STANDARD HORIZON

Nothing takes to water like Standard Horizon

HX890
HX890E

6 Watt VHF/FM

Floating Class H DSC Marine Transceiver with GPS

Owner's Manual

TABLE OF CONTENTS

2

TABLE OF CONTENTS

QUICK REFERENCE

The **HX890** is equipped with the E2O (Easy-To-Operate) menu system. Basic operation may be accomplished by following the procedures below:

① ⏻: Press and hold to turn the transceiver ON/OFF.

② **PTT** (Push-To-Talk): Activates the transmitter when pressed.

③ **SQL**: Press to display the SQL level setting screen, then press the **CH▲** key to squelch the audio or press the **CH▼** to un-squelch the radio.

④ **MIC**: Speak slowly and clearly into the **MIC** aperture, having it about 1/2 to 1 inch (1.2 to 2.5 cm) away from your mouth while pressing the **PTT** key.

⑤ **◄/►**: Press to toggle the on-screen menus to right or left.

⑥ **CLR**: Press to cancel a function or menu selection.

⑦ **MENU/SET**: Press to access MENU; Press and hold to enter the SETUP menu.

⑧ **DISTRESS**: Activates a DSC Distress Alert. Lift the red cover, press the **DISTRESS** once, then press and hold until the radio alarms.

⑨ **Soft keys**: These three programmable keys can be customized through the setup menu mode. Pressing one of these keys briefly will display the key functions at the bottom of the screen.

⑩ **Strobe Light**: Pressing the **[STROBE]** soft key , blinks the internationally-recognized Morse Code "S.O.S" message.

⑪ **CH▼/CH▲**: Press to change the operating channel.

⑫ **O╥**: Press and hold to lock and unlock the keypad.

⑬ **16/S**: Press to recall channel 16. Press and hold to recall the sub channel.

⑭ **VOL−/VOL+**: Press to adjust the speaker audio volume.

1. GENERAL INFORMATION

1.1 INTRODUCTION

Congratulations on your purchase of the **HX890**! Whether this is your first portable marine VHF transceiver, or if you have other STANDARD HORIZON✻ equipment, the STANDARD HORIZON organization is committed to ensuring your enjoyment of this high-performance transceiver, which should provide you with many years of satisfying communications even in the harshest of environments. STANDARD HORIZON technical support personnel stand behind every product sold.

The HX890 Portable Marine transceiver is designed to be used in USA, International, and Canadian Marine bands. The HX890 can be operated from 11 to 16 VDC and has a switchable RF output power of 1 watt, 2.5 watts or 6 watts (5 watts)*.

The HX890 is capable of DSC (Digital Selective Calling) ITU-R M.493 Class H operation. Class H operation allows continuous receiving of Digital Selective Calling functions on channel 70 even if the radio is receiving a call. The **HX890** operates on all currently-allocated marine channels which are switchable for use with USA, International, or Canadian regulations. Emergency channel 16 can be immediately selected from any channel by pressing the red **16/S** key. NOAA weather channel can also be accessed immediately by pressing the **[WX]** soft key (in USA and Canada only).

With the internal high-performance 66 Channel GPS receiver, WAAS and QZSS satellites can be received.

We appreciate your purchase of the **HX890**, and encourage you to read this manual thoroughly, so as to learn and fully understand the capabilities of the **HX890**.

*(5-Watt TX required in some countries)

1.2 RADIO CARE

Before using the radio:
1. It is recommended to fully charge the battery. See section **"7.1.4 Using the SBH-32 Charger Cradle"** for details.
2. Be sure that the speaker microphone cap, antenna and battery are in place and firmly tightened.
3. Care must be taken if the radio was dropped, a close inspection may be needed to insure the radio case and gaskets are in adequate condition.

NOTE

To keep the LCD, keypad and speaker grill clean and in top operating condition after exposure to water: Clean the radio with fresh water after exposure to salt water by rinsing the radio under a sink faucet or by dunking the radio in a bucket of fresh water. After washing, use a soft cloth and thoroughly dry all parts of the radio.

2. PACKING LIST

When the package containing the transceiver is first opened, please check it for the following contents:

- **HX890** Transceiver
- **CAT460** Antenna*1
- **SBR-13LI** 7.4V 1800mAh Li-ion Battery Pack
- **SBH-32** Charger Cradle
- **SAD-25***2 AC adaptor for **SBH-32**
- **E-DC-19A** DC Cable with 12 V Cigarette Lighter Plug for **SBH-32**
- **SBT-13** Alkaline Battery Case for AAA x 5
- **Clip-22** Belt Clip
- **YS-05-01** Hand Strap
- **T9101648** USB Cable
- Owner's Manual

*1(Antenna gain: -1.5dBi, Impedance: 50 ohm)

*2(Depending on the transceiver version)

3. SAFETY PRECAUTIONS

Be sure to read the safety precautions, and use this product safely.
Yaesu is not liable for any failures or problems caused by the use or misuse of this product by the purchaser or any third party. Also, Yaesu is not liable for damages caused through the use of this product by the purchaser or any third party, except in cases where ordered to pay damages under the laws.

Types and meanings of the marks

⚠ **DANGER**	This mark indicates an imminently hazardous situation, which, if not avoided, could result in death or serious injury.
⚠ **WARNING**	This mark indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.
⚠ **CAUTION**	This mark indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury or only property damage.

Types and meanings of symbols

🚫 These symbols signify prohibited actions, which must not be done to use this product safely. For example: 🚫 indicates that the product should not be disassembled.

❗ These symbols signify required actions, which must be done to use this product safely. For example: 🔌 indicates that the power plug should be disconnected.

⚠ DANGER

🚫 **Do not operate the device when flammable gas is generated.**
Doing so may result in fire and explosion.

🚫 **Do not transmit with this device in a crowded place for the safety of persons using a medical device such as a cardiac pacemaker.**
The radio wave emitted from this product can cause the medical device to malfunction and result in an accident.

🚫 **Do not touch any liquid leaking from the liquid display with your bare hands.**
There is a risk of chemical burns occurring when the liquid comes into contact with the skin or gets into the eyes. In this case, seek medical treatment immediately.

🚫 **Do not touch any material leaking from the battery pack with bare hands.**
The chemical that has stuck to your skin or entered your eye can cause chemical burns. In such a case, consult the doctor immediately.

🚫 **Do not solder or short-circuit the terminals of the battery pack.**
A fire, leak, overheating, explosion, or ignition may result.
Do not carry the battery pack together with a necklace, hairpin, or small metal objects. A short circuit can result.

⚠ WARNING

🚫 Do not power this transceiver with a voltage other than the specified power supply voltage.
A fire, electric shock, or damage may result.

🚫 Do not make very long transmissions.
The main body of the transceiver may overheat, resulting component failure or operator burns.

🚫 Do not disassemble or make any alteration to this product.
An injury, electric shock, or failure may result.

🔌 **If smoke or a strange odor is emitted from the main body, battery pack, or battery charger, immediately turn the transceiver off; remove the battery pack.**
A fire, chemical leak, overheating, component damage, ignition, or failure may result. Please contact the dealer from which you purchased this product.

🚫 Never touch the antenna during transmission.
This may result in injury, electric shock and equipment failure.

🚫 **Do not handle the battery pack or charger with wet hands. Do not insert or remove the power plug with wet hands.**
An injury, leak, fire, or failure may result.

❗ When transmitting, keep the transceiver at least 25.0 mm (1 inch) away from your face.
Use only the supplied antenna. Do not use modified or damaged antennas.

⚠ CAUTION

🚫 **Do not place the transceiver on an unsteady or sloping surface, or in a location with extreme vibration.**
The transceiver may fall or drop, resulting in fire, injury and equipment damage.

❗ Stay as far away from the antenna as possible during transmission.
Long-term exposure to electromagnetic radiation may have a negative effect on the human body.

🚫 **Do not dangle or throw the transceiver by holding its antenna.**
This may injure others and may also result in damage and failure of the transceiver.

🚫 **Do not wipe the case using thinner and benzene etc.**
Use only a soft, dry cloth to wipe stains from the case.

❗ **Keep this product out of the reach of children.**
Injury to the child, or damage to the transceiver may result.

🚫 **Do not use any products other than the specified options and accessories.**
Failure or miss operation may result.

🔌 If the transceiver will not be used for an extended period, turn it OFF and remove the battery pack for safety.

❗ **Do not throw the transceiver, or subject it to strong impact forces.**
Physical abuse may result in component damage and equipment failure.

❗ **Keep magnetic cards and videotapes away from the transceiver.**
The data recorded on cash cards or videotapes may be erased.

🚫 **Do not use the transceiver in a crowded place.**
The antenna may strike others and result in an injury.

❗ **Install the hand strap and belt clip securely.**
Improper installation may cause the transceiver to fall or drop, resulting in an injury or damage.

❗ Before discarding a depleted battery pack, affix tape or insulating covering to its terminals.

4. ONLINE WARRANTY REGISTRATION

Please visit **www.standardhorizon.com** - Owner's Corner to register the **HX890** Marine VHF.
NOTE: visiting the STANDARD HORIZON website from time to time may be beneficial. When new products are released, information will appear on the website.

5. OPTIONAL ACCESSORIES

① **MH-73A4B** ....Submersible Speaker/Microphone
② **MH-57A4B** .... Mini Speaker/Microphone
③ **SSM-14A** .... Submersible Speaker/Microphone with Earphone Jack
④ **SEP-10** ....Earphone for SSM-14A
⑤ **SSM-64A** ....VOX Headset
⑥ **SSM-55A** ....Earpiece/Microphone
⑦ **CN-3** .... Radio-to-Ship's-Antenna Adapter
⑧ **SBR-13 LI** ....7.4V 1800mAh Li-ion Battery Pack
⑨ **SBT-13** ....Alkaline Battery Case (AAA x 5 pcs)
⑩ **SBH-32** .... Charger Cradle
⑪ **E-DC-19A** ....DC Cable with 12 V Cigarette Lighter Plug
⑫ **SAD-25**∗1 ....AC Adaptor for the **SBH-32**
⑬ **E-DC-6** .... DC Cable; plug and wire only
∗1(Depending on the transceiver version)

NOTE

> Charge the battery before operating the HX890 for the first time. Please see section "**7.1.4 Using the SBH-32 Charger Cradle**" for details.
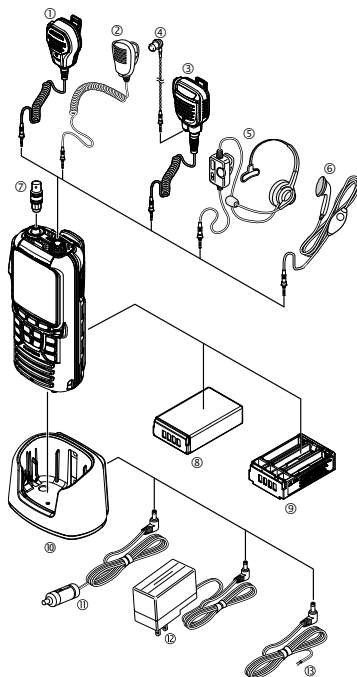
6. ABOUT THIS RADIO

6.1 PROHIBITED COMMUNICATIONS (in USA or Canada only)

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).

6.2 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 163 MHz. 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 (25 km), for a portable 6W (5W)* radio transmission the expected distance can be greater than 5 miles (8 km) in "line of sight".

The user of a Marine VHF radio is subject to severe fine if the radio is used on land. The reasoning for this is you may be near an inland waterway, or propagation anomalies may cause your transmission to be heard in a waterway. If this occurs, depending upon the marine VHF channel on which you are transmitting, you could interfere with a search and rescue case, or contribute to a collision between passing ships. For VHF Marine channel assignments refer to page 122 section 18.

*(5W TX required in some countries)

6.3 DISTRESS AND HAILING (CHANNEL 16)

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 **PTT** (Push-To-Talk) button 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 **PTT** button and listen.
10. If there is no answer, repeat the above procedure. If there is still no response, try another channel.

NOTE

The **HX890** has the DSC Distress Alert, that can transmit a Distress Alert digitally to all ships with compatible DSC radios. Refer to section **"11. DIGITAL SELECTIVE CALLING (DSC)"**.

6.4 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, press the **PTT** button and 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) then release the **PTT** button. When the other vessel returns your call, immediately request another channel by pressing the **PTT** button and saying "*go to*", the number of the other channel, say "*over*" and release the **PTT** button. 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 **PTT** button. 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.

6.5   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.

6.6   BRIDGE CHANNELS 13 AND 67

Channel 13 is used at docks, 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 Page 27 for means to temporarily override the low-power limit on these two channels.

6.7   AUTOMATED RADIO CHECK SERVICE (in the USA only)

In areas across the United States, Sea Tow offers boaters a way to conduct radio checks. To use Sea Tow's free Automated Radio Check service, simply tune your VHF radio to the appropriate channel for your location and conduct a radio check as you typically would. Upon releasing your radio's microphone, the system will play an automated message and relay your transmission back to you, thereby letting you know how your signal will sound to other boaters.

The Automated Radio Check Service is currently available in the areas listed below.

West Coast	Sea Tow Newport/LA - Ch. 27
	Sea Tow San Diego - Ch. 27
Northeast	Sea Tow Portland-Midcoast (Maine) - Ch. 27
	Sea Tow Boston - Ch. 27
	Sea Tow South Shore (Mass.) - Ch. 28
	Sea Tow Rhode Island - Ch. 24
	Sea Tow Eastern Long Island - Ch. 27

|	Sea Tow Huntington (N.Y.) - Ch. 27
	Sea Tow Manasquan (N.J.) - Ch. 28
Mid-Atlantic	Sea Tow Northern Chesapeake (Md.) - Ch. 28
	Sea Tow Central Chesapeake (Md.) - Ch. 27
	Sea Tow Hampton Roads (Va.) - Ch. 28
North Carolina	Sea Tow Wrightsville Beach - Ch. 28
	Sea Tow Ocean Isle Beach - Ch. 28
Florida	Sea Tow Sebastian - Ch. 28
	Sea Tow Fort Lauderdale - Ch. 27
	Sea Tow Charlotte Harbor - Ch. 24
	Sea Tow Tampa Bay - Ch. 27
	Sea Tow Horseshoe Beach - Ch. 27
	Sea Tow Carrabelle/St. Marks - Ch. 27
	Sea Tow Pensacola/Orange Beach (Ala.) - Ch. 27

6.8   NOTES TO ASSURE WATERPROOF INTEGRITY

CAUTION!

To ensure the waterproof integrity of the HX890, please make sure to observe the precautions described below of the HX890, observe the precautions regarding waterproofing as described below.

Failure to observe even one of the precautions may degrade the waterproof integrity, resulting in water intrusion into the transceiver. As a result, the transceiver will not float.

To prevent water intrusion please make sure that the MIC/SP cap, Data jack cover and battery cover are properly sealed.

MIC/SP cap   Gasket

Proper fit   Insufficient fit
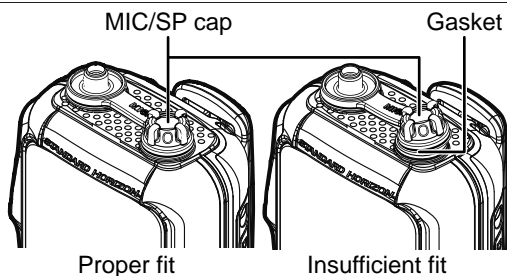
•Use your thumb and index finger to firmly screw in the MIC/SP cap tight creating a water proof seal.
•Make sure that there is no dust, dirt or crack on the jack and the rubber gasket.
•Remove dust and dirt before screwing in the cap.

DATA jack cover
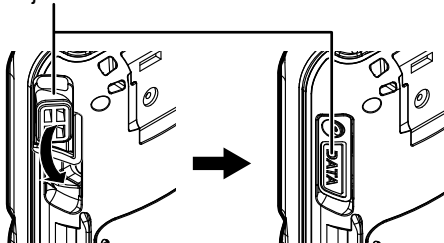
•Close the DATA jack cover completely.
•Make sure that there is no dust, dirt or crack on the DATA jack cover.
•Remove dust and dirt before closing the cover.

Packing on the battery cover

Proper fit   Insufficient fit
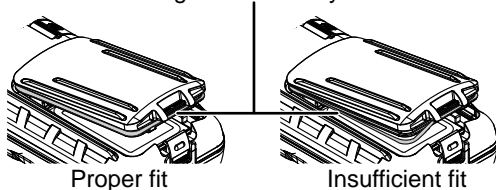
•Attach the battery cover so that the gasket fits into the groove, being careful not to leave a gap.
•Make sure that there is no dust, dirt or crack on the gasket groove and the rubber gasket. Remove dust and dirt before attaching the battery cover.

NOTE

If you find any cracks on the battery cover or gasket, please contact Standard Horizon or your local dealer to purchase a replacement.

CAUTION!

Waterproof and floating features of the transceiver are assured only when the battery cover is correctly attached to the transceiver, the DATA jack cover is locked completely and the MIC/SP cap is screwed in tight. Refer to the section **"6.8 NOTES TO ASSURE WATERPROOF INTEGRITY"**, for details on the waterproof and floating integrity.

7.1 BATTERIES AND CHARGERS

If the radio has never been used, or its charge is depleted, it may be charged by connecting the **SBH-32** Charger Cradle with the **SAD-25** battery charger, as shown in the illustration. If 12V DC power is available, the **E-DC-19A** DC Cable with 12 V Cigarette Lighter Plug or the optional **E-DC-6** DC Cable may be used for charging the battery. The **SAD-25**, **E-DC-19A** and **E-DC-6** will charge a completely discharged **SBR-13LI** battery pack in about 3 hours.

The **SBR-13LI** is a high-performance Li-ion battery providing high capacity in a compact package.

SBR-13LI Rechargeable Battery Pack

Capacity	1800 mAh			
Nominal Voltage	7.4 V			
Temperature Range	**Minimum**		**Maximum**	
	°C	**°F**	**°C**	**°F**
Charge	5	41	35	95
Discharge	−20	−4	60	140
Storage	−10	14	35	95

CAUTION

To avoid risk of explosion and injury, **SBR-13LI** battery pack should only be removed, charged or recharged in non-hazardous environments.

7.1.1 Battery Safety

Battery packs for your transceiver contain Li-ion batteries. This type of battery stores a charge powerful enough to be dangerous if misused or abused, especially when removed from the transceiver. Please observe the following precautions:

DO NOT SHORT BATTERY PACK TERMINALS: Shorting the terminals that power the transceiver can cause sparks, severe overheating, burns, and battery cell damage. If the short is of sufficient duration, it is possible to melt battery components. Do not place a loose battery pack on or near metal surfaces or

objects such as paper clips, keys, tools, etc. When the battery pack is installed on the transceiver, the terminals that transfer current to the transceiver are not exposed. The terminals that are exposed on the battery pack when it is mounted on the transceiver are charging terminals only and do not constitute a hazard.

DO NOT INCINERATE: Do not dispose of any battery in a fire or incinerator. The heat of fire may cause battery cells to explode and/or release dangerous gases.

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-approved charger. The use of any other charger may cause permanent damage to the battery.
- Follow charging instructions provided with the chargers.
- Keep the battery contacts clean.

Battery Storage

Store the 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.

Battery Recycling

DO NOT PLACE USED BATTERIES IN THE REGULAR TRASH!
LI-ION BATTERIES MUST BE COLLECTED, RECYCLED OR DISPOSED OF IN AN ENVIRONMENTALLY SAFE MANNER.

The incineration, landfill disposal, or mixing of Li-ion batteries with the municipal solid waste stream is PROHIBITED BY LAW in most areas.

Return batteries to an approved Li-ion battery recycler. This may be available where the battery was purchased.
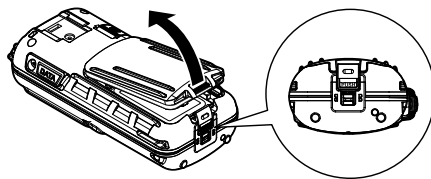
Contact your local waste management officials for other information regarding the environmentally safe collection, recycling and disposal of Li-ion batteries.
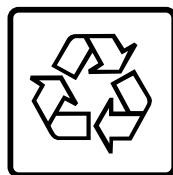

Li-ion

7.1.2 Rechargeable Battery Installation/Removal

1. Turn the transceiver OFF.
2. Slide the battery cover lock switch to the "**UNLOCK**" position, then press "**PUSH**" to open the battery cover.

3. Install the **SBR-13LI** battery pack into the battery rest aligning it to the battery contacts until it clicks.
4. Attach the battery cover, then slide the battery cover lock switch to the "**LOCK**" position.
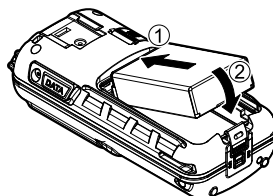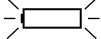
To remove the battery pack, turn the transceiver off, open the battery cover, then push and lift up the bottom end of the battery pack.

NOTE

> The battery lock must be set to "**LOCK**" position to ensure water integrity and keep the battery from coming loose.

7.1.3 Battery Life Information

▰	: Full battery power.
▰	: Enough battery power.
▰	: Low battery power.
☐	: Poor battery power. Charge battery.
☐	: Charge the battery immediately.

When the "☐" icon appears, it is recommended that you charge the battery soon.

WARNING

> If the transceiver will be unused for a long period of time, be sure to fully charge the battery before storing it. When the transceiver is stored for an extended period, recharge the battery every six months to prevent it from over-discharging.

7.1.4 Using the SBH-32 Charger Cradle

1. Insert the DC plug from the **SAD-25** into the DC jack at the bottom of the **SBH-32**.
    Place the SAD-25 cable into either of the left or right hook in the bottom of the **SBH-32** cradle..
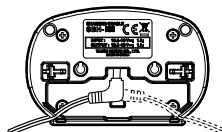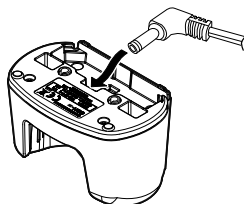
2. Plug the **SAD-25** into the AC line outlet.
3. Insert the **HX890** (with the battery pack) into the **SBH-32**; the antenna should be at the left side when viewing the charger from the front.
    If the **HX890** is inserted correctly, the **HX890**'s LCD display will show the battery charging icon. A fully-discharged pack will be charged completely in approximately 3 hours.
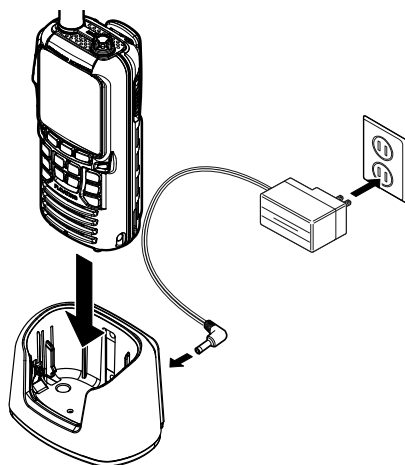
    When charging is completed, the battery charging icon will disappear.

CAUTION

- The **SBH-32** is NOT designed to be waterproof. Charge the radio in a dry location.
- If the transceiver is not used for a long period of time with the battery pack installed, deterioration of the battery pack can accelerate.
- If the transceiver is unused for a long period of time, be sure to store it with the battery pack removed. When the transceiver and battery are stored for an extended period, install the battery pack biannually and recharge the battery to prevent it from discharged and damaged.

> The **SBH-32** is only designed for the charging of the **HX890**'s battery, and is not suitable for other purposes. The **SBH-32** may contribute noise to TV and radio reception in the immediate vicinity, so we do not recommend its use adjacent to such devices.

7.1.5 Installation of the SBT-13 Battery Case

The **SBT-13** is a battery case that holds five "AAA" size Alkaline batteries and is used with the **HX890** transceiver. The Alkaline batteries can be used for reception and transmission in an emergency, and battery life will be shortened dramatically.

1. Turn the transceiver OFF.
2. Slide the five "AAA" size Alkaline batteries into the **SBT-13** with the Negative (–) side of the batteries touching the spring connectors inside the **SBT-13**.

    Put three batteries into the compartment on the front side and two on the back side.

Front   Back
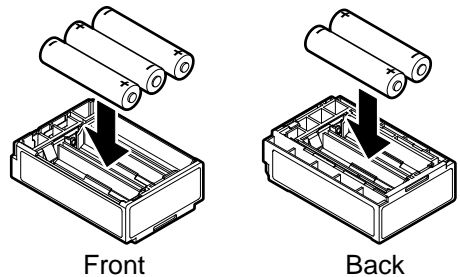
3. Slide the battery cover latch to the "**UNLOCK**" position, then press "**PUSH**" to open the battery cover.
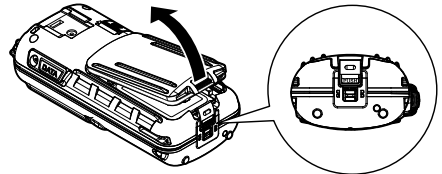
4. Install the **SBT-13** into the battery compartment and align it to the battery contacts until it clicks.
5. Attach the battery cover, then slide the battery cover latch to the "**LOCK**" position.
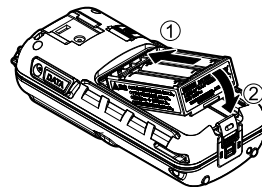
To remove the battery case, turn the transceiver OFF, open the battery cover, then push and lift up the bottom end of the battery case.

NOTE

- When the **SBT-13** Alkaline Battery Case is used, the **HX890** transmit output is fixed to 1 W.
- The **HX890** will float with the **SBT-13** attached.

7.2 BELT CLIP INSTALLATION / REMOVAL

1. To install, align the Belt Clip **Clip-22** to the groove of the Battery pack, then press the Belt Clip downward until it locks in place with a "Click".
2. To remove, pull the **Clip-22** tab away from the battery pack to unlock the **Clip-22**, then slide it upward to remove it.
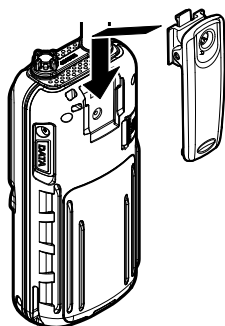
7.3 ATTACHING AN ANTENNA

Insert the **CAT460** antenna into the **ANT** jack at the top panel, hold the bottom end of the antenna, then screw it onto the mating connector on the transceiver until it is snug. Do not over-tighten.
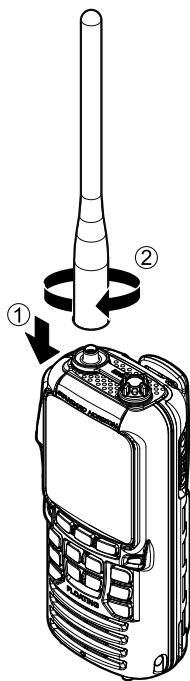
## 7.4 CHECKING GPS SIGNAL (GPS STATUS DISPLAY)

When the **HX890** receives the GPS signal, a small satellite icon "🛰" will appear on the display and your current location (latitude/longitude) is shown on the display.

The **HX890** has a GPS status display which shows the satellites currently being received, along with a graphical (bar-graph) representation of the relative signal strengths from the satellites.
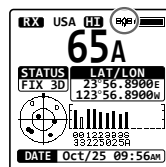
(GPS STATUS DISPLAY MODE)

1. Press and hold the **POWER** key on the left side of the transceiver to turn it on.
2. Press the **MENU** key to display "MENU", then select "GPS" with the **CH▼/CH▲/◄/►** key.
3. Press the **[SELECT]** soft key, then select "GPS STATUS" with the **CH▼/CH▲** key.
4. Press the **[ENTER]** soft key to display the GPS status currently being received.
5. Press the **CLR** key to return to radio operation.
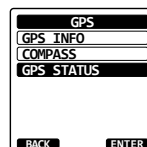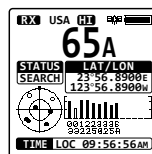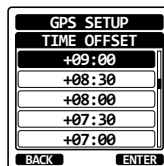
NOTE

- When the **HX890** is first turned on, it may take several minutes to compute a fix of your position. This is normal, as the **HX890** is downloading "almanac" information from the GPS satellites.

- When using the **HX890** inside of a cabin where GPS reception is limited, choose a place where GPS satellite reception is good enough referring to the GPS status display.

7.5 CHANGING THE GPS TIME

From the factory the **HX890** shows GPS satellite time or UTC (Universal Time Coordinated) time. A time offset is needed to show the local time in your area. The time offset must be changed so that the radio will display the current time in your area.

Press and hold	GPS SETUP	SELECT	TIME OFFSET	SELECT
MENU/SET key	⟹ (⌃ / ⌄ key)	⟹ (▭ key)	⟹ (⌃ / ⌄ key)	⟹ (▭ key)

1. Press the **CH▼/CH▲** key to select the time offset of your location. If "00:00" is assigned, the time is the same as UTC or GPS satellite time.

```
        GPS SETUP
       TIME OFFSET
        +09:00
        +08:30
        +08:00
        +07:30
        +07:00
   BACK         ENTER
```

2. Press the **[ENTER]** soft key to store the time offset.
3. Press the **CLR** key to return to radio operation.

7.6 CHANGING THE TIME LOCATION

This menu selection allows the radio to show UTC time or local time with offset.

Press and hold	GPS SETUP	SELECT	TIME AREA	SELECT
MENU/SET key	⟹ (⌃ / ⌄ key)	⟹ (▭ key)	⟹ (⌃ / ⌄ key)	⟹ (▭ key)

1. Press the **CH▼/CH▲** key to select "UTC" or "LOCAL".
2. Press the **[ENTER]** soft key to store the selected setting.
3. Press the **CLR** key to return to radio operation.

```
        GPS SETUP
        TIME AREA
         UTC
         LOCAL



   BACK         ENTER
```
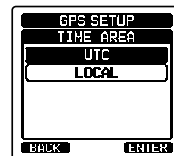
7.7 CHANGING THE TIME FORMAT

This menu selection allows the radio to be setup to show time in 12-hour or 24-hour format.

Press and hold	GPS SETUP	SELECT	TIME FORMAT	SELECT
MENU/SET key	⟹ (⌃ / ⌄ key)	⟹ (▭ key)	⟹ (⌃ / ⌄ key)	⟹ (▭ key)

1. Press the **CH▼/CH▲** key to select "12hour" or "24hour".
2. Press the **[ENTER]** soft key to store the selected setting.
3. Press the **CLR** key to return to radio operation.

```
        GPS SETUP
       TIME FORMAT
         24hour
         12hour



   BACK         ENTER
```