ORCA® TX-104 IS A MAN OVERBOARD IDENTIFICATION AND TRACKING DEVICE FOR PLEASURE BOATING AND INDUSTRIAL APPLICATIONS

MAN OVERBOARD ALARM

ORCA® TX-104 and TX-F104 Owner's Manual

BriarTek
INCORPORATED

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Introduction

ORCA® is a personal saltwater or manual-activated man overboard (MOB) alarm system developed by BriarTek Inc. The system is utilized by the U.S. Navy and other mariners to aid in the rescue of an MOB victim. The ORCA® system operates on 121.5 MHz and includes a transmitter, receiver, and direction finder. When the transmitter is activated, it emits a signal from the victim to the receiver. The receiver emits an audible alarm and displays the ship type/hull number and serial number of the transmitter on the receiver's LCD display. The transmitter also emits a signal that is received by the direction finder and other standard search and rescue (SAR) equipment to locate the MOB.

Parts Overview (figure 1)

A - Antenna
B - Manual activation/ deactivation recess
C - Water sensors
D - Distress marker light
E – Battery door
F – Antenna tip holder

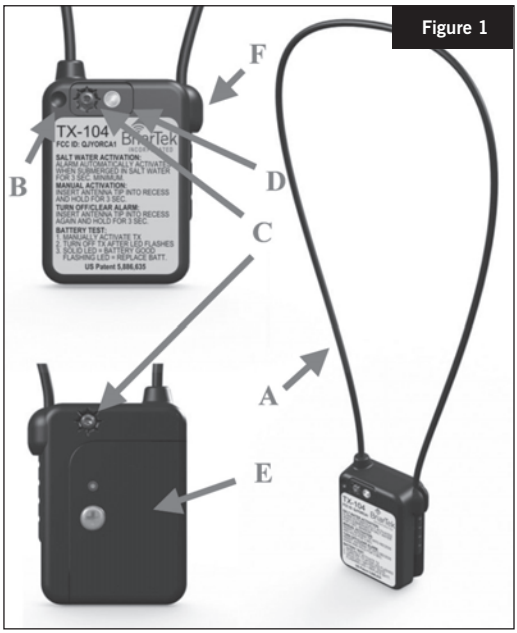


Figure 1

Modes

The TX-104 and TX-F104 have three modes:

» **ARMED**: Each transmitter is **armed** after a 3-volt CR123 lithium battery is correctly installed.

» **TRANSMIT**: The transmitter goes from **armed** to **transmit** mode when it is activated. After the transmitter is activated, it emits an FM signal for approximately 1 minute. This sends the transmitter identification to the receiver. After approximately 1 minute, the transmitter switches to a non-data FM transmission for 40 seconds for optimal DF tracking. After every 40 second non-data transmission, the unit transmits identification information to the receiver for 9-15 seconds.

» **DISABLED**: The transmitter is **disabled** when the battery is removed or the battery is depleted.

Operating Instructions

Manual Activation:

Figure 2

Option 1: Release antenna tip (A) from holder and align with manual activation/deactivation recess (B). See figure 2.

Option 2: If transmitter is being worn in the blue nylon pouch provided (see figure 3), the transmitter can be manually activated by releasing the securing strap and aligning the embedded magnet with the manual activation/ deactivation recess.

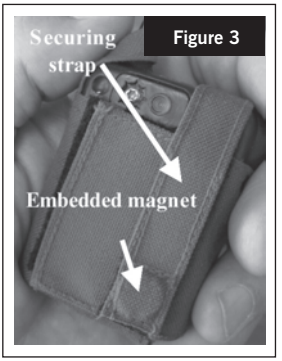


Figure 3

After the antenna tip (option 1) or embedded magnet (option 2) has been aligned with the manual activation/deactivation recess for approximately 3 seconds, the distress marker light begins flashing to indicate activation. Remove antenna tip/embedded magnet from the recess. Approximately 3-5 seconds after distress marker light begins flashing, the transmitter will begin transmitting.

Automatic Activation:

The transmitter will activate when the water sensors are submerged in saltwater (fresh or saltwater for TX-F104) for at least 3 seconds.

All Clear (deactivate transmitter):

When the MOB is recovered, align the antenna tip/ embedded magnet with the manual activation/deactivation recess. This sends an **all clear** message to the receiver and returns the transmitter to the **armed** mode.


Figure 4

Wearing the Transmitter

THE TRANSMITTER MUST BE WORN SO THAT THE WATER SENSORS ARE UNDER WATER AND WET AND THE ANTENNA IS ABOVE THE WATER SURFACE WHEN THE PERSON IS FLOATING. The transmitter can be attached to a personal flotation device (PFD) using the pouch provided by the manufacturer with the antenna attached to the collar using a lanyard clip (see figure 4). In addition, the transmitter has been designed to be worn around the neck (see figure 5). This affords the best opportunity for the signal to be received in a man overboard event if the MOB is not wearing a PFD.

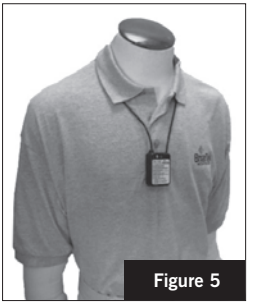


Figure 5

Battery Information

Battery lifespan:

The TX-104 and TX-F104 have very low current consumption. It is recommended that the battery is replaced once a year or sooner if the transmitter has been activated for more than occasional testing. When either transmitter is in TRANSMIT mode, a new battery will last approximately 24 hours.

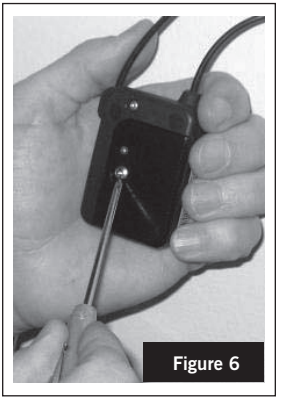


Figure 6

Testing battery strength:

1. Activate the unit using Option 1 or 2 in Operating Instructions on the preceding page.
2. As soon as the distress marker light begins to flash rapidly, remove antenna tip/embedded magnet from the recess.
3. Once more, align antenna tip/embedded magnet with the manual activation/ deactivation recess.
4. If the light turns on and remains on for approximately 5 seconds, the battery is useable. If the light flashes on and off for 5 seconds, the battery is not useable and must be replaced.

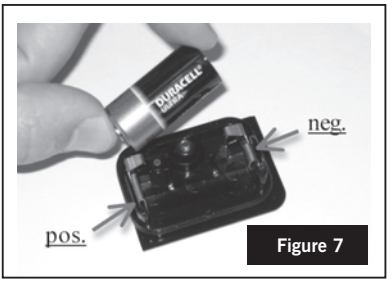


Figure 7

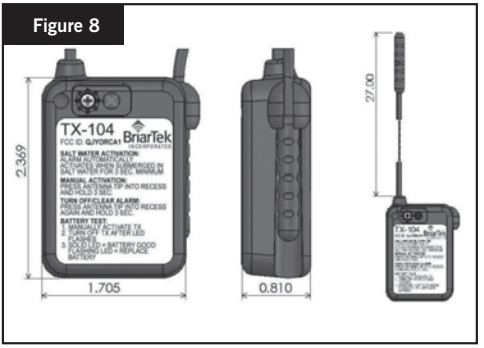
Replacing the battery:

1. Using a #1 size Phillips head screwdriver, unscrew the crosshead screw on the battery door (see figure 6).
2. Remove battery door.
3. Remove used battery.
4. Insert new 3-volt CR123 lithium battery according to polarity diagram on the inside of the battery door (see figure 7).
5. Replace battery door. Grasping screwdriver with thumb and forefinger, screw down the battery door to 45 in/oz. Caution: Do not over tighten!

Specifications

» Size: length = 2.4 inches (6.1 cm)
width = 1.7 inches (4.3 cm)
depth = 0.8 inches (2.0 cm)
» Weight: 2.5 oz. (70.9 g)
» Power: 100 mW
» Tracking Range: 2 NM from small craft, 5 NM from ship, 20 NM or greater from aircraft
» Alerting Range: 1 NM to receiver
» Power Source: One (1) 3-volt CR123 lithium battery
» Battery Life: One year (Armed mode); 24 hours continuous once activated (Transmit mode)
» Activation: manual or water
» Current Draw: Armed 15 uA; Transmit (high power): 185mA; Transmit (low power): 80mA
» Modulation Frequency: 121.5 MHz
» 25.5 inch (64.75 cm) external antenna with strain relief (the length can be modified based on user needs)
» Operating Temperature -20º C (-4º F) to +70º C (158º F)
» Storage Temperature -40º C (-40º F) to +85º C (185º F)

Figure 8



Warranty

BriarTek provides a one-year warranty on all ORCA® system following the date of original purchase – original receipt is required.

If a component fails to function properly during its warranty period (one year), the manufacturer will proceed according to its warranty as follows:

» BriarTek Inc. guarantees each product it distributes to be free from defective materials and workmanship and agrees to remedy any such defect, or to furnish a new or equal part in exchange (at its option) for a period of one year from the date the component is purchased.

» For an exchange of the product, please contact BriarTek at 703.548.7892 or on the web at www.briartek.com and a customer service representative will provide the necessary instructions.

This warranty is void if:

» any component has been subject to misuse or improper installation by a non-BriarTek employee, or has been repaired or altered by a non-BriarTek employee.

» any component fails to function properly after being put into service due to something other than defective materials or workmanship, i.e. excessive temperature, humidity or shock while component is in storage.

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