Cochran

UNDERSEA TECHNOLOGY

A Division of Cochran Consulting, Inc.

*Diving Into The 21st Century*

# NAVY EOD

## Low Magnetic Signature

## DIVE INSTRUMENT

## Operator's Manual

English Language - Metric Units

Version 001m

For your records, please fill in the following:

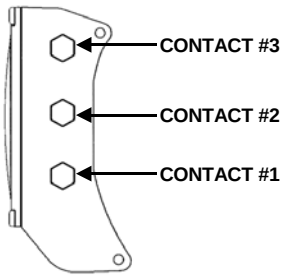
Serial Number: _____
Your Name: _____
Your Contact: _____
_____
_____
Purchase Date: _____
Purchase Place: _____
Address: _____
_____
_____

**PRODUCT INTRODUCTION:** The NAVY EOD Dive unit is quite simple to use and operate. To get the safest and most effective use of this instrument, it is important that the user fully understand the product. Please read and understand this entire manual and know the principles and practices of safe diving before using this device.

This Manual is divided into the following Sections:



**SIDE CONTACTS:**




The Contacts are used to let the user command the unit to do a number of functions, communicate with a PC for extracting information or configuring the unit, and determining water conductivity. When Contacts 1 & 2 are shorted, the NAVY EOD can detect the difference between wet fingers, metal objects, fresh water, salt water, and a PC interface probe.

**TURNING ON THE NAVY EOD:** Although the NAVY EOD automatically turns on when it is submerged in water, it is STRONGLY recommended that the unit be manually powered up by wetting two fingers and simultaneously touching Contacts 1 and 2 for two seconds. This allows the diver to ensure that the unit is operating correctly and has adequate battery capacity prior to entry. Once activated, the unit will remain on for 60 minutes. If a dive is not initiated within this 60 minutes, the NAVY EOD automatically shuts off. Notice that when Contacts 1 & 2 are first bridged, a short beep is issued which indicates that the unit is recognizing the touch. Every time Contacts 1 & 2 are bridged with wet fingers, the unit will stay on for one full hour.

The NAVY EOD will not turn on if the altitude is higher than 4,600 meters, the batteries are less than 2.0 volts, or a fault is detected during the self-test.

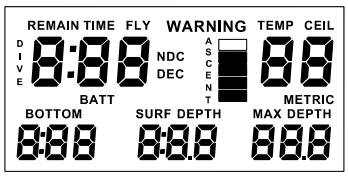



Figure 1
DIAGNOSTIC DISPLAY
(Unit Turning On)
All Segments Illuminated

As the NAVY EOD first recognizes a turn-on command, it begins a "Diagnostic" function where many aspects of the system will be exercised and tested. This procedure takes about three seconds and an audible beep is issued each second as certain tests are successfully completed. During this time, all of the segments in the display are turned on so that their operability can be confirmed by the user. Should a test indicate a malfunction or marginal test, the unit will turn back off again. The user should ensure that all of the display segments are on and operating.

**TURNING OFF THE NAVY EOD:** After the Post Dive Interval following a dive, the NAVY EOD will remain on for one hour.

**MAIN OPERATING MODES:**

- Surface Interval (No Dives)
- Surface Interval (With Dives)
- Dive Mode
- Post Dive Interval
- Touch Programming

**SURFACE INTERVAL:**

After completion of the Self-Diagnostic mode or after the Post Dive Interval following a dive, the NAVY EOD enters the Surface Interval. The Screen displays, if applicable; current Surface Time, the previous dive's Maximum Depth, the previous dive's Bottom Time, Dive of Day number, Altitude and Temperature.

Figure 2 shows the display with no dives.

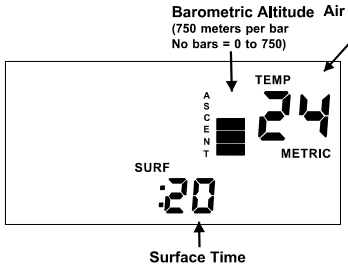



Figure 2
SURFACE MODE
No Nitrogen

Figure 5 shows the display with dives.

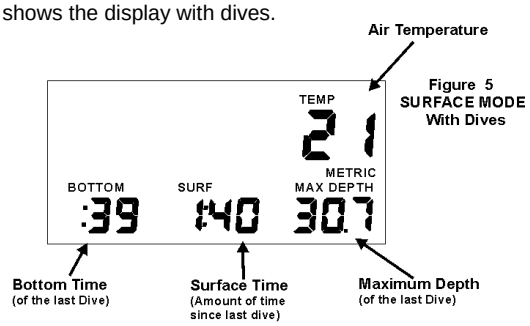



Figure 5
SURFACE MODE
With Dives

"Surface Time" starts at zero after a dive and begins counting minutes. If the computer shuts off and is turned on the Surface Time will be zero.

"Barometric Altitude" is indicated in six ranges via the Ascent Rate Bar Graph as follows (Altitude compensation is seamless up to 4,600 meters above sea level):

| | |
|---|---|
| 0 Bars | sea level to 760 meters |
| 1 Bar | 760 to 1,520 meters |
| 2 Bars | 1,520 to 2,280 meters |
| 3 Bars | 2,280 to 3,040 meters |
| 4 Bars | 3,040 to 3,800 meters |
| 5 Bars | 3,800 to 4,600 meters |

The six ranges are for display purposes only.

The NAVY EOD actually senses and computes extremely small altitude changes and hence, is called "Seamless". The term "Barometric Altitude" is used instead of just "Altitude" because the NAVY EOD measures Barometric Pressure to determine Altitude. Barometric Altitude can vary from actual Altitude by over +/- 305 meters! What is important to the body when diving is Barometric Altitude.

**DIVE MODE:**

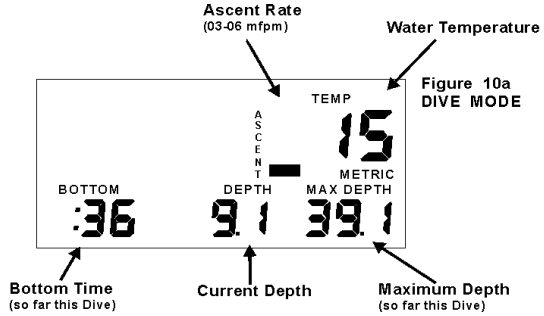



Figure 10a
DIVE MODE

Whether in the Surface Interval, Programming Mode or the Logbook Mode, the NAVY EOD will automatically enter the Dive Mode whenever the unit determines that it is in water deeper than 1.5 meters.

On the Display Screen the Surface time will be replaced with the current Depth and be displayed in one-meter increments. The maximum specified depth is 100 meters, but the unit will continue to measure and display depths deeper than that. A Depth Sensor warning will be issued (See later discussion on Sensor Warnings) when the unit can no longer accurately measure depth.

A Depth Alarm which can be set to warn the diver should a certain depth be exceeded is set at 61 meters from the factory. The Depth Alarm issues an audible alarm and the "WARNING" legend and Depth Digits will flash on and off for five seconds. The maximum depth achieved on the current dive is shown as "MAX DEPTH". This is updated once per second.

Temperature is measured to compensate the Depth Transducer for Temperature variations. For this purpose it requires that the Temperature be very slow reacting, just like the Depth Transducer and the body. This slow-reacting Temperature is what is displayed.

Bottom Time will begin once the NAVY EOD senses that the diver has descended below 1.5 meters and continues until the diver has ascended above 1 meter. The maximum Bottom Time displayed is 9 hours 59 minutes.

**ASCENT RATE BAR GRAPH:**

The Ascent Rate bar graph and alarms are active in the Dive Mode. The five-segment bar graph is used to display the diver's rate of ascent.

Via the Analyst® PC Interface, the Ascent Rate Alarms and Bar Graph can be set to the users preferences.

The first option is a VARIABLE-BY-DEPTH Ascent Rate. When ON, the Ascent Rate Alarm is determined by depth. As the diver ascends to shallow depths, the Maximum Ascent Rate is lowered. The Maximum Ascent Rates and their associated depth are:

| | |
|---|---|
| 18 meters or deeper | 18 meters per minute |
| 18 to 9 meters | meter per minute equal to the depth |
| Less than 9 meters | 9 meters per minute |

If VARIABLE-BY-DEPTH is off, the Maximum Ascent Rate Alarm and Bar Graph is specified by the user and can be from 6 to 18 mpm, in one meter increments.

Another selection is the bar graph itself. The two selections are either FIXED or PROPORTIONAL.

With FIXED, each of the five bars indicates an additional 3 meter per minute of Ascent Rate regardless of the Maximum Ascent Rate selected.

With PROPORTIONAL, each of the five bars indicate 20% (one-fifth) of the selected Maximum Ascent Rate.
For FIXED, the maximum ascent rate is 18 meter per minute. With this setting, no bars will illuminate if a diver is ascending at a rate less than 3 meter per minute.

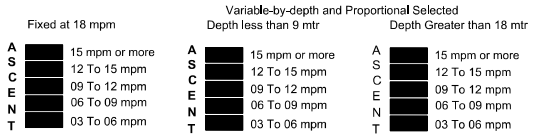



**Figure 12a**
**Ascent Rate Bar Graph**

If the diver's Ascent Rate exceeds the selected maximum, the entire Ascent Rate Bar Graph will flash, the audible alarm will sound once per second, and the WARNING legend will illuminate.

The Ascent Rate responsiveness may be selected via the Analyst®, eight different levels of are available.

NOTE: Customizing the Ascent Rate and Ascent Rate Bar Graph are among many of the additional programmable features available when using the Analyst® PC Interface. Available features are described in the section "USER CONFIGURABLE OPTIONS".

As shipped from the factory, the Ascent Rate is set for FIXED AND FIXED.

**POST DIVE INTERVAL:**

The first ten minutes after a dive, the NAVY EOD is in the Post Dive Interval. The flashing "SURF" legend and a Surface Time of less than ten minutes indicate this. Should another dive be commenced before the completion of the Post Dive Interval, that dive will be considered an extension of the previous dive. In this case, Bottom Time will NOT include the time spent on the surface in this Post Dive Interval. However, when reviewing the profile with the Analyst®, the time spent on the surface in this period will be shown.

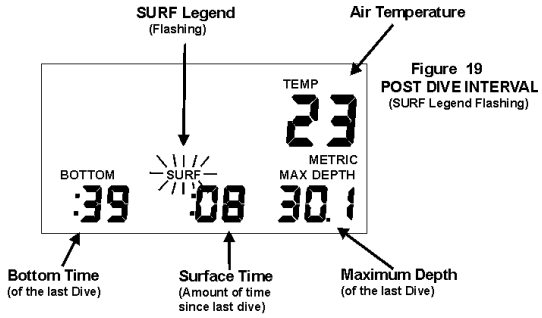



**Figure 19**
**POST DIVE INTERVAL**
(SURF Legend Flashing)

**TACLITE™:** The NAVY EOD is equipped with the TACLITE™ tactical low-light fiber-optic backlighted display. The standard TACLITE™ color is night vision safe red, but it is also available in yellow for those individuals who have vision difficulties with the color red. The TACLITE™ can be activated on demand. To turn the TACLITE™ on, tap the face of the unit and the TACLITE™ will turn on for the preprogrammed number of seconds (1 to 98), then turn off. By tapping the face again the TACLITE™ will turn on again. In this fashion the TACLITE™ can be kept on for as long as wanted. If 0 is entered, the TACLITE™ will never turn on. If 99 is entered, the TACLITE™ will stay on continuously and only turn off when the NAVY EOD does. The TACLITE™ on time can be set via the Programming Mode or via the Analyst® PC Interface, factory setting is 10 seconds. The TACLITE™ will turn off when the NAVY EOD turns off. If the batteries get too low, the TACLITE™ will turn off and cannot be turned back on until fresh batteries are installed.

**TOUCH PROGRAMMING MODE**: Can only be accessed when the unit is in the Surface Interval and allows the user to view or program into the dive computer:

- Displaying battery voltage
- Programming the On Time for the TACLITE™
- Access the Logbook Mode

**TOUCH PROGRAMMING MODE:**

**NOTE:** To enable the Programming Mode, the NAVY EOD must be on the Surface and not in the Post Dive Interval.

**NOTE:** All audible and visual alarms are suspended while the NAVY EOD is in the Programming Mode. Upon exiting the Programming Mode all alarms are reactivated.

**NOTE:** Once a value has been changed and the next menu option selected, the new value is stored.

**NOTE:** It is strongly recommended that the Programming Mode is activated again and a complete review of what was stored is accomplished.

**NOTE:** If the NAVY EOD is left in the Programming mode for five minutes without the contacts being touched, the unit will automatically exit the Programming Mode and return to the Surface Interval. Once this occurs the NAVY EOD will retain the modified programmed settings that have been stored. Options that have not been modified will retain their previous settings.

**TOUCH PROGRAMMING MODE - PROCEDURE:**

Contacts 1, 2, & 3 are for programming sequences.

To begin the programming sequence:

1. Turn the unit on;
2. Using a coin or other conductive metal object, briefly bridge Contacts 1 and 2 until a short beep is heard and the Programming Menu is seen on the display. The Menu options are displayed in sequence, incrementing to the next selection each time that Contacts 1 & 2 are bridged with a **coin**. The program option is displayed on the upper row of the display. The current setting for this option is displayed in the lower right of the display.
3. To reprogram the displayed menu values, bridge Contacts 1 & 2 with wetted fingers. This will cause the current setting to flash or in the case of multi-digit numbers, the least significant digit will flash.
4. Using a coin or other conductive metal object, bridge Contacts 2 & 3 to increment the numeric value. A confirmation beep will sound with each increment.
5. Next using wetted finger, bridge Contacts 1 & 2 to select the next digit, once selected the digit will flash to identify that it is being programmed. Bridge Contacts 2 & 3 till the desired value is displayed.
6. Repeat step 5 until all digits have been programmed.

7. To save the changes that have been made bridge Contact 1 & 2 with a coin or other conductive metal object. Once the next programming option is displayed the changes have been saved.

All programming sequences use the same routine of using Contacts 1 and 2 to SELECT the next programming sequence and Contacts 2 and 3 to INCREMENT the specified value.

**PROGRAMMING MODE MENU:**

The following table lists the various programming choices with their display identification and figure number.

| Identification | Description | Figure | Page |
|---|---|---|---|
| **InF** | Misc. Information | 23 | 3 |
| **tAC dL** | TACLITE™ On Time. Allowed value 0 to 99 | 33 | 3 |
| **LOG** | Logbook | 34a | 3 |

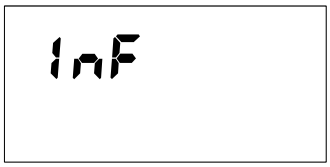



Figure 23
PROGRAMMING MODE
(Information Display Menu)

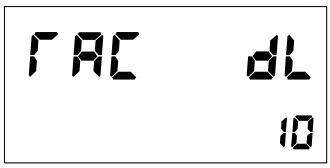



Figure 33
PROGRAMMING MODE
(Setting TACLITE On Time)

On Time 10 sec


Figure 34a
PROGRAMMING MODE
(Logbook Menu)

**TOUCH PROGRAMMING INFORMATION DISPLAY:**

The Information display is accessed via the Programming Mode. Figure 24 shows what the display screen looks like. The F0 in the upper right of the screen indicates the unit is in the Depth / Bottom Timer mode

The Battery voltage is displayed in the lower center of the screen as a two-digit number with a decimal point proceeded by a lower case 'b'.

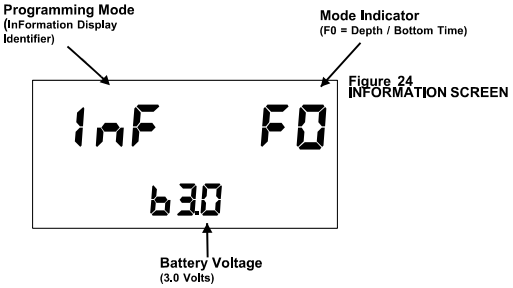



Figure 24
INFORMATION SCREEN

**TOUCH PROGRAMMING - TACLITE™:**

The Taclite™ dwell (on) time can be set so that when the face on the NAVY EOD is tapped the Taclite™ will stay on from 1 to 98 seconds. If the dwell time is programmed to '0' the Taclite™ will never come on, if programmed to 99 the Taclite™ will be on whenever the NAVY EOD is awake.

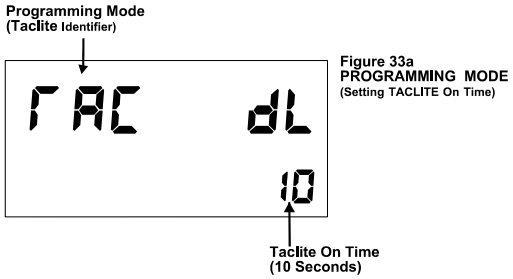



Figure 33a
PROGRAMMING MODE
(Setting TACLITE On Time)

**TOUCH PROGRAMMING - LOGBOOK:**

The Logbook is accessed via touch Contact Programming (see page 2). This enables the diver to view dive statistics; the NAVY EOD has the ability to provide diving data for the most recent 256 dives. The most recent dive will be displayed first. To view the next dive, touch the contacts 1 & 2 with wetted finger after pausing for a few seconds. Do not use a metal object such as a coin or knife-blade once in the Logbook since it will cause the unit to exit the Logbook and return to the Surface Interval.

Information contained in the Logbook will include:

Overall Dive Number
Surface Interval Before Dive
Maximum Depth
Minimum Water Temperature
Beginning Dive Time & Date
Fastest Rate of Ascent Bottom Time
Ending Battery Voltage

It is not necessary to exit the Logbook Mode prior to initiating a dive. Once the diver has descended below 1.5 meters, the NAVY EOD will immediately enter the Dive Mode.

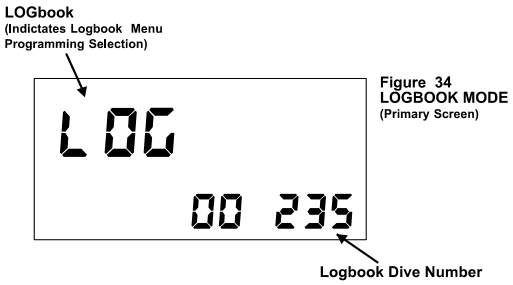



Figure 34
LOGBOOK MODE
(Primary Screen)

NOTE: The Dive Number that is displayed on the Logbook Menu screen (Figure 34) permits the diver to identify the total number of dives made with this specific unit. If the logbook example shown is the most recent dive made, it can be readily identified that this unit has made 235 dives.

Figures 35 display the Logbook of a Dive.

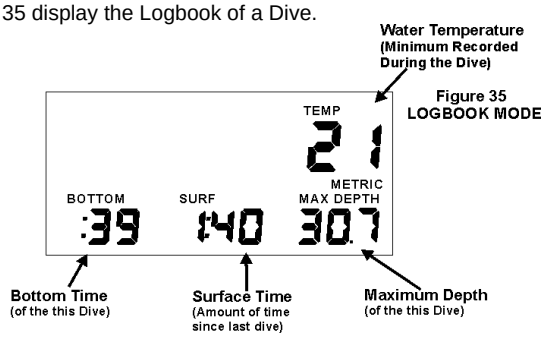



Figure 35
LOGBOOK MODE

**WARNING INDICATIONS:** Failure to observe audible and/or visual warnings and take corrective action may result in injury or death. In general, if the WARNING legend is flashing, some other digits should be flashing to indicate the anomaly.

- If the diver is ascending faster than the selected maximum ascent rate, then the top bar of the ascent bar graph will flash and the "WARNING" legend will illuminate. The unique high to low audible sweep alarm will continue to sound once per second until the situation is corrected.
- If the diver descends below the user set Depth Alarm, the Depth digits will flash. A single beep audible alarm will sound once per second for five seconds and will repeat every two minutes.
- If the battery voltage declines to 2.1 volts, the "BATT" legend will illuminate, at 1.8 volts it will flash once per second.

If an audible alarm is being issued, the display will not switch to the Alternate screen nor will the TACLITE™ activate.

**INTER-DIVE EVENTS:** The NAVY EOD stores important information between dives, even when the unit is not turned on. The information is stored as acquired and is called an "Inter-Dive Event". These events can be viewed via the Analyst® P.C. Interface version 4.01. Some Inter-Dive events are:

- Initialization of the unit.
- The unit is turned on
- Low batteries
- Altitude Changes of over 150 meters
- Sensor Malfunction
- Analyst® P.C. Communication

**DATA STORAGE TYPES & CAPACITY:** The NAVY EOD has the following internal distinct data storage activities that can be recalled, viewed, and stored with the Analyst® PC computer interface:

- **Current Variable Information:** Local Time, Altitude, Battery voltage, and Current unit Temperature.
- **Current Configuration Data:** As can be seen in "USER CONFIGURABLE ITEMS", below.
- **Historical Totals Summaries:** Dive Time, Number of Dives, Number of Warnings, Maximum Depth, and Maximum Depth Dive Number.
- **Each Dive Beginning Statistics:** Local Time Clock, Dive Number, Surface Time, Altitude, and Battery Voltage. Capacity is the most recent 256 dives.
- **Each Dive Ending Statistics:** Bottom Time, Max Depth, Average Depth, Max Ascent Rate, Max A/R Time, Max A/R Depth, Min Temperature, Average Temperature, Maximum Temperature, Min Battery Voltage, and number of Warnings. Capacity is the most recent 256 dives.
- **Each Dive Configuration Data:** Full and complete configuration of the system. Capacity is the most recent 256 dives.
- **Profile Graphical Information:** Depth Graph, Ascent Rate Graph, and Temperature Graph. Capacity is 180 hours at one second sampling.
- **Inter-Dive Events:** Initializations, Unit Activation, Altitude Changes of 150 Meters, Low Batteries, Sensor Malfunction, Analyst® interface with Dive Instrument.

**USER CONFIGURABLE ITEMS:** By using the optional Analyst® Personal Computer Interface, the user has the ability to change the following items:

**Caution: Items that can be changed via Touch Contact Programming may be different from the factory settings.**

**Dive Time/date Stamp:** This is the internal clock that is used by the system to time-stamp each individual dive as it occurs. Due to changes in battery voltage and temperature, the internal Time-of-day clock may slowly drift from the ideal. It is recommended that this clock be periodically set to local time via the Analyst®.

**Metric or Imperial:** The diver may select whether the data is computed and displayed in Metric or Imperial units. The NAVY EOD may be ordered either way as shipped from the factory.

**Select Touch Contact Programming (Enabled or Disabled):** This option enables or disables the Touch Contact Programming feature. If 'Disabled', all changes and information will only be available via the ANALYST® Personal Computer Interface. As shipped from the factory, this is set to 'Disabled'.

**Select PostDive Surface Interval (10 to 30):** This option allows the user to set the amount of time, in minutes, for the PostDive interval. From the factory this is set to 30.

**Selectable Ascent Rate Bar Graph (Fixed or Proportional):** This option determines whether the Ascent Rate bar graph indicates the speed of ascent or the percentage of the selected maximum ascent rate. The NAVY EOD is shipped from the factory as 'Fixed'.

**Selectable Variable-By-Depth Ascent Rate Alarm (On or Off):** This option gives the diver the ability to utilize a fixed ascent rate warning or a warning based on depth. Should the diver prefer the fixed ascent rate warning the diver can select the maximum ascent rate limit from 6 to 18 meters per minute (See next topic). As shipped from the factory, this is set to ON. If the VARIABLE rate is selected then the warning will illuminate based on the following table:

| DEPTH | AVERAGE ASCENT RATE |
|---|---|
| 18 meters and deeper | 18 meters per minute |
| 18 to 9 meters | same as depth |
| Shallower than 9 meters | 9 meters per minute |

**Selectable Fixed Ascent Rate Alarm Limit:** If Variable-By-Depth Ascent Rate Alarm was set to OFF from the above topic, the user may enter the desired Ascent Rate for the alarm to sound. As shipped from the factory, this is set to 9 meters per minute.

**Ascent Rate Responsiveness (0 to 7):** This option determines the responsiveness or sensitivity of the Ascent Rate Bar Graph. Zero is highly responsive and seven is very slow. This feature is set to three as shipped from the factory.

**Max Depth Alarm:** This option allows the diver to select a maximum depth below which the diver does not wish to descend before an alarm is sounded. As shipped from the factory, the Depth Alarm is set for 61 meters.

**Select Display Backlight On Time (0 to 99):** This option allows the user to set the amount of time, in seconds, that the TACLITE™ stays on once activated. If this option is set to "0" the TACLITE™ will never activate, if set to "99" the TACLITE™ will stay on all the time and only turn off when the NAVY EOD does. This option may also be set via the Touch Contact Programming. From the factory this is set to 20.

**Select Audible Beeper Alarm (On or Off):** This allows the user to enable or disable the Audible Alarms and beeper. As shipped from the factory, this is set to 'Off'.

**Restore Original Configuration Settings:** This allows the diver to restore the original factory default settings with a single command.

**SPECIFICATIONS:**

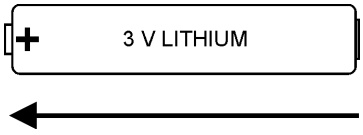
| | |
|---|---|
| Activation | Manual and Water |
| Maximum Depth | 100 Meters, 1 meters increments |
| Depth Accuracy | +/- 1% of full scale (+/- 1.0 meter) |
| Maximum Altitude | 4,600 meters |
| Altitude Accuracy | +/- 305 meters |
| Temperature Display | 0 to 37 degrees C, 1 degree increments |
| Temperature Accuracy | +/- 2% of full scale (after the unit has stabilized from a change in Temperature) |
| Surface Time | 0 to 9:59 hrs/mins, 1-minute increments |
| Bottom Time | 0 to 9:59 hrs/mins, 1-minute increments |
| Dive Summary Storage | up to 256 Dives |
| Dive Profile Storage | up to 180 Dive hours at one second sampling depending on configuration |
| Profile Sampling | 1 second increment |
| Typical Battery Life* | Over 1000 dive hours under normal diving conditions or one years (whichever is first), TACLITE off.<br>Over 40 hours, TACLITE on continuously. |
| Typical Battery Life* | Over 5000 dive hours under normal diving conditions or two years (whichever is first), TACLITE off.<br>Over 75 hours, TACLITE on continuously |

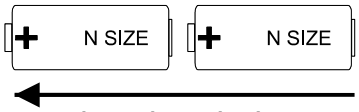
* With fresh new ENERGIZER® brand alkaline batteries
** With fresh new Lithium battery

**Note:** Specifications are additionally +/- one least significant digit due to rounding. Specifications are subject to change without notice.

**CLEANING THE NAVY EOD:** The unit should be cleaned after each use with fresh water and towel dried, never use air pressure to dry the unit. This could damage the unit and will void the warranty. Do not use chemicals to clean the case or lens as this may damage the unit, or permanently fog the lens.

**CHANGING BATTERY:** The NAVY EOD will operate on either two 1.5V N-Cell size Alkaline batteries or one 3V Lithium Battery (CR12600SE). **The unit will only maintain a low magnetic signature when using the Lithium Battery.** The batteries should be changed when the 'BATT' legend is seen or battery voltage reaches 2.5 volts as can be seen on the Information Display. The unit will operate until the battery voltage drops below 2.0 volts. Only use fresh batteries for maximum battery life. At this time, *Eveready Energizer* Alkaline is recommended for the N-Cells. Care should be taken not to activate the TACLITE™ during battery replacement. Be sure to confirm that the batteries are REALLY new and have not been sitting on a shelf losing life. Cold temperatures tend to shorten apparent battery life. Change batteries every two years regardless of battery condition.






**Plus end goes in First.**

When installing new batteries, ensure that the positive "**+**" end of the battery is inserted into the battery compartment first. Inspect the battery cap O-rings for nicks and scratches. If either O-ring is damaged carefully remove both O-rings and replace with new silicone O-rings. Lightly lubricate each end of the batteries with silicone grease or petroleum jelly to help minimize corrosion and therefore extend battery life.

When reinstalling the battery cap, lightly lubricate the O-rings and slowly twist the cap into place using a coin (US Quarter supplied). Press the coin into the battery cap slot firmly to prevent slipping and damaging the slot. Ensure there is no dirt or debris on the O-rings or the mating surface and that the O-rings are properly installed.

As the battery cap is screwed in, carefully observe that the double O-rings install correctly.

It is best to have the new batteries ready to install since the NAVY EOD was designed to allow for battery changes without resetting. This period of time is typically 30 seconds, but varies with temperature and the voltage of the batteries being replaced. It can be significantly less if batteries are not replaced promptly when the 'BATT' legend first comes on. Again care should be taken not to activate the TACLITE™ during battery replacement, if the TACLITE™ is activated it will significantly reduce the time that the NAVY EOD allows for battery changes.

If the batteries are allowed to discharge too low, or if removed for too long, the NAVY EOD may enter a state where it will not turn on even with new batteries. If this occurs, remove the batteries and allow the unit to set for 30 minutes and then install fresh batteries. This procedure could affect the internal Time of Day Clock's settings and these settings should be verified via the Analyst® P.C. Interface.

**CAUTION!!!** ***Putting the battery(s) in backwards may cause permanent damage to the unit and will VOID the Warranty.***

**ASSISTANCE, REPAIR & MAINTENANCE:** The NAVY EOD does not require Annual Maintenance. If you suspect that your NAVY EOD is not operating correctly, contact Cochran Undersea Technology's Customer Support Department in the USA for assistance, by phone at 972.644.6284 or FAX details to 972.644.6286 or E-mail to service@divecochran.com. Most problems can be resolved without returning the unit. The unit may also be returned to the place of purchase and the dealer requested to contact us. If this is not possible or is inconvenient due to a change in location, contact us for the name of the nearest Team Cochran Authorized Dealer.

- **NEVER TEST OR SUBJECT THE PRODUCT TO PRESSURIZED AIR! (Voids Warranty)**
- **NEVER REMOVE THE LENS FROM THE UNIT! (Voids Warranty)**
- **ONLY USE FRESH WATER TO CLEAN THE UNIT! NEVER USE SOLVENTS! (Voids Warranty)**
- **DO NOT USE A SCREWDRIVER TO REMOVE BATTERY CAP! (Voids Warranty)**
- **ALWAYS KEEP FRESH BATTERIES INSTALLED!**
- **ALWAYS USE 1.5 VOLT ALKALINE BATTERIES or ONE 3V LITHIUM BATTERY!**
- **LUBRICATE BATTERY ENDS WITH THIN FILM OF SILICONE GREASE!**

**REPLACEMENT PARTS:**

Batteries (2)
Battery Cap O-rings
Battery Cap Assembly
Pins (2) Replacement
Wrist Strap (long, black)
Retractor Only
Retractor with Compass
Lens Protector (Pkg. of 3)

### ANALYST® Personal Computer Interface

The ANALYST® 4.XX Personal Computer Interface is a complete hardware/software system that uploads data from the Cochran 'NAVY EOD" unit to an IBM or compatible Personal Computer with a Windows® 2000/XP/Vista/& operating system. The ANALYST® Personal Computer Interface allows the diver to retrieve dive data, customize the dive computer and also to enter and store additional information for each dive in a logbook database.

### FCC LABEL

**This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.**

### INTERFERENCE STATEMENT

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device. If not installed and used in accordance with the instructions, it may cause interference to radio communications. The limits are designed to provide reasonable protection against such interference in a residential situation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna of the affected radio or television.
- Increase the separation between the equipment and the affected receiver.
- Connect equipment and the affected receiver to power outlets on separate circuits.
- Consult the dealer or an experienced radio/TV technician for help.

### MODIFICATIONS

Changes or modifications not expressly approved by Cochran Consulting, Inc. could void the user's authority to operate the equipment.

### SHIELDED CABLES

This product is designed to be used only with the Analyst® interface cable (USB) to maintain compliance with FCC Regulations.

### PATENT INFORMATION

Protected under one or more Foreign or US patents.

5,899,204 5,794,616
5,617,848 5,570,688

Other patents may be pending.

All specifications subject to change without prior notice. Analyst® and TACLITE™ are registered trademarks of Cochran Consulting, Inc. **Energizer** is a registered trademark of the Eveready Battery Co., St. Louis MO. 

### CE

The CE mark is used to mark conformity with the European Union EMC directive 89/336/EEC. Cochran dive instruments fulfill all the required EU directives.

### PREN 13319

PREN 13319 "Diving accessories – Depth gauges and combined depth and time measuring devices – Functional and safety requirements test methods" is a European diving depth gauge standard draft. Cochran dive instruments are designed and tested to comply with this standard draft.

### LIMITED WARRANTY

To the original purchaser ("OWNER") only, Cochran Undersea Technology, a division of Cochran Consulting, Inc. ("COCHRAN"), represents this Product to be free of defects in materials and workmanship under normal SCUBA use for 12 months from the date of shipment from COCHRAN to the Authorized Dealer or Distributor. For purposes of establishing warranty eligibility, this date of shipment may be noted on the original Product box, or can be determined by contacting COCHRAN.

Any defective Product, unless cause is specifically excluded in the "Warranty Conditions and Limitations" section below, will at the sole discretion of COCHRAN, be repaired or replaced with a new or refurbished unit of comparable or better function and/or condition. COCHRAN is not responsible for any incidental or secondary damages as a result of Product malfunction.

### WARRANTY CONDITIONS and LIMITATIONS

Product must have been obtained from a COCHRAN Authorized Dealer. Contact COCHRAN for verification of dealer status. This Limited Warranty is not transferable.

The product should be registered on-line at www.divecochran.com within 15 days of purchase in order to validate Limited Warranty.

Failure to provide proper care for this Product will render this Limited Warranty null and void. Damages or malfunction resulting from accidental or deliberate abuse, tampering, battery leakage, exceeding maximum intended operating depth or other parameters, extreme heat or cold, or

other conditions which COCHRAN may deem to be outside the intended scope of this Limited Warranty are not covered. Plastics, O-rings, batteries, battery life, and flooded battery compartments are NOT covered by this Limited Warranty.

This Limited Warranty will be rendered null and void if an attempt is made to establish communications with the computer with any hardware and/or software other than the Cochran approved Analyst® Interface.

OWNER is responsible for shipping this Product to COCHRAN for service, and paying all associated costs, including shipping, insurance, and import duties. OWNER may take Product to an Authorized Dealer to arrange service under terms of this Limited Warranty. COCHRAN will return Product to OWNER or Dealer via a method and carrier of its choosing. Costs for requested expedited return shipping will be the responsibility of OWNER. Product returned for service under terms of this Limited Warranty must be accompanied by a photocopy of the original sales receipt in order for warranty repair or replacement to be performed if the Warranty Registration Card is not on file.

**STATEMENT of LIMITED LIABILITY**

This Product is sold and intended to be used only as a guide, providing the TRAINED and CERTIFIED diver the information needed to make safe diving decisions. It is expressly understood that by buying and/or using this Product the Diver assumes ALL RISK as to its operability, reliability, quality, performance, accuracy, and suitability for his diving style. Furthermore, Diver recognizes that this Product is an electronic instrument being used in a hostile environment and is subject to failure, which may manifest itself in a number of ways. COCHRAN and its distributors and retailers will not be held liable for any personal injuries or other damages resulting from its use, even if COCHRAN has been advised of such occurrences or damages.

These products must be handled with care and properly maintained to assure the optimum performance. Users must possess the proper training for SCUBA diving activities and should be fully educated in the operation of this product. Users are encouraged to possess and utilize a redundant (backup) instrument for their dive planning and execution. Divers are always encouraged to dive with a buddy at all times.

COCHRAN strongly supports and agrees with maximum depth limits of 40 meters for recreational SCUBA diving, as established by recognized training and certification agencies, and in no way encourages diving beyond these or any prudent lesser limits as may be necessitated by environmental, diver-specific, or other conditions.

THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS, WHETHER ORAL OR WRITTEN, EXPRESSED OR IMPLIED. COCHRAN UNDERSEA TECHNOLOGY SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. No Cochran Undersea Technology dealer, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

**METRIC/IMPERIAL MODES:** If the instrument is computing and displaying in Metric, the “METRIC” legend will be illuminated when the computer is on. Metric/Imperial selection is made using the Analyst® software. Changing Modes does not affect any profiles or data stored in the dive computer.

**LOW BATTERY INDICATIONS:** Fresh batteries should read about 3.2 volts on the Information Screen. When the battery voltage drops to 2.5 volts, the “BATT” legend will be illuminated. It is recommended to change the batteries at this point, but several dives might still remain possible. When the battery voltage decays to 2.2 volts, the “BATT” legend will begin to flash on and off. Once the “BATT” legend begins to flash the TACLITE™ is deactivated, to conserve the remaining battery power even though the unit may be on a dive, and can not be activated until fresh batteries are installed. While there should be sufficient battery power to normally complete a dive, it is not recommended to begin a new dive until fresh batteries are installed. After the computer automatically turns itself off 70 minutes after a dive, it cannot be turned back on if the battery voltage is less than 2.0 volts. Fresh batteries must be installed. See the “BATTERY CHANGES” section of this manual for detailed information on how to change batteries.

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Cochran

UNDERSEA TECHNOLOGY

A Division of Cochran Consulting, Inc.

*Diving Into The 21st Century*

# NAVY EOD

## Low Magnetic Signature

## DIVE INSTRUMENT

## Operator's Manual

English Language - Metric Units

Version 001m

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