HAND SETS (DIAL HAND TEST SETS)

1. GENERAL

1.01 This section describes the Nos. 1011C, 1011D, 1011E, 1011F, 1011G, D-81760, D-81761, D-81762, D-81763, and D-158318 (formerly D-157843) hand sets (dial hand test sets).

1.02 This section is reissued to revise the information covering the equipment features and to revise the figure showing schematics of the 1011-type hand set and its associated cord assemblies. Detailed reasons for reissue will be found at the end of the section.

1.03 The No. 1011G hand set described in this section replaces all other hand sets previously covered in the section.

1.04 The Nos. 1011C, 1011D, 1011E, and 1011F hand sets may be converted to the No. 1011G hand set by replacing the associated present cord and plug by the H2A cord and No. 346A plug.

1.05 The principal application of these sets is for originating test calls on dial system apparatus for testing the switching, continuity, and talking features of the circuit. In the maintenance of the equipment, they may also be used for locating trouble in the various portions of the circuit. The type of equipment with which these sets are used is covered in Tables A and B.

2. EQUIPMENT FEATURES

1011-type Hand Sets

2.01 All 1011-type hand sets covered by this section are the same, except for the cord arrangements as shown in 2.03. The hand set consists of an F1 transmitter unit, an HA1 receiver unit, a switch for monitoring and talking, a No. 361C capacitor, a No. 6A dial and a dial mounting. These parts are assembled in a molded rubber mounting. The P-248137 dial mounting and a No. 52D dial adapter are used to assemble the dial to the rubber mounting. Some hand sets were furnished with a No. 5HB dial which has a metal finger wheel. Fig. 1 shows a view of the No. 1011G hand set and Fig. 2 shows a general view of other 1011 type, except the No. 1011G.

2.02 The receiver unit and dial are assembled on one end of the rubber mounting and the transmitter unit is assembled to the other end. The capacitor is placed inside the handle. The switch used for talking and monitoring is a small toggle-type locking switch mounted on the handle of the set near the receiver end. When this switch is in MON position, the capacitor is connected in series with the transmitter and receiver and, when in the TALK position, the capacitor is short-circuited.

2.03 The cords provided with the sets are as follows:

Table A - Equipment Features of No. 1011 Hand Sets

Code of Set	Code of Cord	Cord Terminates in	Principal Application	See Note
1011C	W2DB	No. 2 Test Clip AT&TCo Spec 6928	General Use	1
1011D	W2CK	310 Plug	Panel and Crossbar Offices	
1011E	W2CL	240A Plug	Step-by-Step and Community Dial Offices Step-by-Step Intertoll Dialing and Dial PBX	2,4
1011F	W3AA	325A or 351A Plug	Crossbar Offices	3,4
1011G	H2A	346A Plug	General Use	5

Notes

1. Some No. 1011C hand sets were furnished with the W2CJ cord and 360-type tools.
2. The No. 1011E hand set is also furnished when ordered with a No. 240H plug. Other 240-type plugs may be locally equipped.
3. The No. 1011F hand set may also be equipped locally with a No. 325B or 351B plug for testing 2-party message rate lines.
4. A KS-8010 switch containing a resistor is included as part of the W2CL (1200 ohms) and W3AA (2000 ohms) cords. This is a locking-type switch.
5. The No. 1011G hand set provides an arrangement whereby a basic coded hand set can be adapted by means of plug-in cords to all central office tests requiring the use of a hand set.

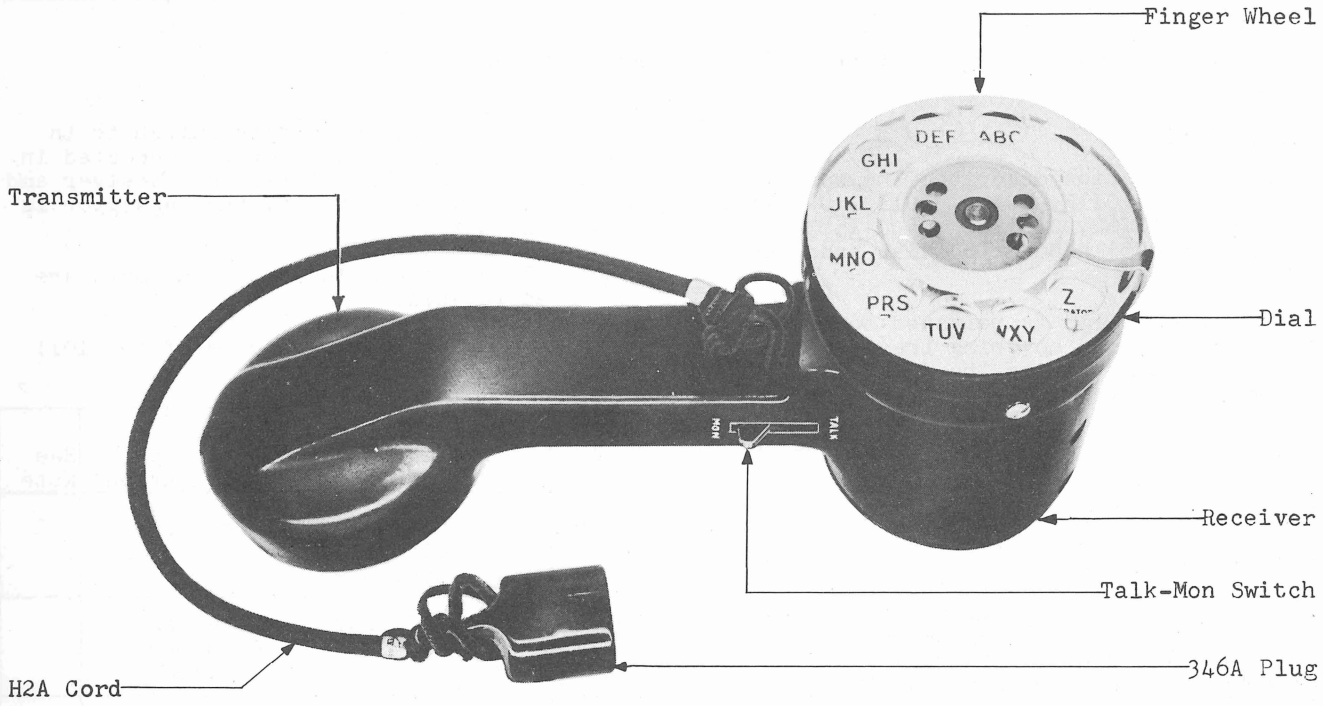

Fig. 1 - No. 1011G Hand Set

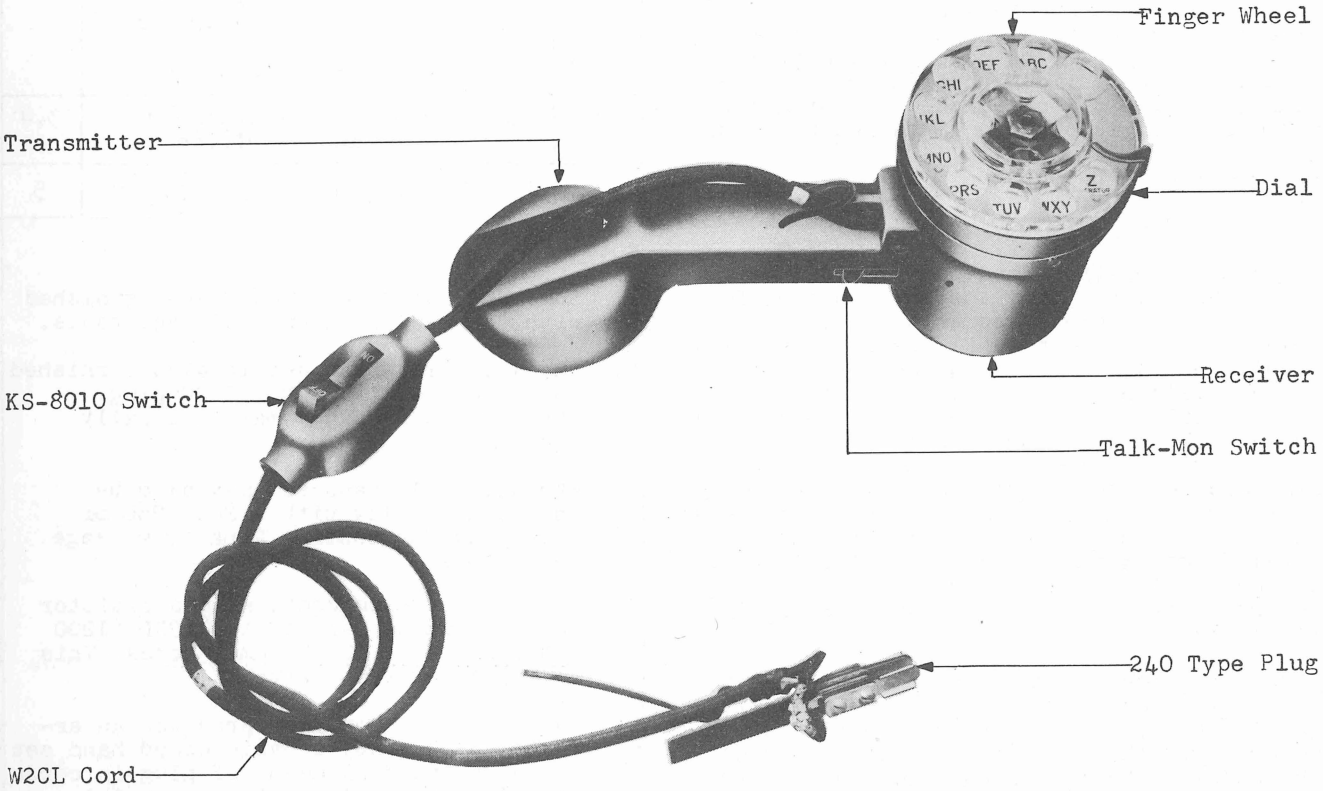

Fig. 2 - General View of 1011-type Hand Sets Other Than the 1011G

D-Specification Type Hand Sets

2.04 The principal equipment of all of these sets includes a transmitter and receiver, a capacitor, a dial, and a cord terminating in a plug or connecting clips. The plug or connecting clips provide for connecting the test set to the proper points on the circuit or apparatus to be tested.

2.05 The equipment is assembled in a divided die-cast aluminum housing approximately 10 inches long. The receiver and dial are mounted back to back on one end of the housing and the transmitter is mounted on the opposite end. A No. 38A dial mounting is used to protect the dial. Fig. 3 shows the set as viewed from the transmitter and receiver side and Fig. 4 shows the set as viewed from the side on which the dial is mounted. Fig. 5 is an interior view showing the arrangement of the apparatus inside the set.

2.06 A capacitor is mounted in the handle of the set and provision is also made for mounting two nonlocking push-button-type keys within the handle. The key buttons extend from the sides of the handle and when depressed are flush with the surface of the handle. A resistor is mounted in the handle of the D-81763 and D-158318 sets.

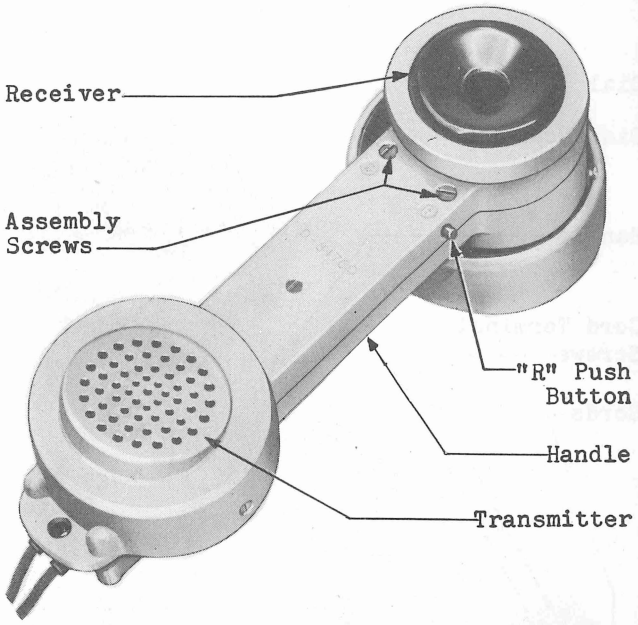

Fig. 3 - General View - D-Specification Type Hand Sets - Transmitter and Receiver Side

Table B - Equipment Features of D-Specification Type Hand Sets

Code	Button When Depressed		Type of Clips or Plugs	Principal Use	See Note
	C	R			
D-81760	Connects Capacitor in Series	Not Provided	Frankel Clip With Spikes	Community Dial Offices	1
D-81761	Connects Capacitor in Series	Not Provided	Frankel Clip Without Spikes	Panel and Crossbar Offices	1
D-81762	Connects Capacitor in Series	Not Provided	No. 109, 110, 309 or 310 Plug	Panel and Crossbar Central Offices	1
D-81763	Short-circuits Capacitor	Connects 1200 Ohms in Series	No. 240A Plug	Intertoll Dialing, Step-by-Step and Community Dial Office and Dial PBX	2
D-158318	Places 2000 Ohms Ground on Tip Side	Short-circuits Capacitor	No. 325A or 351A Plug	Crossbar Local and Toll Offices	3 ←

Notes

1. The D-81760, D-81761, and D-81762 hand sets are the same, except for the type of plugs or clips furnished.

2. The D-81763 hand set may also be equipped locally with No. 240F or other 240-type plugs. The replaced D-95692 set formerly specified for making selector rotary tests was the same as the D-81763 set, except that it was equipped with a No. 240H plug.

3. The D-158318 hand set may also be equipped locally with a No. 325B or 351B plug for testing on 2-party message rate lines. ←

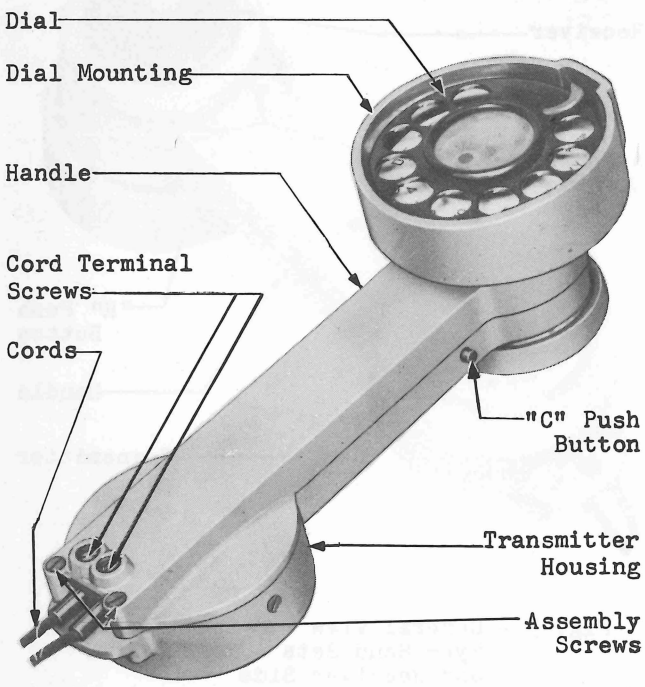

Fig. 4 - General View - D-Specification Type Sets - Dial Side

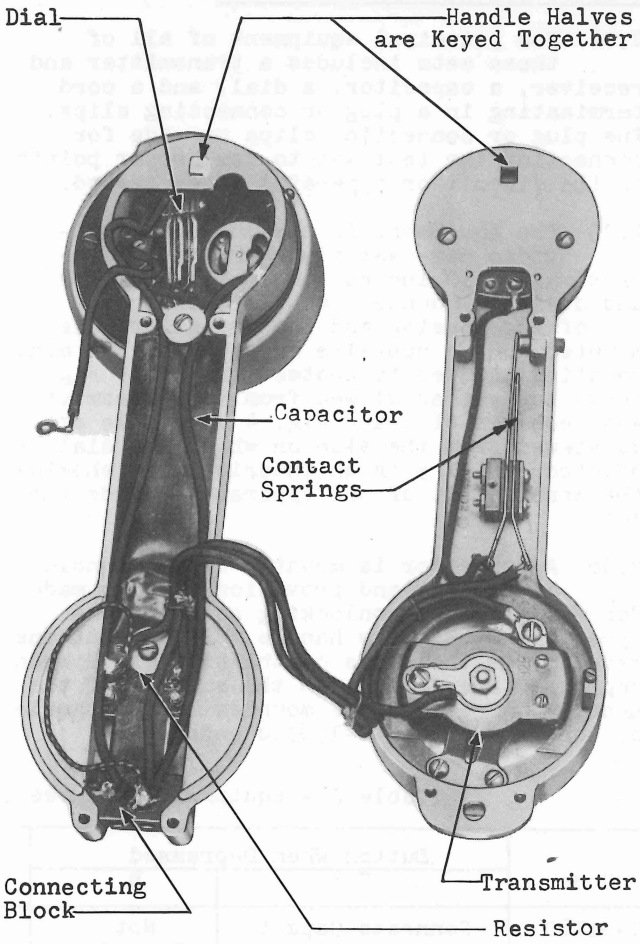

Fig. 5 - General View - D-Specification Type Hand Set - Opened

2.07 When desired, the cords may be removed from the connecting block and two D-97530 cord tips may be inserted. This permits the use of other cord combinations which are equipped with 360-type tools.

2.08 A D-96823 key locking slider is available for use with these sets. This slider which is shown in Fig. 6 provides a means for holding the C button operated. The slider is arranged to grip the hand set handle with sufficient pressure so that it will not slide out of position. The slider can be moved along the handle without interfering with the operation of the R key.

2.09 A belt hook (see Fig. 7) may be provided to facilitate carrying of the test set by the test or maintenance forces.

2.10 Table B shows the differences in equipment features between the various sets.

3. CIRCUIT FEATURES

1011-type Hand Sets

3.01 Schematics of the circuit arrangements of these sets are shown in Figs. 8 and 9.

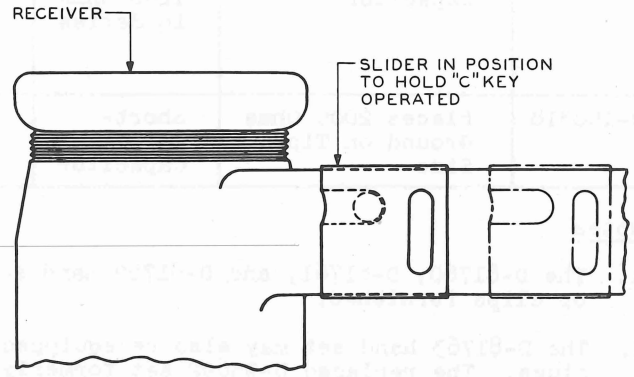

Fig. 6 - D-96823 Key Locking Slider

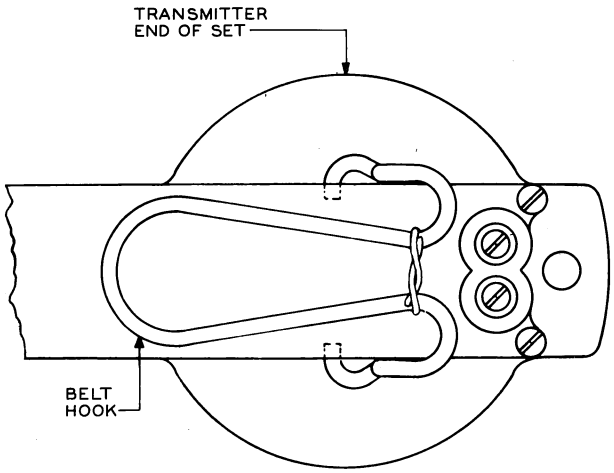

Fig. 7 - Belt Hook Used on Hand Set

3.02 When the dial is moved off-normal, closure of the off-normal contacts short-circuits the transmitter and receiver during the time the dial is off-normal thus eliminating clicks in the receiver due to dialing and removing the transmitter and receiver from the pulsing circuit.

3.03 When the switch in the handle of the set is operated to the MON position, the receiver is bridged across the line in series with a capacitor which provides a monitoring path. When the switch is operated to the TALK position, the capacitor is short-circuited thus permitting transmitter battery to flow and providing a dc bridge across the tip and ring of the line.

3.04 On the No. 1011E hand set, a 1200-ohm resistor connected inside a KS-8010 switch forms part of the cord assembly. When the ON button of this switch is in the depressed position, the resistor is short-circuited through the contacts of the switch. When the OFF button of the switch is in the depressed position, the short circuit is removed by the opening of the switch contacts and the 1200-ohm resistor is connected in series with the line thus simulating the dialing condition encountered on long loops.

3.05 On the No. 1011F hand set, a 2000-ohm resistor connected inside a KS-8010 switch forms part of the cord assembly. When the ON button of the switch is in the depressed position, the switch contact is closed. When this contact is closed, ground is connected from the frame of the plug through the 2000-ohm resistor to the tip of the line. This simulates the deposit of a coin on a coin box line. When the OFF button of the switch is in the depressed

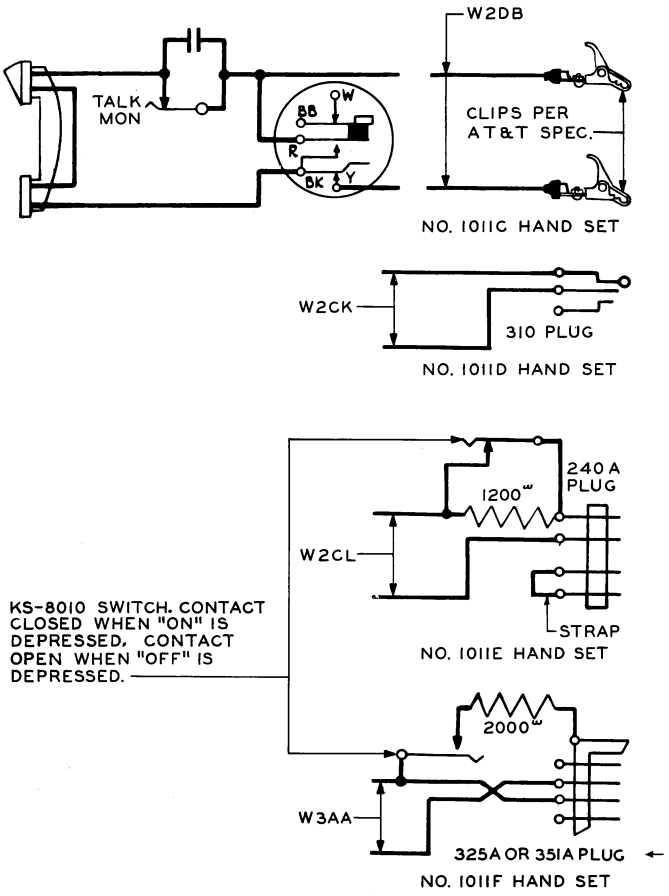

Fig. 8 - Schematics of Nos. 1011C, 1011D, 1011E, and 1011F Hand Sets

position, the 2000-ohm resistor is disconnected from the tip side of the line.

3.06 The No. 1011G hand set and its associated cord assemblies as shown in Fig. 9 replace all other hand sets previously covered in this section. This hand set, when associated with the 2W40A cord assembly, may be used in place of the No. 1011E hand set and when associated with the 3W8A cord assembly, may be used in place of the No. 1011F hand set.

D-Specification Type Hand Sets

3.07 Schematics of the circuit arrangement of these hand sets are shown in Figs. 10, 11, and 12.

3.08 When the dial is moved off-normal, closure of the off-normal contacts short-circuits the transmitter and receiver. This eliminates clicks in the receiver due to dialing and removes the transmitter and receiver from the pulsing circuit.

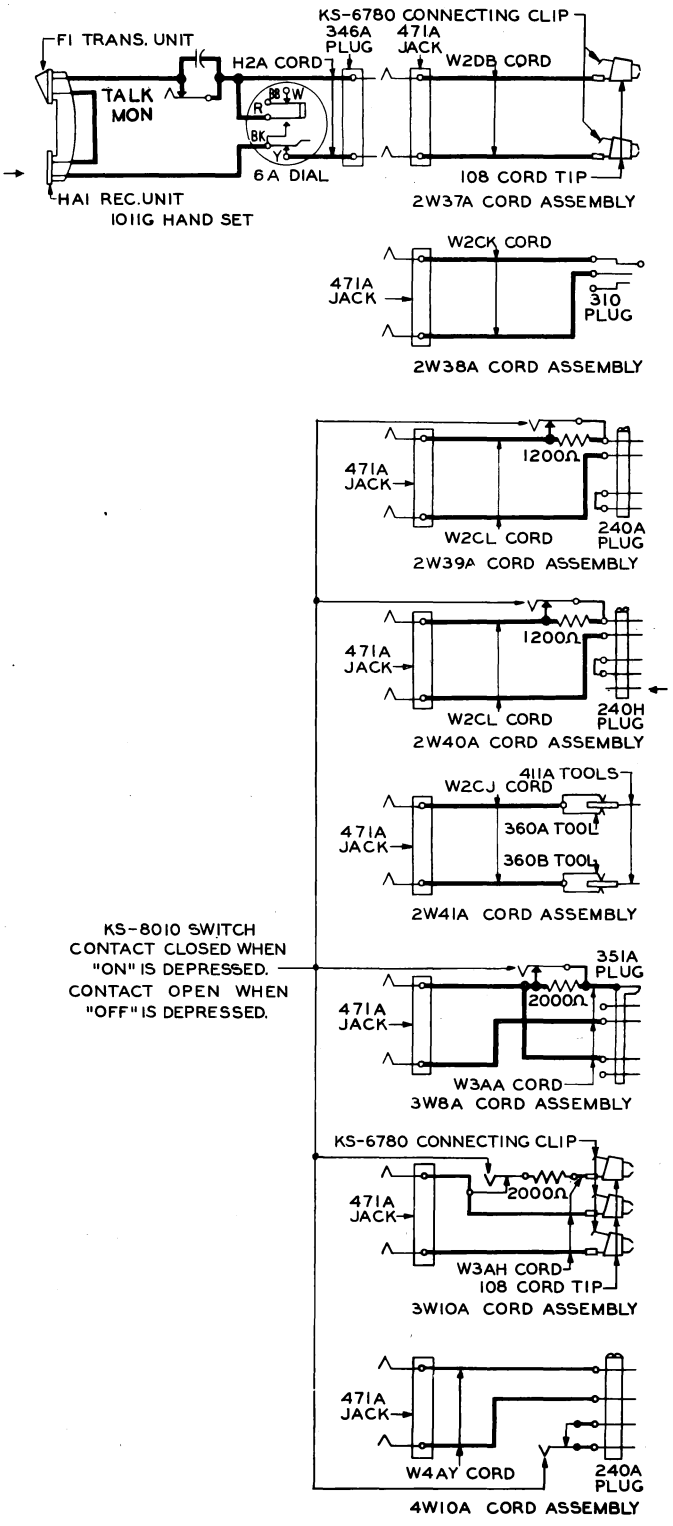

Fig. 9 - Schematics of No. 1011G Hand Set and Its Associated Cord Assemblies

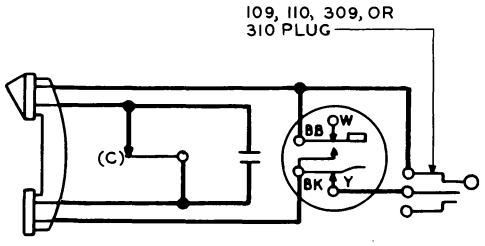

Fig. 10 - Wiring of D-81760, D-81761, and D-81762 Hand Sets (Clips Furnished Instead of Plug on D-81760 and D-81761 Sets)

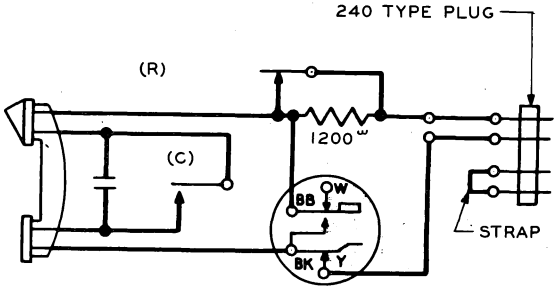

Fig. 11 - Wiring of D-81763 Hand Set

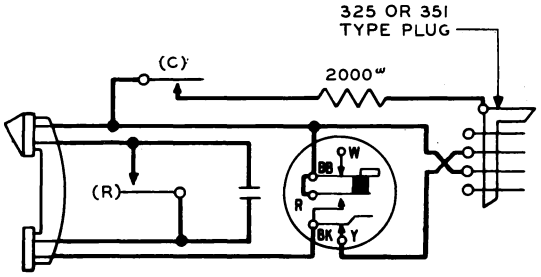

Fig. 12 - Wiring of D-158318 Hand Set

3.09 When the contacts associated with the C button (R button in the case of the D-158318 set) are open, the receiver is bridged across the line through a capacitor which provides a monitoring path. When the contacts are closed, the capacitor is short-circuited thus permitting transmitter battery to flow and providing a dc bridge across the tip and ring of the line.

3.10 On the D-81763 set, the 1200-ohm resistor is short-circuited through the normally closed contacts of the R button. Operation of the R button opens the short circuit and connects this resistor in series with the line to simulate the dialing conditions encountered on long loops.

3.11 On the D-158318 set, the 2000-ohm resistor is connected between the normally open contacts of the C key and the frame of the No. 351A or No. 351B plug. ← When the C key is operated, ground is connected through this resistor to simulate the condition encountered on a call from a coin box line.

4. MAINTENANCE FEATURES

1011-type Hand Sets

4.01 The dial should be adjusted to meet the requirements given in Section A408.002 covering dials. In case the transmitter or receiver is defective, the set should be returned through the usual channels for repair.

D-Specification Type Hand Sets

4.02 Removing the two screws in the handle near the rim of the receiver and the two screws at the transmitter end near the point where the cords are attached and separating the two parts of the housing makes the apparatus and wiring readily accessible. The dial should be adjusted to meet the requirements given in Section A408.002 covering dials. In case the transmitter or receiver is defective, the set should be returned through the usual channels for repair.

REASONS FOR REISSUE

1. To revise piece-part information in 2.01 in accordance with the latest manufacturing information.
2. To revise the information where necessary to include the Nos. 351A and 351B plugs.
3. To reword 2.04 and 2.06 and Fig. 5.
4. To revise the schematics of the No. 240H plug and to replace the No. 5JB dial with the No. 6A dial (Fig. 9).