

# **MODEL AMD200 Deck Unit**

## **Operating & Maintenance Manual**

**17436X**

**REV. D, June 2004**

### **Return Procedure**

It is necessary to obtain from ORE Offshore a Returned Material Evaluation (RMA) number prior to returning equipment. This is to assist tracking and arrival recognition.

Follow the procedure listed below when returning U.S. origin goods to prevent delays and additional costs on Returned American Goods.

#### **New Import Procedure/Returned American Goods**

1. All shipments must be accompanied by two copies of your commercial invoice showing value of material and any reason for return.

\* Whenever possible, please send copies of original export shipping documents with the consignment.

2. If the value is over \$1,000.00, the following shipper's oath must be sent with the invoices. (This can be typed on the invoice or on a separate letterhead.)

*"I, \_\_\_\_\_, declare that the articles herein specified are, the growth, produce, or manufacture of the United States; that they were exported from the United States; From the Port of \_\_\_\_\_, on or about \_\_\_\_\_; that they are returned without having been advanced in value or improved in condition by any process of manufacture or any other means, that no drawback, bounty, or allowance has been paid or admitted thereof.*

*Signed \_\_\_\_\_"*

3. If more than one part per consignment, a packing list must also accompany the shipment. It is acceptable to combine the commercial invoice and packing list as long as the contents of each carton are clearly numbered and identified on the commercial invoice.
4. Consign all air freight shipments to ORE Offshore in care of Intercontinental Air Frt., Inc., Logan Int'l Airport, East Boston, Mass. 02128.
5. If the equipment is property of ORE Offshore please insure for full value.
6. Route via Logan International Airport only as the final destination.
7. Mail one invoice, packing list and copy of airway bill to ORE Offshore upon shipment.
8. Please refer to issued Returned Material Evaluation number on all documents and correspondence.
9. Air freight must be prepaid on all returns.

ORE Offshore  
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W. Wareham, MA 02576  
Tel: (508) 291-0960, Fax: (508) 291-0975  
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## **Standard Commercial Warranty**

All equipment manufactured by ORE Offshore is warranted against defective components and workmanship for repair at the plant in W. Wareham, Massachusetts, free of charge for a period of one year after shipment. Shipping costs are to be borne by the customer. Malfunction due to improper use is not covered in this warranty and ORE Offshore disclaims any liability for consequential damage resulting from defects in the performance of the equipment. No product is warranted as being fit for a particular purpose and there is no warranty of merchantability. This warranty applies only if: (i) the items are used solely under the operating conditions and in the manner recommended in Seller's instruction manual, specifications, or other literature; (ii) the items have not been misused or abused in any manner or repairs attempted thereon; (iii) written notice of the failure within the warranty period is forwarded to Seller and the directions received for properly identifying items returned under warranty are followed; and (iv) the return notice authorizes Seller to examine and disassemble returned products to the extent Seller deems necessary to ascertain the cause for failure. The warranties expressed herein are exclusive. There are no other warranties, either express or implied, beyond those set forth herein, and Seller does not assume any other obligation or liability in connection with the sale or use of said products. Any product or service repaired under this warranty shall be warranted for the unexpired portion of the original warranty period only.

Equipment not manufactured by ORE Offshore is supported only to the extent of the original manufacturer's warranty.

**Model AMD200 Acoustic Deck Unit**

The ORE Offshore model AMD200 is a low cost, light weight, battery operated, transmit only deck unit. The AMD200 is supplied with a hydrophone that includes an oil filled wide band transducer, nine (9) meters of kevlar reinforced cable and a Kelums strain relief grip. The strain relief grip is “split laced” and can be easily moved to a different position if the factory placement is not suited to your needs. To prevent water egress it is strongly recommended that while your AMD200 is exposed to wet conditions that the transducer be connected to the front panel or the protective cap be left in place while the case is open. The AMD200 supports EdgeTech’s (formerly EG&G Marine Instruments) BACS (binary acoustic code system) and XS coding formats. These formats are employed in EdgeTech’s 8202, 8242, 7500, AM200, CART, SWR, SWA and AA100 acoustic release / control products. This field proven coding system provides the user with a command structure that is tolerant of multi-path environments and is secure.

## **Model AMD200 Operation**

Your model AMD200 acoustic deck unit has been carefully tested and shipped from the factory with a set of new, industrial date coded batteries. To use your AMD200 all you need to do is open the case, connect the transducer, enter the desired command mode and begin sending commands. When the AMD200 is switched on the LCD display will come up with a power on message of:

**EdgeTech AMD200**  
**Firmware Ver x.x**

After turning the unit on there are two command modes that can be selected, they are BACS or XS. The BACS mode is selected by pressing the **CMD** button, the XS mode is selected by pressing the **XS** button.

### **BACS Commands:**

BACS commands are EdgeTech’s standard, six digit acoustic commands. They are used to control a variety of underwater equipment, consult your equipments manual to determine the meaning of specific commands. To send a BACS command press the **CMD** button on the keypad, the display will change to:

**Enter BACS Command**  
**Pwr=H Command: \_\_\_\_\_**

The unit will now accept six (6) digit commands and transmit them when the **ENT** (enter) key is pressed. If a mistake is made while entering the command the **CLR** (clear) key may be pressed to delete the entry. The first digit in a BACS command defines the FSK tone pair to be used, the AMD200 will not accept commands that do not start with a valid tone pair (1 thru 6). The BACS command format does not allow any of the remaining five digits of the command to contain decimal values greater than seven (7). If either an invalid tone pair or an illegal command digit is entered the AMD200 will display an error message and quit the current mode.

If a mistake is made while entering a command the **CLR** (clear) key may be pressed to delete the entry. The **H/L** key on the AMD200 allows the user to toggle the transmitter power level between high and low power. The low power setting is particularly useful when bench testing or operating close to an acoustic release. By reducing the transmit power level the problems associated with multipath effects are minimized. A BACS command requires nine (9) seconds to transmit, while the command is being transmitted the AMD200 will display the message:

### **TRANSMITTING COMMAND NOW!**

After the command is sent the display returns to the previous message and is ready for the next command to be input.

### **XS Commands:**

The XS command format was developed primarily to be used as an extension to BACS commands. The XS command format is identical to the BACS command format with the exception of the number of bits in the command and the absence of bit transition requirements. A BACS command consists of two eight (8) bit bytes with some minimum number of bit transition required. XS commands are a single eight (8) bit byte with no requirements on bit transitions. To send an XS command press the **XS** button on the keypad, the display will change to:

**Enter XS Tone Pair**  
**Pwr=H Tone Pair \_**

The AMD200 will now accept a valid tone pair number (1 thru 6), if the number entered is not valid, an error message will be displayed. The tone pair number entered sets the two FSK frequencies that will be used to send all subsequent XS commands. If you wish to change the tone pair simply press the **XS** key again. The tone pair that an instrument will respond to can be determined by looking at the first digit of any one of the BACS commands that have been assigned to that instrument. After the tone pair has been set the display will change to:

**Enter XS Command**  
**Pwr=H Command \_**

The unit will now accept three (3) digit commands and transmit them when the **ENT** (enter) key is pressed. The allowable range of XS commands is 000 to 255, commands must be entered as three digits, leading zeros cannot be omitted. If a mistake is made while entering a command the **CLR** (clear) key may be pressed to delete the entry. The **H/L** key on the AMD200 allows the user to toggle the transmitter power level between high and low power. The low power setting is particularly useful when bench testing or operating close to an acoustic release. By reducing the transmit power level the problems associated with multipath effects are minimized. An XS command requires two (2) seconds to transmit, while the command is being transmitted the AMD200 will display the message:

### **TRANSMITTING COMMAND NOW!**

After the command is sent the display returns to the previous message and is ready for the next command to be input.

### **AMD200 Maintenance:**

The AMD200 requires virtually no maintenance other than periodic battery changes. Batteries should be changed on an annual basis or sooner if the level of use dictates it. Refer to the battery replacement section of the manual for instructions. If the AMD200 is going to be stored for a prolonged period of time (longer than one year) the batteries should be removed from the unit.

### **AMD200 Battery Replacement:**

The AMD200 acoustic deck unit requires eight (8) type MN1604 9V alkaline batteries (or equivalent) to operate properly. This type of battery is widely available and can be purchased at many domestic retail stores. It is recommended that if available, use only the highest quality, industrial date coded batteries in your AMD200.

#### **To replace the batteries:**

- Turn the deck unit off by putting the ON/OFF switch (located on the front panel) in the off position (toward the handle).
- Unscrew the ten (10) mounting screws located on the perimeter of the front panel .
- Gently lift the front panel from the case then place it upside down on mounting frame of the case.
- Unscrew the two wing nuts that hold the battery retaining plate in position.
- Gently remove the batteries from snaps by pulling on them one at a time.
- Carefully insert a new set of batteries in place of the old ones.

**Pay careful attention to both the polarity and alignment of the batteries, failure to do so may result in damage to the instrument.**

- Replace the retaining plate and screw it down with the two (2) wing nuts provided.
- Invert and place the front panel back on its mounting frame, make sure that the gasket is intact and in place.
- If possible, displace the air trapped in the case with dry nitrogen gas by injecting it thru the purge port (located under the handle) before screwing down the front panel.
- Screw the panel down securely with the ten (10) screws provided.
- Connect the transducer to the unit, turn it on and send a command to verify operation of the deck unit.

## AMD200 Deck Unit Specifications

- Source Level - 185 dB re 1 uPascal at 1 meter
- Pulse Width - 17 mSec.
- Beam Pattern - Omni Directional (in one hemisphere)
- Display - 2 x 20 lines, liquid crystal
- Keypad - 4 x 4
- Weight in Air
  - Electronics Package - 7.0 lb. (3.2 kg.)
  - Transducer - 7.0 lb. (3.2 kg.)
- Dimensions
  - Electronics Package - 10.5 “(26.7 cm) x 10.0” (25.4 cm) x 7.5” (19.1 cm)
  - Transducer - 30’ (9m) x 0.375” (9.5mm) Kevlar reinforced cable
  - 4.5” (11.4 cm) x 4.0” (10 cm) Hydrophone
- Operational Life - 130 hours (continuous) and / or 3750 commands (16 bit)
- Batteries Required - 8 each type MN1604 9V battery or equivalent
- Command Structures - BACS, tone pairs 1 thru 6 (16 bit FSK)\*  
XS, tone pairs 1 thru 6 ( 8 bit FSK)\*

\* These command formats have been developed by EdgeTech (formally EG&G Marine Instruments) and are employed in EdgeTech’s model 8202, 8242, 7500, AM200, CART, SWR, SWA and AA100 series acoustic products. At this point in time no other command formats are supported in the model AMD200 deck unit.