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INTRODUCTION

You are now the proud owner of one of the finest VHF FM Marine Transceivers on the market today. It was designed and built by ICOM INCORPORATED, a long time leader in the field of VHF communication. We put all the technology, and experience we have gained over the years in a transceiver that was built from the ground up specifically for Marine. We know that your IC-M80 will give you years of enjoyment and dependable communication.
FEATURES
* All marine channels plus weather pre-programmed.
* All solid state including the 25 watt Power Amplifier module.
* Weather and dust-tight case; molded frame.
* No moving controls inside - PA and RF switching are solid state.
* A snap-in mounting bracket; adjustable angle; lockable for security.
* Advanced RF front end with helical resonators; MOSFETs; and crystal/mechanical filter for adjacent channel and intermodulation rejection.
* Auto Monitor for Channel 16.
* High power, distortion-free audio output.
* Complete line of accessories available.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>GENERAL</th>
<th></th>
<th>Current Drain (Max)</th>
<th>Receive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>78mm(H) x 228mm(W) x 208mm(D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>2.1 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Channels</td>
<td>All USA and INTERNATIONAL marine channels plus 10 weather channels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stability</td>
<td>0.0005%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-20 to +60 degrees C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel Spacing</td>
<td>25 KHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>With full 5 watt output</td>
<td>0.8A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Standby</td>
<td>0.3A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transmit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low output</td>
<td>1.3A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High output</td>
<td>5.5A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Primary Voltage</td>
<td>13.6 Volts DC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Antenna Impedance</td>
<td>50 ohms</td>
</tr>
<tr>
<td>RECEIVER SECTION</td>
<td>TRANSMITTER SECTION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency Range</td>
<td>Frequency Range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>156 ~ 163MHz</td>
<td>156 ~ 157.5MHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity</td>
<td>Modulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.3μV (−20dB quieting)</td>
<td>±5KHz (16F3, F3E 16K0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selectivity</td>
<td>RF Power Output</td>
<td></td>
<td></td>
</tr>
<tr>
<td>−70dB at 25KHz (EIA SINAD)</td>
<td>High 25 watts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spurious &amp; Image Rejection</td>
<td>Low 1 watt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80dB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threshold Squelch Sensitivity</td>
<td>Antenna Impedance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.2μV</td>
<td>50 ohms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tight Squelch Sensitivity</td>
<td>Spurious emission:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2μV</td>
<td>70dB below Carrier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IF Frequencies</td>
<td>Harmonic emission:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st IF: 21.4MHz</td>
<td>60dB below Carrier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd IF: 455KHz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audio Output</td>
<td>Microphone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 watts to 4 ohm Speaker @ 10% distortion</td>
<td>600 ohm microphone, or 600 ohm handset</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Audio Frequency Response</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+1, −3dB of 6dB/octave pre-emphasis characteristic from 300</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to 3000Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Audio Distortion</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Less than 7% at 1000Hz for ±3KHz Deviation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INSTALLATION

Planning
Select a location for your transceiver which will allow free access to the front controls, good air circulation and rear clearance for access to the fuse and cable connectors. Provide the best protection you can from direct rain or heavy seas.

Avoid long cable runs to the antenna and power source. At the same time, keep power and antenna cables as far as possible from electrical sources i.e. generators, alternators, electrical pumps, etc. Stay away from the magnetic compass with the cables, and avoid running the antenna cable near electronic instruments.

Procedures
Your ICOM transceiver is supplied with a universal bracket which allows “over” or “under” mounting by placing the bracket where the unit is adequately supported when wave shock and vibration are considered. Your transceiver comes to you inside the mount when shipped, and the unit is easily removed by releasing the two side catches. The mounting hardware supplied will fit most installations, but should you need special mounting fasteners any good marine supply will be able to assist. As in any marine installation it is recommended that high quality marine fasteners be used. Try to avoid drilling new mounting holes in the bracket, as balance of the set may be affected.
Primary Power

If at all possible, do not exceed the 10 feet length of the power cable supplied, if it is necessary to make a run of over 10 feet use the wire gauge specified in the following table. Color coding of the power cable is as follows: Red is for positive (+) side of the battery, black for minus (−). The blue and white wires are for the microphone hanger; the short red wires are for connection of an external speaker. When hooking up the red and black wires make the splice as close as possible to the power side of the fuse holder, solder all connections and insure that all connections are clean, tight and moisture free.

Be sure to leave a service margin in the power cable so that should the set have to be removed from the bracket it can slide out without straining the cable.

<table>
<thead>
<tr>
<th>POWER INPUT CABLE</th>
<th>WIRE GAUGE</th>
<th>MAX DISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>14</td>
<td>15'</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>25'</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>35'</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>60'</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>100'</td>
</tr>
</tbody>
</table>

External Speaker

To connect an External Speaker, remove the sealed plastic at end of the short red wires at the power cord/mic hanger plug, and connect an 8 ohm speaker to the wires, solder them and cover with plastic tape.

Antenna

Any marine antenna of good quality and 50 ohms impedance will suffice, but the use of a gain antenna is recommended. The antenna is the single most important item that will influence the performance of the transceiver. Location is also important and should you have any doubt request the assistance of your dealer’s technician. Follow the antenna maker’s directions exactly. For an existing antenna, be sure that all connections are corrosion free and that all are firmly seated.

Preliminary Set up

The permanently mounted microphone attached to your transceiver should now be placed at a convenient location where the cable will neither interfere with your craft’s operation while in its hanger, or in use by you or the crew. The CH 16 Auto-Monitor control cable should be routed out of the way and connected to the marked receptacle at the rear of the set.
PRE-OPERATION

Licenses Required

1. Ship Station License

Your craft, when equipped with VHF/FM equipment, has a radio station on board which, if used, must have a current license. It is unlawful to operate a Ship Station which is not licensed. Inquire through your dealer or appropriate government agency for an application for a Ship Radio-Telephone license. Your craft station will be issued a call sign.

2. Operators License

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

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

Logs and Documents

Most countries require that a log of all contacts made over the Radiotelephone be kept. The Ship Radiotelephone Station licensee is the person responsible for compliance.
CONTROL FUNCTIONS

① SQUELCH CONTROL
② VOLUME CONTROL and POWER SWITCH
③ RF POWER SWITCH
④ SEA (DUAL WATCH) BUTTON
⑤ WEATHER CHANNEL BUTTON
⑥ CHANNEL ALLOCATION SWITCH
⑦ CHANNEL 16 SELECT BUTTON
⑧ HAILER SWITCH
⑨ DIAL SELECT BUTTON
⑩ SCAN BUTTON
⑪ CHANNEL SELECTOR
⑫ CHANNEL and FUNCTION DISPLAY
⑬ MEMORY WRITE/DIMMER BUTTON
⑭ MEMORY READ BUTTON
1. SQUELCH CONTROL
Controls squelch threshold level which quiets the receiver when no signal is present.

2. VOLUME CONTROL and POWER SWITCH
By pushing this knob, this switches the power supplied to the radio ON and OFF.
By turning this knob, this controls the audio output level of the receiver.

3. RF POWER SWITCH
Switches the transmitter output power. In the "LO" position, the power is 1 watt, sufficient for local communication. In the "HI" position, the output is a full 25 watts for long distance communication.

4. SEA (DUAL WATCH) BUTTON
Turns the SEA (DUAL WATCH) function ON. During a communication or receiving on a channel (except on channel 16), if you would like to monitor channel 16, push this button, and the receiving frequency will sample channel 16 every two or three seconds.

5. WEATHER CHANNEL BUTTON
By pushing this button, the radio selects a weather channel which is selected by the channel selector.

6. CHANNEL ALLOCATION SWITCH
Switches the channels for the international allocation and U.S.A. allocation.

7. CHANNEL 16 SELECT BUTTON
Sets the radio to Channel 16. This function overrides all other channel selecting buttons and selector.

8. HAILER SWITCH
Switches the set between transceiver operation and hailer (public address) operation.

9. DIAL SELECT BUTTON
Sets the radio to a channel which is selected by the channel selector, and enables the channel selector to select channels.

10. SCAN BUTTON
Starts the scanning operation by pushing this button. To stop the scanning operation, push this button or any one of the channel selecting buttons (WX, CH16, DIAL, Memory write and Memory Read buttons), or turn the channel selector.

11. CHANNEL SELECTOR
Selects a channel of the programmed channels, memory channels or weather channels. Turning this selector while holding the MEMORY WRITE/DIMMER button changes the intensity of the display.

12. CHANNEL and FUNCTION DISPLAY
Displays the operating channel and status of the radio.
13. MEMORY WRITE/DIMMER BUTTON
Transfers your desired channel into a memory channel, and enables the channel selector to change the intensity of the display.

14. MEMORY READ BUTTON
Sets the radio to a memory channel which is selected by the channel selector.

ADDITIONAL CONTROLS

1. Microphone Hanger Box
Triggers the Channel 16 Auto-Monitor circuit when the microphone is replaced in the hanger.

2. Handset Cradle
When the optional Handset is used, the internal switch mutes the front speaker and applies audio to the handset speaker. When the handset is replaced in the cradle, the internal switch turns on the front speaker and triggers the Channel 16 Auto-Monitor circuit.

OPERATION

BASIC OPERATION

Channel 16 Auto-Monitor
The Channel 16 Auto-Monitor circuit simplifies operation of the radio by automatically switching to Channel 16 when the mic or handset is replaced on its hanger. However, even with the mic or handset in its hanger, any channel including weather can be monitored simply by pushing the appropriate button and/or turning the channel selector.

RECEIVING

1. Turn the ② VOLUME CONTROL and ① SQUELCH CONTROL fully counterclockwise.

2. Press the ② POWER SWITCH and channel "16" will be indicated on the ⑩ CHANNEL and FUNCTION DISPLAY. Now the set is turned ON and receiving on channel 16.

3. Turn the Volume Control slowly clockwise until you reach a comfortable level of noise, if no signal is present, or audio if a signal is present.

4. Turn the Squelch Control carefully clockwise until the noise just disappears. (Approximately 11 o’clock position). The radio is now set and will remain quiet until a signal is heard. (This should be done when no signal is present.)

5. When you wish to receive one of the channels installed, first, select the international or U.S.A. allocation which includes the desired channel, by the ⑥ CHANNEL ALLOCATION SWITCH. Check the channelization list (on page 17) for appropriate channel selections.

Then push the ⑨ DIAL SELECT BUTTON and rotate the Channel Selector to the desired channel.

At this time, the selected allocation (INTL or USA) and
channel number are displayed on the CHANNEL and FUNCTION DISPLAY.

6. When you wish to monitor a weather channel, push the ⑤ WEATHER CHANNEL BUTTON, then rotate the Channel Selector to the desired weather channel. At this time, the letters of “WX” and selected weather channel number (0 ～ 9) are displayed on the CHANNEL and FUNCTION DISPLAY.

7. When you wish to receive one of the memory channels, push the ④ MEMORY READ BUTTON and rotate the Channel Selector to the desired memory channel. At this time, the selected memory channel number (MEMO 0 ～ 9), and the allocation and channel number of the memorized channel are displayed on the CHANNEL and FUNCTION DISPLAY.

8. When you wish to return channel 16, simply push the ⑦ CHANNEL 16 SELECT BUTTON, and the channel number of “16” is displayed on the CHANNEL and FUNCTION DISPLAY.

External speaker

When an external speaker is added to the IC-M80, both the external speaker and the internal speaker carry receive audio. This is true in the receive mode and when the unit is placed in the hailer mode. Pressing the microphone Push-To-Talk switch causes the unit to transmit when the unit is in the receive mode, muting both speakers. In the hailer mode, activating the Push-To-Talk switch mutes the internal speaker and allows public address audio to go out the external speaker.

The external speaker is connected to the receiver all of the time when the unit is ON.

If an application requires control of the external speaker from the transceiver, an external switch must be used (not supplied by ICOM). This switch should be electrically in series with one of the wires going to the external speaker.

Transmitting

1. Push the DIAL SELECT BUTTON and rotate the Channel Selector until you find an empty channel that can be used for the type of communication you wish. Be sure the channel is open.

2. Push the CHANNEL 16 SELECT BUTTON, and after confirming that the channel is open, call the party you wish to contact. When contact is made, go to the channel you previously selected by pushing the DIAL SELECT BUTTON.

3. Hold the mic fairly close to your mouth and speak in a clear, natural voice. When you have finished your part of the conversation, release the PTT switch on the microphone, and the radio will receive.

4. When your conversation is completely finished, replace the mic or handset in its hanger, and the radio will auto-
matically return to Channel 16.

(Before Transmitting, be sure that the RF POWER SWITCH is in the proper position for the distance and needs of your contact. Use 25 watts only when necessary, to avoid interfering with others trying to use the same channel in another area.)

MEMORY CHANNEL OPERATION

Memory Writing (Programming the Memory Channels)

1. Push the MEMORY READ BUTTON and a memory channel will be displayed on the CHANNEL and FUNCTION DISPLAY.

2. Rotate the CHANNEL SELECTOR to the channel to be programmed (MEMO 0 ~ 9). As an example, set it at the memory channel 1 (MEMO 1).

The display will show the memory channel number “MEMO 1” and the previously programmed channel number. The radio will receive on this channel.

If no channel has been programmed since first turning the power ON, “16” will be shown on the display, and the radio will receive on channel 16.

3. While holding both the MEMORY READ BUTTON and the MEMORY WRITE/DIMMER BUTTON in, rotate the channel selector, and the displayed channel number will be changed. Rotate the channel selector so that the display shows the desired channel, then release your finger from the MEMORY WRITE/DIMMER BUTTON then from the MEMORY READ BUTTON. At this moment, the desired channel will be memorized into the selected memory channel. The selected allocation, either the “INTL” or “USA”, will be memorized as well.

4. Program desired channels into other memory channels in the same manner. (The weather channels can not be memorized into any memory channels.)

5. The programmed channels in the memory channels are maintained by an internal MEMORY BACKUP battery, even if the radio is removed from the vessel.

Memory Reading

Push the MEMORY READ BUTTON, then rotate the Channel Selector to the desired memory channel, MEMO 0, MEMO 1, MEMO 2, .... or MEMO 9, and the previously programmed channel is then recalled.

SCANNING OPERATION

All Channel Scan

To scan all channels (INTL allocation: Channel 1 ~ Channel 88, USA allocation: Channel 6 ~ Channel 88):

1. Engage the SQUELCH, then push the DIAL SELECT
BUTTON, and a channel number is displayed on the \textcircled{10} CHANNEL and FUNCTION DISPLAY. Depressing the \textcircled{10} SCAN BUTTON starts the scan from the displayed channel to the highest channel (Channel 88).

If the SQUELCH is not engaged, the scan does not start.

2. When the scanning channel reaches the highest channel, it automatically returns to the lowest channel (INTL: Channel 1, USA: Channel 6), and continues scanning up to provide endless scanning operation.

3. While the SQUELCH is engaged, the squelch opening as a signal is received will stop the scanning automatically. When the scan has been stopped by the auto-stop function, the scan will restart after the signal goes away.

4. To stop the scanning operation, depress the SCAN BUTTON, the DIAL SELECT BUTTON or rotate the Channel Selector.

5. If you transmit on the auto-stopped channel, the scan function will be disengaged.

\textbf{Memory Channel Scan}

To scan the ten memory channels continuously;

1. Program ten desired channels into the Memory Channels 0 ~ 9.

2. Push the \textcircled{9} MEMORY READ BUTTON, and a memory channel number and programmed channel number are displayed on the display.

3. Depress the \textcircled{10} SCAN BUTTON, and the radio starts scanning the programmed channels in the Memory Channels 0, 1, 2, 3, \ldots 9, and 0, 1, 2, 3, \ldots.

4. To stop scanning without opening the squelch, depress the SCAN BUTTON, MEMORY READ BUTTON or turn the Channel Selector.

5. Other operations are the same as the All Channel Scan.

\textbf{Weather Channel Scan}

To scan the ten weather channels continuously;

1. Push the \textcircled{5} WEATHER CHANNEL BUTTON and depress the \textcircled{10} SCAN BUTTON, and the radio starts scanning the weather channels 0, 1, 2, 3, \ldots 9, and 0, 1, 2, 3, \ldots.

2. To stop the scan operation, depress the SCAN BUTTON, WEATHER CHANNEL BUTTON or rotate the Channel Selector.

3. Other operations are the same as the All Channel Scan.

\textbf{SEA (DUAL WATCH) OPERATION}

This function allows a check of channel 16 while operating on another channel. If a signal appears on channel 16, the radio watches it until the signal has disappeared, then the radio
returns to operate on the other channel.

1. Select the channel 16 by pushing the CHANNEL 16 SELECT BUTTON, then engage the SQUELCH.

2. Select your desired channel by pushing the DIAL SELECT BUTTON, MEMORY READ BUTTON or WEATHER CHANNEL BUTTON depending on your desired channel), and turning the CHANNEL SELECTOR.

3. Push the SEA (DUAL WATCH) BUTTON, and the radio operates on the selected channel for two or three seconds and on channel 16 for a moment (about 0.1 second) alternately.

4. If a signal appears (the squelch will be opened by the signal) on channel 16, the radio receives on channel 16 until the signal has disappeared, then the radio will continue the SEA OPERATION.

5. The radio can transmit on the selected channel (except weather channels), even if the SEA OPERATION is functioning and the radio is receiving on channel 16. When the radio returns in the receive mode, the radio will continue the SEA OPERATION.

6. If you wish to disengage the SEA OPERATION, push the DIAL SELECT BUTTON, MEMORY READ BUTTON or WEATHER CHANNEL BUTTON depending on the selected channel), and the radio operates on the selected channel.

HAILER OPERATION

You can use the radio as an audio amplifier for a hailer or public address.

1. Provide an external speaker which is 8 ohms and capable 5 watts or more, and put it as far as possible from the radio to prevent howling.

2. Connect the speaker to the external speaker wires of the radio with a piece of low impedance speaker cord or heavy duty AC power cord.

3. Depress and lock the HAILER SWITCH; the display blinks to show the radio is in the hailer mode, however the radio is still in the receive mode and receives on the indicated channel.

4. Depress the PTT (Push-To-Talk) switch on the microphone and talk into the microphone.

5. To disengage the HAILER OPERATION, push again the HAILER SWITCH and release it.
OPERATING RULES AND GUIDELINES

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

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

1. Give your call sign each time you place a call to another vessel or a coast station. (If a call sign has not been assigned, identify the station by announcing the vessel name and the name of the licensee.)
2. Give your call sign at the end of each transmission of more than 3 minutes duration.
3. You must break and give your call sign at least once every fifteen minutes during long ship to shore calls.
4. Keep your unanswered calls short (less than thirty seconds) and do not repeat a call for two minutes.
5. Unnecessary Transmissions are not recommended.

Priorities
Read all the rules and regulations pertaining to priorities and keep an up-to-date copy handy. Safety and Distress take priority over all others.
You must monitor and be able to transmit on 156.8MHz, Channel 16.
False or fraudulent distress signals are prohibited and punishable by law!

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

Logs
Use of this equipment requires entry of the watch period of 156.8MHz (CH 16) by the operator with vessel name, call sign and operator signature. All distress, emergency, and safety messages must be recorded in complete detail. Log date activity is usually recorded in 24 hour time. Universal Standard Time (formerly GMT) is frequently used.

Adjustments, repairs, channel frequency changes and authorized modifications affecting electrical operation of the equipment must be kept in the equipment log and entries signed by the authorized licensed technician performing or supervising the work. This is done in the equipment log, a small section is included in the back of this manual. Contacts are recorded in a communication log. A sample of what would be on the page is shown below.

<table>
<thead>
<tr>
<th>DATE/TIME</th>
<th>CHANNEL</th>
<th>VESSEL</th>
<th>REMARKS</th>
<th>OPERATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Channel usage

A channel selection system, frequency-usage, has been internationally adapted for the marine VHF band. Each frequency within the spectrum has been assigned a channel number, for example, 156.300MHz is Channel 6. Specific purposes have been assigned to each channel under this system i.e. inter-ship between two vessels and ship-to-shore. Geographical locations have specific channels assigned for use with the land telephone system.

Your selection of channels to be installed should be based on the type of contacts you plan to make within the areas you live or travel to. The chart on the following pages will aid this selection.

Each geographical area has specific channels assigned to it for use with the land telephone system.

Be sure to review the channels you should have installed in your radio to give you the capability to make the type of contacts you want in the area where you live or plan to travel.

Study the chart on the following pages, showing the available channels and their usage.

USER TIPS

Battery

Prevent battery drain during prolonged transmissions by keeping the vessel’s engine running.

Dead Spots

Topography may prevent reception and/or transmission from some locations. Move to another location if you find a “dead spot”.

Routine Maintenance

Your ICOM transceiver is designed to provide high quality performance for many years if cared for in a normal manner. Each year you should have the following checked by a licensed technician to verify your unit’s performance.

1. Check antenna system
2. Verify transmitter frequency, deviation, and power output.

Battery voltage should be checked often. Your electrical system should be checked if voltage is less than eleven volts or more than sixteen volts at the radio.

Note: This transceiver uses a polarized filter over the channel and function display. Sunglasses polarized opposite to the filter will cause the display to appear totally dark.
## MARINE VHF RADIO TELEPHONE CHANNEL FREQUENCIES

<table>
<thead>
<tr>
<th>Channel</th>
<th>Ship Transmit</th>
<th>Ship Receive</th>
<th>Mode S/D</th>
<th>Only Intl</th>
<th>Only Com</th>
<th>USCG</th>
<th>Ship to Shore</th>
<th>Type of Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>156.050</td>
<td>160.650</td>
<td>D</td>
<td>yes</td>
<td></td>
<td></td>
<td>no</td>
<td>yes</td>
</tr>
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MINOR TROUBLESHOOTING

Your IC-M80 has been design-engineered to provide years of trouble free operation. This has been made possible through the use of the most current technology along with ICOM's years of experience in the production of high quality, dependable VHF/FM equipment. Your IC-M80 has been specifically designed to withstand years of use in many different, extreme environments.

However, as with all marine electronic equipment, it is possible that some problems may occur that would interfere with the operation of the set. Should such a problem occur, it is recommended that your unit be taken directly to your ICOM dealer or authorized ICOM repair service center for qualified service.

Some problems may occur which may interfere with the operation of the radio that are not directly related to the electronic circuitry within your set. Below is a brief description of common problems outside of your set that may occur, and means of identifying them.

1. Antenna
   If it appears that you are having unusual difficulty in transmitting or receiving properly, it is possible that the cause is due to a defective or faulty antenna system.

   The most common problem that occurs with antenna systems include broken or shorted antenna cable runs, or corroded or defective connector installation. Double check to be sure the connector is soldered to the connector and that it is not shorted.
   Visually inspect these items to help isolate the problem.
   A qualified technician should correct the antenna problem.

2. Power loss
   If, in turning your radio to the ON position, the display fails to light and no sound is heard from the radio, a common problem is low or no power from the battery source in the boat. Visually inspect the power cable from the battery for broken or short leads. Also, inspect the fuses both in the vessel's "fuse block" as well as the fuse in the power cable on the radio for corrosion or a blown fuse.

3. Microphone cable
   If, in transmitting, either the voice is not heard or the TX letters is not displayed, the problem could be in the microphone cables. Inspect the mic cables for possible breaks or tears that could be the source of the problem. If such is the case, replace the mic cord.

4. Ignition noise
   Occasionally ignition noise from operation of the vessel's engine and/or occasionally refrigeration or power generating equipment may cause static interference with your radio. Ignition noise, alternator "whine" and spurious signals from other electrical devices may be found and cured by experienced technicians using known techniques and noise reduction devices.
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EMERGENCY USE

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

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

MEMORY SCAN
1. Push MEMORY READ button.
2. Push SCAN button.
3. Unit scans ten memories.
4. Unit stops on busy channel.
5. Scan resumes on squelch break.
6. Push DIAL to deactivate scanning.

MEMORY WRITE
1. Push MEMORY READ button.
2. Rotate main tuning knob to select channel.
3. Push MEMORY READ then MEMORY WRITE button in. Hold both buttons in simultaneously while rotating the main tuning knob until desired channel is displayed.
4. Release MEMORY READ and MEMORY WRITE buttons.
NOTE: When the WRITE (Dimmer) button is depressed and the main tuning knob is turned, the display will dim and brighten.

SEA WATCH
1. Push DIAL button.
2. Rotate main tuning knob to desired channel.
3. Push SEA button.
4. Unit rapidly scans dial channel and channel 16 alternately.
5. If a call comes up on channel 16, the unit will automatically switch to that call.
6. Push DIAL to deactivate sea watch.
**SELECTING A CHANNEL**

1. Push POWER switch-activates channel 16.
2. Push DIAL button.
3. Select either USA or INTL channels.
4. Rotate main tuning knob to desired channel.

**CHANNEL SCANNING**

1. Turn SQUELCH to desired level.
2. Push DIAL button.
3. Push SCAN button.
4. When a signal is received, scanning stops.
5. Scan resumes when signal is lost.
6. Push DIAL to stop scanning.

**WEATHER CHANNEL**

1. Push weather button (WX).
2. Rotate main tuning knob to select weather channel, 0-9.
3. Push SCAN.
4. Unit scans weather channels.
5. Push weather button (WX) to stop scanning.

**HAILER**

1. Install external hailing speaker.
2. Push HAILER button on (display begins to flash).
3. Pushing the mic button and talking into the microphone causes the hailer speaker to amplify your voice.

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**ICOM**

**QUICK OPERATING GUIDE**

M80
ICOM M80
Above and Beyond the Competition

ICOM's All-Channel Water Resistant VHF Radiotelephone

No VHF Marine telephone can compare to the M80's rugged, water resistant design. All circuitry is protected by a quality constructed water resistant enclosure with seals around all knobs, shafts, buttons, speaker, and case flanges.

All Channel. The M80 has all U.S. and International VHF channels ... plus four weather channels and a ten channel memory ... accessed by an easy to use single knob tuning control.

Powerful. Audio quality second to none, the M80's powerful 5 watt audio system, with external speaker connections and halter provides crisp, clear sound ... audio that can be understood even in high noise environments.

Memory. Ten channels of memory ... owner programmable using the front panel controls ... allow quick access to your most used channels.

Scanning. Three scanning systems ... scan all channels, scan the 10 memory channels, scan the weather channels ... keep you abreast of what's happening.

See Watch enables you to monitor two channels at once ... channel 16 plus one other selected channel ... lets you communicate while listening for calls on channel 16.

Automatic switching to channel 16 at the end of a conversation.

 Reliable and Convenient. ICOM is well known for its tradition of high quality water resistant designs. This, plus convenient size, lockable mounting bracket and clearly labeled controls, makes the M80 a convenient to install and use VHF.

The M80 is available in traditional white or grey (pictured above — M80C) for compatibility with rich wood and/or most other popular interior colors.

All of these features, plus an extra rugged noise cancelling microphone (on the grey model) that eliminates annoying or private background conversations, wind and engine noises, make the M80 your best buy in marine VHF.

All this at a Price You'll Love.

See the M80 at your local ICOM marine dealer.

The World Leader in Marine Communications.

ICOM America, Inc., 2112-116th Ave NE, Bellevue, WA 98004 (206) 454-8155 / 3331 Towerwood Drive, Suite 307, Dallas, TX 75234 (214) 620-2780

All stated specifications are approximate and subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions. M804460-1
M80 Features and Specifications

HANDSET HANG UP
LCD READOUT
(Easy To Read in
Bright Sunlight)

TELEPHONE HANDSET (Option)

BLACK CASE
(Available on
Commercial Version)

EXTENSIVE SEALING ON KNOBS, BUTTONS AND CASE

RUGGED DYNAMIC
MIC

MEMORY WRITE

SQUELCH
VOLUME

MEMORY READ

WATER PROOF SPEAKER

FULL 5 WATTS
OF AUDIO

ACTIVATES CHANNEL KNOB
ACTIVATES SCANNING (3 Modes)

HAILER (Through external spkr.)

The M80 is designed and
built by ICOM INCORPORATED,
a long time leader in the
field of VHF
communication. We put all
the technology and
experience we have gained
over the years in a
transceiver that was built
from the ground up
specifically for Marine. We
know that an IC-M80 will
give you years of enjoyment
and dependable
communication.

M80 FEATURES

Available in commercial/
limited coast (black) or
pleasurecraft (white)
versions, the M80 provides
extra features making it
the most waterproof and easiest
to use marine VHF
available.

• Channel 16 Seawatch. Monitor channel 16 while
using or listening to another
channel

• WX Button. Gives instant
access to weather 1 through 4
• U.S./International. All
channel capability; select
U.S. and get U.S. channels
(including ships-to-ship
channels normally used in
the U.S.); International gives
access to foreign frequency
assignments

• Channel 16 Priority. Instant access to the VHF
calling/distress channel

• Scanning. Three scanning
modes: memory scan, all
channel scan, weather scan

• Memory. A ten channel
memory allows quick
access to your most
commonly used
frequencies. (Memory
maintained by a 5 year
lifetime lithium battery)

• Water Resistant Sealing. All knob shafts, buttons,
speaker, case openings and
the case itself are sealed for
maximum water resistance

• Hailer. The external
speaker system provides a
hailer. Be heard on deck or
on docksides

• Other Standard Features, 25 watts or 1 watt
selectable/small size/locking mobile
mount/DC power cord

• ICOMs Lifetime Warranty.

SPECIFICATIONS

GENERAL
Size: 3½" x 6½" x 7½"
Weight: 4 lbs.
Number of Channels: 78 marine channels
plus 4 weather channels
Stability: 0.0005% (Commercial) limited count
Temperature Range: 20 to +50 degrees C
Channel Spacing: 25 kHz/channel
Current Draw (Max): 500 mA
Receive: 0.85 W output — 0.3 A
Transmit: 500 mA
Low output — 1.3 A
High output — 5.5 A
13.8 Volts DC
Primary Voltage: 120 V
Antenna Impedance: 50 ohms
Compliance: FCC Parts 81, 83 and 15

RECEIVER SECTION
Frequency Range: 156 — 163 MHz
Sensitivity: 0.5 uV (2 dB quieting)
Selectivity: 70 kHz at 25 KHz
Spurious & Image
Rejection: EIA Standard
Threshold Squelch
Sensitivity: 0.2 uV
Tight Squelch
Sensitivity: 2 V
Thresholds: 1st IP: 21.4 kHz
2nd IP: 455 kHz
Audio Output: 5 watts or 4 watts
Speaker ± 10% distortion

TRANSMITTER SECTION
Frequency Range: 156 — 157.95 MHz
RF Power Output: 15 watts
High power 25 watts
Low power 5 watts
Antenna Impedance: 50 ohms
Spurious Emissions: 90 dB below carrier
Harmonic Emissions: 90 dB below carrier
Microphone: 600 ohm microphone
Audio Frequency Response: +1, ±3 dB of 48 dB/octave pre-emphasis
characteristic from
300 to 3000 Hz
Audio Distortion: Less than 7% at 1000 Hz for ±3 dB Deviation

ICOM America, Inc., 2112-116th Ave NE. Bellevue, WA 98004 (206) 454-8135
3331 Towerwood Drive, Suite 307, Dallas, TX 75234 (214) 620-2760
(FI) For licensed amateur radio operators

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