



INSTRUCTION MANUAL

VHF MARINE TRANSCEIVER

IC-M92D

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

Icom Inc.



IN CASE OF EMERGENCY

If your vessel requires assistance, contact other vessels and the Coast Guard by sending a distress call on Channel 16.

USING CHANNEL 16 **DISTRESS CALL PROCEDURE**

1. "MAYDAY MAYDAY MAYDAY."
2. "THIS IS" (name of vessel).
3. Say your call sign or other indication of the vessel (AND 9-digit DSC ID if you have one).
4. "LOCATED AT" (your position).
5. State the nature of the distress and assistance required.
6. Give any other information which might facilitate the rescue.

Or, transmit your Distress call using digital selective calling on Channel 70.

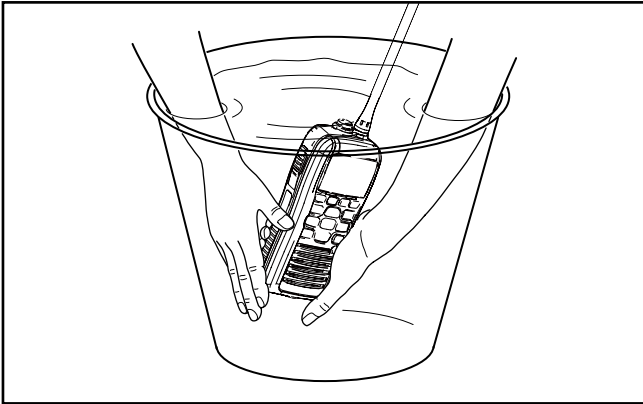
USING DIGITAL SELECTIVE CALLING (Ch 70) **DISTRESS CALL PROCEDURE**

1. While lifting up the key cover, push and hold **[DISTRESS]** for 3 seconds until you hear 3 short beeps change to one long beep.
2. Wait for an acknowledgment on Channel 70 from a coast station.
 - After the acknowledgement is received, Channel 16 is automatically selected.
3. Push and hold **[PTT]**, then transmit the appropriate information as listed above.

RECOMMENDATION

CLEAN THE TRANSCEIVER THOROUGHLY WITH FRESH WATER after exposure to saltwater. Otherwise, the transceiver's keys, switches and controllers may become inoperable due to salt crystallization.

NOTE: DO NOT wash the transceiver in water if there is any reason to suspect the waterproofing may not be effective. For example, in cases where the battery pack rubber seal is damaged, the transceiver/battery pack is cracked or broken, or has been dropped, or when the battery pack is detached from the transceiver.



FOREWORD

Thank you for purchasing this Icom product. The IC-M92D VHF MARINE TRANSCEIVER is designed and built with Icom's state of the art technology and craftsmanship. With proper care this radio should provide you with years of trouble-free operation.



IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL—This instruction manual contains important operating instructions for the IC-M92D.

This instruction manual includes some functions which are usable only when they are pre-programmed by your dealer. Ask your dealer for details.

EXPLICIT DEFINITIONS

WORD	DEFINITION
 DANGER!	Personal death, serious injury or an explosion may occur.
 WARNING!	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. No risk of personal injury, fire or electric shock.

FEATURES



PRECAUTIONS

⚠ WARNING! NEVER connect the transceiver to an AC outlet. This may pose a fire hazard or result in an electric shock.

⚠ WARNING! NEVER hold the transceiver so that the antenna is very close to, or touching exposed parts of the body, especially the face or eyes, while transmitting. The transceiver will perform best if the microphone is 5 to 10 cm (2 to 4 inches) away from the lips and the transceiver is vertical.

⚠ WARNING! NEVER operate the transceiver with other audio accessories at high volume levels. Hearing experts advise against continuous high volume operation. If you experience a ringing in your ears, reduce the volume level or discontinue use.

DO NOT modify the transceiver. The transceiver warranty does not cover any problems caused by unauthorized modification.

BE CAREFUL! The transceiver will become hot when operating it continuously for long periods of time.

KEEP the transceiver and microphone at least 1 m away from the vessel's magnetic navigation compass.

KEEP the transceiver out of the reach of children.

CAUTION: MAKE SURE the flexible antenna, battery pack and jack cover are securely attached to the transceiver, and that the antenna and battery pack are dry before attachment. Exposing the inside of the transceiver to dust or water will result in serious damage to the transceiver.

DO NOT operate the transceiver near unshielded electrical blasting caps or in an explosive atmosphere.

DO NOT push [PTT] when not actually intending to transmit.

DO NOT use or place the transceiver in direct sunlight or in areas with temperatures below -20°C (-4°F) or above $+60^{\circ}\text{C}$ ($+140^{\circ}\text{F}$).

The basic operations, transmission and reception of the transceiver are guaranteed within the specified operating temperature range. However, the LCD display may not be operate correctly, or show an indication in the case of long hours of operation, or after being placed in extremely cold areas.

DO NOT use harsh solvents such as benzine or alcohol when cleaning, as they will damage the transceiver surfaces.

PRECAUTIONS (Continued)

BE CAREFUL! The IC-M92D meets IPX7* requirements for dust-tight and waterproof protection. However, once the transceiver has been dropped, dust-tight and waterproof protection cannot be guaranteed because of possible damage to the transceiver's case or the waterproof seal.

* Only when the jack cover or the optional HM-167 is attached.

Even when the transceiver power is OFF, a slight current still flows in the circuits. Remove the battery pack or batteries from the transceiver when not using it for a long time. Otherwise, the installed battery pack or batteries will become exhausted, and will need to be recharged or replaced.

MAKE SURE to turn the transceiver power OFF before connecting the supplied/optional equipment.

For U.S.A. only:

CAUTION: Changes or modifications to this transceiver, not expressly approved by Icom Inc., could void your authority to operate this transceiver under FCC regulations.

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FCC INFORMATION

FOR CLASS B UNINTENTIONAL RADIATORS

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: Changes or modifications to this device, not expressly approved by Icom Inc., could void your authority to operate this device under FCC regulations.

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◇ Priorities

- Read all rules and regulations pertaining to priorities and keep an up-to-date copy handy. Safety and distress calls take priority over all others.
- You must monitor Channel 16 when you are not operating on another channel.
- False or fraudulent distress calls are prohibited under law.

◇ Privacy

- Information overheard but not intended for you cannot lawfully be used in any way.
- Indecent or profane language is prohibited.

◇ Radio licenses

(1) SHIP STATION LICENSE

You must have a current radio station license before using the transceiver. 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. This 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.

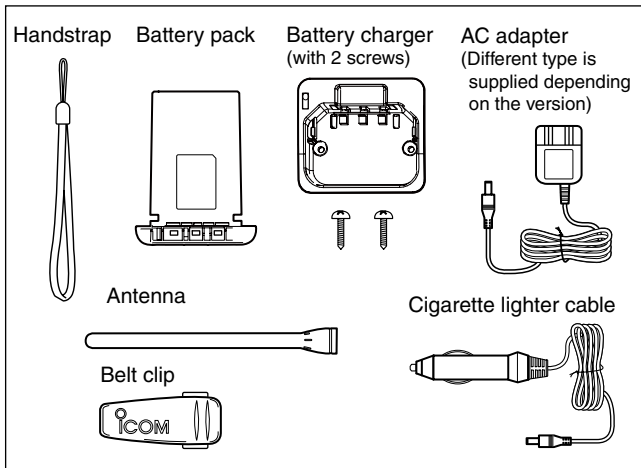
The Restricted Radiotelephone Operator Permit must be posted or kept with the operator. Only a licensed radio operator may operate a transceiver.

However, non-licensed individuals may talk over a transceiver if a licensed operator starts, supervises, ends the call and makes the necessary log entries.

A current copy of the applicable government rules and regulations is only required to be on hand for vessels in which a radio telephone is compulsory. However, even if you are not required to have these on hand it is your responsibility to be thoroughly acquainted with all pertinent rules and regulations.

NOTE: Even though the IC-M92D is capable of operation on VHF marine channels 3, 21, 23, 61, 64, 81, 82 and 83, according to FCC regulations these simplex channels cannot be lawfully used by the general population in U.S.A. waters.

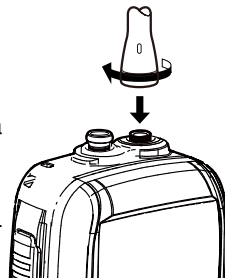
■ Supplied accessories



■ Attachments

◇ Flexible antenna

Connect the supplied flexible antenna to the antenna connector.

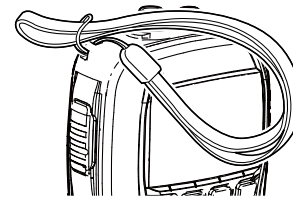


CAUTION:

- NEVER carry the transceiver by holding the antenna.
- Transmitting without an antenna may damage the transceiver.

◇ Handstrap

Pass the handstrap through the loop on the back side of the transceiver as illustrated at right. This facilitates carrying.

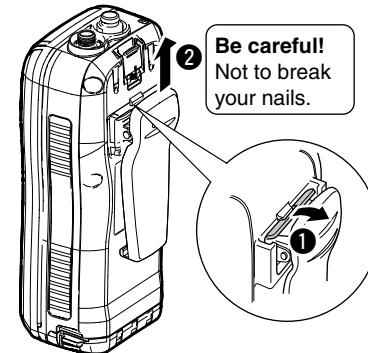
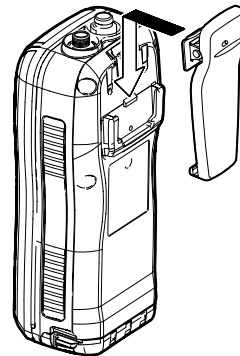


◇ Belt clip

Attach/detach the belt clip to the transceiver as illustrated below.

To attach the belt clip

To detach the belt clip



2 SUPPLIED ACCESSORIES AND ATTACHMENTS

◇ Battery pack

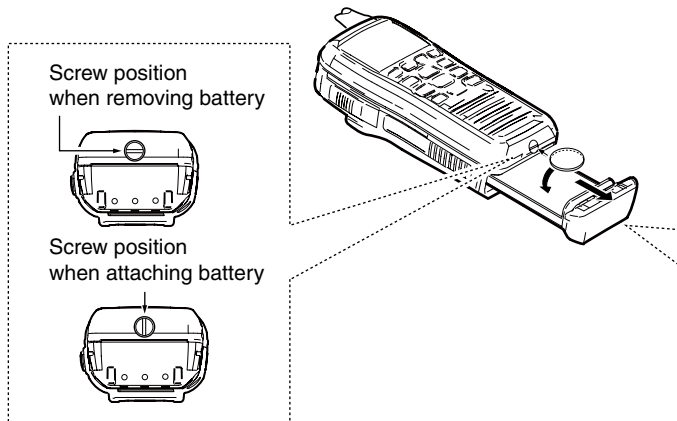
To remove the battery pack:

Turn the screw counter clockwise one quarter turn, then pull the battery pack in the direction of the arrow as shown below.

To attach the battery pack:

Insert the battery pack in the transceiver completely, then turn the screw clockwise one quarter turn.

NEVER remove or insert the battery pack when the transceiver is wet or soiled. This may result water or dust getting into the transceiver/battery pack and may result in the transceiver being damaged.



NOTE: When removing or attaching the battery pack, use a coin or standard screwdriver to loosen or tighten the bottom screw.

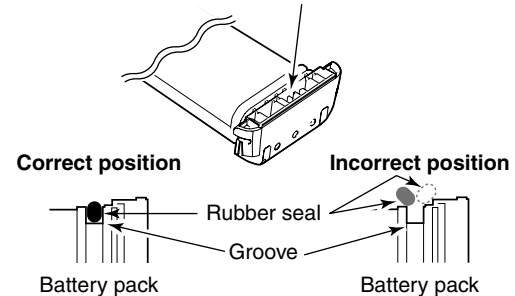
CAUTION:

When attaching or removing a battery pack, make sure the rubber seal is set in the groove of the battery pack correctly. If the seal is not correctly in the groove, it may be damaged when attaching the battery pack. If the seal is damaged, waterproof protection is not guaranteed.

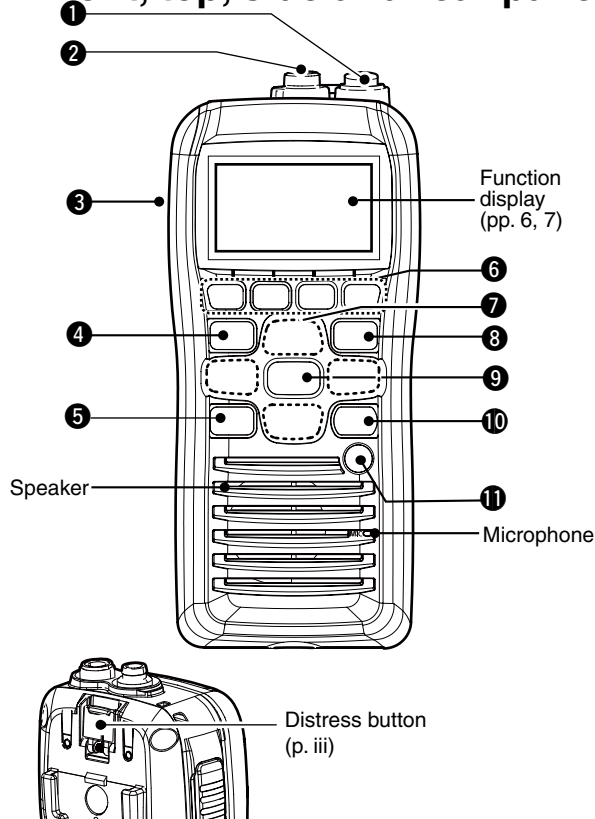
NOTE:

When attaching a battery pack, make sure dust or other material does not adhere to the rubber seal. If dust or other material is on the seal when attaching a battery pack, waterproof protection may not be guaranteed.

Make sure the rubber seal is properly seated in the groove and dust or other material does not adhere to it.



■ Front, top, side and rear panels



1 ANTENNA CONNECTOR (p. 2)

Connects the supplied antenna.

2 SPEAKER-MICROPHONE CONNECTOR [SP MIC] (p. 25)

Connects the optional external speaker-microphone.

NOTE: Attach the [SP MIC] cap when the optional speaker-microphone is not used. Otherwise, water will get into the transceiver.

3 PTT SWITCH [PTT]

Push and hold to transmit; release to receive. (p. 10)

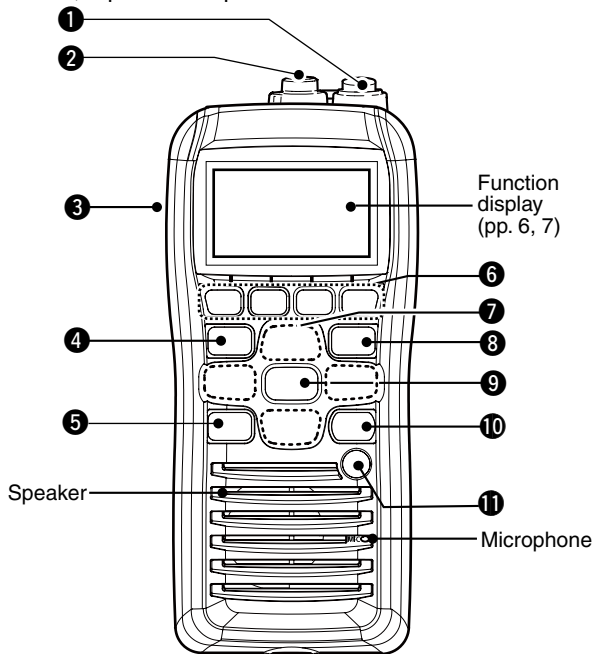
4 MENU KEY

Push to enter the Menu mode to select from the following menus: Adjustment Mode, Inspection Mode, DSC Calls, DSC Settings, Radio Settings, Configuration, MMSI/GPS Info, MOB, Waypoint or GPS Status.

➞ Continued on the next page.

3 PANEL DESCRIPTION

■ Front, top and rear panels



5 VOLUME/SQUELCH KEY [VOL/SQL]

- Push to enter the volume adjustment mode. (pp. 11, 12)
- Push again while in the volume adjustment mode to enter the squelch level adjustment mode.

6 SOFT MENU KEYS [1]/[2]/[3]/[4]

Slide menu by pushing [◀]/[▶] keys, then push either of the 4 keys to select a menu displayed above on the lower side of the monitor.

7 CHANNEL UP/DOWN [▲]/[▼] AND LEFT/RIGHT [◀]/[▶] KEYS

- Push [▲]/[▼] to select an operating channel. (p.)
- While in the set mode, selects the setting or value of an item.

8 CLEAR/LOCK KEY [↵]

- Push to clear the selected page and return to the previous screen.
- Hold down for 1 second to turn the key lock function ON or OFF. (p. 13)

9 ENTER KEY

Push to select a function, enter the input channel comment, select an item, etc.

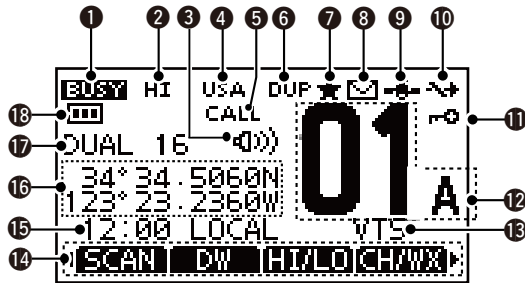
10 CHANNEL 16 KEY [16/C]

- Push to select Channel 16. (p. 8)
- Hold down for 1 sec. to select the call channel. (p. 8)
- When the call channel is selected, hold down for 3 sec. to enter the call channel programming mode. (p. 11)
- While in the set mode, push to return to the normal condition. (p. 17)

11 POWER KEY [⏻]

Hold down for 1 second to turn the power ON or OFF.

■ Function display



- 1 BUSY/TRANSMIT INDICATOR** (p. 2)
 - “BUSY” Appears when receiving a signal or when the squelch opens. (p. 10)
 - “TX” appears while transmitting.
- 2 POWER ICON** (p. 2)
 - “HI” appears when high power is selected.
 - “LOW” appears when low power is selected.
- 3 VOLUME LOUD/VOLUME MUTE ICON** (p. 12)
 - Volume loud or volume mute icon appears when the functions are set.
- 4 CHANNEL GROUP ICON/ WEATHER CHANNEL** (p. 9)
 - Selected channel group icon appears between U.S.A. “USA,” International “INT,” Canadian “CAN”.
 - “WX” appears when the weather channel is selected.
 - The icon blinks while the weather alert function is activated; blinks when the alert tone is received.

- 5 CALL CHANNEL ICON** (p.)
 - Appears when call channel is selected.
- 6 DUPLEX ICON** (p. 2)
 - Appears when a duplex channel is selected.
- 7 TAG CHANNEL ICON** (p.)
 - The icon appears while a TAG (favorite) channel is selected.
- 8 MAIL ICON** (p.)
 - The icon appears when a message is received.
- 9 GPS ICON** (p.)
 - Stays ON when the GPS receiver is activated and a valid position data is received.
 - Blinks when an invalid position data is being received.
- 10 AUTO SW ICON** (p.)
 - Blinks when both the Auto Switch function and Auto Tuner are turned OFF.
- 11 LOCK ICON** (p.)
 - Appears while the lock function is activated.
- 12 CHANNEL NUMBER READOUT** (p. 2)
 - Indicates the selected operating channel number.
- 13 CHANNEL NAME INDICATOR** (p. 2)
 - Indicates the channel name of the selected operating number if programmed.

2
3

1 CHAPTER_CONTINUED

14 KEY INDICATOR (p.)

Shows the programmed function of the soft keys on the front panel.

15 TIME ZONE INDICATOR (p. 2)

- ➔ Shows the current time data when a GPS receiver is connected, or the time data is manually programmed.
 - When the GPS current time data is invalid, ?? may blink every 2 seconds instead of current time data. After 23.5 hours have passed, “No Time” will appear.
 - ?? may blink every 2 instead of current time data, after 4 hours have passed from the time when the time data was manually programmed. The manually programmed data is held for only 23.5 hours, and after that, “No Time” will appear.
- ➔ “Local” appears when the offset time data is set. (p. 44)
- ➔ “No Time” appears when no GPS receiver is connected and no time data is manually input.

16 POSITION INDICATOR (p. 2)





- ➔ Shows the current position data when a GPS receiver is connected, or the position data is manually programmed.
 - When the GPS position data is invalid, “??” may blink every 2 seconds instead of position data. The last position data is held for only 23.5 hours, and after that, “No Position” will appear.
 - “??” may blink every 2 seconds instead of position data, after 4 hours have passed from the time when the position data is manually programmed. The manually programmed position data is held for only 23.5 hours, and after that, “No Position” will appear.
- ➔ “No Position” appears when no GPS receiver is connected and no position data is input manually.


17 SCAN INDICATOR (p. 2)

- ➔ “SCAN 16” appears during a Priority scan; “SCAN” appears during a Normal scan. (p. 17)
- ➔ “DUAL 16” appears during Dualwatch; “TRI 16” appears during Tri-watch. (p. 18)

18 BATTERY INDICATOR

Indicates the battery's remaining power.

Indication				
Battery level	Full	Middle	Charging required	No battery

 blinks when the battery is over charged.

■ MMSI code programming

The 9 digit MMSI (Maritime Mobile Service Identity: DSC self ID) code can be programmed at power ON.

NOTE:

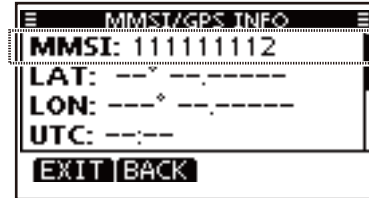
- This initial code programming can be performed only the first time to turn the power ON.
- The programming can only be done once.
- After the programming is completed, it can be re-programmed only by your dealer or distributor.

- ① First, push [⏻] turn ON the power.
 - The opening display appears.
 - “MMSI” display appears and warning alarm sounds for 2 seconds.
- ② “Push [ENT] to Register Your MMSI” appears.
 - Do not push [CLEAR] while this screen is displayed.
- ③ Push [▲]/[▼]/[◀]/[▶] to select and input with [ENTER].
- ④ Select “FINISH” and push [ENTER] to register.
- ⑤ When “MMSI CONFIRMATION” screen appears, input the previously registered 9 digit code to confirm the registration. Then, push [ENTER] to register.
 - Automatically enters the functional mode if the registration is valid.

◇ MMSI code check

The 9 digit MMSI code can be checked.

- ① Push [MENU].
- ② Push [▲]/[▼] several times to select “MMSI/GPS Info”, then push [ENTER] to enter.
- ③ Select “EXIT” to return to the main menu screen or “BACK” to return to the previous screen.



■ Channel selection

IMPORTANT: Prior to using the transceiver for the first time, the battery pack must be fully charged for optimum life and operation. To avoid damage to the transceiver, turn the power OFF while charging.

◇ Channel 16

Channel 16 is the distress and safety channel. It is used for establishing initial contact with a station and for emergency communications. Channel 16 is monitored during both Du-al-watch and Tri-watch. While in the standby condition, you must monitor Channel 16.

- ① Push **[16/C]** to select Channel 16.
 - “CALLING” appears.
- ② Select **[CH/WX]** to return to the selected channel before Channel 16, or push **[▲]/[▼]** to select an operating channel.

Push [16/C] key



◇ Call channel

Each regular channel group has separate leisure-use call channels. The call channel is monitored during Tri-watch. The call channels can be programmed (p. 11) and are used to store your most often used channel in each channel group for quick recall.

- ① Hold down **[16/C]** for 1 second to select Call channel.
 - “CALLING” and the call channel number appear.
 - Call channel can be re-programmed. See the “Call channel programming” on page 10 for details.
- ② Select **“CH/WX”** to return to the selected channel before the call channel, or push **[▲]/[▼]** to select the operating channel.

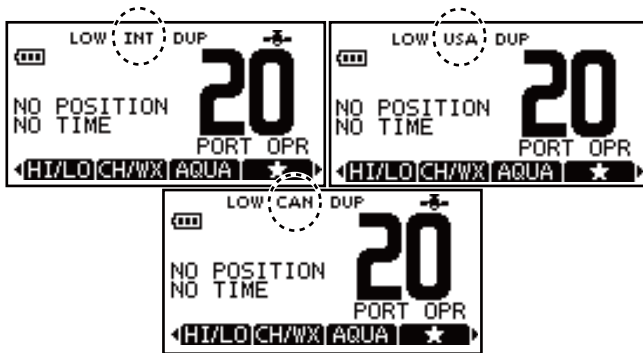
Hold down [16/C] key for 1 second



◇ U.S.A., International and Canadian channels

The transceiver is pre-programmed with 59 U.S.A., 59 International and 63 Canadian channels. These channel groups may be specified for the operating area.

- ① Push [MENU].
- ② Push [▲]/[▼] to select “Radio Settings”.
 - U.S.A., International and Canadian channel groups can be selected in sequence.
- ③ Push [▲]/[▼] to select “CHAN Group”.
- ④ Select between “USA”, “INT” and “CAN”.
- ⑤ Select “EXIT” while the desired channel group is selected to return to the home screen.
 - “DUP” appears for duplex channels.



◇ Weather channels

The IC-M92D has 10 pre-programmed weather channels. These are used for monitoring broadcasts from NOAA (National Oceanographic and Atmospheric Administration.)

The transceiver can automatically detect a weather alert tone on the selected weather channel while receiving on another channel, during standby on a regular channel or while scanning. (p. 44)

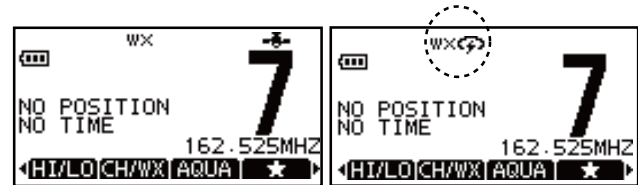
To Select a Weather channel:

Select “CH/WX” to select a weather channel.

- “WX” appears when a weather channel is selected.
- Weather channel alert icon appears when the alert function is turned ON.

To set the Weather Alert:

- ① Push [MENU].
- ② Push [▲]/[▼] to select “Radio Settings”.
- ③ Push [▲]/[▼] to select “WX Alert”.
- ④ Select “ON” to set the Weather Alert. .
- ⑤ Select “EXIT” while “ON” is selected to return to the home screen.
 - WX Alert icon appears.



■ Receiving and transmitting

/// **CAUTION:** Transmitting without an antenna may damage the transceiver.

- ① Hold down [⏻] for 1 second to turn power ON.
- ② Set the volume and squelch levels with [VOL/SQL].
 - ➔ Set the volume by pushing [▲]/[▼] to adjust the volume.
 - ➔ Set the squelch level by pushing [VOL/SQL] while the volume adjustment mode is selected.
 - While in the squelch adjustment mode, pushing [▲] will make the noise disappear.
- ③ Push [▲]/[▼] to select the desired channel.
 - Further adjustment of the audio may be necessary at this point.
- ④ Select “HI/LO” to select the output power if necessary.
 - “HI” appears when high power is selected; “LOW” when high power is selected.
 - Choose low power for short range communications, choose high power for longer distance communications.
 - Some channels are for low power only.
- ⑤ Hold down [PTT] to transmit, then speak into the microphone.
 - Channel 70 cannot be used for transmission.
- ⑤ Release [PTT] to receive.

/// **IMPORTANT:** To maximize the readability of your transmitted signal, pause a few seconds after pushing [PTT], hold the microphone 5 to 10 cm (2 to 4 inches) from your mouth and speak into the microphone at a normal voice level.

/// **NOTE:** The transceiver has a power save function to conserve the battery power. The power save function activates automatically when no signal is received for 5 seconds.

/// **For U.S.A. version:** To prevent accidental prolonged transmission, etc., the transceiver has a time-out timer function. This timer cuts a transmission OFF after 5 minutes of continuous transmission.

■ Call channel programming

Call channel is used to access the Call Channel 9 (default), however, you can program the call channel with your most often-used channels in each channel group for quick recall.

- ① Select the desired channel group (U.S.A, International or Canada) to be programmed. (p.)
- ② Hold down **[16/C]** for 1 second to select the call channel of the selected channel group.
 - “**CALLING**” and call channel number appear.
- ③ Hold down **[16/C]** again until long beep stops with two short beeps. The channel programming mode screen is displayed.
- ④ Push **[▲]/[▼]** to select the desired channel.
- ⑤ Push **[ENTER]** to program the selected channel as the call channel.
 - The display automatically returns to the main menu screen.

■ Adjusting the volume level

The volume level can be adjusted with **[VOL/SQL]** and **[▲]/[▼]** keys.

- ① Push **[VOL/SQL]** once to enter the volume adjustment mode, then adjust the volume level with **[▲]/[▼]**.
 - The transceiver has 20 volume levels and OFF.
 - With no key operation is performed for 5 seconds, it returns to the main menu.
- ② Push **[VOL/SQL]** twice to exit the volume adjustment mode.

■ Adjusting the squelch level

The squelch level can be adjusted with **[VOL/SQL]** and **[▲]/[▼]** keys.

In order to receive signals properly, as well as for the scan to function effectively, the squelch must be adjusted to its proper level.

- ① Push **[VOL/SQL]** twice to enter the squelch adjustment mode, then adjust the squelch level with **[▲]/[▼]**.
 - The transceiver has 11 squelch levels: OP is completely open; 10 is tight squelch; 1 is loose squelch.
 - With no key operation is performed for 5 seconds, the transceiver returns to the main screen.
- ② Push **[VOL/SQL]** again to exit the adjustment mode and return to the main menu screen.

5 BASIC OPERATION

■ Volume loud function

The volume loud function can be activated temporarily by pushing [VOL/SQL] and [▲].

/// The function does not work when the volume level is already set to the maximum 20.

- ① Hold down [VOL/SQL] first, and then while holding it down, push [▲] to activate the volume loud function.
 - The volume level is set to the maximum level (level 20).
 - The volume icon appears.
- ② Push [ENTER] to turn the volume function OFF.

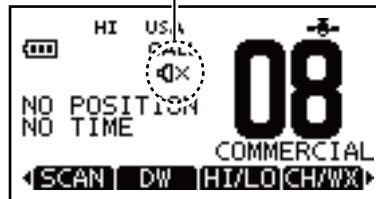
■ Volume mute function

The volume mute function can be activated temporarily by pushing [VOL/SQL] and [▼].

/// The function does not work when the volume level is already OFF.

- ① Hold down [VOL/SQL] first, and then while holding it down, push [▼] to activate the volume mute function.
 - The volume level is set to the minimum level (OFF).
 - Volume mute icon appears.
- ② Push [ENTER] to turn the volume mute function OFF.

The volume mute or volume loud icon appears.



■ Lock function

This function electronically locks all keys (except for [PTT] and [P]) to prevent accidental channel changes and function access.

- Push [CLEAR/↔] for 1 second to turn the lock function ON and OFF.



Appears when function is a

■ Monitor function

This function lights the function display and keys, and it is convenient for night-time operation. The automatic backlighting can be set in the set mode. (p. 19)

- Push any key except for [PTT] to turn the backlight ON.
 - The backlight is automatically turned OFF after 5 seconds of inactivity.

■ AquaQuake water draining function

The AquaQuake water draining function clears water away from the speaker grill. Without this function, water may muffle the sound coming from the speaker. The transceiver emits a vibrating beep when this function is activated.

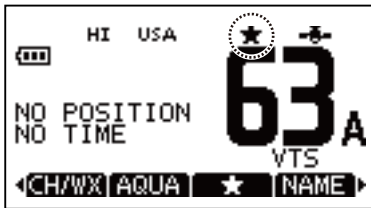
- Select "AQUA" and hold down the soft key.
 - A beep sounds for 10 seconds to drain water, regardless of the volume level setting.
 - The transceiver never accepts key operation while the AquaQuake function is activated.
 - The AquaQuake function can not be activated when an optional speaker-microphone is connected.

5 BASIC OPERATION

■ Setting TAG channels

For more efficient scanning, add the desired channels as TAG channels or clear TAG for unwanted channels. Channels that are not tagged will be skipped during scanning. TAG channels can be assigned to each channel group (U.S.A., International and Canada) independently.

- ① Select “**CH/WX**” to select the desired channel group.
- ② While the desired channel is selected on the display, select the TAG icon on the soft keys.
 - “★” appears on the display.
- ③ To cancel a TAG channel setting, select the desired TAG channel, then select the TAG icon on the soft keys.
 - “★” disappears.



To Clear (or set) all tagged channels:

Hold down to select TAG for 3 seconds on the soft keys until a short beep sounds. This clears all tags or tag all channels.

■ Channel names

Each channel can be labeled with alphanumeric names of up to 10 characters for easy channel recognition.

- The programmed names will be indicated at the channel name indicator of the function display.
- Capital letters, numbers, 26 types of symbols and space can be used.

- ① Select the desired channel.
 - Cancel dualwatch, Tri-watch or Scan in advance.
- ② While the desired channel is displayed, select “NAME” to enter the channel name editing mode screen.
- ③ Select the desired character by pushing [▲]/[▼]/[◀]/[▶] keys, and then input with [ENTER].
 - While in the channel name editing mode, push the very right key of the soft keys to change between alphabets, numbers and symbols.
 - Select “DELETE” to delete the selected character and select “SPACE” to insert a space.
- ④ Select “FINISH” to program the name.
 - Automatically returns to the main mode.
 - The programmed name appears on the display.

■ Backlight setting

This function lights the function display and keys, and it is convenient for night-time operation.

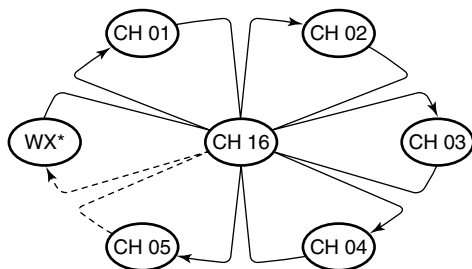
- ① Select “**BKLT**” to enter the backlight adjusting mode.
- ② Push [**▲**] or [**▼**] to adjust the brightness level between 1 (minimum) to 7 (maximum) or OFF.
 - The default setting is 3.
 - The display returns automatically to the main menu after 5 seconds without any key operation is performed.

■ Scan types

Scanning is an efficient way to locate signals quickly over a wide frequency range. The transceiver has priority scan and normal scan.

In addition, the weather alert and auto scan functions are available for standby convenience. These functions can be activated simultaneously, depending on the setting in the set mode.

PRIORITY SCAN



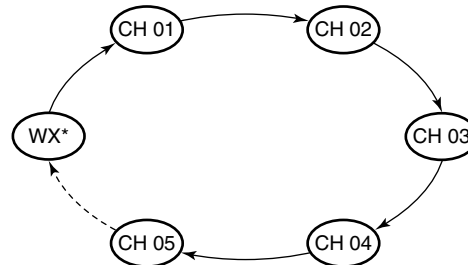
* Previously selected weather channel.
(when the weather alert function is activated)

Priority scan searches through all TAG channels in sequence while monitoring Channel 16. When a signal is detected on Channel 16, scan pauses until the signal disappears; when a signal is detected on a channel other than Channel 16, scan becomes Dualwatch until the signal disappears.

Set the TAG channels (scanned channels) before scanning. Clear the TAG for unwanted channels which inconveniently stop scanning, such as those for digital communications. (p. 15)

/// Choose the desired scan type from “Priority” or “Normal” in the set mode.

NORMAL SCAN



* Previously selected weather channel.
(when the weather alert function is activated)

Normal scan, like priority scan, searches through all TAG channels in sequence. However, unlike priority scan, Channel 16 is not checked unless Channel 16 is set as a TAG channel.

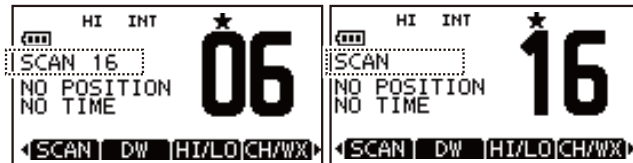
■ Starting a scan

Set the scan type (Priority or Normal scan), WX Alert function and Scan Timer function in advance, using the se mode.

To select a scan type:

Select the scan type between Normal scan and Priority scan.

- ① Push [MENU].
- ② Push [▲] or [▼] to select “Radio Settings”, then push [ENTER].
- ③ Select “Scan Type”, then push [ENTER].
- ④ Select “Normal Scan” or “Priority Scan” and push [ENTER] to program.
- ⑤ Select “BACK” to return to the previous page, or simply select “EXIT” to return to the main menu screen.
 - “SCAN” appears if “Normal Scan” is selected, and “SCAN 16” appears if “Priority Scan” is selected as show below.



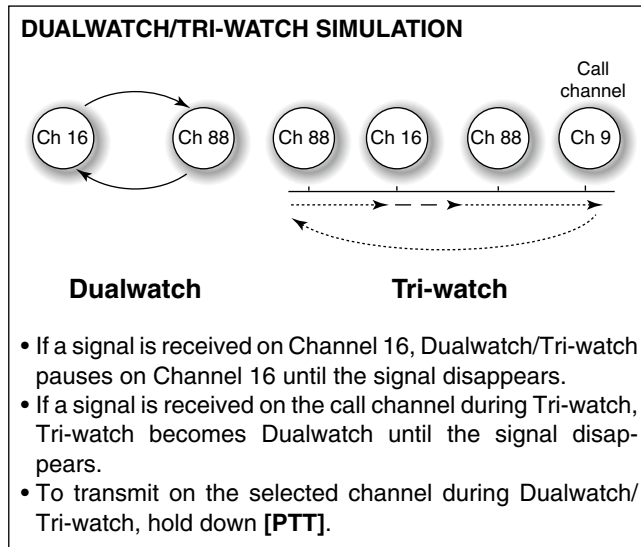
To scan:

Select “SCAN” and push on the soft key to start or stop scanning.

- Pushing [PTT] also stops the scan.
- When a signal is received, scan pauses until the signal disappears or resumes after pausing for 5 seconds according to the Scan Timer setting.
- While scanning, push [▲] or [▼] to check which channels have been set as TAG channels or to change the scanning direction.

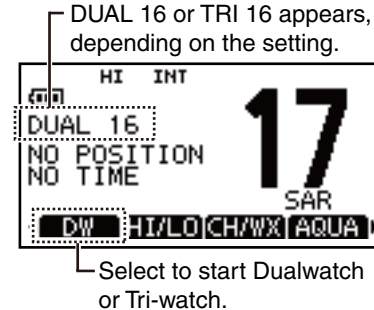
■ Description

Dualwatch monitors Channel 16 while you are receiving on another channel; Tri-watch monitors Channel 16 and the call channel while receiving another channel. Dualwatch/Triwatch is convenient for monitoring Channel 16 when you are operating on another channel.



■ Operation

- ① Push **[MENU]**.
- ② Push **[▲]** or **[▼]** to select "Radio Settings", then push **[ENTER]**.
- ③ Select "Dual/Tri-Watch", then push **[ENTER]**.
- ④ Select "Dualwatch" or "Tri-watch" and push **[ENTER]** to program.
- ⑤ Select "BACK" to return to the previous page, or simply select "EXIT" to return to the main menu screen.
 - "DUAL 16" appears if "Dualwatch" is selected, and "TRI 16" appears if "Tri-watch" is selected as shown below.



■ DSC address ID

◇ Programming Individual ID

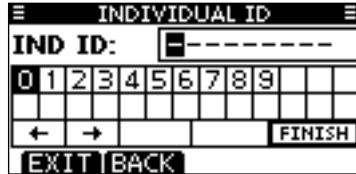
A total of 100 DSC address IDs can be programmed and assigned a name of up to 10 characters.

- ① Enter “INDIVIDUAL ID” in the DSC SETTINGS menu.

◀MENU▶ ⇄ ▶DSC Settings▶ ⇄ ▶Individual ID▶
 (Push [MENU]) (Push [▲]/[▼], then push [ENT].)

- ② Push [ADD].

- The “INDIVIDUAL ID” program screen is displayed.



- ③ Enter a desired individual ID in the following instruction:
- Select a desired number using [▲]/[▼]/[◀]/[▶].
 - Push [ENT] to set it.
 - To move the cursor, select either arrow, “←” or “→,” then push [ENT].
- /// The first digit is specified as ‘0’ for a Group ID.
 /// The first two digits are ‘0’ for any Coast station ID.

- ④ Repeat step ③ to enter all 9 digits.

- ⑤ After entering the 9 digit code, push [ENT] to set it.
- ID name programming screen is displayed.



- ⑥ Enter a desired 10 digit ID name in the following instruction:
- Select a desired character using [▲]/[▼]/[◀]/[▶].
 - Push [ENT] to set it.
 - To move the cursor, select either arrow, “←” or “→,” then push [ENT].
 - Push [123] then [!\$?] then [ABC] to select a character group.
- ⑦ After entering the ID name, select “FINISH” by pushing [▲]/[▼]/[◀]/[▶], then push [ENT] to program it.
- ⑧ The “INDIVIDUAL ID” list screen is displayed.
- Push [MENU] to exit the MENU screen.



8 DSC OPERATION

◇ Programming Group ID

- ① Enter “GROUP ID” in the DSC SETTINGS menu.

◀MENU▶ ⇄ ▶DSC Settings▶ ⇄ ▶Group ID▶
(Push [MENU]) (Push [▲]/[▼], then push [ENT].)

- When no group ID is programmed, “No ID” is displayed. In this case, push [MENU] to exit the MENU screen.
- ② Push [ADD].
- The “GROUP ID” program screen is displayed.



- ③ Enter a desired group ID in the following instruction:
- Select a desired number using [▲]/[▼]/[◀]/[▶].
 - Push [ENT] to set it.
 - To move the cursor, select either arrow, “←” or “→,” then push [ENT].
- /// The first digit is fixed as ‘0’ for a Group ID.
/// The first two digits are ‘0’ for any Coast station ID.
- ④ Repeat step ③ to input the specific 9 digits group code.

- ⑤ After entering the 9 digit code, push [ENT] to set it.
- Group ID name programming screen is displayed.



- ⑥ Enter a desired 10 digit ID name in the following instruction:
- Select a desired character using [▲]/[▼]/[◀]/[▶].
 - Push [ENT] to set it.
 - To move the cursor, select either arrow, “←” or “→,” then push [ENT].
 - Push [123], [!\$?] or [ABC] to select a character group.
- ⑦ After entering the ID name, select “FINISH” pushing [▲]/[▼]/[◀]/[▶], then push [ENT] to program it.
- The “GROUP ID” list screen is displayed.



- ⑧ Push [MENU] to exit the MENU screen.

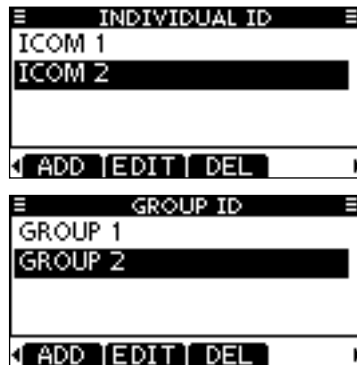
◇ Deleting Individual/Group ID

- ① Enter “INDIVIDUAL ID” or “GROUP ID” in the DSC SETTINGS menu.

◀MENU▶ ⇨ ▶DSC Settings▶ ⇨ ▶Individual ID▶/▶Group ID▶
(Push [MENU]) (Rotate Dial, then push [ENT].)

• When no address ID is programmed, “No ID” is displayed. In this case, push [MENU] to exit the MENU screen.

- ② Select a desired ID name (or ID, if no name is programmed) with Dial or [▲]/[▼] to be deleted, then push [DEL].



- ③ Push [OK] to delete the ID, and return to the “INDIVIDUAL ID” or “GROUP ID” list screen.
- Push [CANCEL] to cancel it.



- ④ Push [MENU] to exit the MENU screen.

8 DSC OPERATION

■ Position and time programming

A Distress call should include the ship's position and time data. If no GPS is connected, your position and UTC (Universal Time Coordinated) time should be manually input. They are automatically included when a GPS receiver compatible with the NMEA0183 ver. 2.0 or 3.01 format is connected.

- Manual programming is disabled when a GPS receiver is connected.
- Manually programmed position and time data will be held for only 23.5 hours.

① Enter "POSITION INPUT" in the DSC SETTINGS menu.

<MENU>	⇄	<DSC Settings>	⇄	<Position Input>
(Push [MENU])		(Push [▲]/[▼], then push [ENT].)		

② Edit your latitude and longitude position data using Dial, or [▲]/[▼]/[◀]/[▶].

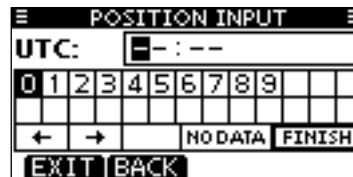
- Select a desired number using Dial, or [▲]/[▼]/[◀]/[▶].
- Push [ENT] or Dial to set it.
- To move the cursor, select either arrow, "←" or "→," then push [ENT].
- Select N: North latitude or S: South latitude when the cursor is on the 'N' or 'S' position.
- Select W: West longitude or E: East longitude when the cursor is on the 'W' or 'E' position.



③ After entering the position data, push [ENT] to program it.

④ The UTC time programming screen is displayed, enter the UTC time in the following way:

- Select a desired number using [▲]/[▼]/[◀]/[▶].
- Push [ENT] to set it.
- To move the cursor, select either arrow, "←" or "→," then push [ENT].



⑤ Push [ENT] to program your position and time data.

- Return to the "DSC SETTING" screen.

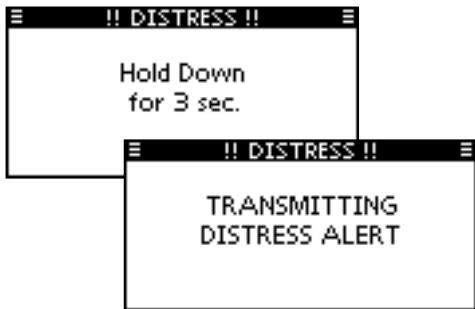
■ Distress call

A Distress call should be transmitted if, in the opinion of the Master, the ship or a person is in distress and requires immediate assistance.

NEVER MAKE A DISTRESS CALL IF YOUR SHIP OR A PERSON IS NOT IN AN EMERGENCY. A DISTRESS CALL SHOULD BE MADE ONLY WHEN IMMEDIATE HELP IS NEEDED.

◇ Simple call

- ① Confirm no Distress call is being received.
- ② While lifting up the key cover, hold down [DISTRESS] for 3 seconds to transmit the Distress call.
 - While holding down [DISTRESS], count down beeps sound and both the key and display backlighting blink.
 - DSC channel (Channel 70) is automatically selected and the Distress call is transmitted.



- ③ After transmitting the call, the transceiver waits for an acknowledgment call.
 - The Distress call is automatically transmitted every 3.5 to 4.5 minutes, until an acknowledgement is received ('Call repeat' mode), or DSC Cancel call is made (p. 26).
 - Push [RESEND] to manually transmit the Distress repeat call.
 - Push [◀]/[▶] then push [INFO] to display the transmitted Distress call information.
 - Push [◀]/[▶] then push [PAUSE] to pause the 'Call repeat' mode, push [RESUME] to resume it.



- ④ After receiving the acknowledgment, push [ALARM OFF] then reply using the microphone.

A distress alert contains (default):

- Nature of distress : Undesignated distress
- Position data : The latest GPS or manual input position data is held for 23.5 hours, or until the power is turned OFF.

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8 DSC OPERATION

◇ Distress cancel call

- ① While waiting for an acknowledgment call, push [CANCEL].



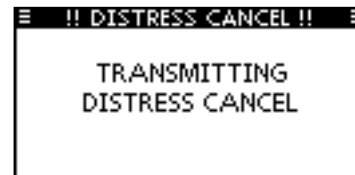
- ② Push [CONTINUE].
- Push [BACK] to return to waiting for an acknowledgement call.



- ③ Push [FINISH].
- Push [EXIT] to return to waiting for an acknowledgement call.



- ④ The Distress cancel call is transmitted.



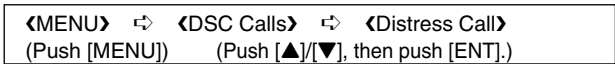
- ⑤ Channel 16 is automatically selected.
- Report your situation using the microphone.
 - After the report, push [EXIT] to return to the normal operating mode.



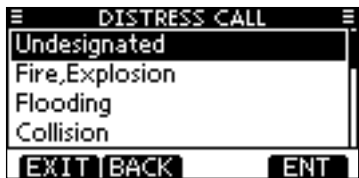
◇ Regular call

The nature of the Distress call should be included in the Distress call.

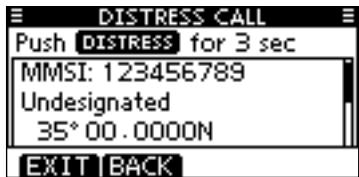
- ① Enter "DISTRESS CALL" in the DSC CALLS menu.



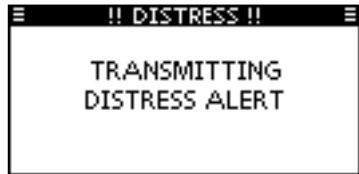
- ② Select the nature of the distress using Dial or [▲]/[▼], then push Dial or [ENT].
• 'Undesignated,' 'Fire,Explosion,' 'Flooding,' 'Collision,' 'Grounding,' 'Capsizing,' 'Sinking,' 'Adrift,' 'Abandoning ship,' 'Piracy' or 'Man Overboard' is selectable.
• The nature of the distress is stored for 10 minutes after a selection is made.



- ③ The Distress call confirmation screen is displayed.
• Rotate Dial or push [▲]/[▼] to see the hidden lines.



- ④ Hold down [DISTRESS] for 3 seconds to transmit the Distress call.
• While holding down [DISTRESS], count down beeps sound and both the key and display backlight blink.
• The selected nature of the distress is stored for 10 minutes.



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8 DSC OPERATION

■ Transmitting DSC calls

/// To ensure correct operation of the DSC function, make sure you correctly set the CH70 SQL LEVEL. (p. 64)

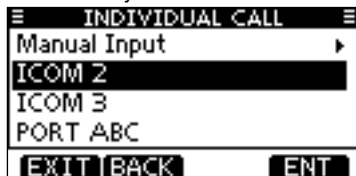
◇ Transmitting an individual call

The Individual call function allows you to transmit a DSC signal to only a specific station.

- ① Enter "INDIVIDUAL CALL" in the DSC CALLS menu.

<MENU>	↔	<DSC Calls>	↔	<Individual Call>
(Push [MENU])		(Push [▲]/[▼], then push [ENT].)		

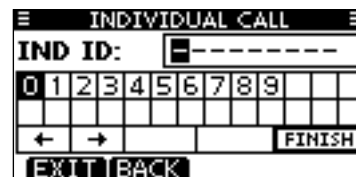
- ② Select the desired preprogrammed individual address, or "Manual Input," using [▲]/[▼], then push [ENT].
- The ID code for the Individual call can be set first. (p. 19)
 - When "Manual Input" is selected, set a desired 9 digit MMSI ID code for the individual you wish to call.



/// About Manual Inputting:

Enter a desired individual ID in the following way:

- Select a desired number using [▲]/[▼]/[◀]/[▶].
- Push [ENT] to set it.
- To move the cursor, select either arrow, "←" or "→," then push [ENT].
- The first digit is specified as '0' for a Group ID.
- The first two digits are '0' for any coast station ID.



- ③ Select Routine, Safety or Urgency as the desired call type using [▲]/[▼], then push [ENT].



/// **NOTE:** When a coast station is selected in step ②, the voice channel is automatically specified by the coast station. Therefore, skip step ④ and go directly to step ⑤.

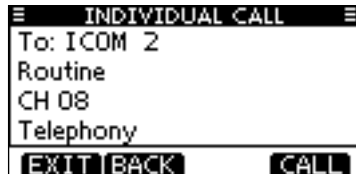
☞ Continued on the next page.

◇ Transmitting an Individual call (continued)

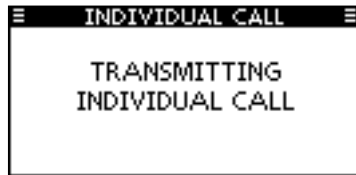
- ④ Select a desired intership channel using [▲](CH)/[▼](CH), then push [ENT].
 - Intership channels are already preset into the transceiver in the recommended order.



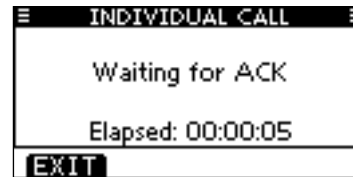
- ⑤ A confirmation screen appears.
 - Confirm the call contents.



- ⑥ Push [CALL] to transmit the Individual call.
 - If Channel 70 is busy, the transceiver stands by until the channel becomes clear.



- ⑦ Standby on Channel 70 until an acknowledgement is received.



- ⑧ When the acknowledgement 'Able to comply' is received, beeps sound and the screen below is displayed.



- Or, when the acknowledgement 'Unable to comply' is received, beeps sound and the screen below is displayed.
- Push [ALARM OFF] to stop the beeps and then return to the operating channel (before you entered the MENU screen).



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◇ Transmitting an Individual Acknowledgement

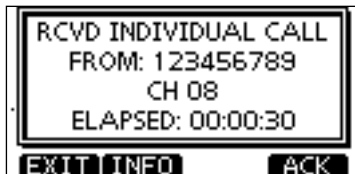
When receiving an Individual call, you can transmit an acknowledgement ('Able to Comply,' 'Propose New Channel' or 'Unable to Comply') by using the on-screen prompts (Quick ACK.) Also, you can send an acknowledgement through the MENU system (Manual ACK.)

Quick ACK:

- ① When an Individual call is received, beeps sound and the screen as shown below is displayed.
Push [ALARM OFF] to stop the beeps.



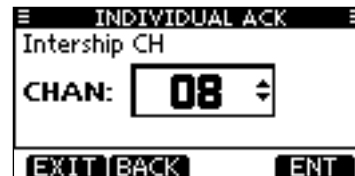
- ② Push [ACK].



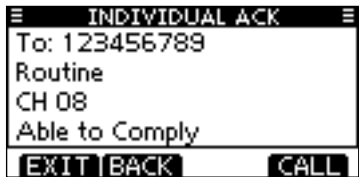
- ③ Select one of three options, then push [ENT].



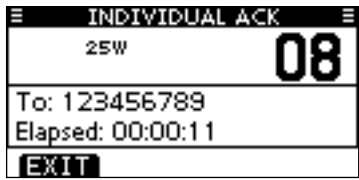
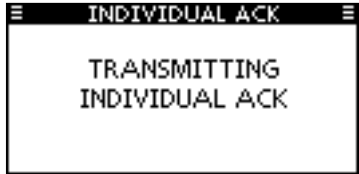
- Able to Comply : Make an acknowledgment call without any changes.
- Unable to Comply : You cannot make an acknowledgment call.
The Acknowledgement call ('Unable to Comply') can be automatically transmitted, if set. See page 61 for details.
- Propose New Channel : You can make an acknowledgement call, but you specify the intership channel. Select a desired intership channel, using Dial, or [▲](CH)/[▼](CH), then push [ENT].



- ④ The Individual ACK confirmation screen is displayed. Push [CALL] to transmit an acknowledgement call.



- ⑤ Following screens as shown below are displayed.



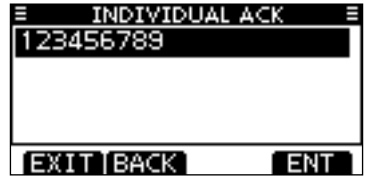
- ⑥ Comply to the call using the microphone.
- ⑦ Push [EXIT] to return to the normal operating mode.

Manual ACK:

- ① Enter "INDIVIDUAL ACK" in the DSC CALLS menu.
 - When no Individual call has been received, "Individual ACK" item will not be displayed.



- ② Select a desired individual address or ID code to reply to, using Dial or [▲]/[▼], then push [ENT].



- ③ Perform steps ③ to ⑦, as described in "Quick ACK:" to the left.

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1 CHAPTER_CONTINUED

◇ Transmitting a Group call

The Group call function allows you to transmit a DSC signal to only a specific group.

- ① Enter “GROUP CALL” in the DSC CALLS menu.

<MENU>	⇄	<DSC Calls>	⇄	<Group Call>
(Push [MENU])		(Push [▲]/[▼], then push [ENT].)		

- ② Select the desired preprogrammed group address or “Manual Input,” using [▲]/[▼], then push [ENT].
- The ID code for the Group call can be set first. (p. 20)
 - When “Manual Input” is selected, set the 8 digit ID code for the group you wish to call.



- ③ Select a desired intership channel using [▲](CH)/[▼](CH), then push [ENT].
- Intership channels are already preset into the transceiver in the recommended order.



▨ About Manual Inputting:

Enter a desired group ID in the following way:

- Select a desired number using [▲]/[▼]/[◀]/[▶].
- Push [ENT] to set it.
- To move the cursor, select either arrow, “←” or “→,” then push [ENT].
- The first digit is specified as ‘0’ for a Group ID.
- The first two digits are ‘0’ for any Coast station ID.



- ④ A confirmation screen appears.
- Confirm the call contents.



- ⑤ Push [CALL] to transmit the Group call.
 - If Channel 70 is busy, the transceiver stands by until the channel becomes clear.



- ⑥ After the Group call has been transmitted, the following screen is displayed.



- ⑦ Announce the information using the microphone.
- ⑧ After the announcement, push [EXIT] to return to the normal operating mode.

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8 DSC OPERATION

◇ Transmitting an All Ships call

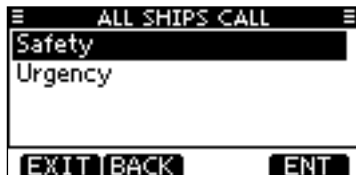
All ships, that have DSC transceiver, use Channel 70 as their 'listening channel.' When you want to announce a message to these ships within range, use the 'All Ships Call' function.

- ① Enter "ALL SHIPS CALL" in the DSC CALLS menu.

<MENU> ⇄ **<DSC Calls>** ⇄ **<All Ships Call>**
(Push [MENU]) (Push [▲]/[▼], then push [ENT].)

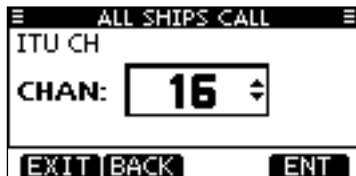
- ② Select a desired category, using [▲]/[▼], then push [ENT].

- The selectable categories may differ, depending on the programmed setting. Ask your dealer for the selectable categories.



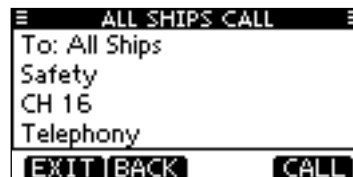
- ③ Select a desired traffic channel, using [▲]/[▼], then push [ENT].

- The selected channel is displayed.



- ④ A confirmation screen appears.

- Confirm the call contents.

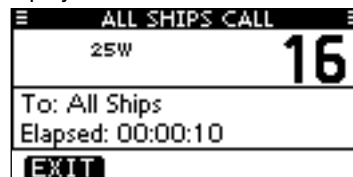


- ⑤ Push [CALL] to transmit the All Ships call.

- If Channel 70 is busy, the transceiver stands by until the channel becomes clear.



- ⑥ After the All Ships call has been transmitted, the following screen is displayed.



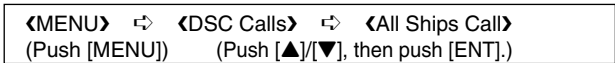
- ⑦ Announce the message using the microphone.

- ⑧ After the announcement, push [EXIT] to return to the normal operating mode.

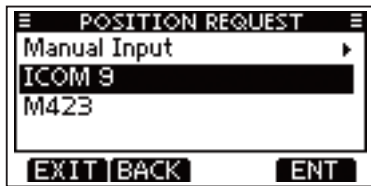
◇ Transmitting a Position request call

Transmit a Position request call when you want to know a specific ship's current position.

- ① Enter "POSITION REQUEST" in the DSC CALLS menu.



- ② Select the desired preprogrammed Position request address or "Manual Input," using [▲]/[▼], then push [ENT].
 - The ID code for the Position request call can be set first. (p. 20)
 - When "Manual Input" is selected, set the 8 digit ID code for the group you wish to call.



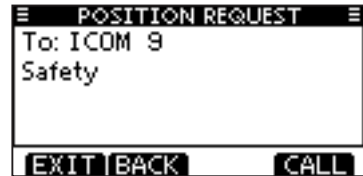
About Manual Inputting:

Enter a desired address ID in the following way:

- Select the desired number using [▲]/[▼]/[←]/[→].
- Push [ENT] to set it.
- To move the cursor, select either arrow, "←" or "→," then push [ENT].
- The first digit is specified as '0' for a Group ID.
- The first two digits are '0' for any Coast station ID.



- ③ A confirmation screen appears.
 - Confirm the call contents.



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☞ Continued on the next page.

◇ **Transmitting a Position report call**

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8 DSC OPERATION

◇ Transmitting a Position Reply call

Transmit a Position Reply call when a Position Request call is received.

When the "POSITION ACK" in DSC Settings is set to 'Auto TX' (p. 61), the transceiver automatically transmits a reply call when receiving a Position Request call.

Quick Reply:

- ① When a Position Request call is received, beeps sound and the screen as shown below is displayed. Push [ALARM OFF] to stop the beeps.



- ② Push [ACK].



- Push [INFO] to display the Position Request call information. Push [BACK] to return to the previous screen, or push [ACK].



- ③ The Position Reply confirmation screen is displayed. Push [CALL] to transmit the reply call.



- ④ While transmitting the reply call, the screen as shown below is displayed, and then returns to the normal operating mode.



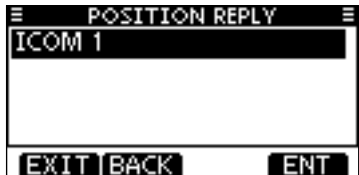
Manual Reply:

- ① Enter "POSITION REPLY" in the DSC CALLS menu.
 - If no Position Request call has been received, the "POSITION REPLY" item will not be displayed.

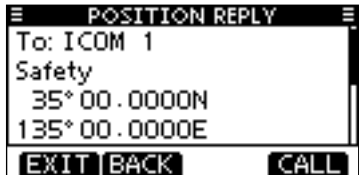
◀MENU▶ ⇔ ◀DSC Calls▶ ⇔ ◀Position Reply▶
 (Push [MENU]) (Push [▲]/[▼], then push [ENT].)



- ② Select a desired Position Request call to reply to, using [▲]/[▼], then push [ENT].



- ③ The Position Reply call confirmation screen is displayed. Push [CALL] to transmit the acknowledgement call.



- ④ While transmitting the reply call, the screen as shown below is displayed, and then returns to the normal operating mode.



When no GPS receiver is connected, and both position and time have been manually programmed, the screen as shown below appears. Edit your latitude and longitude position and UTC time data as follows:



Push [CHG], then edit your latitude and longitude position and UTC time data.

- Select a desired number using [▲]/[▼]/[◀]/[▶].
- Push [ENT] to set it.
- To move the cursor, select either arrow, "←" or "→," then push [ENT].
- Select N: North latitude or S: South latitude when the cursor is on the 'N' or 'S' position.
- Select W: West longitude or E: East longitude when the cursor is on the 'W' or 'E' position.

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8 DSC OPERATION

◇ Transmitting a Position Report Reply call

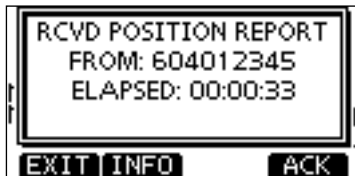
Transmit a Position Report Reply call when a Position Report Request call is received.

Quick Reply:

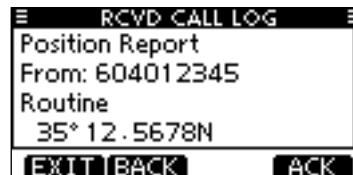
- ① When a Position Report Request call is received, beeps sound and the screen as shown below is displayed.
Push [ALARM OFF] to stop the beeps.



- ② Push [ACK].



- Push [INFO] to display the Position Report Request call information.
Push [BACK] to return to the previous screen, or push [ACK].



- ③ The Position Report Reply confirmation screen is displayed.
Push [CALL] to transmit the reply call.



- ④ While transmitting the reply call, the screen as shown below is displayed, and then returns to the normal operating mode.



Manual Reply:

- ① Enter "POSITION REPORT REPLY" in the DSC CALLS menu.

- If no Position Report Request call has been received, the "POSITION REPORT REPLY" item will not be displayed.

◀MENU▶ ⇔ ◀DSC Calls▶ ⇔ ◀Position Report Reply▶
 (Push [MENU]) (Push [▲]/[▼], then push [ENT].)

"POSITION REPORT REPLY" item will not be displayed.

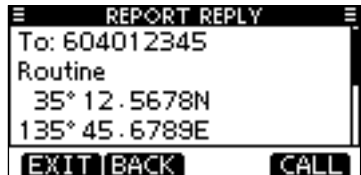


- ② Select a desired Position Report Request call to be replied, using [▲]/[▼], then push [ENT].



- ③ The Position Report Reply call confirmation screen is displayed.

Push [CALL] to transmit the acknowledgement call.



- ④ While transmitting the reply call, the screen as shown below is displayed, and then returns to the normal operating mode.



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8 DSC OPERATION

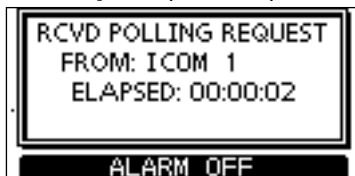
◇ Transmitting a Polling Reply call

Transmit a Polling Reply call when a Polling Request call is received.

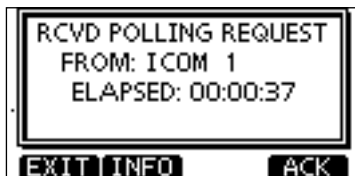
When the "POSITION ACK" in DSC Settings is set to 'Auto TX' (p. 61), the transceiver automatically transmits a reply call when receiving a Polling Request call.

Quick Reply:

- ① When a Polling Request call is received, beeps sound and the screen as shown below is displayed.
Push [ALARM OFF] to stop the beeps.



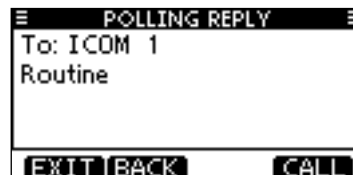
- ② Push [ACK].



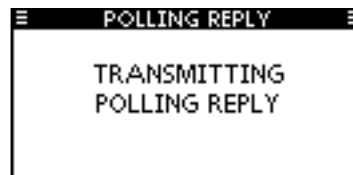
- Push [INFO] to display the Polling Request call information.
Push [BACK] to return to the previous screen, or push [ACK].



- ③ The Polling Reply confirmation screen is displayed.
Push [CALL] to transmit the reply call.



- ④ While transmitting the reply call, the screen as shown below is displayed, and then returns to the normal operating mode.



Manual Reply:

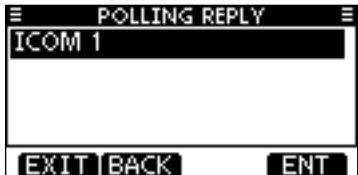
- ① Enter "POLLING REPLY" in the DSC CALLS menu.

◀MENU▶ ⇄ ▶DSC Calls▶ ⇄ ▶Polling Reply▶
(Push [MENU]) (Push [▲]/[▼], then push [ENT].)

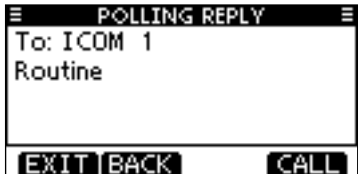
• If no Polling Request call has been received, the "POLLING REPLY" item will not be displayed.



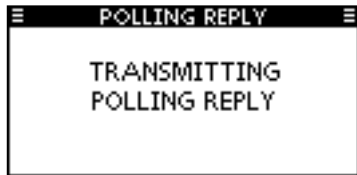
- ② Select a desired Polling Request call to be replied, using [▲]/[▼], then push [ENT].



- ③ The Position Polling Reply call confirmation screen is displayed. Push [CALL] to transmit the acknowledgement call.



- ④ While transmitting the reply call, the screen as shown below is displayed, and then returns to the normal operating mode.



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8 DSC OPERATION

◇ Transmitting a Test call

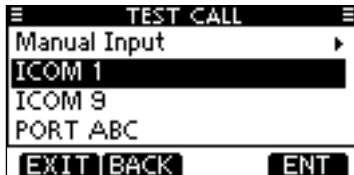
Testing on the exclusive DSC distress and safety calling channels should be avoided as much as possible. When testing on the distress/safety channel is unavoidable, you should indicate that these are test transmissions.

Normally the test call would require no further communications between the two stations involved.

- 1 Enter "TEST CALL" in the DSC CALLS menu.

<MENU>	↔	<DSC Calls>	↔	<Test Call>
(Push [MENU])		(Push [▲]/[▼], then push [ENT].)		

- 2 Select a desired preprogrammed individual address, or "Manual Input," then push [ENT].
 - The ID code for the Individual call can be set first. (p. 19)
 - When "Manual Input" is selected, set the 9 digit MMSI ID code for the individual you wish to call.



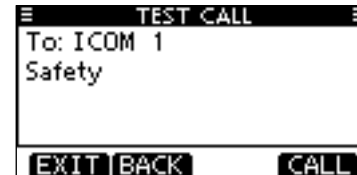
/// About Manual Inputting:

Enter a desired address ID in the following way:

- Select a desired number using [▲]/[▼]/[◀]/[▶].
- Push [ENT] to set it.
- To move the cursor, select either arrow, "←" or "→," then push [ENT].
- The first digit is specified as '0' for a Group ID.
- The first two digits are '0' for any Coast station ID.



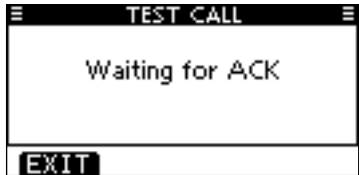
- 3 A confirmation screen appears.
 - Confirm the call contents.



- ④ Push [CALL] to transmit the Test call.
 - If Channel 70 is busy, the transceiver stands by until the channel becomes clear.



- ⑤ After the Test call has been transmitted, the following screen is displayed.



- ⑥ When the acknowledgement call is received, beeps sound and the following screen is displayed.



- ⑦ Push [ALARM OFF] to stop the beeps, and then the screen as shown below is displayed.



- ⑧ Push [EXIT] to return to the normal operating mode.

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8 DSC OPERATION

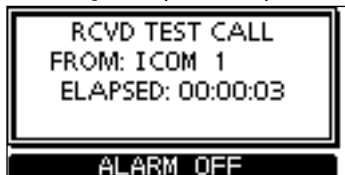
◇ Transmitting a Test Acknowledgement call

When the "TEST ACK" in DSC settings is set to 'Auto TX' (p. 61), the transceiver automatically transmits a reply call when receiving a Test call.

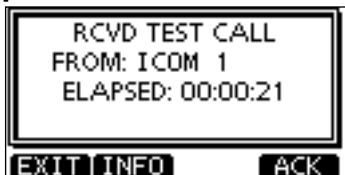
Quick ACK:

- ① When a Test call is received, beeps sound and the screen as shown below is displayed.

Push [ALARM OFF] to stop the beeps.



- ② Push [ACK].



- Push [INFO] to display the Test call information.
Push [BACK] to return to the previous screen, or push [ACK].



- ③ The Test ACK confirmation screen is displayed.
Push [CALL] to transmit the acknowledgement call.



- ④ While transmitting the acknowledgement call, the screen as shown below is displayed, and then returns to the normal operating mode.

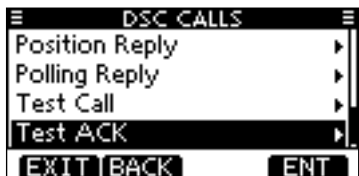


Manual ACK:

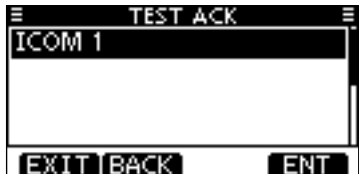
- ① Enter "TEST ACK" in the DSC CALLS menu.
 - If no Test call has been received, the "TEST ACK" item will not

◀MENU▶ ⇄ ◀DSC Calls▶ ⇄ ◀Test ACK▶
 (Push [MENU]) (Push [▲]/[▼], then push [ENT].)

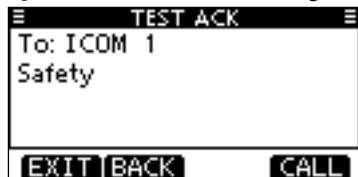
be displayed.



- ② Select a desired Test call to reply to, using [▲]/[▼], then push [ENT].



- ③ The Test ACK confirmation screen is displayed. Push [CALL] to transmit the acknowledgement call.



- ④ While transmitting the acknowledgement call, the screen as shown below is displayed, and then returns to the normal operating mode.



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■ Receiving DSC calls

◇ Receiving a Distress Call

When a Distress Call is received:

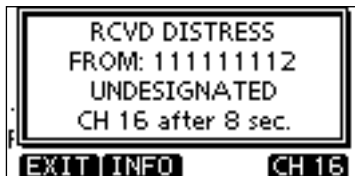
- The emergency alarm sounds.
- “RCVD DISTRESS” pops up and the LCD backlight blinks.
- Continue monitoring the current operating channel for 10 seconds. After that, the transceiver automatically switches to Channel 16.

/// This action may differ, depending on the CH16 Switch setting. See page 62 for more details.

- ① Push [ALARM OFF] to stop the alarm and the backlight blinking.



- ② Push either softkey to select a desired action.

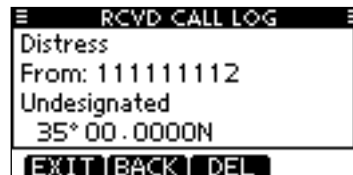


[EXIT]

- Push to return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - By pushing [PTT], the transceiver also exits the DSC mode.
 - “☑” continues to blink and the Call is stored in the Received Call Log.

[INFO]

- Push to display the Received call information. (p. 58)



[CH 16]

- Push to switch the operating channel to Channel 16, and monitor Channel 16, as a coast station may require assistance.
 - If you haven't pushed any key within 10 seconds, the operating channel automatically switches to Channel 16.



◇ Receiving a Distress Acknowledgement

When a Distress Acknowledgement to other ship is received:

- The emergency alarm sounds.
 - “RCVD DISTRESS ACK” pops up and the LCD backlight blinks.
 - Continue monitoring the current operating channel for 10 seconds. After that, the transceiver automatically switches to Channel 16.
- /// This action may differ, depending on the CH16 Switch setting. See page 62 for more details.

① Push [ALARM OFF] to stop the alarm and the backlight blinking.



② Push either softkey to select a desired action.

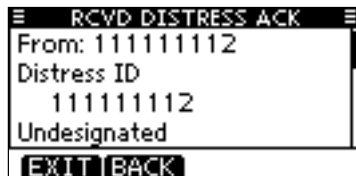


[EXIT]

- Push to return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - By pushing [PTT], the transceiver also exits the DSC mode.
 - “☑” continues to blink and the Call is stored in the Received Call Log.

[INFO]

- Push to display the Received call information. (p. 58)



[CH 16]

- Push to switch the operating channel to Channel 16, and monitor Channel 16, as a coast station may require assistance.
 - If you haven't pushed any key within 10 seconds, the operating channel also switches to Channel 16.



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8 DSC OPERATION

◇ Receiving a Distress Relay Call

When a Distress Relay call is received:

- The emergency alarm sounds.
 - “RCVD DISTRESS RELAY” pops up and the LCD backlight blinks.
 - Continue monitoring the current operating channel for 10 seconds. After that, the transceiver automatically switches to Channel 16.
- /// This action may differ, depending on the CH16 Switch setting. See page 62 for more details.
- ① Push [ALARM OFF] to stop the alarm and the backlight blinking.



- ② Push either softkey to select a desired action.



[EXIT]

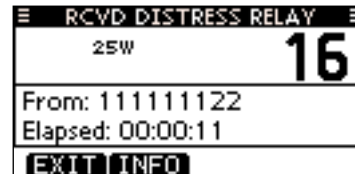
- Push to return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - By pushing [PTT], the transceiver also exits the DSC mode.
 - “☑” continues to blink and the Call is stored in the Received Call Log.

[INFO]

- Push to display the Received call information. (p. 58)

[CH 16]

- Push to switch the operating channel to Channel 16, and monitor Channel 16, as a coast station may require assistance.
 - If you haven't pushed any key within 10 seconds, the operating channel also switches to Channel 16.



◇ Receiving a Distress Relay Acknowledgement

When a Distress Relay Acknowledgement is received:

- The emergency alarm sounds.
- “RCVD DIST RELAY ACK” pops up and the LCD backlight blinks.
- Continue monitoring the current operating channel for 10 seconds. After that, the transceiver automatically switches to Channel 16.
- ▨ This action may differ, depending on the CH16 Switch setting. See page 62 for more details.

① Push [ALARM OFF] to stop the alarm and the backlight blinking.



② Push either softkey to select a desired action.



[EXIT]

- Push to return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - By pushing [PTT], the transceiver also exits the DSC mode.
 - “✉” continues to blink and the Call is stored in the Received Call Log.

[INFO]

➤ Push to display the Received call information. (p. 58)

[CH 16]

- Push to switch the operating channel to Channel 16, and monitor Channel 16, as a coast station may require assistance.
 - If you haven't pushed any key within 10 seconds, the operating channel also switches to Channel 16.



▨ **NOTE:** If a duplicate call is received within 1 hour after receiving the Distress Relay or Distress Relay Acknowledgement call, the alarm does not sound.

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8 DSC OPERATION

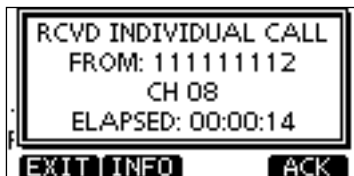
◇ Receiving an Individual Call

When an Individual Call is received:

- The emergency alarm sounds for 2 minutes, depending on the received Category.
- “RCVD INDIVIDUAL CALL” pops up. The LCD backlight blinks for 2 minutes, depending on the received Category.
- ① Push [ALARM OFF] to stop the alarm and the backlight blinking.
 - If you haven’t pushed [ALARM OFF] within 2 minutes, the next screen automatically appears, depending on the received Category.



- ② Push either softkey to select a desired action.



[EXIT]

- Push to ignore the Call and return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - The Call is stored in the Received Call Log.
 - “☑” continues to blink and the Call is stored in the Received Call Log.

[INFO]

- Push to display the Received call information. (p. 59)

[ACK]

- Push to display the “INDIVIDUAL ACK” screen to reply to the Call, and select the channel specified by the calling station for voice communication, depending on your situation. See page 30 for details of the Individual Acknowledgement procedure.



When “INDIVIDUAL ACK” is set to “Auto ACK (Unable),” the transceiver automatically replies to the Call. In that case, both the TX and RX calls are stored in the Transmitted and Received Call Logs.

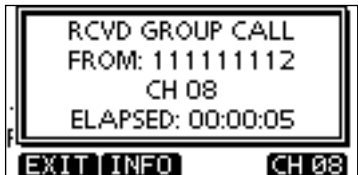
◇ Receiving a Group Call

When a Group Call is received:

- The emergency alarm sounds for 2 minutes, depending on the received Category.
 - “RCVD GROUP CALL” pops up. The LCD backlight blinks for 2 minutes, depending on the received Category.
- ① Push [ALARM OFF] to stop the alarm and the backlight blinking.
- If you haven’t pushed [ALARM OFF] within 2 minutes, the next screen automatically appears, depending on the received Category.



② Push either softkey to select a desired action.



[EXIT]

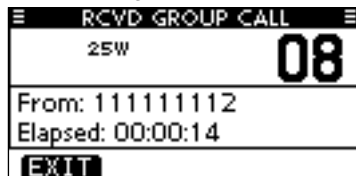
- Push to ignore the Call and return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - “✉” continues to blink and the Call is stored in the Received Call Log.

[INFO]

- Push to display the Received call information. (p. 59)

[CH xx*]

- * xx is specified by the calling station. (Example: 08)
- Push to monitor the specified channel for an announcement from the calling station.



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8 DSC OPERATION

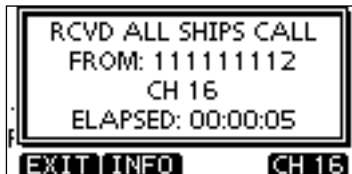
◇ Receiving an All Ships Call

When an All Ships Call is received:


- The emergency alarm sounds for 2 minutes, depending on the received Category.
- “RCVD ALL SHIPS CALL” pops up. The LCD backlight blinks for 2 minutes, depending on the received Category.
- ① Push [ALARM OFF] to stop the alarm and the backlight blinking.
 - If you haven’t pushed [ALARM OFF] within 2 minutes, the next screen automatically appears, depending on the received Category.



- ② Push either softkey to select a desired action.



[EXIT]

- Push to ignore the Call and return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - “ ” continues to blink and the Call is stored in the Received Call Log.

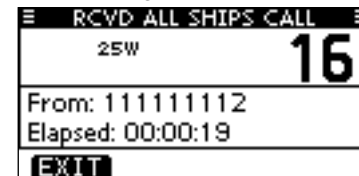
[INFO]

- Push to display the Received call information. (p. 59)

[CH xx*]

* xx is specified by the calling station. (Example: 16)

- Push to monitor the specified channel for an announcement from the calling station.



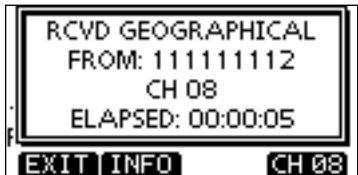
◇ Receiving a Geographical Area Call

When a Geographical Area Call (for the area you are in) is received:

- The emergency alarm sounds for 2 minutes, depending on the received Category.
 - “RCVD GEOGRAPHICAL CALL” pops up. The LCD backlight blinks for 2 minutes, depending on the received Category.
- ① Push [ALARM OFF] to stop the alarm and the backlight blinking.
- If you haven’t pushed [ALARM OFF] within 2 minutes, the next screen automatically appears, depending on the received Category.



② Push either softkey to select a desired action.



[EXIT]

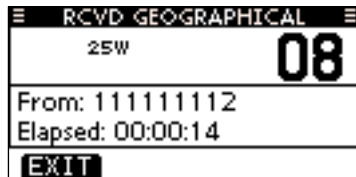
- Push to ignore the Call and return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - “✉” continues to blink and the Call is stored in the Received Call Log.

[INFO]

- Push to display the Received call information. (p. 59)

[CH xx*]

- * xx is specified by the calling station.
- Push to monitor the specified channel for an announcement from the calling station.



/// When no GPS receiver is connected or if there is a problem with the connected receiver, all Geographical Area Calls are received, regardless of your position.

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8 DSC OPERATION

◇ Receiving a Position Request Call

When a Position Request Call is received:

- The emergency alarm sounds for 2 minutes.
- “RCVD POS REQUEST” pops up. The LCD backlight blinks for 2 minutes.
- ① Push [ALARM OFF] to stop the alarm and the backlight blinking.
 - If you haven’t pushed [ALARM OFF] within 2 minutes, the next screen automatically appears.



- ② Push either softkey to select a desired action.



[EXIT]

- Push to ignore the Call and return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - “☑” continues to blink and the Call is stored in the Received Call Log.

[INFO]

- Push to display the Received call information. (p. 59)

[ACK]

- Push to display the “POSITION REPLY” screen and send a reply to the Call. (p. 39)



When “POSITION ACK” is set to “Auto TX,” the transceiver automatically replies to the Call. In that case, both the TX and RX calls are stored in the Transmitted and Received Call Logs.

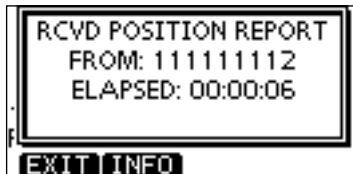
◇ Receiving a Position Report Call

When a Position Report Call is received:

- The emergency alarm sounds for 2 minutes.
 - “RCVD POSITION REPORT” pops up. The LCD backlight blinks for 2 minutes.
- ① Push [ALARM OFF] to stop the alarm and the backlight blinking.
- If you haven’t pushed [ALARM OFF] within 2 minutes, the next screen automatically appears.



- ② Push either softkey to select a desired action.



[EXIT]

- Push to ignore the Call and return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - “✉” continues to blink and the Call is stored in the Received Call Log.

[INFO]

- Push to display the Received call information. (p. 59)



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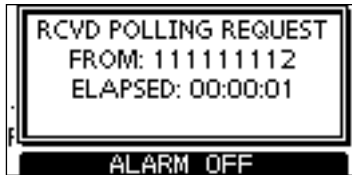
16

8 DSC OPERATION

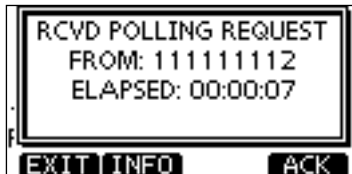
◇ Receiving a Polling Request call

When a Polling Request call is received:

- The emergency alarm sounds for 2 minutes.
- “RCVD POLLING REQUEST” pops up. The LCD backlight blinks for 2 minutes.
- ① Push [ALARM OFF] to stop the alarm and the backlight blinking.
 - If you haven’t pushed [ALARM OFF] within 2 minutes, the next screen automatically appears.



- ② Push either softkey to select a desired action.



[EXIT]

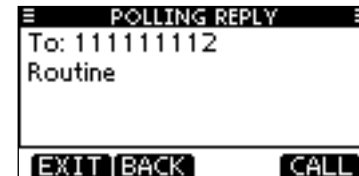
- Push to ignore the Call and return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - “☑” continues to blink and the Call is stored in the Received Call Log.

[INFO]

- Push to display the Received call information. (p. 58)

[ACK]

- Push to display the “POLLING REPLY” screen to reply to the Call. (p. 43)



When “POSITION ACK” is set to “Auto TX,” the transceiver automatically replies to the Call. In that case, both the TX and RX calls are stored in the Transmitted and Received Call Logs.

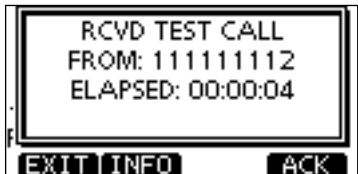
◇ Receiving a Test Call

When a Test Call is received:

- The emergency alarm sounds for 2 minutes.
 - “RCVD TEST CALL” pops up. The LCD backlight blinks for 2 minutes.
- ① Push [ALARM OFF] to stop the alarm and the backlight blinking.
- If you haven’t pushed [ALARM OFF] within 2 minutes, the next screen automatically appears.



② Push either softkey to select a desired action.



[EXIT]

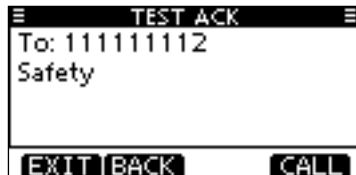
- Push to ignore the Call and return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - “☒” continues to blink and the Call is stored in the Received Call Log.

[INFO]

- Push to display the Received call information. (p. 58)

[ACK]

- Push to display the “TEST ACK” screen to reply to the Call. (p. 37)



When “TEST ACK” is set to “Auto TX,” the transceiver automatically replies to the Call. In that case, both the TX and RX calls are stored in the Transmitted and Received Call Logs.

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8 DSC OPERATION

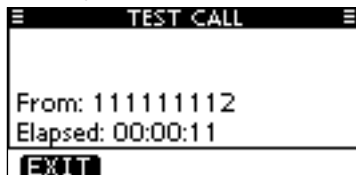
◇ Receiving a Test Acknowledgement Call

When a Test Acknowledgement Call is received:


- ➔ The emergency alarm sounds for 2 minutes.
 - ➔ “RCVD TEST ACK” pops up. The LCD backlight blinks for 2 minutes.
- ① Push [ALARM OFF] to stop the alarm and the backlight blinking.
 - If you haven’t pushed [ALARM OFF] within 2 minutes, the next screen automatically appears.



- ② Push either softkey to select a desired action.



[EXIT]

- ➔ Push to ignore the Call and return to the normal operating mode.
 - The transceiver exits the DSC mode.
 - “” continues to blink and the Call is stored in the Received Call Log.

■ Transmitted Call log

The transceiver automatically stores up to 50 transmitted calls, and the logs can be used as a supplement to your log-book.

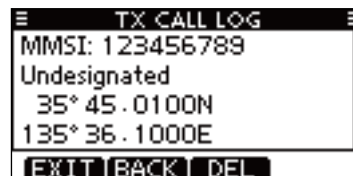
- ① Enter “TX CALL LOG” in the DSC CALLS menu.

<MENU> ⇨ <DSC Calls> ⇨ <Transmitted Call Log>
(Push [MENU]) (Push [▲]/[▼], then push [ENT].)

- ② Push [▲] or [▼] to select the desired item, then push [ENT].



- ③ Push [▲] or [▼] to scroll the message contents.



- ④ To delete the displayed message, push [DEL].
 - The confirmation screen appears, then push [OK] to delete.
- ⑤ Push [EXIT] to return to the normal operating mode.

■ Received Call log

The transceiver automatically stores up to 50 distress messages and 50 other messages, and the messages can be used as a supplement to your logbook.

• “✉” blinks when there is an unread message.

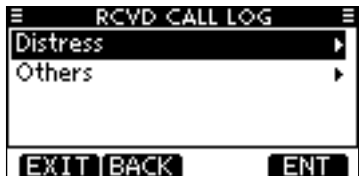
◇ Distress message

① Enter “RCVD CALL LOG” in the DSC CALLS menu.

◀MENU▶ ⇨ ▶DSC Calls▶ ⇨ ▶Received Call Log▶
(Push [MENU]) (Push [▲]/[▼], then push [ENT].)

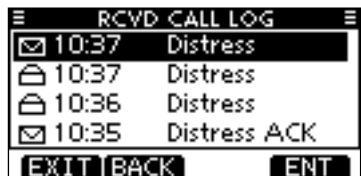
② Push [▲] or [▼] to select “Distress,” then push [ENT].

• The messages are stored in “Distress,” if its format specifier is ‘Distress.’



③ Push [▲] or [▼] to select the desired item, then push [ENT].

• The message in the unopened file has not been read.



④ Push [▲]/[▼] to scroll the message contents.



⑤ To delete the displayed message, push [DEL].

• The confirmation screen appears, then push [OK] to delete.

⑥ Push [EXIT] to return to the normal operating mode.

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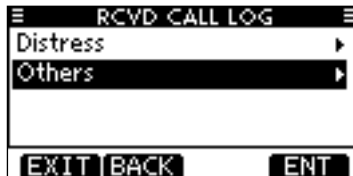
8 DSC OPERATION

◇ Other messages

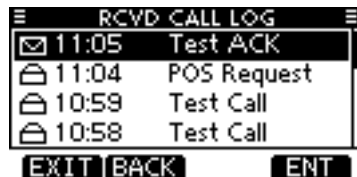
- ① Enter “RCVD CALL LOG” in the DSC Calls menu.

◀MENU▶ ⇨ ◀DSC Calls▶ ⇨ ◀Received Call Log▶
(Push [MENU]) (Push [▲]/[▼], then push [ENT].)

- ② Push [▲] or [▼] to select “Other,” then push [ENT].
- The messages are stored in “Other,” if its format specifier is other than ‘Distress.’



- ③ Push [▲] or [▼] to select the desired item, then push [ENT].
- The message in the unopened file has not been read.



DSC Settings

- ◇ Position Input (See page 22)
- ◇ Add Individual ID/Group ID (See pages 19, 20)
- ◇ Delete Individual ID/Group ID (See page 21)

Automatic Acknowledgement

These items set the Automatic Acknowledgement function to “Auto TX” or “Manual TX.”

When an Individual, Position Request, Position Report, Polling Request or Test Call is received, the transceiver automatically transmits an Individual Acknowledgement, Position Reply, Position Report Reply*, Polling Reply or Test Acknowledgement Call, respectively.

*Only when the received Position Report call requires a reply.

When “INDIVIDUAL ACK” is set to “Auto TX,” the transceiver automatically transmits the Acknowledgment call including “Unable to Comply” (No Reason Given) after receiving the Individual call.

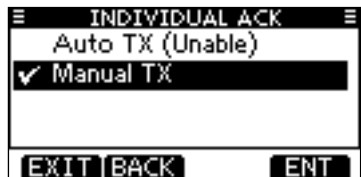
- ① Enter either “INDIVIDUAL ACK,” “POSITION ACK,” “TEST ACK” in the DSC Settings menu.

◀MENU▶ ⇄ ▶DSC Settings▶ ⇄ ▶Individual ACK▶
 (Push [MENU]) (Push [▲]/[▼], then push [ENT].)

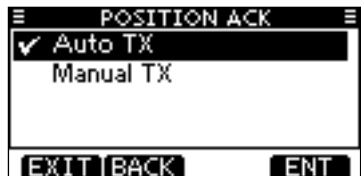
◀MENU▶ ⇄ ▶DSC Settings▶ ⇄ ▶Position ACK▶

◀MENU▶ ⇄ ▶DSC Settings▶ ⇄ ▶Test ACK▶

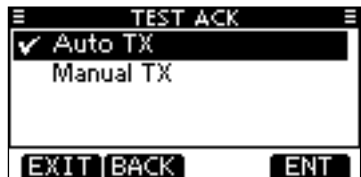
- ② Rotate Dial to select “Auto TX” or “Manual TX,” then push [ENT].
 - Push [BACK] to cancel and return to the DSC Settings menu.



(default)



(default)



(default)

- ③ Push [EXIT] to return to the normal operating mode.

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10 BATTERY CHARGING

■ Battery caution

Misuse of Lithium-ion batteries may result in the following hazards: smoke, fire, or the battery may rupture. Misuse can also cause damage to the battery or degradation of battery performance.

⚠ **DANGER!** Use and charge only specified Icom battery pack with Icom radios or Icom chargers. Only Icom battery packs are tested and approved for use and charge with Icom radios or Icom chargers. Using third-party or counterfeit battery packs or chargers may cause smoke, fire, or cause the battery to burst.

◇ Battery caution

⚠ **DANGER! DO NOT** hammer or otherwise impact the battery. Do not use the battery if it has been severely impacted or dropped, or if the battery has been subjected to heavy pressure. Battery damage may not be visible on the outside of the case. Even if the surface of the battery does not show cracks or any other damage, the cells inside the battery may rupture or catch fire.

⚠ **DANGER! NEVER** use or leave battery pack in areas with temperatures above +60°C (+140°F). High temperature buildup in the battery, such as could occur near fires or stoves, inside a sun-heated car, or by setting the battery in direct sunlight may cause the battery to rupture or catch fire. Excessive temperatures may also degrade battery performance or shorten battery life.

⚠ **DANGER! DO NOT** expose the battery to rain, snow, saltwater, or any other liquids. Never charge or use a wet battery. If the battery gets wet, be sure to wipe it dry before using. The battery by itself is not waterproof.

⚠ **DANGER! NEVER** incinerate a used battery pack since internal battery gas may cause them to rupture or may cause an explosion.

⚠ **DANGER! NEVER** solder the battery terminals, or **NEVER** modify the battery pack. This may cause heat generation, and the battery may rupture, emit smoke or catch fire.

⚠ **DANGER!** Use the battery only with the transceiver for which it is specified. Never use a battery with any other equipment, or for any purpose that is not described in this instruction manual.

⚠ **DANGER!** If fluid from inside the battery gets in your eyes, blindness can result. Rinse your eyes with clean water, without rubbing them, and see a doctor immediately. **WARNING!** Immediately stop using the battery if it emits an abnormal odor, heats up, or is discolored or deformed. If any of these conditions occur, contact your Icom dealer or distributor.

WARNING! Immediately wash, using clean water, any part of the body that comes into contact with fluid from inside the battery.

WARNING! NEVER put the battery in a microwave oven, high-pressure container, or in an induction heating cooker. This could cause overheating, a fire, or cause the battery to rupture.

CAUTION: Always use the battery within the specific temperature range for the transceiver and the battery itself (-20°C to +60°C (-4°F to +140°F)). Using the battery out of its specific temperature range will reduce the battery's performance and battery life. Please note that the specified temperature range of the battery may exceed that of the transceiver. In such cases, the transceiver may not work properly because it is out of its operating temperature range.

CAUTION: Shorter battery life could occur if the battery is left fully charged, completely discharged, or in an excessive temperature environment (above +50°C (+122°F)) for an extended period of time. If the battery must be left unused for a long time, it must be detached from the radio after discharging. You may use the battery until the remaining capacity is about half, then keep it safely in a cool dry place with the temperature range as follows:

- 20°C to +50°C (-4°F to +122°F) (within a month)
- 20°C to +35°C (-4°F to +122°F) (within three months)
- 20°C to +25°C (-4°F to +122°F) (within a year)

◇ Charging caution

Charge the battery pack at least once every six months, even if it has been not used for a long period of time. The battery pack will have slowly self-discharged, even though it has not been used. If the battery pack is left for a long period without being charged, its life cycle will be shorter, or worse, it will never accept a charge again.

Due to the characteristics of the Li-ion rectangular battery, the battery pack may change its shape as the charge and discharge cycles are repeated. This is a normal phenomenon, and it is quite safe to continue to use the pack, as long as it is properly handled. However, when the shape of the battery pack is so changed that the battery pack or battery cover can not be correctly attached to the transceiver, it is time to replace it with a new one. Otherwise, the transceiver can be damaged due to the loss of air tightness.

⚠ **DANGER! NEVER** charge the battery pack in areas with extremely high temperatures, such as near fires or stoves, inside a sun-heated car, or in direct sunlight. In such environments, the safety/protection circuit in the battery will activate, causing the battery to stop charging.

WARNING! DO NOT charge or leave the battery in the battery charger beyond the specified time for charging. If the battery is not completely charged by the specific time, stop charging and remove the battery from the battery charger. Continuing to charge the battery beyond the specific time limit may cause a fire, overheating, or the battery may rupture.

WARNING! NEVER insert the transceiver (battery attached to the transceiver) into the charger if it is wet or soiled. This could corrode the battery charger terminals or damage the charger. The charger is not waterproof.

CAUTION: DO NOT charge the battery outside of the specified temperature range: ±0°C to +45°C (+32°F to +113°F). Icom recommends charging the battery at +20°C (+68°F). The battery may heat up or rupture if charged out of the specified temperature range, and battery performance or battery life may be reduced.

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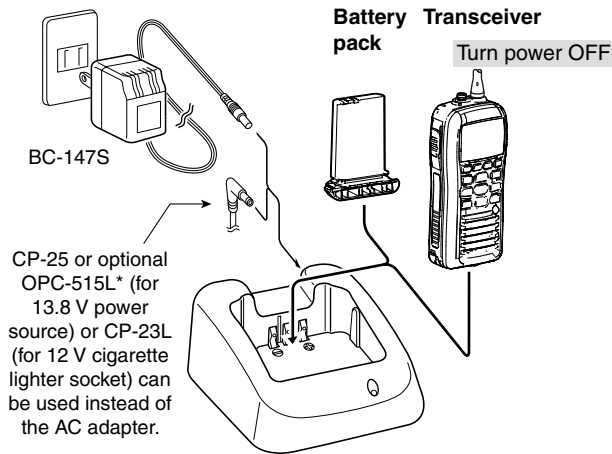
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10 BATTERY CHARGING

■ Regular battery charger

◇ Regular charging with the BC-204 + BC-147S

The supplied BC-204 with BC-147 provide regular charging of the Li-ion battery pack.



CP-25 or optional OPC-515L* (for 13.8 V power source) or CP-23L (for 12 V cigarette lighter socket) can be used instead of the AC adapter.

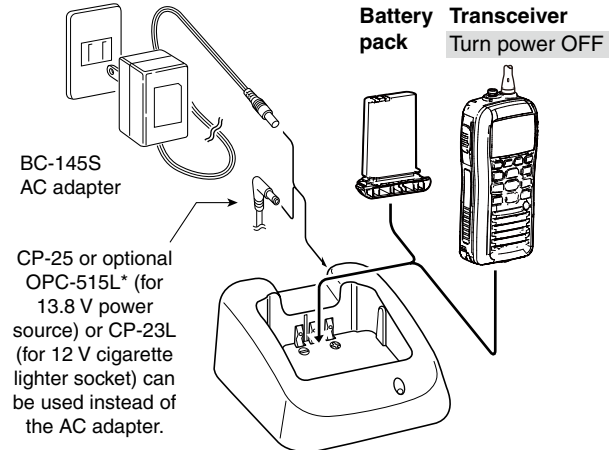
/// *CAUTION: NEVER connect the OPC-515L to a power source using reverse polarity. This will ruin the battery charger.
/// White line: ⊕ Black line: ⊖

■ Optional battery chargers

◇ Rapid charging with the BC-205 + BC-145S

The optional BC-205 provides rapid charging of the Li-ion battery pack.

- An AC adapter (may be supplied with BC-205 depending on version) or the DC power cable (OPC-515L/CP-23L) is additionally required.



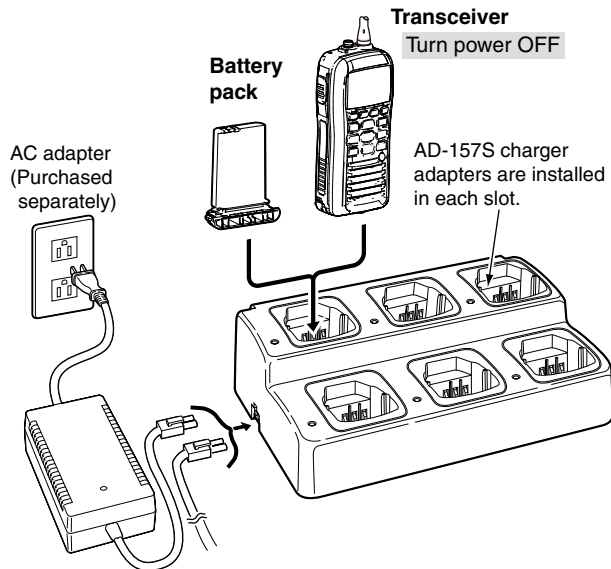
CP-25 or optional OPC-515L* (for 13.8 V power source) or CP-23L (for 12 V cigarette lighter socket) can be used instead of the AC adapter.

/// *CAUTION: NEVER connect the OPC-515L to a power source using reverse polarity. This will ruin the battery charger.
/// White line: ⊕ Black line: ⊖

◇ Rapid charging with the BC-197+BC-157S

The optional BC-197 allows up to 6 Li-ion battery packs to be charged simultaneously. The following items are additionally required.

- Six BC-157S charger adapter
- An optional AC adapter or the DC power cable (OPC-656)



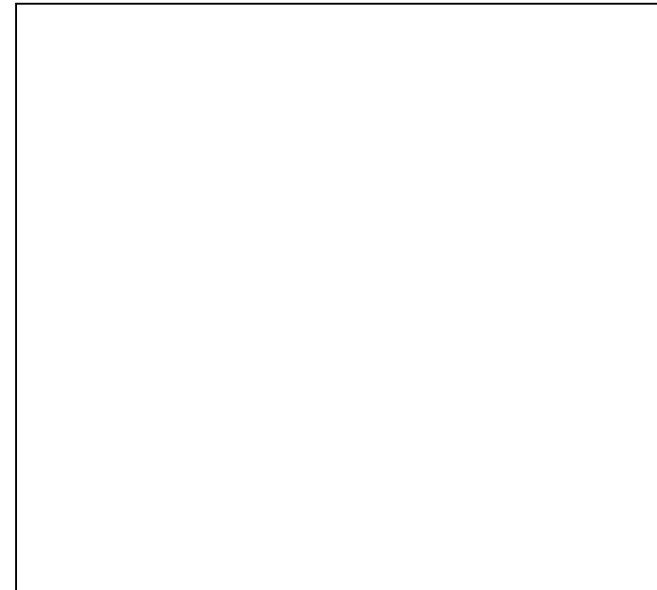
DC power cable (OPC-656)
(Connect with the DC power supply; 13.8 V/at least 7 A)

*About the OPC-656

Red line : ⊕ Black line : ⊖

IMPORTANT: Battery charging caution

Ensure the guide tabs on the battery pack are correctly aligned with the guide rails inside the charger adapter.
(This illustration is described with the BC-160.)



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■ Specifications

◇ General

- Frequency coverage : Tx 156.025–157.425 MHz
Rx 156.050–163.275 MHz
- Mode : FM (16K0G3E),
DSC (16K0G2B)
- Channel spacing : ± 25 kHz
- Operating temp. range : -20°C to $+60^{\circ}\text{C}$
- Current drain (at 7.4 V) : TX high 1.5 A
(approximately) Max. audio 0.50 A
- Power supply requirement : 7.4 V DC nominal
(negative ground)
- Frequency stability : ± 10 PPM (-20°C to $+60^{\circ}\text{C}$)
- Antenna impedance : 50 Ω nominal
- Dimensions (approximately) : 61.2(W) \times 141.4(H) \times 43.2(D) mm
: 2.4(W) \times 5.6(H) \times 1.7(D) inch
(Projections not included)
- Weight (approximately) : 295 g/10.4 oz with BP-275

◇ Transmitter

- Output power : 5 W/1 W
- Modulation system : Variable reactance frequency
modulation
- Max. frequency deviation : ± 5.0 kHz
- Adjacent channel power : 70 dB
- Spurious emissions : -68 dBc (typical)

◇ Receiver

- Sensitivity (12 dB SINAD) : 0.25 μV (typical)
- Squelch sensitivity : 0.35 μV typical (at threshold)
- Intermodulation rejection ratio : 70 dB (typical)
- Spurious response rejection ratio:
70 dB (typical)
- Adjacent channel selectivity : 70 dB (typical)
- Audio output power : 0.35 W typical at 10% distortion with an 8 Ω load (External)
: 0.7 W typical at 10% distortion with an 8 Ω load (Internal)

All stated specifications are subject to change without notice or obligation.

14 SPECIFICATIONS AND OPTIONS

■ Options

- **BP-275** Li-ion BATTERY PACK
7.4V 1590mAh (Typical) Li-ion battery pack. The battery pack must be charged with the supplied BC-204 or the optional BC-205.
- **BC-204** REGULAR CHARGER + **BC-147S** AC ADAPTER
Used for regular charging of battery pack. The same as supplied with the transceiver.
- **BC-205** RAPID CHARGER + **BC-145S** AC ADAPTER + **OPC-515L DC** POWER CABLE
For rapid charging of battery pack.
- **HM-167** SPEAKER MICROPHONE
Full sized waterproof speaker-microphone including alligator type clip to attach to your shirt or collar, etc.
- **FA-SC59V** ANTENNA
- **CP-25** CIGARETTE LIGHTER CABLE
For charging the battery pack through a 12 V cigarette lighter socket. (For BC-204)
- **MB-109** BELT CLIP
- **MB-96F** LEATHER BELT HANGER

Approved Icom optional equipment is designed for optimal performance when used with an Icom transceiver.

Icom is not responsible for the destruction or damage to an Icom transceiver in the event the Icom transceiver is used with equipment that is not manufactured or approved by Icom.

SAFETY TRAINING INFORMATION



WARNING

Your Icom radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as “General Population Use” in an uncontrolled environment.

This radio has been evaluated for compliance at the distance of 2.5 cm (1 inch) with the FCC RF exposure limits for “General Population Use.” In addition, your Icom radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

- FCC OET Bulletin 65 Edition 01-01 Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- American National Standards Institute (C95.1-1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- American National Standards Institute (C95.3-1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields— RF and Microwave.
- The following accessories are authorized for use with this product. Use of accessories other than those specified may result in RF exposure levels exceeding the FCC requirements for wireless RF exposure.: Belt Clip (MB-109), Rechargeable Li-Ion Battery Pack (BP-275).



CAUTION

To ensure that your exposure to RF electromagnetic energy is within the FCC allowable limits for general population use, always adhere to the following guidelines:

- **DO NOT** operate the radio without a proper antenna attached, as this may damage the radio and may also cause you to exceed FCC RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or antenna specifically authorized by the manufacturer for use with this radio.
- **DO NOT** transmit for more than 50% of total radio use time (“50% duty cycle”). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded. The radio is transmitting when the “transmit indicator” appears on the LCD. You can cause the radio to transmit by pressing the “PTT” switch.
- **ALWAYS keep** the antenna at least 2.5 cm (1 inch) away from the body when transmitting and only use the Icom belt clip which is listed on page 28 when attaching the radio to your belt, etc., to ensure FCC RF exposure compliance requirements are not exceeded. To provide the recipients of your transmission the best sound quality, hold the antenna at least 5 cm (2 inches) from your mouth, and slightly off to one side.

The information listed above provides the user with the information needed to make him or her aware of RF exposure, and what to do to assure that this radio operates with the FCC RF exposure limits of this radio.

Electromagnetic Interference/Compatibility

During transmissions, your Icom radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so. **DO NOT** operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

**AVERTISSEMENT**

Votre radio Icom produit une énergie électromagnétique de radiofréquences (RF), en mode de transmission. Elle est conçue pour une «utilisation grand public», dans un environnement non contrôlé. Cet appareil a été évalué et jugé conforme, à 2,5 cm, aux limites d'exposition aux RF de la FCC, pour une «utilisation grand public». En outre, votre radio Icom satisfait les normes et directives qui suivent en matière de niveaux d'énergie et d'énergie électromagnétique de RF et d'évaluation de tels niveaux en ce qui concerne l'exposition humaine :

- Supplément C, édition 01-01, du Bulletin OET de la FCC, «Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields».
- Norme de l'American National Standards Institute (ANSI) : IEEE C95.1-1992 sur les niveaux de sécurité compatibles avec l'exposition humaine aux champs électromagnétiques de radiofréquences (3 kHz à 300 GHz).
- Norme de l'ANSI : IEEE C95.3-1992 sur la méthode d'évaluation recommandée du champ magnétique potentiellement dangereux des radiofréquences et des micro-ondes.
- Les accessoires qui suivent sont approuvés pour une utilisation avec ce produit. L'utilisation d'accessoires autres que ceux précisés peut entraîner des niveaux d'exposition aux RF supérieures aux limites établies par la FCC en matière d'exposition aux RF sans fil; attache pour ceinture (MB-109), bloc-piles rechargeable au lithium-ion (BP-275).

**MISE EN GARDE****CAUTION**

Afin de vous assurer que votre exposition à une énergie électromagnétique de RF se situe dans les limites permises par la FCC pour une utilisation grand public, veuillez en tout temps respecter les directives suivantes :

- **NE PAS** faire fonctionner la radio sans qu'une antenne appropriée y soit fixée, car ceci risque d'endommager la radio et causer une exposition supérieure aux limites établies par la FCC. L'antenne appropriée est celle qui est fournie avec cette radio par le fabricant ou une antenne spécialement autorisée par le fabricant pour être utilisée avec cette radio.
- **NE PAS** émettre pendant plus de 50% du temps total d'utilisation de l'appareil («50% du facteur d'utilisation»). Émettre pendant plus de 50% du temps total d'utilisation peut causer une exposition aux RF supérieure aux limites établies par la FCC. La radio est en train d'émettre lorsque le témoin du mode de transmission s'affiche sur l'écran ACL. La radio émettra si vous appuyez sur le bouton du microphone.
- **TOUJOURS** tenir l'antenne éloignée d'au moins 2,5 cm de votre corps au moment d'émettre et utiliser uniquement l'attache pour ceinture Icom illustrée à la p. 28, lorsque vous attachez la radio à votre ceinture, ou à autre chose, de façon à vous assurer de ne pas provoquer une exposition aux RF supérieure aux limites fixées par la FCC. Pour offrir à vos interlocuteurs la meilleure qualité de transmission possible, tenez l'antenne à au moins 5 cm de votre bouche et légèrement de côté.

Les renseignements ci-dessus fournissent à l'utilisateur toute l'information nécessaire sur l'exposition aux RF et sur ce qu'il faut faire pour assurer que cette radio fonctionne en respectant les limites d'exposition aux RF établies par la FCC.

Interférence électromagnétique et compatibilité

En mode de transmission, votre radio Icom produit de l'énergie de RF qui peut provoquer des interférences avec d'autres appareils ou systèmes. Pour éviter de telles interférences, mettez la radio hors tension dans les secteurs où une signalisation l'exige. **NE PAS** faire fonctionner l'émetteur dans des secteurs sensibles au rayonnement électromagnétique tels que les hôpitaux, les aéronefs et les sites de dynamitage.

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Count on us!

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