

## COIN TELEPHONE—1A- AND 2A-TYPE OPERATION TESTS AND TROUBLE ANALYSIS

### 1. GENERAL

1.01 This section provides operation tests which should normally be performed at completion of installation.

1.02 This section is reissued to add information on 2A1 and 2A2 coin telephones, and to change title.

1.03 Refer to Section 506-326-200 for installation and maintenance of 1A-type coin telephones. Refer to Section 506-328-200 for installation and maintenance of 2A-type coin telephones.

1.04 Operation tests covered are:

A. *Totalizer and Coin Relay Operation (On-Hook)*

B. *Coin Relay Bias Margin Test*

C. *Dial Tone Test*

D. *Totalizer Operation (Off-Hook)*

E. *Coin Tone Signaling*

F. *Coin Release Mechanism*

### 2. APPARATUS REQUIRED

(a) P11C Cord

(b) 1011B Test Set or equivalent

(c) Coins: 1 penny, 2 nickels, 1 dime, 2 quarters

(d) 146B Bias Margin Gauge

### 3. PREPARATION

#### STEP

#### ACTION

#### VERIFICATION

#### Tests A, B, C, D, and E

1 Invert handset on switch hook (Fig. 1) (1A-type only).

**Note:** Prevents armored cord from pushing handset off switch hook when cover is removed.

2 Remove cover unit assembly (1A-type) or open door and faceplate assembly (2A-type) and remove plug P1. Place cover unit assembly (1A-type) on a firm level surface.

3 Connect P11C cord between plug P1 and jack J1 of chassis assembly.

4. METHOD

STEP	ACTION	VERIFICATION
<b>A. Totalizer and Coin Relay Operation (On-Hook)</b>		
4	Deposit quarter in coin chute.	Totalizer operates and then steps back to home position. Coin relay refunds coin.
		<i>Note:</i> If coin is not refunded, repeat with a second quarter before assuming failure. Cam shaft could be in such position initially that no response would be obtained from CO.
5	Repeat Step 4 using a dime and then a nickel.	Same as Step 4.
<b>B. Coin Relay Bias Margin Test</b>		
<i>Note:</i> Make this test when coin relay fails to operate or operates in the wrong direction.		
4	Remove coin relay dust cover.	
5	Remove handset, call test desk and request a bias margin test. (Use central office test circuit where available.)	
6	Slip 146B bias margin gauge (Fig. 2) over left pole piece extension arm from left side of coin relay (Fig. 3).	
7	Request deskman to perform operation appearing in the lower left corner of gauge.	Relay operates to accomplish what is indicated in lower left corner of gauge.
8	Reverse the 146B bias margin gauge by turning it around on the same pole piece extension arm.	
9	Repeat Step 7.	Same as Step 7.
10	Remove 146B gauge.	
11	Hang up handset (inverted on 1A-type).	
<b>C. Dial Tone Test</b>		
4	Remove coin relay dust cover.	
5	Remove handset.	

STEP	ACTION	VERIFICATION
6	Operate hopper trigger.	Dial tone heard.
7	Dial any digit but "0" or "1".	Dial tone should not break.
8	Hang up handset (inverted on 1A-type).	
<b>D. Totalizer Operation (Off-Hook)</b>		
	<i>Note:</i> Totalizer set for an initial rate of 10 cents.	
4	Remove handset.	
5	Deposit nickel in coin chute.	Totalizer cam rotates 1 step. No dial tone.
6	Deposit second nickel.	Totalizer cam rotates an additional step and then steps back to home position. Dial tone is heard.
7	Dial any digit but "0" or "1".	Dial tone is broken.
8	Hang up handset (inverted on 1A-type).	Coin relay refunds coins.
9	Remove handset.	
10	Deposit dime in coin chute.	Totalizer cam rotates 2 steps and then steps back to home position. Dial tone is heard.
11	Repeat Steps 7 and 8.	Same as Steps 7 and 8.
12	Remove handset.	
13	Deposit quarter in coin chute.	Totalizer cam rotates 5 steps and then steps back to home position. Dial tone is heard.
14	Repeat Steps 7 and 8.	Same as Steps 7 and 8.
<b>E. Coin Tone Signaling</b>		
4	Connect leads of 1011B test set to tip and ring terminals on TBl.	
5	Place <b>TALK-MONITOR</b> switch of test set in <b>MONITOR</b> position.	
6	Remove handset.	

**SECTION 506-326-500**

<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
7	Deposit dime in coin chute.	Dial tone is heard in coin telephone handset.  <i>Note:</i> Beeps should not be heard in handset of coin telephone.
8	Dial any digit but "0" or "1" with coin telephone dial.	Dial tone breaks.
9	While monitoring with test set, deposit nickel in coin chute.	One beep heard in test set.  <i>Note:</i> Prior to hearing beep, passage of coin down chute is heard in test set.
10	Deposit dime in coin chute.	Two beeps heard in test set. (See Note in Step 9)
11	Deposit quarter in coin chute.	Five rapid beeps heard in test set. (See Note in Step 9)
12	Hang up handset (inverted on 1A-type).	Coin relay refunds all coins.
13	Disconnect 1011B test set.	
14	Replace coin relay dust cover.	
15	Check ringer for maximum volume position of gong.	
16	Remove P11C cord. Replace plug P1 into jack J1. Replace cover unit assembly (1A-type), or close door (2A-type).	
17	Replace handset properly on switch hook.	
18	Dial the dial test number and verify all frequencies and amplitudes (1A2 and 2A2).	
19	Call local operator, have station called, and verify that coin telephone is working correctly.	

**F. Coin Release Mechanism**

- |   |                            |                               |
|---|----------------------------|-------------------------------|
| 1 | Deposit penny.             |                               |
| 2 | Depress coin return lever. | Penny drops into coin return. |

**5. TROUBLE ANALYSIS**

- 5.02** Refer to Table A for trouble analysis for the coin telephone.

**5.01** On trouble reports of coins collected or returned in error, try to obtain area code and telephone number of called party to facilitate tracing trouble in central office.

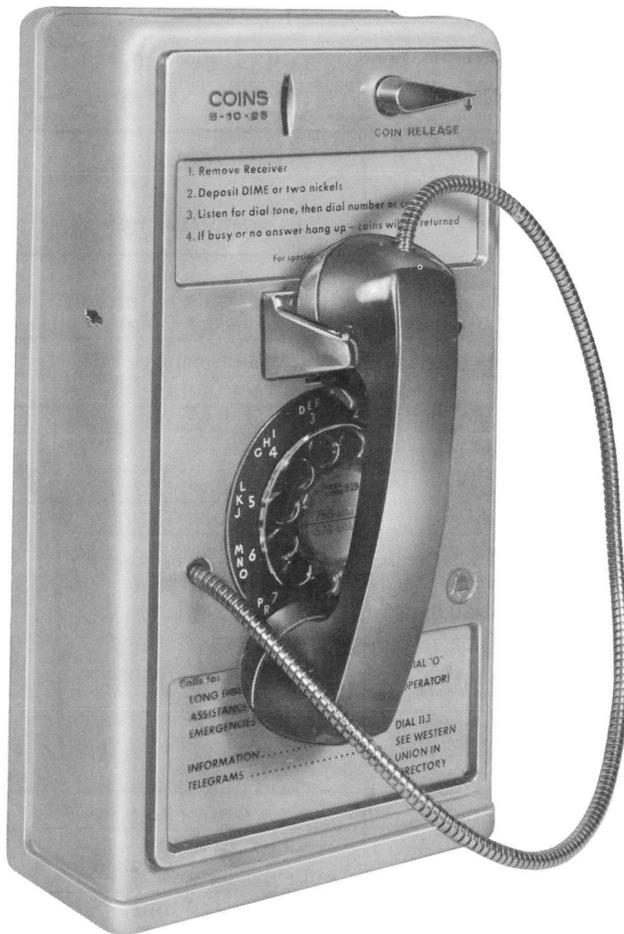
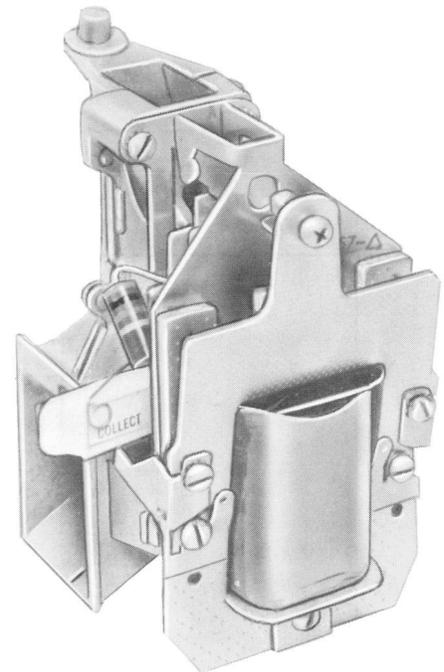
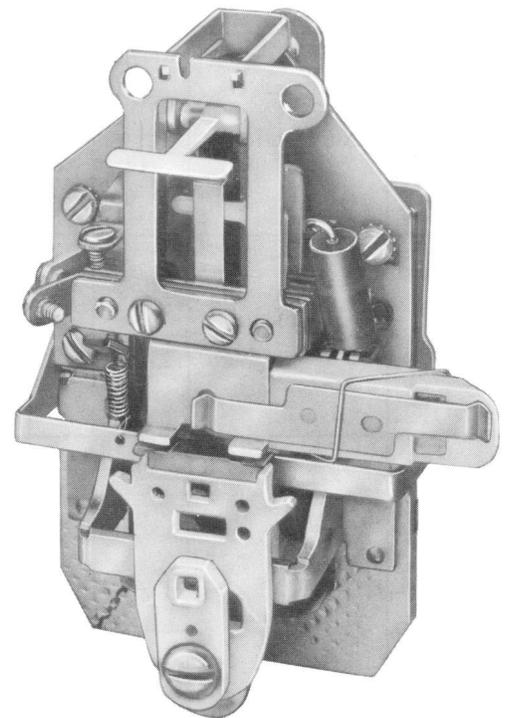


Fig. 1—Cover Unit With Handset Inverted (Typical of 1A-Type)



SIDE VIEW



BACK VIEW

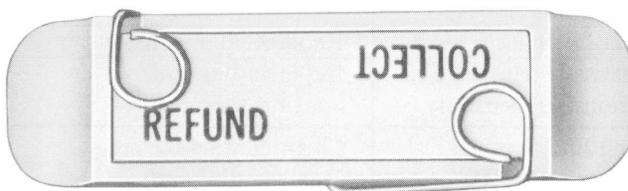


Fig. 2—146B Bias Margin Gauge

Fig. 3—Bias Margin Gauge in Position for Collect Test

**TABLE A**  
**TROUBLE ANALYSIS**  
**(INITIAL RATE SET FOR 10 CENTS)**

TELEPHONE SET CONDITION	FAILURE	* STEP NO.	COIN TELEPHONE		POSSIBLE CAUSE	REMEDIAL ACTION	
			1A1 AND 2A1	1A2 AND 2A2			
Handset On-Hook (inverted on 1A-type) Deposit Quarter	No Readout†	1	•	•	Tip and ring reversed	Reconnect as required	
		2	•	•	Plugs P1 & P2 reversed		
		3	•	•	Central office overload	Wait, then repeat test	
		4	•	•	•	Switchhook transfer contacts SH1(NC) and SH3(NC) not making	Clean contacts
						Replace dial and housing assembly	
		5	•	•	•	Coin relay contact HT1 not making	Clean contacts
						Replace coin relay	
		6	•	•	•	Defective totalizer	Replace defective apparatus
		7	•	•	•	Defective coin relay	
		8	•	•	•	Defective chassis wiring	
		9	•	•	•	Defective wiring in dial and housing assembly	
		10	•	•	•	Defective A relay	
11	•	•	•	Defective handset			
12			•	Defective dial			
Handset On-Hook (inverted on 1A-type) Deposit Nickel	No Readout†	13	•	•	Switch hook transfer contacts SH3(NC) not making	Clean contacts	
		14	•	•	Defective wiring in dial and housing assembly	Replace dial and housing assembly	
		15	•	•	Central office overload	Wait, then repeat test	
Handset On-Hook (inverted on 1A-type) Nickel Deposited, Readout OK	No Refund	16	•	•	Switch hook contacts SH2 or SH4 not breaking	Replace dial and housing assembly	
		17	•	•	Defective totalizer	Replace totalizer	
		18	•	•	Central office overload	Wait, then repeat test	
		19	•	•	Defective CO coin trunk	Refer to test center	
Handset Off-Hook Deposit Nickel	Readout obtained, Dial Tone is Heard	20	•	•	TI contacts remain latched after refund	Replace totalizer	
		21	•	•	Initial rate set for 5 cents	Reset totalizer rate	
		22	•	•	Switch hook transfer contacts SH3(NC) not breaking	Replace dial and housing assembly	
		23	•	•	Defective chassis wiring	Replace chassis assembly	
		24	•	•	Defective wiring in dial and housing assembly	Replace dial and housing assembly	
Handset Off-Hook Initial rate (10 cents) Deposited	No Readout†	25	•	•	Switch hook transfer contacts SH3(NO) or SH2(NO) not making	Clean contacts	
		26	•	•	Totalizer set for more than initial rate	Replace dial and housing assembly	
						Reset totalizer rate	
27	•	•	Defective wiring in dial and housing assembly	Replace dial and housing assembly			

**TABLE A (Cont)**  
**TROUBLE ANALYSIS**  
**(INITIAL RATE SET FOR 10 CENTS)**

TELEPHONE SET CONDITION	FAILURE	* STEP NO.	COIN TELEPHONE		POSSIBLE CAUSE	REMEDIAL ACTION
			1A1 AND 2A1	1A2 AND 2A2		
Handset Off-Hook, Initial Rate Deposited, Readout OK	No dial tone (or reduced dial tone level in 1A2 and 2A2)	28	•	•	Switch hook transfer contacts SH1 (NO) not making	Clean contacts Replace dial and housing assembly
		29	•		Rotary dial off-normal contacts not breaking	Replace dial and housing assembly
		30	•	•	Defective totalizer	Replace defective apparatus
		31	•	•	Defective chassis wiring	
		32	•	•	Defective wiring in dial and housing assembly	
		33	•	•	Defective handset	
		34		•	Defective dial	
	Coins return after readout with no dial tone	35	•	•	Switch hook contacts SH2 and SH4 not making	Clean contacts Replace dial and housing assembly
		36	•		Open dial	Replace defective apparatus
		37	•	•	Defective chassis wiring	
	Totalizer steps continuously (may give bursts of tone)	38	•	•	Defective wiring in dial and housing assembly	Replace defective apparatus
		39	•	•	Totalizer transfer contacts T2 (NC) not making	
		40	•	•	Defective chassis wiring	
		41	•	•	Defective wiring in dial and housing assembly	
Handset Off-Hook Dial Tone OK	Cannot break dial tone	42	•	•	Totalizer contacts T1 not latching	Replace totalizer
		43	•		Defective dial	Replace defective apparatus
		44	•	•	Defective chassis wiring	
		45	•	•	Defective wiring in dial and housing assembly	
	46		•	Defective handset		
	Coins return when dial is operated	47	•	•	Defective dial	
Handset Off-Hook, Hopper Trigger Tripped by Hand, Dial Tone Obtained, Dialed One Digit Other than "0" or "1"	Dial tone broken	48	•	•	Totalizer transfer contacts T1 (NO) not making	Replace totalizer
Handset Off-Hook, Initial Rate Deposited, Readout OK	No dial tone and no refund	49	•	•	Totalizer transfer contacts T2 (NC) not making	Replace totalizer
		50	•	•	Totalizer steps through zero rate position	

**TABLE A (Cont)**  
**TROUBLE ANALYSIS**  
**(INITIAL RATE SET FOR 10 CENTS)**

TELEPHONE SET CONDITION	FAILURE	* STEP NO.	COIN TELEPHONE		POSSIBLE CAUSE	REMEDIAL ACTION
			1A1 AND 2A1	1A2 AND 2A2		
Handset Off-Hook, Readout OK, Dial Tone OK, Refund OK	No Sidetone	51	•	•	Open transmitter	Replace handset
Operator On Line, Deposit Nickel	No Readout, Operator Cannot Hear Coin Tone	52	•	•	Defective A relay	Replace A relay
Operator On Line, Deposit Additional Coins	Hear Coin Tones in Handset †	53	•	•	Defective chassis wiring	Replace chassis assembly
	No Coin Tones Heard by Operator	54	•	•	Totalizer transfer contacts S1 (NC) not making	Replace totalizer
		55	•	•	Defective oscillator	Replace chassis
	Dime Tones Too Fast	56	•	•	Totalizer transfer contacts CS (NC) not making	Replace totalizer
		57	•	•	CS cam not resetting	
	Too Many Coin Tones	58	•	•	Totalizer not stepping properly — T2 (NC) not making	
Quarter Tones Too Slow	59	•	•	Totalizer transfer contacts CS (NC) not breaking		

\* Steps should be taken in sequence. Possible cause assumes that preceding tests have been met.

† Readout refers to operation of totalizer and generation of beeps by coin signal oscillator.

‡ A slight tone may be heard on long loops but may not necessarily be a failure.