Cochran

UNDERSEA TECHNOLOGY

A Division of Cochran Consulting, Inc.

Diving Into The 21st Century

NAVY EOD III

Low Magnetic Signature
DIVE COMPUTER
Operator's Manual

English Language - Imperial Units

Version 001i

USER INFORMATION

For your records, please fill in the following information.

SERIAL NUMBER OF UNIT: _____
DATE OF PURCHASE: _____
PLACE OF PURCHASE: _____
ADDRESS: _____
CITY: _____
STATE: _____ ZIP CODE: _____
PHONE NUMBER: _____

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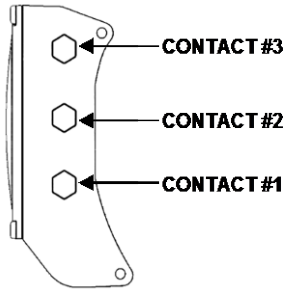
Introduction

The NAVY EOD III Dive Computer (NAVY EOD III) is quite simple to use and operate, but underneath that simplicity is a significant level of sophistication. For 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. The NAVY EOD III is one of the first dive computers to implement a Training Mode which enables the computer to record and store data in shallow water training environments (swimming pools, shallow lakes, etc.). By using the NAVY EOD III, the diver specifically acknowledges that he has been adequately and thoroughly trained and certified to engage in Constant PO_2 and Nitrox diving by a professional, competent, recognized training agency.

Operating Modes of the NAVY EOD III:

PreDive Prediction Mode
Surface Mode
Subsurface Mode
Decompression Mode
PostDive Interval Mode
Logbook Mode
Training Mode
Programming Mode
Sleep Mode

Side Touch Contacts



For identification purposes, put the NAVY EOD III face up in the orientation that allows the display, display bezel, and product name to be read. There are three contacts on the right side of the unit. The closest contact toward the bottom of the display is Contact 1; the middle contact is Contact 2, while the contact farthest away at the top of the display is Contact 3. Contacts are used to:

- **Turn the unit on by sensing wetted Contacts 1 & 2**
- **Enter Logbook Mode by sensing wetted Contacts 1 & 2**
- **Enter Programming Mode by sensing shorted Contacts 1 & 2**
- **Select Programming options by sensing shorted Contacts 1 & 2**
- **Increment Programmable options by sensing shorted Contacts 2 & 3**
- **Determine water conductivity when in a dive via Contacts 1 & 2 & 3**
- **Communicate with the ANALYST® PC Interface via Contacts 1 & 2 & 3**

It is important that the Contacts be kept clean and dry when the computer is not in use. Do not use solvents. Use only clean, fresh water.

Turning On the NAVY EOD III

Although the NAVY EOD III 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 just prior to a dive. 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 60 minutes, the NAVY EOD III 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.

The NAVY EOD III will not turn on if the altitude is greater than 16,000 feet or if the battery voltage is less than approximately 1.6 volts.

As the NAVY EOD III 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 five seconds and an audible beep is issued each second as certain tests are successfully completed (**If the audible beeper has been disabled, these tests will be visual only).** During this time, all of the segments in the display are turned on so their operability can be confirmed. The user should ensure that all of the display segments are on and operating correctly. Should a test indicate a malfunction or marginal test, the unit will turn back off.

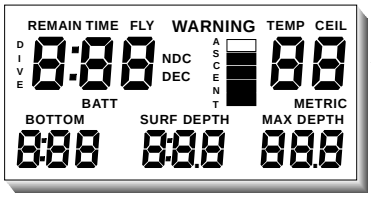


Figure 1
SELF-DIAGNOSTIC DISPLAY
All Segments Illuminated

Figure 1: Self-Test Screen

Turning Off the NAVY EOD III

After a dive, the NAVY EOD III will remain on for 70 minutes before automatically entering its "Sleep Mode". The NAVY EOD III will automatically turn off once all residual nitrogen outgassing has been completed.

Warning Indications

Failure to observe audible and/or visual warnings and take corrective action may result in injury or death.

If the audible beeper has been disabled, the Warnings will be visual only.

- If the unit ascends faster than the selected maximum ascent rate, the hollow bar of the ascent bar graph will flash and the “WARNING” legend will illuminate. The unique audible sweep alarm will continue to sound once per second until the situation is corrected.
- If the unit descends below the user set Depth Alarm, the "WARNING" legend will illuminate and flash along with the Depth digits. The audible alarm will sound once per second for five seconds and repeats once every two minutes. The Depth alarm is not active in the Decompression Mode to avoid confusion with the “Shallower Than Ceiling” alarm.
- If the diver has less than two minutes of a No-Decompression Time remaining, the "WARNING" legend will illuminate and flash along with the Remaining NDC time digits. An audible alarm will sound once per second for five seconds and repeats once every two minutes.
- If the diver enters the Decompression Mode, an audible alarm will sound once per second for five seconds.
- During a Decompression dive, if the Depth is less than the CEILING, the “WARNING” legend will illuminate and flash along with the Depth and Ceiling digits. The unique audible sweep alarm will continue to sound once per second until the situation is corrected.

Constant PO_2 & FO_2 Modes

Almost all other dive computers only compute using air or enriched air (Nitrox) which is referred to as “Constant FO_2” and is commonly found in open-circuit systems and in semi-closed circuit rebreathers. The NAVY EOD III has this capability, but also computes using a “Constant PO_2” as commonly found in closed-circuit rebreathers. The user can select which of these two modes or combination of these two modes is desired by using the ANALYST® PC Interface.

If the user selects CONSTANT FO_2 mode, the Oxygen content of the Nitrox blends can be selected from 21 to 99.9 percent.

If the user selects CONSTANT PO_2 mode, the Partial Pressure of Oxygen (PO_2) can be selected between 0.5 and 1.5 ata.

Via the ANALYST® PC Interface, the user can specify when, or if the unit should change from CONSTANT PO_2 mode to CONSTANT FO_2 mode at or near the surface. This is common since most divers will revert to air or enriched air at or near the surface.

It is important to recognize that if CONSTANT FO_2 mode is selected, the unit will not switch to CONSTANT PO_2 under any circumstances.

Deco PO_2/ FO_2 Mode Switching

While using the NAVY EOD III in the CONSTANT PO_2 mode, it may be desirable to switch to another gas source at some point, usually during the end of the dive. This gas source may be ordinary air, or an enriched gas. This switching is automatic.

Since the depth of the desired switch to the CONSTANT FO_2 blend is known ahead of time, it can be used to automatically switch the computer to the CONSTANT FO_2 Blend or back to the CONSTANT PO_2 mode should the diver descend again. This switch definition is done prior to starting a dive by programming the Deco FO_2 Blend Oxygen percentage, the minimum dive time that must expire and the absolute maximum depth of the Blend switch. Depending on surface swells, a small amount may be added to this depth to ensure that when the diver is shallower than the depth the Blend switch will actually occur. If the diver subsequently descends below this depth, the CONSTANT PO_2 mode is again assumed to be in use. The unit will automatically revert to the CONSTANT PO_2 mode at the conclusion of the PostDive Interval. If the switch depth is set to zero, the unit will not switch modes. All of these factors can be set via Touch Contact Programming or the ANALYST® PC interface.

TACLITE™

The NAVY EOD III is equipped with the TACLITE™ tactical low-light fiber-optic back lighted display. The TACLITE™ can be activated on demand. To turn the TACLITE™ on, tap the face of the NAVY EOD III and the TACLITE™ will turn on for the preprogrammed number of seconds (1 to 98), and 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. The TACLITE™ will turn off when the NAVY EOD III turns off. If 0 is entered the TACLITE™ will never turn on, if 99 is entered the TACLITE™ will only turn off when the NAVY EOD III does. The number of seconds that the TACLITE™ stays on is settable via the Programming Mode or via the ANALYST® PC Interface, factory setting is 20 seconds.

CONSTANT PO_2 OPERATING MODE

PreDive Prediction Mode - PO_2 Mode

The PreDive Prediction Screen is accessed through the Programming menu (See Programming, page 30). This enables the diver to view the PreDive Prediction information at the touch of the Contacts. The NAVY EOD III PreDive Prediction starts at 30 feet and increasing in 10-foot increments. PreDive Predictions will terminate when the No-Decompression (NDC) time prediction is two minutes or a maximum depth of 320 feet is reached. During PreDive Prediction the current PO_2 that the unit is programmed for is used to compute the NDC time remaining and will influence predictions. Additional Conservatism and residual nitrogen can also affect PreDive Predictions. Once the maximum PreDive Prediction depth has been reached the unit will return to the Surface Mode. Typical PreDive predictions can be seen in the next chart.

Refer to the ANALYST® for information about how to modify parameters.

During the PreDive Prediction Mode, the unit will compute and display the maximum safe time at that depth. Also the PO_2 set point value will be displayed in the lower center of the display.

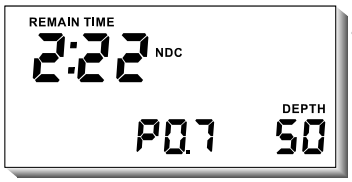


FIGURE 13
PRE DIVE PREDICTION
Constant PO2 Mode

NDC Time Predict (2 hrs 22 mins)	142 mins
Depth Predict	50 feet
PO2 Set Point	0.7 ata

Figure 13: PreDive Prediction – Constant PO_2 Mode

Surface Mode- PO_2 Mode

At the completion of the Self-Diagnostic mode or after the PostDive Interval following a dive, the NAVY EOD III enters the Surface Mode. The Surface Mode has two screens, a Primary Screen and an Alternate Screen. You may switch to the Alternate Screen by rotating the wrist quickly or tapping firmly on the face of the WU. The Primary Screen displays, if applicable: current Surface Time, the previous dive's Maximum Depth, the previous dive's Bottom Time, the current breathing gas, and Temperature. The Alternate Screen displays the current PO_2 set point value, and current battery voltage. Figure 2 shows the display with no residual nitrogen (a clean dive). Figure 5 shows the display with residual nitrogen (a repetitive dive). Figure 2a shows the alternate screen for both with and without residual nitrogen.

"Surface Time" starts at zero immediately after a dive and begins counting minutes. It the computer shuts off (enters Sleep Mode) and is turned on with nitrogen residual left, the Surface Time will continue to count. If the computer shuts off and is turned on with no nitrogen residual left, the Surface Time will be zero.

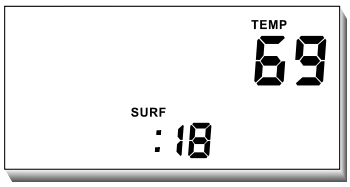


FIGURE 2
SURFACE MODE DISPLAY
Primary Screen
Constant PO2 Mode
No Nitrogen Residual

Altitude	< 2k feet
Temperature	69 f
Surface Time	18 mins
Battery	OK

Figure 2: Surface Mode – No Nitrogen – Constant PO_2 Mode

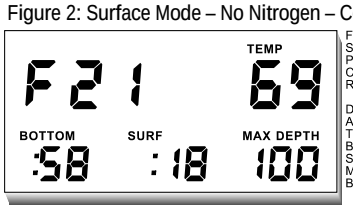


FIGURE 5
SURFACE MODE DISPLAY
Primary Screen
Constant PO2 Mode
Residual Nitrogen

Diver Breathing	21 %
Altitude	< 2k feet
Temperature	69 f
Bottom Time	58 mins
Surface Time	18 mins
Max Depth	100 feet
Battery	OK

Figure 5: Surface Mode – With Nitrogen – Constant PO_2 Mode

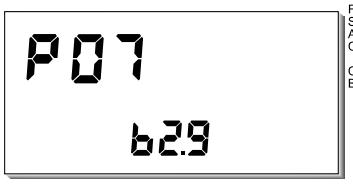


FIGURE 2a
SURFACE MODE DISPLAY
Alternate Screen
Constant PO2 Mode

Constant PO2	0.7 ata
Battery Voltage	2.9 volts

Figure 2a: Surface Mode – Alternate Screen – Constant PO_2 Mode

Subsurface Mode - PO_2 Mode

Whether in the Surface Mode, PreDive Prediction Mode, Programming Mode or the Logbook Mode, the NAVY EOD III will automatically enter the Subsurface Mode when the unit determines that it is in water deeper than five feet.

Maximum Depth will be replaced with current Depth displayed in one-foot increments. Bottom Time will begin once the NAVY EOD III senses that the diver has descended below five feet and continues until the diver has ascended above three feet. The maximum Bottom Time displayed is 9 hours 59 minutes.

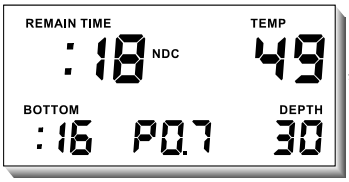


Figure 8
SUBSURFACE MODE DISPLAY
Constant PO2 Mode

Remain NDC Time	18 mins
Ascent Rate	0
Temperature	49 f
Bottom Time	16 mins
Depth	30 feet
Constant PO2	0.7 ata
Battery	OK

Figure 8: Subsurface Mode – Constant PO_2 Mode

Decompression Mode - PO_2 Mode

Should a no-decompression limit be overstayed, the NAVY EOD III will enter the Decompression Mode. In this mode, the Ceiling digits will display the depth at which the diver must stop and not ascend above during final ascent (the "TEMP" legend and digits will be replaced with the "CEIL" legend and digits). The first Ceiling will be at 10 feet and continue in ten-foot increments.

The Remaining No-decompression Time and "NDC" legend will be replaced with Decompression Time and "DEC" legend. Both STOP time and TOTAL time are displayed using the same set of digits. As shipped from the factory (can be changed via ANALYST®), STOP and TOTAL time will alternate at the rate of once every two seconds. In this way, the diver can view not only the time to spend at a particular STOP depth, but also the TOTAL time it will take to complete all STOPS. Clearly, the larger of the two alternating numbers is the Total Decompression Time of all stops, and the smaller of the two numbers is the time required at the current stop. At the ten foot stop, the TOTAL and STOP times may be the same and therefore appear to not alternate. When at a specific stop, the decompression time at that stop is as shown, and will count down. The Total decompression time, however, is merely an indication based on a forecast using the normal dive PO_2 or FO_2 value and the Deco Ascent Rate that has been entered via the ANALYST®. The times that are forecast do not include the effects of a Deco breathing gas switch, once the switch is made the displayed times are accurate for that breathing gas. The TOTAL time that is shown is usually longer than that actually required.

Predicted Decompression Time at a specific stop assumes that the diver is at the required Ceiling. However, it is not necessary to be precisely at the specified Ceiling. Outgassing credit will be given that is proportional to a depth that is deeper than the specified Ceiling. A small margin shallower than the Ceiling also exists. Should a Ceiling be violated (diver is shallower than Ceiling), the Depth and Ceiling digits will flash as a visual warning and a unique audible alarm will sound once per second. This warning will continue until the Depth has been corrected. Outgassing will continue even though the diver is shallower than the Ceiling.

If the diver surfaces before satisfying his decompression obligation, the NAVY EOD III will continue to give outgassing credit as if it was in a dive, but at a depth of zero feet. The unit will continue to log data and perform as if actually in a dive. If in the Constant PO_2 mode and not switched to the Constant FO_2 mode, the unit will actually decompress as if it were actually at the various required decompression stops using the specified Constant PO_2. If the unit is in the Constant PO_2 mode and switched to Constant FO_2 or in the Constant FO_2 mode, the unit will decompress correctly. However, the forecasted decompression times are based on Constant PO_2 and will not be accurate. When the decompression obligation is finally satisfied, the thirty-minute "PostDive Interval" will begin and the dive will terminate in thirty minutes.

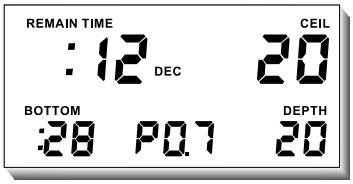


Figure 16
DECOMPRESSION MODE
Constant PO2 Mode
(Showing Total Deco Time)

Total Deco Time	12 mins
Ascent Rate	0
Stop Ceiling	20 feet
Bottom Time	28 mins
Constant PO2	0.7 ata
Depth	20 feet
Battery	OK

Figure 16: Deco Mode – Constant PO_2 Mode – Showing Total Time

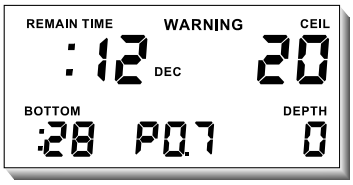


FIGURE 17
DECOMPRESSION MODE
Constant PO2 Mode
(At Zero Depth)
(CEILING & DEPTH Digits Flashing)

Total Deco Time	12 min
Stop Ceiling	20 feet
Bottom Time	28 mins
Constant PO2	0.7 ata
Depth	0 feet
Battery	OK

Figure 17: Deco Mode – Constant PO_2 Mode – At Zero Depth

Logbook Mode

The Logbook Mode of the NAVY EOD III is accessed via the Programming Mode (see Programming Mode, page 30). This enables the diver to view the dive statistics; the NAVY EOD III has the ability to provide diving data in this mode for the previous 512 dives. The most recent dive will be displayed first. To view the next dive, touch 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 Mode, since it will cause the unit to exit the Programming Mode.

Information contained will include:

- Overall Dive Number
- Minimum NDC Time
- Maximum DEC Time (Deco Dive)
- Fastest Rate of Ascent.
- Minimum Water Temperature
- Maximum Ceiling (Deco Dive)
- Bottom Time
- Surface Interval before the dive
- Maximum Depth

It is not necessary to exit the Logbook Mode prior to initiating a dive. Once the diver has descended below five feet, the NAVY EOD III will immediately enter the Subsurface Mode.

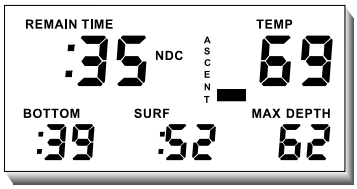


Figure 35
LOGBOOK MODE DISPLAY

Min NDC Time	35 mins
Max Ascent Rate	15 fpm
Min Temperature	69 f
Bottom Time	39 mins
Surface Time	52 mins
Max Depth	62 feet
Battery	OK

Figure 35: Logbook Mode Display

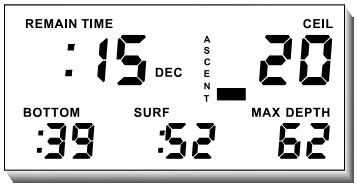


Figure 36
LOGBOOK MODE DISPLAY
(DECO DIVE)

Max Deco Time	15 mins
Max Ascent Rate	15 fpm
Deepest Ceiling	20 feet
Bottom Time	39 mins
Surface Time	52 mins
Max Depth	62 feet
Battery	OK

Figure 36: Logbook Mode Display – Deco Dive

NOTE: The overall dive number is displayed at the lower right of the Logbook Menu screen (see figure 34a, page 36). If the logbook example is the most recent dive made, it could be identified that 235 dives had been made with that specific unit.

Confined Water Protocol (Training Mode)

The NAVY EOD III is one of the first dive computers to offer an operating mode designed to record and store data from training dives performed in shallow water environments (swimming pools, shallow lakes, lagoons, etc.) or calm open water environments that have less than 1-foot seas. In the Training Mode, the NAVY EOD III enters the Subsurface Mode at a depth of 2 feet instead of 5 feet and will exit the Subsurface Mode at 1 foot instead of 3 feet. Also the PostDive Surface Interval may be extended from 10 minutes up to a maximum of 30 minutes in 1-minute increments after which the dive data is stored in the computer's memory. These changes permit the Instructor to record the complete training session, including in-water surface periods, as a single dive. The Training Mode can only be enabled or disabled via the ANALYST® PC Interface.

CONSTANT FO_2 OPERATING MODE
PreDive Prediction Mode - FO_2 Mode

The PreDive Prediction Screen is accessed through the Programming menu (See Programming, page 29). This enables the diver to view the PreDive Prediction information at the touch of the Contacts. The NAVY EOD III PreDive Prediction starts at 30 feet and increasing in 10-foot increments. PreDive Predictions will terminate when the No-Decompression (NDC) time prediction is two minutes or a maximum depth of 320 feet is reached. During PreDive Prediction the current O_2 setting of Blend 1, that the unit is programmed for, is used to compute the NDC time remaining and will influence predictions. Additional Conservatism and residual nitrogen can also affect PreDive Predictions. Once the maximum PreDive Prediction depth has been reached the unit will return to the Surface Mode. Typical PreDive predictions can be seen in the next chart.

Refer to the ANALYST® for information about how to modify parameters. During the PreDive Prediction Mode, the unit will compute and display the maximum safe time and the PO_2 value at that depth.

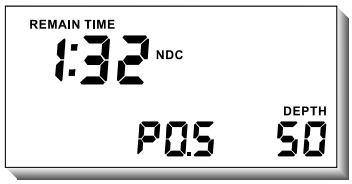


FIGURE 14
PRE DIVE PREDICTION
Constant FO2 Mode

NDC Time Predict (1 hrs 32 mins)	92 mins
Depth Predict	50 feet
PO2 Predict	0.5 ata

Figure 14: PreDive Prediction – Constant FO_2 Mode

Surface Mode- FO_2 Mode

At the completion of the Self-Diagnostic mode or after the PostDive Interval following a dive, the NAVY EOD III enters the Surface Mode. The Surface Mode has two screens, a Primary Screen and an Alternate Screen. You may switch to the Alternate Screen by rotating the wrist quickly or tapping firmly on the face of the WU. The Primary Screen displays, if applicable: current Surface Time, the previous dive's Maximum Depth, the previous dive's Bottom Time, the current breathing gas, and Temperature. The Alternate Screen displays the current FO_2 oxygen percentage, and current battery voltage. Figure 3 shows the display with no residual nitrogen (a clean dive). Figure 6 shows the display with residual nitrogen (a repetitive dive). Figure 3a shows the alternate screen for both with and without residual nitrogen.

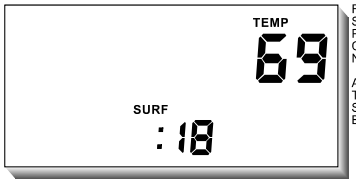


Figure 3: Surface Mode – No Nitrogen – Constant FO_2 Mode

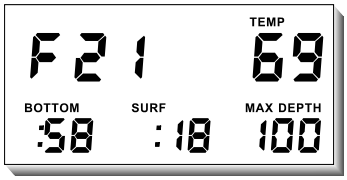


Figure 6: Surface Mode – With Nitrogen – Constant FO_2 Mode

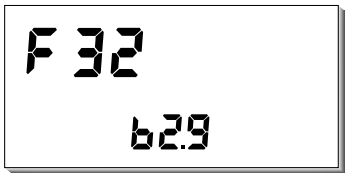


Figure 3a: Surface Mode – Alternate Screen – Constant FO_2 Mode

Subsurface Mode - FO_2 Mode

Whether in the Surface Mode, PreDive Prediction Mode, Programming Mode or the Logbook Mode, the NAVY EOD III will automatically enter the Subsurface Mode when the unit determines that it is in water deeper than five feet.

Maximum Depth will be replaced with current Depth displayed in one-foot increments. Bottom Time will begin once the NAVY EOD III senses that the diver has descended below five feet and continues until the diver has ascended above three feet. The maximum Bottom Time displayed is 9 hours 59 minutes.

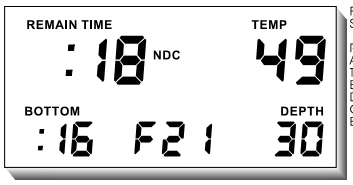


Figure 10: Subsurface Mode – Constant FO_2 Mode

Decompression Mode - FO_2 Mode

Should a no-decompression limit be overstayed, the NAVY EOD III will enter the Decompression Mode. In this mode, the Ceiling digits will display the depth at which the diver must stop and not ascend above during final ascent (the “TEMP” legend and digits will be replaced with the “CEIL” legend and digits). The first Ceiling will be at 10 feet and continue in ten-foot increments.

The Remaining No-decompression Time and “NDC” legend will be replaced with Decompression Time and “DEC” legend. Both STOP time and TOTAL time are displayed using the same set of digits. As shipped from the factory (can be changed via ANALYST®), STOP and TOTAL time will alternate at the rate of once every two seconds. In this way, the diver can view not only the time to spend at a particular STOP depth, but also the TOTAL time it will take to complete all STOPS. Clearly, the larger of the two alternating numbers is the Total Decompression Time of all stops, and the smaller of the two numbers is the time required at the current stop. At the ten-foot stop, the TOTAL and STOP times may be the same and therefore appear to not alternate. When at a specific stop, the decompression time at that stop is as shown, and will count down. The Total decompression time, however, is merely an indication based on a forecast using the normal dive PO_2 or FO_2 value and the Deco Ascent Rate that has been entered via the ANALYST®. The times that are forecast do not include the effects of a Deco breathing gas switch, once the switch is made the displayed times are accurate for that breathing gas. The TOTAL time that is shown is usually longer than that actually required.

Predicted Decompression Time at a specific stop assumes that the diver is at the required Ceiling. However, it is not necessary to be precisely at the specified Ceiling. Outgassing credit will be given that is proportional to a depth that is deeper than the specified Ceiling. A small margin shallower than the Ceiling also exists. Should a Ceiling be violated (diver is shallower than Ceiling), the Depth and Ceiling digits will flash as a visual warning and a unique audible alarm will sound once per second. This warning will continue until the Depth has been corrected. Outgassing will continue even though the diver is shallower than the Ceiling.

If the diver surfaces before satisfying his decompression obligation, the NAVY EOD III will continue to give outgassing credit as if it was in a dive, but at a depth of zero feet. The unit will continue to log data and perform as if actually in a dive. If in the Constant PO_2 mode and not switched to the Constant FO_2 mode, the unit will actually decompress as if it were actually at the various required decompression stops using the specified Constant PO_2. If the unit is in the Constant PO_2 mode and switched to Constant FO_2 or in the Constant FO_2 mode, the unit will decompress correctly. However, the forecasted decompression times are based on Constant PO_2 and will not be accurate. When the decompression obligation is finally satisfied, the ten-minute “PostDive Interval” will begin and the dive will terminate in ten minutes.

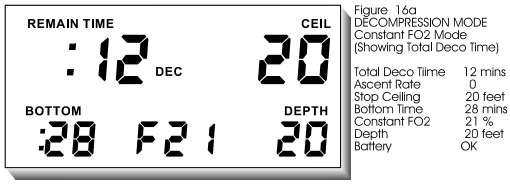


Figure 16a: Deco Mode – Constant FO_2 Mode – Showing Total Time

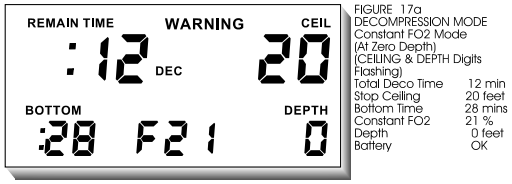


Figure 17a: Deco Mode – Constant FO_2 Mode – At Zero Depth

Logbook Mode - FO_2 Mode

The Logbook Mode of the NAVY EOD III is accessed via the Programming Mode (see Programming Mode, page 30). This enables the diver to view the dive statistics; the NAVY EOD III has the ability to provide diving data in this mode for the previous 512 dives. The most recent dive will be displayed first. To view the next dive, touch 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 Mode, since it will cause the unit to exit the Programming Mode.

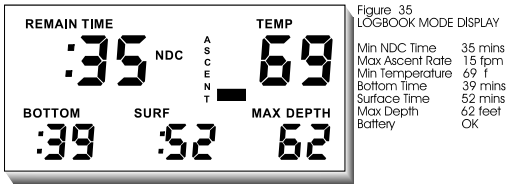


Figure 35: Logbook Mode Display

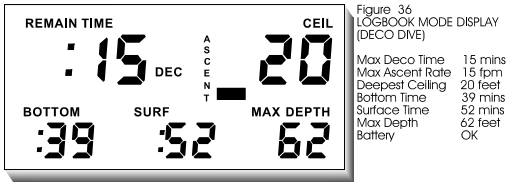


Figure 36: Logbook Mode Display – Deco Dive

NOTE: The overall dive number is displayed at the lower right of the Logbook Menu screen (see figure 34a, page 36). If the logbook example is the most recent dive made, it could be identified that 235 dives had been made with that specific unit.

Ascent Rate Bar Graph

The Ascent Rate bar graph and alarms are active in both the Subsurface Mode and Decompression Mode when the depth is below ten feet. The five-segment bar graph is used to display the diver's rate of ascent. The factory default for maximum ascent rate is 60 feet per minute. With this setting, no bars will illuminate if a diver is ascending at a rate less than 10 feet per minute. If the diver has an ascent rate of more than 60 feet per minute, the entire Ascent Rate Bar Graph will flash, and audible alarm will sound once per second, and the WARNING legend will illuminate. Each segment indicates an additional 10 feet per minute of Ascent Rate.

Via the ANALYST® PC Interface, the maximum Ascent Rates alarms can be selected from 20 to 60 feet per minute. Another ANALYST® selection pertains to the bar graph itself. The two selections given are either FIXED or PROPORTIONAL. With FIXED, each of the five bars indicates an additional 10 feet per minute of Ascent Rate regardless of the maximum Ascent Rate selected. With PROPORTIONAL, each of the five bars indicates 20% (one-fifth) of the selected maximum Ascent Rate.

A third option that is accessible via the ANALYST® PC Interface is a VARIABLE Ascent Rate. With this option, 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:

60 feet or deeper - 60 feet per minute
59 to 30 feet - feet per minute equal to the depth
Less than 30 feet - 30 feet per minute

The sensitivity or responsiveness of the Ascent Rate may be selected. Via the ANALYST®, eight different levels of sensitivity are available.

GREATER THAN 60 FEET
PER MINUTE WARNING AND
TOP BAR OF GRAPH WILL FLASH

WARNING

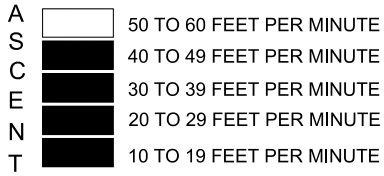


Figure 12 Ascent Rate Bar Graph
(Fixed at 60 feet-per-minute)

NOTE: Customizing the Ascent Rate and Ascent Rate Bar Graph are just two of the many additional programmable features available when using the ANALYST® PC Interface. See an Authorized Team Cochran Dealer for a complete demonstration. Some available features are described in the section “USER CONFIGURABLE OPTIONS”.

PostDive Interval Mode

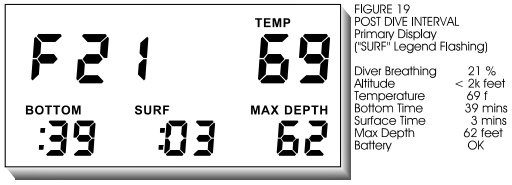


Figure 19: PostDive Interval – Constant FO_2 Mode

During the first ten minutes (or up to thirty minutes if the unit is in the Training Mode) after a dive, the NAVY EOD III is in the PostDive Interval Mode. The flashing "SURF" legend and a Surface Time of less than ten minutes (or up to thirty minutes if the unit is in the Training Mode) indicate this. Should another dive be commenced before the completion of the PostDive 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 PostDive Interval Mode. However, when reviewing the profile with the ANALYST®, the time spent on the surface in this mode will be shown. As in the normal Surface Mode the PostDive Interval Mode has a primary and alternate display screen. The primary screen will display the breathing gas that the diver is assumed to be breathing on the surface, Air (F21) and the alternate screen will display the programmed dive mode, i.e. P07, F21. The alternate screens are the same as figures 2a (page 18) and 3a (page 24).

Sleep Mode

Sixty minutes after the NAVY EOD III has concluded the Post-Dive Interval the NAVY EOD III will enter into a Sleep Mode. In the Sleep mode the NAVY EOD III computer continues to perform out-gassing calculations and keep track of the Surface time, and “Time To Fly” but ceases all other activities. This is a power saving feature of the NAVY EOD III. The current Surface Interval and PreDive Predictions can be viewed by turning the unit back on.

Exceeding Depth Rating

If the NAVY EOD III is subjected to a depth greater than 328 feet, the NAVY EOD III will display a depth of 328 feet. The WARNING legend will illuminate and the depth digits will flash and the computer will issue a 5-beep audible alarm once every

two minutes. Decompression calculations will be based on a depth of 328 feet.

NOTE: Diving the NAVY EOD III to a depth of 328 feet or greater will void the Limited Warranty.

Programming Mode

Overview

The Programming Mode of the NAVY EOD III allows the user to have access or view or program into the dive computer:

- The PreDive Prediction Mode
- Displaying battery voltage
- A Maximum Depth Alarm
- An Added degree of Conservatism from 0 to 50%.
- Setting oxygen percentage of blend 1 in the Constant FO2 Mode
- Setting the PO2 set point in the Constant PO2 Mode
- Setting the Deco FO2 oxygen percentage
- Setting the Deco Bottom Time Benchmark
- Setting the Deco Depth Benchmark
- Programming the On Time for the TACLITE™
- Access the Logbook Mode

NOTE: To enable the Programming Mode, the NAVY EOD III must be on the Surface and not in the PostDive Interval.

NOTE: All audible and visual alarms are suspended while the NAVY EOD III 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 III 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 Mode. Once this occurs the NAVY EOD III will retain the modified programmed settings that have been stored. Options that have not been modified will retain their previous settings.

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 in the display. The Programming Menu options depend on whether the units is in the PO2 or FO2 mode and are displayed in sequence each time that Contacts 1 & 2 are bridged with a coin the menu increments to the next selection. 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 change the displayed menu options information, 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.
4. Using a coin or other conductive metal object, bridge Contacts 2 & 3 to toggle the selection or 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.
8. To increment through the PreDive Prediction option, bridge Contacts 1 & 2 with wetted fingers. Each time the Contacts are bridged the PreDive Prediction Depth will increment 10 feet and display the NDC time for that depth (see figure 13 & 14). The prediction depth will continue until a depth is reached which has less than two minutes of NDC time or a maximum depth of 320 feet is reached. To exit from the PreDive Prediction Mode bridge Contacts 1 & 2 with a coin.

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 - PO_2 Mode

The following table lists the various programming choices with their display identification and figure number. The Programming sequence and choices are determined by the selection of PO_2 or FO_2 Mode. This table assumes Programming choice #1 is PO_2

Identification	Description	Figure
PO2 / FO2	Toggles between PO_2 Mode and FO_2 Mode	21
PdP	PreDive Prediction	22
InF	Battery voltage	23
dEP AL	Depth Alarm, Maximum value is 320 feet.	25
Con	Added Conservatism, Maximum allowable value is 50%.	26
PO2 1	PO_2 value. Allowable values 0.5 to 1.50.	31
EAn 2	Deco FO2 Oxygen percentage, Allowable value 21 to 99.9 in 0.1 increments.	28
dEC b	Bottom Time Benchmark for Deco FO_2 switching, Maximum allowable value is 999 minutes**.**	29
dEC d	Depth Benchmark for Deco FO_2 switching, Maximum value is 320 feet.	30
TAc dL	TACLITE™ On Time. Allowable values 00 to 99.	33
LOG	Logbook	35

Programming Mode Screens - PO_2 Mode

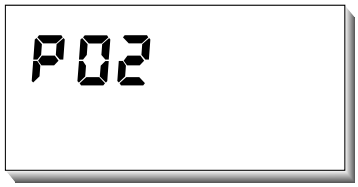


Figure 21
PROGRAMMING MODE
(FO2/PO2 - Showing PO2)

Figure 21: Programming Mode – PO_2 / FO_2 Mode – Showing PO_2

Figure 22
PROGRAMMING MODE
(PreDive PREDICTION MENU)

Figure 22: Programming Mode – PreDive Prediction Menu

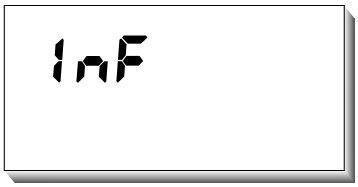


Figure 23
PROGRAMMING MODE
(Information Display Menu)

Figure 23: Programming Mode – Information Menu

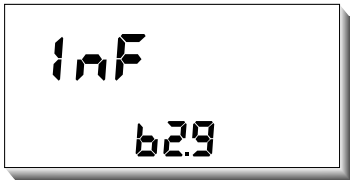


Figure 24
PROGRAMMING MODE
(Information Display)

Battery Voltage 2.9 volts

Figure 24: Programming Mode – Information Display

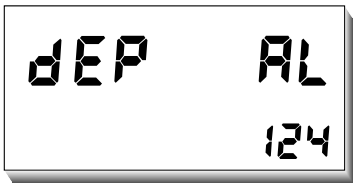


Figure 25
PROGRAMMING MODE
(Setting Depth Alarm)

Depth Alarm 124 feet

Figure 25: Programming Mode – Setting Depth Alarm

Figure 26
PROGRAMMING MODE
(Setting Conservatism)

Conservatism 15 %

Figure 26: Programming Mode – Setting Conservatism

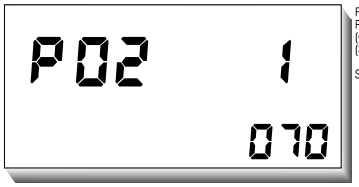


Figure 31
PROGRAMMING MODE
(Constant PO2 Mode)
(Setting PO2 Value)

Set Point PO2 070 ata

Figure 31: Programming Mode – Constant PO_2 Mode – Setting PO_2

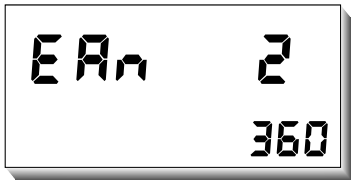


Figure 28
PROGRAMMING MODE
(Constant FO2 Mode)
(Setting Deco Blend - Oxygen %)

Oxygen Percentage 36 %

Figure 28: Programming Mode – Constant FO2 Mode – Setting Deco O_2

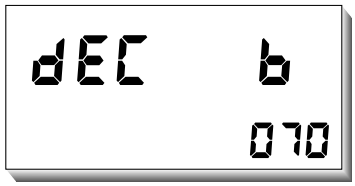


Figure 29
PROGRAMMING MODE
(Constant FO2 Mode)
(Setting Deco Blend - Time Benchmark)

Bottom Time 70 min.

Figure 29: Programming Mode – Constant FO_2 Mode – Setting Deco Bottom Time Benchmark

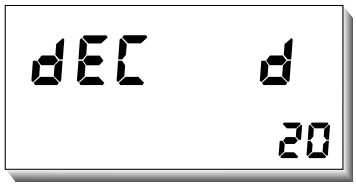


Figure 30
PROGRAMMING MODE
(Constant FO2 Mode)
(Setting Deco Blend - Depth Benchmark)

Depth 20 feet

Figure 30: Programming Mode – Constant FO_2 Mode – Setting Deco Depth Benchmark

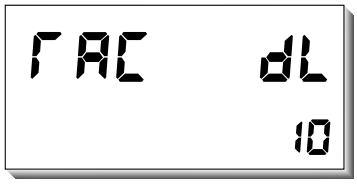


Figure 33
PROGRAMMING MODE
(Setting TACLITE On Time)

On Time 10 sec

Figure 33: Programming Mode – Setting TACLITE ON Time

Figure 34
PROGRAMMING MODE
(Logbook MENU)

Figure 34: Programming Mode – Logbook Menu

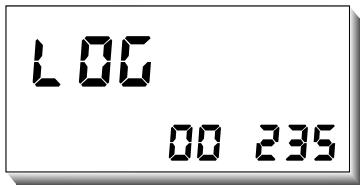


Figure 34a
PROGRAMMING MODE
(Logbook)

Dive Number 235

Figure 34a: Programming Mode – Logbook Number

Programming Mode Menu - FO_2 Mode

The following table lists the various programming choices with their display identification and figure number. The Programming sequence and choices are determined by the selection of PO_2 or FO_2 Mode. This table assumes Programming choice #1 is FO_2

Identification	Description	Figure
PO2 / FO2	Toggles between PO_2 Mode and FO_2 Mode	20
PdP	PreDive Prediction	22
InF	Battery voltage	23
dEP AL	Depth Alarm, Maximum value is 320 feet.	25
Con	Added Conservatism, Maximum allowable value is 50%.	26
EAn 1	Oxygen percentage of Blend, Allowable value 21 to 99.9 in 0.1 increments	27
EAn 2	Deco FO_2 Oxygen percentage, Allowable value 21 to 99.9 in 0.1 increments	28
dEC b	Bottom Time Benchmark for Deco FO_2 switching, Maximum value is 999 minutes.	29
dEC d	Depth Benchmark for Deco FO_2 switching, Maximum value is 320 feet	30
TAc dL	TACLITE™ On Time. Allowable values 00 to 99	33
LOG	Logbook	35

NOTE: If the NAVY EOD III 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 Mode. Once this occurs the NAVY EOD III will retain the modified programmed settings that have been stored. Options that have not been modified will retain their previous settings.

Programming Mode Screens - FO_2 Mode

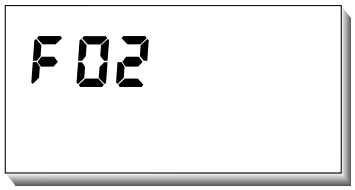


Figure 20
PROGRAMMING MODE
(FO2/PO2 - Showing FO2)

Figure 20: Programming Mode – PO_2 / FO2 Mode – Showing FO_2

Figure 22
PROGRAMMING MODE
(PreDive PREDICTION MENU)

Figure 22: Programming Mode – PreDive Prediction Menu

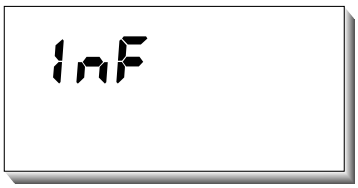


Figure 23
PROGRAMMING MODE
(Information Display Menu)

Figure 23: Programming Mode – Information Menu

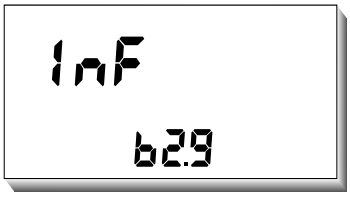


Figure 24
PROGRAMMING MODE
(Information Display)

Battery Voltage 2.9 volts

Figure 24: Programming Mode – Information Display

Figure 26
PROGRAMMING MODE
(Setting Conservatism)

Conservatism 15 %

Figure 26: Programming Mode – Setting Conservatism

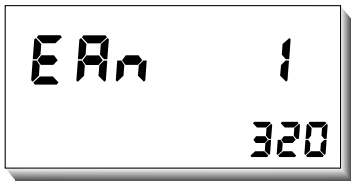


Figure 27
PROGRAMMING MODE
(Constant FO2 Mode)
(Setting Blend 1 Oxygen %)

Oxygen Percentage 32 %

Figure 27: Programming Mode – Constant FO_2 Mode – Setting O_2

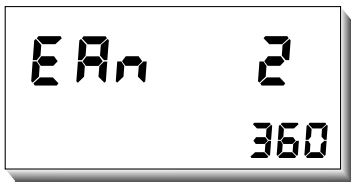


Figure 28
PROGRAMMING MODE
(Constant FO2 Mode)
(Setting Deco Blend - Oxygen %)

Oxygen Percentage 36 %

Figure 28: Programming Mode – Constant FO_2 Mode – Setting Deco O_2

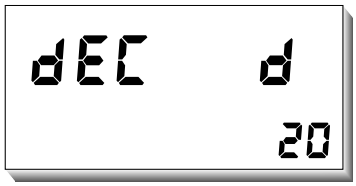


Figure 30
PROGRAMMING MODE
(Constant FO2 Mode)
(Setting Deco Blend - Depth Benchmark)

Depth 20 feet

Figure 30: Programming Mode – Constant FO_2 Mode – Setting Deco Depth Benchmark

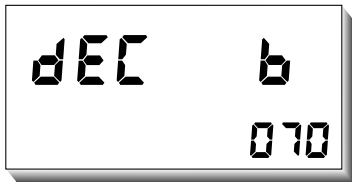


Figure 29
PROGRAMMING MODE
(Constant FO2 Mode)
(Setting Deco Blend - Time Benchmark)

Bottom Time 70 min.

Figure 29: Programming Mode – Constant FO_2 Mode – Setting Deco Bottom Time Benchmark

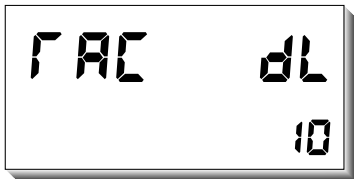


Figure 33
PROGRAMMING MODE
(Setting TACLITE On Time)

On Time 10 sec

Figure 33: Programming Mode – Setting TACLITE ON Time

Figure 34
PROGRAMMING MODE
(Logbook MENU)

Figure 34: Programming Mode – Logbook Menu

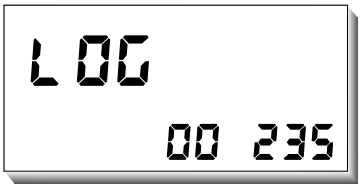


Figure 34a
PROGRAMMING MODE
(Logbook)
Dive Number 235

Figure 34a: Programming Mode – Logbook Number

Data Storage Types & Capacity

The NAVY EOD III has the following internal distinct data storage activities that can be recalled, viewed, and stored with the ANALYST® PC Interface:

- **Current Variable Information:** Local Time, Altitude, Battery voltage, and 9 tissues loading.
- **Current Configuration Data:** As can be seen in USER CONFIGURABLE ITEMS, below.
- **Historical Totals Summaries:** Dive Time, Number of Dives, Number of Marginal Dives, Number of Warnings, Number of Decompression Dives, and Decompression Time.
- **Each Dive Beginning Statistics:** 9 tissues loading, Local Time Clock, Dive of Day, Dive Number, Surface Time, Altitude, Dsat Time, and Battery Voltage. Capacity is the most recent 512 dives.
- **Each Dive Ending Statistics:** 9 tissues loading, Bottom Time, Max Depth, Average Depth, Min NDC Time, Max Deco Time, Max Deco Ceiling, Missed Ceiling, Missed Deco Time, Max PO_2, Max Ascent Rate, Max A/R Time, Max A/R Depth, FO_2 Blend Switch Depth, Min Temperature, Max Temperature, Min Battery Voltage, Dsat Time, and Number of Warnings. Capacity is the most recent 512 dives.
- **Each Dive Configuration Data:** Configuration of the system, including FO_2 Blend Oxygen %, FO_2 Blend Activate Depth, User Conservatism. Capacity is the most recent 512 dives.
- **Profile Graphical Information:** Depth Graph, Ascent Rate Graph, Temperature Graph, and PO_2 Graph. Capacity is 550 hours at one second sampling. Uploading to a PC often via the ANALYST® prevents earlier data from being overwritten by more recent data from being lost.

User Configurable Items

By using the ANALYST® Personal Computer Interface, the user has the ability to change the following items:

Dive Time/Date Stamp: This is the internal clock setting 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 III 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 III is shipped from the factory as FIXED (speed).

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 which, can be selected from 20 to 60 feet per minute (See next topic). As shipped from the factory, this is set to OFF. If the VARIABLE rate is selected then the warning will illuminate based on the following table:

DEPTH	AVERAGE ASCENT RATE
60 feet and deeper	60 feet per minute
60 to 30 feet	same as depth
Shallower than 30 feet	30 feet 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. The NAVY EOD III is shipped from the factory as FIXED, with a 30 feet per minute alarm.

Ascent Rate for Deco Predictions (20 to 60): This option allows the diver to select the ascent rate to be used in the forecasting of the displayed Total Decompression time. The NAVY EOD III is shipped from the factory with this option set to 30.

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.

Remaining Time Responsiveness (0 to 7): This determines the responsiveness of the Remaining Time information that is displayed. Zero is highly responsive and seven is very slow. This feature is set to three as shipped from the factory.

Max Depth Alarm (0 to 320): This option allows the diver to select a maximum depth below which, the diver does not wish to descend before an alarm is sounded. This function is disabled when in the Decompression Mode. As shipped from the factory, the Depth Alarm is set for 150 feet. This option may also be set via the Touch Contact Programming method.

Select Decompression Time Display (Total, Stop, Both): There are three options for the manner in which the decompression time is displayed.

If **TOTAL** is selected, the decompression time displayed will indicate the total time that is to be spent in decompression. Watch the Ceiling depth change in order to identify when to ascend to the next stop depth.

If **STOP** is selected, the decompression time displayed will indicate the time that must be spent at the current Ceiling. When this time is 0:00, the Ceiling depth will decrease and the new stop time will be displayed.

If **BOTH** is selected, the **TOTAL** time and **STOP** time will alternate at the rate of once every 2 seconds. From the factory, the unit is set to **BOTH**.

Select Ceiling Display in 1 Foot Increments (On or Off): This option allows the diver to select when in the Decompression Mode the Ceilings are displayed as 1 = 10, 2 = 20, 3 = 30 etc. (On) or as 10, 20, 30 etc. (Off). From the factory this option is set to Off.

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 III does. From the factory this is set to 10. This option may also be set via the Touch Contact Programming method.

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".

Selectable NDC Conservatism (0% to 50%): This feature will allow the diver to input an added degree of conservatism to the decompression algorithm from 0 to 50 percent in one-percent increments. This may be desirable if the diver is dehydrated, tired, or has some other factor that warrants added conservatism. This option may also be set via the Touch Contact Programming method. Conservatism is set to zero as shipped from the factory.

Select Constant Mode Computations (FO_2 or PO_2): This allows the user to select between the Constant PO_2 and Constant FO_2 modes. Only the 0.7 ata PO_2 mode has been tested. This option may also be set via the Touch Contact Programming method. As shipped from the factory, this is set to Constant PO_2.

Enter PO_2 for Constant PO_2 Computations (.50 to 1.50): This allows the user to experiment with different PO_2s. Only 0.7 ata has been tested. This option may also be set via the Touch Contact Programming method. As shipped from the factory, this is set to 0.7.

Enter Blend Oxygen % in FO_2 Nitrox Mixture (21.0 to 99.9): For Constant FO_2 mode, this option allows the user to enter the desired Oxygen percentage for the FO_2 Blend in 0.1% increments. Values from 21.0% to 99.9% may be entered. This option may also be set via the Touch Contact Programming method. As shipped from the factory, this is set to 21.0%.

Enter Deco Blend Oxygen % in FO_2 Nitrox Mixture (21.0 to 99.9): For Constant FO_2 mode, this option allows the user to enter the desired Oxygen percentage for the FO_2 Deco Blend in 0.1% increments. For Constant PO_2 mode, this option specifies the FO_2 blend percentage if and when the unit switches to FO_2 computations. Values from 21.0% to 99.9% may be entered. This option may also be set via the Touch Contact Programming method. As shipped from the factory, this is set to 21.0%.

Enter FO_2 Deco Blend Ascent Time Activation (0 to 999): Enter the bottom time benchmark (in minutes), for the Constant FO_2 mode, which the diver will need to be beyond for switching to the FO_2 Deco Blend. For the Constant PO_2 mode this is the bottom time, which the diver must be beyond in order to switch from the Constant PO_2 mode to the Constant FO_2 Deco mode. This option may also be set via the Touch Contact Programming method. Factory setting is 0.

Enter FO_2 Deco Blend Ascent Depth Activation (0 to 99): For the Constant FO_2 mode, enter the depth benchmark, which the diver will need to be above for switching to the FO_2 Deco Blend. For the Constant PO_2 mode this is the depth at which the unit switches from the Constant PO_2 mode to the Constant FO_2 mode. If set to zero the unit will not switch from the Constant PO_2 mode. This option may also be set via the Touch Contact Programming method. As shipped from the factory, this is set to 78.

Program attached Unit to Stay Awake (On or Off): If this option is set to "On", the NAVY EOD III will not enter the Sleep Mode nor automatically turn off once all residual nitrogen outgassing has been completed. The unit will have to be turned off via the ANALYST®. As shipped from the factory, this is set to "Off".

One Zone Altitude NDC Compensation (On or Off): If this option is set to "On", regardless of altitude all NDC compensation is treated as if at sea level. As shipped from the factory, this is set to "Off".

Confined Water Protocol (Training Mode) - (Enabled or Disabled): This option enables the Training Mode for the NAVY EOD III. In this mode the NAVY EOD III will enter the Subsurface Mode at 2 feet instead of 5 feet and exit the Subsurface Mode at 1 foot instead of 3 feet. The Training Mode also permits the selection of an increased PostDive Interval period from 10 to 30 minutes in one-minute increments. These changes permit the Instructor to record a complete training session, including in-water surface periods, as a single dive. As shipped from the factory, this is set to "Disabled".

Training Mode PostDive Interval Period (10 to 30): If the Training Mode is enabled this allows the user to select the duration of the PostDive Interval period from a minimum of 10 minutes to a maximum of 30 minutes in one-minute increments. As shipped from the factory, this is set to 10.

Initialize Unit and Zero Nitrogen Values: If this option is selected, the attached dive computer will be reinitialized and all residual nitrogen loading values will be zeroed.

Wake up the attached Unit: This option permits the dive computer to be turned on while attached to the P.C.

Specifications

Algorithm	NAVY VVAL-18
Tissue Compartments	9
Computation Period	Once per Second
Activation	Manual and Water
Maximum Depth	Over 410 feet, 1 foot increments
Depth Accuracy	+/- 1.0% of full scale (+/- 3.3 feet)
Maximum Altitude	16,000 feet, seamless
Altitude Accuracy	+/- 1000 feet
Temperature Display	20 to 99 deg F., 1-degree increments
Temperature Accuracy	+/- 2.0% of full scale (+/- 2.8 deg F after the unit stabilizes 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
No-Deco Time	0 to 9:59 hrs/mins, 1-minute increments
Decompression Time	0 to 9:59 hrs/mins, 1-minute increments
Dive Summary Storage	256 Dives
Dive Profile Storage	180 Dive hours at one second sampling
Profile Sampling	1-second increments
Typical Battery Life*	Over 1000 dive hours under normal diving conditions or one years (whichever is first), TACLITE off
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
	Over 75 hours, TACLITE on continuously

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

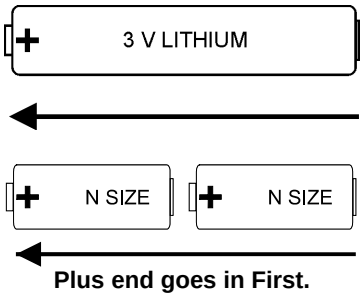
NOTE: Specifications are additionally +/- one least significant display digit due to rounding. Specifications are subject to change without notice.

Cleaning the NAVY EOD III

Clean the unit after each use with fresh water. Towel the unit dry, 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, and/or permanently fog the lens.

CHANGING BATTERY

The NAVY EOD III will operate on either one 3V Lithium Battery (CR12600SE or CR2NP) or two 1.5V N-Cell size alkaline battery(s). 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 III 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 III allows for battery changes.

If the batteries are allowed to discharge too low, or if removed for too long, the NAVY EOD III 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!!! COMPLETE LOSS OF BATTERY POWER MAY CAUSE ALL PREVIOUS DIVE NITROGEN LOADING TO BE LOST. THIS WILL AFFECT NITROGEN CALCULATIONS ON NEAR-FUTURE DIVES. AFTER A BATTERY CHANGE, CONFIRM THAT NO-DECOMPRESSION TIME DATA IS REASONABLE IN THE PRE-DIVE PREDICTION MODE. DIVE-OF-DAY NUMBER GOING TO ZERO IMMEDIATELY AFTER CHANGING BATTERIES IS ANOTHER INDICATION OF A LOSS OF NITROGEN LOADING.

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

Product Assistance, Repair & Maintenance

If it is suspected that the NAVY EOD III is not operating correctly, please contact your dealer, distributor, or our Customer Support Department in the USA for assistance at 972.644.6284 or FAX details to 972.644.6286 or E-mail details 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 request the dealer 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!**
- **NEVER REMOVE THE LENS FROM THE UNIT!**
- **ONLY USE FRESH WATER TO CLEAN UNIT! NEVER USE SOLVENTS!**
- **DO NOT USE A SCREWDRIVER TO REMOVE BATTERY CAP!**
- **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 & Accessory 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 III unit to an IBM or compatible Personal Computer

with a Windows® 95/98/NT/ME/2000/XP 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 (RS-232) to maintain compliance with FCC Regulations.

PATENT INFORMATION

Protected under one or more Foreign or US patents.
5,899,2045,794,616
5,617,8485,570,688
Other patents may be pending.

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 24 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 Warranty Registration card must be sent to COCHRAN 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

A mathematical model is used by this Product to calculate physiological effects of SCUBA diving related to use of compressed air or other breathing mixtures while at depth. Such effects specifically relate to nitrogen absorption into and elimination from body tissues, as well as effects of oxygen used in Enriched Air Nitrox breathing mixtures.

However, because of the number of variables and the varying degrees to which they may affect individuals engaged in SCUBA diving, COCHRAN DOES NOT GUARANTEE THAT USE OF THIS PRODUCT WILL PREVENT DECOMPRESSION SICKNESS OR ANY OTHER CONDITION OR INJURY INCURRED WHILE USING THIS PRODUCT.

These influencing variables may include, but are not limited to, dehydration, obesity, age, old injuries, or other physical conditions on the part of the diver, or environmental extremes of heat or cold, or poor training, or diving practices, any of which may promote the onset of decompression sickness or other harmful effects.

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) computer 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 130 feet 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.

USER & ENVIRONMENTAL ADAPTATION

The NAVY EOD III is one of the new breed of Dive Computers that adapts its algorithm to the users diving environment and style as originally pioneered by COCHRAN. All of COCHRAN's newer dive computers incorporate this capability. The factors that are used for this "Adaptation" in the NAVY EOD III are:

Water Temperature
Altitude Acclimatization
Previous Dive Profiles
Salt/Fresh Water Compensation
User Conservatism

WATER TEMPERATURE

Diving in cold water can lead to a lower diver core and skin temperature which can affect the gas exchange rate of the body's tissues. The NAVY EOD III features two modes of Temperature Compensation, Normal or Reduced. The NAVY EOD III progressively makes its nitrogen algorithms more conservative as the water temperature declines below 75 degrees F. Above this water temperature, there is no temperature compensation. In the Reduced Mode, the algorithms are made more conservative by approximately one-half the amount of the Normal Mode. If the diver is wearing an insulated dry suit and is relatively warm even in cold water, this temperature compensation factor may be set to Reduced Mode at the divers discretion using the Analyst® PC software.

USER CONSERVATISM

Current dive computers cannot tell if the diver is dehydrated, tired, smokes, overweight, or has some other physical issue that may require additional conservatism in the nitrogen algorithm. The NAVY EOD III allows the diver to input an added degree of conservatism to the nitrogen algorithm from 0 to 50 percent in one-percent increments. This can be done via the Touch Contact Programming Mode or with the Analyst® Personal Computer Interface.

PREVIOUS DIVE PROFILES

Under some circumstances, recent dive activity can have an effect on nitrogen loading, particularly if the diver engages in inverted profile diving. This occurs when a deep dive is followed by an even deeper dive. This recent dive history is used to compensate the nitrogen loading for the current dive. This can be enabled or disabled with the Analyst® Personal Computer Interface.

SALT/FRESH WATER COMPENSATION (High/Low Water Conductivity)

There is approximately a three percent difference in depth readings taken in salt water versus fresh water. Some dive computers are calibrated in feet of fresh water and some are calibrated in feet of seawater. Diving in a medium different from what the dive computer is calibrated for will cause apparent depth errors. Only COCHRAN dive computers, including the NAVY EOD III, actually determine the type of diving medium and compensate the depth reading accordingly. This is accomplished by measuring the conductivity of the water during a dive. Caution must be taken in interpreting this reading since some apparent fresh water is actually high in minerals or contaminants and is correctly compensated as salt water (High Conductivity). This commonly occurs in some caves, springs, and lakes.

ALTITUDE ACCLIMATIZATION

Driving or flying to a dive site significantly higher in altitude requires special modifications to the "sea level" algorithm. The NAVY EOD III regularly samples the ambient barometric pressure to determine these changes in altitude whether the unit is On or Off. Accordingly, the decompression algorithm is changed to reflect these barometric pressure changes. Note that temperature and weather systems also affect barometric pressure and hence, apparent altitude. Using the Time-To-Fly digits, the number of hours required to "adapt" to the new altitude is immediately known to the diver. If a significant altitude change occurs, a minimum of one hour should pass before diving to allow the unit to adapt to this new altitude. Rapid changes in altitude should be avoided. The dive computer may interpret a rapid change from a higher altitude to a lower altitude as a dive. Should this occur, removing the batteries for ten minutes will reset the computer, however, all tissue nitrogen loading will also be lost.

Should it be desired to initiate a dive PRIOR to completing the adaptation time, the NAVY EOD III will treat this dive as a repetitive dive in its algorithm, taking into account the "residual" nitrogen present due to travel to altitude. There are two methods of compensating for altitude. Via the Analyst® PC Interface, ZONE or SEAMLESS altitude compensation may be selected.

In **ZONE** all altitudes less than 2,000 feet above sea level use the sea-level algorithm. At altitudes greater than this, altitude compensation is "seamless"; literally, every small fraction of gained altitude is considered in adjusting the algorithm. ZONE will reduce the occurrences of obtaining slightly different altitude readings and corresponding no-decompression (NDC) limits when diving within a given area. However, ZONE reduces the accuracy of the altitude compensation for the first 2,000 feet above sea level, since all altitudes below 2,000 feet are treated as sea level. The advantage in ZONE is that changes in apparent altitude due to temperature or weather changes at sea level will not affect the NDC computations.

In **SEAMLESS**, the algorithm is adjusted for extremely small changes in altitude. However, a difference in altitude may be seen from day-to-day at a given dive site due to temperature or weather systems and their effect on barometric pressures. SEAMLESS will provide the most accurate altitude compensation algorithm, but normal variations in atmospheric barometric pressure may affect the no-decompression time which is more predominantly seen in the Pre-dive Prediction forecast.

CAUTION: The NAVY EOD III will not perform Altitude Acclimatization if the touch contacts are shorted or bridged. Rinse the unit with clean fresh water and dry it with a towel after each dive. Transporting and storing the unit in its case will help prevent the possibility of the contacts being shorted or bridged.

WARNING: While your NAVY EOD III will automatically adjust its no decompression algorithm for altitude, you should NOT attempt to dive at altitudes greater than 1,000 feet above sea level without first completing a sanctioned altitude diving course from a recognized training agency for recreational diving. The NAVY EOD III should not be used for this type of diving by anyone without this important training.

METRIC/IMPERIAL MODES

If the computer 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 cannot 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.

CAUTION!!! COMPLETE LOSS OF BATTERY POWER MAY CAUSE ALL PREVIOUS DIVE NITROGEN LOADING TO BE LOST. THIS WILL AFFECT NITROGEN CALCULATIONS ON NEAR-FUTURE DIVES. AFTER A BATTERY CHANGE, CONFIRM THAT NO-DECOMPRESSION TIME DATA IS REASONABLE IN THE PRE-DIVE PREDICTION MODE. DIVE-OF-DAY NUMBER GOING TO ZERO IMMEDIATELY AFTER CHANGING BATTERIES IS ANOTHER INDICATION OF A LOSS OF NITROGEN LOADING.

Cochran
UNDERSEA TECHNOLOGY
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Diving Into The 21st Century

NAVY EOD III

Low Magnetic Signature
DIVE COMPUTER
Operator's Manual

English Language - Imperial Units

Version 001i

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