

# LH10 Loud Hailer

## Contains:

- General Information
- Specifications
- Controls and Connections
- Installation
- Operation
- Maintenance and Care
- Schematic Diagram

## Owner's Manual



# LH10 OWNER'S MANUAL

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# 1 GENERAL INFORMATION

## 1.1 GENERAL

The Standard Communications Corporation (SCC) Model LH10 is a marine loudhailer which operates as a multipurpose device. The LH10 has three modes: HAIL/LISTEN BACK, INTERCOM and AUTOMATIC SIGNALLING.

The LH10 requires 13.6 VDC ( $\pm 20\%$ ) power input. It is capable of 35 watts maximum power output.

## 1.2 OPTIONS

Optional equipment such as hailer horn(s) and intercom speaker/microphones, are needed to make the LH10 work.

Consult your local marine dealer for the following options.

OPTION	DESCRIPTION
201S	Remote extension, audio speaker with RCA plug available in white, brown and gray
CSH03	Telephone-type IC speaker/microphone with wall bracket
CSK202	Bracket-mount IC speaker/microphone with push-to-alert button.
CAW50	50 foot intercom cable
CAW100	100 foot intercom cable
CMB24	Trim Ring for flush-mount installation
230SW	P.A. Speaker, 4 Ohm

## 2 INSTALLATION

### 2.1 PRE-INSTALLATION

1. Locate the unit where it will be protected from direct exposure to water spray or rain.
2. Keep in mind that the cables for hailer horn, external intercom speaker, auxiliary source and power source must be connected to the unit.
3. The unit should be mounted in such a manner that the controls and microphone are both visible and readily accessible.
4. Do not locate the LH10 or external speaker close to the compass. Both the microphone and speaker contain permanent magnets which could result in erroneous compass readings.

### 2.2 MECHANICAL

The LH10 can be mounted in any attitude on any suitable surface. It can be mounted on a flat surface or overhead using the attached mounting bracket. See Figure 1.



Figure 1. Installation of the LH10

The mounting angle can be adjusted by the position of the bolts. See Figure 2 for the possible positions.

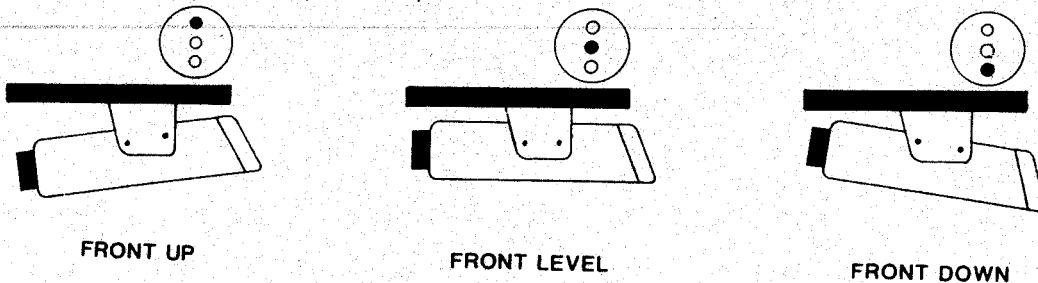


Figure 2. Mounting Angles of the LH10

The front panel can be tilted up or down depending on the location and for convenience in operating the unit.

Perform the following procedure to tilt the front panel down.

1. Remove the four screws at the rear of the LH10.
2. Slide the main case off the unit.
3. Remove the four screws (two on each side) connecting the main chassis and the front panel.
4. Adjust the panel to the desired position. See Figure 3.
5. Secure the four screws connecting the main chassis and the front panel.
6. Replace the main case according to the position of the front panel.
7. Secure the four screws at the rear of the LH10.

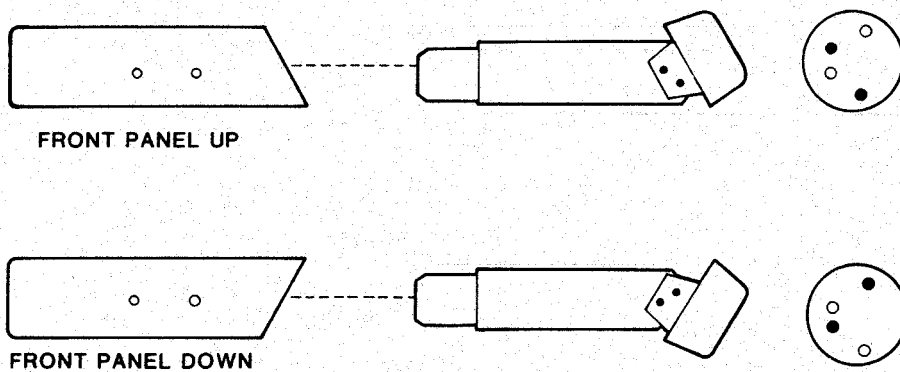
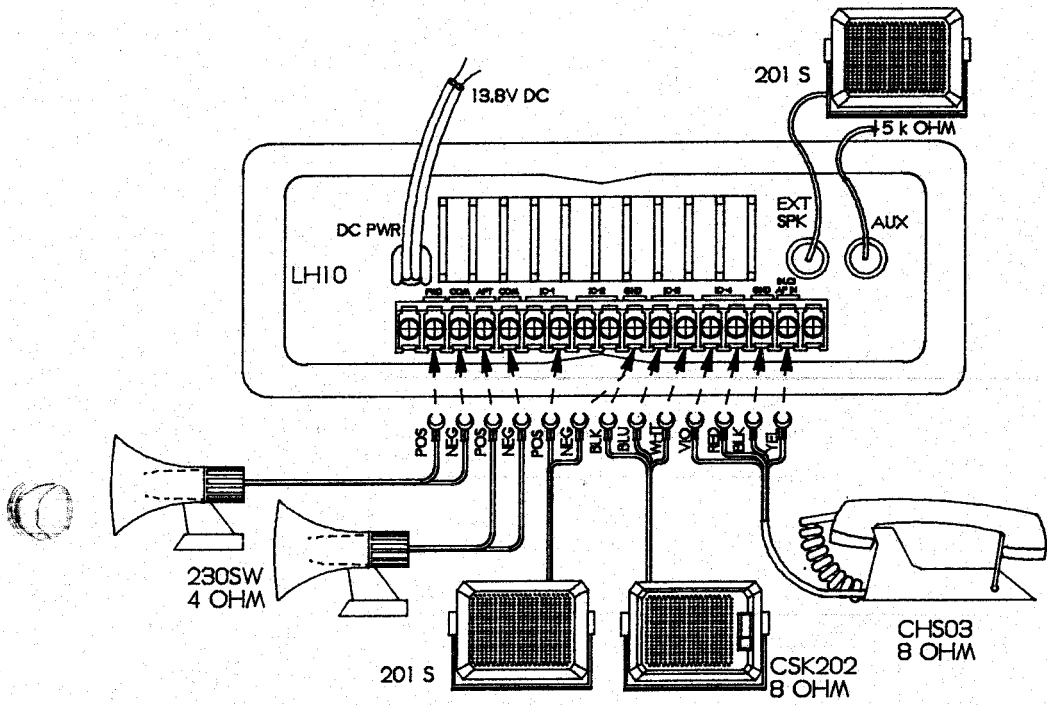


Figure 3. Front Panel Positions of the LH10

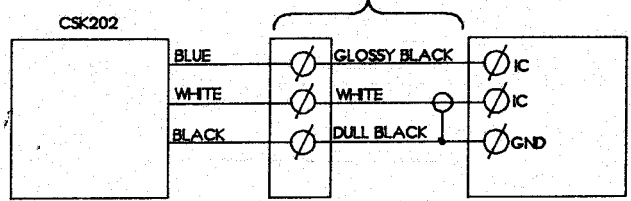
### 2.3 ELECTRICAL

At the back of the loudhailer are the receptacles for electrical DC power connection, four intercom speakers, forward and aft horns, an external speaker and an auxiliary audio source. The receptacles are accessible and clearly marked for use. When making electrical connections, be sure that you are using the proper receptacles.

1. For DC power connection, use the supplied power cord assembly. Connect the red wire to the "+" terminal and the black wire to the "-" terminal of the power source. NOTE: IRREPARABLE DAMAGE CAN RESULT IF THESE CONNECTIONS ARE NOT OF THE CORRECT POLARITY!!
2. For connection of speakers and auxiliary audio source, No. 22 AWG stranded, plastic jacketed wire is recommended, preferably water, oil and fuel resistant. See Figure 4 for the proper connections.
3. An external speaker with an RCA phono plug may be installed, if desired, by connecting it to the EXT SPK (external speaker) receptacle at the rear of the loudhailer. This will disable the internal speaker of the loudhailer.
4. For the FWD and AFT horns, it is recommended that 35-watt, 4-ohm horn speakers be used.
5. The LH10 has capability of having the CSK202 IC speaker with call button or the CSH03 telephone-type IC speaker/microphone connected to any or all of the IC connectors (IC-1, IC-2, IC-3 or IC-4). The "MIC" wire of the CSH03 is always connected to the NC connector on the LH10, in any position.

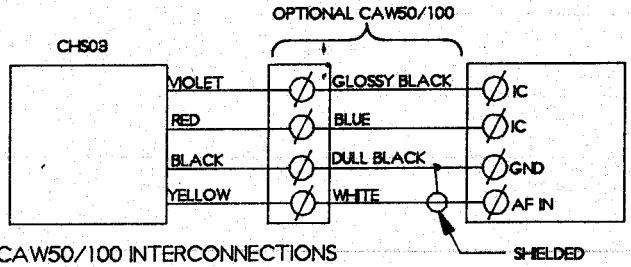


NOTE: INTERCOM REMOTE STATIONS MAY BE MIXED AND/OR MATCHED IN ANY COMBINATION.



CAW50/100 INTERCONNECTIONS

PART OF TYPICAL LH5, LH10, & GX2400S CONNECTION FOR IC-1 THROUGH IC-4.



CAW50/100 INTERCONNECTIONS

PART OF TYPICAL LH5 OR LH10 CONNECTION FOR IC-1 THROUGH IC-4

Figure 4. Installation Interconnections

### 3 CONTROLS AND CONNECTIONS

Refer to Figure 5 for the location of the controls and connections for the LH10.

#### 1 HORN/LISTEN Control

This control is used to turn on the power by turning it clockwise. When the control is turned fully counterclockwise to the click position, the power is turned off.

This control adjusts the volume level of the LH10 internal/external speaker.

#### 2 RCV/OFF Control

LISTEN BACK mode for the two public address horns, FWD and AFT, are turned on or off with this selector.

#### 3 PA/AUX Control

Controls the output volume level in HAIL, AUX, I.C. and SIGNALLING mode.

#### 4 BRIGHT/OFF Control

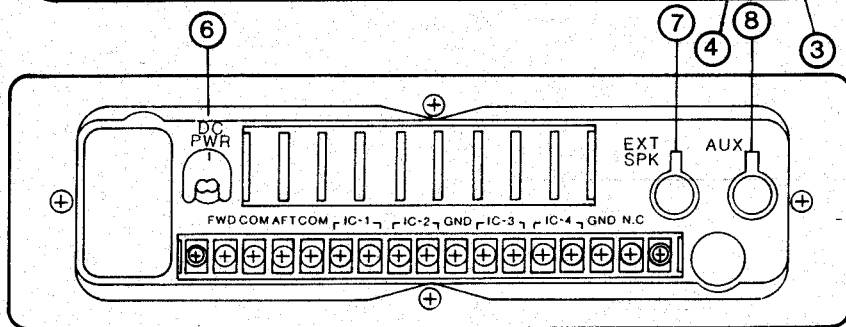
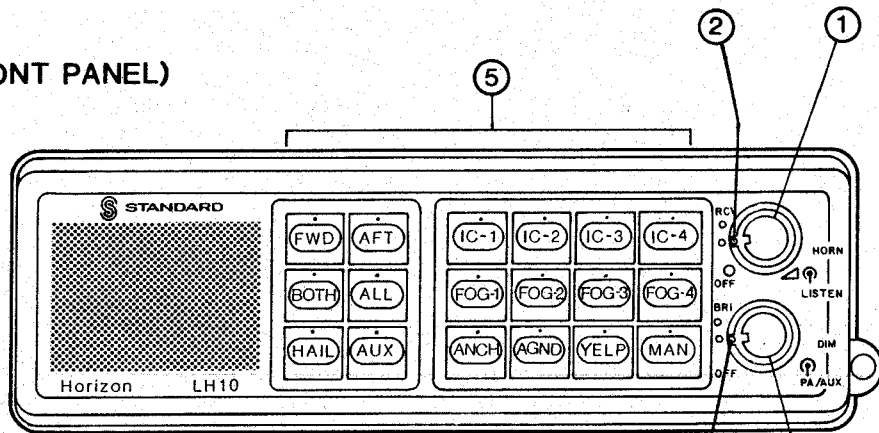
The keyboard backlight is turned "on" with the control set at "BRI".

#### 5 KEYBOARD

- o FWD - activates the forward hailer horn.
- o AFT - activates the aft hailer horn
- o BOTH - activates the forward and aft hailer horns
- o ALL - activates all stations, the forward and aft hailer horns and intercom speakers 1 to 4.
- o HAIL - activates HAIL/LISTEN BACK mode. When the PTT button is pressed, HAIL mode is obtained and the audio signals from the microphone are amplified and sent to the chosen P.A. horns and/or I.C. speakers. When the PTT button is released, LH10 returns to LISTEN BACK mode and the P.A. horns (when RCV/off Selector" is set at "RCV") and I.C. speakers act as microphones, with the sounds being heard at the LH10 internal or external speaker.
- o AUX - activates external audio signals applied to the LH10 from the AUX jack to be paged through the P.A. horns and I.C. speakers. Example: Low level output from a cassette deck



(FRONT PANEL)



(REAR PANEL)

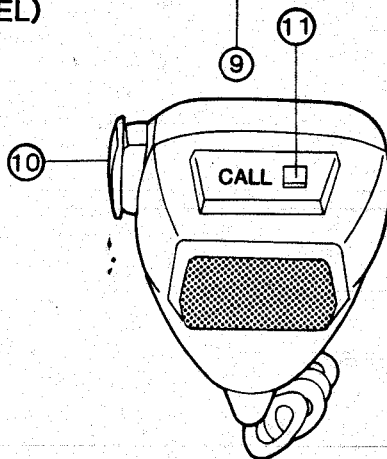


Figure 5. Controls and Connections

- o IC-1 to IC-4 - activates one of the intercom speakers according to the key entry. An LED on each key blinks in any mode when the CALL button on each intercom speaker is pressed. The internal beeper also sounds indicating a "CALL" condition.

A 400 Hz foghorn and ringing bell tones are produced. The following signals conforming to "RULES OF THE ROAD" can be automatically generated.

- o FOG-1 ---- Usage: Power Boat Underway

One 5-second blast ( $\pm 1$  second) at 2-minute intervals.

- o FOG-2 ---- Usage: Power Boat "STOPPED"

Two 5-second blasts ( $\pm 1$  second) separated by a 2-second interval, repeated every two minutes.

- o FOG-3 ---- Usage: Sail Boat, Fish Boat, Tow Boat

One 5-second blast ( $\pm 1$  second) followed by two 1-second blasts separated by 2 second intervals, repeated every 2 minutes.

- o FOG-4 ---- Usage: Vessel Under Tow

One 5-second blast ( $\pm 1$  second) followed by three 1-second blasts with 2 second intervals between blasts, repeated every 2 minutes.

- o ANCH ---- Usage: Any vessel at anchor

Rapidly ringing bell for duration of 5 seconds, with a repetition interval not to exceed 1 minute.

- o AGND ---- Usage: Any vessel aground

Three strokes of bell at 1 second intervals, followed by a rapidly ringing bell for a duration of 5 seconds, followed again by three strokes of bell at 1 second intervals, repeated every minute.

- o YELP ---- Usage: Coast Guard, Patrol Vessels, etc.

A varying pitch (yelping) tone is generated while the PTT button is held depressed.

- o MAN ---- Usage: Passing Signals, etc.

Any signal with desired length and timing of blasts can be generated by depressing the PTT button on the microphone.

6 DC POWER SUPPLY CORD (with 5A fuse)

Nominal power supply voltage is 13.8 VDC ( $\pm 20\%$ ). Connect LH10 to the power source using the attached extension cord.

7 EXTERNAL SPEAKER JACK

Used to connect an external speaker with an impedance of 4 ohms.

8 AUXILIARY JACK (with an impedance of 5 kohms)

Used to connect an external audio source.

9 TERMINAL BOARD

Used to connect hailer horns and intercom speakers.

10 PTT BUTTON

The push-to-talk (PTT) button activates the microphone.

11 CALL BUTTON

Activates all stations, the forward and aft horns and speakers 1 to 4 while held depressed. When the CALL key is released the hailer goes back to its previous mode.

## 4 OPERATION

### 4.1 HAIL/LISTEN BACK

1. Turn on the hailer by rotating the HORN/LISTEN control clockwise. The hailer will automatically go to the HAIL mode and the FWD hailer horn is activated. The corresponding LEDs on the HAIL and FWD keys are illuminated.
2. Choose the speakers you want activated by pressing either the AFT, BOTH, or ALL key.
3. Adjust the HORN/LISTEN control to approximately 1/3 of its rotation to regulate the volume of the input audio on the LH10 speaker.
4. Adjust the PA/AUX control to approximately 1/3 of its rotation to regulate the output audio level.
5. When the hailer is in the HAIL mode, press the PTT button on the microphone and speak clearly. The audio signals are amplified and sent to the hailer horns and/or speakers.
6. If it is desired for the hailer to be in the LISTEN BACK mode, switch the RCV/OFF control to the RCV position.
7. The horns (when RCV/OFF control is set at "RCV") and speakers act as microphones and signal from them can be heard from the built in speaker of the LH10.
8. Press the AUX key to activate audio signals from the auxiliary audio source to be heard through the enabled horns and speakers.

### 4.2 I.C (INTERCOM)

To use this feature, optional intercom speakers are necessary. Consult your local dealer for the following options:

- a. CSH03 - telephone-type handset with PTA (push-to-alert button).
- b. CSK202 - bracket-mount speaker with PTA (push-to-alert button).
- c. 201SW - intercom/external speaker (without push-to-alert button).

1. To activate the intercom speakers, press the following key:

IC-1 : To activate intercom speaker 1  
IC-2 : To activate intercom speaker 2  
IC-3 : To activate intercom speaker 3  
IC-4 : To activate intercom speaker 4

2. The LH10 has a CALL WAITING feature. If the LH10 is in any other mode, the intercom speakers (IC-1 to IC-4) can alert the LH10 by pressing the PTA button on the CSK202 or CSH03. The LED on the corresponding key on the LH10 will illuminate. The internal beeper of the LH10 will also sound indicating a call from the intercom speaker.
3. Adjust the volume of the speaker by rotating the HORN/LISTEN control.

#### 4.3 AUTOMATIC SIGNALLING

1. FOG-1 - When a power-driven vessel is making way, press the FOG-1 key to produce a 5-second blast every 2 minutes.
2. FOG-2 - When a power-driven vessel is underway but stopped, press the FOG-2 key to produce two 5-second blasts every 2 minutes.
3. FOG-3 - When a sailing vessel is underway, towing or pushing (unmanned vessel or fishing vessel), press the FOG-3 key to produce one 5-second blast followed by two 1-second blasts repeated every 2 minutes.
4. FOG-4 - When a manned vessel is being towed, press the FOG-4 key to produce one 5-second blast followed by three 1-second blasts repeated every 2 minutes.
5. ANCH - For any vessel at anchor, press the ANCH key to produce a 5-second ringing bell repeated every minute.
6. AGND - For any vessel aground, press the AGND key to produce 3 strokes of bell followed by 5 seconds of bell ringing and 3 strokes of bell.
7. YELP - For coast guard, patrol vessels, press the YELP key then keep the PTT button on the microphone depressed to generate a varying pitch (yelping) tone.
8. MAN - For passing signals, press the MAN key and depress the PTT button on the microphone to generate a signal with any desired length and timing of blasts.

## 5 ADDITIONAL INFORMATION ON SIGNALS

### SOUND SIGNALS IN RESTRICTED VISIBILITY

Fog signals should be sounded when visibility is reduced to the distance at which sidelights are required. These sound signals serve two purposes; they alert nearby vessels to the presence and rough position of the signalling vessel and they indicate the vessel's status or limitations of maneuverability (towing, being towed, sailing, fishing).

#### 5.1 Power-Driven Vessels Underway

A power-driven vessel making way through the water must sound one prolonged blast at intervals of not more than two minutes.

A vessel underway but stopped and making no way through the water must sound, at the same intervals, a signal of two prolonged blasts separated by an interval of about two seconds.

A vessel towing or pushing another ahead, a vessel not under command, a vessel restricted in her ability to maneuver, and a fishing vessel underway or anchored, all sound the same signal - one prolonged blast followed by two short blasts.

#### 5.2 Sailing Vessels Underway

A sailing vessel underway makes the same sound signal in restricted visibility conditions as a towing or fishing vessel - one prolonged blast on her whistle followed by two short blasts.

#### 5.3 Vessels At Anchor

A vessel at anchor must, at intervals of not more than one minute, ring the bell rapidly for about five seconds. If the boat is 100 meters or more in length, the bell must be sounded in the FWD part of the vessel and immediately thereafter the gong must be sounded rapidly in the AFT part of the vessel.

#### 5.4 Vessels Aground

A vessel aground must sound the bell signal of a vessel at anchor and additionally give three separate and distinct strokes on the bell immediately before and after the rapid ringing of the bell.

A vessel aground may also sound an appropriate whistle signal on detecting the approach of another vessel, if there is the possibility of collision. It could be a short-long-short signal or the letter "U" of the International Code (short-short-long).

#### 5.5 Vessels Being Towed

If manned, a vessel being towed (or the last vessel, if several are being towed in a string) must sound a fog signal of four blasts - at intervals of not more than two minutes. When possible, this signal should be sounded immediately after the signal of the towing vessel.

## 6 SPECIFICATIONS

### 6.1 GENERAL

Functions .....	Auxiliary Horn Fog Horn Alarm Intercom Public Address
Nominal Input Voltage .....	13.8 VDC $\pm 20\%$
Dimensions .....	2.8-H x 8.7-W x 9.6-D in. (71-H x 220-W x 245-D mm.)
Weight .....	3.5 lbs. (1.6 kg.)
Microphone .....	low impedance
Speakers (Horn) .....	4 ohms
(Remote Intercom) .....	8 ohms
(External) .....	4 ohms
Current Draw (maximum) .....	7 Amps
(minimum) .....	300 mA

### 6.2 AUXILIARY INPUT

Input Impedance .....	5K ohms
Input Minimum .....	150 mV
Input Maximum .....	250 mV

### 6.3 FOG HORN, HORN ALARM

Output Frequency .....	400 Hz $\pm 50$ Hz
Fog Horn Timing (ON) .....	5 sec. $\pm 1$ sec.
(OFF) .....	120 sec. $\pm 6.5$ sec.

### 6.4 INTERCOM/PUBLIC ADDRESS

Microphone Sensitivity (Intercom) .....	8 mV max.
(Public Address) .....	8 mV max.
Input Sensitivity (Intercom) .....	2 mV max.
(Public Address) .....	2 mV max.
Output Power (Intercom) .....	4.5 watts max. *
(Public Address) .....	35 watts max. *

\* - design center



## 7 MAINTENANCE AND SERVICE

### 7.1 GENERAL

The loud hailer requires practically no routine maintenance. Proper care and good judgment will ensure a long and trouble-free life of the loud hailer. The following guidelines will assist you in maintaining the unit in peak performance.

1. Protect the loud hailer from exposure to water spray, rain or other inclement weather conditions.
2. Avoid operating the loud hailer on a supply voltage of less than 11 VDC or more than 16.5 VDC.

### 7.2 SERVICE INFORMATION

The LH10 is a piece of electronic equipment. It should be serviced by an FCC-licensed marine technician, SCC dealer or Standard Communications.

For service by Standard Communications, the shipping address is as follows:

STANDARD COMMUNICATIONS CORP.  
Attn: Factory Service  
108 West Victoria St.  
Carson, CA 90746

Note: There is no postal delivery to the above address.  
United Parcel or Federal Express delivery is accepted.

### 7.3 TROUBLESHOOTING

The troubleshooting chart on the following page is provided to assist in determining whether or not service is required. It covers the more likely problems that can occur and are user correctable.

## TROUBLESHOOTING CHART

<u>SYMPTOM</u>	<u>PROBABLE CAUSE</u>	<u>SOLUTION</u>
Blows Fuse	Battery Polarity	Check Battery Polarity. Replace fuse with a 5 amp 32 volt fuse. If the LH10 still blows a fuse, contact your nearest SCC Dealer or SCC for service.
No Listen back in HAIL mode	RCV switch	Turn the OFF/RCV switch to RCV. Refer to section on CONTROLS AND CONNECTIONS.
Hailer beeps when Connecting Intercom Speaker	Intercom Speaker Connection	Refer to Figure 4 for Multiple Speaker Connection
External Speaker will not plug into EXT SPK Jack	Incorrect Connector on Speaker	EXT SPK Jack will only accept RCA Phono plug.