

## **OPERATING INSTRUCTIONS**

### **177A TEST SET**

**1.01** The 177A test set is designed to monitor the voltage polarity and levels provided to the coin telephone set from any type central office, test desk, test console, test cabinet, LSV, MLT, etc.

**1.02** The 177A test set light emitting diodes (LED's) respond to negative or positive potentials applied to the loop or across either side of the loop to ground. A third wire is also provided with diodes for tip to ground tests. The FEMF potentials can be determined and identified without fear of burning the trouble conditions clear. The 177A test set can be used for monitoring an in-service set without interfering with circuit operation. It can also be used to determine trouble conditions when circuits are in the idle state.

**1.03** A jumper lead when connected between the chassis ground and the tip access point supplies ground to the tip side of the line and is used for ground start applications. This connection may also be used to represent a coin ground when testing coin control recycle applications, stuck coin alarms, registers, identifiers, and visual indicators.

**1.04** Listed are sample test procedures and the signaling threshold required for dial-tone-first service. From this the signaling application to be monitored can be determined. The test set can be connected at the station, central office terminal locations, or any location where tip, ring, and ground can be accessed.

**1.05** The LED indicators operate as follows:

<b>LED</b>	<b>DC OPERATION</b>
No. 1	Lights on negative dc voltages across TIP and RING (-6 volt threshold)
No. 2	Lights on positive dc voltages across TIP and RING (+6 volt threshold)

No. 3	Lights on negative dc voltages across TIP and GRD (-70 volt threshold)
No. 4	Lights on positive dc voltages across TIP and GRD (+70 volt threshold)
No. 5	Lights on TIP to GRD voltage (+24 volt threshold)
No. 6	Lights on TIP to GRD voltage (-24 volt threshold)

Typical test set use for FEMF tests and DTF operational checks are shown below.

#### **FEMF Test**

1. Request the loop to be disconnected at the CO.
2. With the green, red, and yellow leads connected to tip, ring, and station ground, respectively, the following light conditions should be noted:

<b>Light</b>	<b>FEMF CONDITION</b>
No. 1	- DC across TIP and RING
No. 2	+DC across TIP and Ring
No. 1 and 2	AC across TIP and RING
No. 5 or 6	DC from TIP to GRD

#### **SIGNALING THRESHOLD FOR DIAL-TONE-FIRST**

- (1) Coin present test for initial deposit: -48 volt battery on the tip side with the ring side open.
- (2) Stuck coin or 5-cent overtime test: +48 volt battery on the tip side with the ring side open.

(3) Transmission and coin deposit readout on local call: -48 volt battery on the ring side of line and ground on the tip side.

(4) Transmission and coin desposit on toll call and totalizer homing before coin control has been applied: +48 volt on the ring side of the line and ground on the tip.

(5) Coin return: -130 volt battery on the tip side of the line with the ring side open.

(6) Coin collect: +130 volt battery on the tip side of the line with the ring side open.

***Sample Test Procedures Using the 177A Test Set***

Connections: Green and Red from the 177A test set connecting cord to the tip and ring of the line. Yellow lead from the connecting cord to the station ground.

**DIAL-TONE-FIRST MODE**

***Local Overtime Call - Test set connected to a DTF line appearance at the station.***

STEP	ACTION	VERIFICATION
1	With handset on hook	-48 volt (No. 1) diode lights brightly indicating battery and ground from the line relay. (No. 5 may light dimly on lines equipped with DDL or SRE's)
2	Go off-hook	-48 volt (No. 1) diode goes dim indicating current flow (dial tone) from the Orig. Reg., Sub Sender, Sel, etc.
3	Dial local charge number with initial rate	No. 1 diode follows rotary dial pulses. At completion of dialing -48 (No. 6) diode lights momentarily, indicating initial rate ground tests. (Test occurs after third digit in SXS)
4	Call answered	-48 volt (No. 1) diode now lighted.

***Automatic 5-Cent Overtime***

1	30 seconds before end of initial period.	+300 volt (No. 4 and 5) diodes light and go dark, indicating a coin was collected.
2	Simulate local OT deposit. Trip HT	
3	At the end of initial period.	+48 volt (No. 2) diode lights indicating totalizer homing battery has been applied.  +48 volt (No. 5) diode flashes indicating coin present test.

***Dial "0" and Call (TSP, TSPS, Cord Board)***

1	With handset on hook	-48 volt (No. 1) diode lights brightly.
2	Go off-hook	

STEP	ACTION	VERIFICATION
3	Dial "0" +	Just prior to operator answer, Nos. 3 and 6 diodes flash, representing coin refund.
4	Operator Answer	+48 volt (No. 2) diode lights indicating positive talking battery for totalizer homing.
5	Simulate deposit by manually operating totalizer and request operator to collect	Nos. 4 and 5 diodes flash once, indicating +130 volt coin collect pulse.
6	Request operator to ring back and hang up	Nos. 1 and 2 diodes glow following 20 cycle ringing supply, indicating ringing current applied.
7	Request operator to refund.	Nos. 3 and 6 diodes flash once, indicating -130 volt coin refund pulse.

### ***Incoming Toll***

1	Have cordboard operator initiate call to coin test station.	Diodes Nos. 1 and 2 light and respond to 20 cycle ringing supply.
2	Go off-hook	Nos. 1 and 2 diodes go dark.  No. 2 diode lights indicating +48 volt talk battery on line.
3	Request operator to identify deposit. Deposit less than initial rate.	No. 2 diode remains lighted totalizer homes, operator can identify deposit.
4	Request operator to refund.	No. 2 diode goes dark.  Nos. 3 and 6 diodes flash, indicating a -130 volt coin refund pulse.  No. 2 diode lights.
5	Deposit initial rate and request operator to collect.	No. 2 diode goes dark.  Nos. 4 and 5 diodes flash, indicating +130 volt coin collect pulse.
6	Request operator to disconnect circuit.	No. 2 diode lights.
7	Hang up.	No. 2 diode goes dark.  No. 1 diode lights.

### ***Recycle***

1	At coin station, block coin relay armature nonoperate.
2	Lift handset.

<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
3	Deposit initial rate and dial a local test number for audible ring.	No. 1 diode lights, follows dial pulses. Audible ringing heard.
4	Hang up.	No. 1 diode goes dark, Nos. 3 and 6 diodes flash indicating -130 volt coin refund pulse.  No. 5 diode lights indicating +48 volt stuck coin test.  Nos. 3 and 6 diodes flash indicating a second coin refund pulse.
5	Remove blocking tool	No. 1 diode lights.
6	Go off-hook, then hang up.	No. 1 diode goes dark momentarily.  Nos. 3 and 6 diodes flash once, indicating a refund pulse.