LOCAL TEST CABINET NO. 3

TESTS AND TROUBLE LOCATING PROCEDURES

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1. GENERAL

1.01 This section describes the tests to be performed on the No. 3 local test cabinet to verify that it is functioning properly. This section also includes trouble locating information should the test verifications not be obtained.

1.02 The Equipment Test List is affected.

1.03 The following tests are covered:

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Danger: Certain keys and jacks of the No. 3 test cabinet have battery voltages ranging from 20 to 200 volts. Exercise care when performing the prescribed tests.

1.04 ***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 made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

1.05 For troubles which are encountered while performing the tests of this section, CORRECTIVE ACTION suggestions are provided. These list the "checks" that should be made should the associated verification not be obtained. The "checks" are listed in the order in which they should be performed.

1.06 Tests E and F require the aid of a second craft person stationed at a nearby test telephone.

2. APPARATUS

2.01 The type and quantity of apparatus required to perform each test is shown in Table A. Additional apparatus may be needed if trouble locating procedures must be used to correct deficiencies before completing the tests. The details of each item are covered in the paragraph indicated by the number in parentheses. Verify that test equipment is properly calibrated.

2.02 KS-8039 dc voltmeter and dc current meter or equivalent. Refer to Section 084-800-101.

2.03 KS-14510 L1 (mfr disc), L5 (mfr disc) or L11 VOM or equivalent. Refer to Section 100-520-101.

2.04 KS-20538 VOM or equivalent. Refer to Section 100-521-101.

2.05 One 3P7D patching cord used with the test cabinet jack panel.

2.06 One 310 plug.

2.07 One 48K-ohm, ±1 percent, 1/2 watt resistor.

3. METHOD

A. Test Cabinet Meter Calibration and Supply Voltage Tests

STEP	ACTION	VERIFICATION
DC Voltmeter		
1	Set the KS-14510 VOM to the 300 Vdc scale and connect it to the (-) and the 120V terminals of the test cabinet meter.	
2	Zero the pointer of the test cabinet meter if necessary.	Test cabinet meter indicates zero. ***CORRECTIVE ACTION*** Replace test cabinet meter.
3	Operate the VM-REV key.	The test cabinet meter indicates between 99 and 101 volts.

TABLE A

APPARATUS	TESTS					
	A	B	C	D	E	F
KS-8039 DC Voltmeter (2.02)	1					
KS-14510 VOM (2.03)	1		1	1		
KS-20538 VOM (2.04)		1				
3P7D Cord (2.05)					1	1
310 Plug (2.06)			1	1		
48K Ω, ±1%, 1/2W Resistor (2.07)	1					

STEP	ACTION	VERIFICATION
		CORRECTIVE ACTION Replace batteries or check and adjust test voltage supply circuit.
4	Compare the readings of the KS-14510 VOM and the test cabinet meter.	The KS-14510 VOM indicates within 1.2 volts of the test cabinet meter. ***CORRECTIVE ACTION*** Replace test cabinet meter.
5	Transfer the KS-14510 VOM lead from the 120V terminal to the 24V terminal of the test cabinet meter.	
6	Change the KS-14510 VOM to the 60 Vdc scale.	
7	Operate the 20,000 key.	Test cabinet meter indicates between 19 and 21 volts. ***CORRECTIVE ACTION*** Check 20,000 key contacts.
8	Observe the reading of the KS-14510 VOM.	The KS-14510 VOM indicates within 0.5 volts of the test cabinet meter reading. ***CORRECTIVE ACTION*** Replace test cabinet meter, replace batteries, or adjust voltage supply circuit.
9	Release the 20,000 key and operate the 1000 key.	The test cabinet meter indicates between 19 and 21 volts. ***CORRECTIVE ACTION*** Check the 1000 key contacts.
10	Observe the reading of the KS-14510 VOM.	The KS-14510 VOM indicates within 0.5 volts of the test cabinet meter reading. ***CORRECTIVE ACTION*** Replace test cabinet meter, replace batteries or adjust voltage supply circuit.
11	Release the 1000 and VM-REV keys.	Test cabinet meter and KS-14510 VOM indicates zero. ***CORRECTIVE ACTION*** Check VM-REV and 1000 key contacts.
12	Disconnect the KS-14510 VOM from the test cabinet meter.	

STEP	ACTION	VERIFICATION
13	Operate the +STA and VM-REV keys.	Test cabinet meter indicates between 116 and 120 volts. ***CORRECTIVE ACTION*** Check the +STA and VM-REV key contacts.
14	Release the +STA key and operate the -STA key.	Test cabinet meter indicates between 116 and 120 volts. ***CORRECTIVE ACTION*** Check the -STA key contacts.
15	Release the -STA and VM-REV keys.	Test cabinet meter indicates zero.
Milliammeter		
16	Remove fuse M from the test cabinet circuit.	
17	Connect a KS-8039 dc voltmeter/milliammeter in series with -48 CO battery, a 48K-ohm resistor, and the test cabinet meter as shown in Fig. 1.	KS-8039 meter indicates approximately 1.0 mA.

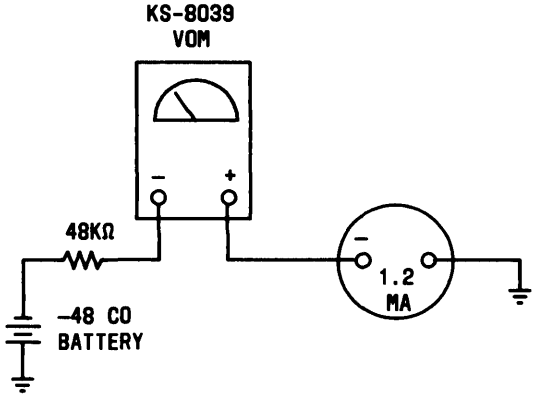

Fig. 1—Milliammeter Calibration Circuit—1.0 mA Connection

18	Observe the reading of the test cabinet meter.	The test cabinet meter indicates within 0.012 mA of the KS-8039 meter reading. ***CORRECTIVE ACTION*** Replace test cabinet meter.
19	Disconnect all test connections.	KS-8039 and test cabinet meters indicate zero.
20	Replace fuse M.	

STEP	ACTION	VERIFICATION
B. Rheostat Test		
1	Set the KS-20538 VOM to the OHMS X1 scale.	
2	Connect the KS-20538 VOM between the wiper and the ccw terminal of the test cabinet rheostat, R.	The KS-20538 meter reads less than one ohm. ***CORRECTIVE ACTION*** A. Check that the RH key is in the normal position. B. Check the RH key contacts.
3	Set the rheostat for minimum resistance.	
4	Operate the RH key.	The KS-20538 meter still indicates less than one ohm. ***CORRECTIVE ACTION*** Clean or replace the rheostat.
5	Observe the KS-20538 VOM as the rheostat wiper is adjusted from its minimum to its maximum position.	The KS-20538 meter indicates a steadily increasing resistance up to a maximum of 3500 ohms, ±10 percent. ***CORRECTIVE ACTION*** Clean or replace the rheostat.
6	Disconnect the KS-20538 VOM from the test cabinet rheostat.	The KS-20538 meter indicates an infinite resistance.
7	Release the RH key.	
C. Insulation Breakdown Test		
1a	If the test cabinet is used without the jack panel, connect the KS-14510 VOM + lead to the ring lead of the test cabinet terminal strip.	
2b	If the test cabinet is used with the jack panel, insert a 310 plug into the T jack of the jack panel to which the cabinet under test is terminated.	
3b	Connect the + lead of the KS-14510 VOM to the ring lead of the 310 plug.	
4	Connect the KS-14510 (—) lead to the test cabinet ground.	
5	Set the KS-14510 VOM to the 300 Vdc scale.	
6	Operate the BT key.	The KS-14510 VOM indicates +200V.

STEP	ACTION	VERIFICATION
		CORRECTIVE ACTION Check the BT key contacts.
7	Release the BT key.	The KS-14510 VOM indicates zero volts. ***CORRECTIVE ACTION*** Check the BT key contacts.
8a	If the test cabinet is used without the jack panel, change the KS-14510 VOM + lead from the ring to the tip lead of the test cabinet terminal strip.	
9b	If the test cabinet is used with the jack panel, change the KS-14510 VOM + lead from the ring to the tip lead of the 310 plug.	
10	Operate the REV key.	
11	Operate the BT key.	The KS-14510 VOM indicates +200 V. ***CORRECTIVE ACTION*** Check BT key contacts.
12	Release the BT key.	The KS-14510 VOM indicates zero volts. ***CORRECTIVE ACTION*** Check the BT key contacts.
13	Release the REV key.	
14a	If the test cabinet is used without the jack panel, disconnect the KS-14510 VOM from the test cabinet terminal strip.	
15b	If the test cabinet is used with the jack panel, disconnect the KS-14510 VOM from the 310 plug.	
16b	Remove the 310 plug from the jack panel T jack.	
17	Disconnect the KS-14510 VOM (—) lead from the test cabinet ground.	

D. Coin Relay Voltage Tests

1a	If the test cabinet is used without the jack panel, connect the KS-14510 VOM + lead to the tip lead of the test cabinet terminal strip.	

STEP	ACTION	VERIFICATION
2b	If the test cabinet is used with the jack panel, insert a 310 plug into the T jack of the jack panel to which the cabinet under test is terminated.	
3b	Connect the + lead of the KS-14510 VOM to the tip lead of the 310 plug.	
4	Connect the KS-14510 (—) lead to the test cabinet ground. ***Note:*** Reverse leads at the KS-14510 VOM for a negative voltage.	
5	Set the KS-14510 VOM to appropriate dc voltage scale. ***Note:*** Coin voltages vary and must be determined locally.	
6c	If equipped with dial-tone-first feature, option YD, operate the keys and observe the indications listed in Table B.	Voltages present as indicated in Table B. ***CORRECTIVE ACTION*** A. Check option YD wiring. B. Check coin batteries or power supply and adjust or repair.

TABLE B

OPERATE	INDICATED VOLTAGE
COIN +	COIN COLLECT VOLTAGE
COIN —	COIN RETURN VOLTAGE

Note: Coin voltages vary and must be determined locally.

7d	If equipped with option YC, operate the keys and observe the indications listed in Table B.	Voltages present as indicated in Table B. ***CORRECTIVE ACTION*** A. Check option YC wiring. B. Check coin batteries or power supply and adjust or repair.
8a	If the test cabinet is used without the jack panel, connect the KS-14510 VOM + lead to the tip lead of the test cabinet terminal strip.	
9b	If the test cabinet is used with the jack panel, connect the + lead of the KS-14510 VOM to the ring lead of the 310 plug.	

STEP	ACTION	VERIFICATION
10c	If equipped with dial-tone-first feature, option YD, repeat Step 6c.	No voltages present on the ring lead. ***CORRECTIVE ACTION*** Check option YD wiring.
11d	If equipped with option YC, repeat Step 7d.	Voltages present as indicated in Table B. ***CORRECTIVE ACTION*** Check option YC wiring.
12a	If the test cabinet is used without the jack panel, disconnect the KS-14510 VOM from the test cabinet terminal strip.	
13b	If the test cabinet is used with the jack panel, disconnect the KS-14510 VOM from the 310 plug.	
14b	Remove the 310 plug from the jack panel T jack.	
15	Disconnect the KS-14510 VOM (—) lead from the test cabinet ground.	

E. Receiver Off-Hook (ROH) Tone Test

Note 1: This test is required only where a jack panel equipped with ROH tone is provided.

Note 2: This test requires the aid of a craft person stationed at a nearby test telephone.

1	Connect a 3P7D patch cord from the T jack of the test panel associated with the cabinet position under test and an idle test trunk.	Red trunk test lamp lighted.
2	At the test cabinet— Operate DIAL and SS keys.	Position voltmeter needle deflects to left.
3	When position voltmeter needle deflects to the right, dial the number of the nearby test telephone.	Position voltmeter needle follows dial pulses.
4	When dialing is completed, release the DIAL key.	
5	Have the craft person take the test telephone off-hook.	
6	Operate the T and RCCI keys and test the connection between the test cabinet and the test telephone.	A good talking path is established between the test cabinet position and the test telephone.

STEP	ACTION	VERIFICATION
7	Operate the HOLD key of the seized test trunk.	
8	Release the test cabinet T and RCCI keys.	
9	Move the 3P7D cord from the T jack to the ROHT jack of the test panel.	The green ROHT lamp lights when the plug is inserted into the ROHT jack.
10	Release the test trunk hold condition.	
11	Operate the HT-HT1 or HT2 key (depending upon which test cabinet is under test when two are connected to the jack panel).	***CORRECTIVE ACTION*** Check the HT-HT1 or HT2 key contacts.
12	Test the connection to the test telephone. ***Caution: Advise the test telephone craft person to hold the receiver away from the ear as the ROH tone is applied.***	A good talking connection is established between the test cabinet position and the test telephone.
13	Release the HT-HT1 or HT2 key.	
14	Operate the ROHT key on the jack panel.	The ROH tone is applied and the ROHT red lamp flashes. ***CORRECTIVE ACTION*** Check the ROHT key contacts.
15	Operate the BUZ key on the jack panel.	
16	Have the craft person place the test telephone on-hook while the ROH tone is being applied.	The jack panel buzzer sounds when the test telephone goes on hook. ***CORRECTIVE ACTION*** Check the BUZ key contacts.
17	Release the BUZ key.	
18	Remove the 3P7D patch cord from the jack panel.	

F. Dial Speed or TOUCH-TONE Frequency Test

Note 1: This test is required only where a jack panel equipped with ROH tone is applied.

Note 2: This test requires the aid of a craft person stationed at a nearby test telephone.

STEP	ACTION	VERIFICATION
1	Connect a 3P7D patch cord from the T jack of the test panel associated with the cabinet position under test and an idle test trunk.	Red trunk test lamp lighted.
2	At the test cabinet— Operate DIAL and SS keys.	Position voltmeter needle deflects to left.
3	When position voltmeter needle deflects to the right, dial the number of the nearby test telephone.	Position voltmeter needle follows dial pulses.
4	When dialing is completed, release the DIAL key.	
5	Have the craft person take the test telephone off-hook.	
6	Operate the T and RCCI keys and test the connection between the test cabinet and the test telephone.	A good talking path is established between the test cabinet position and the test telephone.
7	Release the T and RCCI keys.	
8a	If rotary dial is being tested— For dial speed test, operate the DT key to the "set" position.	
9a	Operate the RH key.	
10a	Adjust the test cabinet rheostat so that the voltmeter indicates 10 on the 24V scale.	Voltmeter indicates 10 on 24V scale. ***CORRECTIVE ACTION*** Check the rheostat and DT key wiring.
11a	Operate the DT key to the "dial" position.	The craft person at the test telephone hears dial tone.
12a	Have the craft person at the test telephone dial "0" Observe the meter reading just prior to its indicating zero.	Dial pulses are indicated on the meter scale as the needle moves to a new position about which it vibrates momentarily and then falls to zero. The meter reading just prior to the needle falling off to zero corresponds to the dial speed in pulses per second as read on the 0-24 scale. ***CORRECTIVE ACTION*** Troubleshoot or calibrate the dial test circuit.
13a	Release and then reoperate the DT key.	

STEP	ACTION	VERIFICATION
14a	Have the craft person dial "0" and manually slow the dial as it returns to the normal position.	The test desk meter indicates a slower dial speed than Step 12a.
15a	Release and then reoperate the DT key.	
16a	Have the craft person dial "0" and manually speed the dial as it returns to the normal position.	The test desk meter indicates a faster dial speed than Step 12a.
17a	Release the DT key.	
18b	If TOUCH-TONE frequency testing is required—Operate the TT key.	Dial tone is heard at the test telephone.
19b	Have the craft person at the test telephone operate all TT keys in ascending order.	Tones are heard at the test cabinet to indicate that the TOUCH-TONE frequency test circuit is operating. ***CORRECTIVE ACTION*** Troubleshoot the TOUCH-TONE frequency test circuit.
20b	Release the TT key.	
21	Disconnect patch cord from test panel.	