RJE INTERNATIONAL, INC.

ASR-370 ACOUSTIC SURFACE RECALL DEVICE USER MANUAL REV 1.1

10/26/2017

600-17016

Forward

This manual is comprised of figures and text intended to provide descriptions and instructions for the installation, operation and maintenance of the RJE International ASR-370.

The information herein is arranged into chapters and sections as follows:

Chapter 1 – An overview of the ASR-370 recall device. *General notes including brief sections describing the applications and physical characteristics of the beacon itself.*

Chapter 2 – Specifications. *Section containing list of both general and unique-to-the-unit specifications.*

Chapter 3 – Operation and Installation Notes. *Sections detail the unpacking and pre-deployment checkout procedures for the ASR-370.*

Chapter 4 - Maintenance. *Sections detail periodic maintenance, battery replacement and calibration procedures.*

Please forward comments, questions, suggestions, or problems with the text, figures, or equipment to RJE International.

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PROPRIETARY MATERIAL

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RJE International, Inc., reserves the right to make changes in design or specifications at any time without incurring any obligation to modify previously installed units.

This manual is provided for information and reference purposes only and is subject to change without notice.

LIMITED WARRANTY

RJE International, Inc. (RJE) guarantees its products to be free from defects in materials and workmanship for a period of one year from the date of shipment. In the event a product malfunctions during this period, RJE's obligation is limited to the repair or replacement, at RJE's option, of any product returned to the RJE factory. Products found defective should be returned to the factory freight prepaid and carefully packed, as the customer will be responsible for any damage during shipment.

Repairs or replacements, parts, labor, and return shipments under this warranty will be at no cost to the customer. This warranty is void if, in RJE's opinion, the product has been damaged by accident or mishandled, altered, or repaired by the customer, where such treatment has affected its performance or reliability. In the event of such mishandling, all costs for repair and return freight will be charged to the customer. All products supplied by RJE that are designed for use under hydrostatic loading have been certified by actual pressure testing prior to shipment. Any damage that occurs as a direct result of flooding is NOT covered by this warranty.

If a product is returned for warranty repair and no defect is found, the customer will be charged a diagnostic fee plus all shipping costs. Incidental or consequential damages or costs incurred as a result of a product's malfunction are not the responsibility of RJE.

All returned products must be accompanied by a Case Number issued by RJE International, Inc. Shipments without a Case Number will not be accepted.

LIABILITY

RJE shall not be liable for incidental or consequential damages, injuries, or losses as a result of the installation, testing, operation, or servicing of RJE products.

RETURN PROCEDURE

Before returning any equipment to RJE, you must contact RJE and obtain a Case Number. The Case Number assists RJE in identifying the origin and tracking the location of returned items.

When returning items to RJE from outside the United States, follow the checklist presented below to prevent any delays or additional costs.

- ✓ Include with all shipments two copies of your commercial invoice showing the value of the items and the reason you are returning them. Whenever possible, send copies of the original export shipping documents with the consignment.
- ✓ Route via courier (FedEx or UPS).
- ✓ If there is more than one item per consignment, include a packing list with the shipment. It is acceptable to combine the commercial invoice and packing list with the contents of each carton clearly numbered and identified on the commercial invoice.
- ✓ If it is necessary to ship via airfreight, contact RJE for specific freight forwarding instructions.
- ✓ You will be charged for customs clearance and inbound freight.
- ✓ Insure the items for their full value.
- ✓ Refer to the RJE-issued Case Number on all documents and correspondence.
- ✓ Prepay the freight.

TITLE

Title shall pass to buyer on delivery to carrier at Irvine, CA. Risk of damage or loss following such delivery shall be to the buyer and RJE International, Inc., shall in no way be responsible for safe arrival of the shipment. Title shall so pass to buyer regardless of any provision for payment of freight or insurance by RJE International, Inc., or of the form of shipping documents. If shipment is consigned to RJE International, Inc., it shall be for the purpose of securing buyer's obligations under the contract.

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1.1 Overall Description

RJE International's ASR-370 series is a group of acoustic signaling devices used to assist in training marine mammals such as dolphins. The ASR-370 activates when immersed in water, where it continuously emits an acoustic signal at 12 kHz until it is removed from the water or its batteries die.

As mentioned above, the ASR-370 is battery-operated. It requires two 9-volt alkaline or lithium batteries that will power the device for 8 to 18 days.

1.1.1 ASR-370 Series Acoustic Surface Recall Device

Fig 1-1: A visual breakdown of the ASR-370.

Section

2

2.1 ASR-370 Specifications

Table 2-1 ASR-370 Specifications

Frequency	12kHz
Acoustic Source Level	168.5 dB re 1μPa @ 1 meter
Repetition Rate	Normal: 1.0 pulse per second
Pulse Length	5 ms
Activation	Water Activated Switch
Batteries	9 Volt Batteries, Alkaline or Lithium
Operating Life	Alkaline: 8 days Lithium: 18 days
Operational Depth	1m (3ft)
Housing Material	Aluminum O-ring Sealed
Dimensions	20.32 cm (L) x 5.71 cm (D) (8”x 2.25”)
Weight	806 g (1.8 lbs)

Specifications are subject to change.

Section

3

OPERATION & INSTALLATION NOTES

3.1 Introduction

The ASR-370 operates as a free-running pinger, which means that it activates once placed in the water and shuts down when removed from the water. It can operate in both fresh and salt water and is preset to emit signals at 12 kHz. Despite its flexibility and robustness, you should take care to unpack, install and operate the beacon correctly to avoid damage and to get the longest life out of your product.

3.2 Unpacking

When opening the shipping carton, carefully inspect each ASR-370 as it is unpacked and report any damage to the freight carrier and to RJE International.

As with any sophisticated electronic equipment, RJE International products should be handled with a reasonable amount of care during unpacking, transporting and storing. Pay particular attention to make sure that the end caps are properly secured and there is no damage to the housing.

Section

4

ASR-370 MAINTENANCE

4.1 Maintenance

After each use, follow these steps to ensure continued reliable performance from your ASR-370:

- Wash the exterior of the equipment with fresh water and mild detergent. Make sure to clean any build-up on the transducer face.
- Make sure the equipment has been thoroughly dried before storage.
- Inspect the O-ring for damage and wear, and replace it every 12 to 18 months.

4.2 Battery Test

This test allows you to roughly determine the state of the 9-volt batteries without removing the batteries from the unit. All batteries are different and we recommend that you replace the batteries after every deployment to ensure full operational life.

Using a Volt/Ohm Meter (VOM) set to measure DC voltage, place the meter's probes across the water switch contacts, which you can find on top of the transducer. Measure the voltage and use the chart below. **Note:** Polarity is not important in this measurement.

Voltage Reading	**Battery Status**
>/= 3 vdc	New
>/= 2.8 vdc	Good
>/= 2.75 vdc	Marginal
< 2.75 vdc	Replace

4.3 Replacing the ASR-370 batteries

Replace the batteries in the ASR-370 as needed to ensure it continues to operate properly.

- Gently loosen and remove the electronic module from the housing by gripping the housing and turning the transducer counter-clockwise.
- Remove the old batteries and install the new batteries as shown. Note the battery terminal orientation before making a connection. Ensure the battery terminals are fully seated into the electronics module.

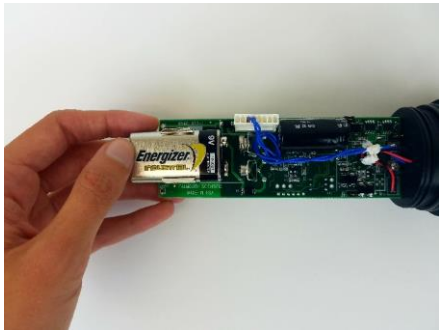

Figure 4-1: Removing the Batteries

- Before installing the electronic module, make sure the O-ring and O-ring surfaces are clean and free of debris.

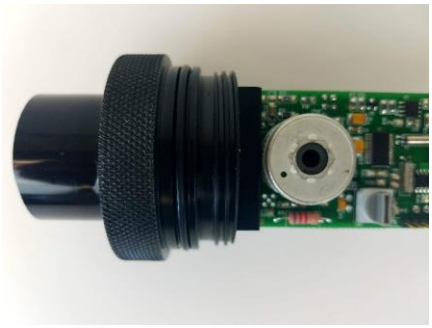

Fig 4-2: Transducer and O-ring

- Reassemble the unit by reversing the order of disassembly. DO NOT over tighten the electronic module onto the housing.

Fig 4-3: Properly Assembled ASR-370