

## NOTE

Please fill out the enclosed warranty registration postcard attached to the front of this manual. Should the warranty registration postcard be missing, please register on line at [www.yaesu.com](http://www.yaesu.com) or contact Standard Horizon at:

**17210 Edwards Road  
Cerritos, CA 90703**

## FCC RADIO LICENSE INFORMATION

Standard Horizon radios comply with the Federal Communication Commission (FCC) requirements that regulate the Maritime Radio Service.

### Station License

An FCC ship station license is no longer required for any vessel traveling in U.S. waters which uses a VHF marine radio, RADAR or EPIRB, and which is not required to carry radio equipment. A license is necessary however for a DSC MMSID number, any vessel required to carry a marine radio on an international voyage, carrying a HF single side band radiotelephone or marine satellite terminal. FCC license forms, including applications for ship (506) and land station licenses can be downloaded via the Internet at [www.fcc.gov/forms](http://www.fcc.gov/forms). To obtain a form from the FCC, call (888) 225-5322.

### Radio Call sign

Currently the FCC does not require recreational boaters to have a Ship Radio Station License. The USCG recommends the boats registration number and the state to be used.

### Canadian Ship Station Licensing

You do not need a license if your vessel is not operated in sovereign waters of a country other than Canada or the U.S.A. If you do need a license contact their nearest field office or regional office or write:

**Industry Canada  
Radio Regulatory Branch  
Attn: DOSP  
300 Slater Street  
Ottawa, Ontario  
Canada, KIA 0C8**

# **FACTORY SERVICE**

In the unlikely event that the radio fails to perform or needs servicing, please contact the following:

**Standard Horizon Factory Service**  
**115 Wright Brother Drive**  
**Salt Lake City, UT 84116-2838**  
**Telephone (800) 366-4566**  
**Fax No. (801) 359-4122**

# OPERATING PRACTICES

## Emergency (Channel 16 Use)

Channel 16 is known as the **Hail and Distress Channel**. An emergency may be defined as a threat to life or property. In such instances, be sure the transceiver is on and set to CHANNEL 16. Then use the following procedure:

1. Press the microphone push-to-talk switch and say "**Mayday, Mayday, Mayday**. This is \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_" (your vessel's name).
2. Then repeat once: "**Mayday, \_\_\_\_\_**," (your vessel's name).
3. Now report your position in latitude/longitude, or by giving a true or magnetic bearing (state which) to a well-known landmark such as a navigation aid or geographic feature such as an island or harbor entry.
4. Explain the nature of your distress (sinking, collision, aground, fire, heart attack, life-threatening injury, etc.).
5. State the kind of assistance your desire (pumps, medical aid, etc.).
6. Report the number of persons aboard and condition of any injured.
7. Estimate the present seaworthiness and condition of your vessel.
8. Give your vessel's description: length, design (power or sail), color and other distinguishing marks. The total transmission should not exceed 1 minute.
9. End the message by saying "**OVER**". Release the microphone button and listen.
10. If there is no answer, repeat the above procedure. If there is still no response, try another channel.

## Calling Another Vessel (Channel 16 or 9)

Channel 16 may be used for initial contact (hailing) with another vessel. However, its most important use is for emergency messages. This channel must be monitored at all times except when actually using another channel. It is monitored by the U.S. and Canadian Coast Guards and by other vessels. **Use of channel 16 for hailing must be limited to initial contact only.** Calling should not exceed 30 seconds, but may be repeated 3 times at 2-minute intervals. In areas of heavy radio traffic, congestion on channel 16 resulting from its use as a hailing channel can be reduced significantly in U.S. waters by using **channel 9** as the initial contact (hailing) channel for non-emergency communications. Here, also, calling time should not exceed 30 seconds but may be repeated 3 times at 2-minute intervals.

Prior to making contact with another vessel, refer to the channel charts in this manual, and select an appropriate channel for communications after initial contact.

For example, Channels 68 and 69 of the U.S. VHF Charts are some of the channels available to non-commercial (recreational) boaters. Monitor your desired channel in advance to make sure you will not be interrupting other traffic, and then go back to either channel 16 or 9 for your initial contact.

When the hailing channel (16 or 9) is clear, state the name of the other vessel you wish to call and then **“this is”** followed by the name of your vessel and your Station License (Call Sign). When the other vessel returns your call, immediately request another channel by saying **“go to”**, the number of the other channel, and “over.” Then switch to the new channel. When the new channel is not busy, call the other vessel.

After a transmission, say **“over”**, and release the microphone's push-to-talk (PTT) switch. When all communication with the other vessel is completed, end the last transmission by stating your Call Sign and the word **“out”**. Note that it is not necessary to state your Call Sign with each transmission, only at the beginning and end of the contact.

Remember to return to Channel 16 when not using another channel. Some radios automatically monitor Channel 16 even when set to other channels or when scanning; see your Owner's Manual.

## Making Telephone Calls

To make a radiotelephone call, use a channel designated for this purpose, The fastest way to learn which channels are used for radiotelephone traffic is to ask at a local marina. Channels available for such traffic are designated **Public Correspondence** channels on the channel charts in this manual. Some examples for USA use are Channels 24, 25, 26, 27, 28, 84, 85, 86, and 87. Call the marine operator and identify yourself by your vessel's name, The marine operator will then ask you how you will pay for the call (telephone credit card, collect, etc.) and then link your radio transmission to the telephone lines.

The marine telephone company managing the VHF channel you are using may charge a link-up fee in addition to the cost of the call.

## Operating On Channels 13 And 67

Channel 13 is used at docks and bridges and by vessels maneuvering in port. Messages on this channel must concern navigation only, such as meeting and passing in restricted waters.

Channel 67 is used for navigational traffic between vessels.

By regulation, power is normally limited to 1 Watt on these channels. Your radio is programmed to automatically reduce power to this limit on these channels. However, in certain situations it may be necessary to temporarily use a higher power. See your Owner's Manual for means to temporarily override the low-power limit on these two channels.

## Prohibited Communications

The FCC prohibits the following communications:

- False distress or emergency messages;
- Messages to "any boat" except in emergencies and radio tests;
- Messages to or from a vessel on land;
- Transmission while on land;
- Obscene, indecent, or profane language (potential fine of \$10,000).

## NOAA Weather Alert Testing

In the event of a major storm or other appreciable weather condition requiring vessels at sea or other bodies of water to be notified, the NOAA (National Oceanographic and Atmospheric Administration) broadcasts a 1050 Hz tone that some marine VHF radios can detect. (Refer to your radio's Owner's Manual on how to use this feature.) This tone, when detected, will produce a loud beep from the radio speaker to signal that a weather alert is being broadcast.

In order to test this system, the NOAA broadcasts the 1050 Hz tone every Wednesday, sometime between 11 AM and 1 PM. Any marine VHF radio that can detect the weather alert tone, may use this test to verify that this feature is functioning properly,

## **Digital Selective Calling (DSC)**

Digital Selective Calling is a semi-automated method of establishing a radio call, it has been designated by the International Maritime Organization (IMO) as an international standard for establishing VHF, MF and HF radio calls. It has also been designated part of the Global Maritime Distress and Safety System (GMDSS) and it is planned that DSC will eventually replace aural watches on distress frequencies and will be used to announce routine and urgent maritime safety information broadcasts.

This new service will allow mariners to instantly send a distress call with GPS position (when connected to the transceiver) to the US Coast Guard and other vessels within range of the transmission. DSC will also allow mariners to initiate or receive distress, urgency, safety and routine calls to or from another vessel equipped with a DSC transceiver.

### **USCG DSC Watch**

The USCG has plans to upgrade its VHF National Distress System (expected by 2005), so at the time of printing only larger vessels that are required to carry VHF DSC radios will be able to hear your distress transmission

## **Maritime Mobile Service Identity(MMSI)**

### **What is a MMSID?**

A MMSI is a nine digit number used on Marine Transceivers capable of using Digital Selective Calling (DSC). This number is used like a telephone number to selectively call other vessels.

### **How can I obtain a MMSID assignment?**

At the time of this printing, to obtain an MMSID the user must contact the FCC and apply for a Ship Station License form 506, or an amendment to a ship station license, regardless of whether the license is otherwise required. This procedure is currently under review by both the FCC and US Coast Guard. Refer to FCC ship station license section for contact information.

## **Using Digital Selective Calling Features**

### **Distress Call**

Transmits a DSC Distress message to all radios equipped to receive a DSC Distress call. Some Standard Horizon radios may be connected to a GPS to also transmit the Latitude, Longitude of the vessel.

## **Individual Call**

This feature allows the user to contact another vessel capable of using DSC to automatically switch the radio to a desired working channel. This feature is similar to calling a desired vessel on CH16 and requesting them to go to another channel.

## **Urgency Call**

This call should be used when a vessel may not be truly in distress, but have a potential problem that might lead to a distress situation.

## **Safety Call**

Used to transmit boating safety information to other vessels. This message usually contains information about an overdue boat, a derelict afloat, loss of a navigation aid or an important meteorological message.

## **Position request**

Used to poll another vessel position via DSC and show it on the LCD of the radio.

# **ADDITIONAL DIGITAL SELECTIVE CALLING INFORMATION**

For additional information the USCG has an excellent site that should be visited at [www.navcen.uscg.mil/marcoms/gmdss/dsc.html](http://www.navcen.uscg.mil/marcoms/gmdss/dsc.html)

## **About VHF Radio**

The radio frequencies used in the VHF marine band lie between 156 and 158 MHz with some shore stations available between 161 and 163MHz. The marine VHF band provides communications over distances that are essentially "line of sight" (VHF signals do not travel well through objects such as buildings, hills or trees). Actual transmission range depends much more on antenna type, gain and height than on the power output of the transmitter. On a fixed mount 25W radio transmission expected distances can be greater than 15 miles, for a portable 5W radio transmission the expected distance can be greater than 5 miles in "line of sight".

## Selecting an Antenna

Marine antennas are made to radiate signals equally in all horizontal directions, but not straight up. The objective of a marine antenna is to enhance the signal toward the horizon. The degree to which this is accomplished is called the antenna's gain. It is measured in decibels (dB) and is one of the major factors in choosing an antenna. In terms of effective radiated power (ERP), antennas are rated on the basis of how much gain they have over a theoretical antenna with zero gain. A 3 foot, 3dB gain antenna represents twice as much gain over the imaginary antenna. The length of the antenna you choose, however, must also be related to the size of your boat. Typically a 3 foot 3dB gain stainless steel whip is used on a sailboat mast. The longer 9 foot 6dB is primarily used on power boats that require the additional gain.

## Coaxial Cable

VHF antennas are connected to the transceiver by means of a coaxial cable – a shielded transmission line. Coaxial cable is specified by its diameter and construction. For runs less than 20 feet, RG-58/U, about 1/4 inch in diameter is a good choice. For runs over 20 feet, the larger RG-8U or RG-213/U should be used. For installation of the connector onto the coaxial cable refer to the instructions supplied with the antenna.



# MAINTENANCE

## General

The inherent quality of the solid-state components in STANDARD HORIZON radios will provide many years of continuous use. Take the following precautions to prevent damage to the radio.

- Keep the microphone connected or the jack covered at all times to prevent corrosion of electrical contacts;
- Never key the transmitter unless an antenna or suitable dummy load is connected to the antenna receptacle;
- Ensure that the input voltage does not exceed the value specified in your Owner's Manual;
- Use only STANDARD HORIZON-approved accessories and replacement parts.

## Batteries and Chargers

### CAUTION

This section is applicable only for radios with external battery packs.

### Battery Maintenance

For safe and proper battery use, please observe the following:

- Battery packs should be charged only in non-hazardous environments;
- Use only STANDARD HORIZON-approved batteries;
- Use only a STANDARD HORIZON, (a division of YAESU USA) approved charger. The use of any other charger may cause permanent damage to the battery;
- Follow charging instructions provided with the chargers;
- Do not use the radio while it is in the charger;
- Keep the battery contacts clean.

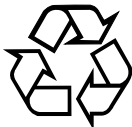
### Battery Storage

Store batteries in a cool place to maximize storage life. Since batteries are subject to self-discharge, avoid high storage temperatures that cause large self-discharge rates. After extended storage, a full recharge is recommended.

## Memory Cycling

Partially discharging a nickel-cadmium battery and then recharging it causes a phenomenon called "memory". When a battery establishes a memory, its available capacity is reduced. To ensure that a nickel-cadmium battery pack retains its full capacity, the battery pack should be almost fully discharged and then recharged completely after every few cycles of use.

## Battery Recycling



**DO NOT PLACE USED BATTERIES IN YOUR REGULAR TRASH!**

**NICKEL-CADMIUM BATTERIES MUST BE COLLECTED, RECYCLED OR DISPOSED OF IN AN ENVIRONMENTALLY SOUND MANNER.**

The incineration, landfilling or mixing of nickel-cadmium batteries with the municipal solid waste stream is **PROHIBITED BY LAW** in most areas.

Return batteries to an approved nickel-cadmium battery recycler. This may be where you purchased the battery.

Contact your local waste management officials for other information regarding the environmentally sound collection, recycling and disposal of nickel-cadmium batteries.

# CHANNEL ASSIGNMENTS

Tables on the following columns list the VHF Marine Channel assignments for U.S.A. and International use. Below are listed some data about the charts.

1. VTS. Where indicated, these channels are part of the U.S. Coast Guard's **Vessel Traffic System**.

2. Alpha channel numbers, that is, channel numbers followed by the letter A (such as Channel 07**A**) are **simplex** channels on the U.S.A. or Canadian channel assignments whose counterparts in the International assignments are **duplex** channels. International channels do not use "alpha" numbers. If you call the Coast Guard on Channel 16, they will sometimes ask you to **"go to channel 22 Alpha."** This is a channel assigned to U.S.A. and Canadian Coast Guards for handling distress and other calls. If your radio is set for **International** operation you will go to Channel 22 instead of 22**A**, and will not be able to communicate with the Coast Guard. To use Channel 22**A**, your radio must be set for **USA** or **Canada** operation, usually by a U/I/C (USA/International/Canada) control or combination of controls (see your Owner's Manual). Channel 22 (without an "A") is an **International** duplex channel for port operations. Some radios indicate an "A" adjacent to the alpha channels on the display; on others "alpha" is not indicated but the proper channel is selected based on the U/I/C setting.

3. Bridge-to-Bridge channels (for example, Channel 13) are for use by bridge operators on intercoastal waterways and rivers. It is also used by marine vessels in the vicinity of these bridges for navigation and for communicating with the bridge operators. **Note that a limit of 1 Watt is specified for these channels.** See page 4 for additional information.

4. The **S/D** column on the chart indicates either S (simplex) or D (duplex). **Simplex** means transmitting and receiving on the same frequency. Only one party at a time can talk, unlike a telephone. Be sure to say **"over"** and release your microphone push-to-talk switch at the end of each transmission. **Duplex** operation involves the use of one frequency for transmitting and a separate frequency for receiving. On channels specified as duplex on the charts, correct mode of operation is established automatically by your radio when you select a channel; you cannot change the mode. And you still must release the push-to-talk switch after each transmission in order to listen to the radio.

5. Channels normally used by recreational boaters are those that include the term "non-commercial" in the **Channel Use** column of the chart. Some of these are shared with other users and some are used only in certain geographic regions. The **Marine Radio-Telephone User's Handbook** (see page 1) identifies shared channels in detail.

**6. Marine vessels equipped with VHF radios are required to monitor Channel 16. For some radios, this is done automatically when the radio is on; see your Owner's Manual.**

VHF MARINE CHANNEL CHART							
CH	U	C	I	S/D	TX	RX	CHANNEL USE
01A	X			S	156.050		Port Operation and Commercial. VTS in selected areas
01		X	X	D	156.050	160.650	Public Correspondence (Marine Operator)
02		X	X	D	156.100	160.700	Public Correspondence (Marine Operator)
<b>03A</b>	<b>X</b>			<b>S</b>	<b>156.150</b>		<b>US Government only, Coast Guard</b>
03		X	X	D	156.150	160.750	Public Correspondence (Marine Operator)
04A		X		S	156.200		Pacific coast: Coast Guard, East Coast: Commercial fishing
04			X	D	156.200	160.800	Public Correspondence (Marine Operator), Port operation, ship movement
05A	X	X		S	156.250		Port operation. VTS in Seattle.
05			X	D	156.250	160.850	Public Correspondence (Marine Operator), Port operation, ship movement
06	X	X	X	S	156.300		Inter-ship Safety
07A	X	X		S	156.350		Commercial
07			X	D	156.350	160.950	Public Correspondence (Marine Operator), Port operation, ship movement
08	X	X	X	S	156.400		Commercial (Inter-ship only)
09	X	X	X	S	156.450		Boater Calling channel, Commercial & Non-commercial (Recreational)
10	X	X	X	S	156.500		Commercial
11	X	X	X	S	156.550		Commercial. VTS in selected areas.
12	X	X	X	S	156.600		Port operation. VTS in selected areas.
13	X	X	X	S	156.650		Inter-ship Navigation Safety (Bridge-to-bridge)
14	X	X	X	S	156.700		Port operation. VTS in selected areas.
15	X			S	---	156.750	Environmental (Receive only)
15		X	X	S	156.750		Commercial, non-commercial, ship movement (1W)
16	X	X	X	S	156.800		International Distress, Safety and Calling.
17	X	X	X	S	156.850		State Controlled (1 W)
18A	X	X		S	156.900		Commercial
18			X	D	156.900	161.500	Port operation, ship movement
19A	X			S	156.950		US: Commercial
19A		X		S	156.950		Coast Guard
19			X	D	156.950	161.550	Port operation, ship movement
20A	X			S	157.000		Port Operation
20		X	X	D	157.000	161.600	Canadian Coast Guard Only, International: port operations and shipment
<b>21A</b>	<b>X</b>	<b>X</b>		<b>S</b>	<b>157.050</b>		<b>U.S. Government Only, Canadian Coast Guard</b>
21			X	D	157.050	161.650	Port operation, ship movement
22A	X	X		S	157.100		US and Canadian Coast Guard Liaison and Maritime Safety Information Broadcasts announced on channel 16
22			X	D	157.100	161.700	Port operation, ship movement
<b>23A</b>	<b>X</b>			<b>S</b>	<b>157.150</b>		<b>U.S. Government Only</b>
23		X	X	D	157.150	161.750	Public Correspondence (Marine Operator)
24	X	X	X	D	157.200	161.800	Public Correspondence (Marine Operator)
25	X	X	X	D	157.250	161.850	Public Correspondence (Marine Operator)
26	X	X	X	D	157.300	161.900	Public Correspondence (Marine Operator)
27	X	X	X	D	157.350	161.950	Public Correspondence (Marine Operator)
28	X	X	X	D	157.400	162.000	Public Correspondence (Marine Operator)

VHF MARINE CHANNEL CHART							
CH	U	C	I	S/D	TX	RX	CHANNEL USE
60		X	X	D	156.025	160.625	Public Correspondence (Marine Operator)
<b>61A</b>	<b>X</b>	<b>X</b>		<b>S</b>	<b>156.075</b>		<b>U.S. Government Only, Canadian Coast Guard-Pacific Coast, Commercial Fishing-East Coast</b>
61			X	D	156.075	160.675	Public Correspondence (Marine Operator), Port operation, ship movement
62A		X		S	156.125		Pacific Coast: Coast Guard; East Coast: commercial fishing only
62			X	D	156.125	160.725	Public Correspondence (Marine Operator), Port operation, ship movement
63A	X			S	156.175		Port Operation and Commercial. VTS in selected areas.
63			X	D	156.175	160.775	Public Correspondence (Marine Operator), Port operation, ship movement
<b>64A</b>	<b>X</b>	<b>X</b>		<b>S</b>	<b>156.225</b>		<b>U.S. Government Only, Canadian Commercial Fishing</b>
64			X	D	156.225	160.825	Public Correspondence (Marine Operator), Port operation, ship movement
65A	X	X		S	156.275		Port Operations
65			X	D	156.275	160.875	Public Correspondence (Marine Operator), Port operation, ship movement
66A	X	X		S	156.325		Port Operations
66			X	D	156.325	160.925	Public Correspondence (Marine Operator), Port operation, ship movement
67	X	X	X	S	156.375		US: Commercial. Used for Bridge-to-bridge communications in lower Mississippi River. Inter-ship only, Canada: Commercial fishing, S&R
68	X	X	X	S	156.425		Non-commercial (Recreational)
69	X	X	X	S	156.475		US: Non-commercial (Recreational), Canada: Commercial fishing only. International: Port operations and Ship movement
70	X	X	X	S	156.525		Digital selective calling (voice communications not allowed)
71	X	X	X	S	156.575		US, Canada: Non-commercial (Recreational), International: Port operations and Ship movement
72	X	X	X	S	156.625		Non-commercial (Inter-ship only)
73	X	X	X	S	156.675		US: Port Operations, Canada: Commercial fishing only, International: Inter-ship, Port operations and Ship movement
74	X	X	X	S	156.725		US: Port Operations, Canada: Commercial fishing only, International: Inter-ship, Port operations and Ship movement
77	X	X	X	S	156.875		Port Operations (inter-ship only)
78A	X	X		S	156.925		Non-commercial(Recreational)
78			X	D	156.925	161.525	Public Correspondence (Marine Operator), Port operation, ship movement
79A	X	X		S	156.975		Commercial
79			X	D	156.975	161.575	Port operation and Ship movement
80A	X	X		S	157.025		Commercial
80			X	D	157.025	161.625	Port operation, ship movement
<b>81A</b>	<b>X</b>	<b>X</b>		<b>S</b>	<b>157.075</b>		<b>U.S. Government Only – Environmental protection operations.</b>
81			X	D	157.075	161.675	Port operation, ship movement
<b>82A</b>	<b>X</b>	<b>X</b>		<b>S</b>	<b>157.125</b>		<b>U.S. Government Only, Canadian Coast Guard Only</b>
82			X	D	157.125	161.725	Public Correspondence (Marine Operator), Port operation, ship movement
<b>83A</b>	<b>X</b>	<b>X</b>		<b>S</b>	<b>157.175</b>		<b>U.S. Government Only, Canadian Coast Guard Only</b>
83			X	D	157.175	161.775	Public Correspondence (Marine Operator)
84	X	X	X	D	157.225	161.825	Public correspondence (Marine Operator)
85	X	X	X	D	157.275	161.875	Public correspondence (Marine Operator)

VHF MARINE CHANNEL CHART							
CH	U	C	I	S/D	TX	RX	CHANNEL USE
86	X	X	X	D	157.325	161.925	Public correspondence (Marine Operator)
87	X	X	X	D	157.375	161.975	Public correspondence (Marine Operator)
88A	X			S	157.425		Commercial, Inter-ship Only
88		X	X	D	157.425	162.025	Public correspondence (ship-to-coast)
WX01	X	X	X	D	---	162.550	Weather (receive only)
WX02	X	X	X	D	---	162.400	Weather (receive only)
WX03	X	X	X	D	---	162.475	Weather (receive only)
WX04	X	X	X	D	---	162.425	Weather (receive only)
WX05	X	X	X	D	---	162.450	Weather (receive only)
WX06	X	X	X	D	---	162.500	Weather (receive only)
WX07	X	X	X	D	---	162.525	Weather (receive only)
WX08	X	X	X	D	---	161.650	Weather (receive only)
WX09	X	X	X	D	---	161.775	Weather (receive only)
WX10	X	X	X	D	---	163.275	Weather (receive only)

The **BOLD** channels above are not for use by the general public in US water, unless proper authorization is given.

# **WARRANTY**

## Marine Products Limited Warranty

STANDARD HORIZON (a division of YAESU USA) warrants, to the original purchaser only, each new Marine Communications Product ("Product") manufactured and/or supplied by STANDARD HORIZON against defects in materials and workmanship under normal use and service for a period of time from the date of purchase as follows:

### **Fixed Mount and Portable Transceivers**

**1 year - if purchased before 01/01/91**

**3 years - if purchased between 01/01/91 and 01/01/94**

**3 years Waterproof - if purchased after 01/01/94**

### **Loud hailers**

**1 year - if purchased before 01/01/91**

**3 years - if purchased after 01/01/91**

### **Associated Chargers**

**1 year - if purchased before 01/01/91**

**3 years - if purchased after 01/01/91**

Associated Batteries - 18 months. Note: Batteries will be deemed defective only if storage capacity drops below 80% of rated capacity or if leakage develops.

Associated Accessories- 1 year. Includes: Microphones/Handsets, External Speakers, Antennas, Carrying Accessories, Power Supplies, and Signaling Boards.

To receive warranty service, the purchaser must deliver the Product, transportation and insurance prepaid, to STANDARD HORIZON (a division of YAESU USA) ., 115 North Wright Brothers Dr, Salt Lake City, Utah 84116-2838. Include proof of purchase indicating model, serial number, and date of purchase. STANDARD HORIZON will return the Product to the purchaser freight prepaid. Products purchased prior to January 1, 1991 will bear the STANDARD HORIZON warranty terms in effect prior to that date.

In the event of a defect, malfunction or failure of the Product during the warranty period, STANDARD HORIZON's liability for any breach of contract or any breach of express or implied warranties in connection with the sale of Products shall be limited solely to repair or replacement, at its option, of the Product or part(s) therein which, upon examination by STANDARD HORIZON, appear to be defective or not up to factory specifications. STANDARD HORIZON may, at its option, repair or replace parts or subassemblies with new or reconditioned parts and subassemblies. Parts thus repaired or replaced are warranted for the balance of the original applicable warranty.

STANDARD HORIZON will not warrant installation, maintenance or service of the Products. In all instances, STANDARD HORIZON's liability for damages shall not exceed the purchase price of the defective Product. This warranty only extends to Products sold within the 50 States of the United States of America and the District of Columbia.

STANDARD HORIZON will pay all labor and replacement parts charges incurred in providing the warranty service except where purchaser abuse or other qualifying exceptions exist. The purchaser must pay any transportation expenses incurred in returning the Product to STANDARD HORIZON for service.

This limited warranty does not extend to any Product which has been subjected to misuse, neglect, accident, incorrect wiring by anyone other than STANDARD HORIZON, improper installation, or subjected to use in violation of instructions furnished by STANDARD HORIZON, nor does this warranty extend to Products on which the serial number has been removed, defaced, or changed. STANDARD HORIZON cannot be responsible in any way for ancillary equipment not furnished by STANDARD HORIZON which is attached to or used in connection with STANDARD HORIZON's Products, or for the operation of the Product with any ancillary equipment, and all such equipment is expressly excluded from this warranty. STANDARD HORIZON disclaims liability for range, coverage, or operation of the Product and ancillary equipment as a whole under this warranty. STANDARD HORIZON reserves the right to make changes or improvements in Products, during subsequent production, without incurring the obligation to install such changes or improvements on previously manufactured Products.

The implied warranties which the law imposes on the sale of this Product are expressly LIMITED, in duration, to the time period specified above. STANDARD HORIZON shall not be liable under any circumstances for consequential damages resulting from the use and operation of this Product, or from the breach of this LIMITED WARRANTY, any implied warranties, or any contract with STANDARD HORIZON. IN CONNECTION WITH THE SALE OF ITS PRODUCTS, STANDARD HORIZON MAKES NO WARRANTIES, EXPRESS OR IMPLIED AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, EXCEPT AS EXPRESSLY SET FORTH HEREIN.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitation on how long an implied warranty lasts, so the above limitations or exclusions may not apply. This warranty gives specific legal rights, and there may be other rights which may vary from state to state.

ONLY PRODUCTS SOLD ON OR AFTER JANUARY 1, 1991 ARE COVERED UNDER THE TERMS OF THIS LIMITED WARRANTY.



## WARRANTY INFORMATION CARD INSTRUCTIONS

Please complete the Owner's Record below for your records. Then complete the Warranty Information Card that should be attached to the front of this manual, detach it and mail it to STANDARD HORIZON. Should you ever return the equipment to your STANDARD HORIZON Dealer or to STANDARD HORIZON for in-warranty repair, the Owner's Record, or other proof of purchase, must be included with the unit to provide warranty information.

In addition to the warranty, STANDARD HORIZON includes a lifetime "flat rate" program to provide service after the warranty period has expired. If you wish to obtain the flat rate price for out-of-warranty repair, you must include the information on the Owner's Record with the unit when you return it to your Dealer or to STANDARD HORIZON.

**Lifetime Flat Rate Service Program:** For the original Owner only, for the lifetime of the unit, STANDARD HORIZON will repair the unit to original specifications for \$65.00 per repair.

**Note:** The flat rate amount is payable by the Owner only if STANDARD HORIZON or the STANDARD HORIZON Dealer determines that a repair is needed. After the repair, a 90-day warranty will be in effect from the date of return of the unit to the Owner.

This service program is not available for equipment which has failed as a result of neglect, accident, breakage, misuse, improper installation or modification, or water damage.

**THANK YOU** for buying STANDARD HORIZON (a division of YAESU USA) products!  
We are confident your new radio will serve your needs for many years!

Model		Serial Number	
Purchase Date	Dealer		



**STANDARD HORIZON**

YAESU U. S. A.  
17210 Edwards Rd., Cerritos, CA 90703, U.S.A.

Printed in Japan

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**STANDARD HORIZON**

# **Owner's Manual**

## **Supplement**

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**For Marine VHF Radios**

### **Contains**

- FCC / INDUSTRY CANADA Information
- Maintenance
- Service
- VHF Channel Charts
- Warranty

