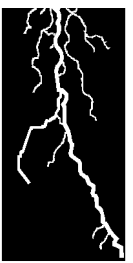
AquaNOX™

Owner's Manual

English - Metric
Ver.AQNX001M



Cochran
UNDERSEA TECHNOLOGY
A Division of Cochran Consulting, Inc.

Diving Into The 21st Century

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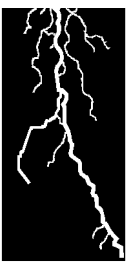

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Diving Into The 21st Century

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Version 001M

USER INFORMATION

For your records, please fill in the following information.

SERIAL NUMBER OF UNIT: _____
DATE OF PURCHASE:_____
PLACE OF PURCHASE:_____
ADDRESS:_____

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FCC LABEL FCC ID: LYP744556-03

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.

EUROPEAN 'CE' MARK

The AquaNOX™ is considered a "benign device" by European Authorities for purposes of the EMC Directive and has been thereby approved.

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.

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. And divers are always encouraged to dive with a buddy at all times.

COCHRAN strongly supports and agrees with maximum depth limits of 50 metres 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 LIMITATIONS, 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.

DO NOT ALLOW THE AquaNOX™ TO HAVE LOW OR NO BATTERIES FOR ANY PERIOD OF TIME! THIS WILL DISCHARGE THE INTERNAL LITHIUM BATTERY THAT KEEPS THE MEMORY ALIVE!

CAUTION!!! LOSS OF BATTERY POWER WILL CAUSE ALL PREVIOUS DIVE NITROGEN LOADING TO BE LOST. THIS MAY AFFECT NITROGEN CALCULATIONS ON NEAR-FUTURE DIVES. AFTER A BATTERY CHANGE, CONFIRM THAT NO-DECOMPRESSION TIME DATA IS REASONABLE DURING 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.

INTRODUCTION: The AquaNOX™ is quite simple to use and operate, but underneath that simplicity lies a significant level of sophistication. 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. By using the AquaNOX™, the diver specifically acknowledges that he has been adequately and thoroughly trained and certified to engage in Nitrox diving by a professional, competent, recognized training agency.

USER & ENVIRONMENTAL ADAPTATION: The AquaNOX™ is one of the new breed of Dive Computers that adapts its algorithm to the user's 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 AquaNOX™ are:

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

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 AquaNOX™ progressively makes its nitrogen algorithms more conservative as the water temperature declines below 25 degrees C. Above this water temperature, there is no temperature compensation. If the diver is wearing an insulated dry suit and is relatively warm even in cold water, this temperature compensation factor may be turned off at the divers discretion using the ANALYST® PC software. (See later ANALYST® description.)

ASCENT RATE: There are several theories regarding the exact method by which a nitrogen bubble forms from a microbubble which was formed from a micronuclei. One predominant theory states that more rapid ascents accelerate bubble formation. The AquaNOX™ attempts to compensate, or adapt, for these higher Ascent Rates. For Ascent Rates less than 9 metres-per-minute (mpm) there is no compensation. As the Ascent Rate goes progressively higher than 9 mpm the compensation progressively increases.

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 AquaNOX™ allows the diver to input an added degree of conservatism to the nitrogen algorithm from 0 to 50 percent in one-percent increments. Field programming is featured.

SALT/FRESH WATER COMPENSATION: There is approximately three percent difference in depth readings taken in salt water versus fresh water. Some dive computers are calibrated in metres of fresh water and some are calibrated in metres of seawater. Diving in a medium different from what the dive computer is calibrated will cause apparent depth errors. Only COCHRAN dive computers, including the AquaNOX™, 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 interpreting readings since some apparent fresh water is actually high in minerals or contaminants and is correctly compensated as salt water. This commonly occurs in some caves, springs, and lakes.

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.

ALTITUDE ACCLIMATIZATION: Driving or flying to a dive site significantly higher in altitude requires special modifications to the "sea level" algorithm. The AquaNOX™ regularly samples the ambient barometric pressure to determine these changes in altitude. 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 in fact, see particularly rapid changes from a higher 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 AquaNOX™ 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 compensation for altitude may be selected.

In **ZONE**, all altitudes less than 600 metres 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 600 metres above sea level, since all altitudes below 600 metres are treated as sea level. However, 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.

METRIC/IMPERIAL MODES: Most dive computers always compute in either Metric or Imperial units and merely convert the display to the other units. The AquaNOX™ actually computes and displays in the selected units which gives maximum accuracy and user familiarity. 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 computer.

LOW BATTERY INDICATIONS: Fresh batteries should read about 3.2 volts on the PreDive Prediction display. When the battery voltage decays 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 2.3 volts, the "BATT" legend will begin to flash on and off. Also, the TACLITE if on, will be turned off to conserve the remaining battery power even though the unit may be on a dive. 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 40 minutes after a dive, it cannot be turned back on if the battery voltage is less than 2.3 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 WILL 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 DURING PRE-DIVE PREDICTION MODE. DIVE-OF-DAY NUMBER GOING TO ZERO IMMEDIATELY AFTER CHANGING BATTERIES IS ANOTHER INDICATION OF A LOSS OF NITROGEN LOADING.

SIDE CONTACTS: For identification purposes, put the AquaNOX™ 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;
- Step through Programming functions 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 AquaNOX™: Although the AquaNOX™ 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 30 minutes. If a dive is not initiated within this 30 minutes, the AquaNOX™ 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 the Contacts 1 & 2 are touched and the short beep is heard, the "on" time is again extended to 30 minutes.

It is recommended that this procedure be followed prior to a dive since this prevents the unit from "timing out" just as the diver is entering the water. The AquaNOX™ will not turn on if the altitude is greater than 4.5 km or if the depth is greater than one metre. Also, the battery voltage must be above 2.3 volts for the unit to turn on.

As the AquaNOX™ 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 their operability can be confirmed. 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 correctly.

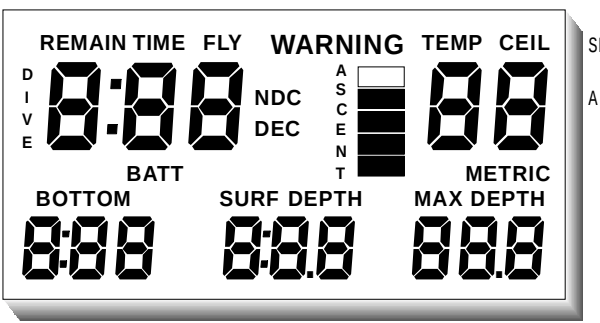

Figure 1
SELF DIAGNOSTIC DISPLAY
All Segments Illuminated

TURNING OFF THE AquaNOX™: After a dive, the AquaNOX™ remains on for 40 minutes before automatically entering its "Sleep Mode". During the Sleep Mode, all calculations continue but the display is off. This is a power saving feature of the AquaNOX™. The unit will continue calculating Surface Interval and compartment off gassing until all residual nitrogen is eliminated. The current Surface Interval and PreDive Predictions can be viewed by turning the unit back on.

OXYGEN TOXICITY FACTORS: The AquaNOX™ has the ability to track Oxygen Toxicity levels for the Central Nervous System (CNS) as well as the Mission Oxygen Tolerance Units Dose (OTU). In addition, a maximum Partial Pressure of Oxygen (PO2) warning alarm can also be set. While most other audible alarms of the dive computer consist of five long beeps, the CNS, OTU, and PO2 have a distinctive audible alarm that consists of short double-beeps that sound once per second for five seconds.

As long as one or more of these three parameters is outside its limits, the “WARNING” legend on the display will continue to flash and the audible alarm will be repeated once per minute.

None of these three functions are active if the NITROX capability is disabled via the ANALYST® PC Interface (see later description of the ANALYST®).

PARTIAL PRESSURE OF OXYGEN (PO2): High levels of PO2 can cause severe Oxygen poisoning. Widely different levels of PO2 can affect individual divers. The user via the ANALYST® can set the PO2 alarm to any level between 0.50 ATA and 1.60 ATA. As shipped from the factory, this is set to 1.60 ATA.

Should the PO2 be above the alarm set point, the audible alarm will sound and the “MAX DEPTH” digits will be replaced with a “P” followed by the two-digit PO2 value with decimal point.

CENTRAL NERVOUS SYSTEM (CNS) TOXICITY: Should the CNS Toxicity reach 50% of the maximum allowable, the audible alarm will sound and the "MAX DEPTH" digits will be replaced with a "C" followed by the two digit CNS percentage. All three of these digits on the display will be flashing along with the "WARNING" legend.

By the accepted definition of CNS toxicity, should a PO2 value of greater than 1.6 ATA be measured, the CNS Toxicity will be 100%. During the Surface Interval, this percentage will decrease as the CNS declines toward zero. Once this has dropped below 50%, the MAX DEPTH reading will return. Whatever the current CNS Toxicity level, it can also be viewed in the Programming Mode.

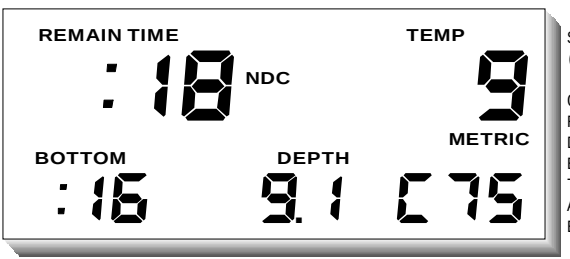

Figure 15
SUBSURFACE MODE DISPLAY
(Max CNS Alarm)

Current CNS	75 %
Remain NDC Time	18 mins
Depth	9.1 mtr
Bottom Time	16 mins
Temperature	9 c
Ascent Rate	0
Battery	OK

OXYGEN TOLERANCE UNITS (OTU): An issue with long term breathing of higher partial pressures of Oxygen above 0.5 ATA is Pulmonary Oxygen Toxicity or sometimes called WHOLE BODY which must be tracked properly.

The AquaNOX™ will track the OTU based on Dr. Bill Hamilton's 'REPEX' method of oxygen exposure management. The OTU Dose is an exponential function of oxygen partial pressure and time.

The time-dependent limit varies with length of time (days) that the diver continues to dive without full recovery to zero OTU. The Mission OTU Clock tracks the OTU, which is a running clock that tracks long-term Oxygen exposure. This clock may run for several weeks if frequent dives are made using high levels of PO2. The current Mission Clock, CNS, and OTU can be seen via the ANALYST® PC interface.

The recovery portion of the OTU algorithm is a linear reduction of OTU over time. The Mission OTU clock is reset to 0:00 when the OTU Dose reaches zero.

Should the OTU Dose reach 50% of the maximum allowable, the audible alarm will sound and the "MAX DEPTH" left digit will be replaced with an "O" followed by the two digit OTU Dose percentage. All three of these digits and the "WARNING" legend will be flashing. Symptoms of Pulmonary Oxygen Toxicity include burning in the throat and chest, coughing, and shortness of breath. Discontinue diving and consult a Physician should any of these, or other, symptoms appear.

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

- If the diver is ascending faster than the selected maximum ascent rate, then the hollow bar of the ascent bargraph 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 diver descends below the user set Depth Alarm, the Depth digits will flash. The audible alarm will sound once per second for five seconds and will repeat once per minute. Depth alarm is not active in the Decompression Mode to avoid confusion with the "Shallower Than Ceiling" alarm.
- If the battery voltage goes below 2.3 volts, the audible alarm will sound once per second for five seconds and will repeat once per minute.
- For High PO2, see "**OXYGEN TOXICITY FACTORS**".
- For High CNS, see "**OXYGEN TOXICITY FACTORS**".
- For High OTU, see "**OXYGEN TOXICITY FACTORS**".
- If the diver has less than two minutes of No-Decompression Time remaining, an audible alarm will sound once per second for five seconds and repeat once per minute. The "WARNING" legend will also flash for as long as the condition exists.
- If the diver enters the Decompression Mode, an audible alarm will sound once per second for five seconds. The "WARNING" legend on the display will flash for as long as the Decompression Mode is active.
- If a CEILING of 21 metres or greater is computed, a one-time, five beep audible alarm will sound and the Ceiling digits will flash once per second.
- During a Decompression dive, if the Depth is less than the CEILING, then the Depth and Ceiling digits will flash. The unique audible sweep alarm will continue to sound once per second until the situation is corrected.
- During a Decompression dive, if the CEILING is computed to be greater than 27 metres, the system will immediately enter the Gauge Mode. The audible alarm will sound once per second for five consecutive seconds.

MAIN MODES of the AquaNOX™:

PreDive Prediction Mode
Surface Mode
Subsurface Mode
Decompression Mode
PostDive Interval Mode
Logbook Mode
Gauge Mode
Programming Mode.
Sleep Mode (previously described)

PRE-DIVE PREDICTION MODE: Once every minute the AquaNOX™ will "scroll" depths starting at 9 metres and increasing in 3 metre increments. PreDive Predictions will stop when the No-Decompression (NDC) time prediction reaches two minutes or the set maximum depth is reached. This limit is set to 51 metres at the factory, but can be changed by the ANALYST® PC software. During PreDive Prediction the current oxygen percentage setting is used to compute NDC time remaining and will influence predictions. Furthermore, the PreDive Predictions will stop when the Max PO2 is computed. PreDive Predictions can also be affected by apparent altitude.

Typical PreDive predictions can be seen in the next chart. Notice the termination of the PreDive Prediction Mode when the PO2 reaches the user set point (1.6 from factory)

TYPICAL PRE-DIVE PREDICTIONS:

	Condition						
Depth	**A**	**B**	**C**	**D**	**E**	**F**	**G**
9	4:32	2:52	3:05	3:44	9:59	9:59	9:59
12	2:21	1:27	1:24	2:01	6:24	5:34	9:59
15	1:20	:55	:38	1:10	3:22	3:01	9:59
18	:57	:37	:24	:48	2:07	1:54	6:36
21	:40	:28	:18	:35	1:19	1:10	3:54
24	:31	:20	:12	:26	:59	:53	
27	:23	:14	:09	:21	:45	:41	
30	:18	:10	:08	:16	:35	:32	
33	:13	:08	:06	:12	:29	:26	
36	:10	:07	:05	:09			
39	:09	:06	:08				
42	:07	:05	:07				
45	:06	:05	:06				
48	:05	:04	:05				

	Current Altitude	O2%	Dive Depth	Bottom Time	Surface Interval
Condition A:	0	21	0	:00	:00
Condition B:	1.5km	21	0	:00	:00
Condition C:	0	21	18	:45	:13
Condition D:	0	21	18	:45	2:00
Condition E:	0	36	0	:00	:00
Condition F:	0	36	18	:45	2:00
Condition G:	0	50	0	:00	:00

For this chart, the Temperature Factor is set to off and the Conservatism factor is set to 0%. Both of these factors, in addition to any residual nitrogen, can affect the NDC predictions. The Conditions E, F, and G caused the PreDive prediction to terminate when the PO2 reached the current set point of 1.6 ATA. NDC times shown are approximate.

Refer to the ANALYST® description about how to modify parameters. During the PreDive Prediction Mode, the unit will compute and display the maximum safe time at that depth. Current Surface Temperature and Battery Voltage are also displayed. Battery Voltage is displayed in the lower right hand corner of the display. Altitude is indicated in six ranges via the Ascent Rate Bar Graph as follows (Altitude compensation is seamless from 600m to 4.5km above sea level.

The six ranges are for display purposes only):

0 Bars	sea level to 600 metres	1 Bar	600 to 1,200 metres
2 Bars	1,200 to 1,800 metres	3 Bars	1,800 to 2,400 metres
4 Bars	2,400 to 3,000 metres	5 Bars	greater than 3,000 metres

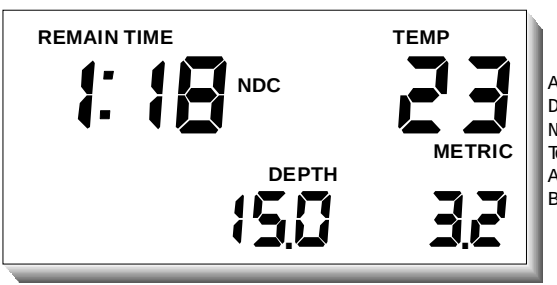

Figure 4
PREDIVE PREDICTION

All Segments Illuminated
Depth Predict 15 mtr
NDC Time Predict 78 mins
Temperature 23 c
Altitude < 600 mtr
Battery Voltage 3.2 v

SURFACE MODE: Surface Mode is entered after the AquaNOX™ successfully completes its Self-Diagnostic Mode after being turned on, or after the PostDive Interval after a dive. In this mode, current Surface Time, the previous dive's Maximum Depth, the previous dive's Bottom Time, Dive of Day number, current Time to Fly, and Temperature are displayed.

"Surface Time" starts at zero immediately after a dive and begins counting minutes. If the computer shuts off 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.

"Dive of Day" starts at zero and increments after each dive regardless of the calendar day. When there is no remaining nitrogen residual, the Dive of Day is set to zero and the computer is referred to as a "clean" system.

"Time to Fly" is displayed as the number of hours remaining until the nitrogen residual reaches zero plus a twelve-hour safety factor. Flying is not recommended until the Time to Fly reaches zero.

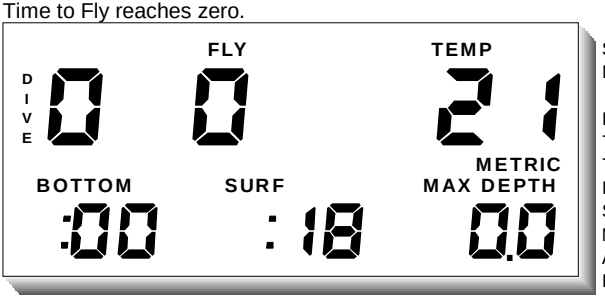

Figure 2
SURFACE MODE DISPLAY
No Nitrogen Residual

Dive of Day	0
Time to Fly	0
Temperature	21 c
Bottom Time	0
Surface Time	18 mins
Max Depth	0
Altitude	< 600 mtr
Battery	OK

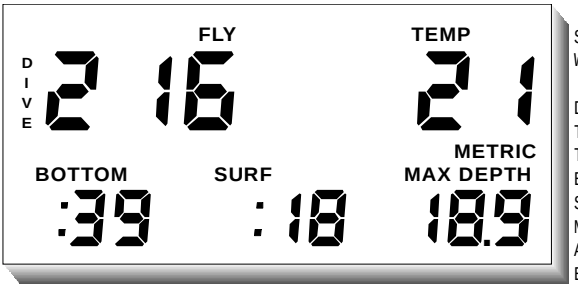

Figure 3
SURFACE MODE DISPLAY
With Nitrogen Residual

Dive of Day	2	
Time to Fly	16	hrs
Temperature	21	c
Bottom Time	39	mins
Surface Time	18	mins
Max Depth	18.9	mtr
Altitude	< 600	mtr
Battery	OK	

SUBSURFACE MODE: Whether in the Surface Mode, PreDive Prediction Mode, Programming Mode or the Logbook Mode, the AquaNOX™ will automatically enter the Subsurface Mode whenever the unit determines that it is in water deeper than two metres.

Surface Time will be replaced with current Depth, displayed in 0.1 metre increments, up to a maximum depth of 99.9 metres. Bottom Time will begin once the AquaNOX™ senses that the diver has descended below two metres and continues until the diver has ascended above one metre. The maximum Bottom Time displayed is 9 hours 59 minutes.

If the Central Nervous System (CNS) Oxygen Toxicity is 75% or more, the “MAX DEPTH” will be replaced with a “C” followed by the two-digit CNS toxicity. If the Oxygen Tolerance Units (OTU) is 75% or more, the “MAX DEPTH” will be replaced with an “O” followed by the two-digit OTU number.

If the PO2 is greater than the user set point (1.6 ATA from factory), the “MAX DEPTH” will be replaced with a “P” followed by the two-digit PO2 number.

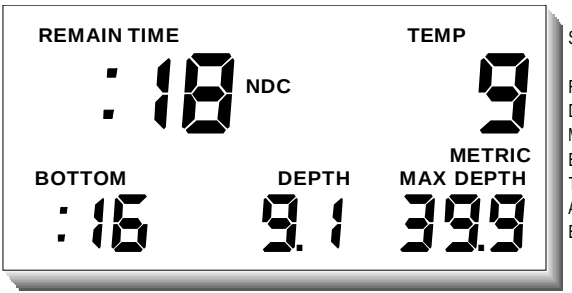

Figure 5
SUBSURFACE MODE MODE

Remain NDC Time	18 mins
Depth	9.1 mtr
Max Depth	39.9 mtr
Bottom Time	16 mins
Temperature	9 c
Ascent Rate	0
Battery	OK

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 3 metres. The five-segment bar graph is used to display the diver's rate of ascent. The factory default for maximum ascent rate is 18 mpm. With this setting, no bars will illuminate if a diver is ascending at a rate less than 3 mpm.

If the diver has an ascent rate of more than 18 mpm, 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 3 mpm of Ascent Rate.

Via the ANALYST® PC Interface, the maximum Ascent Rates alarms can be selected from 6 to 18 metres per minute in one-metre increments. 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 3 mpm 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.

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:

18 metres or deeper	18 mpm
18 to 9 metres	mpm equal to the depth
Less than 9 metres	9 mpm

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

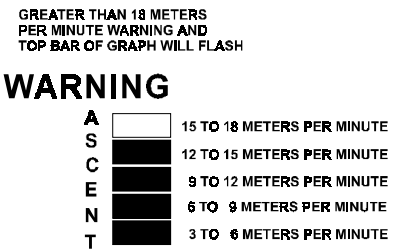

FIG-6 Ascent Rate Bar Graph (Fixed at 18 metres-per-minute)

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”.

DECOMPRESSION MODE: Should a no-decompression limit be mistakenly overstayed, the AquaNOX™ 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 three metres and continue in three metre increments to a maximum of 27 metres. To alert the diver to an even more hazardous situation, the CEILING digits will flash if the Ceiling is 21 metres or more.

The Remaining No-decompression Time and "NDC" legend will be replaced with Decompression Time and "DEC" legend and the "WARNING" legend will come on. 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 and surface. Clearly, the larger of the two alternating numbers is the Total Decompression Time of all stops which includes ascent time to the surface, and the smaller of the two numbers is the time required at the current stop. At the three metre stop, the TOTAL and STOP times may be the same and therefore appear to not alternate.

Predicted Decompression Time assumes that the diver is at exactly 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. Remaining shallower than the Ceiling for five consecutive minutes will immediately put the computer into the Gauge Mode.

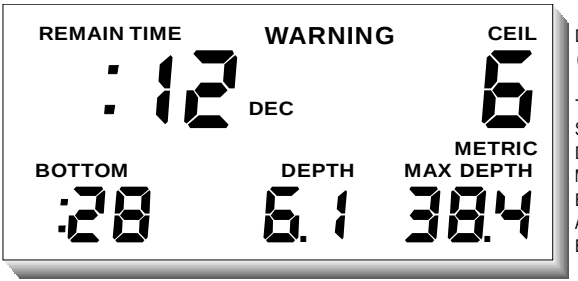

Figure 7
DECOMPRESSION MODE
(Showing Total Deco Time)

Total Deco Time	12 mins
Stop Ceiling	6 mtr
Depth	6.1mtr
Max Depth	38.4 mtr
Bottom Time	28 mins
Ascent Rate	0
Battery	OK

NOTE: COCHRAN does not intend for this instrument to be used for deliberate Decompression diving.

POST DIVE INTERVAL MODE: During the first ten minutes after a dive, the AquaNOX™ is in the PostDive Interval Mode. 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 PostDive Interval Mode. However, when reviewing the profile with the ANALYST®, the time spent on the surface in this mode will be shown.

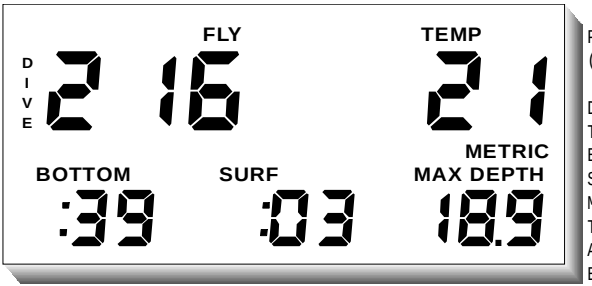

Figure 8
POST DIVE INTERVAL
("SURF" Legend Flashing)

Dive of Day	2
Time to Fly	16 hrs
Bottom Time	39 mins
Surface Time	3 mins
Max Depth	18.9 mtr
Temperature	21 c
Altitude	< 600 mtr
Battery	OK

LOGBOOK MODE: To enter the Logbook Mode, the AquaNOX™ must be in the normal Surface Mode. Touching Contacts 1 and 2 simultaneously with wetted fingers will cause the unit to enter the Logbook Mode.

The most recent dive will be displayed first. To view the next dive, touch the contacts again after pausing for a few seconds. Do not use a metal object such as a coin or knife-blade to enter the Logbook Mode since it will cause the unit to enter the Programming Mode.

The internal storage capacity of the Logbook Mode is 100 dives. Therefore, only the most recent 100 dives can be viewed since the earlier dives have been over-written. Information contained in each log will include Overall Dive Number, Minimum Water Temperature, Maximum Depth, Bottom Time, Surface Interval before the dive, and Fastest Rate of Ascent.

Each log will be displayed for 30 seconds before “timing-out” and returning to the Surface Mode. Via the optional ANALYST® Personal Computer Interface, the Logbook Mode “time-out” timer can be set from 10 to 60 seconds in one-second increments which would allow the user to view each dive for more or less time.

It is not necessary to allow the time-out timer to complete prior to initiating a dive. Once the diver has descended below two metres, the AquaNOX™ will immediately enter the Subsurface Mode.

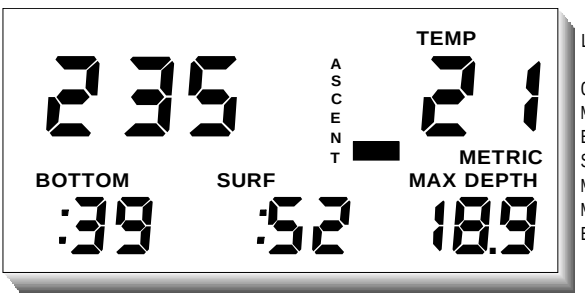

Figure 9
LOGBOOK MODE DISPLAY

Overall Dive Number	235
Max Depth	18.9 mtr
Bottom Time	39 mins
Surface Time	52 mins
Min Temperature	21 c
Max Ascent Rate	5 mpm
Battery	OK

NOTE: The overall Dive Number allows the diver to immediately identify the total number of dives made with that AquaNOX™. If the logbook example shown was the most recent dive made, it could be identified that that 235 dives had been made with that specific unit.

GAUGE MODE: Should the diver violate the design limitations of the AquaNOX™, Gauge Mode will be entered since it is impossible for the computer to continue computing and displaying accurate or even reasonable information. While in this mode, the only data that will be displayed are Depth, Max Depth, Ascent Rate, Temperature, and Bottom Time. The AquaNOX™ will continue to compute Oxygen toxicity factors.

The conditions which will cause the computer to enter the Gauge Mode are:

- A dive 100 metres or deeper is performed;
- A Decompression Ceiling of greater than 27 metres is calculated;
- Diver is shallower than the required Decompression Ceiling five consecutive minutes.

The AquaNOX™ will remain in Gauge Mode for 24 consecutive hours of surface time. After the diver has been on the surface for 40 minutes, the unit will enter its “Sleep Mode". The total hours until the unit exits Gauge Mode is displayed in the Time-To-Fly digits when the unit is again turned on.

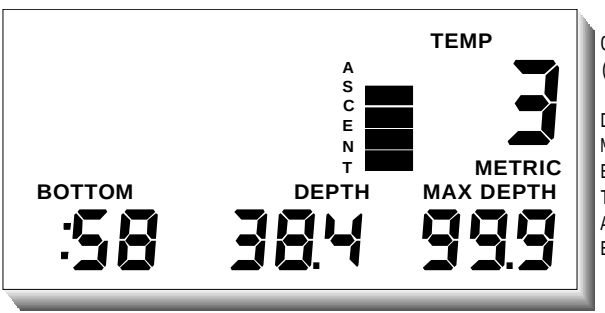

Figure 10
GAUGE MODE DISPLAY
(Sub Surface)

Depth	38.4 mtr
Max Depth	99.9 mtr
Bottom Time	58 mins
Temperature	3 c
Ascent Rate	14 fpm
Battery	OK

FIELD PROGRAMMING MODE: Contacts 1, 2, & 3 are for programming sequences. The AquaNOX™ is set at the factory to calculate Air (21% Oxygen) in its decompression algorithm. PRIOR to diving an Enriched Air Nitrox gas blend, the unit must be programmed accordingly.

To begin the programming sequence:

1. Analyze the gas blend using a calibrated Oxygen Analyzer;

2. Turn the unit on;

3. Using a coin or other highly conductive metal, briefly bridge Contacts 1 and 2 until a short beep is heard and the Programming Menu is seen in the display.

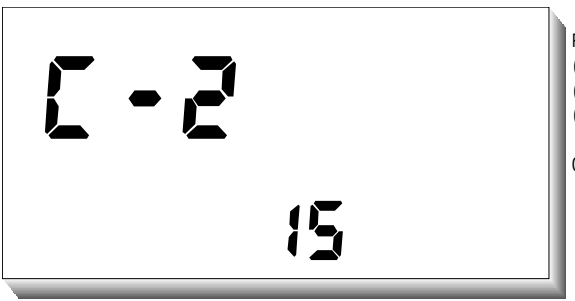

Figure 11
FIELD PROGRAMMING
(Setting Conservatism)
(Setting 10's digit)
(No Nitrox Functions)

Conservatism 15%

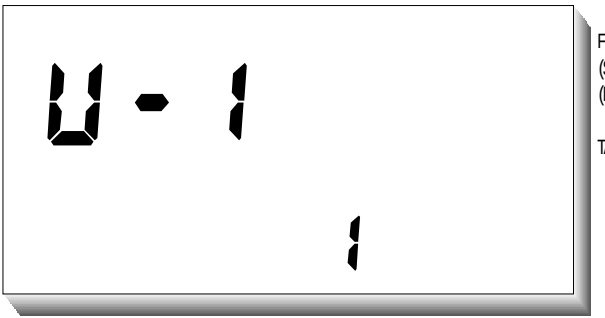

Figure 13
FIELD PROGRAMMING
(Setting TACLITE on/off)
(No Nitrox Functions)

TACLITE On

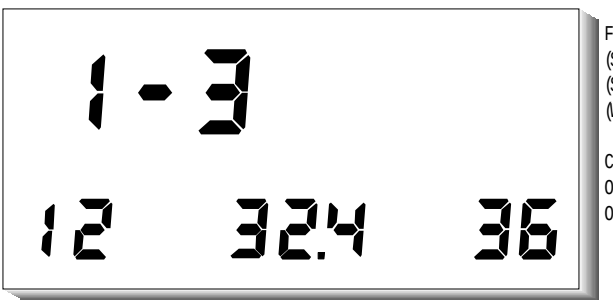

Figure 12
FIELD PROGRAMMING
(Setting Oxygen %)
(Setting 10's digit)
(With Nitrox Functions)

CNS Toxicity 12 %
OTU Dose 36 %
Oxygen % 32.4 %

4. The first display seen is for setting the oxygen percentage. The upper left corner will display a “1-3”. The “1” indicates you are programming the oxygen percentage and the “-3” indicates the 10’s digit is being programming. The Oxygen Percentage being programmed is displayed bottom center. Upon initial programming, this value should display “21.0” as set at the factory. At the bottom left, the current CNS Oxygen Toxicity percentage is displayed while the current OTU percentage is displayed in the lower right.

5. Using the same coin or metal object, bridge Contacts 2 and 3 to increment the 10's value. A confirmation beep will sound with each increment. If diving a bottom mix of 40.0%, Contacts 2 and 3 should be bridged until a “4” is displayed at the bottom center's 10's digit.

6. Next, bridge Contacts 1 and 2 to select the 1's digit programming sequence. A “1-2” being displayed at the upper left corner of the display identifies this. The “1” identifies that the oxygen percentage is still being programmed while the “-2” identifies the 1’s digit is being programmed.

7. Bridge Contacts 2 and 3 to increment the 1's digit to the desired value. If the example of setting an Oxygen Percentage of 40.0% for Blend #1 is continued, Contacts 2 and 3 would be bridged until a “0” appears in the 1's digit at the bottom center display.

8. Next, bridge Contacts 1 and 2 to move to the 1/10's programming sequence. Displaying “1-1” in the upper left corner of the display. The “1” signifies that the oxygen percentage is still being programmed, while the “-1” signifies that the 1/10's digit is being programmed.

9. Bridge Contacts 2 and 3 to increment the 1/10's digit. When the desired setting is displayed for the 1/10's digit, bridge Contacts 1 and 2 to move to the next selection.

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. If a value requires three digits to be programmed, a -3, then a -2, and then a -1 will be displayed in the upper left-hand corner. The -3 identifies the most significant digit, or the far-left digit, of the value being displayed. The -2 identifies the next most significant digit, or the center digit, of the value being displayed. The -1 identifies the least significant digit, or the right digit, of the value being displayed.

For Oxygen Percentage programming, the -3 identifies the 10's digit, the -2 identifies the 1's digit, and the -1 identifies the 1/10th's digit. For Depth Alarm, the -3 identifies the 100's digit, the -2 identifies the 10's digit, and the -1 identifies the 1's digit. Some values use only two digits. For these values, only a -2 and -1 will be displayed.

Once all of the desired values have been programmed, you must SELECT through the entire programming sequence WITHOUT making any additional changes before the AquaNOX™ will exit the Programming Mode with all of the values saved into memory. It is strongly recommended that the Programming Mode be activated again and a complete review of what was stored is accomplished.

CAUTION: Bridging Contacts 1 and 2 with wetted fingers instead of a metal object while in the Programming Mode will cause the AquaNOX™ to exit the Programming Mode WITHOUT saving the desire values. A coin or other highly conductive metal must be used throughout the entire programming process.

The programming sequence is consistent from value to value. The table below lists the various programming sequence and their display identifications.

Identification	Description
1-3 1-2 1-1	Oxygen %. Maximum allowable value is 50.0%
C-2 C-1	Added Conservatism. Maximum allowable value is 50%.
U-1	TACLITE On/Off. If bottom center display is a zero, TACLITE is off. If the bottom center display is a one, TACLITE is On.
A-3 A-2 A-1	Depth Alarm. Maximum allowable value is 99 metres.

DATA STORAGE TYPES & CAPACITY: The AquaNOX™ 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, CNS toxicity, OTU dose, OTU Mission Clock, Altitude, Battery voltage, 12 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 Violated Dives, Number of Warnings, Decompression Dives, and Decompression Time.
- **Each Dive Beginning Statistics:** 12 tissues loading, Local Time Clock, Dive of Day, Dive Number, Surface Time, CNS Toxicity, OTU Dose, Mission Clock, Altitude, Time to Fly, Battery Voltage. Capacity is the most recent 100 dives.

- **Each Dive Ending Statistics:** 12 tissues loading, Bottom Time, Max Depth, Average Depth, Min NDC Time, Max Deco Time, Max Deco Ceiling, Missed Ceiling, Missed Deco Time, CNS Toxicity, OTU Dose, Max PO2, Max Ascent Rate, Max A/R Time, Max A/R Depth, Min Temperature, Average Temperature, Maximum Temperature, Min Battery Voltage, Time to Fly, and the number of Warnings. Capacity is the most recent 100 dives.
- **Each Dive Configuration Data:** Full and complete configuration of the system, including Oxygen %, and User Conservatism. Capacity is the most recent 100 dives.
- **Profile Graphical Information:** Depth Graph, Ascent Rate Graph, Temperature Graph, PO2 Graph, CNS Graph, and OTU Graph. Capacity is 6 hours at one second sampling, 12 hours at two second sampling, etc.

- The user via the ANALYST® can set sampling from one to 15 seconds sampling. Uploading to a PC often via the ANALYST® prevents earlier data overwritten by more recent data from being lost forever. Default from the factory is four-second sampling. The sampling rate does not affect the compute rate, which remains fixed at one second.

USER CONFIGURABLE ITEMS: By using the optional 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 your local time via the ANALYST®.

PreDive Planning Maximum Depth: This option allows you to enter the maximum depth that will be predicted during the PreDive Prediction Mode. You may enter this maximum depth in 3 metre increments from 0 to 100 metres. If zero is selected, there will be no PreDive Planning.

Select Altitude <600 metres as One Zone (Off or On): This option provides "actual" altitude for any given day at any diving location as explained in the previous section “ALTITUDE ACCLIMATIZATION”. With changes in barometric pressure due to temperature and weather systems, it is possible, even expected, to have a different apparent altitude at the same dive site from day to day.

While the seamless means of monitoring provides the most accurate decompression schedule, all altitudes less than 600 metres above sea level can be treated in the algorithm as sea level if so selected.

With this option OFF, the unit is calculating altitude in a seamless fashion. With this option ON altitudes less than 600 metres above sea level will be treated as sea level. Regardless of the selection, altitudes greater than 600 metres above sea level will be treated in a seamless manner. From the factory, this is set to sense seamless altitude from sea level to 4.5 km above sea level.

Select Decompression Time Display (Total, Stop, Both): There are three options for the manner in which the decompression time is displayed. If you select TOTAL, the decompression time displayed will indicate the total time you will spend in decompression, including ascent to the surface.

Watch the Ceiling depth change in order to identify when to ascend to the next stop depth. If you select STOP, the decompression time displayed will indicate the time you must remain at the current Ceiling. When this time is 0:00, the Ceiling depth will decrease and the new stop time will be displayed. If you select BOTH, 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 Backlight on Display (On or Off): This option may also be set via the Field Programming method. To conserve battery life, it is suggested that the light be turned off immediately after a dive while in the Surface Mode. Regarding battery life, every hour the TACLITE is on is equivalent to about five dive hours without TACLITE. From the factory, the TACLITE is set to OFF.

Temperature Dependent NDC Computations (Off or On): This feature compensates the decompression algorithm proportional to the ambient water temperature if the water temperature is below 25 degrees C. If the diver is using a warm, well-insulated dry suit, it may be desirable to turn this feature off. See previous explanation of this capability. The AquaNOX™ is shipped from the factory with this feature ON.

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 Field Programming method. Conservatism is set to zero as shipped from the factory.

Selectable Type of Ascent Rate Alarm (Fixed or Variable): 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 in one-metre increments from 6 to 18 metres per minute (See next topic). As shipped from the factory, this is set to FIXED. If the VARIABLE rate is selected then the warning will illuminate based on the following table:

DEPTH	AVERAGE ASCENT RATE
18 metres and deeper	18 mpm
18 to 9 metres	mpm same as depth
Shallower than 9 metres	9 mpm

The AquaNOX™ is shipped from the factory as FIXED with an 18 metre per minute alarm.

Selectable Fixed Ascent Rate Alarm Limit: If FIXED Ascent Rate alarm was selected 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 18 metre per minute. The AquaNOX™ is shipped from the factory as FIXED with an 18 metre per minute alarm.

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 AquaNOX™ is shipped from the factory as FIXED.

Selectable Logbook Dwell Time (10 to 60 seconds): This feature allows the diver to determine how long (in seconds) that a particular dive's logbook is displayed before the Logbook Mode is exited. This option is set to 30 seconds as shipped from the factory.

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

Metric or Imperial: The diver may select whether the data is computed and displayed in Metric or Imperial units. The AquaNOX™ may be ordered either way 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. This function is disabled when in the Decompression Mode. The Field Programming Mode previously described may also modify this setting. As shipped from the factory, the Depth Alarm is set for 39 metres.

Select Nitrox Computations (Off or On): This option enables and disables NITROX computations. If this option is disabled, mixtures other than 21.0% oxygen will be disallowed. Furthermore, if this option is selected as OFF, the AquaNOX™ will not compute CNS Toxicity, OTU Dose, or maximum PO2 alarm. The factory setting for this option is ON.

Enter Oxygen % in Nitrox Mixture: This option allows you to enter the desired oxygen percentage in 0.1% increments. Values from 21.0% to 50.0% may be entered. The Field Programming Mode previously described may also modify this setting. As shipped from the factory, this is set to 21.0%.

Max PO2 Alarm: This option allows the diver to select a maximum PO2 (Partial Pressure of Oxygen) at which an alarm is sounded. Values from 0.50 to 1.60 are allowed. This is set to a PO2 of 1.6 at the factory before shipping.

Profile Storage Period (1 to 15 Seconds): This option allows the diver to select the sample rate at which data is stored for later recall by the ANALYST®. This option does not affect how frequently the computer performs its calculations, but only how often data of the dive in progress is stored for later retrieval. The faster (lower the number) the profile storage period, the more precise the re-creation of the dive will be.

However, this will also limit the number of dives retained in memory for later recall. For optimum re-creation of dives, sampling periods of greater than four seconds are not recommended. For each one-second increase in the sampling rate, the AquaNOX™ will store an additional six hours of profiles. As shipped from the factory, Profile Storage Period is set to four seconds which allows for 24 hours of storage before the earlier profiles are overwritten.

CAUTION: If the computer is not uploaded to a PC via the ANALYST® before this period expires, some dive profiles will be irretrievably lost.

SPECIFICATIONS:

Algorithm	Modified Haldanian
Tissue Compartments	12
Computation Period	Every second
Activation	Manual and Water
Depth Display	99.9 metres, 0.1 metre increments
Depth Accuracy	+/- 1% of full scale
Maximum Altitude	4.5 km, seamless
Altitude Accuracy	+/- 300 m
Temperature Display	0 to 37 degrees C., 1 degree increments
Temperature Accuracy	+/- 2% of full scale
Surface Time	0 to 9:59 hrs/mins, 1-minute increments
Bottom Time	0 to 9:59 hrs/mins, 1-minute increments
Time To Fly	0 to 36 hours, 1-hour increments
No-Deco Time	0 to 9:59 hrs/mins, 1-minute increments
Decompression Time	0 to 9:59 hrs/mins, 1-minute increments
Decompression Ceiling	0 to 27 m, 3 m increments
Dive Summary Storage	100 Dives

Dive Profile Storage	6 Dive hours at one second sampling 24 Dive hours at four second sampling (default) 90 Dive hours at 15 second sampling
Profile Sampling	Selectable 1-15 secs, 1-second increments
Typical Battery Life	Over 200 dive hours or 1 year, TACLITE off Over 40 hours, TACLITE on

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

CLEANING THE AquaNOX™: Clean the unit only with fresh water after each use. Towel dry the unit, 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.

BATTERY CHANGES: The batteries should be changed when the 'BATT' legend is seen or battery voltage reaches 2.4 volts as can be seen during the PreDive Prediction. The unit will run until the battery voltage drops below 2.0 volts. Only use fresh, name brand N-Cell size Alkaline batteries for maximum battery life. At this time, *Eveready Energizer* Alkaline is recommended.

Do not use Lithium or rechargeable batteries, which may damage the computer and void the warranty. 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 annually regardless of battery condition.

DO NOT ALLOW THE AquaNOX™ TO HAVE LOW OR NO BATTERIES FOR ANY EXTENDED PERIOD OF TIME! THIS WILL DISCHARGE THE INTERNAL LITHIUM BATTERY THAT KEEPS THE MEMORY ALIVE!

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

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, lubricate the O-rings lightly and slowly twist the cap into place using a USA quarter (supplied). Press quarter into battery cap slot firmly to prevent slipping and damaging the slot. Ensure that 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. Ask a Team Cochran Dealer for a demonstration.

It is best to have the new batteries ready to immediately install since the AquaNOX™ was designed to allow for battery changes without resetting and losing any nitrogen residuals. 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.

PRODUCT ASSISTANCE, REPAIR & MAINTENANCE: If you suspect that your AquaNOX™ 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 with details to 972.644.6286. 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!**
- **LUBRICATE BATTERY ENDS WITH THIN FILM OF SILICONE GREASE!**

REPLACEMENT PARTS:

Batteries (2)	1.5 VDC Alkaline 'N' cells
Battery Cap O-rings	Part Number 19930
Battery Cap Assembly	Part Number 19934
Wrist Strap (long, black)	Part Number 19951