talk path of trunk is established.
7	When originating end requests record of impulse noise measurements— Operate RCV key* and IMP CTR key*.	Noise pulses can be registered on 6HR impulse noise counter.
8	At 6HR impulse noise counter— Set the DBRN dial to the required noise threshold level.	
9	Set the MINUTES switch to the required timing interval. ***Note:*** To insure accurate timing intervals of 3 minutes or less, first adjust the timer to at least 5 minutes and then return timer to desired value.	
10	Momentarily operate RESET key to zero counter.	6HR records all impulses above the reference level.

STEP	ACTION	VERIFICATION
11	Determine character of noise using the 723A receiver equipped with W2FS cord inserted in the MON IMP CTR B jack.	
12	At termination of timing interval— Restore RCV key* and IMP CTR key*.	
13	Report impulse counter reading and character of noise to originating end.	
14b	If no further tests are to be performed— When originating end requests disconnect— Restore all keys and switches.	All lamps extinguished.
15a	If testing trunk using the TDF patch jack— At the TDF— Remove patch cord.	

BE. Two-Way PAR Measurement

Note: The trunk distributing frame (TDF) patch jacks can only be used with the B-ACCESS portion of the manual test frame (MTF) on incoming calls.

1a	If testing trunk using the TDF patch jack— At the TDF— Using W5F cord, connect the incoming link frame appearance of the trunk to be tested to the INC (TR, TR1) jack associated with the MTF being used.	
	Note: Both ends of the patch are made on the vertical side of the TDF.	
2a	At the B-ACCESS portion of the MTF— Momentarily depress IPJV___ key* associated with incoming patch jack vertical being used on the TDF.	
3a	Manually condition the incoming trunk to insure continuity of the transmission path through the trunk.	
4	Originating end seizes trunk.	ITRK___ lamp starts flashing at all MTFs.
5	At B-ACCESS portion of MTF being used— Operate ITRK___ key.	At MTF being used— ITRK___ lamp stops flashing and remains lighted. At all other MTFs— ITRK___ lamps extinguished.

STEP	ACTION	VERIFICATION
6	Operate TEL key*.	Trunk under test is cut through to handset on MTF, and talk path of trunk is established.
7b	If using 27A PAR generator— When originating end requests connection to PAR generator— Using 3P7A cord, connect the SEND jack, associated with the ACCESS portion being used on the MTF, to the 600-310 jack of the PAR generator for interval agreed upon.	
8c	If using 27E PAR generator— At PAR generator— Operate switch S1 to 600.	
9c	When originating end requests connection to PAR generator— Using 3P7A cord, connect the SEND jack, associated with the ACCESS portion being used on the MTF, to the OUTPUT jack of the PAR generator for interval agreed upon.	
10	After time allowed for Step 7b or 9c— Remove cord connecting SEND jack and PAR generator.	
11	When originating end requests PAR measurement— At PAR receiver— Set IMPEDANCE switch to 600.	
12	Using 2W42A cord, connect RCV jack, associated with ACCESS portion being used on the MTF, to the INPUT binding posts of the PAR meter receiver.	
13	Adjust RECEIVED LEVEL ADJ (COARSE and FINE) controls to make the RECEIVED LEVEL meter read at the REF LEVEL line.	Meter reading is PAR measurement for terminating end.
14	Report PAR reading to originating end.	
15	Remove cord connecting RVC jack and PAR meter receiver.	
16	When originating end requests disconnect from trunk under test— Restore all keys and switches.	All lamps extinguished.
17	If testing trunk using the TDF patch jack— At the TDF— Remove patch cord.	