

SWITCHBOARD CORD AND OPERATOR TELEPHONE CIRCUIT

TESTS

NO. 1 CROSSBAR OFFICES

1. GENERAL

PAGE

1.01 This section describes: (1) the methods of making 1000-Hz transmission loss tests on cord circuits, operator telephone circuits, and supervision telephone circuits of DSA boards in No. 1 crossbar offices; (2) the methods of making current flow test of cord circuit supervisory relays in "A" switchboards in No. 1 crossbar offices.

for Completion of Intercepted Calls. 10

F. Current Flow Test of Answering Cord Supervisory Relays—High-Resistance Sleeve—Cords Arranged for Completion of Intercepted Calls. 11

1.02 This section is reissued to add Tests A, B, and C for 1000-Hz transmission loss of DSA board cord circuits, operator telephone circuits, and supervisory telephone circuits which replace Tests C, D, and E of Section 216-769-501, Issue 3. This change requires that Tests A through H be relettered to D through K.

G. Current Flow Test of Calling Cord Supervisory Relays—High-Resistance Sleeve. 13

Office Not Having a Cord Testing Circuit

1.03 The tests covered are:

PAGE

A. 1000-Hz Transmission Loss Test of DSA Board Cord Circuits. 4

H. Current Flow Test of Answering and Calling Cord Supervisory Relays—Low-Resistance Sleeve. 14

B. 1000-Hz Transmission Loss Test of DSA Board Operator Telephone Circuit. 6

I. Current Flow Test of Answering Cord Supervisory Relays—High-Resistance Sleeve—Cords Not Arranged for Completion of Intercepted Calls: 15

C. 1000-Hz Transmission Loss Test of DSA Board Supervisor Telephone Circuit. 8

J. Current Flow Test of Answering Cord Supervisory Relays—High-Resistance Sleeve—Cords Arranged for Completion of Intercepted Calls. 16

K. Current Flow Test of Calling Cord Supervisory Relays—High-Resistance Sleeve. 18

Offices Having Cord Testing Circuit SD-20444-01 or SD-90501-01

D. Current Flow Test of Answering and Calling Cord Supervisory Relays—Low-Resistance Sleeve. 9

1.04 Tests D, E, F, and G are based on the use of cord testing circuit SD-20444-01 or SD-90501-01. In offices where a cord testing circuit has not been provided, use Tests H, I, J, and K instead of Tests D, E, F, and G.

E. Current Flow Test of Answering Cord Supervisory Relays—High-Resistance Sleeve—Cords Not Arranged

1.05 The tests described in this section apply to cord circuits as follows except as noted in 1.04.

SECTION 216-742-501

CORD CIRCUIT	TESTS TO BE APPLIED	
	ANSWERING	CALLING
Special Service	D	G D L.S.
Intercepting — Non-Completing	E	D
Intercepting — Completing	F H.S. D L.S.	D
Combined Intercepting and Special Service — Non-Completing	E H.S. D L.S.	G H.S. D L.S.
Combined Intercepting and Special Service — Completing	F H.S. D L.S.	G H.S. D L.S.
Recording — Completing	D	

Note: H.S. = High Resistance Sleeve
L.S. = Low Resistance Sleeve

1.06 While testing cord circuit relays, check the various current values often enough to make sure that they have not changed due to voltage variations.

1.07 New current values are to be shown on the circuit requirement tables for the polarized relays in the calling cords. However, to care for those cases where the tables do not show these new values, the test values are as follows:

	AFTER SOAK MA	TEST MA
Operate	-75	4.5
Release	75	Open circuit

1.08 A typical answering cord test arrangement is illustrated in Fig. 1. A typical calling cord test arrangement is illustrated in Fig. 2.

1.09 Lettered Steps: A letter a, b, c, etc, added to a step number in Part 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.

2. APPARATUS

Tests A, B, and C

2.01 23A transmission measuring set J94023A.

2.02 Patching cord, P3F cord, 6 feet long, equipped with a 309 plug and a 310 plug (3P12E cord).

Tests B and C

2.03 82A test set.

Tests D Through K

2.04 35-Type test set.

2.05 Patching cord, P2G cord, 10 feet long, equipped with two 309 plugs (2P7A cord) or patching cord, P2H cord, 10 feet long, equipped with two 310 plugs (2P8A cord).

Tests D and G

2.06 Patching cord, P3F cord, 8 feet long, equipped with a 309 plug and a 310 plug (3P12H cord) or patching cord, P3E cord, 8 feet long, equipped with two 310 plugs (3P6E cord).

Tests G and K

2.07 One filter consisting of one No. 18AS resistance (350Ω ±1%), one 18FS resistance (4250Ω ±1%), and one 137QA condenser (4.28 to 4.36 mf) connected in series, attached to the tip and ring of a cord equipped with a 310 plug. It is intended that this filter will be made up locally.

Test I

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

Test J

2.09 Two testing cords, 893 cords, 6 feet long, equipped with two 360A tools (1W13B cord) and two KS-6278 connecting clips.

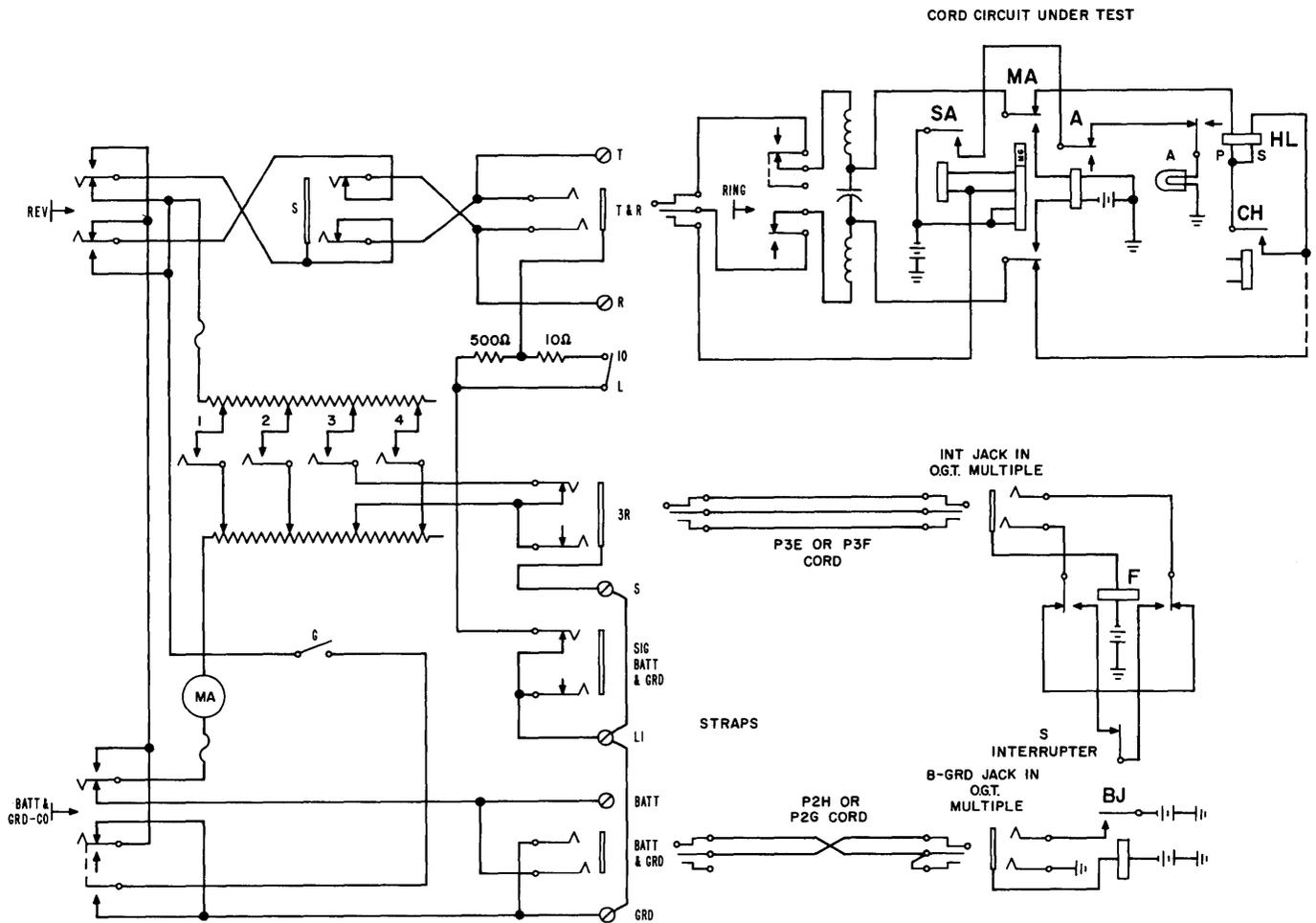


Fig. 1—Typical Answering Cord Test Arrangement

3. PREPARATION

STEP	ACTION	VERIFICATION
Tests A, B, and C		
1	Calibrate 23A TMS if necessary.	
Tests D and G		
2	On 35-type test set— Using insulated wire, strap binding posts L1 and S.	
Tests D Through K		
3	On 35-type test set— Using insulated wire, strap binding posts GRD and L1.	

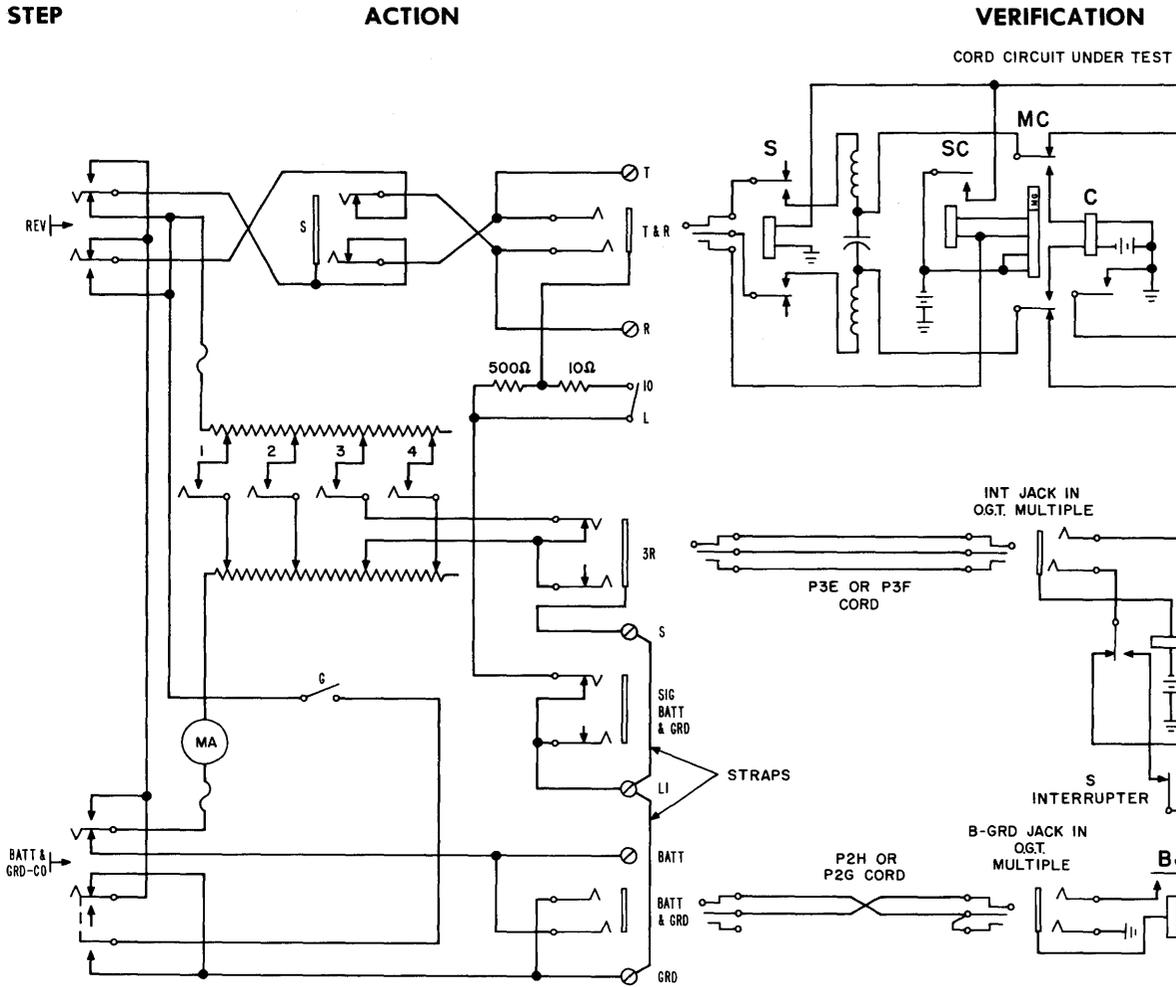


Fig. 2—Typical Calling Cord Test Arrangement

- 4 Restore all keys to normal and move all resistance slides to extreme right position.
- 5 Using P2G or P2H, connect TEST—BATT & GRD jack to B-GRD jack of the "A" switchboard.

Note: Connect to BATT & GRD jack first and disconnect from it last.

4. METHOD

STEP	ACTION	VERIFICATION
<p>A. 1000-Hz Transmission Loss Test of DSA Board Cord Circuits</p>		

- 2 At position in which cords are to be tested—Using 3P12E cord, connect DIAL jack of

STEP	ACTION	VERIFICATION
	TMS to a spare or idle jack having a 34Ω sleeve ground.	
3	Connect back cord to MEAS jack of TMS (cord circuit TALK key normal).	
	<i>Note:</i> In case flashing recall circuit operates during test, operate and restore TALK key.	
4a	If two 600Ω milliwatt supply jacks are provided, one with high (500Ω) and one with low (34Ω) sleeve resistance— Connect front cord to low sleeve resistance milliwatt supply jack.	
5b	If only one 600Ω milliwatt supply jack is provided— Connect front cord to milliwatt supply jack.	
6	Place lever key of TMS in MEAS position.	
7	Observe reading of meter.	This reading is the cord circuit loss which should be within requirements.
8c	If two 600Ω milliwatt supply jacks are provided and cord is arranged for both high- and low-sleeve resistances— Remove front cord from low-sleeve resistance jack and connect to high-sleeve resistance jack.	
9c	Observe reading of meter.	This reading is the cord circuit loss which should be within requirements.
10d	If back cord is arranged for both high- and low-sleeve resistances— Remove patching cord from spare 34Ω sleeve jack and insert into a spare 500Ω sleeve jack.	
11d	Observe reading of meter.	This reading is the cord circuit loss which should be within requirements.
12	For other cord circuits to be tested— Repeat Steps 2 and 4a through 11d.	
13	If no further tests are to be made— Disconnect TMS and restore cord circuit to service.	

SECTION 216-742-501

STEP	ACTION	VERIFICATION
B. 1000-Hz Transmission Loss Test of DSA Board Operator Telephone Circuit		
Bridged Loss		
2	Insert plug of a calling cord into MEAS jack of TMS.	
3a	If two 600 Ω milliwatt supply jacks are provided, one with high (500 Ω) and one with low (34 Ω) sleeve resistance— Using 3P12E cord, connect MEAS jack of TMS to low sleeve resistance milliwatt supply jack.	
4b	If only one 600 Ω milliwatt supply jack is provided— Using 3P12E cord, connect MEAS jack of TMS to milliwatt supply jack.	
5	At 23A TMS— Place lever key in MEAS position.	
6	Observe reading of meter.	This reading is the cord circuit loss which should be within requirements. Note: This cord should be used when making the following tests.
7	Insert double plug of 82A test set into C and D jacks of operator telephone circuit.	
8	Operate key of 82A test set to normal position.	
9	Operate TALK key of cord circuit.	
10	Observe reading of meter.	This reading minus reading in Step 6 equals bridged loss which should be within requirements.
11	Restore TALK key and operate MON key.	
12	Observe reading of meter.	This reading minus reading in Step 6 equals bridged monitoring loss which should be within requirements.
13	Restore MON key.	
Transmitting Loss		
14	Disconnect patching cord from TMS and milliwatt supply jack.	

STEP	ACTION	VERIFICATION
15	Remove plug of calling cord from MEAS jack of TMS and insert into milliwatt supply jack previously used.	
16	Insert 310 plug of 82A test set into MEAS jack of TMS.	
17	Operate TALK key of cord circuit.	
18	Operate key of 82A test set to T position.	
19	Observe reading of meter.	This reading minus reading in Step 6 equals transmitting loss which should be within requirements.
Receiving Loss		
20	Operate key of 82A test set to R position.	
21	Observe reading of meter.	This reading minus reading in Step 6 equals receiving loss which should be within requirements.
22	Restore TALK key and operate MON key.	
23	Observe reading of meter.	This reading minus reading in Step 6 equals receiving monitoring loss which should be within requirements.
24	Restore MON key.	
25c	If operator telephone circuit is equipped with a repeating coil between jacks C-D and A-B— Remove double plug of 82A test set from C and D jacks, and insert into A and B jacks. Operate TALK key.	
26c	Observe reading of meter.	This reading minus reading in Step 6 equals receiving loss which should be within requirements.
27	For other telephone circuits to be tested— Repeat Steps 2 through 26c.	
28e	If no further tests are to be made— Restore all keys and remove all patching cords.	

STEP	ACTION	VERIFICATION
C. 1000-Hz Transmission Loss Test of DSA Board Supervisor Telephone Circuit		
Bridged Loss		
2	At DSA switchboard position— Connect calling cord of cord circuit to 600Ω milliwatt supply jack.	
3	Connect answering cord of cord circuit selected in Step 2 to X jack of TMS.	
4	Operate DIAL key of TMS.	
5	Using 3P12E cord, connect supervisor multiple jack (other than intercept call jack) to DIAL jack of TMS.	
6	Observe reading of meter.	This reading is the cord circuit loss which should be within requirements.
7	Insert double plug of 82A test set into TEL jacks of supervisor telephone circuit.	
8	Operate key of 82A test set to normal position.	
9	Remove plug of answering cord from X jack and insert into MEAS jack of TMS.	
10	Remove plug of patching cord from DIAL jack and insert into second MEAS jack of TMS.	
11	Operate MEAS key of TMS.	
12	Observe reading of meter.	This reading minus reading in Step 6 equals bridged loss which should be within requirements.
Transmitting Loss		
13	Remove plug of answering cord from MEAS jack and insert into X jack of TMS.	
14	Remove plug of patching cord from second MEAS jack and insert into DIAL jack of TMS.	
15	Insert 310 plug of 82A test set into MEAS jack of TMS.	
16	Operate key of 82A test set to T position.	

STEP	ACTION	VERIFICATION
17	Observe reading of meter.	This reading minus reading in Step 6 equals transmitting loss which should be within requirements.
18	For other telephone circuits to be tested— Repeat Steps 2 through 17.	
19a	If no further tests are to be made— Disconnect all cords and testing equipment.	

Offices Having Cord Testing circuit SD-20444-01 or SD-90501-01

D. Current Flow Test of Answering and Calling Cord Supervisory Relays—Low-Resistance Sleeve

6	On 35-type test set— Operate BATT & GRD Co key.	
7	Open switch G and close switch L to 10.	
8a	If testing answering cords arranged with flashing recall feature— On switchboard— Operate talking key of cord to be tested.	
9	On 35-type test set— Insert plug of cord to be tested into T & R jack.	Associated supervisory lamp lighted.
10	Close locking lever of key 4 and set No. 4 resistances to obtain specified test <i>release</i> value for cord supervisory relay as indicated on MA meter.	
11	Depress key 3 and set No. 3 resistances to obtain specified test <i>operate</i> value for cord supervisory relay as indicated on MA meter.	
12	Release key 3.	
13	Depress keys 2 and 3 and set No. 2 resistances to obtain specified test <i>soak</i> value for cord supervisory relay as indicated on MA meter.	
14	Release keys 2 and 3.	
15	Using P3E or P3F cord, connect 3R jack to INT jack of cord testing circuit.	
16	Simultaneously depress keys 2 and 3.	

SECTION 216-742-501

STEP	ACTION	VERIFICATION
17	After approximately one second— Release key 2.	
18	After supervisory lamp flashes three times at uniform intervals— Release key 3. <i>Note:</i> If more flashes are desired, repeat Steps 16 through 18.	Supervisory lamp lighted steadily.
19	Disconnect P3E or P3F cord from 3R jack and release key 4.	
20	For other cords to be tested— Repeat Steps 8a through 19.	
21b	If no further tests are to be made— Restore all keys and remove all patching cords.	
E. Current Flow Test of Answering Cord Supervisory Relays—High-Resistance Sleeve—Cords Not Arranged for Completion of Intercepted Calls		
6	On 35-type test set— Operate BATT & GRD Co and REV keys.	
7	Close switch G and open switch L.	
8	Insert plug of answering cord to be tested into T & R jack.	Supervisory lamp lighted.
9a	If cord circuit arranged for flashing recall— Insert plug of associated calling cord into CON jack of cord testing circuit and operate talking key.	
10	Depress key 2 and set No. 2 resistances to obtain specified test <i>operate</i> value for secondary (P1) winding of the answering cord supervisory relay as indicated on MA meter.	
11b	If <i>soak</i> value is specified— Depress keys 1 and 2 and set No. 1 resistances to obtain <i>soak</i> value for the relay as indicated on MA meter.	
12b	Hold keys 1 and 2 for approximately one second after <i>soak</i> value is set up.	Supervisory lamp extinguished.
13b	After approximately one second— Release keys 1 and 2.	Supervisory lamp lighted.

STEP	ACTION	VERIFICATION
14	Depress key 2.	Supervisory lamp extinguished.
15	Release key 2.	Supervisory lamp lighted.
16	For other cords to be tested— Repeat Steps 8 through 15.	
17c	If no further tests are to be made— Restore all keys and remove all patching cords.	

F. Current Flow Test of Answering Cord Supervisory Relays—High-Resistance Sleeve—Cords Arranged for Completion of Intercepted Calls

6	On 35-type test set— Operate REV key.	
7	Open switches G and L.	
8	Insert plug of answering cord to be tested into T & R jack.	Back supervisory lamp lighted.
9	Insert plug of associated calling cord into CON jack of cord testing circuit.	
10	After a minimum of 5 seconds— Depress key 2 and set No. 2 resistances to obtain test <i>operate</i> value for primary winding of HL supervisory relay as indicated on MA meter.	
11	Release key 2.	
12a	If test nonoperate <i>value</i> is specified for primary winding of HL supervisory relay— Depress key 1 and set No. 1 resistances to obtain <i>nonoperate</i> value as indicated on MA meter.	
13a	Release key 1.	
14	Remove plug of calling cord from CON jack.	
15b	If test <i>release</i> value is specified for primary and secondary windings in series of HL supervisory relay— Depress key 4 and set No. 4 resistances to obtain this value as indicated on MA meter.	
16b	Release key 4.	

SECTION 216-742-501

STEP	ACTION	VERIFICATION
17b	Depress keys 3 and 4 and set No. 3 resistances to obtain test <i>operate</i> value for the two windings as indicated on MA meter.	
18b	Release keys 3 and 4.	
19c	If test <i>release</i> value is not specified for primary and secondary windings in series of HL supervisory relay— Depress key 3 and set No. 3 resistances to obtain specified test <i>operate</i> value for the two windings as indicated on MA meter.	
20c	Release key 3.	
21	Insert plug of calling cord into CON jack.	
22	After a minimum of 5 seconds— Depress key 2.	Back supervisory lamp extinguished.
23	Release key 2.	Back supervisory lamp lighted.
24a	If test <i>nonoperate</i> value is specified for primary winding of HL supervisory relay— Depress key 1.	Back supervisory lamp remains lighted.
25a	Release key 1.	
26	Remove plug of the calling cord from CON jack.	
27b	If test <i>release</i> value is specified for primary and secondary windings in series of HL supervisory relay— Depress keys 3 and 4.	Back supervisory lamp extinguished.
28b	Release Key 3.	Back supervisory lamp lighted.
29b	Release key 4.	Back supervisory lamp remains lighted.
30c	If test <i>release</i> value is not specified for primary and secondary windings in series HL supervisory relay— Depress key 3.	Back supervisory lamp extinguished.
31c	Release key 3.	Back supervisory lamp lighted.
32	For other cords to be tested— Repeat Steps 8 through 31c.	

STEP	ACTION	VERIFICATION
33d	If no further tests are to be made— Restore all keys and remove all patching cords.	
G. Current Flow Test of Calling Cord Supervisory Relays—High-Resistance Sleeve		
6	On 35-type test set— Open switches G and L.	
7	Insert plug associated with filter into upper T & R jack.	
8	Insert plug of cord to be tested into lower T & R jack.	Front supervisory lamp lighted.
9	Depress key 1 and set No. 1 resistances to obtain <i>operate soak</i> value covered in 1.07 for the polarized relay.	
10	Release key 1.	
11	Depress key 2 and set No. 2 resistances to obtain the operate value covered in 1.07.	
12	Release key 2.	
13	Depress key 3 and set No. 3 resistances to obtain the <i>release soak</i> value covered in 1.07.	
14	Release key 3.	
15	Using P3E or P3F cord, connect 3R jack to INT jack of cord testing circuit.	
16	Depress key 1.	
17	After approximately one second— Release key 1.	
18	Operate REV key and immediately depress key 2.	Front supervisory lamp extinguished.
19	Release key 2.	Front supervisory lamp lighted.
20	Depress key 3.	Front supervisory lamp flashes three times at equal intervals.
21	Release key 3.	Front supervisory lamp lights steadily.
22	Release REV key.	

SECTION 216-742-501

STEP	ACTION	VERIFICATION
23	For other cords to be tested— Repeat Steps 8 through 22.	
24a	If no further tests are to be made— Restore all keys and remove all patching cords.	
Offices Not Having A Cord Testing Circuit		
H. Current Flow Test of Answering and Calling Supervisory Relays—Low-Resistance Sleeve		
6	On 35-type test set— Operate BATT & GRD CO key.	
7	Open switch G and close switch L to 10.	
8a	If testing answering cords arranged with flashing recall feature— On switchboard— Operate talking key of cord to be tested.	
9	On 35-type test set — Insert plug of cord to be tested into T & R jack.	Associated supervisory lamp lighted.
10	Close locking lower of key 4 and set No. 4 resistance to obtain specified test <i>release</i> value for cord supervisory relay as indicated on MA meter.	
11	Depress key 3 and set No. 3 resistances to obtain specified test <i>operate</i> value of cord supervisory relay as indicated on MA meter.	
12	Release key 3.	
13	Depress keys 2 and 3 and set No. 2 resistances to obtain specified <i>soak</i> value of cord supervisory relay as indicated on MA meter.	
14	Release keys 2 and 3.	
15	Simultaneously depress keys 2 and 3.	
16	After approximately one second— Release key 2, then immediately release and depress key 3 three times at a rate of approximately two times per second.	Associated supervisory lamp flashes three times in unison with the release and operation of key 3.
17	Release key 3.	Associated supervisory lamp lighted steadily.

STEP	ACTION	VERIFICATION
	<i>Note:</i> If it is desired to obtain more flashes, repeat Steps 15 through 17.	
18	For other cords to be tested— Repeat Steps 8a through 17.	
19b	If no further tests are to be made— Restore all keys and remove all patching cords.	
i. Current Flow Test of Answering Cord Supervisory Relays—High-Resistance Sleeve—Cords Not Arranged for Completion		
6	On 35-type test set— Operate BATT & GRD CO and REV keys.	
7	Open switch L and close switch G.	
8	Insert plug of answering cord to be tested into T & R jack.	Supervisory lamp lighted.
9a	If cord circuit is arranged for flashing recall— Using 893 cord, connect ground to sleeve of associated calling cord.	
10a	Operate associated talking key.	
11	Depress key and set No. 2 resistances to obtain specified test <i>operate</i> value for secondary or P1 winding of the answering cord supervisory relay as indicated on MA meter.	
12	Release key 2.	
13b	If <i>soak</i> value is specified— Depress keys 1 and 2 and set No. 1 resistance to obtain <i>soak</i> value for secondary or P1 winding of the answering cord supervisory relay as indicated on MA meter.	
14b	Hold keys 1 and 2 depressed for approximately one second after <i>soak</i> value is set up.	
15b	After approximately one second— Release key 1 and 2.	Supervisory lamp lighted.
16	Depress key 2.	Supervisory lamp extinguished.
17	Release key 2.	Supervisory lamp lighted.

SECTION 216-742-501

STEP	ACTION	VERIFICATION
18	For other cords to be tested— Repeat Steps 8 through 17.	
19c	If no further tests are to be made— Restore all keys and remove all patching cords.	
J. Current Flow Test of Answering Cord Supervisory Relays—High-Resistance Sleeve—Cords Arranged for Completion of Intercepted Calls		
6	On 35-type test set— Operate REV key.	
7	Open switches G and L.	
8	Insert plug of answering cord to be tested into T & R jack.	Back supervisory lamp lighted.
9	Using two 893 cords, connect ground to sleeve and to ring of associated calling cord.	
10	After a minimum of 5 seconds— Depress key 2 and set No. 2 resistances to obtain test <i>operate</i> value for primary winding of HL supervisory relay as indicated on MA meter.	
11	Release key 2.	
12a	If test <i>nonoperate</i> value is specified for primary winding of HL supervisory relay— Depress key 1 and set No. 1 resistances to obtain this value as indicated on MA meter.	
13a	Release key 1.	
14	Remove ground from sleeve and ring of calling cord.	
15b	If test release value is specified for primary and secondary windings in series— Depress key 4 and set No. 4 resistances to obtain this value as indicated on MA meter.	
16b	Release key 4.	
17b	Depress keys 3 and 4 and set No. 3 resistances to obtain test <i>operate</i> value for the two windings as indicated on MA meter.	
18b	Release keys 3 and 4.	

STEP	ACTION	VERIFICATION
19c	If test <i>release</i> value is not specified for primary and secondary windings in series of H1 supervisory relay— Depress key 3 and set No. 3 resistances to obtain specified test <i>operate</i> value for the two windings as indicated on MA meter.	
20c	Release key 3.	
21	Replace ground on sleeve and ring of calling cord.	
22	After a minimum of 5 seconds— Depress key 2.	Back supervisory lamp extinguished.
23	Release key 2.	Back supervisory lamp lighted.
24a	If test <i>nonoperate</i> value is specified for primary winding of HL supervisory relay— Depress key 1.	Back supervisory lamp remains lighted.
25a	Release key 1.	
26	Remove ground from sleeve and ring of calling cord.	
27b	If test <i>release</i> value is specified for primary and secondary windings in series of HL supervisory relay— Depress keys 3 and 4.	Back supervisory lamp extinguished.
28b	Release key 3.	Back supervisory lamp lighted.
29b	Release key 4.	Back supervisory lamp remains lighted.
30c	If test <i>release</i> value is not specified for primary and secondary windings in series of HL supervisory relay— Depress key 3.	Back supervisory lamp extinguished.
31c	Release key 3.	Back supervisory lamp lighted.
32	For other cords to be tested— Repeat Steps 8 through 31c.	
33d	If no further tests are to be made— Restore all keys and remove all patching cords.	

SECTION 216-742-501

STEP	ACTION	VERIFICATION
K. Current Flow Test of Calling Supervisory Relays—High Resistance Sleeve		
6	On 35-type test set— Open switches G and L.	
7	Insert plug associated with filter into upper T & R jack.	
8	Insert plug of cord to be tested into lower T & R jack.	Front supervisory lamp lighted.
9	Depress key 1 and set No. 1 resistances to obtain the <i>operate soak</i> value covered in 1.07 for the polarized relay.	
10	Release key 1.	
11	Depress key 2 and set No. 2 resistances to obtain the <i>operate</i> value covered in 1.07.	
12	Release key 2.	
13	Depress key 3 and set No. 3 resistances to obtain the <i>release soak</i> value covered in 1.07.	
14	Release key 3.	
15	Depress key 1.	
16	After approximately one second— Release key 1.	
17	Operate REV key and immediately depress key 2.	Front supervisory lamp extinguished.
18	Release key 2.	Front supervisory lamp lighted.
19	Depress key 3.	
20	After approximately one second— Release and depress key 3 three times.	Front supervisory lamp flashes three times in unison with key 3.
21	Release key 3.	Front supervisory lamp lighted steadily.
22	Release REV key.	
23	For other cords to be tested— Repeat Steps 8 through 22.	

STEP

ACTION

VERIFICATION

24a

If no further tests are to be made—
Restore all keys and remove all patching
cords.

