

PRODUCT SUPPORT MANUAL

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Rev. B



SR-102™

Product No. 2726A

GMDSS 16/6 Survival Radio

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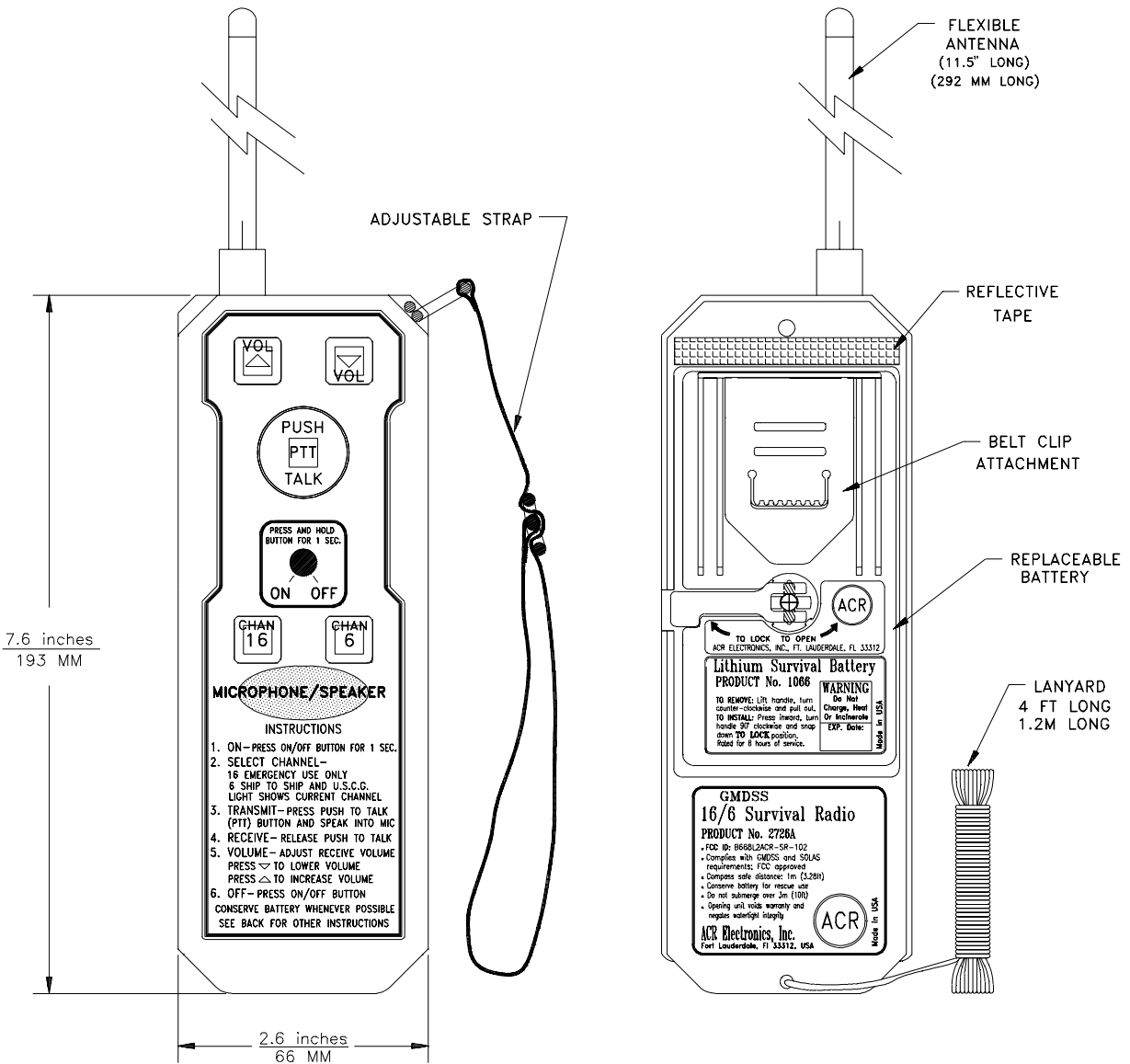


FIGURE 1: ACR/GMDSS 16/6 SURVIVAL RADIO

1.0 TECHNICAL SPECIFICATIONS

OPERATING FREQUENCY

<u>CHAN</u>	<u>FREQUENCY (MHz)</u>	<u>FUNCTION</u>
16	156.800	Distress Calling
6	156.300	Communications/USCG

TRANSMITTER

Power Output (ERP)	500 mW \pm 2.5 dB
Frequency Control	Quartz Crystal (\pm .001 %)
Modulation Type	Phase
Max. Modulation	\pm 5 kHz
Audio Bandwidth	300/2500 Hz

RECEIVER

Sensitivity (12dB SINAD)	1.0 μ V
Audio Output	300 mW

BATTERY

Type	Primary, Lithium
Storage Life	10 Years
Operating Life under typical duty cycle of 1:9 (i.e. 6 sec T _X , 6 sec R _X , 48 sec stand by)	8 hours @ -20°C

SERVICE CONDITIONS

Temperature	-20°C to +50°C
Altitude	0 to 40,000 ft/0 to 12000 m
Water Resistance	3 Meter Depth, Max up to 5 minutes

PHYSICAL CHARACTERISTICS

Dimensions (Less Antenna)	
Height	7.6 in/19.3 cm
Width	2.6 in/ 6.6 cm
Thickness	1.7 in/4.3 cm
Antenna	11.5 in/29.2 cm
Weight (includes Battery)	1.1 lb/0.5 kg

2.0 INTRODUCTION

2.1 THIS MANUAL

2.1.1 This manual contains necessary information for the operation, maintenance and performance of distress communications utilizing the **ACR/2726A** 16/6 Survival Craft Portable Two-Way Radiotelephone. The user is strongly recommended to read this manual in its entirety. A photocopy of the suggested procedures for distress communications outlined in section 7.0 should be kept with each radiotelephone to aid the designated operator maximize the intelligibility and success of his radio distress request.

2.2 PURPOSE

2.2.1 The 16/6 Survival Craft Portable Two-Way VHF Radiotelephone is intended to be used for on-scene emergency communications between survival craft and ship, and survival craft and rescue units. The radio is equipped with a 5 year lithium survival battery pack which is user replaceable. With the lithium battery pack installed, the unit meets all IMO, SOLAS and FCC requirements for survival craft two-way VHF transceivers. An optional rechargeable MaxCap™ battery pack is also available.

2.3 AUTHORIZATION

2.3.1 This radio is FCC Type Accepted and GMDSS listed (FCC Part 80.1101) as a survival craft two-way VHF radiotelephone apparatus which complies with the 1988 GMDSS SOLAS amendments. To install the radio on a survival craft, the host ship must have a valid Ship Station License as required by law. To obtain an application for an FCC Ship Station License (U.S. ships), the user should contact the nearest FCC office.

2.4 CARRIAGE REQUIREMENTS

2.4.1 The following carriage requirements apply to all relevant SOLAS ships built on or after February 1, 1992, and to all relevant SOLAS ships as of February 1, 1995. Any vessel may voluntarily carry any number of two-way VHF radiotelephones provided it maintains a valid Ship Station License:

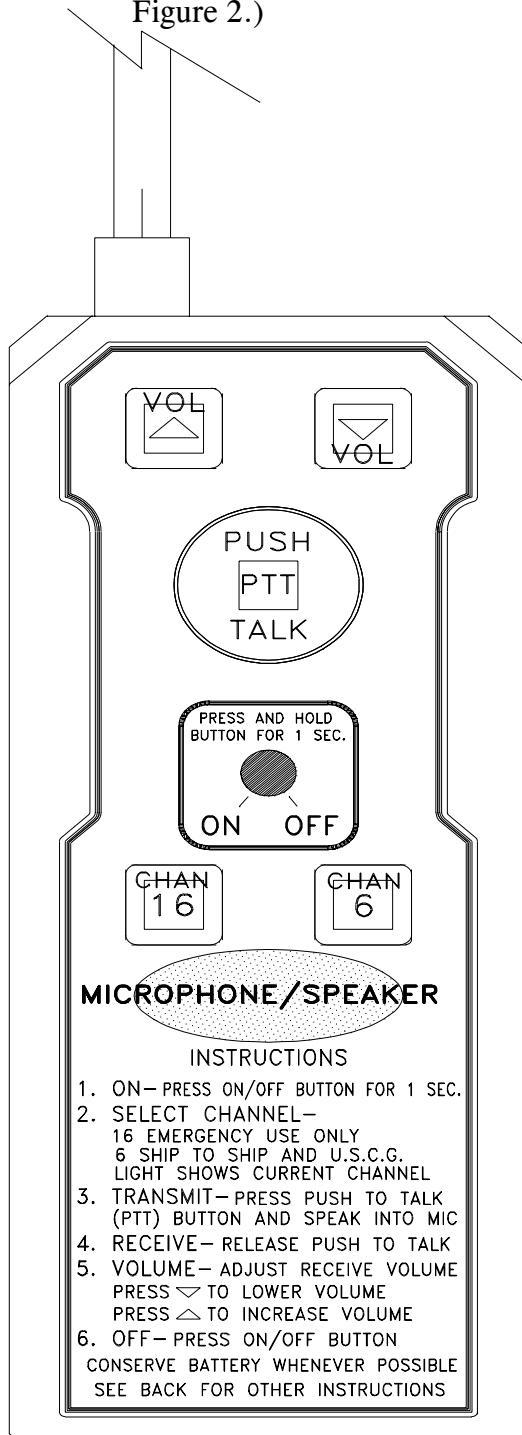
1. A minimum number of two (2) two-way VHF radiotelephones are required for SOLAS cargo ships of between 300-500 gross tons.
2. A minimum number of three (3) two-way VHF radiotelephones are required for SOLAS passenger ships and SOLAS cargo ships of 500 or more gross tons.

Note: These carriage requirements are subject to change. For the latest information, please refer to International Maritime Organization (IMO).

3.0 OPERATING CONTROLS AND INDICATORS

3.1 OPERATING CONTROLS

All radio controls are flat panel, push-types located on the front surface of the radio (see Figure 2.)



- ON/OFF** Press for one (1) second to turn ON, and press again to turn OFF.
 - VOL ▲** Volume ▲ (increases audio output level to maximum)
 - VOL ▼** Volume ▼ (decreases audio output level).
 - PTT** **Push-To-Talk** activates transmitter while switch is depressed. When switch is released, radio returns to receive mode automatically.
 - CHAN 16** Selects operation on Marine Channel 16 (Distress/Calling)
 - CHAN 6** Selects operation on Marine Channel 6 (Communications/USCG)
- #### 3.2 OPERATING INDICATORS
- CHAN 16** The push switch includes a RED light which will be illuminated when the radio is ON and Channel 16 is selected.
 - CHAN 6** The push switch includes a GREEN light which will be illuminated when the radio is ON and Channel 6 is selected.
 - VOL ▲ ▼** Both of these push switches light up YELLOW when the PTT switch is depressed - indicates that radio is transmitting.
 - PTT** The push switch blinks YELLOW at a slow rate to assist operator in locating the PTT switch in darkness.

FIGURE 2: ACR/GMDSS 16/6 SURVIVAL RADIO CONTROL PANEL

4.0 OPERATION

4.1 CHANNEL 16 OPERATION (CHAN 16)

- a. Remove control panel protective cover.
- b. Strap the unit around operator's wrist, hand or glove.
- c. Press ON/OFF button for one (1) second to turn ON the Survival Radio*.
- d. CHAN 16 button stays lit (red).
- e. Listen for the tone and for the squelch action 3 seconds after activating the unit.
- f. Press blinking PUSH TO TALK button to transmit.
- g. Speak loudly and clearly into speaker area from a distance of approximately 3"—6" (7.5 cm to 15 cm).
- h. Both Volume indicators stay lit during transmission.
- i. Release PUSH TO TALK button to listen.
- j. Adjust Volume by pressing the respective buttons (Note: there are 4 preset volume settings from which to choose).
- k. Keep transmissions to a minimum to conserve battery power.
- l. Periodically verify that the CHAN 16 button is lit (red) to guard against accidental selection of channel 6.
- m. Press ON/OFF button to turn unit off.

4.2 CHANNEL 6 OPERATION (CHAN 6)

- a. Remove control panel protective cover.
- b. Strap the unit around operator's wrist, hand or glove.
- c. Press ON/OFF button for one (1) second to turn on the Survival Radio*.
- d. CHAN 16 button stays lit (red).
- e. Listen for the tone and for the squelch action 3 seconds after activating the unit.
- f. Press CHAN 6 button to select channel 6.
- g. CHAN 6 button stays lit (green).
- h. Adjust Volume by pressing the respective buttons (Note: there are 4 preset volume settings from which to choose).
- i. Press blinking PUSH TO TALK button to transmit.
- j. Speak loudly and clearly into speaker area from a distance of approximately 3"—6" (7.5 cm to 15 cm).
- k. Both Volume indicators stay lit during transmission.
- l. Release PUSH TO TALK button to listen.
- m. Keep transmissions to a minimum to conserve battery power.
- n. Press ON/OFF button to turn unit off.

***Note: ON/OFF Button is designed with a short delay to prevent accidental turn-on.**

4.3 BATTERY SAVE FEATURE

- a. To conserve battery life, the unit will automatically shut-off following a period of approximately 20 – 30 minutes of idle radio activity.

5.0 INSTALLATION AND MAINTENANCE

5.1 INSTALLATION

The Survival Radio and its protective cover shall be packed with the ship's survival craft or in a survival suit. When not packed with a life raft, the radiotelephone should be stored in an accessible place, as close to the survival craft as possible.

5.2 MANDATORY TESTING

5.2.1 Radiotelephones operated within the U.S.A. must be operationally tested on a periodic basis (FCC regulations, Part 80, section 80.834, until superseded by section 80.1095). To test the radiotelephone, follow the steps given below (Note: this test requires that a separate VHF marine radio transceiver be used to monitor transmitted and received signals). Any transmissions effected for the purpose of testing the Survival Radio shall be as brief as possible. The recommended test message format is as follows: "< name of station receiving the test message> THIS IS <name of station transmitting this text> <station callsign or call letters>". EXAMPLE: "BLUE DUCK THIS IS MARY JANE WXT599". When a second radiotelephone or the ship's receiver is utilized to monitor proper operation of the Survival Radio, the test distance between devices should be kept to a maximum and the following message format should be observed: "< name of station transmitting this text> THIS IS <name of station transmitting this text> MOBILE 1". EXAMPLE: "MARY JANE THIS IS MARY JANE MOBILE 1 WXT599" (NOTE: if the unit to be tested is not on board the vessel containing the fixed station, "UNIT 1" should be used rather than "MOBILE 1").

- a. Remove the radio from its survival craft package.
- b. Remove control panel protective cover.
- c. Press and hold ON/OFF button for one (1) second.
- d. Listen for the tone and for the squelch action 3 seconds after activating the unit.
- e. The receiver tunes to Channel 16 automatically when unit is turned ON.
- f. Listen for any activity on the frequency (channel 16).
- g. If no activity is detected, transmit the test message and have someone monitor the transmission (see above for suggested test message formats).
- h. If the test signal was not heard (full quieting), replace the battery and retest. If the test signal is still not heard (full quieting), have the unit inspected at your nearest authorized service center.
- i. Have someone return the call from the monitoring station (lowest power setting) to verify proper radiotelephone receiver operation.

- j. If a response is not heard (full quieting), have the radio unit inspected at your nearest authorized service center.
- k. Press the CHAN 6 key to tune unit to channel 6.
- l. Set the monitoring transceiver to channel 6 (156.3 MHz).
- m. Listen for any activity on the frequency (channel 6).
- n. If no activity is detected, transmit the test message and have someone monitor the transmission (see above for suggested test message formats).
- o. If the test signal was not heard (full quieting), have the unit inspected at your nearest authorized service center.
- p. Have someone return the call from the monitoring station (lowest power setting) to verify proper radiotelephone receiver operation.
- q. If a response is not heard (full quieting), have the radio unit inspected at your nearest authorized service center.
- r. Slide ON/OFF button to turn unit OFF.
- s. Replace control panel protective cover.
- t. Replace unit into its survival craft package.

5.3 VISUAL INSPECTION

- 5.3.1 Periodically inspect the Survival Radio for damage, cracks and front panel label wear. Wipe off any salt deposits with a damp cloth.

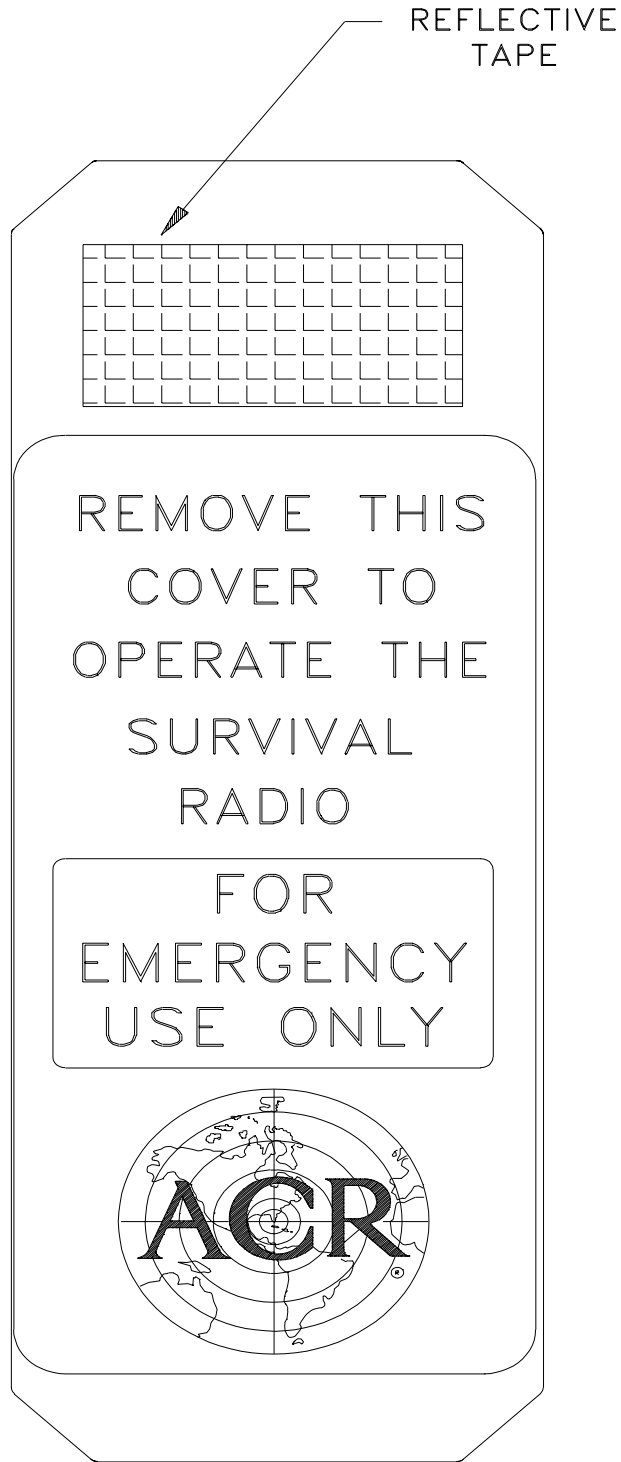


FIGURE 3: CONTROL PANEL PROTECTIVE COVER

6.0 BATTERY INFORMATION

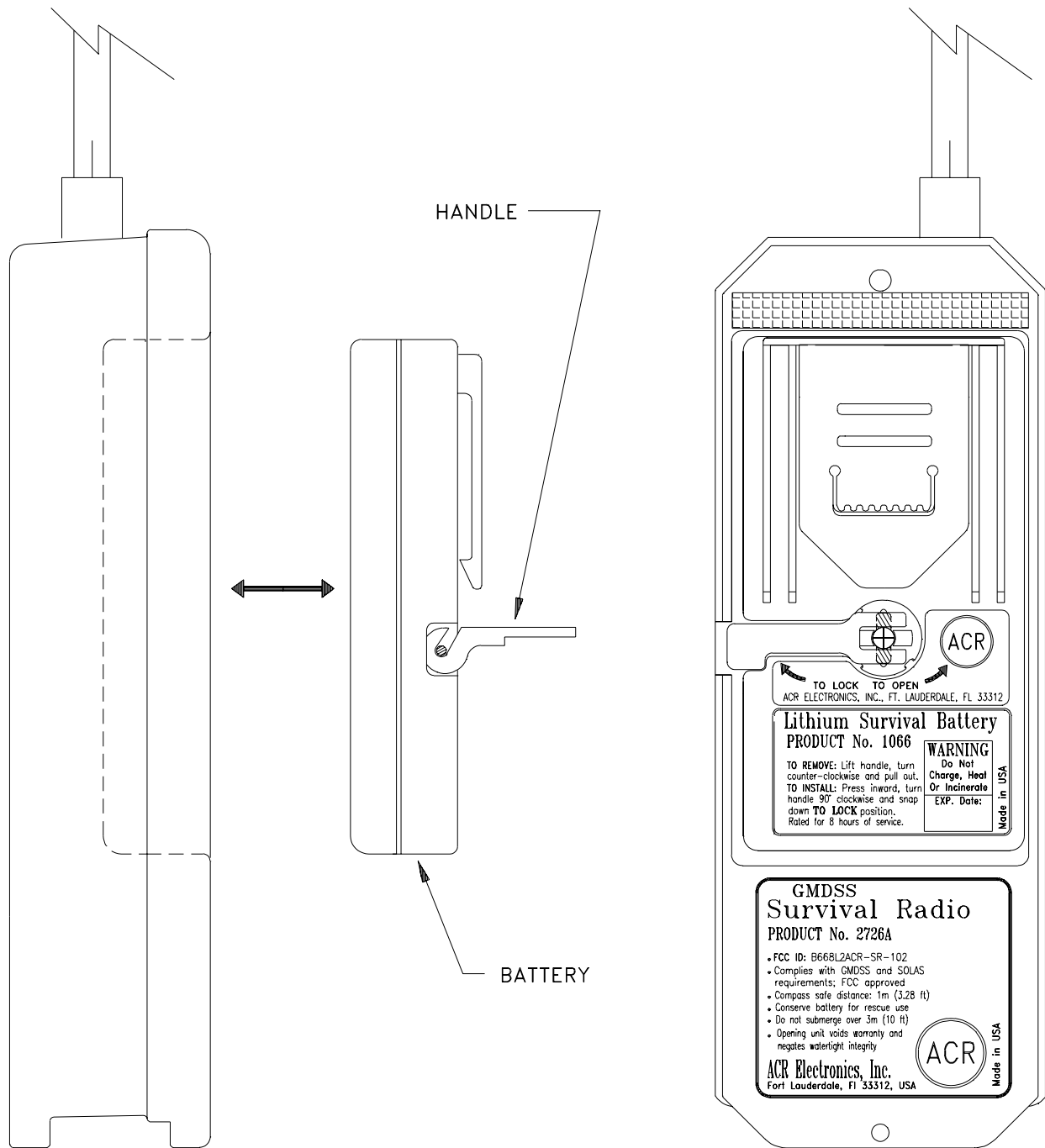


FIGURE 4: BATTERY REPLACEMENT

6.1 Battery Options

6.1.1 Lithium Survival Battery (Product No. 1066)

The Survival Radio is supplied with a replaceable lithium battery pack. This primary battery pack will operate the radio for at least 8 hours, in compliance with IMO/SOLAS and FCC requirements for a survival craft radio. To maintain compliance with these regulations, the lithium battery pack must be replaced after 5 years or after any use (with the exception of activating the unit for the purpose of testing.)

Additional lithium battery packs may be stored in survival craft along with the radio for extended operating life.

CAUTION: The battery is internally fused to avoid fire hazard. Do not immerse in water, short circuit or incinerate.

6.1.2 MaxCap™ Rechargeable (Ni-Cad) Battery (Product No. 1067)

To allow the survival radio to be used in non-emergency situations, a rechargeable battery pack (ACR Product No. 1067), and a MaxCap™ Charger (ACR Product No. 2711) are also available. The rechargeable battery pack will operate the unit for approximately four to six hours. The charger is capable of charging the battery in less than 135 minutes. Refer to charger manual for charging instructions.

CAUTION: When the radio is operating with the rechargeable battery pack, it does not comply with the SOLAS/GMDSS regulation for battery life.

6.2 How to replace the battery pack: (Refer to Figure 4)

Simply lift the battery handle, turn it counter-clockwise until it stops and pull the battery out. Replace a fresh battery into the rear of the radio. Turn the handle clockwise until it stops and snap it down to lock into position. Make sure battery is engaged by turning the unit ON and then OFF.

7.0 DISTRESS COMMUNICATIONS

7.1 The following are a set of observations intended to help the user maximize his success during the course of a rescue where two-way communication is possible.

- a. Transmit only when the channel is clear of activity, or between other stations' transmissions during a distress.

- b. Use the world recognized expression *M'AIDER* or *MAYDAY* to call for help. Note that *MAYDAY* is commonly pronounced as it is read in English, when utilized in English speaking countries. To improve the chances of being understood internationally, it is best to pronounce the above expression two ways:
1. The internationally recognized way, *M'AIDER* (in French) pronounced phonetically as “mĕ - dě,” (see any French language instruction book for further details) and,
 2. The commonly used pronunciation in English speaking countries *MAYDAY* pronounced phonetically as “mā - dā.”

To prevent the distress signal from being misunderstood, and to improve the intelligibility of the distress call, use the two pronunciations above when calling, for example (also, see example for part c): “M'AIDER MAYDAY M'AIDER THIS IS MARY JANE WXT599 WXT599 WXT599”.

- c. Always use the ICAO Convention (Convention on International Civil Aviation) recognized alphabet for spelling.

ICAO recognized alphabet:

A Alpha	N November
B Bravo	O Oscar
C Charlie	P Papa
D Delta	Q Quebec
E Echo	R Romeo
F Foxtrot	S Sierra
G Golf	T Tango
H Hotel	U Uniform
I India	V Victor
J Juliet	W Whiskey
K Kilo	X X-ray
L Lima	Y Yankee
M Mike	Z Zulu

Example: “M'AIDER MAYDAY M'AIDER THIS IS MARY JANE Whiskey X-ray Tango 599 Whiskey X-ray Tango 599 Whiskey X-ray Tango 599”

To acknowledge that a transmission has been received and understood in its entirety, simply use the expression “R R R” spoken as “Romeo Romeo Romeo” (“R” stands for received). Note: some radio operators use the expression “Roger” instead of “Romeo”.

- d. Antenna height and range of communications are intimately related. In general, a higher antenna will have a longer range than a similar lower antenna.

The typical range for a transmitting radio held at about 1.2 meters (4.0 ft) above average water level is expected to equal 4.5 kilometers (2.8 statute miles). The receiving shipborne antenna can extend the range if it is mounted high. Airborne receivers greatly extend the above range (over 150 kilometers/100 miles for aircraft flying over 1500 meters/5000 ft).

Because of the above fact, and to maximize the range of the survival craft VHF radiotelephone, the unit should be held as high as possible without endangering the safety of the operator.

COMMENTS (NOTES):

CALL SIGN: _____

VESSEL: _____

BATTERY EXPIRATION DATE: _____