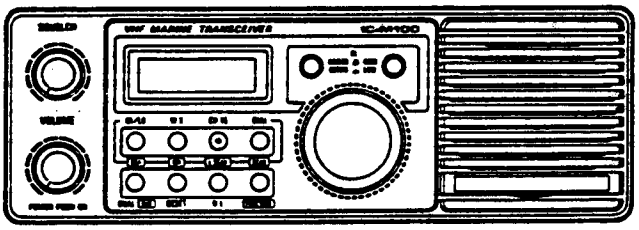
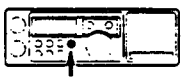
ICOM

# IC-M100

# OPERATING GUIDE



## SELECTING A CHANNEL (P11)



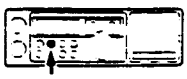
1) Push [DIAL] SWITCH.

2) Select either USA or INTERNATIONAL.

3) Rotate the CHANNEL SELECTOR.

## WEATHER CHANNEL (P12, 16)

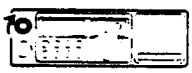
**• Selecting a weather channel**



1) Push [WX] SWITCH.

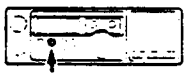
2) Rotate the CHANNEL SELECTOR.

**• Weather channel scan**



1) Rotate [SQUELCH] CONTROL CW to close squelch.

2) Push [FUNCTION] SWITCH and then push [SCAN] SWITCH.

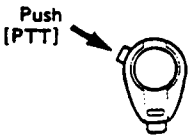


3) Push [WX] SWITCH to stop scanning.

## TAILER FUNCTION (P21)

1) Push [HL] SWITCH.

2) Push [HL/INCOM] SWITCH OUT and select [HIGH/LOW] SWITCH.



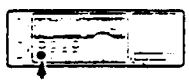

3) Push [PTT] SWITCH and speak into the mic.

4) Push [HL] SWITCH again to cancel the function.

## DUAL WATCH (P19)

1) Push [DIAL] SWITCH.

2) Rotate the CHANNEL SELECTOR and set the desired channel.



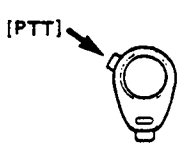
3) Push [DUAL] SWITCH.

4) Push [DIAL] SWITCH to cancel the function.

## INTERCOM FUNCTION (P22)

1) Push [HL] SWITCH.

2) Push [HL/INCOM] SWITCH IN.

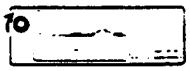



3) Push [PTT] SWITCH and speak into the mic.

4) Release [PTT] SWITCH.

* Detailed instructions for each function are indicated by bracketed page numbers.

## CHANNEL SCANNING (P16)



1) Rotate [SQUELCH] CONTROL CW to close squelch.

2) Push [DIAL] SWITCH.

3) Push [FUNCTION] SWITCH and then push [SCAN] SWITCH.

4) Push [DIAL] SWITCH again to stop scanning.

## MEMORY SCAN (P15)

1) Push [FUNCTION] SWITCH and then push [MR] SWITCH.

2) Rotate [SQUELCH] CONTROL CW to close squelch.

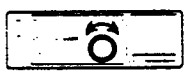
3) Push [FUNCTION] SWITCH and then, push [SCAN] SWITCH.

4) Push [FUNCTION] SWITCH to stop scanning.

## LOCKOUT SCAN (P17)

**• Preset for lockout scan**

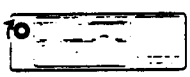
1) Push [DIAL] SWITCH.



2) Rotate the CHANNEL SELECTOR and select the lockout channel.

3) Hold down the [FUNCTION] SWITCH, and then push the [L-SCAN] SWITCH.

**• Scanning**



1) Rotate [SQUELCH] CONTROL CW to close squelch.

2) Push [FUNCTION] SWITCH and then push [L-SCAN] SWITCH.

3) Push [DIAL] SWITCH.

## MEMORY READ (P15)

1) Push [FUNCTION] SWITCH and then push [MR] SWITCH.

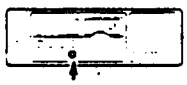
2) Rotate the CHANNEL SELECTOR and set the desired channel.

## MEMORY WRITE (P15)

1) Push [FUNCTION] SWITCH and then hold down [MR] SWITCH unit "MEMO" blinks.

2) Rotate the CHANNEL SELECTOR and set the desired memory channel and then push [FUNCTION] SWITCH.

3) Rotate the CHANNEL SELECTOR and set the desired channel.



4) Push [FUNCTION] SWITCH.

## DISPLAY LIGHT (P20)

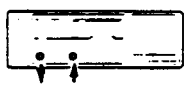
**• Light ON and OFF**

1) Push [FUNCTION] SWITCH and then push [DIM] SWITCH.

2) Repeat step 1) to change the condition of the light.

**• Light intensity**

1) Hold down [FUNCTION] SWITCH and then push [DIM] SWITCH.



2) Release [DIM] SWITCH but hold down [FUNCTION] SWITCH.

3) Rotate the CHANNEL SELECTOR.

4) Release [FUNCTION] SWITCH.

* Detailed instructions for each function are indicated by bracketed page numbers.

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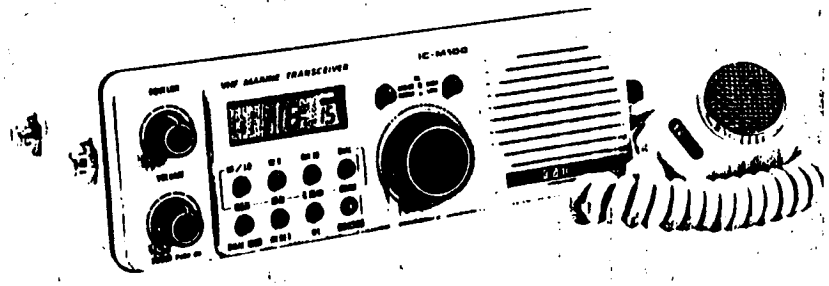
# IC-M100

## VHF MARINE TRANSCEIVER

OWNERS MANUAL



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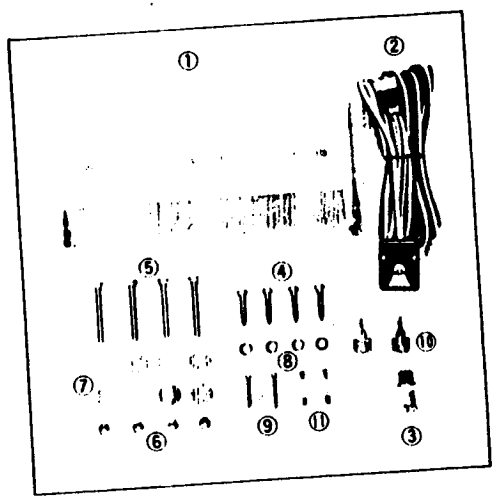
## FOREWORD

Thank you for choosing the **IC-M100**, one of the finest VHF FM Marine Transceivers on the market today. It was designed and built by ICOM INCORPORATED, a long-time leader in the field of VHF communication. This transceiver incorporates state-of-the-art technology, and it was built specifically for Marine applications using experience gained over a long period of time.

Please read this owner's manual carefully before using your **IC-M100** transceiver. With proper care, the **IC-M100** will provide many years of dependable and enjoyable communication.

## UNPACKING

| **Accessories included with the IC-M100:** | QTY. |
|---|---|
| 1. Mounting Bracket | 1 |
| 2. DC Power Cable with Microphone Hanger Box | 1 |
| 3. 8-pin ACC Connector Plug | 4 |
| 4. Mounting Self-tapping Screws | 4 |
| 5. Mounting Bolts | 4 |
| 6. Mounting Nuts | 8 |
| 7. Flat Washers | 4 |
| 8. Spring Washers | 2 |
| 9. Self-tapping Screws for Microphone Hanger | 2 |
| 10. Mounting Bracket Key | 2 |
| 11. Fuses (10A) | 2 |



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## SECTION 1 FEATURES

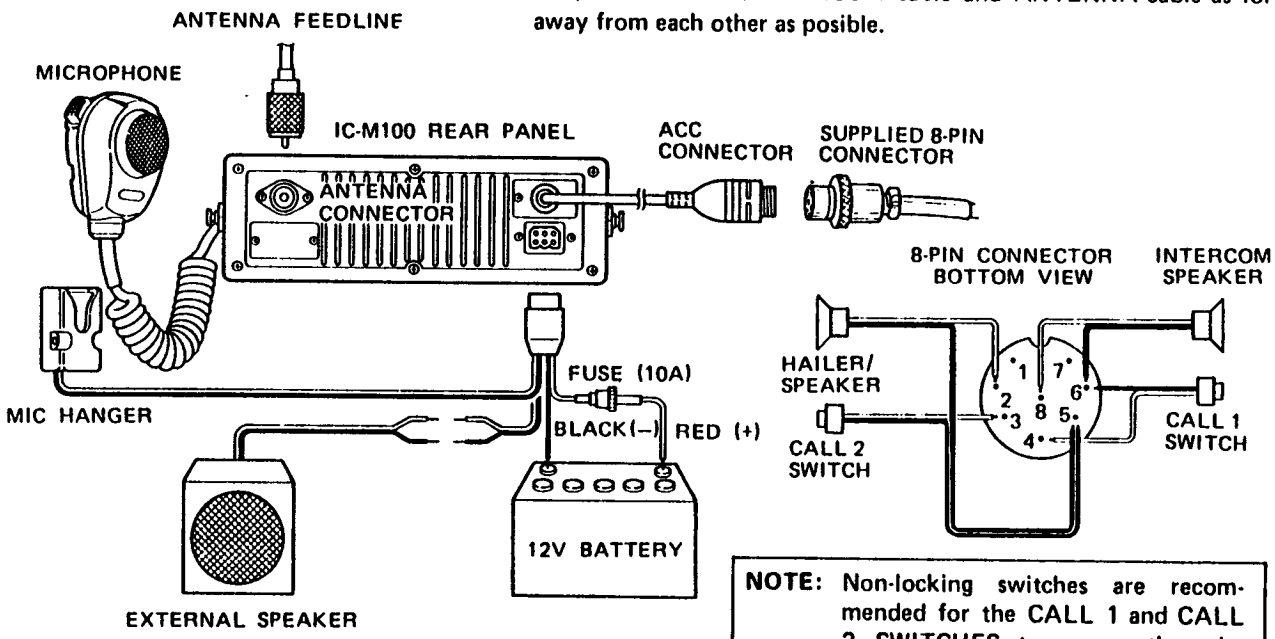
- All marine and weather channels pre-programmed.
- Weatherproof and dust-tight case, molded frame.
- 16 user-programmable memory channels with a backup lithium battery.
- 4 different channel scanning systems.
- HAILER and INTERCOM operations available.
- Dual watch mode for monitoring channel 16 while listening on a different channel.
- Auto-monitor for channel 16.
- Advanced RF front end circuit with helical resonators, MOSFETs and both crystal and ceramic filters for improved adjacent channel and intermodulation rejection.
- High power, distortion-free audio output.
- Mounting bracket with adjustable viewing angle.
- Optional DTMF microphone available.
- Newly designed display that uses a soft orange illumination for easy visiblity when operating on bright days.
- Two different colors white and gray available.

## 2 INSTALLATION

### 2 · 1 MOUNTING LOCATION

Avoid long cable runs to the antenna, power source, and HAILER/INTERCOM cables. Keep these cables as far away as possible from electrical pumps, generators and other electronic instruments.

Keep the HAILER/INTERCOM cable and ANTENNA cable as for away from each other as posible.




**NOTE:** Non-locking switches are recommended for the CALL 1 and CALL 2 SWITCHES to ensure that the transceiver's functions remain operational.

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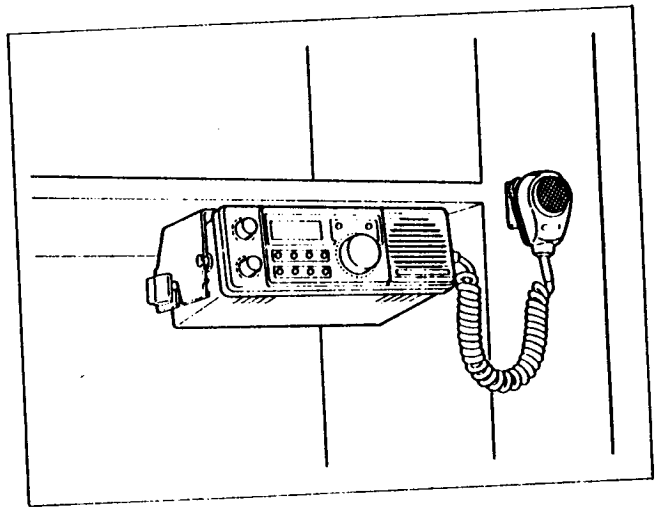
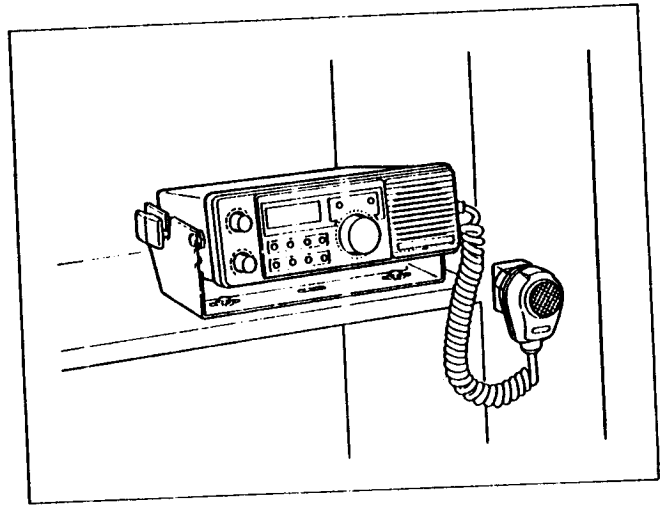
## 2-2 MOUNTING THE TRANSCEIVER

The universal bracket supplied with your transceiver allows "over" or "under" mounting. Install the bracket so the unit is adequately supported, thus protecting it from wave shock and excessive vibration.

The mounting hardware supplied is suitable for most installations, but if you need special hardware, any good marine store should be able to assist. As in any marine installation, it is recommended that only high quality marine hardware be used. Try to avoid drilling new mounting holes in the bracket as balance of the transceiver may be affected.





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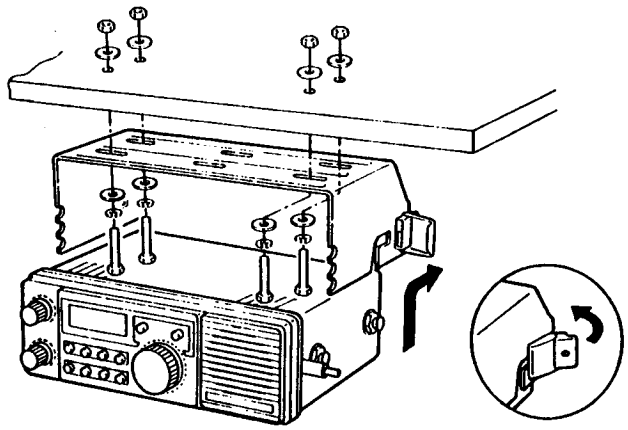

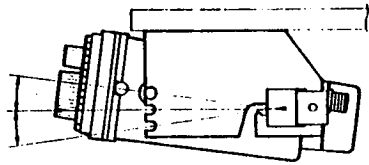

Vary installation angle for good visibilty.

Open the latches on each side of the mounting bracket and slide the transceiver to tilt the unit to the best angle.

## 2 - 3 ANTENNA

The antenna is the most important item that influences the performance of your transceiver. Any good quality, 50Ω marine antenna will suffice, but a high gain antenna is preferable.

The mounting location is also important, therfore consult your dealer if you are uncertain where to install the antenna. Follow the antenna manufacturer's instructions exactly.

If using a previously installed antenna system, check that all connections are corrosion-free and secure.

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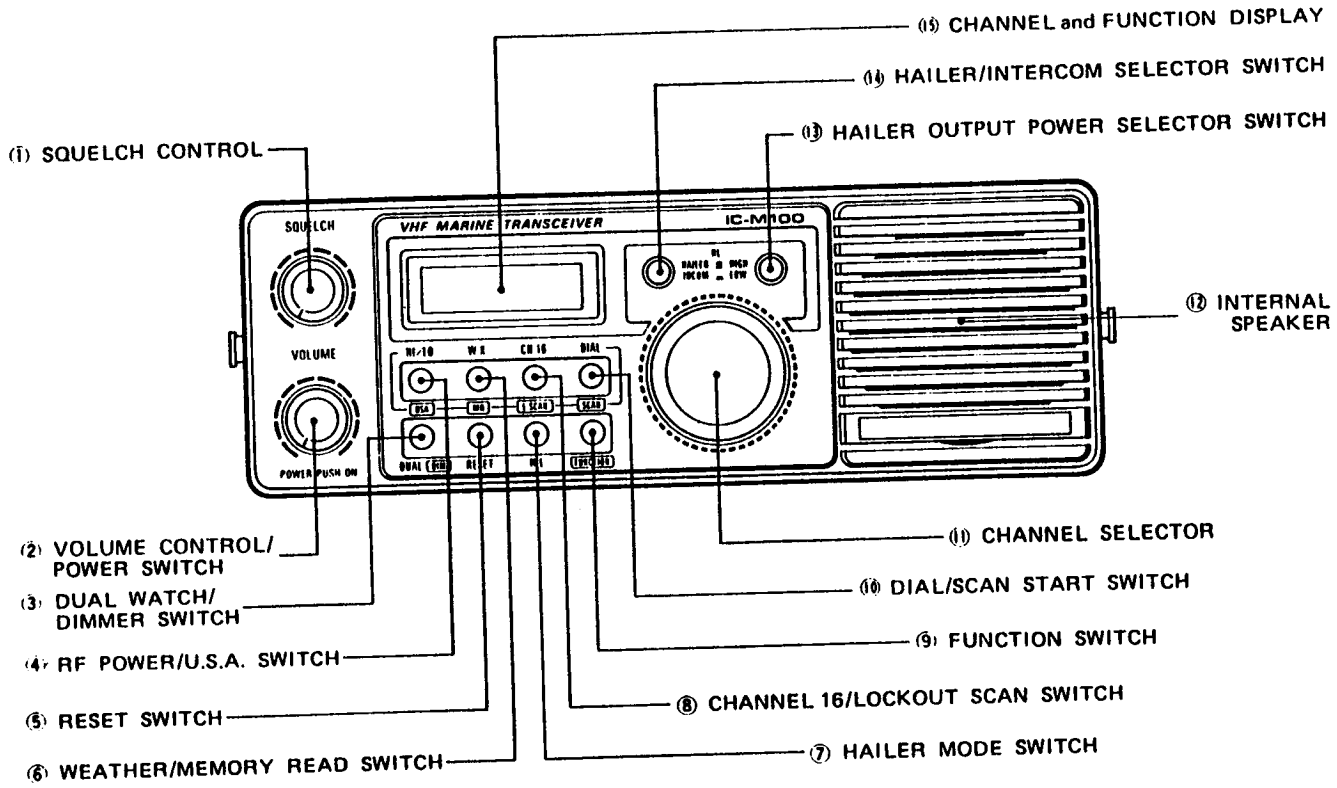
# SECTION 3 FUNCTIONS

## 3-1 FRONT PANEL



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**(1) SQUELCH CONTROL [SQUELCH]**

Varies the squelch threshold level for quiet monitoring when no receive signal is present. Rotate completely counterclockwise to turn OFF the squelch function, and clockwise to increase the threshold level.

**(2) VOLUME CONTROL/POWER SWITCH [VOLUME/POWER]**

Varies the audio output level from the speaker in the receive mode, including the level of the switch BEEP tones as each panel switch is operated. Rotate clockwise to increase the sound level.

This is also a power switch for turning the transceiver ON and OFF.

**(3) DUAL WATCH/DIMMER SWITCH [DUAL/DIM]**

Activates the dual watch function. This function permits monitoring of channel 16 while listening on a different channel. Refer to SECTION 5 - 3 for the operating procedure.

This switch also controls the illumination of the CHANNEL DISPLAY. Refer to SECTION 5 - 4 for more information.

**(4) RF POWER/USA SWITCH [HI/LO/USA]**

Alternately changes the transmit output power between the HIGH (25W) and the LOW (1W) positions. HIGH power is useful for long distance communications whereas LOW power is best for contacting stations nearby.

This switch also selects the International and U.S.A. channel systems alternately.

**(5) RESET SWITCH [RESET]**

This switch is used for erasing contents of ALL memory channels or resetting the transceiver when erroneous information is displayed on the CHANNEL DISPLAY. Refer to SECTION 9 for more information.

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(6) WEATHER/MEMORY READ SWITCH [WX/MR]

Selects the weather channel mode. Rotate the CHANNEL SELECTOR to choose the desired weather channel. Refer to SECTION 4 - 1 for operating the weather channels.

This switch also selects the memory channel mode. Refer to SECTION 5 - 1 for operating the memory channel.

(7) HAILER MODE SWITCH [HL]

Alternately changes modes between the hailer mode and normal operating mode. When in the hailer mode, "HL" appears on the CHANNEL DISPLAY. Refer to SECTION 5 - 5 for operating instructions.

(8) CHANNEL 16/LOCKOUT SCAN SWITCH [CH16/L-SCAN]

Selects the channel 16 auto-monitor mode. This function overrides all other switch functions. Each time the microphone is replaced in the microphone hanger, the transceiver switches to the channel 16 auto-monitor mode.

This switch also starts and stops the lockout scanning function. Refer to SECTION 5 - 2 for the operating procedure.

(9) FUNCTION SWITCH [FUNCTION]

Activates the secondary function of each dual function switch on the front panel. Push this switch first, and then push the [SCAN], [MR], [USA], [DIM] or [L-SCAN] SWITCHES to activate their respective functions. After pushing the [FUNCTION] SWITCH, you have 3 seconds to push dual function switches before they return to their primary functions.

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| | |
|---|---|
| (10) DIAL/SCAN START SWITCH [DIAL/SCAN] | Selects the dial mode. Rotate the CHANNEL SELECTOR to choose an operating channel. Refer to SECTION 4 - 1 for more information.<br><br>This switch also starts and stops the scanning functions. Refer to SECTION 5 - 2 for the operating procedure. |
| (11) CHANNEL SELECTOR | Selects a programmed channel, memory channel or weather channel. Rotate clockwise or counterclockwise to change the operating channel in any mode. |
| (12) INTERNAL SPEAKER | This speaker operates when the transceiver is receiving or the intercom is operating. |
| (13) HAILER OUTPUT POWER SELECTOR SWITCH [HIGH/LOW] | Selects the hailer output power when in the hailer mode. Refer to SECTION 5 - 5 for operating information. |
| (14) HAILER/INTERCOM SELECTOR SWITCH [HAILER/INCOM] | Selects either hailer or intercom mode. Refer to SECTION 5 - 5 for operating instructions. |
| (15) CHANNEL AND FUNCTION DISPLAY | Shows current operating channel and additional information. Refer to SECTION 3 - 2. |

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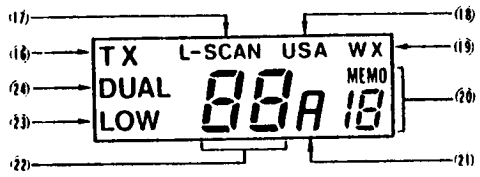
## 3-2 CHANNEL AND FUNCTION DISPLAY




(16) TRANSMIT INDICATOR — "TX" appears when the transceiver is transmiting.

(17) SCAN INDICATOR — "SCAN" appears when the transceiver is operating in channel, weather, or memory scan. "L-SCAN" appears during lockout scan.

(18) CHANNEL SYSTEM INDICATOR — "USA" appears when the USA channel system is selected.

(19) WEATHER CHANNEL INDICATOR — "WX" appears when a weather channel is selected.

(20) MEMORY CHANNEL INDICATOR — "MEMO" and the selected memory channel number appear when in the memory mode.

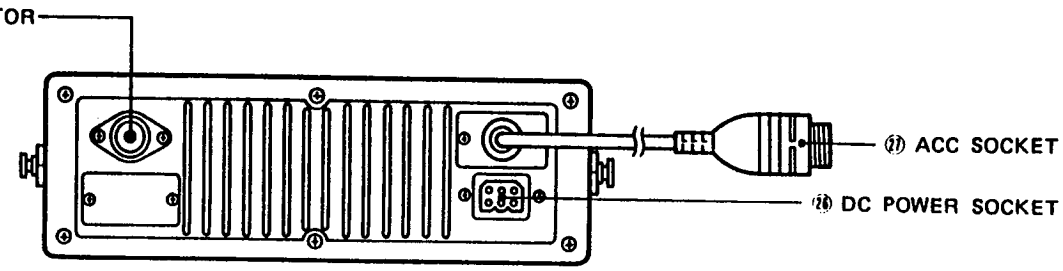
(21) SIMPLEX INDICATOR — "A" appears when operating in the simplex mode on a duplex channel.

(22) CHANNEL NUMBER INDICATOR — Indicates the operating channel number.

(23) TRANSMIT POWER INDICATOR — "LOW" appears when the transceiver uses LOW power or operates on pre-set LOW power channels.

(24) DUAL WATCH INDICATOR — "DUAL" appears when the dual watch function is operating.

## 3-3 REAR PANEL




**㉕ ANTENNA CONNECTOR**

Connect an antenna cable here. The connector should be matched with a PL-259 plug.

**㉖ DC POWER SOCKET**

Connect the supplied DC power cable from this socket to an external 12V DC power source. Refer to SECTION 2 INSTALLATION for detailed information.

**㉗ ACC SOCKET**

This socket provides signals for the hailer or the intercom functions. Refer to SECTION 2 INSTALLATION for connection information.

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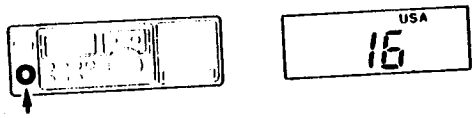
## 4 - 1 RECEIVING

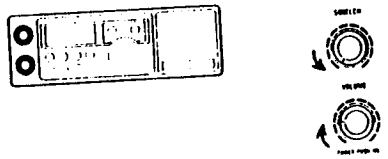
### (1) Turn ON the POWER




1) Push the [POWER] SWITCH ON.

- The number "16" and "USA" appear on the CHANNEL DISPLAY.

### (2) Adjust the [VOLUME] CONTROL



1) Rotate the [SQUELCH] CONTROL completely counterclockwise.

2) Rotate the [VOLUME] CONTROL clockwise for a suitable noise level from the speaker.

### (3) Adjust the [SQUELCH] CONTROL

1) Rotate the [SQUELCH] CONTROL clockwise until the channel noise just disappears. This is the threshold point where signals can be received.

- The transceiver remains silent after this adjustment until a signal is received which opens the receiver's squelch circuit.

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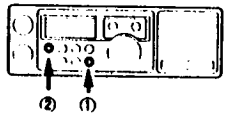
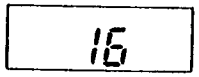
**(4) Select the channel system (International/U.S.A.)**



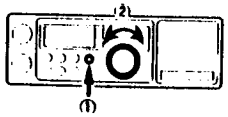




1) The transceiver is presently in the U.S.A. mode and will tune any of these channels.

2) If an International channel is required, push the [FUNCTION] SWITCH, and then push the [USA] SWITCH. The International mode is now selected and "USA" disappears from the CHANNEL DISPLAY.

3) To return to the U.S.A. mode, push the [FUNCTION] SWITCH, and then the [USA] SWITCH.

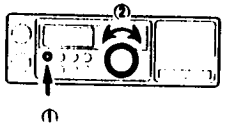
**(5) Select channel**

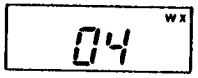


1) Push the [DIAL] SWITCH.

2) Rotate the CHANNEL SELECTOR to choose the required operating channel. The selected channel number appears on the CHANNEL DISPLAY, and the transceiver is now receiving the indicated channel.

**(6) Weather mode**




1) Push the [WX] SWITCH. The letters "WX" appear on the CHANNEL DISPLAY indicating the transceiver is in the weather mode.

2) Rotate the CHANNEL SELECTOR to choose the desired weather channel (1 ~ 10).

3) The transceiver only operates in the receive mode when the weather channels are selected. If the PTT SWITCH on the microphone is pushed, the audio signal disappears and no signal is transmitted.

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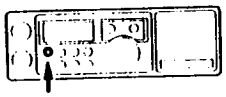
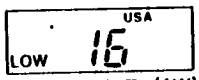
## 4 - 2 TRANSMITTING

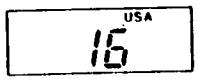
The following transmitting procedures should be started after finishing the steps described above in SECTION 4 - 1 RECEIVING.

**(1) Select output power**






LOW POWER (1W)




HIGH POWER (25W)

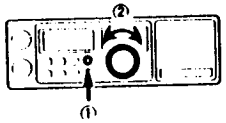
1) The IC-M100 automatically resets to the HIGH (25W) power position when the transceiver is turned ON.

2) Push the [HI/LO] SWITCH to select the LOW (1W) power position.

- "LOW" appears on the CHANNEL DISPLAY.

3) Push the [HI/LO] SWITCH again to change back to the HIGH (25W) power position. There is no "HIGH" power indidicator.

**(2) Select the operating channel.**

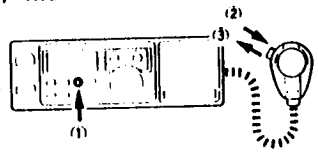


1) Push the [DIAL] SWITCH.

2) Rotate the CHANNEL SELECTOR to choose a channel suitable for the type of communication intended.

3) Listen carefully to be sure the channel is clear.

**(3) Move to a call channel**



1) Push the [CH 16] SWITCH, and wait until the channel is clear.

2) Push the PTT SWITCH on the microphone and call the party you are trying to contact. Speak into the microphone using your normal voice level.

3) After contact, release the PTT SWITCH to return to receiving.

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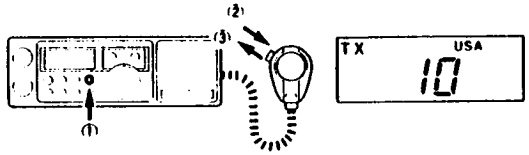
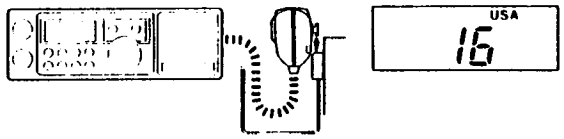
(4) Move to an operating channel




1) After establishing contact with the desired party, push the [DIAL] SWITCH to move to the channel previously selected in STEP (2).

2) Resume your conversation.

3) When your conversation is completely finished, return the microphone to the mic hanger, and the transceiver automatically changes to channel 16.

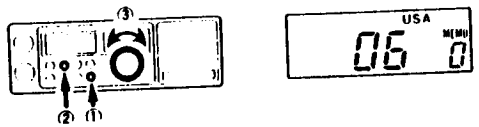


REPRODUCED AT GOVERNMENT PRINT

# SECTION 5 FUNCTIONAL OPERATION

## 5 - 1 MEMORY CHANNEL OPERATION

(1) Using the memory channels.

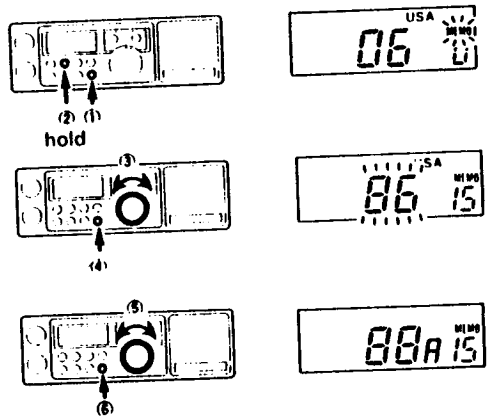



1) Push the [FUNCTION] SWITCH, and then push the [MR] SWITCH.

2) Rotate the CHANNEL SELECTOR to choose a memory channel (0 ~ 15). Memory channels which have not been programmed cannot be selected. Refer to (2) below, Programming the memory channels.

3) The channel number and the memory number selected appear on the CHANNEL DISPLAY.

(2) Programing the memory channels




1) Push the [FUNCTION] SWITCH, and then push and hold the [MR] SWITCH for approximately 2 seconds until the word "MEMO" on the CHANNEL DISPLAY begins to blink.

2) Rotate the CHANNEL SELECTOR to choose a memory channel. Push the [FUNCTION] SWITCH.

3) Rotate the CHANNEL SELECTOR to choose a required channel. Push the [FUNCTION] SWITCH.

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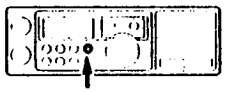
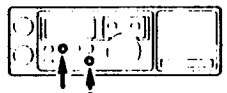
## 5 - 2 SCANNING OPERATION

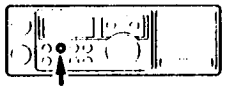
(1) Channel scan
Memory scan
Weather scan



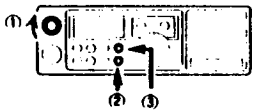
DIAL SCAN

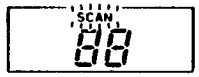


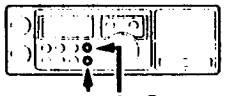

MEMORY SCAN

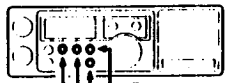


WEATHER SCAN




The following procedure explains how to automatically scan all marine channels, a memory channel or a weather channel.

1) Push the following switches as required for the correct mode.

   Channel scan : [DIAL] SWITCH
   Memory scan : ①[FUNCTION]② [MR] SWITCHES
   Weather scan : [WX] SWITCH

2) Rotate the [SQUELCH] CONTROL clockwise until the noise is quieted.

3) Push the [FUNCTION] SWITCH, and then push the [SCAN] SWITCH.

   • "SCAN" appears and blinks on the CHANNEL DISPLAY.

4) On reaching the highest channel, the scan continues from the lowest channel up wards in a continuous loop. Each time the transceiver reaches a channel with a signal, the scan stops as long as the signal is present. When the channel is clear, the scan resumes moving upwards.

5) When a signal is received and the scan stops, push the [FUNCTION] SWITCH and then push the [SCAN] SWITCH to start the scan again.

6) Push any one of the [DIAL], [WX], [CH 16] or [FUNCTION] SWITCHES to stop the scan function.

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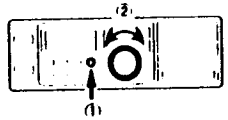
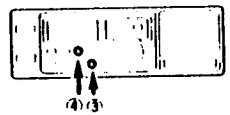
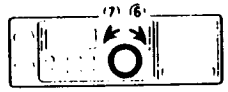
(2) Lockout scan

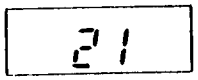
In the all channel scan mode the transceiver automatically stops at specific channels. Lockout scan, however, allows you to skip unnecessary channels, customizing the transceiver to fit your exact programming requirements.

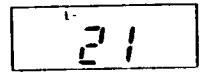
(a) Locking out a channel

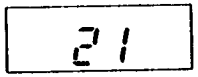


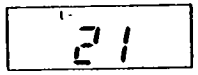



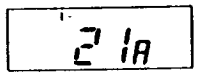



1) Push the [DIAL] SWITCH.

2) Rotate the CHANNEL SELECTOR to choose the channel to be locked out.

3) Push and hold the [FUNCTION] SWITCH, and then push the [L·SCAN] SWITCH.

- "L–" appears on the CHANNEL DISPLAY.

4) Release the [FUNCTION] SWITCH. The "L–" symbol disappears and the channel is now locked out.

5) Turn the CHANNEL SELECTOR to select an adjacent channel and then shift back to the original channel.

- "L–" appears again on the CHANNEL DISPLAY.

**NOTE:** Locking out an International channel simultaneously locks out the U.S.A. channel with the same number and vice versa. For example, locking out channel 21 also locks out channel 21A.

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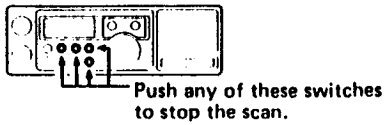
(b) Activate Lockout scan

1) Rotate the [SQUELCH] CONTROL clockwise until the noise from the speaker just disappears.

2) Push the [FUNCTION] SWITCH, and then push the [L-SCAN] SWITCH. "L-SCAN" appears and "SCAN" begins to blink on the CHANNEL DISPLAY.

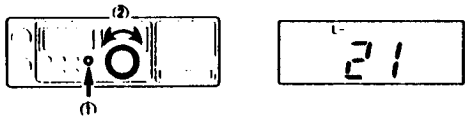
3) The scan moves upwards, skipping the locked-out channels.

4) When a signal is received and the scan stops, push the [FUNCTION] SWITCH and then push the [L-SCAN] SWITCH to start Lockout scan again.



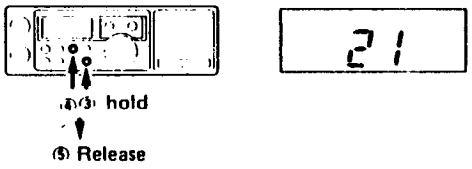

5) Push any one of the [DIAL], [WX], [CH 16] or [FUNCTION] SWITCHES to stop Lockout scan.

(c) Cancelling a lockout channel




1) Push the [DIAL] SWITCH.

2) Rotate the CHANNEL SELECTOR to choose a channel you no longer wish locked out.




3) Push and hold the [FUNCTION] SWITCH, and then push the [L-SCAN] SWITCH. The "L–" symbol appears.

4) Release the [FUNCTION] SWITCH. The "L–" symbol disappears.

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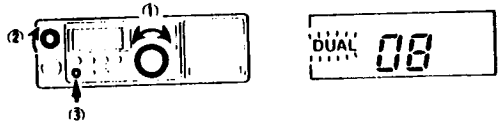
## 5 - 3 DUAL WATCH OPERATION

This function allows a check of channel 16 while listening on another channel. When a signal appears on channel 16, the transceiver automatically switches to channel 16 until this signal has cleared, then the transceiver returns to the original channel.







1) Choose the desired operating channel.

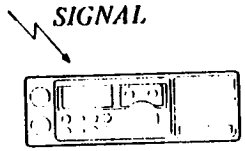
2) Rotate the [SQUELCH] CONTROL clockwise until the noise just disappears.

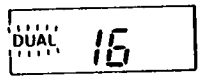
- Perform this setting when there is no signal present on the channel.

3) Push the [DUAL] SWITCH.

- "DUAL" appears on the CHANNEL DISPLAY, and begins to blink.

4) The transceiver now alternates between the channel selected in step 1) and channel 16.




5) When a signal appears on either channel, that channel is monitored.

- If a signal appears on both channels simultaneously, then channel 16 has priority.

- The transceiver remains locked on channel 16 until it is clear, and then switches to monitor the other signal.

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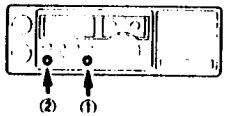
## 5 - 4 DISPLAY LIGHT AND LIGHT DIMMER

The IC-M100 has an illuminated CHANNEL and FUNCTION DISPLAY for easy reading in dim or no light situations. The light may be turned ON and OFF, also the intensity may be varied to suit the ambient light conditions.

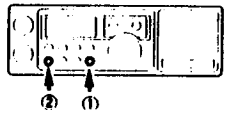
### (1) Light ON and OFF




1) Push the [FUNCTION] SWITCH, and then push the [DIM] SWITCH to turn the light ON and OFF.

2) Repeat step 1) to change the condition of the light.

### (2) Light intensity



1) Push and hold the [FUNCTION] SWITCH, and then push the [DIM] SWITCH.

2) Continue holding the [FUNCTION] SWITCH IN while rotating the CHANNEL SELECTOR to vary the light intensity.

3) The IC-M100 has 4 different levels of light intensity. Rotate the CHANNEL SELECTOR CCW for darker intensity and CW for brighter intensity.

4) Release the [FUNCTION] SWITCH.

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## 5 - 5 HAILER AND INTERCOM OPERATIONS

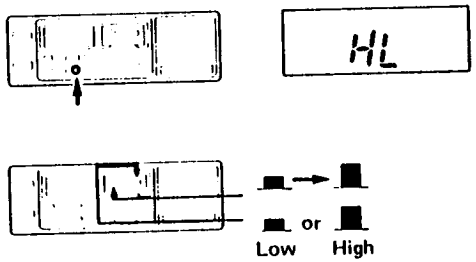
The IC-M100 provides a hailer mode as an audio amplifier function for a Public Address system and has an interphone function for communicating between the deck and cabin. Both functions can be used at the same time. Refer to SECTION 2 - 1 for connecting instructions.

### (1) Hailer operation

The hailer function allows that you voice to be amplified through an external loudspeaker while you speak into the IC-M100 microphone.

1) Connect a 4 ~ 8Ω (more than 5W) speaker to the ACC SOCKET. Refer to SECTION 2 - 1 for connecting instructions.

2) Turn power ON.




3) Push the [HL] HAILER MODE SWITCH to change to the hailer mode.

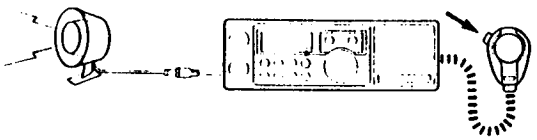
   • "HL" appears on the CHANNEL DISPLAY.

4) Select the hailer function by using the [HAILER/INCOM] SWITCH.

   • HAILER FUNCTION SWITCH: Out position

5) Select the audio volume level by using the [HIGH/LOW] SWITCH.

   • HAILER OUTPUT POWER SELECTOR SWITCH
   Out position : High output power
   In position : Low output power



6) Push the PTT SWITCH on the microphone and speak into the microphone.

- The hailer speaker emits the audio.

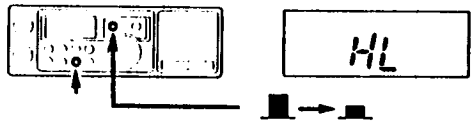
7) Push any of the switches or rotate the CHANNEL SELECTOR to to return to normal operations.

**(2) Intercom operation**

The intercom function allows you to receive an answer from the deck to your hailer message via the IC-M100 internal speaker.

1) Connect a 4 ~ 8Ω (more than 5W) speaker and switch to the ACC SOCKET. Refer to SECTION 2 - 1 for connecting instructions.

2) Turn power ON.




3) Push the [HL] HAILER MODE SWITCH to change to the hailer mode.

- "HL" appears on the CHANNEL DISPLAY.

4) Select the intercom function by pressing the [HAILER/ INCOM] SWITCH IN.

- INTERCOM FUNCTION SWITCH: In position

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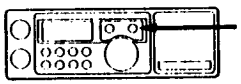
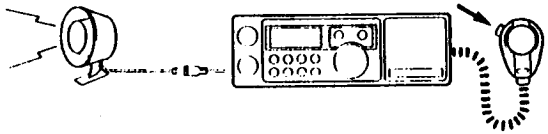


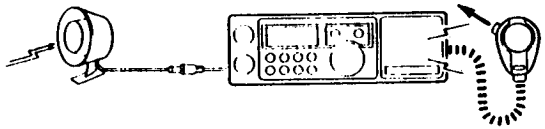

5) Select the audio volume level by using the [HIGH/LOW] SWITCH.

- HAILER OUTPUT POWER SELECTOR SWITCH
  Out position : High output power
  In position : Low output power



6) Push the PTT SWITCH on the microphone and speak into the microphone.

- The intercom speaker emits the audio.



7) Release the PTT SWITCH to hear an answer from the deck.

8) Push any of the switches or rotate the CHANNEL SELECTOR to return to normal operations.

**(3) Controlling the intercom from the deck side**

The intercom function can also be controlled on the deck.

1) To call the cabin, close the CALL 1 SWITCH and speak into the intercom speaker. Refer to SECTION 2 - 1 for connection information for the CALL 1 SWITCH.

2) Release the switch to return the IC-M100 to cabine control of the intercom function.

## SECTION 6 OPERATING RULES AND GUIDELINES

### PREVENT INTERFERENCE

Before transmitting, monitor the channel you wish to use to avoid interrupting transmissions in progress.

### CALL PROCEDURES

Calls must be properly identified and time limits must be respected.

1) Give your call sign each time you call another vessel or a coast station. If you have no call sign, identify the station by giving the vessel name and the name of the licensee.

2) Give your call sign at the end of each transmission of more than 3 minutes duration.

3) You must break and give your call sign at least once every fifteen minutes during long ship-to-shore calls.

4) Keep your unanswered calls short (less than thirty seconds) and do not repeat a call for two minutes.

5) Unnecessary transmissions are not allowed.

### PRIORITIES

1) Read all the rules and regulations pertaining to priorities and keep an up-to-date copy handy. Safety and Distress messages take priority over all others.

2) You must monitor and be able to transmit on Channel 16.

3) False or fraudulent distress signals are prohibited and punishable by law.

## PRIVACY

1) Information overheard but not intended for you cannot lawfully be used in any way.

2) Indecent or profane language is prohibited.

## LOGS

Use of this equipment requires entry of the watch period of Channel 16 by the operator with vessel name, call sign and operator signature. All distress, emergency and safety messages must be recorded in complete detail. Log date activity is usually recorded in 24 hour time. Universal Time (formerly GMT) is frequently used.

Adjustments, repairs, channel frequency changes and authorized modifications affecting electrical operation of the equipment must be kept in the maintenance log and entries signed by the authorized licensed technician performing or supervising the work. A sample Maintenance log is included in the back of this manual.

## RADIO LICENSES

**1) Ship Station License**

When your craft is equipped with a VHF/FM transceiver such as the IC-M100 you must posses a current radio station license before using the equipment. It is unlawful to operate a Ship Station which is not licensed.

Inquire through your dealer or the appropriate government agency for a Ship Radiotelephone License application. Your government issued license states the call sign which is your craft's identification for radio purposes.

2) Operator's License

A Restricted Radiotelephone Operator Permit is the license most often held by small vessel radio operators when a radio is not required for safety purposes. You can usually obtain this permit by mail without examination. Again, contact your marine dealer or appropriate government agency for information or applications.

The Restricted Radiotelephone Operator Permit must be posted or be kept with the operator. Only a licensed radio operator may operate a transceiver. However, non-licensed individuals may talk over a transceiver if a licensed operator starts, supervises, and ends the call, and makes the necessary log entries. A current copy of the applicable government rules and regulations is usually required to be kept.

## DEAD SPOTS

Topography may prevent receiving and transmitting from some locations. Move to another location if you find a "dead spot".

## ROUTINE MAINTENANCE

Your IC-M100 is designed to perform well for many years if cared for in a proper manner. Each year you should have the following checked by a licensed technician.

1. Check the antenna system.

2. Check the transmitter frequency, deviation, and power output.

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# SECTION 7 MARINE VHF TRANSCEIVER CHANNEL CHART

| Channel No. | Frequency (MHz) | | Transmitter output power |
|---|---|---|---|
| | Transmitter | Receiver | |
| 01 | 156.050 | 160.650 | 25W & 1W |
| 01A | 156.050 | 156.050 | 25W & 1W |
| 02 | 156.100 | 160.700 | 25W & 1W |
| 02A | 156.100 | 156.100 | 25W & 1W |
| 03 | 156.150 | 160.750 | 25W & 1W |
| 03A | 156.150 | 156.150 | 25W & 1W |
| 04 | 156.200 | 160.800 | 25W & 1W |
| 04A | 156.200 | 156.200 | 25W & 1W |
| 05 | 156.250 | 160.850 | 25W & 1W |
| 05A | 156.250 | 156.250 | 25W & 1W |
| 06 | 156.300 | 156.300 | 25W & 1W |
| 07 | 156.350 | 160.950 | 25W & 1W |
| 07A | 156.350 | 156.350 | 25W & 1W |
| 08 | 156.400 | 156.400 | 25W & 1W |
| 09 | 156.450 | 156.450 | 25W & 1W |
| 10 | 156.500 | 156.500 | 25W & 1W |
| 11 | 156.550 | 156.550 | 25W & 1W |
| 12 | 156.600 | 156.600 | 25W & 1W |
| 13 | 156.650 | 156.650 | 25W & 1W |
| 14 | 156.700 | 156.700 | 25W & 1W |
| 15 | 156.750 | 156.750 | 1W only |
| 16 | 156.800 | 156.800 | 25W & 1W |
| 17 | 156.850 | 156.850 | 1W only |
| 18 | 156.900 | 161.500 | 25W & 1W |
| 18A | 156.900 | 156.900 | 25W & 1W |

| Channel No. | Frequency (MHz) | | Transmitter output power |
|---|---|---|---|
| | Transmitter | Receiver | |
| 19 | 156.950 | 161.550 | 25W & 1W |
| 19A | 156.950 | 156.950 | 25W & 1W |
| 20 | 157.000 | 161.600 | 25W & 1W |
| 20A | 157.000 | 157.000 | 25W & 1W |
| 21 | 157.050 | 161.650 | 25W & 1W |
| 21A | 157.050 | 157.050 | 25W & 1W |
| 22 | 157.100 | 161.700 | 25W & 1W |
| 22A | 157.100 | 157.100 | 25W & 1W |
| 23 | 157.150 | 161.750 | 25W & 1W |
| 23A | 157.150 | 157.150 | 25W & 1W |
| 24 | 157.200 | 161.800 | 25W & 1W |
| 25 | 157.250 | 161.850 | 25W & 1W |
| 26 | 157.300 | 161.900 | 25W & 1W |
| 27 | 157.350 | 161.950 | 25W & 1W |
| 28 | 157.400 | 162.000 | 25W & 1W |
| 60 | 156.025 | 160.625 | 25W & 1W |
| 60A | 156.025 | 156.025 | 25W & 1W |
| 61 | 156.075 | 160.675 | 25W & 1W |
| 61A | 156.075 | 156.075 | 25W & 1W |
| 62 | 156.125 | 160.725 | 25W & 1W |
| 62A | 156.125 | 156.125 | 25W & 1W |
| 63 | 156.175 | 160.775 | 25W & 1W |
| 63A | 156.175 | 156.125 | 25W & 1W |
| 64 | 156.225 | 160.825 | 25W & 1W |
| 64A | 156.225 | 156.225 | 25W & 1W |

| Channel No. | Frequency (MHz) | | Transmitter output power |
|---|---|---|---|
| | Transmitter | Receiver | |
| 65 | 156.275 | 160.875 | 25W & 1W |
| 65A | 156.275 | 156.275 | 25W & 1W |
| 66 | 156.325 | 160.925 | 25W & 1W |
| 66A | 156.325 | 156.325 | 25W & 1W |
| 67 | 156.375 | 156.375 | 25W & 1W |
| 68 | 156.425 | 156.425 | 25W & 1W |
| 69 | 156.475 | 156.475 | 25W & 1W |
| 70 | 156.525 | 156.525 | 25W & 1W |
| 71 | 156.575 | 156.575 | 25W & 1W |
| 72 | 156.625 | 156.625 | 25W & 1W |
| 73 | 156.675 | 156.675 | 25W & 1W |
| 74 | 156.725 | 156.725 | 25W & 1W |
| 75 | ----- | ----- | Guard |
| 76 | ----- | ----- | Guard |
| 77 | 156.875 | 156.875 | 25W & 1W |
| 78 | 156.925 | 161.525 | 25W & 1W |
| 78A | 156.925 | 156.925 | 25W & 1W |
| 79 | 156.975 | 161.575 | 25W & 1W |
| 79A | 156.975 | 156.975 | 25W & 1W |
| 80 | 157.025 | 161.625 | 25W & 1W |
| 80A | 157.025 | 157.025 | 25W & 1W |
| 81 | 157.075 | 161.675 | 25W & 1W |
| 81A | 157.075 | 157.075 | 25W & 1W |
| 82 | 157.125 | 161.725 | 25W & 1W |

| Channel No. | Frequency (MHz) | | Transmitter output power |
|---|---|---|---|
| | Transmitter | Receiver | |
| 82A | 157.125 | 157.125 | 25W & 1W |
| 83 | 157.175 | 161.775 | 25W & 1W |
| 83A | 157.175 | 157.175 | 25W & 1W |
| 84 | 157.225 | 161.825 | 25W & 1W |
| 84A | 157.225 | 157.225 | 25W & 1W |
| 85 | 157.275 | 161.875 | 25W & 1W |
| 85A | 157.275 | 157.275 | 25W & 1W |
| 86 | 157.325 | 161.925 | 25W & 1W |
| 86A | 157.325 | 152.325 | 25W & 1W |
| 87 | 157.375 | 161.975 | 25W & 1W |
| 87A | 157.375 | 157.375 | 25W & 1W |
| 88 | 157.425 | 162.025 | 25W & 1W |
| 88A | 157.425 | 157.425 | 25W & 1W |
| WX1 | ----- | 162.550 | RX. only |
| WX2 | ----- | 162.400 | RX. only |
| WX3 | ----- | 161.650 | RX. only |
| WX4 | ----- | 162.475 | RX. only |
| WX5 | ----- | 162.425 | RX. only |
| WX6 | ----- | 162.500 | RX. only |
| WX7 | ----- | 162.525 | RX. only |
| WX8 | ----- | 162.450 | RX. only |
| WX9 | ----- | 161.775 | RX. only |
| WX0 | ----- | 163.275 | RX. only |

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## TRANSMITTER LOG

| RADIO SET SER. NO: | Date | Date | Date | Date | Date | Date | Date |
|---|---|---|---|---|---|---|---|
| Transmitter RF Power Output | | | | | | | |
| Transmitter Deviation | | | | | | | |
| Transmitter Frequency CH16 | | | | | | | |
| Transmitter Frequency CH 6 | | | | | | | |
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| | | | | | | | |
| TECHNICIAN SIGNATURE, ADDRESS, FCC LICENSE NO., EXPIRATION DATE | | | | | | | |

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## SECTION 8 TROUBLESHOOTING

| Problem | Possible Cause | Solution |
|---|---|---|
| 1. Power does not come ON when the [POWER] SWITCH is pushed. | • Power cable is improperly connected.<br>• Power cable is connected with the polarity reversed.<br>• Blown fuse. | • Carefully reconnected the power cable.<br>• Disconnect the power cable, replace the blown fuses on the DC power cable, then reconnect the power cable observing proper polarity.<br>• Check for the cause, then replace fuses on the DC power cable or on the rear panel. |
| 2. Low level or no sound comes from the speaker. | • [VOLUME] CONTROL is completely counterclockwise.<br>• The [SQUELCH] CONTROL is completely counterclockwise. | • Turn the [VOLUME] CONTROL to a suitable level.<br>• See SECTION 5 - 1 RECEIVING for proper Squelch operation. |
| 3. Sensitivity is low and only strong signals are audible. | • Antenna feed line is cut or shorted, or a corroded or defective connector is installed. | • Check the feedline and connector, and correct any improper condition. |
| 4. Either the voice is not heard or the "TX" is not displayed when transmitting. | • Mic cable is cut. | • Inspect the mic cable for possible breaks or tears, and correct any improper condition. |
| 5. CHANNEL DISPLAY indicates erroneous information. | • Internal microprocessor may be malfunctioning. | • Push and hold the [RESET] SWITCH then, push the [SQUELCH] SWITCH.<br>**CAUTION:** After resetting the CPU, all information you have programmed into the memory channels will be cleared. Memory channels must be reprogrammed. |

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# SECTION 10 SPECIFICATIONS

## GENERAL

| | | |
|---|---|---|
| Dimensions | : | 228mm(W) x 78mm(H) x 208mm(D) |
| Weight | : | 2.1kg |
| Number of channels | : | All U.S.A. and International channels<br>16 Memory channels<br>10 Weather channels |
| Frequency stability | : | 0.0005% |
| Temperature range | : | −20°C ~ +60°C |
| Channel spacing | : | 25kHz |
| Power supply requirement | : | 13.8V DC |
| Antenna impedance | : | 50Ω |
| Type of emission | : | 16K0G3E |

## RECEIVER

| | | |
|---|---|---|
| Frequency range | : | 156 ~ 163MHz |
| Sensitivity | : | Less than 0.3μV for 12dB SINAD |
| Threshold squelch sensitivity | : | 0.3μV |
| Tight squelch sensitivity | : | 1μV |
| Intermediate frequencies | : | 1st IF : 21.4MHz<br>2nd IF : 455kHz |
| Audio output | : | More than 5W at 10% distortion |
| Current drain | : | Audio max. : 0.8A<br>Standby : 0.2A |

## TRANSMITTER

| | | |
|---|---|---|
| Frequency range | : | 156 ~ 157.5MHz |
| Maximum deviation | : | ±5kHz (16K0G3E) |
| RF Output power | : | HIGH : 25W<br>LOW : 1W |
| Spurious emission | : | 70dB below carrier |
| Harmonic emission | : | 70dB below carrier |
| Microphone | : | 600Ω microphone |
| Current drain | : | High power : 6.3A<br>Low power : 1.7A |

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## EMERGENCIES

If your vessel requires assistance, attract the attention of other vessels and the Coast Guard by sending a distress message on Channel 16.

Procedures for sending a distress signal:

1. MAYDAY, MAYDAY, MAYDAY (repeat three times)
2. THIS IS (name of the vessel)
3. LOCATED AT (gives position)
4. Give the reason for the distress call.
5. Explain what assistance you need.
6. Give additional information to help those come to your assistance, (vessel length, color, type, etc.)
7. Use Channel 16 only to make initial contact.
8. After making initial contact agree on an alternate frequency, such as Channel 22A or Channel 6 and clear Channel 16 for other traffic.