

**HELMET COMMUNICATOR SYSTEM  
O.M. 15068**

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 **WARNING**

**Do not proceed with these instructions until you have READ the orange cover of this MANUAL and YOU UNDERSTAND its content.\* These WARNINGS are included for the health and safety of the operator and those in the immediate vicinity.**

**\*If you are using a Clemco Distributor Parts and Maintenance Guide refer to the orange warnings insert preceding the Index before continuing with the following instructions.**

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**1.0 INTRODUCTION**

**1.1** Scope Of Manual: This manual covers set-up, operation, troubleshooting and a replacement parts list for the Clemco HCS-110 Helmet Communication System. Separate operating instructions are supplied with the radio and should be consulted for specific information on operation, maintenance and FCC regulations. Read both the radio manual and this system manual, and comply with FCC regulations and requirements before attempting operation of the communication system.

**1.2 General Description:**

**1.2.1** The HCS-100 Communication System consists of: 2 radio packages (each includes a radio, rechargeable battery pack, battery charger with adaptor, antenna, belt clip, and radio operating instructions), 1 supervisor headset/cable assembly, 1 operator headset, 1 cable assembly for operator headset, and 1 operator cross chest radio holster. Available optional accessories are a Quick rate (3 hr.) battery charger, and 6-radio battery charger.

**1.3 Operating Controls**

**1.3.1** On/Off Volume Control: Applies power, sets volume from low (counter-clockwise) to high (clockwise).

**1.3.2** Channel Switch: Selects one of two possible operating channels. Each radio is supplied with one talk/receive channel and a second channel may be added as an optional accessory. All radios must be operating on the same channel.

**1.3.3** PL Squelch: Turns on PL (private line) feature, mutes background noise and reduces unwanted signals.

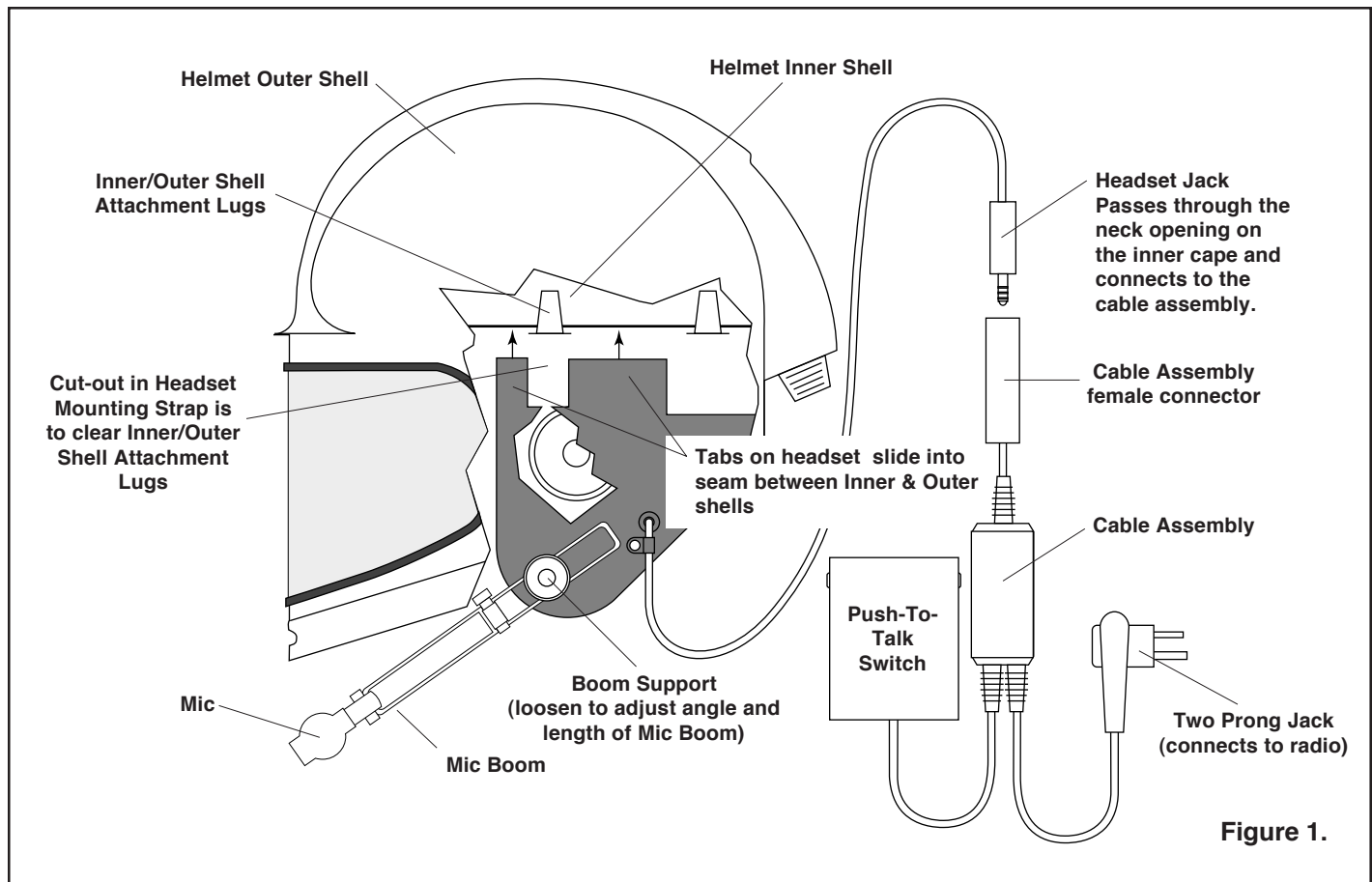
**1.3.4** Antenna Connector: Provides threaded attachment for the antenna to the radio.

**1.3.5** Transmit/Battery Status LED: Illuminates when the PTT switch is depressed. It does not illuminate if the battery needs charging.

**1.3.6** Accessory Connector: Provides point of connection of headsets to the radio.

**1.3.7** PTT Switch (push to talk switch): Puts the radio in transmit mode when depressed and held. When released, the radio operates in the receive mode. (NOTE: When headsets are used, the remote PTT switch bypasses this switch.) Radios are always in receive mode if PTT switch is not depressed.

**1.3.8** Body Switch (remote PTT): This PTT switch is part



**Figure 1.**

of the adaptor cable assembly and takes the place of the PTT switch on the radio. Operator applies pressure to transmit and releases to receive.

**1.3.9 Supervisor Headset:** The supervisor headset improves reception and transmittance in areas of high ambient noise.

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## 2.0 INITIAL SET-UP

### 2.1 Attach Operator's Headset to Helmet. (Figure 1)

**2.1.1** The following instructions pertain to installing the head-set in a Clemco Apollo Helmet. Installation in other helmets can be done in a similar manner but may require trimming the headset mounting strap to fit the contour of the helmet and attaching it with adhesive and/or velcro.

**2.1.2** Remove the helmet cape assembly and work through the bottom opening.

**2.1.3** Slide the tabs of the headset mounting strap between the inner and outer shell. The cut-out in the mounting strap is to clear the lugs that attach the inner to the outer helmet shell.

**2.1.4** Velcro loop material is supplied on the mounting strap and is to be used if additional support is required. To install, note the location of the velcro strip on the mounting strap. Cut a window in the acoustic foam and epoxy velcro hook material (not supplied) at the corresponding location on the helmet wall. Allow epoxy to dry and reinstall headset assembly.

**2.1.5** Place helmet on head and adjust the mic boom so the mic is directly in front of operator's mouth.

**2.1.6** Replace the cape assembly. The headset cord should go through the neck opening on the inner cape.

### 2.2 Prepare Radios (refer to radio manual)

**2.2.1** Install batteries in radio.

**2.2.2** Attach antenna and belt clip to radio.

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## 3.0 SET-UP FOR OPERATION

### 3.1 Operator's Radio

**3.1.1** Check that radio is fully charged.

**3.1.2** Put on radio holster and adjust straps.

**3.1.3** Select (check) radio operating channel.

**3.1.4** Turn on radio, adjust volume.

**3.1.5** Adjust squelch or position control to PL position for private line mode.

**3.1.6** Open rubber cover on the radio's accessory connector and attach cable assembly to radio by aligning the cable connector lugs with those on the radio connector. Pushing the cable connector will snap it into place.

**3.1.7** Place radio in chest holster and snap the retaining strap to secure.

**3.1.8** Attach the cable clip to the holster or other convenient location.

**3.1.9** Attach the PTT body switch to a belt or other location that will enable easy actuation while wearing protective clothing and blasting. One suggestion is to clip the switch on the side at the waist, allowing the operator to activate the switch using an elbow or arm. The switch must be pressed before the operator can transmit.

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## !WARNING

**Sufficient protective clothing must be worn while using the communication system to protect the radio and accessory equipment, as well as the operator, from rebounding abrasive and dust.**

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**3.1.10** Put on protective clothing.

**3.1.11** Supply the helmet with respirable air and put it on. The headset cable lead should come through the neck band.

**3.1.12** Plug the male jack of the headset lead into the female jack of the cable assembly. NOTE: BE SURE JACKS ARE FULLY SEATED. THE HEADSET WILL NOT FUNCTION UNLESS THE CONNECTORS ARE COMPLETELY ENGAGED.

### 3.2 Supervisor's Radio

**3.2.1** Check that radio is fully charged.

**3.2.2** Select (check) radio operating channel.

**3.2.3** Turn on radio, adjust volume.

**3.2.4** Adjust squelch or position control to PL position (private line mode).

**3.2.5** Attach supervisor headset as follows:

**3.2.6** Open rubber cover on the radio accessory connector and attach cable assembly to radio by aligning the cable connector lugs with those on the radio connector. Pushing the cable connector will snap it into place.

**3.2.7** Use belt clip to attach the radio to belt or place in pocket.

**3.2.8** Attach the cable clip and PTT switch at a convenient location within cable reach of the radio.

**3.2.9** Place headset on head.

**4.0 OPERATION**

**4.1 To Receive**

**4.1.1** Radios are always in receive mode if the PTT switch is not depressed.

**4.2 To Transmit**

**4.2.1** Position mic directly in front of mouth.

**4.2.2** Press PTT Switch, speak plainly and clearly into mic. The PTT Switch must remain depressed while transmitting. NOTE: CERTAIN CONDITIONS CAUSE AMBIENT NOISE TO BE LOUDER THAN THAT OF THE RADIO'S RECEPTION. UNUSUALLY HIGH NOISE LEVELS MAY REQUIRE THE OPERATOR TO STOP BLASTING TO RECEIVE A CLEAR TRANSMISSION.

**4.3 Shut Down**

**4.3.1** Turn off radio. To conserve battery, always turn radio off when not in use.

**4.3.2** Disassemble in reverse order as set-up. To disconnect cable assembly from radio, pull up on the outer sleeve of the cable connector, pull the connector straight up to detach from the radio. NOTE: DO NOT PULL ON THE CABLE OR RUBBER CABLE CONNECTOR.

**4.3.3** Replace accessory connector cover when connector is not used.

**4.3.4** Place radio in battery charger. To insure full battery charge, the battery should be charged after each use. NOTE: IF RADIO REQUIRES CHARGING DURING A SHIFT OR IS USED FOR MULTIPLE SHIFTS, A SPARE CHARGED BATTERY SHOULD BE KEPT ON HAND, OR USE AN OPTIONAL QUICK CHARGER TO BOOST THE BATTERY CHARGE DURING WORK BREAKS.

**5.0 MAINTENANCE**

**5.1** See radio operating instructions for care and maintenance of the radio. Give special attention to the section regarding battery charging and memory effect.

**5.2** Clean non-porous parts of headset with water and mild detergent on damp cloth.

**!NOTICE**

**Do not submerge headset in water. Doing so will damage the speakers and mic.**

**6.0 TROUBLESHOOTING**

**6.1 Unable to receive or transmit.**

**6.1.1** If a headset is used, disconnect the cable assembly and use the radio only, or a substitute, to determine whether the headset or radio is malfunctioning.

**6.2 Headset Problems**

**6.2.1** Check that cable assembly jack is fully seated in headset cable connector.

**6.2.2** Check all wires and connectors for breaks.

**6.2.3** If problem is in transmitting, substitute mic element from another headset.

**6.3 Radio Problems**

**6.3.1** See radio operating instructions for troubleshooting radio. Check battery charge, position of channel select switch and PL Squelch control setting.

**7.0 REPLACEMENT PARTS**

**7.1 Assembly Replacement Parts (Not Shown)**

**Complete Systems:**

<b>Description</b>	<b>Stock No.</b>
HCS-100 Helmet Communication System: Includes; OCS-100 Operator and SCS-100 Supervisor Communication Sets .....	21717

**Description** **Stock No.**  
 OCS-100 Operator Communication Set:  
 Includes; (1) Radio Package, Radio Chest  
 Holster, Helmet Headset Assembly, Cable  
 Assembly w/Switch ..... 21718

SCS-100 Supervisor Communication Set:  
 Includes; (1) Radio Package, Headset/Cable  
 Assembly ..... 21719

Radio package: Includes; P-110 radio, antenna,  
 belt clip, battery pack, standard rate battery  
 charger w/AC adaptor ..... 21690  
 Operator helmet headset assembly ..... 15054  
 Operator cable, P-110 assembly ..... 21692  
 Supervisor headset, P-110 cable assembly ..... 21691

**7.2 Radio Replacement Parts**  
 (Not Shown)

**Description** **Stock No.**  
 (-) Antenna ..... 15048  
 (-) Battery pack ..... 15049

(-) Belt clip ..... 15051  
 (-) Charger w/AC adaptor,  
 standard 16 hr. rate ..... 15050  
 (-) Charger w/AC adaptor,  
 optional 3 hr. rate ..... 15052  
 (-) Charger for 6 radios  
 (does not include AC adaptor) ..... 15053  
 (-) Cross chest radio holster, P-110 ..... 21693

**7.3 Headset Replacement Parts**  
 (Figure 2)

**Item** **Description** **Stock No.**  
 1. Windscreen, foam ..... 15047  
 2. Ear pad, supervisor set ..... 15058  
 3. Coverplate and mount, supervisor set ..... 15059  
 4. Cup hanger, supervisor set ..... 15060  
 5. Headband, supervisor set ..... 15061  
 6. Boom washer, supervisor set ..... 15062  
 7. Thumb screw, supervisor set ..... 15063  
 8. Mic boom, supervisor and operator set ... 15064  
 9. Mic element, supervisor/operator set ..... 15065  
 (-) Helmet speaker, ea., operator set ..... 15067  
 (-) Boom support assembly, operator set ..... 15066

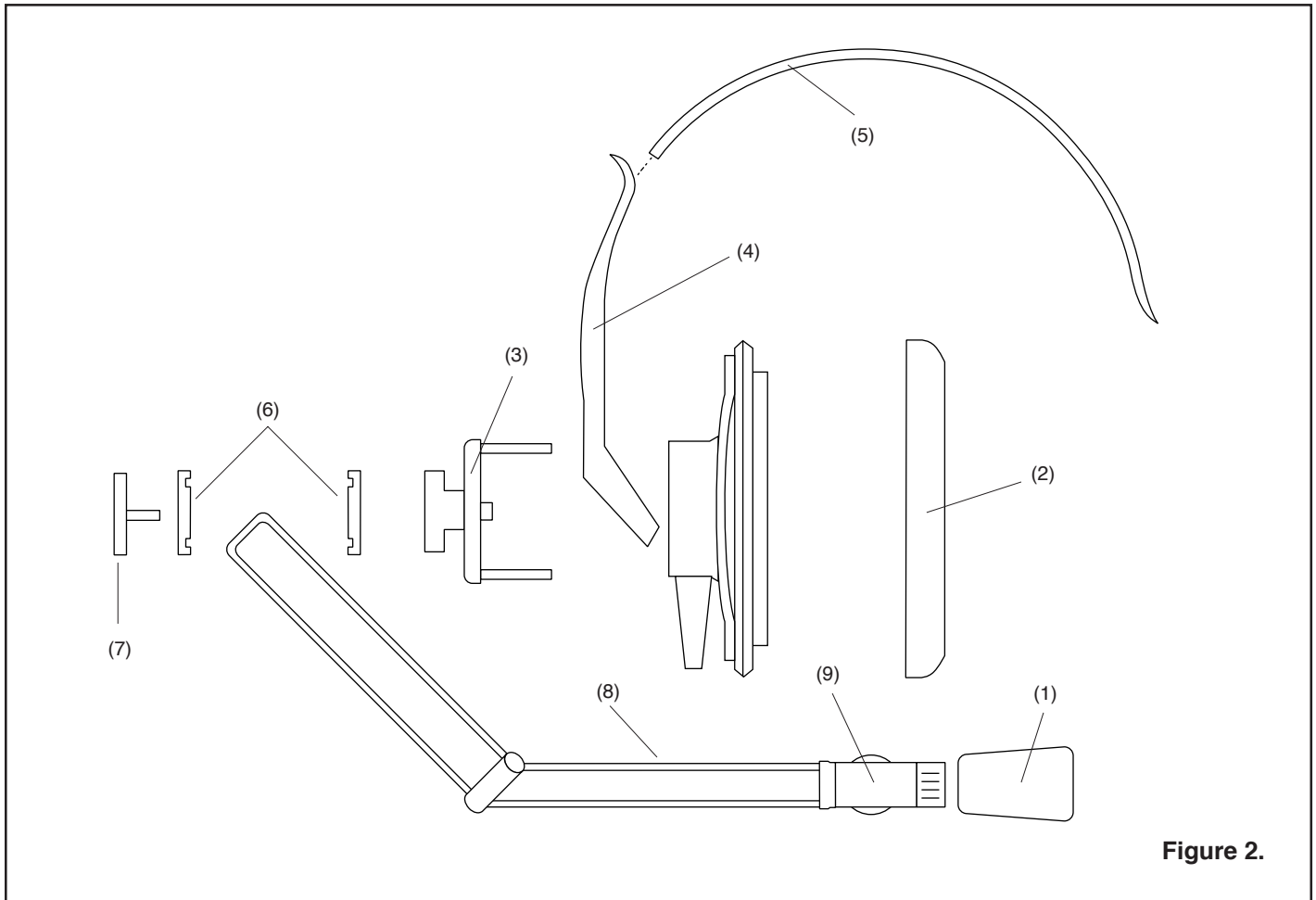


Figure 2.