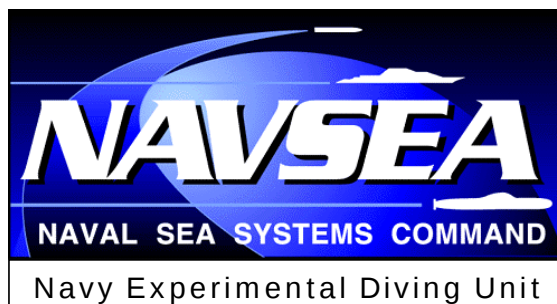


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**TA 01-07
NEDU TR 07-09
May 2007**

VVal-18 and VVal-18M Thalmann Algorithm Air Decompression Tables and Procedures



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**Distribution Statement A:
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SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE				
1a. REPORT SECURITY CLASSIFICATION Unclassified		1b. RESTRICTIVE MARKINGS		
2a. SECURITY CLASSIFICATION AUTHORITY		3. DISTRIBUTION/AVAILABILITY OF REPORT DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.		
2b. DECLASSIFICATION/DOWNGRADING AUTHORITY				
4. PERFORMING ORGANIZATION REPORT NUMBER(S) NEDU Technical Report No. 07-09		5. MONITORING ORGANIZATION REPORT NUMBER(S)		
6a. NAME OF PERFORMING ORGANIZATION Navy Experimental Diving Unit	6b. OFFICE SYMBOL (If Applicable) O2	7a. NAME OF MONITORING ORGANIZATION		
6c. ADDRESS (City, State, and ZIP Code) 321 Bullfinch Road, Panama City, FL 32407-7015		7b. ADDRESS (City, State, and Zip Code)		
8a. NAME OF FUNDING SPONSORING ORGANIZATION Naval Sea Systems Command	8b. OFFICE SYMBOL (If Applicable) 00C	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER		
8c. ADDRESS (City, State, and ZIP Code) 1333 Isaac Hull Avenue, SE Washington Navy Yard, D.C. 20376		10. SOURCE OF FUNDING NUMBERS		
		PROGRAM ELEMENT NO.	PROJECT NO. .	TASK NO. 01-07
11. TITLE (Include Security Classification) (U) VVAL-18 AND VVAL-18M THALMANN ALGORITHM AIR DECOMPRESSION TABLES AND PROCEDURES				
12. PERSONAL AUTHOR(S) Wayne. A. Gerth, Ph.D; David J. Doolette, Ph.D.				
13a. TYPE OF REPORT Technical Report	13b. TIME COVERED FROM January 2000 TO March 2007	14. DATE OF REPORT (Month, Year) May 2007		15. PAGE COUNT 212
16. SUPPLEMENTARY NOTATION				
17. COSATI CODES FIELD GROUP SUB-GROUP		18. SUBJECT TERMS Decompression, air, in-water oxygen, surface decompression using oxygen, Thalmann Algorithm, VVal-18, VVal-18M, probabilistic models, decompression sickness risk		
19. ABSTRACT (Continue on reverse if necessary and identify by block number) The Thalmann Algorithm parameterized with the VVal-18 parameter set is a well-documented decompression algorithm developed at Navy Experimental Diving Unit (NEDU) to produce 0.7 atmospheres absolute (ata) constant PO ₂ -in-N ₂ decompression schedules. The algorithm was more recently used with a modified VVal-18 parameter set, designated VVal-18M, to produce a candidate set of air diving decompression procedures. This report documents the modifications to the VVal-18 parameter set that result in VVal-18M and describes the accompanying updates to the Thalmann Algorithm that are required to correctly implement these modifications. Complete sets of air, air with in-water oxygen (Air/O ₂), and air with surface decompression using oxygen (SurDO ₂) decompression tables are provided as calculated with the algorithm with VVal-18 and VVal-18M parameter sets. In the absence of extensive man-testing, probabilistic models of DCS incidence and time of onset were used to assess the risks of decompression sickness (P _{DCS}) of the schedules in these tables. Estimated risks and total decompression times of the schedules were compared to those of current U.S. Navy Standard Air and Air SurDO ₂ decompression procedures. Schedules for air with in-water O ₂ decompression (Air/O ₂) and air with surface decompression using oxygen (SurDO ₂) are recommended for use as prescribed by either the VVal-18 or VVal-18M Thalmann Algorithm. Schedules for air-only decompression prescribed by either the VVal-18 or VVal-18M Thalmann Algorithm are recommended with less enthusiasm because such schedules prescribe large decompression time increases that afford only relatively small DCS				

risk decreases from those incurred by current procedures over the range of commonly accepted DCS risk. This imbalance is mitigated by allowing a 10 fsw last decompression stop instead of the 20 fsw last stop imposed in the nominal VVal-18M procedures. Both the VVal-18 and VVal-18M air diving procedures integrate Air, Air/O₂, and SurDO₂ schedules into a single table that can be used with the same Surface Interval Credit Table that accompanies existing U.S. Navy VVal-18 0.7 ata and 1.3 ata constant PO₂-in-N₂ Tables, a use that would simplify table-based repetitive diving. Under all procedures, P_{DCS} of schedules in a dive depth group increases with increasing total decompression stop time (TST). The integrated table of either VVal-18 or VVal-18M schedules will require insertion of an exceptional exposure limit line for air-only decompressions in each dive depth group to indicate when the schedules first incur unacceptable DCS risk as bottom time increases. Such lines are not required for the Air/O₂ or SurDO₂ schedules.		
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT ☐ UNCLASSIFIED/UNLIMITED ☒ SAME AS RPT. ☐ DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION Unclassified
22a. NAME OF RESPONSIBLE INDIVIDUAL NEDU Librarian	22b. TELEPHONE (Include Area Code) 850-230-3100	22c. OFFICE SYMBOL

DD Form 1473

UNCLASSIFIED

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1. Introduction

The U. S. Navy has long sought to develop a diver-worn decompression computer with a single comprehensive algorithm for determining the decompression obligations of divers breathing air and other N_2 - O_2 mixes. Such a diver-worn system would prescribe diver decompression schedules in real time according to the actual depth-time profiles experienced by the diver, not according to costly depth and time roundup conventions required when such schedules are prescribed from conventional decompression tables. The history of this development can be traced back to Braithwaite, who provided a detailed step-by-step programmable schematic of Workman's worksheet¹ for computing decompression tables,² and Thalmann, who later implemented this schematic in a functional real-time decompression computer algorithm.³ As later summarized by Thalmann,⁴ this algorithm was modified on the basis of extensive man-testing in ensuing work and was incorporated into a new "probabilistic" class of decompression algorithms.^{5,6} In the course of this evolution, it was also recognized that a successful algorithm could be used to replace the collection of disparate tables for all air and N_2 - O_2 diving modes currently in the U. S. Navy Diving Manual with a cohesive set of decompression tables that would integrate the procedures for these diving modes. Renewed pursuit of such an integrated table set was recently undertaken under NAVSEA tasking to NEDU,^{7,8} and received new impetus to meet requirements of a next generation dive system (NGDS) for surface-supplied air diving operations.

The NGDS is being developed to enhance operational safety and efficiency of surface-supplied air diving operations through revised procedures for surface decompression using oxygen (SurDO2) and new procedures for in-water oxygen decompression. Each of these preferred alternative diving modes will be backed up by air-only decompression procedures for use when SurDO2 or in-water oxygen cannot be used. Decompression obligations of divers using the NGDS will be prescribed in real time by a topside decompression monitor (TDM) operating a real-time decompression algorithm that will support all three diving modes of the NGDS. Hard copy decompression tables, consistent with the real-time prescriptions of the TDM, will be available as backup in the event of TDM failure.

The TDM will initially be fielded with an interim exponential-linear real-time decompression algorithm (EL-RTA) based on a full-functioned exponential-linear decompression model (EL-DCM), also known as the Thalmann Algorithm. In order to avoid a multiplicity of air decompression tables in the U. S. Navy Diving Manual, the backup tables for the NGDS are scheduled to replace the U. S. Navy Standard Air Decompression and Air with Surface Decompression Using Oxygen tables in a forthcoming revision of the *U. S. Navy Diving Manual*.⁹

This report documents the algorithmic provisions implemented to support the three NGDS diving modes in the interim version of the TDM and provides the associated hard copy backup tables and procedures for their use. Two related Thalmann Algorithm parameter sets that result in different decompression schedules are considered. Detailed analyses of

the risks of decompression sickness (DCS) associated with the tabulated schedules are also given. Analyses are limited to consideration of single no-stop and decompression dives only.

2. The Exponential-Linear Decompression Algorithm (Thalmann Algorithm)

Thalmann described the initial operating version of the EL-RTA and its underlying theory in 1984.¹⁰ The EL-RTA used a neo-Haldanian decompression algorithm with novel exponential-linear gas exchange kinetics, various matrices of maximum permissible tissue tensions (MPTTs), user-specified breathing gas properties, and measured diver depth to compute and display a diver's safe ascent depth at 2-second intervals throughout a dive profile. The EL-RTA was used to control most man-dives conducted during the development and testing of the algorithm. The decompression algorithm in the EL-RTA was also implemented in a full-functioned software package, the EL-DCM, to produce decompression tables. Thalmann published FORTRAN source code for the initial operating version of the EL-DCM in 1983.¹¹ Additional FORTRAN code for the programs and subroutines of the EL-DCM required to compute decompression tables *per se*, surfacing repetitive groups, surface interval credit tables, and residual nitrogen times to support repetitive diving was described and published still later.^{12,13}

An independent implementation of the EL-RTA developed by Cochran Consulting, Inc. (Richardson, TX), under the guidance of E. D. Thalmann, is the algorithm currently used to provide real-time decompression prescriptions in the diver-carried Navy Dive Computer (NDC),¹⁴ which has been approved for use by Navy special warfare personnel for MK 16 MOD 0 and MK 16 MOD 1 diving and is in the approval process for use in air diving.

Thalmann's original EL-DCM was extensively modified at NEDU to develop MK 16 MOD 1 N₂-O₂ and He-O₂ decompression tables^{15,16} and Submarine Rescue and Diving Recompression System Operator/Tender decompression tables.¹⁷ Still other modifications were made to support new provisions for in-water oxygen decompression with the NGDS-TDM. Modifications included:

- Output of computed profiles in Augmented NMRI Standard Format¹⁸ for ready analysis with probabilistic models of DCS incidence and time of occurrence.
- Support for last allowed decompression stops deeper than one stop depth increment.
- Support for accommodation of effects of gas exchange during ascent from the last decompression stop to the surface. In the original EL-DCM code, times at the last decompression stop before surfacing were computed to allow instantaneous ascent from the last stop to the surface. Such times can be excessively conservative when off-gassing during slow ascent from the last stop to the surface is not accommodated, particularly when the last stop is deeper than one stop depth increment.

- Determination of the controlling compartment when surfacing and suppression of output of the surfacing repetitive group designator (RGD) when this controlling compartment has a half-time slower than that of the reference compartment.¹²
- Support for oxygen decompression with user-settable inspired oxygen fraction and automatic insertion of an initial on-O₂ gas switch latency period and subsequent air-breathing breaks.
- Support for an option to fix compartmental gas contents (i.e., to disable gas exchange) during air-breathing breaks in oxygen decompression.
- Support for use of unequal saturation and desaturation compartmental half-times, specified in the model parameter input file as non-unit ($\neq 1$) saturation/desaturation half-time ratios (SDRs; see Glossary, Appendix A), only when inspired oxygen fraction is greater than or equal to a specified threshold value.
- Support for PBOVP parameter value (see Glossary, Appendix A) at surface different from that at depth
- Modification of the stop time rounding convention. In original EL-DCM code, any nonzero decompression stop time was increased by 0.9 minutes. This increased value or 1.0, whichever was larger, was then used in ensuing calculations as the time at stop but was truncated to the next lower integer value in subsequent integer output. The EL-DCM has been updated to propagate the next largest integer value for use in gas exchange calculations and for output. This change in rounding convention causes the occasional stop time in EL-DCM-prescribed schedules to differ by one minute from its value in the corresponding published schedule. More often, the EL-DCM-prescribed surfacing repetitive group for the occasional schedule is one letter group higher than for the corresponding published schedule (e.g., "L" instead of "K") due to use of the longer untruncated time at the last stop to compute the group in the original EL-DCM implementation.
- Modification of the method for computing surface interval credit tables (SICT) to a direct letters-to-letters scheme for decay of starting letter groups to end-interval final letter groups. This modified method differs from that used to produce the SICT for the MK 16 MOD 0 UBA in the *U.S. Navy Diving Manual*.¹⁹ The latter is a condensation of the SICT in Thalmann's NEDU Report 9-85,¹² which tracks the decay of 16 starting letter groups into 21 final numerical groups during surface intervals. The sixteen Standard Air final letter groups were then approximated from the 21 final numerical groups by collapsing more than one final numerical group into some final letter groups. The modified scheme tracks the decay of 16 starting letter groups directly into 16 final letter groups.
- Miscellaneous code changes for efficiency and clarity.

3. Thalmann Algorithm Parameterization

Quantitative performance of the Thalmann Algorithm and its real-time EL-RTA counterpart is governed by values assigned to compartment-specific and global parameters. The compartment-specific parameters consist of two vectors that define compartmental gas exchange half-times and saturation/desaturation half-time ratios and an associated MPTT matrix. An accompanying vector of global parameters applies across all compartments. A variety of parameter sets have been developed for use with the Thalmann Algorithm to produce decompression tables for different applications. For example, the VVal-18 parameter set was originally developed to produce 0.7 ata constant PO₂-in-nitrogen decompression tables for the MK 16 MOD 0 UBA¹⁰ in the *U.S. Navy Diving Manual*,¹⁹ while the HVal-21 set was developed to produce 0.7 ata Constant PO₂-in-Helium decompression tables for the same UBA.²⁰

3.1. VVal-18

The VVal-18 parameter set was used with the Thalmann Algorithm to compute the 0.7 ata constant PO₂-in-N₂ decompression tables for the MK 16 MOD 0 UBA¹⁰ and the 1.3 ata constant PO₂-in-N₂ decompression tables for the MK 16 MOD 1 UBA¹⁵ in the *U.S. Navy Diving Manual*, and it is used with an independently developed implementation of the EL-RTA in the NDC.¹⁴ The Thalmann Algorithm VVal-18 parameter set is given in Appendix B.

3.2. VVal-18M

E. T. Flynn at NAVSEA modified the VVal-18 parameter set to shorten air decompression times prescribed by the VVal-18 Thalmann Algorithm and maintain in-water O₂ decompression times similar to those prescribed with the VVal-18 set.²¹ This modified parameter set, designated VVal-18M, is given in Appendix C. The principal modifications include:

- The PBOVP global parameter is assigned a constant value of 0 fsw in the VVal-18 parameterization. In VVal-18M, PBOVP is assigned a value of 10 fsw throughout all decompressions and 0 fsw at surface. These assignments generally result in faster gas washouts during decompression with shorter decompression times than those obtained with VVal-18.
- The O2TIME_FO2 global parameter (see Glossary, Appendix A) is assigned a value of 0.7 in the VVal-18 parameterization. In VVal-18M, O2TIME_FO2 is assigned a value of 0.8.
- The saturation/desaturation half-time ratio (SDR) for each of nine gas exchange compartments is assigned a constant value of 1.0 in the VVal-18 parameterization. In VVal-18M the SDR for the compartments is assigned a value of 0.7 during oxygen breathing in air with in-water O₂ (Air/O₂) decompression schedules, and 1.0 at all other times. Such assignments counteract undesired shortening of in-water O₂ decompression stops caused by the above PBOVP and O2TIME_FO2 parameter changes.

4. Conventions Adopted to Produce the VVal-18 and VVal-18M Air Decompression Tables

The following conventions were adopted to compute and compile the VVal-18 and VVal-18M Air Decompression Tables:

- All no-decompression limits and decompression schedules were computed with 75 fsw/min descent rates and 30 fsw/min ascent rates.
- No-decompression limits and air-only decompression schedules were computed with air breathing (inspired O_2 fraction = 0.21) throughout the dives.
- The decompression stop depth increment in all computed schedules was 10 fsw.
- All VVal-18 decompression schedules and all VVal-18M air with in-water O_2 decompression schedules were computed with the last allowed in-water decompression stop at 20 fsw. Two tables of VVal-18M Air-only schedules were computed: one with the last allowed in-water decompression stop at 20 fsw, and the other with the last allowed in-water decompression stop at 10 fsw.
- The last allowed in-water decompression stop times were computed for instantaneous ascent to surface after completion of time at the last stop.
- Travel times to decompression stops were not included in tabulated stop times.
- Air with in-water O_2 (Air/ O_2) decompression schedules were computed with air breathing until arrival at the first in-water stop at a depth less than or equal to 30 fsw. On arrival at this stop, a three-minute “dead time” with no gas exchange was arbitrarily inserted into the schedule to accommodate latency in the initial in-water air-to- O_2 gas switch. The remainder of the decompression was computed with the assumption of an inspired O_2 fraction of 0.7 for VVal-18 schedules and of 0.8 for VVal-18M schedules, except as noted below:
 - o A five-minute air-breathing break was inserted after each 30 minutes of in-water O_2 breathing, unless the diver was within five minutes of the last pull to surface. These air-breathing break times were considered “dead time” with no gas exchange.
 - o The three-minute air-to- O_2 gas switch latency period at the beginning of the first O_2 stop in each Air/ O_2 schedule was included in the first 30-minute O_2 breathing period for scheduling air breathing breaks.
 - o Travel time between the 30 fsw and 20 fsw water stops was not included in the On- O_2 time governing the scheduling of air breathing breaks.
 - o Because it was assumed that no gas exchange occurs during air breaks, all air breaks begin and end at the same stop, a procedure which obviates whether to count travel time during an air break toward the five-minute air break time.
- RGDs were calculated with the 120-min half-time compartment in the MPTT table as the reference compartment.

- Only a single RGD is given for each depth/bottom time combination, regardless of which of the three decompression modes is used. The tabulated value is the highest attained from the air-only or accompanying air/in-water O₂ procedure. No RGD is tabulated for any dive in which the controlling tissue on surfacing has a half-time greater than 120 min, the half-time of the reference tissue for the Surface Interval Credit and Residual Nitrogen Time Table.
- The minimum surface interval for each starting and final RGD in the SICT is zero minutes. This differs from the 10-minute surface interval minimum prescribed by current USN Standard Air procedures. With the presently prescribed 0-minute surface interval minimum, a dive preceded by a surface interval of less than 10 minutes must be considered a repetitive dive, whereas it is considered a simple extension of the previous dive under current USN Standard Air procedures. A modified Residual Nitrogen Time Exception Rule (RNT Exception Rule) accompanies the SICT/RNT table to prevent excessively conservative decompression prescriptions for repetitive dives (see Appendix D, Section C.3).
- The number of 30-minute chamber oxygen periods required for SurDO₂ was determined for each depth/bottom time combination by rule from the computed Air/O₂ schedule. The 3-minute gas switch latency period was subtracted from the sum of the in-water oxygen-breathing times at 30 and 20 fsw (any air break time was not included in the sum). This intermediate result was then rounded up to the nearest multiple of 15 min and divided by 30 min to obtain the final result to the nearest half-period. For example, 1.5 periods are required if the summed oxygen times minus 3 min rounds up to 45 min.
- Dive depth groups are placed at 5 fsw increments between 30 fsw and 60 fsw, and at 10 fsw increments between 60 fsw and 300 fsw. Maximum bottom time in each dive depth group is limited to 720 min or that for the first Air-only schedule with more than 360 minutes Total Ascent Time. Schedules are given within each dive depth group for bottom times that increase at 5-minute increments between the no-stop limit and 100 min, at 10-minute increments between 100 and 240 min, at 30-minute increments between 240 min and 360 min, and at 60-minute increments between 360 and 720 min.

4.1. Executive Changes and Additions

Air diving no-decompression limits prescribed by the EL-DCM with either VVal-18 or VVal-18M are longer than the U.S. Navy Standard Air (USN56) no-decompression limits for dives to depths of 60 fsw and to depths of 90 fsw or greater. Results of recent NEDU man-trials of selected longer no-stop limits²² may motivate retention of the shorter USN56 no-decompression limits for these dive depths. Substitution of the USN56 limits in these cases will require addition of decompression schedules to the Main Tables for a number of VVal-18 and VVal-18M no-stop dives. Where such additions are required, the 20 fsw stop times in the added air-only schedules should be taken from the 10 fsw stop times for the corresponding dives in the USN56 Decompression Table. The corresponding Air/O₂ schedules can then be obtained by adding a three-minute Air-to-O₂ gas switch latency time to the air-only 20 fsw stop times. The surfacing RGDs for these added schedules

should be taken as those prescribed by the EL-DCM with VVal-18 or VVal-18M, as appropriate, for the corresponding Sub-NoD dives.

Insertion of the 3-minute Air-to-O₂ gas switch latency and the assumption that no gas exchange occurs during this period at the onset of O₂ breathing in in-water O₂ decompressions cause the total decompression time of some short in-water O₂ decompressions to be longer than their air-only counterparts. The stop time at the last allowed decompression stop in the shorter air-only schedule can be used in place of the tabulated first stop time in the in-water O₂ schedule in these cases.

Regardless of the decompression mode, estimated DCS risks of tabulated decompression schedules increase with bottom time in each dive depth group in the tables presented in this report. Corresponding indication of the bottom time in each depth group at which the schedules first incur unacceptable DCS risks remain to be added.

4.2. Thalmann Algorithm Dive Planner Support

With the following exceptions, the above conventions are systematically implemented in the Thalmann Algorithm Dive Planner, Versions 2.5 and greater, to compute VVal-18 and VVal-18M air and air with in-water O₂ decompression schedules from user-entered depths and times:

- No-stop limits are given as prescribed by the algorithm and do not reflect any executive substitutions of shorter limits from the current USN56 procedures.
- Repetitive group designators are given as prescribed by the algorithm such that the surfacing repetitive group designator for an air-only decompression from a given depth/bottom time dive may differ from the designator for an air with in-water O₂ decompression from the same dive.
- Air-break times, during which no gas exchange occurs, are included in displayed stop times.
- With Dive Planner default parameter settings, the time at the last decompression stop before surfacing is computed to accommodate effects of gas exchange during ascent to within one stop depth increment of the surface, after which instantaneous ascent to the surface is assumed. The LST_DOMode parameter (see Glossary, Appendix A) must be changed from its default setting of 0 to 1 to cause the Dive Planner to compute last decompression stop times for instantaneous ascent from the 20 fsw last stop to the surface, which is the behavior in the EL-DCM used to compute the tables.
- The decompression stop time rounding convention in Dive Planner versions 2.03 through V3.03 was modified from the scheme in the original EL-DCM to propagate the same truncated integer value for both calculation and output. Thus, any nonzero decompression stop time is increased by 0.9 minutes, and the integer truncation of this increased value or 1.0, whichever is larger, is used in ensuing calculations and in subsequent integer output. Differences between this convention and those implemented in the original and updated versions of the

EL-DCM can cause the occasional stop times in Planner-prescribed schedules to differ by one minute from their values in the corresponding schedule obtained with one or the other EL-DCM version.

5. VVal-18 and VVal-18M Air Decompression Tables

E.T. Flynn specified most of the conventions described in Section 4 for computing the VVal-18M Air Decompression Tables^{21,23} and used software provided earlier by NEDU to compute preliminary versions of both the VVal-18 and VVal-18M Air Decompression Tables (References 24 and 25, respectively). Updated and complete VVal-18 and VVal-18M table sets are given in Appendices E and F, respectively.

5.1. Format and Procedures for Use

E.T. Flynn developed an integrated format for presentation of air, air with in-water O₂, and SurDO₂ decompression schedules in a single table, along with associated procedures for use (Appendix D). The three integrated decompression tables in this report (Tables E.3, F.3, and F.4) are presented in this format. Each was produced with software written at NEDU to assemble text files produced by separate runs of the EL-DCM for each of the two in-water decompression modes.

5.2. Comparative Analyses of Estimated DCS Risks and Total Stop Times of Tabulated Schedules

The VVal-18 parameter set was developed and used to schedule air and N₂-O₂ diving decompressions with the EL-RTA during NEDU man-trials.^{10,26} However, neither the VVal-18 nor the VVal-18M decompression tables presented here have been extensively man-tested. To evaluate these tables, the probability of DCS (P_{DCS}) for each dive schedule was estimated with the NMRI98²⁷ and BVM(3)^{28,29} probabilistic models of DCS incidence and time of occurrence. These models are generalized expressions of experience embodied in calibration data (approximately 5% average incidence of DCS, counting marginal outcomes as 0.1 DCS) from carefully controlled and monitored air and N₂-O₂ man-dives ranging from short, deep submarine escapes to saturation exposures.

Another probabilistic model of DCS incidence in air and N₂-O₂ dives has been more recently described in which DCS risk is expressed as a function of maximum dive depth, bottom time, inspired O₂ fraction, and total decompression time.³⁰ This model was initially of interest because it indicated that air decompressions prescribed by the Thalmann Algorithm with VVal-18 parameters are of uniform 2.3% DCS risk, contradicting the indications of NMRI98 and BVM(3). This finding of uniform risk is a result of fundamental model flaws, discussion of which is beyond our present scope, and the newer model is not considered further here.

P_{DCS} was calculated for each schedule at the limit of tabulated depth and bottom time and with consideration of the influences of the three-minute air-to-O₂ gas switch latencies and air breaks when these features occur. DCS risks of Air/O₂ and SurDO₂ schedules were

computed assuming inspired O_2 fractions of 95% during in-water O_2 breathing periods and 85% during SurDO2 O_2 breathing periods, regardless of the value used in the EL-DCM to compute the schedules. The gas switch time — i.e., the time over which alveolar gas is modeled to change linearly from one composition to another after a breathing gas switch — was assumed to be 0.2 minutes.

Results are presented in various graphic formats throughout this report. Schedule-by-schedule comparisons of total stop times and estimated DCS risks of schedules in the VVal-18 and USN56 decompression tables are given in Appendix G. The USN56 table is the table of Standard Air Decompression Schedules³¹ that has appeared in *U.S. Navy Diving Manuals* from 1959 to 2006 as the Standard Air Decompression Table. Schedule-by-schedule comparisons of total stop times and estimated DCS risks of schedules in the VVal-18M (20 fsw last allowed in-water stop) and USN56 decompression tables are given in Appendix H. Raw data on which all illustrations are based are given in Appendices H, J, and K, with 95% binomial confidence limits on each estimated DCS risk. Data for dives to the USN56 no-decompression limits are matched to the nearest VVal-18 or VVal-18M bottom times, unless there is a USN56 decompression schedule at the nearest bottom time, in which case data for the dive to the USN56 limit does not appear.

5.2.1 Comparisons of VVal-18 Air Decompression Tables with USN Standard Air Decompression Tables

Figure 1 compares the total decompression stop times of the VVal-18 schedules with those of the USN56 schedules. The comparisons include only those schedules in the VVal18 Air Decompression Main Table (Table E.3), for which counterparts (same depth–bottom time combinations) exist in the normal exposure regions of the USN56 Table. Each point represents a depth–bottom time combination with location determined by the total stop time prescribed by the VVal-18 and USN56 Tables. The VVal-18 Air/ O_2 schedules fall on the identity line, indicating that they are of lengths comparable to those of their USN56 air-only counterparts. In contrast, VVal-18 Air schedules are uniformly longer than their USN56 air-only counterparts, often by considerable amounts.

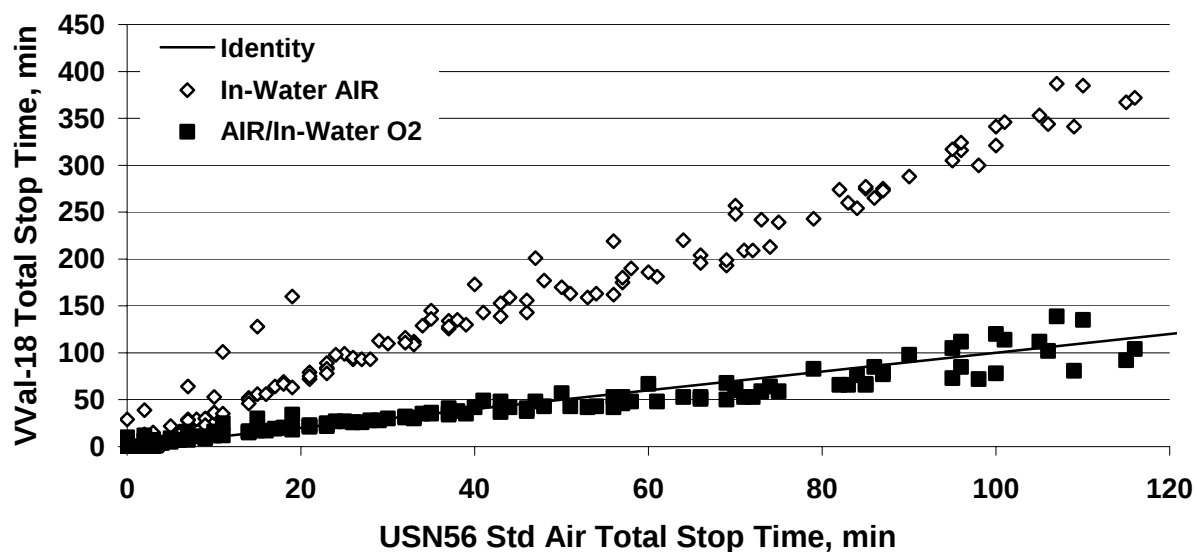


Figure 1. Total stop times of VVal-18 Air and Air/O₂ schedules vs. total stop times of corresponding USN Standard Air schedules.

Risk analysis indicates that the VVal-18 Air/O₂ decompression schedules and associated procedures incur P_{DCS} comparable to, or substantially less than, the P_{DCS} of corresponding USN Standard Air Decompression schedules. Figure 2 compares the P_{DCS} risks of VVal-18 schedules and their USN56 counterparts as estimated by the NMRI98 probabilistic model. As in Figure 1, each point corresponds to a depth–bottom time combination, and its position is determined by the P_{DCS} of the respective VVal-18 and USN56 decompression schedules. With few exceptions, both VVal-18 Air and VVal-18 Air/O₂ schedules fall below the identity line, indicating that they incur less DCS risk than their counterparts in the USN56 Tables.

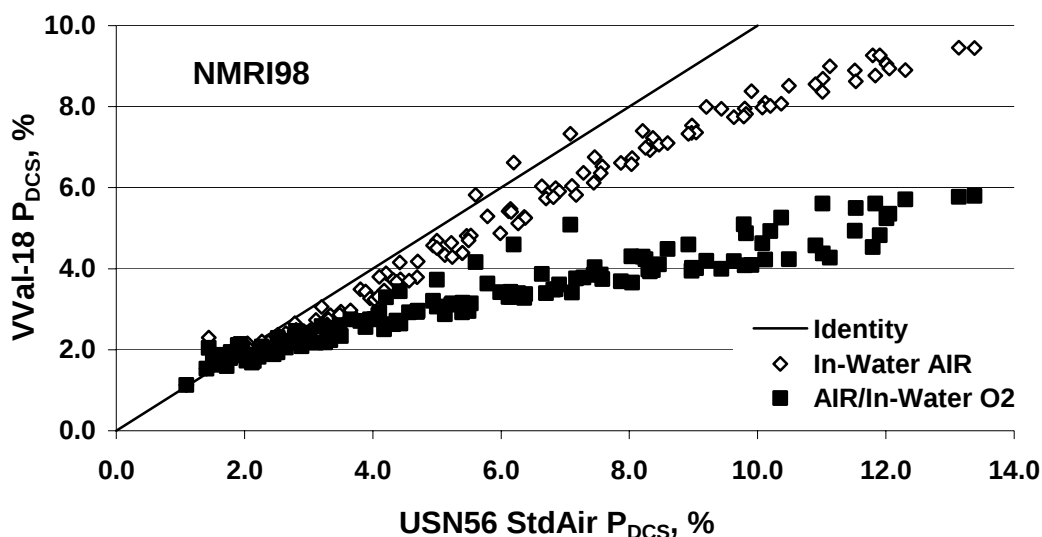


Figure 2. DCS risks of VVal-18–prescribed decompression schedules vs. risks of corresponding USN Standard Air decompression schedules, as these risks are estimated by the NMRI98 probabilistic model.

Some USN56 normal exposure schedules and VVal-18 Air schedules carry substantial risk. Figure 3 shows that P_{DCS} increases with increasing total stop time. Total stop time, of course, increases with increasing depth or bottom time. This relationship between depth, bottom time, total stop time, and P_{DCS} is fully illustrated in the figures presented in Appendix G. Figure 3 also shows the USN93 risk slide, proposed to define acceptable operational decompression risk.³² Dives with less than 20 minutes total stop time should have P_{DCS} of 2.3%, the average risk of USN56 no-stop limits. The initial ramp from 2.3% to 5% P_{DCS} represents a compromise between risk and decompression time to provide efficiency for the most operationally common depth–bottom time combinations. As a reference, the USN56 Standard Air schedules have P_{DCS} about 5% once total stop time reaches about 30 minutes (example schedules are 100 fsw/60 minutes or 150 fsw/30 min). The plateaus at 5% and 10% define the maximum acceptable risks for normal exposure and exceptional exposure dives, respectively. The USN56 plot in Figure 3 is slightly truncated because only schedules with counterparts in the VVal-18 Table were

plotted. As a result the longest USN56 normal exposure schedules with the highest risks are not illustrated. All the VVal-18 schedules are shown. Notably, many longer VVal-18 Air schedules incur estimated risks above 5%, but most VVal-18 Air/O₂ schedules have P_{DCS} below 5%.

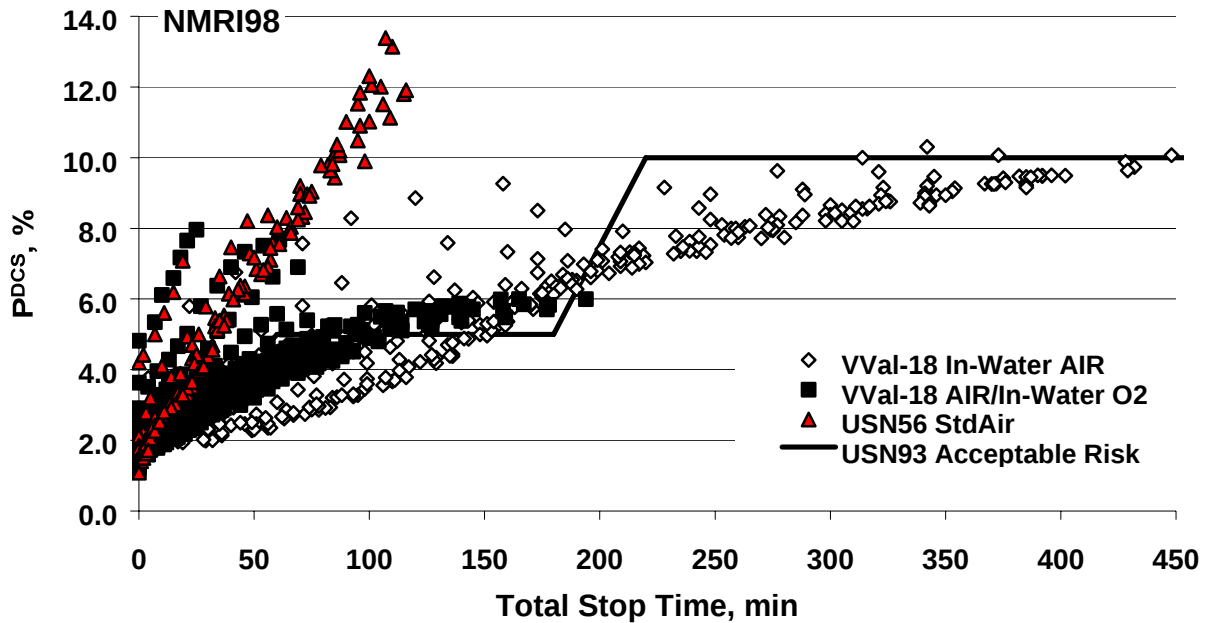


Figure 3. NMRI98-estimated DCS risks of USN Standard Air and VVal-18 Air and Air with in-water O₂ schedules vs. total stop time.

Figure 4 and Figure 5 present information similar to that in Figure 2 and Figure 3, respectively, but P_{DCS} is calculated with the BVM(3) probabilistic model. The estimates are similar but more scattered than those from the NMRI98 model, probably because the Thalmann Algorithm shares more structural similarities with NMRI98 than with BVM(3).

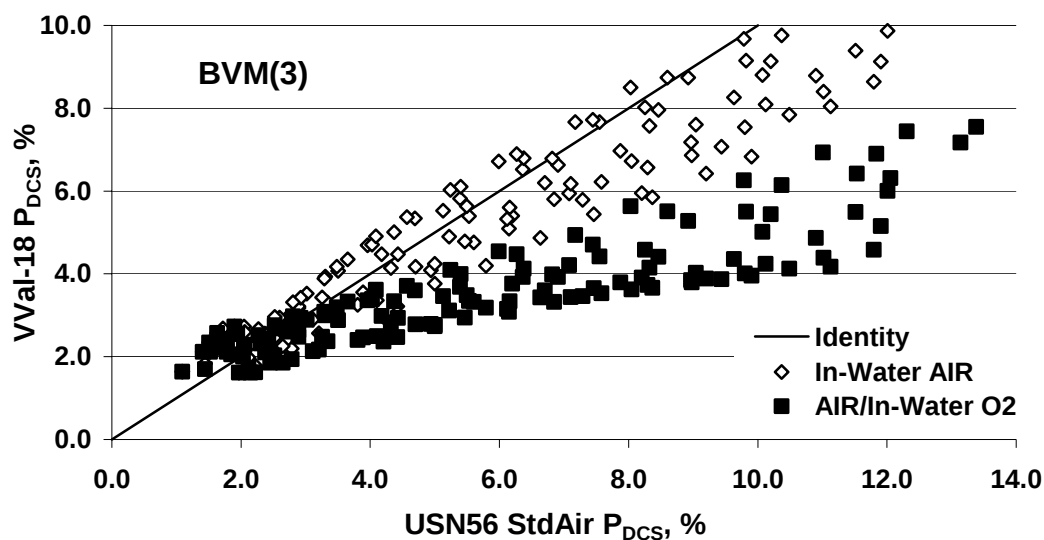


Figure 4. DCS risks of VVal-18–prescribed decompression schedules vs. risks of corresponding USN Standard Air decompression schedules, as these risks are estimated by the BVM(3) probabilistic model.

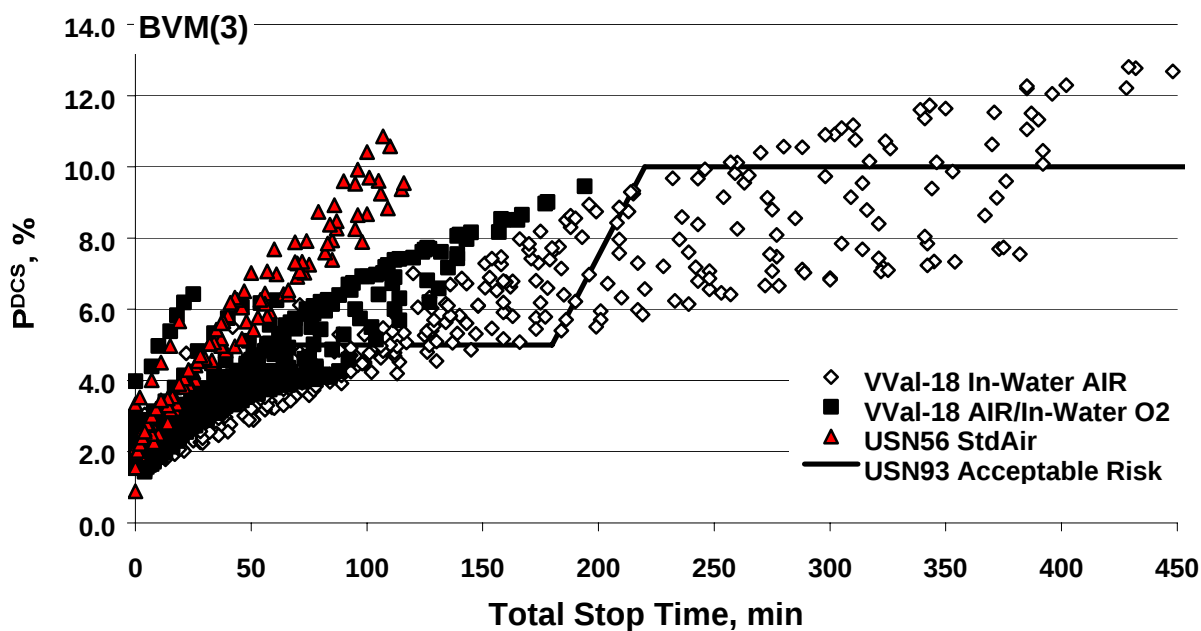


Figure 5. BVM(3)-estimated DCS risks of USN Standard Air and VVal-18 Air and Air with in-water O₂ schedules vs. total stop time.

Figure 6 and Figure 7 illustrate that the estimated DCS risks of VVal-18 SurDO2 schedules are also uniformly lower than those of their USN SurDO2 counterparts.

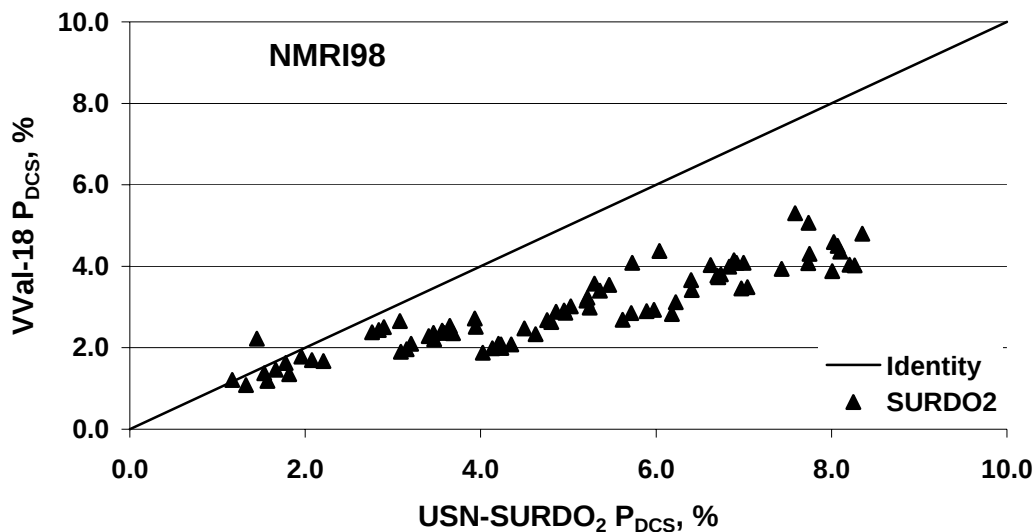


Figure 6. DCS risks of VVal-18–prescribed SurDO2 schedules vs. risks of corresponding USN SurDO2 schedules, as these risks are estimated by the NMRI98 probabilistic model.

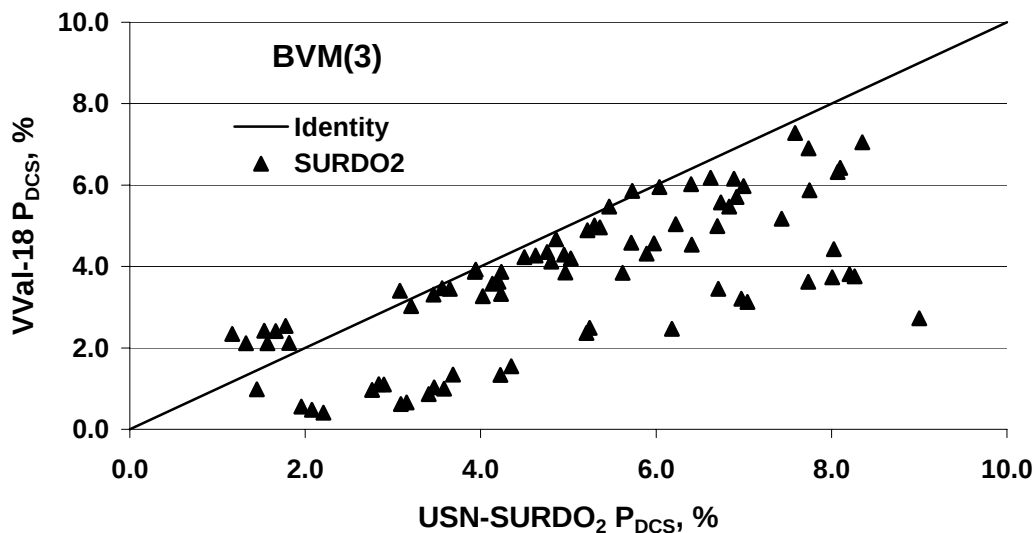


Figure 7. DCS risks of VVal-18–prescribed SurDO2 schedules vs. risks of corresponding USN SurDO2 schedules, as these risks are estimated by the BVM(3) probabilistic model.

5.2.2 Comparisons of VVal-18M Air Decompression Tables with USN Standard Air and VVal-18 Air Decompression Tables

The total stop times of schedules with matching depth–bottom time combinations in the VVal-18M and VVal-18 Tables are compared in Figure 8. VVal-18M–prescribed air decompression schedules are generally shorter than their VVal-18–prescribed counterparts, in fulfillment of the principal objective for modifying the original VVal-18 parameters to obtain VVal-18M. In accord with other properties of performance sought with the modified VVal-18M parameters, VVal-18M–prescribed Air/O₂ schedules are generally of duration similar to VVal-18 Air/O₂ schedules. As a result of reducing the decompression times, VVal-18M Air decompression schedules incur somewhat higher NMRI98-estimated P_{DCS} than their VVal-18 counterparts, as the points in Figure 9 falling mostly above the identity line illustrate. It is also evident in this figure that the VVal-18M Air/O₂ schedules incur risks that are equivalent to or somewhat less than the risks incurred by their VVal-18 counterparts. Figure 10 shows the comparative risks estimated by the BVM(3) model. Greater scatter in the data obscures systematic differences between the VVal-18M and VVal-18 schedules, though the trend for VVal-18M Air/O₂ schedules to have DCS risks equivalent to or lower than those of their VVal-18 counterparts is evident under this model as well.

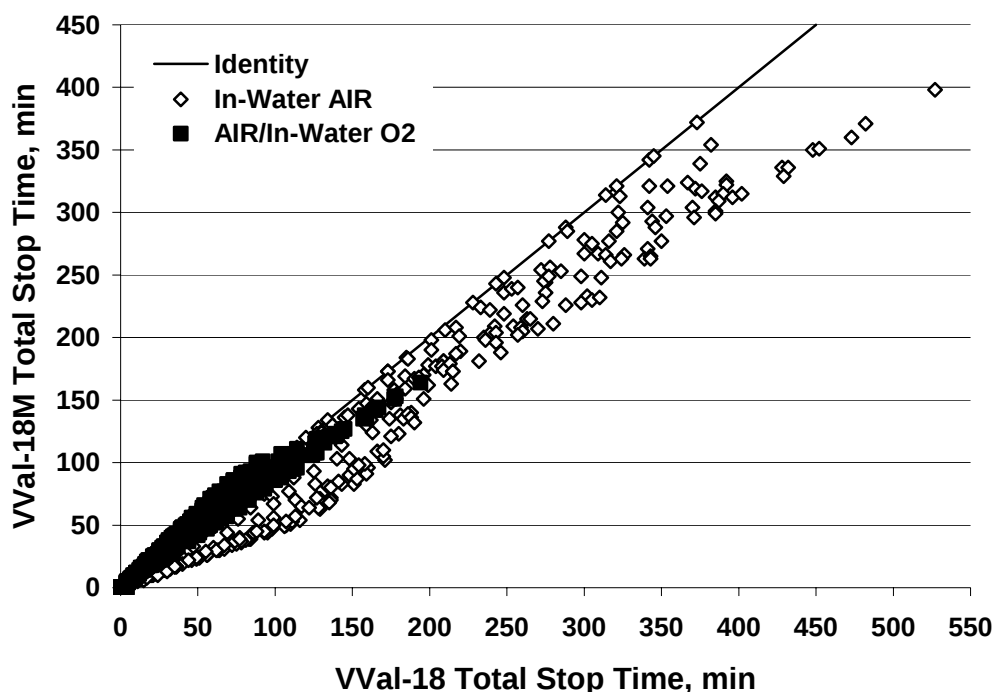


Figure 8. Total stop times of VVal-18M–prescribed schedules vs. those of their VVal-18–prescribed counterparts.

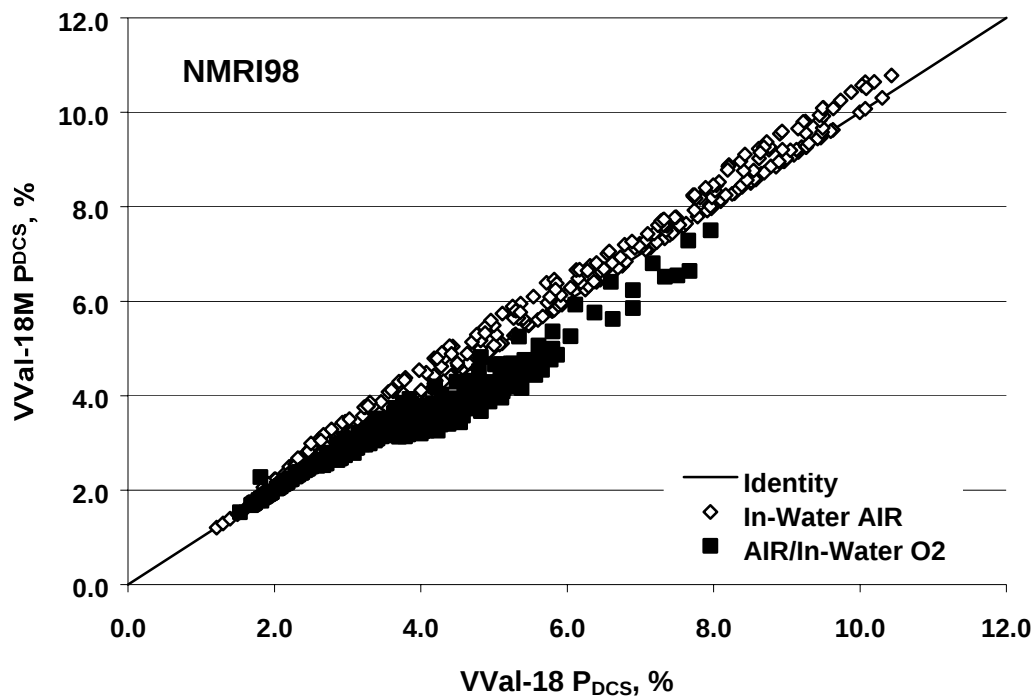


Figure 9. NMRI98-estimated DCS risks of VVal-18M schedules vs. those of their VVal-18 counterparts.

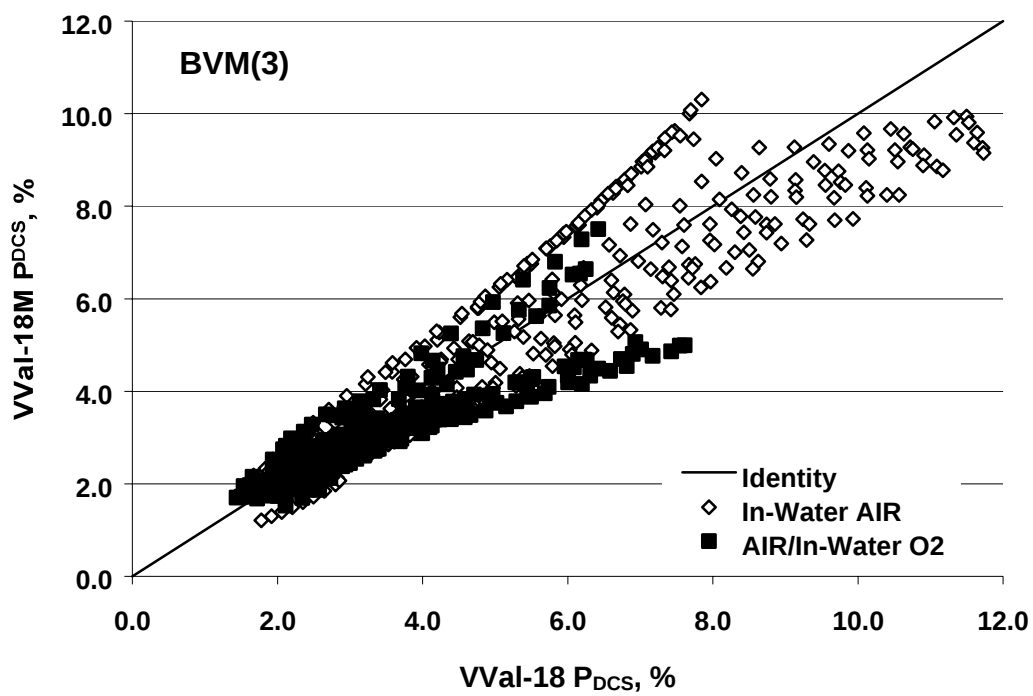


Figure 10. BVM(3)-estimated DCS risks of VVal-18M schedules vs. those of their VVal-18 counterparts.

Figure 11 compares the total decompression stop time of the VVal-18M schedules with counterparts from the USN56 Table. VVal-18M Air schedules are also uniformly longer than their USN56 counterparts, while VVal-18M Air/O₂ schedules are of lengths comparable to those of their USN56 counterparts.

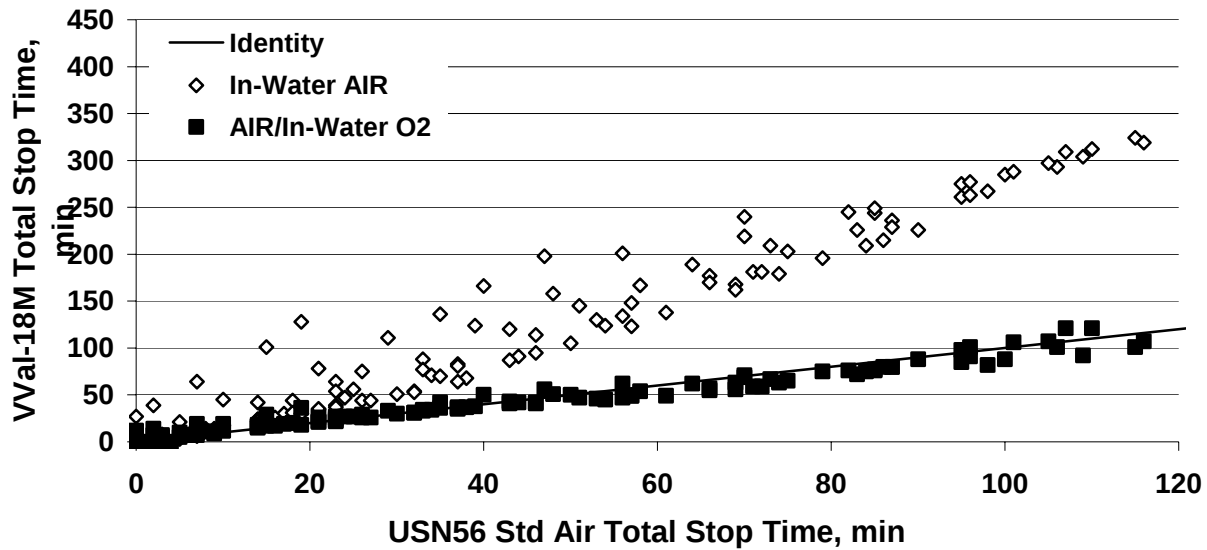


Figure 11. Total stop times of VVal-18M Air schedules and VVal-18M Air/O₂ schedules vs. total stop time of corresponding USN Standard Air schedules.

Figure 12 shows the DCS risks of VVal-18M–prescribed decompression schedules vs. risks of corresponding USN56 schedules, as estimated by the NMRI98 probabilistic model. The VVal-18M Air/O₂ schedules generally incur substantially less DCS risk than their air-only counterparts in the USN56 Tables. DCS risks of VVal-18M Air schedules are also less than those of their USN56 counterparts. However, in the operationally important region where P_{DCS} is 5% or less, the DCS risks of VVal-18M schedules are practically equal to those of their USN56 counterparts.

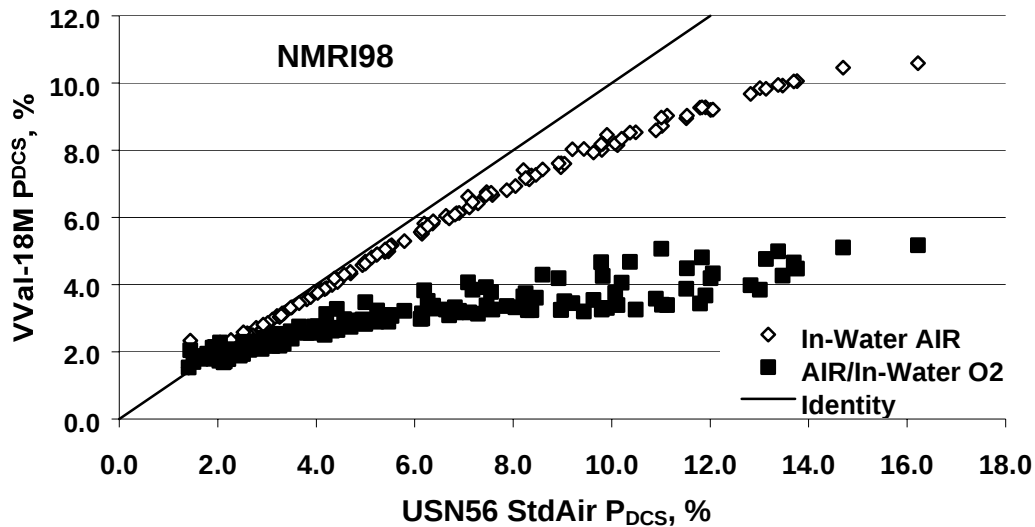


Figure 12. DCS risks of VVal-18M–prescribed decompression schedules vs. risks of corresponding USN Standard Air decompression schedules, as these risks are estimated by the NMRI98 probabilistic model.

Figure 13 shows increasing P_{DCS} of VVal-18M and USN56 schedules with increasing total stop time superimposed on the USN93 risk slide. The longest normal exposure schedules with the highest DCS risks in the USN56 table are not illustrated. All the VVal-18M schedules are shown. Thus the VVal-18M plots are more comprehensive than the USN56 plot, with points for schedules to depths down to 300 fsw. However, if these additional depths were removed, the VVal-18M plots, although sparser, would extend across a similar range of total stop times and P_{DCS} . For instance, the longest schedules common to all plots are for the 100 fsw/120-minute dive which has a total stop time of 131 minutes under USN56 and 370 minutes under VVal-18M Air.

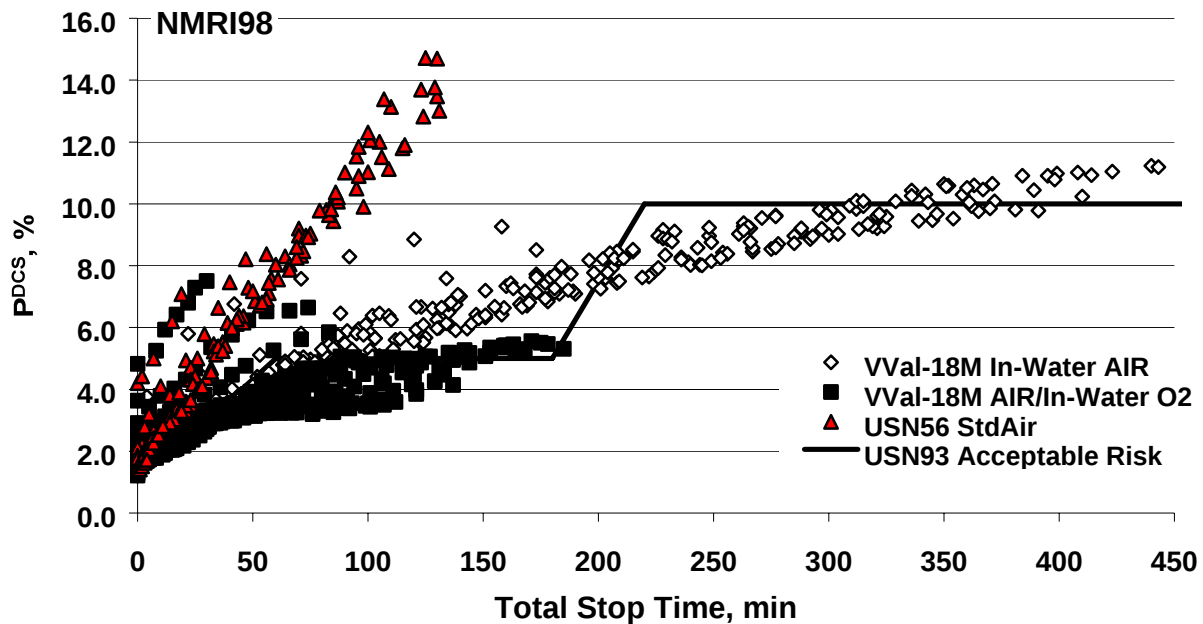


Figure 13. NMRI98-estimated DCS risks of USN Standard Air and VVal-18M Air and Air with in-water O_2 schedules vs. total stop time.

Figure 14 and Figure 15 are similar to Figure 12 and Figure 13 but have P_{DCS} calculated with the BVM(3) probabilistic model. The findings are similar, but the scatter in data points is broader than in the NMRI98 data.

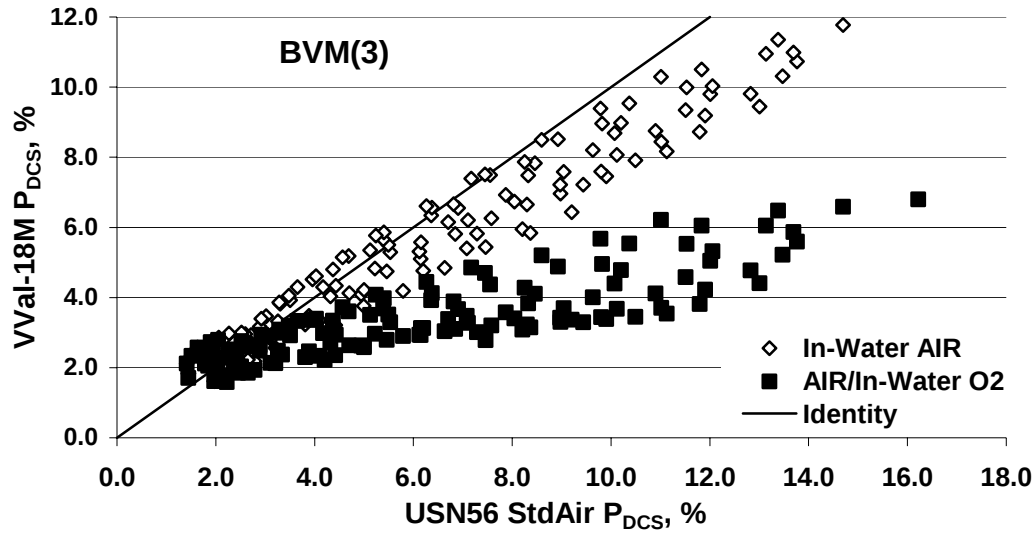


Figure 14. DCS risks of VVal-18M–prescribed decompression schedules vs. risks of corresponding USN Standard Air decompression schedules, as these risks are estimated by the BVM(3) probabilistic model.

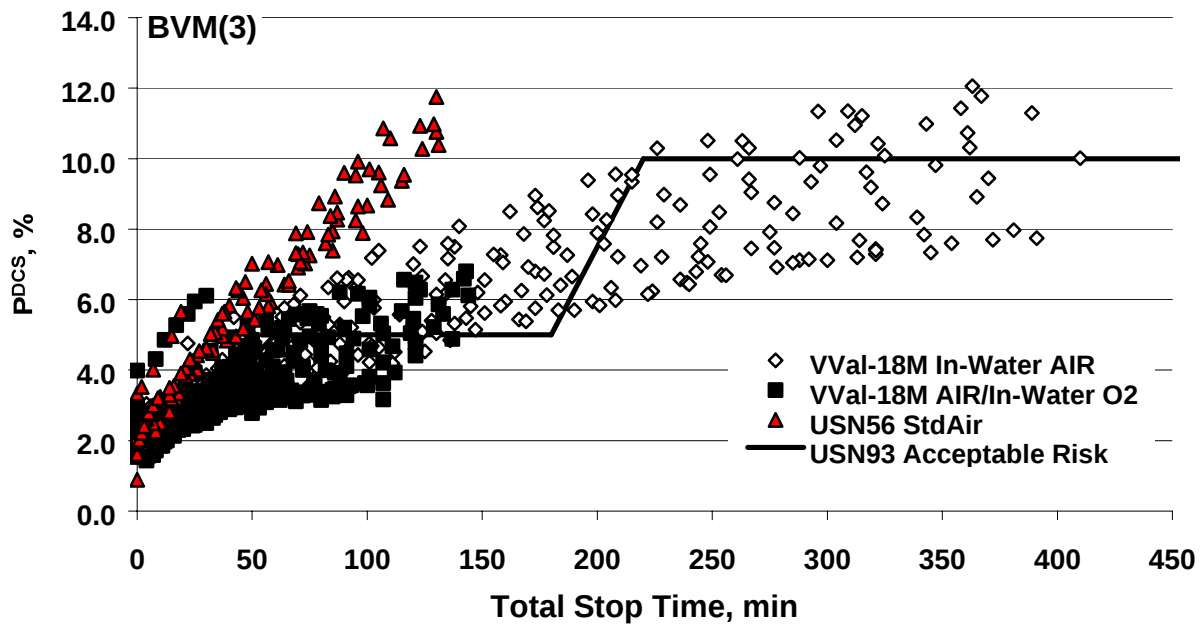


Figure 15. BVM(3)-estimated DCS risks of USN Standard Air and VVal-18M Air and Air with in-water O₂ schedules vs. total stop time.

Figure 16 and Figure 17 illustrate that the estimated DCS risks of VVal-18M SurDO2 schedules are also uniformly lower than those of their USN SurDO2 counterparts.

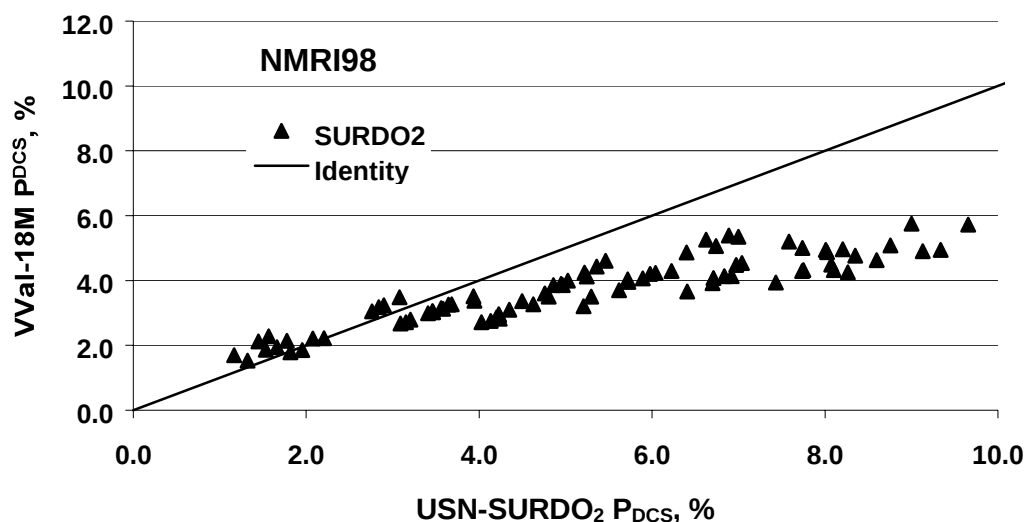


Figure 16. DCS risks of VVal-18M–prescribed SurDO2 schedules vs. risks of corresponding USN SurDO2 schedules, as these risks are estimated by the NMRI98 probabilistic model.

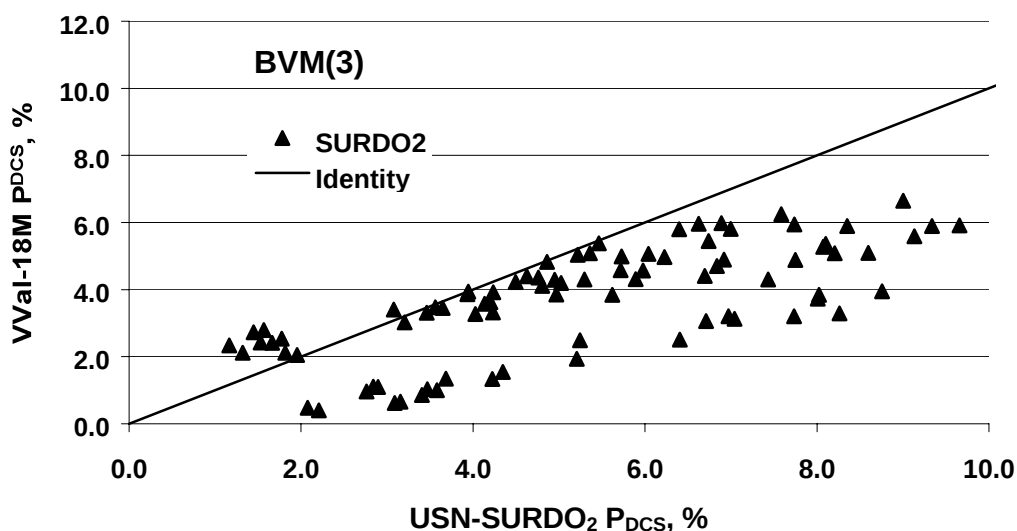


Figure 17. DCS risks of VVal-18M–prescribed SurDO2 schedules vs. risks of corresponding USN SurDO2 schedules, as these risks are estimated by the BVM(3) probabilistic model.

5.3. Last Decompression Stop Depth

The 20 fsw last allowed in-water stop adopted with the VVal-18 and VVal-18M tables departs from the convention of a 10 fsw last stop in present U. S. Navy Air and N₂-O₂ diving procedures. A 20 fsw last stop can have operational advantages, but the consequent forfeit of the higher washout gradient at a 10 fsw last stop during Air-only decompressions comes at a cost. Figure 18 illustrates how recalculation of the VVal-18M main table allowing a 10 fsw last decompression stop affects total stop times overall. As expected, the last stop depth does not influence Air/O₂ decompression times, but the 10 fsw last stop substantially shortens Air-only decompressions. Corresponding influences on model-estimated DCS risks of the schedules are illustrated in Figures 19 and 20. Despite the large differences in total stop time, there is little difference in the estimated DCS risks for schedules computed with either a 10 fsw or 20 fsw last stop.

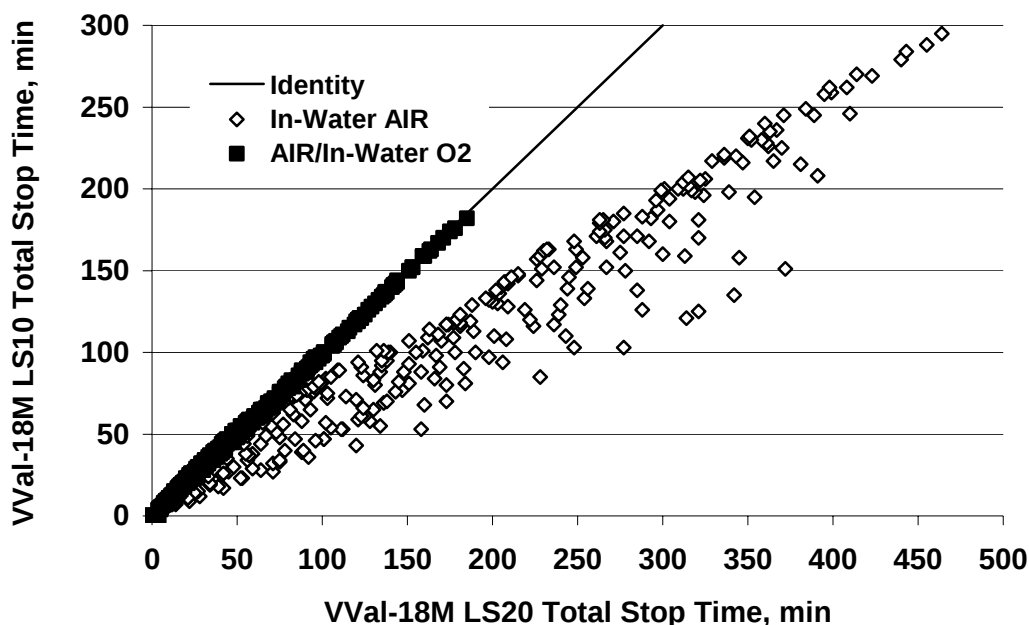


Figure 18. Influence of changing the last allowed decompression stop from 20 fsw to 10 fsw on total stop time in schedules prescribed by the Thalmann Algorithm with VVal-18M.

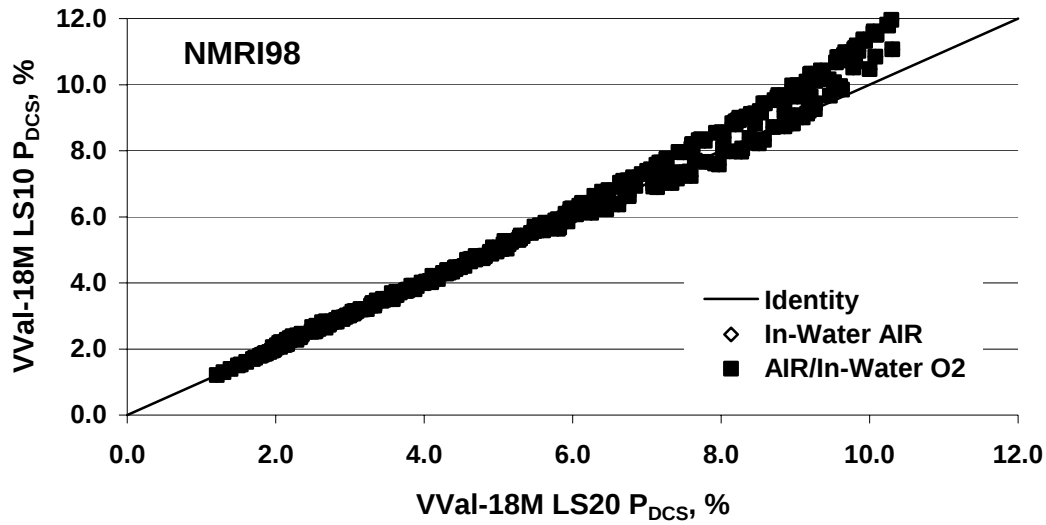


Figure 19. Influence of changing the last allowed decompression stop from 20 fsw to 10 fsw on NMRI98-estimated DCS risks of schedules prescribed by the Thalmann Algorithm with VVal-18M.

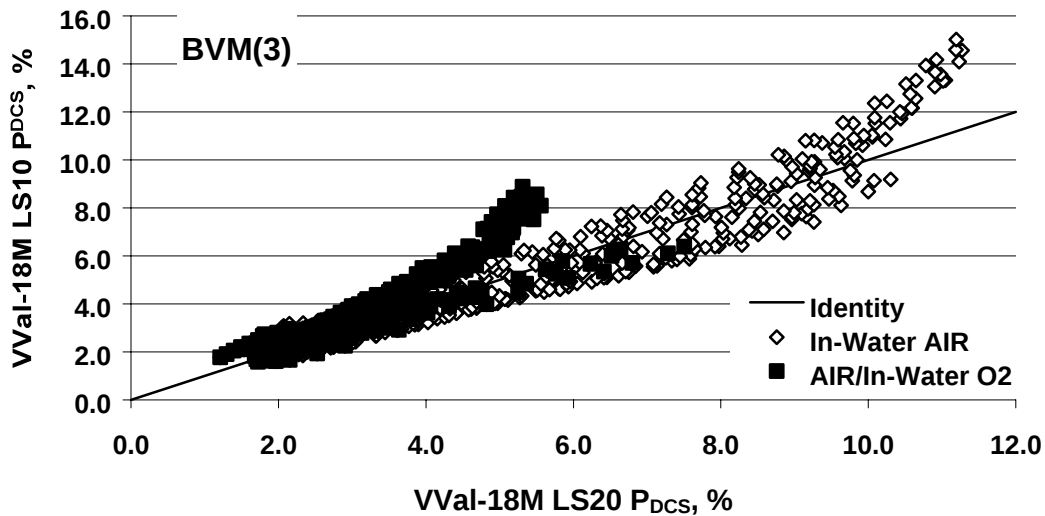


Figure 20. Influence of changing the last allowed decompression stop from 20 fsw (LS20) to 10 fsw (LS10) on BVM(3)-estimated DCS risks of schedules prescribed by the Thalmann Algorithm with VVal-18M.

An integrated table of Air, Air/O₂, and SurDO₂ decompression schedules with a 10 fsw last allowed stop for Air decompressions and a 20 fsw last allowed stop for Air/O₂ decompressions is given in Appendix F (Table F.4). In some cases the no-stop limit for an air-only ascent with a 10 fsw last allowed stop is longer than with a 20 fsw last allowed

stop. The shorter no-stop limit was substituted in such cases. The other VVal-18M Thalmann Algorithm tables in Appendix F remain applicable for use with this hybrid integrated table.

6. Discussion

There has been an on-going effort to develop a computer-based integrated decompression algorithm for all modes of U.S. Navy air and N_2 - O_2 diving operations. This effort has been given new impetus with the advent of the NGDS, for which the Thalmann Algorithm with its various parameterizations offers immediate advantages. Among these are that the algorithm is readily programmed into a real-time version for the TDM and that it supports production of backup decompression tables in standard U.S. Navy format.

The VVal-18 parameter set for the Thalmann Algorithm was originally developed for 0.7 ata constant PO_2 -in- N_2 diving, with the assumption that the contribution of O_2 to compartmental gas contents remained constant.¹⁰ This parameter-algorithm combination was later considered for application to air diving and, with probabilistic models for DCS risk assessment still to be developed, was noted to prescribe decompressions for long and deep dives that seemed inordinately long.²⁶ A variety of different parameter sets and algorithm modifications were consequently examined to shorten algorithmically prescribed schedules for air decompressions while maintaining the capability to compute validated decompression schedules for 0.7 and 1.3 ata constant PO_2 -in- N_2 diving with the same algorithm and parameter set.

The first of these variations entailed changes to the VVal-18 parameters: the PBOVP parameter was increased from 0 fsw to 10 fsw to reduce calculated air decompression times, and all compartmental SDR values were decreased from 1.0 to 0.67 to keep off-gassing rates at 0.7 ata PO_2 unchanged from those with the original VVal-18 parameters. Resultant reductions in air decompression times were considered favorable, but because schedules computed for 1.3 ata constant PO_2 -in- N_2 diving were considered too short, no schedules computed with these parameters were man-tested. Subsequent parametric and algorithmic modifications were made in a series of developmental steps, supported by results of 837 man-dives on 38 different profiles, to accommodate depth-dependent variations in the contributions of oxygen to compartmental gas contents during air breathing.

Two new algorithmic classes and associated parameter sets emerged from this work: the EL-DCM-I, in which depth-dependent variations in O_2 contributions to total compartmental gas contents were accommodated in different MPTT tables tailored to the breathing gas, and the EL-DCM-II, in which O_2 contributions to total compartmental gas contents were computed within the algorithm *per se* and a common MPTT table was applicable to diving with air, 0.7 ata constant PO_2 in N_2 , or 1.3 ata constant PO_2 in N_2 . Despite this development effort, and because the original EL-DCM with the VVal-18 parameters was already used to support U. S. Navy 0.7 ata constant PO_2 -in- N_2 decompression tables, the MK 16 MOD 1 N_2 - O_2 decompression tables, and the NDC, Thalmann advocated application of the EL-DCM with VVal18-1, a version of VVal-18 with MPTTs modified to

bring no-stop limits for shallow air dives into closer agreement with USN56 limits, to integrate procedures for all modes of air and N_2 - O_2 diving.⁴ Only air-only diving schedules with a 10 fsw last in-water decompression stop were considered: SurDO2 schedules or schedules with in-water oxygen decompression were not considered. Survanshi et al.³³ critically reviewed this recommendation.

Adoption of this recommendation requires acceptance of — or other parametric compensations for — known theoretical deficiencies in the EL-DCM. Ascents in this algorithm are governed by compartmental gas contents that are determined with a constant venous PO_2 . With neglect of depth-dependent variations of O_2 contributions to total compartmental gas contents during air breathing, the transition from faster exponential to slower linear kinetics (the EL transition) occurs earlier during air decompression than is appropriate, which causes the EL-DCM to prescribe inappropriately long total decompression times for a given air dive. This problem arises because the EL transition occurs when modeled compartmental partial pressure of nitrogen (PN_2) exceeds the prevailing saturation venous PN_2 (ambient pressure minus venous PO_2 , PCO_2 , and PH_2O), which is computed with a constant venous PO_2 in EL-DCM instead of with a properly varying venous PO_2 as in EL-DCM-II. (Varying venous PO_2 is incorporated into the MPTT values in EL-DCM-I.) Neglect of the decrease in venous PO_2 with decreasing ambient pressure during air breathing results in an excessively rapid decrease in saturation venous PN_2 , and the EL transition is improperly hastened.

This problem is roughly compensated for by adding a nonzero PBOVP to the prevailing saturation venous PN_2 , though the systematic problem of an improperly constant venous PO_2 remains. For example, the VVal-22 parameter set with PBOVP = 10 fsw and SDR = 0.72 for all compartments was engineered for the EL-DCM-I algorithm to be equivalent to the original EL-DCM with VVal-18 on 0.7 ata constant PO_2 -in- N_2 dives, and, with an appropriately modified MPTT table, to accommodate depth-dependent changes in the contributions of O_2 to compartmental gas contents during air dives.²⁶ As noted above, the corresponding VVal-18 analog has PBOVP = 10 fsw and SDR = 0.67 with unmodified MPTT values. The EL-DCM-I algorithm with VVal-22 prescribes shorter air schedules than EL-DCM with this VVal-18 analog. For instance, EL-DCM-I with VVal-22 prescribes a schedule with a total stop time of 281 min for a 150 fsw/60 minute air dive. The corresponding schedule prescribed by EL-DCM with the VVal-18 analog has a total stop time of 298 min. Longer decompressions than prescribed by EL-DCM-I/VVal-22 would seem warranted: man-testing of the EL-DCM-I/VVal-22 150/60 schedule yielded five DCS in 20 man dives, while testing of EL-DCM-I/VVal-22 60/180 and 100/60 dives yielded one DCS in 20 man-dives and no DCS in 30 man-dives, respectively. In comparison, retention of SDR=1 for all compartments in VVal-18M causes the EL-DCM with VVal-18M to prescribe much shorter Air schedules: the 150 fsw/60 minute Air schedule prescribed by EL-DCM with VVal-18M has a total stop time of 200 min with the 10 fsw last stop allowed in the other schedules (TST = 312 min with a 20 fsw last stop).

A general finding of earlier man testing²⁶ was that substantial increases in air decompression times over those for USN56 Standard Air are warranted but that even very long air decompression times cannot render the DCS risks of deep, long air dives

acceptable. This conclusion is supported by the present risk analysis. Although generally safer than USN56, both VVal-18 and VVal-18M Air Tables will have problem regions. Significantly, DCS risk analyses indicate that even the large decompression time increases prescribed by VVal-18 purchase only insignificant reductions of DCS risk for dives that incur DCS risk less than about 5% with the USN56 Standard Air schedules. It can consequently be argued that the even smaller decompression time increases prescribed by VVal-18M in this region are not warranted.

The neglect of inspired gas-dependent variations in O_2 contributions to total compartmental gas contents also causes the EL-DCM to overestimate the beneficial effects of breathing high PO_2 gas mixes during decompression. Because the EL transition occurs independent of the higher venous PO_2 values that are associated with breathing such mixes, the transition occurs later during O_2 breathing than is appropriate for the correspondingly decreased saturation venous PN_2 values. Resultant decompression schedules are consequently too short. Air/In-water O_2 decompressions can be computed with rough compensation for this problem by adopting fractional SDR values or using artificially low values for the inspired oxygen fraction. The latter approach is adopted for computing Air/ O_2 schedules with VVal-18, and both approaches are adopted for such computations with VVal-18M. Both VVal-18 and VVal-18M Air/ O_2 or SurDO2 procedures are effective in limiting DCS risk to acceptable levels.

Accepting either the VVal-18 or VVal-18M Air diving procedures involves some compromise. Both variants allow use of a common residual nitrogen timetable for all nitrogen-based diving procedures, which greatly simplifies repetitive diving across different diving modes. Other positive features of these tables are not affected by the choice of algorithm and parameters: the combined air-only, Air/ O_2 and SurDO2 table format developed by Flynn condenses three tables into one, providing enhanced ease of use, while support of in-water O_2 decompression is a significant advance for Navy air diving operations. However, VVal-18 and VVal-18M air-only decompression schedules are much longer than USN56 Standard Air schedules without appreciable added safety in the regions where they will be most often used. Also, it must be recognized that such air-only schedules have higher DCS risks than the associated Air/ O_2 schedules and that these risks increase to unacceptable levels as the air-only schedules increase in length.

Similarly, choosing between the VVal-18 and VVal-18M Air diving procedures also involves compromise. The VVal-18 Air procedures are based on a consistent application of the Thalmann Algorithm across all modes of nitrogen-based diving. This consistency comes at the expense of longer, albeit with somewhat lower DCS risk, Air-only decompression schedules. Importantly, however, this consistency extends to computer support of decompression by the TDM, NDC, and Navy Dive Planner, in which a single algorithm can compute decompression for all nitrogen-based diving modes. The VVal-18M procedures provide Air-only decompression schedules intermediate in duration between the USN56 and VVal-18 but sacrifice algorithmic consistency.

7. Conclusions and Recommendations

Updated and complete VVal-18 and VVal-18M Thalmann Algorithm Air Decompression Tables and Procedures are presented with full descriptions of the parameters and conventions used in their calculation. Probabilistic models of DCS incidence and time of onset were used to assess the risks of decompression sickness (P_{DCS}) of single dive schedules in these tables. Estimated risks and total decompression times of the schedules were compared to those of current U.S. Navy Standard Air and Air SurDO2 decompression procedures. The following conclusions and recommendations are made on the basis of these analyses:

7.1. Schedules for air with in-water O_2 decompression (Air/ O_2) and air with surface decompression using oxygen (SurDO2) are recommended for use as prescribed by either the VVal-18 or VVal-18M Thalmann Algorithm.

7.1.1 Air/ O_2 and SurDO2 schedules in both VVal-18 and VVal-18M tables have total decompression times similar to those of their depth/time counterparts in the U.S. Navy Standard Air Decompression Table (USN56).

7.1.2 Estimated DCS risks associated with the VVal-18 and VVal-18M Air/ O_2 and SurDO2 schedules are significantly lower than those of their air-only counterparts in USN56.

7.1.3 Estimated DCS risks of the Air/ O_2 and SurDO2 schedules increase with increasing bottom time in each dive depth group, but the risks of most schedules remain within acceptable limits (less than approximately 5%) up to the full extent of tabulated bottom times.

7.2. Schedules for Air-only decompression prescribed by either the VVal-18 or VVal-18M Thalmann Algorithm are recommended with less enthusiasm. Within the range of commonly accepted DCS risk, these schedules prescribe large decompression time increases that afford only relatively small DCS risk decreases from those incurred by current procedures.

7.2.1. Estimated DCS risks of Air-only schedules prescribed by the Thalmann Algorithm with either VVal-18 or VVal-18M increase with increasing bottom time in each dive depth group. Unacceptably high risks are attained with sufficiently long bottom times in most groups. The maximum risk attained in tabulated VVal-18 Air schedules is about 9%, substantially lower than highest risks incurred by USN56 schedules. The maximum risk attained in tabulated VVal-18M Air schedules is about 11%.

7.2.2. Air-only decompression schedules in the VVal-18 table are considerably longer than their counterparts in USN56, but the increased decompression times afford substantially decreased DCS risks only for long and deep dives.

7.2.3. Air-only decompression schedules in the VVal-18M table are of length intermediate between those of their counterparts in the VVal-18 Table and USN56. In the operationally important region of acceptable DCS risk less than about 5%, the DCS risks of VVal-18M schedules are practically equal to those of their USN56 counterparts. VVal-18M Air schedules have substantially reduced risks only for depth/bottom time combinations for which schedules in USN56 have estimated risks in excess of about 5%.

7.2.4. Air-only decompression schedules with a 10 fsw last allowed decompression stop are substantially shorter than schedules with a 20 fsw last allowed stop but incur no penalty in DCS risk. Such schedules are recommended for use when conditions allow.

7.3. Air-only, Air/O₂, and SurDO₂ schedules are integrated into a single Main Decompression Table in each VVal-18 or VVal-18M table set. This integration affords utility considerably enhanced over that of current Air and N₂-O₂ tables, but must be adopted with the realization that parallel Air and Air/O₂ schedules for each depth/bottom time combination do not have the same DCS risks. When logistically supportable, air decompression dives should be conducted with the prescribed Air/O₂ or SurDO₂ procedures.

7.4. Exceptional exposure or limit lines should be added to each dive depth group in the Main Decompression Tables to indicate when Air-only decompression schedules first incur unacceptable DCS risk as bottom time increases. Such boundaries are not required for the Air/O₂ or SurDO₂ schedules.

7.5. Either VVal-18 or VVal-18M Air Tables will integrate with existing VVal-18 N₂-O₂ Tables, allowing use of a common SICT to simplify table-based repetitive diving. A mix of VVal-18 and VVal-18M procedures cannot be supported by already-developed computer-based decompression planning tools.

7.6. The adequacy of algorithmic prescriptions for decompressions from repetitive dives should be examined, particularly before the Thalmann Algorithm with VVal-18M parameters is promulgated for use in real-time applications where safety margins afforded by use of decompression tables with depth and bottom time rounding conventions are lost.

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Appendix A

Glossary of Thalmann Algorithm Parameters

<u>Parameter</u>	<u>Description</u>
AB_DEAD	Boolean that when TRUE causes suspension of gas exchange during air breathing breaks in oxygen-air cycling in air with in-water oxygen decompression
AIRTIME	air breathing time (min) in an oxygen-air cycle during oxygen breathing in air with in-water oxygen decompression
AMBAO2	ambient-arterial oxygen partial pressure gradient (fsw)
CNDSDR_FO2	when processing constant oxygen fraction breathing gases, CNDSDR_FO2 is the fraction of oxygen in the inspired gas above which SDR values other than 1.0 in the model parameter input file are used. With inspired oxygen fractions less than the CNDSDR_FO2 value, all compartmental SDR values are kept at 1.0, regardless of their settings in the model parameter input file. When processing constant oxygen partial pressure breathing gases, compartmental SDR values specified in the model parameter input file are always used.
GSWLAT	air-to-oxygen switch latency time (min) at start of oxygen breathing in air with in-water oxygen decompression
HLFTM(i)	gas exchange halftime (min) for the i^{th} modeled compartment
LST_DOMode	last stop dropout mode • LST_DOMode = 0: commands allowance for instantaneous ascent to surface from a depth equal to the decompression stop depth increment in last decompression stop time calculations • LST_DOMode = 1: commands allowance for instantaneous ascent to surface from the last decompression stop in last decompression stop time calculations. If the last stop is at 20 fsw with 10 fsw increments between stops, resultant last stop times are longer than those obtained with LST_DOMode = 0 by amounts that increase with decreasing ascent rate • LST_DOMode = 2: commands accounting for gas exchange during the entire ascent from the last stop to surface in last decompression stop time calculations. Resultant last stop times are shorter than those obtained

	with LST_DOMode = 0 or LST_DOMode = 1 by amounts that increase with decreasing ascent rate
MPTT(i,j)	maximum permissible tissue tension for compartment i at the j th stop depth
O2CEIL	maximum depth (fsw) at which oxygen breathing can start in air with in-water oxygen breathing decompression
O2TIME	oxygen breathing time (min) in an oxygen-air cycle during in-water oxygen decompression
O2TIME_FO2	fraction of oxygen in inspired gas during oxygen breathing in air with in-water oxygen decompression
PACO2	arterial carbon dioxide partial pressure (fsw)
PBOVP	threshold compartmental inert gas tension overpressure with respect to saturation at the prevailing ambient hydrostatic pressure (fsw) for transition from exponential to linear gas exchange kinetics
PH2O	water vapor pressure (fsw)
PVCO2	venous carbon dioxide partial pressure (fsw)
PVO2	venous oxygen partial pressure (fsw)
SDR(i)	saturation/desaturation halftimes ratio for the i th modeled compartment
SPBOVP	PBOVP parameter value at surface

APPENDIX B

Thalmann Algorithm VVal-18 Parameters

Table B.1.
Table of Maximum Permissible Tissue Tensions (VVal-18 Nitrogen)^a

STOP	TISSUE HALF-TIMES								
DEPTH	5 MIN	10 MIN	20 MIN	40 MIN	80 MIN	120 MIN	160 MIN	200 MIN	240 MIN
FSW	1.00 SDR	1.00 SDR	1.00 SDR	1.00 SDR	1.00 SDR	1.00 SDR	1.00 SDR	1.00 SDR	1.00 SDR
10	120	98	78	56	48.5	45.5	44.5	44	43.5
20	130	108	88	66	58.5	55.5	54.5	54	53.5
30	140	118	98	76	68.5	65.5	64.5	64	63.5
40	150	128	108	86	78.5	75.5	74.5	74	73.5
50	160	138	118	96	88.5	85.5	84.5	84	83.5
60	170	148	128	106	98.5	95.5	94.5	94	93.5
70	180	158	138	116	108.5	105.5	104.5	104	103.5
80	190	168	148	126	118.5	115.5	114.5	114	113.5
90	200	178	158	136	128.5	125.5	124.5	124	123.5
100	210	188	168	146	138.5	135.5	134.5	134	133.5
110	220	198	178	156	148.5	145.5	144.5	144	143.5
120	230	208	188	166	158.5	155.5	154.5	154	153.5
130	240	218	198	176	168.5	165.5	164.5	164	163.5
140	250	228	208	186	178.5	175.5	174.5	174	173.5
150	260	238	218	196	188.5	185.5	184.5	184	183.5
160	270	248	228	206	198.5	195.5	194.5	194	193.5
170	280	258	238	216	208.5	205.5	204.5	204	203.5
180	290	268	248	226	218.5	215.5	214.5	214	213.5
190	300	278	258	236	228.5	225.5	224.5	224	223.5
200	310	288	268	246	238.5	235.5	234.5	234	233.5
210	320	298	278	256	248.5	245.5	244.5	244	243.5
220	330	308	288	266	258.5	255.5	254.5	254	253.5
230	340	318	298	276	268.5	265.5	264.5	264	263.5
240	350	328	308	286	278.5	275.5	274.5	274	273.5
250	360	338	318	296	288.5	285.5	284.5	284	283.5
260	370	348	328	306	298.5	295.5	294.5	294	293.5
270	380	358	338	316	308.5	305.5	304.5	304	303.5
280	390	368	348	326	318.5	315.5	314.5	314	313.5
290	400	378	358	336	328.5	325.5	324.5	324	323.5
300	410	388	368	346	338.5	335.5	334.5	334	333.5

^a Each row of MPTT values is shifted to the next deeper stop where the values are used in the Thalmann Algorithm to assess the time at that stop required before ascent to the stop at which the values actually apply. Thus, tabulated MPTT values for the 10 fsw stop depth are the “surfacing values” that express the maximum permissible tissue

tensions at surface. With depths and gas tensions in units of fsw, the surfacing MPTT value for each compartment, i , is linearly projected to the j^{th} decompression stop depth, $D(j)$, in accord with a convention used by Workman:¹

$$\text{MPTT}(i, j) = \text{MPTT}(i, 0) + a(i)D(j), \quad (1)$$

where $j = 0$ at surface, $\text{MPTT}(i, 0)$ is the surfacing MPTT, the slope parameter $a(i)$ is 1, and $D(j) = j \cdot \text{SDI}$, where SDI is the stop depth increment. A 20 fsw last allowed decompression stop is implemented by replacing the tabulated MPTT values for the 20 fsw stop depth with those for the 10 fsw stop depth.¹⁵

Table B.2.
Table of VVal-18 Global Parameters

PARAMETER	VALUE	UNITS
PACO2	1.50	FSW
PH2O	0.00	FSW
PVCO2	2.30	FSW
PVO2	2.00	FSW
AMBAO2	0.00	FSW
PBOVP	0.00	FSW
sPBOVP	0.00	FSW
O2CEIL	30.0	FSW
O2TIME	30.0	MIN
AIRTIME	5.0	MIN
CNDSDR_FO2	0.00	*
O2TIME_FO2	0.70	*
GSWLAT	3.00	MIN
AB_DEAD	TRUE	

*dimensionless

APPENDIX C

Thalmann Algorithm VVal-18M Parameters (Values modified from VVal-18 shaded)

Table C.1.
Table of Maximum Permissible Tissue Tensions (VVal-18M Nitrogen)^b

STOP	TISSUE HALF-TIMES								
DEPTH	5 MIN	10 MIN	20 MIN	40 MIN	80 MIN	120 MIN	160 MIN	200 MIN	240 MIN
FSW	0.70 SDR	0.70 SDR	0.70 SDR	0.70 SDR	0.70 SDR	0.70 SDR	0.70 SDR	0.70 SDR	0.70 SDR
10	120	98	78	56	48.5	45.5	44.5	44	43.5
20	130	108	88	66	58.5	55.5	54.5	54	53.5
30	140	118	98	76	68.5	65.5	64.5	64	63.5
40	150	128	108	86	78.5	75.5	74.5	74	73.5
50	160	138	118	96	88.5	85.5	84.5	84	83.5
60	170	148	128	106	98.5	95.5	94.5	94	93.5
70	180	158	138	116	108.5	105.5	104.5	104	103.5
80	190	168	148	126	118.5	115.5	114.5	114	113.5
90	200	178	158	136	128.5	125.5	124.5	124	123.5
100	210	188	168	146	138.5	135.5	134.5	134	133.5
110	220	198	178	156	148.5	145.5	144.5	144	143.5
120	230	208	188	166	158.5	155.5	154.5	154	153.5
130	240	218	198	176	168.5	165.5	164.5	164	163.5
140	250	228	208	186	178.5	175.5	174.5	174	173.5
150	260	238	218	196	188.5	185.5	184.5	184	183.5
160	270	248	228	206	198.5	195.5	194.5	194	193.5
170	280	258	238	216	208.5	205.5	204.5	204	203.5
180	290	268	248	226	218.5	215.5	214.5	214	213.5
190	300	278	258	236	228.5	225.5	224.5	224	223.5
200	310	288	268	246	238.5	235.5	234.5	234	233.5
210	320	298	278	256	248.5	245.5	244.5	244	243.5
220	330	308	288	266	258.5	255.5	254.5	254	253.5
230	340	318	298	276	268.5	265.5	264.5	264	263.5
240	350	328	308	286	278.5	275.5	274.5	274	273.5
250	360	338	318	296	288.5	285.5	284.5	284	283.5
260	370	348	328	306	298.5	295.5	294.5	294	293.5
270	380	358	338	316	308.5	305.5	304.5	304	303.5
280	390	368	348	326	318.5	315.5	314.5	314	313.5
290	400	378	358	336	328.5	325.5	324.5	324	323.5
300	410	388	368	346	338.5	335.5	334.5	334	333.5

^b see footnote a to Table B.1., Appendix B.

Table C.2.
Table of VVal-18M Global Parameters

PARAMETER	VALUE	UNITS
PACO2	1.50	FSW
PH2O	0.00	FSW
PVCO2	2.30	FSW
PVO2	2.00	FSW
AMBAO2	0.00	FSW
PBOVP	10.00	FSW
SPBOVP	0.00	FSW
O2CEIL	30.0	FSW
O2TIME	30.0	MIN
AIRTIME	5.0	MIN
CNDSDR_FO2	0.80	*
O2TIME_FO2	0.80	*
GSWLAT	3.00	MIN
AB_DEAD	TRUE	

*dimensionless

APPENDIX D

VVal-18/VVal-18M Air Decompression Procedures

The same procedures govern use of both VVal-18 and VVal-18M table sets.

D.1. Tables

Each table set consists of three component tables:

- Air Decompression Main Table;
- No-Decompression Limits and Repetitive Group Designators Table for No-Decompression Air Dives, and;
- Surface Interval Credit and Residual Nitrogen Time Table for Repetitive Air Dives.

Air Decompression Main Table

The Main Table combines three modes of decompression into one table. These modes are: (1) in-water decompression on air, (2) in-water decompression on air and oxygen, and (3) surface decompression using oxygen (SurDO₂).

In-Water Decompression on Air

The top line labeled "Air" under each depth/time entry is the decompression schedule for air dives with in-water air decompression. The rules for such dives are the same as those given in Chapter 9 of the Diving Manual for air diving, including descent rates, ascent rates, timing of stops, and management of delays during ascent. Note that stop time begins upon arrival at the stop: Time to ascend to the stop is not included in the stop time as it is in surface-supplied mixed gas diving. Note also that the last water stop on these schedules is always at 20 fsw rather than 10 fsw. Ascent rate from 20 fsw to the surface is 30 fsw/min.

In-Water Decompression on Air and Oxygen

The bottom line labeled "Air/O₂" under each depth/time entry is the decompression schedule for air dives with in-water air and oxygen decompression. The diver follows the air schedule until arrival at 30 fsw (or 20 fsw if there is no 30 fsw stop) during ascent, and then completes the decompression breathing 100% oxygen. Oxygen stop times at 20 and 30 fsw are shown in bold print. The shift from air to 100% oxygen at the first stop is completed by ventilating the diver with 100% oxygen following the rules for Surface-Supplied Mixed Gas Diving given in Chapter 14, paragraph 14-3.8, of the

Diving Manual. Up to 3 minutes may be taken for this procedure. The 3-minute maximum shift-over time is included in the tabulated first stop time and does not have to be accounted for separately.

After each 30-min period on oxygen in the water, the diver is given a 5-min air break using the procedure given in Chapter 14, paragraph 14-3.9, of the Diving Manual. The break does not need to be timed precisely. It is sufficient to simply shift the console to air at the beginning of the break then back to oxygen after the 5-minute period is over. There is no need to ventilate the diver with air to initiate the break or to ventilate him with oxygen to end the break. If the diver is within 5 min of surfacing when an air break is due, the air break may be skipped. Tabulated oxygen stop times in the Main Table do not include air break times. However, air break times are included in the tabulated total ascent times for Air/O₂ decompressions.

Surface Decompression using Oxygen

To decompress the diver using surface decompression on oxygen, follow the in-water air decompression schedule (top line for each depth/time combination in Table E.3, F.3, or F.4. through the end of the 40 fsw water stop. Upon completion of the 40 fsw stop, initiate surface decompression following the rules given in Chapter 14, paragraph 14-3.11, of the Diving Manual. If there is no 40 fsw stop in the tabulated schedule, surface the diver without taking any stops. Start timing the surface interval when the diver leaves 40 fsw.

The rules for surface decompression with oxygen are identical to those with surface-supplied helium-oxygen, including travel rates, depths at which oxygen is breathed, and required air breaks. The Main Table gives the number of chamber oxygen periods required during surface decompression. Each period is 30 min in duration. A half period is 15 min. The first 15 min is always spent at 50 fsw; the remainder of the oxygen time is taken at 40 fsw. If the schedule requires only one-half of an oxygen period, the diver spends 15 min breathing oxygen at 50 fsw in the chamber, then surfaces at 30 fsw/min.

Repetitive Group Designator

The surfacing repetitive group designator shown in the last column of the Main Table is the same regardless of the decompression mode used to reach the surface. Repetitive diving is prohibited after dives for which no repetitive group designator is shown.

Exceptional Exposure

Dives deeper than 190 fsw are considered exceptional exposures.

No-Decompression Limits and Repetitive Group Designators Table for No-Decompression Air Dives

The No-Decompression Limits and No-Decompression Repetitive Group Designators Table for VVal-18 or VVal-18M Air No Decompression Dives gives the no-decompression limits and repetitive group designators for no-decompression dives. The rules for the use of this table are identical to those given in Chapter 9 of the Diving Manual.

Surface Interval Credit and Residual Nitrogen Time Table for Repetitive VVal-18 Air Dives

This table is a composite of two tables, the Surface Interval Credit Table (SICT) and the Residual Nitrogen Time (RNT) Table. The rules for the use of this composite table are identical to those given in Chapter 9 of the Diving Manual. The SICT shows the rate at which the repetitive group designator decreases as the surface interval before a repetitive dive increases. Note that a diver does not require 12 hours to become "clean" as with the USN Standard Air diving procedures. The "clean time" varies from 2 hours and 20 min for a Group A diver to 15 hours and 50 min for a Group Z diver. The RNT Table gives the residual nitrogen times for repetitive dives.

D.2. Emergency Procedures

Safe Way Out during Surface Decompression

The total elapsed time from leaving the 40 fsw water stop to arriving at the 50 fsw chamber stop must not exceed 5 minutes. If the diver cannot reach the 50 fsw chamber stop because of middle ear pressure equalization difficulty, stop descent at 30 fsw, then have the diver breathe oxygen for twice the number of SurD oxygen periods indicated in the Main Table. Upon completion of the oxygen breathing periods, surface the diver at 30 fsw/min.

CNS Oxygen Toxicity Symptoms (Nonconvulsive) at 30 or 20 fsw Water Stop

Most divers will easily tolerate the oxygen exposures prescribed by these Tables. CNS oxygen toxicity symptoms, if they do develop, are most likely to occur near the end of the 20 fsw oxygen water stop with nausea as the most likely symptom.

If the diver develops symptoms of CNS toxicity at the 30 or 20 fsw water stops, take one of the following actions:

1. If a recompression chamber is available on the dive side, initiate surface decompression. Shift the console to air during travel to the surface.

2. If a recompression chamber is not available on the dive side, shift the console to air, ventilate both divers, and complete the decompression in the water on air. Compute the remaining stop time on air at the depth of the incident by multiplying the remaining stop time on oxygen by the ratio of the air to oxygen stop times in the Main Table.

Example: A diver is shifted to air with 10 min of oxygen time remaining at 20 fsw. His decompression schedule calls for either 140 min on air or 34 min on oxygen at 20 fsw. His remaining decompression time on air at 20 fsw is $10 \times (140/34) = 41.2$ min.

If the shift to air occurs at 30 fsw, compute the remaining stop time on air at 30 fsw as described in (2) above, then take the full 20 fsw air stop as prescribed by the Main Table.

Oxygen Convulsion at the 30 or 20 fsw Water Stop

If symptoms progress to an oxygen convulsion despite the above measures, or if a convulsion occurs suddenly without warning, take the following action:

1. Shift both divers to air and follow the guidance given in Chapter 14, paragraph 14-4.8, of the Diving Manual for stabilizing the diver and determining whether he is breathing
2. If the diver is breathing, hold him at depth until he is stable, then surface decompress. If surface decompression is not feasible, continue decompression on air in the water. Compute the remaining air decompression time as outlined above for continuing an in-water decompression on air after a CNS O₂ toxicity symptom during an in-water O₂ stop.
3. If the diver is not breathing, surface the diver at 30 fsw/min while maintaining an open airway and treat the diver for arterial gas embolism.

CNS Oxygen Toxicity in the Chamber

For an oxygen symptom or convulsion in the chamber, follow the guidance given in Chapter 14, paragraph 14-4.11, of the Diving Manual. If another oxygen symptom occurs after resumption of oxygen breathing, complete decompression on chamber air. Follow guidance below for permanent loss of oxygen supply in the chamber to compute the air decompression schedule.

Loss of Oxygen Supply in the Water

For loss of oxygen in the water, shift diver to air. If the problem is quickly remedied, reventilate the diver with oxygen and resume the schedule at the point of interruption. Consider any air-breathing time as dead time.

If the problem cannot be corrected, continue decompression on air in the water or surface decompress. For continued decompression on air in the water, compute the remaining decompression time as outlined above for continuing an in-water decompression on air after a CNS O₂ toxicity symptom during an in-water O₂ stop. For surface decompression, compute the required number of chamber oxygen periods by multiplying the remaining oxygen time by 1.1, dividing the result by 30 min, then rounding up to the next highest half period.

Example: The oxygen supply is lost permanently when the diver has a remaining oxygen time of 5 min at 30 fsw and 33 min at 20 fsw. The total remaining oxygen time is 38 min. The number of 30-min SurDO₂ periods required is $(38 \times 1.1)/30 = 1.39$. This number is rounded up to 1.5.

Loss of Oxygen Supply in the Chamber

For loss of oxygen in the chamber, have the diver breathe chamber air. If the loss is temporary, return the diver to oxygen breathing as soon as possible, then continue the surface decompression after considering any time spent on air as dead time.

If the loss of oxygen in the chamber is permanent, complete decompression in the chamber on air. To compute the remaining chamber time on air, multiply the remaining chamber time on oxygen by the ratio of the water stop times on air and oxygen at 30 and 20 fsw in the Main Table. Allocate 10% of the remaining air time to the 40 fsw stop, 20% to the 30 fsw stop, and 70% to the 20 fsw stop. If the diver is at 50 fsw when the loss occurs, ascend to 40 fsw to begin the stop time. Round the stop times up to the next whole minute. Surface upon completion of the 20 fsw stop.

Example: A SurDO₂ schedule calls for two 30-min oxygen periods in the chamber. The oxygen supply is lost permanently after 28 min on oxygen at 50 and 40 fsw. The remaining oxygen time is $(2 \times 30) - 28 = 32$ min. The original schedule calls for 52 and 140 min stops on air in the water at 30 and 20 fsw. The corresponding oxygen stop times are 16 and 34 min. The ratio of air to oxygen times is $(52+140)/(16+34) = 3.84$. The remaining chamber air time is $32 \times 3.84 = 123$ min. This time is allocated as follows: 13 min at 40 fsw (123×0.1), 25 min at 30 fsw (123×0.2), and 85 min at 20 fsw (123×0.7).

Contamination of Oxygen Supply with Air

It will be difficult to detect mixing of air with the oxygen supply during oxygen decompression. If the operator discovers that the oxygen console is improperly lined up or the diver discovers that the Emergency Gas Supply (EGS) is partially open, take the following action:

1. Align the console properly. Close the EGS.
2. Re-ventilate each diver for 20 seconds with oxygen.
3. Continue decompression as planned. Do not lengthen stop times to compensate for the time spent correcting the problem.

Omitted Decompression

For omitted decompression, follow the guidance given in Table D.1.

Table D.1.
Management of Asymptomatic Omitted Decompression with the
VVal-18/VVal-18M Air Decompression Table.

Deepest Decompression Stop Omitted	Surface Interval	Action	
		Chamber Available	No Chamber Available
None	Any	Observe on surface for 1 hour	
20 or 30 fsw	Less than 1 min	Return to depth of stop. Increase stop time by 1 min. Resume decompression according to original schedule	
	1 to 5 min	Use Surface Decompression Procedure	Return to depth of stop. Multiply 30 and/or 20 fsw air or O ₂ stop times by 1.5. Minimum 15 min on O ₂ .
	Greater than 5 min	Treatment Table 6	
Deeper than 30 fsw	Any	Treatment Table 6	Descend to depth of first stop. Follow the schedule to 30 fsw. Switch to O ₂ at 30 fsw if available. Multiply 30 and 20 fsw air or O ₂ stops by 1.5

D.3. Special Notes

Repetitive Diving Residual Nitrogen Time Exception Rule

An exception to Residual Nitrogen Time Table occurs when less decompression is prescribed for a single dive to the deepest depth of all dives, including that of the planned repetitive dive, for a bottom time equal to the sum of the actual bottom times of all previous dives plus the bottom time of the repetitive dive. In such cases, the shorter schedule for the single dive with summed bottom times should be used for the repetitive dive.

Example A: A diver makes an air dive to 60 fsw for 40 minutes and plans to make a repetitive air dive to 56 fsw for 20 minutes after a 30-minute surface interval. Determine the schedule for the repetitive dive.

Solution: The diver surfaces from the first dive as an H diver and remains an H diver at the end of the surface interval. With an RNT of 45 minutes, the equivalent single dive time of the repetitive dive is $20 + 45 = 65$ minutes. The 60/65 schedule is a decompression dive with a 2-min stop at 20 fsw. The alternative single dive is a 60/60 ($40 + 20 = 60$ minutes) no-decompression dive. The schedule for the repetitive dive is consequently the shorter 60/60 schedule prescribed according to the exception rule.

Example B: A diver makes a dive to 100 fsw for 25 minutes and plans to make a repetitive dive to 60 fsw for 20 minutes after a 30-minute surface interval. Determine the schedule for the repetitive dive.

Solution: The diver surfaces from the first dive as an H diver and remains an H diver at the end of the surface interval. With an RNT of 45 minutes, the equivalent single dive time of the repetitive dive is $20 + 45 = 65$ minutes. The 60/65 schedule with a 2-minute stop at 20 fsw is prescribed by the tables. The alternative single dive is a 100/45 ($25 + 20 = 45$ minutes) dive with a 36-minute stop at 20 fsw. The schedule for the repetitive dive is consequently the 60/65 schedule prescribed by the tables.

Flying after Diving

Since the repetitive groups with VVal-18 and Standard Air are different, Table 9-5 of the Diving Manual cannot be used to determine the safe interval before flying after diving. For the time being, it is recommended that 12 hours elapse on the surface before flying after a no-decompression dive on the VVal-18 tables and that 24 hours elapse following a decompression dive or repetitive dive on the VVal-18 tables.

Air VVal-18

APPENDIX E. VVal-18 Air Decompression Tables

Air VVal-18

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Air VVal-18

Table E.1
No-Decompression Limits and Repetitive Group Designators Table for No-Decompression VVal-18 Air Dives

Depth (fsw)	No-Decompression Limit	Repetitive Group Designator															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	720	57	101	158	245	426	720	*									
15	720	36	60	88	121	163	217	297	449	720	*						
20	720	26	43	61	82	106	133	165	205	256	330	461	720	*			
25	720	20	33	47	62	78	97	117	140	166	198	236	285	354	469	720	*
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	63	7	12	17	22	28	33	39	45	51	57	63					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	33	4	7	11	14	17	21	24	28	31	33						
100	29	4	6	9	12	15	18	21	25	28	29						
110	25	3	6	8	11	14	16	19	22	25							
120	22	3	5	7	10	12	15	17	20	22							
130	19	2	4	6	9	11	13	16	18	19							
140	17	2	4	6	8	10	12	14	16	17							
150	15	2	3	5	7	9	11	13	15								
160	13	2	3	5	6	8	10	12	13								
170	11		2	4	6	8	9	11									
180	10		2	4	5	7	9	10									
190	9			3	5	6	8	9									

*Highest repetitive group that can be achieved at this depth regardless of bottom time

Air VVal-18

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Air VVal-18

Table E.2
Surface Interval Credit and Residual Nitrogen Time (RNT) Table
For Repetitive VVal-18 Air Dives

SURFACE INTERVAL BREATHING AIR (HH:MM)

START	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0:00
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2:20
B		-	-	-	-	-	-	-	-	-	-	-	-	-	-	0:00	1:17
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	1:16	3:36
C		-	-	-	-	-	-	-	-	-	-	-	-	-	0:00	0:56	2:12
		-	-	-	-	-	-	-	-	-	-	-	-	-	0:55	2:11	4:31
D		-	-	-	-	-	-	-	-	-	-	-	-	0:00	0:53	1:48	3:04
		-	-	-	-	-	-	-	-	-	-	-	-	0:52	1:47	3:03	5:23
E		-	-	-	-	-	-	-	-	-	-	0:00	0:53	1:45	2:40	3:56	
		-	-	-	-	-	-	-	-	-	-	0:52	1:44	2:39	3:55	6:15	
F		-	-	-	-	-	-	-	-	-	0:00	0:53	1:45	2:38	3:32	4:49	
		-	-	-	-	-	-	-	-	-	0:52	1:44	2:37	3:31	4:48	7:08	
G		-	-	-	-	-	-	-	-	0:00	0:53	1:45	2:38	3:30	4:24	5:41	
		-	-	-	-	-	-	-	-	0:52	1:44	2:37	3:29	4:23	5:40	8:00	
H		-	-	-	-	-	-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:17	6:33	
		-	-	-	-	-	-	-	0:52	1:44	2:37	3:29	4:21	5:16	6:32	8:52	
I		-	-	-	-	-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:09	7:25	
		-	-	-	-	-	-	0:52	1:44	2:37	3:29	4:21	5:13	6:08	7:24	9:44	
J		-	-	-	-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	7:01	8:17	
		-	-	-	-	-	0:52	1:44	2:37	3:29	4:21	5:13	6:06	7:00	8:16	10:36	
K		-	-	-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:53	9:10	
		-	-	-	-	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:52	9:09	11:29	
L		-	-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:45	10:02	
		-	-	-	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:44	10:01	12:21	
M		-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43	9:38	10:54	
		-	-	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:42	9:37	10:53	13:13	
N		-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43	9:35	10:30	11:46	
		-	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:42	9:34	10:29	11:45	14:05	
O		-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43	9:35	10:28	11:22	12:38
		-	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:42	9:34	10:27	11:21	12:37	14:58
Z		0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43	9:35	10:28	11:20	12:14	13:31
		0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:42	9:34	10:27	11:19	12:13	13:30	15:50
		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
FINAL:	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A	

RNT FOR REPETITIVE DIVE BREATHING AIR (MIN)

	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
DEPTH (FSW)																	
10	-	-	-	-	-	-	-	-	-	-	720	426	245	158	101	57	
15	-	-	-	-	-	-	-	720	449	297	217	163	121	88	60	36	
20	-	-	-	-	720	461	330	256	205	165	133	106	82	61	43	26	
25	-	720	469	354	285	236	198	166	140	117	97	78	62	47	33	20	
30	371	307	260	223	193	167	145	125	107	91	76	62	50	38	27	17	
35	245	215	190	168	148	131	115	100	87	74	63	52	42	32	23	14	
40	188	168	151	135	121	108	95	84	73	63	53	44	36	27	20	12	
45	153	139	126	114	102	92	82	72	63	55	46	39	31	24	17	11	
50	130	119	108	98	89	80	71	63	56	48	41	34	28	21	15	9	
55	113	104	95	87	78	71	63	56	50	43	37	31	25	19	14	8	
60	100	92	85	77	70	63	57	51	45	39	33	28	22	17	12	7	
70	82	75	69	64	58	53	47	42	37	32	28	23	19	14	10	6	
80	69	64	59	54	49	45	40	36	32	28	24	20	16	12	9	5	
90	59	55	51	47	43	39	35	31	28	24	21	17	14	11	7	4	
100	52	49	45	41	38	34	31	28	25	21	18	15	12	9	6	4	
110	47	43	40	37	34	31	28	25	22	19	16	14	11	8	6	3	
120	42	39	36	33	31	28	25	22	20	17	15	12	10	7	5	3	
130	38	35	33	30	28	25	23	20	18	16	13	11	9	6	4	2	
140	35	32	30	28	25	23	21	19	16	14	12	10	8	6	4	2	
150	32	30	28	25	23	21	19	17	15	13	11	9	7	5	3	2	
160	30	28	26	24	22	20	18	16	14	12	10	8	6	5	3	2	
170	28	26	24	22	20	18	16	15	13	11	9	8	6	4	2	2	
180	26	24	22	20	19	17	15	13	12	10	9	7	5	4	2	2	
190	24	22	21	19	17	16	14	13	11	9	8	6	5	3	3	3	

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Table E.3
VVal-18 Air Decompression Main Table

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
30 fsw	371	1:00	AIR AIR/O ₂					0 0	0	1:00 1:00	0	Z
	30	420	AIR AIR/O ₂					22 7	0 0	23:00 8:00	0.5	Z
	30	480	AIR AIR/O ₂					42 10	0 0	43:00 11:00	0.5	
	30	540	AIR AIR/O ₂					71 15	0 0	72:00 16:00	0.5	
	30	600	AIR AIR/O ₂					92 18	0 0	93:00 19:00	0.5	
	30	660	AIR AIR/O ₂					120 21	0 0	121:00 22:00	1	
	30	720	AIR AIR/O ₂					158 25	0 0	159:00 26:00	1	
35 fsw	232	1:10	AIR AIR/O ₂					0 0	0	1:10 1:10	0	Z
	35	240	AIR AIR/O ₂					4 4	0 0	5:10 5:10	0.5	Z
	35	270	AIR AIR/O ₂					28 8	0 0	29:10 9:10	0.5	Z
	35	300	AIR AIR/O ₂					53 13	0 0	54:10 14:10	0.5	Z
	35	330	AIR AIR/O ₂					71 17	0 0	72:10 18:10	0.5	Z
	35	360	AIR AIR/O ₂					88 21	0 0	89:10 22:10	1	
	35	420	AIR AIR/O ₂					134 27	0 0	135:10 28:10	1	
	35	480	AIR AIR/O ₂					173 34	0 0	174:10 35:10	1.5	
	35	540	AIR AIR/O ₂					228 40	0 0	229:10 46:10	1.5	
	35	600	AIR AIR/O ₂					277 46	0 0	278:10 52:10	1.5	
	35	660	AIR AIR/O ₂					314 54	0 0	315:10 60:10	2	
	35	720	AIR AIR/O ₂					342 61	0 0	343:10 67:10	2	

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
40 fsw	163	1:20	AIR					0	0	1:20	0	O
			AIR/O ₂					0	0	1:20		
40	170	0:40	AIR					6	0	7:20	0.5	O
			AIR/O ₂					5	0	6:20		
40	180	0:40	AIR					14	0	15:20	0.5	Z
			AIR/O ₂					7	0	8:20		
40	190	0:40	AIR					22	0	23:20	0.5	Z
			AIR/O ₂					9	0	10:20		
40	200	0:40	AIR					29	0	30:20	0.5	Z
			AIR/O ₂					10	0	11:20		
40	210	0:40	AIR					39	0	40:20	0.5	Z
			AIR/O ₂					12	0	13:20		
40	220	0:40	AIR					52	0	53:20	0.5	Z
			AIR/O ₂					13	0	14:20		
40	230	0:40	AIR					64	0	65:20	0.5	Z
			AIR/O ₂					16	0	17:20		
40	240	0:40	AIR					75	0	76:20	0.5	Z
			AIR/O ₂					18	0	19:20		
40	270	0:40	AIR					101	0	102:20	1	Z
			AIR/O ₂					25	0	26:20		
40	300	0:40	AIR					128	0	129:20	1	
			AIR/O ₂					30	0	31:20		
40	330	0:40	AIR					160	0	161:20	1.5	
			AIR/O ₂					34	0	35:20		
40	360	0:40	AIR					185	0	186:20	1.5	
			AIR/O ₂					39	0	45:20		
40	420	0:40	AIR					248	0	249:20	2	
			AIR/O ₂					49	0	55:20		
40	480	0:40	AIR					321	0	322:20	2	
			AIR/O ₂					58	0	64:20		
40	540	0:40	AIR					373	0	374:20	2.5	
			AIR/O ₂					69	0	80:20		
45 fsw	125	1:30	AIR					0	0	1:30	0	N
			AIR/O ₂					0	0	1:30		
45	130	0:50	AIR					2	0	3:30	0.5	O
			AIR/O ₂					4	0	5:30		
45	140	0:50	AIR					15	0	16:30	0.5	O
			AIR/O ₂					7	0	8:30		
45	150	0:50	AIR					27	0	28:30	0.5	Z
			AIR/O ₂					10	0	11:30		
45	160	0:50	AIR					38	0	39:30	0.5	Z
			AIR/O ₂					13	0	14:30		
45	170	0:50	AIR					48	0	49:30	0.5	Z
			AIR/O ₂					15	0	16:30		
45	180	0:50	AIR					59	0	60:30	0.5	Z
			AIR/O ₂					17	0	18:30		

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
45	190	0:50	AIR					75	0	76:30	1	Z
			AIR/O ₂					19	0	20:30		
45	200	0:50	AIR					89	0	90:30	1	Z
			AIR/O ₂					22	0	23:30		
45	210	0:50	AIR					102	0	103:30	1	Z
			AIR/O ₂					25	0	26:30		
45	220	0:50	AIR					114	0	115:30	1	Z
			AIR/O ₂					28	0	29:30		
45	230	0:50	AIR					126	0	127:30	1	Z
			AIR/O ₂					30	0	31:30		
45	240	0:50	AIR					137	0	138:30	1	Z
			AIR/O ₂					33	0	34:30		
45	270	0:50	AIR					173	0	174:30	1.5	
			AIR/O ₂					40	0	46:30		
45	300	0:50	AIR					210	0	211:30	1.5	
			AIR/O ₂					46	0	52:30		
45	330	0:50	AIR					243	0	244:30	2	
			AIR/O ₂					53	0	59:30		
45	360	0:50	AIR					288	0	289:30	2	
			AIR/O ₂					60	0	66:30		
50 fsw	92	1:40	AIR					0	0	1:40	0	M
			AIR/O ₂					0	0	1:40		
50	95	1:00	AIR					3	0	4:40	0.5	M
			AIR/O ₂					4	0	5:40		
50	100	1:00	AIR					7	0	8:40	0.5	N
			AIR/O ₂					5	0	6:40		
50	110	1:00	AIR					15	0	16:40	0.5	N
			AIR/O ₂					7	0	8:40		
50	120	1:00	AIR					22	0	23:40	0.5	O
			AIR/O ₂					9	0	10:40		
50	130	1:00	AIR					38	0	39:40	0.5	Z
			AIR/O ₂					13	0	14:40		
50	140	1:00	AIR					53	0	54:40	0.5	Z
			AIR/O ₂					16	0	17:40		
50	150	1:00	AIR					67	0	68:40	1	Z
			AIR/O ₂					20	0	21:40		
50	160	1:00	AIR					79	0	80:40	1	Z
			AIR/O ₂					23	0	24:40		
50	170	1:00	AIR					96	0	97:40	1	Z
			AIR/O ₂					25	0	26:40		
50	180	1:00	AIR					113	0	114:40	1	Z
			AIR/O ₂					28	0	29:40		
50	190	1:00	AIR					130	0	131:40	1	Z
			AIR/O ₂					31	0	32:40		
50	200	1:00	AIR					145	0	146:40	1.5	Z
			AIR/O ₂					35	0	36:40		

Air VVal-18

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
50	210	1:00	AIR					159	0	160:40	1.5	Z
			AIR/O ₂					39	0	45:40		
50	220	1:00	AIR					173	0	174:40	1.5	Z
			AIR/O ₂					42	0	48:40		
50	230	1:00	AIR					186	0	187:40	1.5	Z
			AIR/O ₂					45	0	51:40		
50	240	1:00	AIR					201	0	202:40	1.5	
			AIR/O ₂					48	0	54:40		
50	270	1:00	AIR					248	0	249:40	2	
			AIR/O ₂					56	0	62:40		
50	300	1:00	AIR					289	0	290:40	2.5	
			AIR/O ₂					64	0	70:40		
50	330	1:00	AIR					345	0	346:40	2.5	
			AIR/O ₂					73	0	84:40		
55 fsw	74	1:50	AIR					0	0	1:50	0	L
			AIR/O ₂					0	0	1:50		
55	75	1:10	AIR					1	0	2:50	0.5	L
			AIR/O ₂					4	0	5:50		
55	80	1:10	AIR					8	0	9:50	0.5	M
			AIR/O ₂					5	0	6:50		
55	85	1:10	AIR					14	0	15:50	0.5	M
			AIR/O ₂					7	0	8:50		
55	90	1:10	AIR					20	0	21:50	0.5	N
			AIR/O ₂					8	0	9:50		
55	95	1:10	AIR					25	0	26:50	0.5	N
			AIR/O ₂					9	0	10:50		
55	100	1:10	AIR					30	0	31:50	0.5	O
			AIR/O ₂					11	0	12:50		
55	110	1:10	AIR					39	0	40:50	0.5	O
			AIR/O ₂					13	0	14:50		
55	120	1:10	AIR					58	0	59:50	0.5	Z
			AIR/O ₂					17	0	18:50		
55	130	1:10	AIR					75	0	76:50	1	Z
			AIR/O ₂					22	0	23:50		
55	140	1:10	AIR					91	0	92:50	1	Z
			AIR/O ₂					26	0	27:50		
55	150	1:10	AIR					106	0	107:50	1	Z
			AIR/O ₂					29	0	30:50		
55	160	1:10	AIR					127	0	128:50	1	Z
			AIR/O ₂					32	0	33:50		
55	170	1:10	AIR					147	0	148:50	1.5	Z
			AIR/O ₂					36	0	42:50		
55	180	1:10	AIR					166	0	167:50	1.5	Z
			AIR/O ₂					40	0	46:50		
55	190	1:10	AIR					184	0	185:50	1.5	Z
			AIR/O ₂					45	0	51:50		

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
55	200	1:10	AIR					201	0	202:50	2	Z
			AIR/O ₂					49	0	55:50		
55	210	1:10	AIR					217	0	218:50	2	Z
			AIR/O ₂					53	0	59:50		
55	220	1:10	AIR					233	0	234:50	2	
			AIR/O ₂					56	0	62:50		
55	230	1:10	AIR					253	0	254:50	2	
			AIR/O ₂					60	0	66:50		
55	240	1:10	AIR					272	0	273:50	2	
			AIR/O ₂					63	0	69:50		
55	270	1:10	AIR					323	0	324:50	2.5	
			AIR/O ₂					73	0	84:50		
60 fsw	63	2:00	AIR					0	0	2:00	0	K
			AIR/O ₂					0	0	2:00		
60	65	1:20	AIR					4	0	6:00	0.5	L
			AIR/O ₂					4	0	6:00		
60	70	1:20	AIR					13	0	15:00	0.5	L
			AIR/O ₂					6	0	8:00		
60	75	1:20	AIR					21	0	23:00	0.5	M
			AIR/O ₂					8	0	10:00		
60	80	1:20	AIR					28	0	30:00	0.5	N
			AIR/O ₂					10	0	12:00		
60	85	1:20	AIR					35	0	37:00	0.5	N
			AIR/O ₂					12	0	14:00		
60	90	1:20	AIR					41	0	43:00	0.5	O
			AIR/O ₂					13	0	15:00		
60	95	1:20	AIR					47	0	49:00	0.5	O
			AIR/O ₂					15	0	17:00		
60	100	1:20	AIR					52	0	54:00	0.5	O
			AIR/O ₂					16	0	18:00		
60	110	1:20	AIR					72	0	74:00	1	Z
			AIR/O ₂					21	0	23:00		
60	120	1:20	AIR					93	0	95:00	1	Z
			AIR/O ₂					26	0	28:00		
60	130	1:20	AIR					112	0	114:00	1	Z
			AIR/O ₂					31	0	33:00		
60	140	1:20	AIR					130	0	132:00	1.5	Z
			AIR/O ₂					35	0	37:00		
60	150	1:20	AIR					154	0	156:00	1.5	Z
			AIR/O ₂					39	0	46:00		
60	160	1:20	AIR					177	0	179:00	1.5	Z
			AIR/O ₂					43	0	50:00		
60	170	1:20	AIR					199	0	201:00	1.5	Z
			AIR/O ₂					48	0	55:00		
60	180	1:20	AIR					219	0	221:00	2	Z
			AIR/O ₂					53	0	60:00		

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
60	190	1:20	AIR					239	0	241:00	2	Z
			AIR/O ₂					58	0	65:00		
60	200	1:20	AIR					257	0	259:00	2	Z
			AIR/O ₂					62	0	69:00		
60	210	1:20	AIR					278	0	280:00	2.5	
			AIR/O ₂					67	0	79:00		
60	220	1:20	AIR					300	0	302:00	2.5	
			AIR/O ₂					71	0	83:00		
60	230	1:20	AIR					322	0	324:00	2.5	
			AIR/O ₂					74	0	86:00		
60	240	1:20	AIR					342	0	344:00	2.5	
			AIR/O ₂					78	0	90:00		
70 fsw	48	2:20	AIR					0	0	2:20	0	K
			AIR/O ₂					0	0	2:20		
70	50	1:40	AIR					4	0	6:20	0.5	K
			AIR/O ₂					4	0	6:20		
70	55	1:40	AIR					17	0	19:20	0.5	L
			AIR/O ₂					8	0	10:20		
70	60	1:40	AIR					29	0	31:20	0.5	M
			AIR/O ₂					11	0	13:20		
70	65	1:40	AIR					40	0	42:20	0.5	M
			AIR/O ₂					13	0	15:20		
70	70	1:40	AIR					51	0	53:20	0.5	N
			AIR/O ₂					16	0	18:20		
70	75	1:40	AIR					60	0	62:20	0.5	N
			AIR/O ₂					18	0	20:20		
70	80	1:40	AIR					69	0	71:20	1	O
			AIR/O ₂					20	0	22:20		
70	85	1:40	AIR					76	0	78:20	1	O
			AIR/O ₂					22	0	24:20		
70	90	1:40	AIR					84	0	86:20	1	Z
			AIR/O ₂					24	0	26:20		
70	95	1:40	AIR					98	0	100:20	1	Z
			AIR/O ₂					27	0	29:20		
70	100	1:40	AIR					112	0	114:20	1	Z
			AIR/O ₂					31	0	33:20		
70	110	1:40	AIR					139	0	141:20	1.5	Z
			AIR/O ₂					37	0	44:20		
70	120	1:40	AIR					163	0	165:20	1.5	Z
			AIR/O ₂					43	0	50:20		
70	130	1:40	AIR					190	0	192:20	1.5	Z
			AIR/O ₂					48	0	55:20		
70	140	1:40	AIR					220	0	222:20	2	Z
			AIR/O ₂					53	0	60:20		
70	150	1:40	AIR					248	0	250:20	2	Z
			AIR/O ₂					60	0	67:20		

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
70	160	1:20	AIR				2	273	0	277:20	2.5	Z
			AIR/O ₂				4	62	0	78:20		
70	170	1:20	AIR				5	295	0	302:20	2.5	Z
			AIR/O ₂				5	67	0	84:20		
70	180	1:20	AIR				7	318	0	327:20	2.5	
			AIR/O ₂				5	73	0	90:20		
70	190	1:20	AIR				9	345	0	356:20	3	
			AIR/O ₂				6	78	0	96:20		
70	200	1:20	AIR				17	365	0	384:20	3	
			AIR/O ₂				8	80	0	100:20		
80 fsw	39	2:40	AIR					0	0	2:40	0	J
			AIR/O ₂					0	0	2:40		
80	40	2:00	AIR					2	0	4:40	0.5	J
			AIR/O ₂					4	0	6:40		
80	45	2:00	AIR					19	0	21:40	0.5	L
			AIR/O ₂					8	0	10:40		
80	50	2:00	AIR					36	0	38:40	0.5	L
			AIR/O ₂					12	0	14:40		
80	55	2:00	AIR					51	0	53:40	0.5	M
			AIR/O ₂					16	0	18:40		
80	60	2:00	AIR					64	0	66:40	1	N
			AIR/O ₂					19	0	21:40		
80	65	2:00	AIR					77	0	79:40	1	N
			AIR/O ₂					22	0	24:40		
80	70	2:00	AIR					89	0	91:40	1	O
			AIR/O ₂					25	0	27:40		
80	75	2:00	AIR					99	0	101:40	1	O
			AIR/O ₂					27	0	29:40		
80	80	2:00	AIR					109	0	111:40	1	Z
			AIR/O ₂					30	0	32:40		
80	85	2:00	AIR					125	0	127:40	1.5	Z
			AIR/O ₂					34	0	36:40		
80	90	2:00	AIR					143	0	145:40	1.5	Z
			AIR/O ₂					38	0	45:40		
80	95	2:00	AIR					159	0	161:40	1.5	Z
			AIR/O ₂					42	0	49:40		
80	100	1:40	AIR				2	173	0	177:40	1.5	Z
			AIR/O ₂				4	42	0	53:40		
80	110	1:40	AIR				12	192	0	206:40	2	Z
			AIR/O ₂				6	47	0	60:40		
80	120	1:40	AIR				20	222	0	244:40	2	Z
			AIR/O ₂				8	51	0	66:40		
80	130	1:40	AIR				27	247	0	276:40	2.5	Z
			AIR/O ₂				10	56	0	78:40		
80	140	1:40	AIR				33	272	0	307:40	2.5	
			AIR/O ₂				12	61	0	85:40		

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
80	150	1:40	AIR				38	303	0	343:40	3	
			AIR/O ₂				13	68	0	93:40		
80	160	1:40	AIR				42	333	0	377:40	3	
			AIR/O ₂				14	74	0	100:40		
90 fsw	33	3:00	AIR					0	0	3:00	0	J
			AIR/O ₂					0	0	3:00		
90	35	2:20	AIR					7	0	10:00	0.5	J
			AIR/O ₂					5	0	8:00		
90	40	2:20	AIR					29	0	32:00	0.5	L
			AIR/O ₂					10	0	13:00		
90	45	2:20	AIR					49	0	52:00	0.5	M
			AIR/O ₂					15	0	18:00		
90	50	2:20	AIR					67	0	70:00	1	N
			AIR/O ₂					20	0	23:00		
90	55	2:20	AIR					84	0	87:00	1	N
			AIR/O ₂					24	0	27:00		
90	60	2:20	AIR					99	0	102:00	1	O
			AIR/O ₂					27	0	30:00		
90	65	2:20	AIR					113	0	116:00	1	O
			AIR/O ₂					31	0	34:00		
90	70	2:20	AIR					126	0	129:00	1.5	O
			AIR/O ₂					34	0	37:00		
90	75	2:20	AIR					140	0	143:00	1.5	Z
			AIR/O ₂					37	0	45:00		
90	80	2:00	AIR				9	150	0	162:00	1.5	Z
			AIR/O ₂				6	36	0	50:00		
90	85	2:00	AIR				17	161	0	181:00	1.5	Z
			AIR/O ₂				8	38	0	54:00		
90	90	2:00	AIR				25	171	0	199:00	2	Z
			AIR/O ₂				10	41	0	59:00		
90	95	2:00	AIR				31	186	0	220:00	2	Z
			AIR/O ₂				11	44	0	63:00		
90	100	2:00	AIR				38	201	0	242:00	2	Z
			AIR/O ₂				13	46	0	67:00		
90	110	2:00	AIR				49	228	0	280:00	2.5	Z
			AIR/O ₂				16	51	0	80:00		
90	120	1:40	AIR			3	54	264	0	324:00	2.5	
			AIR/O ₂			3	17	58	0	91:00		
90	130	1:40	AIR			9	55	303	0	370:00	3	
			AIR/O ₂			9	17	66	0	105:00		

Air VVal-18

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
100 fsw	29	3:20	AIR					0	0	3:20	0	J
			AIR/O ₂					0	0	3:20		
100	30	2:40	AIR					6	0	9:20	0.5	J
			AIR/O ₂					5	0	8:20		
100	35	2:40	AIR					32	0	35:20	0.5	L
			AIR/O ₂					11	0	14:20		
100	40	2:40	AIR					56	0	59:20	0.5	M
			AIR/O ₂					17	0	20:20		
100	45	2:40	AIR					78	0	81:20	1	N
			AIR/O ₂					22	0	25:20		
100	50	2:40	AIR					98	0	101:20	1	N
			AIR/O ₂					27	0	30:20		
100	55	2:40	AIR					117	0	120:20	1	O
			AIR/O ₂					32	0	35:20		
100	60	2:40	AIR					134	0	137:20	1.5	O
			AIR/O ₂					36	0	44:20		
100	65	2:20	AIR				9	139	0	151:20	1.5	Z
			AIR/O ₂				6	33	0	47:20		
100	70	2:20	AIR				21	141	0	165:20	1.5	Z
			AIR/O ₂				9	33	0	50:20		
100	75	2:20	AIR				32	152	0	187:20	1.5	Z
			AIR/O ₂				11	37	0	56:20		
100	80	2:20	AIR				41	168	0	212:20	2	Z
			AIR/O ₂				14	39	0	61:20		
100	85	2:20	AIR				50	185	0	238:20	2	Z
			AIR/O ₂				16	42	0	66:20		
100	90	2:00	AIR			3	55	202	0	263:20	2	Z
			AIR/O ₂			3	17	46	0	74:20		
100	95	2:00	AIR			9	55	221	0	288:20	2.5	
			AIR/O ₂			9	17	49	0	88:20		
100	100	2:00	AIR			15	55	246	0	319:20	2.5	
			AIR/O ₂			15	17	53	0	98:20		
100	110	2:00	AIR			25	55	292	0	375:20	3	
			AIR/O ₂			25	17	62	0	117:20		
110 fsw	25	3:40	AIR					0	0	3:40	0	I
			AIR/O ₂					0	0	3:40		
110	30	3:00	AIR					28	0	31:40	0.5	K
			AIR/O ₂					10	0	13:40		
110	35	3:00	AIR					57	0	60:40	0.5	M
			AIR/O ₂					17	0	20:40		
110	40	3:00	AIR					83	0	86:40	1	N
			AIR/O ₂					24	0	27:40		
110	45	3:00	AIR					107	0	110:40	1	N
			AIR/O ₂					29	0	32:40		
110	50	3:00	AIR					129	0	132:40	1.5	O
			AIR/O ₂					35	0	38:40		

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
110	55	2:40	AIR				10	138	0	151:40	1.5	O
			AIR/O ₂				6	33	0	47:40		
110	60	2:40	AIR				25	138	0	166:40	1.5	Z
			AIR/O ₂				10	33	0	51:40		
110	65	2:40	AIR				38	141	0	182:40	1.5	Z
			AIR/O ₂				13	34	0	55:40		
110	70	2:40	AIR				51	158	0	212:40	2	Z
			AIR/O ₂				16	37	0	61:40		
110	75	2:20	AIR			7	55	181	0	246:40	2	Z
			AIR/O ₂			7	17	41	0	73:40		
110	80	2:20	AIR			16	54	205	0	278:40	2	Z
			AIR/O ₂			16	17	44	0	85:40		
110	85	2:20	AIR			24	55	230	0	312:40	2.5	
			AIR/O ₂			24	17	49	0	103:40		
110	90	2:20	AIR			31	55	258	0	347:40	2.5	
			AIR/O ₂			31	17	54	0	115:40		
110	95	2:20	AIR			38	55	283	0	379:40	2.5	
			AIR/O ₂			38	17	59	0	127:40		
120 fsw	22	4:00	AIR					0	0	4:00	0	I
			AIR/O ₂					0	0	4:00		
120	25	3:20	AIR					16	0	20:00	0.5	J
			AIR/O ₂					7	0	11:00		
120	30	3:20	AIR					50	0	54:00	0.5	L
			AIR/O ₂					16	0	20:00		
120	35	3:20	AIR					81	0	85:00	1	M
			AIR/O ₂					23	0	27:00		
120	40	3:20	AIR					110	0	114:00	1	N
			AIR/O ₂					30	0	34:00		
120	45	3:00	AIR				1	135	0	140:00	1.5	O
			AIR/O ₂				4	32	0	45:00		
120	50	3:00	AIR				18	138	0	160:00	1.5	O
			AIR/O ₂				8	33	0	50:00		
120	55	3:00	AIR				36	138	0	178:00	1.5	Z
			AIR/O ₂				12	34	0	55:00		
120	60	3:00	AIR				52	141	0	197:00	2	Z
			AIR/O ₂				17	33	0	59:00		
120	65	2:40	AIR			11	54	171	0	240:00	2	Z
			AIR/O ₂			11	17	38	0	75:00		
120	70	2:40	AIR			22	55	196	0	277:00	2	Z
			AIR/O ₂			22	17	41	0	89:00		
120	75	2:40	AIR			33	55	226	0	318:00	2.5	
			AIR/O ₂			33	17	47	0	106:00		
120	80	2:40	AIR			42	55	256	0	357:00	2.5	
			AIR/O ₂			42	17	53	0	126:00		

Air VVal-18

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
120	85	2:20	AIR		5	46	54	287	0	396:00	2.5	
			AIR/O ₂		5	46	17	59	0	141:00		
130 fsw	19	4:20	AIR					0	0	4:20	0	I
			AIR/O ₂					0	0	4:20		
130	20	3:40	AIR					1	0	5:20	0.5	I
			AIR/O ₂					4	0	8:20		
130	25	3:40	AIR					36	0	40:20	0.5	K
			AIR/O ₂					12	0	16:20		
130	30	3:40	AIR					72	0	76:20	1	M
			AIR/O ₂					21	0	25:20		
130	35	3:40	AIR					106	0	110:20	1	N
			AIR/O ₂					29	0	33:20		
130	40	3:20	AIR				6	130	0	140:20	1.5	O
			AIR/O ₂				5	31	0	45:20		
130	45	3:20	AIR				22	138	0	164:20	1.5	O
			AIR/O ₂				9	33	0	51:20		
130	50	3:20	AIR				43	138	0	185:20	1.5	Z
			AIR/O ₂				14	34	0	57:20		
130	55	3:00	AIR			7	54	147	0	212:20	2	Z
			AIR/O ₂			7	17	33	0	66:20		
130	60	3:00	AIR			21	55	178	0	258:20	2	Z
			AIR/O ₂			21	17	38	0	85:20		
130	65	3:00	AIR			35	55	208	0	302:20	2	
			AIR/O ₂			35	17	43	0	104:20		
130	70	2:40	AIR		2	45	55	244	0	350:20	2.5	
			AIR/O ₂		2	45	17	50	0	128:20		
130	75	2:40	AIR		11	46	55	280	0	396:20	2.5	
			AIR/O ₂		11	46	17	57	0	145:20		
140 fsw	17	4:40	AIR					0	0	4:40	0	I
			AIR/O ₂					0	0	4:40		
140	20	4:00	AIR					13	0	17:40	0.5	J
			AIR/O ₂					7	0	11:40		
140	25	4:00	AIR					56	0	60:40	0.5	L
			AIR/O ₂					17	0	21:40		
140	30	4:00	AIR					95	0	99:40	1	M
			AIR/O ₂					26	0	30:40		
140	35	3:40	AIR				8	121	0	133:40	1.5	N
			AIR/O ₂				5	30	0	39:40		
140	40	3:40	AIR				22	137	0	163:40	1.5	O
			AIR/O ₂				9	33	0	51:40		
140	45	3:20	AIR			5	40	138	0	187:40	1.5	Z
			AIR/O ₂			5	13	34	0	61:40		
140	50	3:20	AIR			14	52	147	0	217:40	2	Z
			AIR/O ₂			14	16	34	0	73:40		

Air VVal-18

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
140	55	3:20	AIR			28	55	180	0	267:40	2	Z
			AIR/O ₂			28	17	37	0	91:40		
140	60	3:00	AIR	4	40	55	218	0		321:40	2	
			AIR/O ₂	4	40	17	44	0		114:40		
140	65	3:00	AIR	11	46	55	258	0		374:40	2.5	
			AIR/O ₂	11	46	17	52	0		140:40		
150 fsw	15	5:00	AIR					0	0	5:00	0	H
			AIR/O ₂					0	0	5:00		
150	20	4:20	AIR					30	0	35:00	0.5	K
			AIR/O ₂					11	0	16:00		
150	25	4:20	AIR					75	0	80:00	1	M
			AIR/O ₂					22	0	27:00		
150	30	4:00	AIR			8	108	0		121:00	1	N
			AIR/O ₂			5	26	0		36:00		
150	35	4:00	AIR			22	129	0		156:00	1.5	O
			AIR/O ₂			9	31	0		50:00		
150	40	3:40	AIR			8	34	138	0	185:00	1.5	Z
			AIR/O ₂			8	12	33	0	63:00		
150	45	3:40	AIR			19	46	144	0	214:00	1.5	Z
			AIR/O ₂			19	15	33	0	77:00		
150	50	3:20	AIR	5	26	55	179	0		270:00	2	Z
			AIR/O ₂	5	26	17	37	0		95:00		
150	55	3:20	AIR	11	38	55	222	0		331:00	2	
			AIR/O ₂	11	38	17	45	0		121:00		
150	60	3:20	AIR	19	45	55	266	0		390:00	2.5	
			AIR/O ₂	19	45	17	54	0		150:00		

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods
				110	100	90	80	70	60	50	40	30	20	10		
160 fsw	13	5:20	AIR										0	0	5:20	0
			AIR/O ₂										0	0	5:20	
160	15	4:40	AIR										7	0	12:20	0.5
			AIR/O ₂										5	0	10:20	
160	20	4:40	AIR										46	0	51:20	0.5
			AIR/O ₂										15	0	20:20	
160	25	4:20	AIR									8	85	0	98:20	1
			AIR/O ₂									5	21	0	31:20	
160	30	4:00	AIR								3	15	117	0	140:20	1.5
			AIR/O ₂								3	7	28	0	43:20	
160	35	4:00	AIR								8	27	136	0	176:20	1.5
			AIR/O ₂								8	10	33	0	61:20	
160	40	4:00	AIR								21	40	138	0	204:20	1.5
			AIR/O ₂								21	13	34	0	78:20	
160	45	3:40	AIR							9	22	54	174	0	264:20	2
			AIR/O ₂							9	22	17	36	0	94:20	
160	50	3:40	AIR							17	33	55	219	0	329:20	2
			AIR/O ₂							17	33	17	45	0	122:20	
160	55	3:20	AIR						4	19	45	55	267	0	395:20	2.5
			AIR/O ₂						4	19	45	17	54	0	154:20	
170 fsw	11	5:40	AIR										0	0	5:40	0
			AIR/O ₂										0	0	5:40	
170	15	5:00	AIR										15	0	20:40	0.5
			AIR/O ₂										7	0	12:40	
170	20	4:40	AIR									3	60	0	68:40	0.5
			AIR/O ₂									4	14	0	23:40	
170	25	4:20	AIR								2	13	96	0	116:40	1
			AIR/O ₂								2	7	23	0	37:40	
170	30	4:20	AIR								10	20	123	0	158:40	1.5
			AIR/O ₂								10	8	30	0	58:40	
170	35	4:00	AIR							4	16	30	138	0	193:40	1.5
			AIR/O ₂							4	16	11	33	0	74:40	
170	40	4:00	AIR							10	23	45	165	0	248:40	2
			AIR/O ₂							10	23	15	35	0	93:40	
170	45	3:40	AIR						1	19	28	55	208	0	316:40	2
			AIR/O ₂						1	19	28	17	42	0	117:40	
170	50	3:40	AIR						9	19	40	55	264	0	392:40	2.5
			AIR/O ₂						9	19	40	17	54	0	154:40	
180 fsw	10	6:00	AIR										0	0	6:00	0
			AIR/O ₂										0	0	6:00	
180	15	5:20	AIR										23	0	29:00	0.5
			AIR/O ₂										9	0	15:00	

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods	
				110	100	90	80	70	60	50	40	30	20	10			
180	20	5:00	AIR										10	68	0	84:00	1
			AIR/O ₂										6	16	0	28:00	
180	25	4:40	AIR								9	13	106	0	134:00	1	
			AIR/O ₂							9	7	25	0	47:00			
180	30	4:20	AIR							5	11	25	129	0	176:00	1.5	
			AIR/O ₂						5	11	10	31	0	68:00			
180	35	4:00	AIR						1	9	21	35	149	0	221:00	1.5	
			AIR/O ₂					1	9	21	12	34	0	88:00			
180	40	4:00	AIR						4	17	22	52	193	0	294:00	2	
			AIR/O ₂					4	17	22	17	38	0	109:00			
180	45	4:00	AIR						11	19	34	55	252	0	377:00	2.5	
			AIR/O ₂					11	19	34	17	51	0	148:00			
190 fsw	9	6:20	AIR										0	0	6:20	0	
			AIR/O ₂										0	0	6:20		
190	10	5:40	AIR										2	0	8:20	0.5	
			AIR/O ₂										4	0	10:20		
190	15	5:40	AIR										35	0	41:20	0.5	
			AIR/O ₂										12	0	18:20		
190	20	5:00	AIR								3	14	76	0	99:20	1	
			AIR/O ₂							3	7	18	0	34:20			
190	25	4:40	AIR							4	11	15	113	0	149:20	1.5	
			AIR/O ₂						4	11	7	27	0	55:20			
190	30	4:20	AIR						1	10	14	27	134	0	192:20	1.5	
			AIR/O ₂					1	10	14	10	32	0	78:20			
190	35	4:20	AIR						6	12	23	41	178	0	266:20	2	
			AIR/O ₂					6	12	23	14	37	0	103:20			
190	40	4:00	AIR					1	10	20	25	55	230	0	347:20	2.5	
			AIR/O ₂				1	10	20	25	17	47	0	131:20			
190	45	4:00	AIR					4	17	19	40	54	294	0	434:20	2.5	
			AIR/O ₂				4	17	19	40	17	60	0	173:20			
200 fsw	8	6:40	AIR										0	0	6:40	0	
			AIR/O ₂										0	0	6:40		
200	10	6:00	AIR										6	0	12:40	0.5	
			AIR/O ₂										5	0	11:40		
200	15	5:40	AIR									4	45	0	55:40	0.5	
			AIR/O ₂									4	11	0	21:40		
200	20	5:20	AIR								9	14	84	0	113:40	1	
			AIR/O ₂							9	7	20	0	42:40			
200	25	5:00	AIR							9	11	20	118	0	164:40	1.5	
			AIR/O ₂						9	11	8	29	0	68:40			
200	30	4:40	AIR						7	9	18	29	152	0	221:40	1.5	
			AIR/O ₂					7	9	18	11	35	0	91:40			

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods
				Stop Times (min)												
				110	100	90	80	70	60	50	40	30	20	10		
200	35	4:20	AIR					3	8	17	22	47	205	0	308:40	2
			AIR/O ₂					3	8	17	22	15	43	0	119:40	
200	40	4:20	AIR					6	14	20	30	55	271	0	402:40	2.5
			AIR/O ₂					6	14	20	30	17	56	0	159:40	
210 fsw	7	7:00	AIR										0	0	7:00	0
			AIR/O ₂										0	0	7:00	
210	10	6:20	AIR										11	0	18:00	0.5
			AIR/O ₂										6	0	13:00	
210	15	5:40	AIR								1	9	52	0	69:00	0.5
			AIR/O ₂								1	6	12	0	26:00	
210	20	5:20	AIR							4	11	13	94	0	129:00	1
			AIR/O ₂							4	11	7	22	0	51:00	
210	25	5:00	AIR						5	9	11	24	126	0	182:00	1.5
			AIR/O ₂						5	9	11	9	31	0	77:00	
210	30	4:40	AIR					3	9	9	22	35	179	0	264:00	2
			AIR/O ₂					3	9	9	22	12	39	0	106:00	
210	35	4:20	AIR				1	7	9	19	23	52	239	0	357:00	2.5
			AIR/O ₂				1	7	9	19	23	17	49	0	142:00	
210	40	4:20	AIR				3	9	17	19	36	55	309	0	455:00	3
			AIR/O ₂				3	9	17	19	36	17	64	0	182:00	
220 fsw	7	7:20	AIR										0	0	7:20	0
			AIR/O ₂										0	0	7:20	
220	10	6:40	AIR										17	0	24:20	0.5
			AIR/O ₂										8	0	15:20	
220	15	6:00	AIR								4	12	58	0	81:20	1
			AIR/O ₂								4	6	14	0	31:20	
220	20	5:40	AIR							9	11	13	103	0	143:20	1
			AIR/O ₂							9	11	7	24	0	58:20	
220	25	5:00	AIR					1	9	9	12	27	138	0	203:20	1.5
			AIR/O ₂					1	9	9	12	10	33	0	86:20	
220	30	4:40	AIR				1	7	8	13	23	41	205	0	305:20	2
			AIR/O ₂				1	7	8	13	23	14	43	0	121:20	
220	35	4:40	AIR				5	7	13	19	27	55	276	0	409:20	2.5
			AIR/O ₂				5	7	13	19	27	17	57	0	162:20	
230 fsw	6	7:40	AIR										0	0	7:40	0
			AIR/O ₂										0	0	7:40	
230	10	7:00	AIR										24	0	31:40	0.5
			AIR/O ₂										9	0	16:40	
230	15	6:00	AIR							1	7	13	65	0	93:40	1
			AIR/O ₂								1	7	7	15	0	
230	20	5:40	AIR						4	9	11	14	113	0	158:40	1.5
			AIR/O ₂						4	9	11	7	27	0	65:40	

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods		
				Stop Times (min)														
				110	100	90	80	70	60	50	40	30	20	10				
230	25	5:20	AIR					6	8	9	16	28	165	0	239:40	2		
			AIR/O ₂					6	8	9	16	10	39	0	100:40			
	30	5:00	AIR				5	7	8	17	22	48	232	0	346:40	2.5		
			AIR/O ₂				5	7	8	17	22	16	49	0	136:40			
	35	4:40	AIR			3	6	7	17	19	33	55	312	0	459:40	3		
			AIR/O ₂			3	6	7	17	19	33	17	65	0	184:40			
	240 fsw	6	8:00	AIR										0	0	8:00	0	
				AIR/O ₂										0	0	8:00		
		10	7:00	AIR									3	27	0	38:00	0.5	
				AIR/O ₂									4	6	0	18:00		
15		6:20	AIR							4	9	13	73	0	107:00	1		
			AIR/O ₂							4	9	7	17	0	45:00			
20		5:40	AIR					1	7	10	11	18	119	0	174:00	1.5		
			AIR/O ₂					1	7	10	11	8	28	0	78:00			
240		25	5:20	AIR				2	8	8	9	20	34	189	0	278:00	2	
				AIR/O ₂				2	8	8	9	20	12	41	0	113:00		
240	30	5:00	AIR			2	7	7	9	19	23	54	264	0	393:00	2.5		
			AIR/O ₂			2	7	7	9	19	23	17	55	0	157:00			
250 fsw	5	8:20	AIR										0	0	8:20	0		
			AIR/O ₂										0	0	8:20			
	10	7:20	AIR									6	29	0	43:20	0.5		
			AIR/O ₂									5	7	0	20:20			
	15	6:20	AIR						2	4	11	14	82	0	121:20	1		
			AIR/O ₂						2	4	11	7	20	0	52:20			
	20	6:00	AIR					4	8	10	11	21	134	0	196:20	1.5		
			AIR/O ₂					4	8	10	11	9	32	0	87:20			
	250	25	5:40	AIR				6	8	8	10	22	41	210	0	313:20	2	
				AIR/O ₂				6	8	8	10	22	14	44	0	125:20		
250	30	5:20	AIR			6	6	8	12	19	28	55	298	0	440:20	3		
			AIR/O ₂			6	6	8	12	19	28	17	62	0	176:20			
260 fsw	5	8:40	AIR										0	0	8:40	0		
			AIR/O ₂										0	0	8:40			
	10	7:20	AIR								2	7	35	0	52:40	0.5		
			AIR/O ₂								2	5	8	0	23:40			
	15	6:40	AIR						4	6	11	14	92	0	135:40	1		
			AIR/O ₂						4	6	11	7	22	0	58:40			
	20	6:00	AIR				1	7	8	10	11	25	152	0	222:40	1.5		
			AIR/O ₂				1	7	8	10	11	10	36	0	96:40			
	260	25	5:40	AIR			3	7	7	8	14	22	48	234	0	351:40	2.5	
				AIR/O ₂			3	7	7	8	14	22	15	51	0	145:40		
260	30	5:20	AIR		3	6	7	7	16	19	34	55	335	0	490:40	3		
			AIR/O ₂		3	6	7	7	16	19	34	17	69	0	196:40			

Air VVal-18

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)												Total Ascent Time (min:sec)	Chamber O ₂ Periods	
				Stop Times (min)														
				110	100	90	80	70	60	50	40	30	20	10				
270 fsw	5	9:00	AIR										0	0	9:00	0		
			AIR/O ₂									0	0	9:00				
270	10	7:40	AIR							4	8	43	0	64:00	0.5			
			AIR/O ₂						4	5	11	0	29:00					
270	15	6:40	AIR					2	4	8	11	14	102	0	150:00	1		
			AIR/O ₂				2	4	8	11	7	24	0	65:00				
270	20	6:20	AIR				4	7	9	9	13	29	175	0	255:00	2		
			AIR/O ₂				4	7	9	9	13	11	40	0	107:00			
270	25	5:40	AIR		1	6	6	7	9	16	23	54	263	0	394:00	2.5		
			AIR/O ₂		1	6	6	7	9	16	23	17	55	0	159:00			
280 fsw	4	9:20	AIR										0	0	9:20	0		
			AIR/O ₂									0	0	9:20				
280	5	8:40	AIR										2	0	11:20	0.5		
			AIR/O ₂									4	0	13:20				
280	10	7:40	AIR						2	5	10	50	0	76:20	0.5			
			AIR/O ₂						2	5	6	12	0	34:20				
280	15	7:00	AIR					3	6	9	11	13	112	0	163:20	1		
			AIR/O ₂				3	6	9	11	7	26	0	71:20				
280	20	6:20	AIR			2	5	8	8	9	17	36	195	0	289:20	2		
			AIR/O ₂			2	5	8	8	9	17	12	43	0	118:20			
280	25	6:00	AIR		4	6	6	8	8	20	28	55	294	0	438:20	3		
			AIR/O ₂		4	6	6	8	8	20	28	17	62	0	178:20			
290 fsw	4	9:40	AIR										0	0	9:40	0		
			AIR/O ₂									0	0	9:40				
290	5	9:00	AIR										4	0	13:40	0.5		
			AIR/O ₂									4	0	13:40				
290	10	8:00	AIR							3	6	12	56	0	86:40	1		
			AIR/O ₂							3	6	6	14	0	38:40			
290	15	7:00	AIR				2	3	7	10	11	13	124	0	179:40	1.5		
			AIR/O ₂				2	3	7	10	11	7	29	0	83:40			
290	20	6:40	AIR			4	7	7	8	9	20	43	212	0	319:40	2		
			AIR/O ₂			4	7	7	8	9	20	14	45	0	128:40			
290	25	6:00	AIR	2	5	6	6	8	11	20	34	55	326	0	482:40	3		
			AIR/O ₂	2	5	6	6	8	11	20	34	17	68	0	196:40			

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods
				110	100	90	80	70	60	50	40	30	20	10		
300 fsw	4	10:00	AIR										0	0	10:00	0
			AIR/O ₂										0	0	10:00	
300	5	9:20	AIR										8	0	18:00	0.5
			AIR/O ₂										5	0	15:00	
300	10	8:00	AIR						1	4	7	13	63	0	98:00	1
			AIR/O ₂						1	4	7	7	15	0	44:00	
300	15	7:20	AIR				3	4	8	10	11	17	137	0	200:00	1.5
			AIR/O ₂				3	4	8	10	11	8	33	0	91:00	
300	20	6:40	AIR		2	5	7	7	8	10	22	50	232	0	353:00	2.5
			AIR/O ₂		2	5	7	7	8	10	22	16	49	0	141:00	
300	25	6:20	AIR	4	6	6	6	7	15	19	41	55	368	0	537:00	3
			AIR/O ₂	4	6	6	6	7	15	19	41	17	73	0	214:00	

Air VVal-18M

APPENDIX F. VVal-18M Air Decompression Tables

Air VVal-18M

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Air VVal-18M

Table F.1
No-Decompression Limits and Repetitive Group Designators for
No-Decompression VVal-18M Air Dives

Depth (fsw)	No-Decompression Limit	Repetitive Group Designator															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	720	57	101	158	245	426	720	*									
15	720	36	60	88	121	163	217	297	449	720	*						
20	720	26	43	61	82	106	133	165	205	256	330	461	720	*			
25	720	20	33	47	62	78	97	117	140	166	198	236	285	354	469	720	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	63	7	12	17	22	28	33	39	45	51	57	63					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	33	4	7	11	14	17	21	24	28	31	33						
100	29	4	6	9	12	15	18	21	25	28	29						
110	25	3	6	8	11	14	16	19	22	25							
120	22	3	5	7	10	12	15	17	20	22							
130	20	2	4	6	9	11	13	16	18	20							
140	17	2	4	6	8	10	12	14	16	17							
150	15	2	3	5	7	9	11	13	15								
160	13	2	3	5	6	8	10	12	13								
170	12		2	4	6	8	9	11	12								
180	11		2	4	5	7	9	10	11								
190	10			3	5	6	8	9	10								

*Highest repetitive group that can be achieved at this depth regardless of bottom time

Air VVal-18M

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Air VVal-18M

Table F.2

Surface Interval Credit and Residual Nitrogen Time (RNT) Table For Repetitive VVal-18M Air Dives

SURFACE INTERVAL BREATHING AIR (HH:MM)

START	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0:00
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2:20
B	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0:00 1:17
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1:16 3:36
C	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0:00	0:56 2:12
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	0:55	2:11 4:31
D	D	-	-	-	-	-	-	-	-	-	-	-	-	-	0:00	0:53	1:48 3:04
		-	-	-	-	-	-	-	-	-	-	-	-	-	0:52	1:47	3:03 5:23
E	E	-	-	-	-	-	-	-	-	-	-	-	-	0:00	0:53	1:45	2:40 3:56
		-	-	-	-	-	-	-	-	-	-	-	-	0:52	1:44	2:39	3:55 6:15
F	F	-	-	-	-	-	-	-	-	-	-	0:00	0:53	1:45	2:38	3:32	4:49
		-	-	-	-	-	-	-	-	-	-	0:52	1:44	2:37	3:31	4:48	7:08
G	G	-	-	-	-	-	-	-	-	-	0:00	0:53	1:45	2:38	3:30	4:24	5:41
		-	-	-	-	-	-	-	-	-	0:52	1:44	2:37	3:29	4:23	5:40	8:00
H	H	-	-	-	-	-	-	-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:17	6:33
		-	-	-	-	-	-	-	-	0:52	1:44	2:37	3:29	4:21	5:16	6:32	8:52
I	I	-	-	-	-	-	-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:09	7:25
		-	-	-	-	-	-	-	0:52	1:44	2:37	3:29	4:21	5:13	6:08	7:24	9:44
J	J	-	-	-	-	-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	7:01	8:17
		-	-	-	-	-	-	0:52	1:44	2:37	3:29	4:21	5:13	6:06	7:00	8:16	10:36
K	K	-	-	-	-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:53	9:10
		-	-	-	-	-	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:52	9:09	11:29
L	L	-	-	-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:45	10:02
		-	-	-	-	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:44	10:01	12:21
M	M	-	-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43	9:38	10:54
		-	-	-	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:42	9:37	10:53	13:13
N	N	-	-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43	9:35	10:30	11:46
		-	-	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:42	9:34	10:29	11:45	14:05
O	O	-	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43	9:35	10:28	11:22	12:38
		-	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:42	9:34	10:27	11:21	12:37	14:58
Z	Z	0:00	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43	9:35	10:28	11:20	12:14	13:31
		0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:42	9:34	10:27	11:19	12:13	13:30	15:50

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

FINAL: Z O N M L K J I H G F E D C B A

RNT FOR REPETITIVE DIVE BREATHING AIR (MIN)

	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
DEPTH (FSW)																	
10	-	-	-	-	-	-	-	-	-	-	720	426	245	158	101	57	
15	-	-	-	-	-	-	-	720	449	297	217	163	121	88	60	36	
20	-	-	-	-	720	461	330	256	205	165	133	106	82	61	43	26	
25	-	720	469	354	285	236	198	166	140	117	97	78	62	47	33	20	
30	371	307	260	223	193	167	145	125	107	91	76	62	50	38	27	17	
35	245	215	190	168	148	131	115	100	87	74	63	52	42	32	23	14	
40	188	168	151	135	121	108	95	84	73	63	53	44	36	27	20	12	
45	153	139	126	114	102	92	82	72	63	55	46	39	31	24	17	11	
50	130	119	108	98	89	80	71	63	56	48	41	34	28	21	15	9	
55	113	104	95	87	78	71	63	56	50	43	37	31	25	19	14	8	
60	100	92	85	77	70	63	57	51	45	39	33	28	22	17	12	7	
70	82	75	69	64	58	53	47	42	37	32	28	23	19	14	10	6	
80	69	64	59	54	49	45	40	36	32	28	24	20	16	12	9	5	
90	59	55	51	47	43	39	35	31	28	24	21	17	14	11	7	4	
100	52	49	45	41	38	34	31	28	25	21	18	15	12	9	6	4	
110	47	43	40	37	34	31	28	25	22	19	16	14	11	8	6	3	
120	42	39	36	33	31	28	25	22	20	17	15	12	10	7	5	3	
130	38	35	33	30	28	25	23	20	18	16	13	11	9	6	4	2	
140	35	32	30	28	25	23	21	19	16	14	12	10	8	6	4	2	
150	32	30	28	25	23	21	19	17	15	13	11	9	7	5	3	2	
160	30	28	26	24	22	20	18	16	14	12	10	8	6	5	3	2	
170	28	26	24	22	20	18	16	15	13	11	9	8	6	4	2	2	
180	26	24	22	20	19	17	15	13	12	10	9	7	5	4	2	2	
190	24	22	21	19	17	16	14	13	11	9	8	6	5	3	3	3	

Air VVal-18M

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Air VVal-18M

Table F.3

VVal-18M Air Decompression Main Table:

Last Allowed In-Water Decompression Stop at 20 fsw with AIR and AIR/O₂

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
30 fsw	371	1:00	AIR					0	0	1:00	0	Z
			AIR/O ₂					0	0	1:00		
30	420	0:20	AIR					22	0	23:00	0.5	Z
			AIR/O ₂					8	0	9:00		
30	480	0:20	AIR					42	0	43:00	0.5	
			AIR/O ₂					12	0	13:00		
30	540	0:20	AIR					71	0	72:00	0.5	
			AIR/O ₂					17	0	18:00		
30	600	0:20	AIR					92	0	93:00	1	
			AIR/O ₂					22	0	23:00		
30	660	0:20	AIR					120	0	121:00	1	
			AIR/O ₂					25	0	26:00		
30	720	0:20	AIR					158	0	159:00	1	
			AIR/O ₂					30	0	31:00		
35 fsw	232	1:10	AIR					0	0	1:10	0	Z
			AIR/O ₂					0	0	1:10		
35	240	0:30	AIR					4	0	5:10	0.5	Z
			AIR/O ₂					5	0	6:10		
35	270	0:30	AIR					28	0	29:10	0.5	Z
			AIR/O ₂					10	0	11:10		
35	300	0:30	AIR					53	0	54:10	0.5	Z
			AIR/O ₂					16	0	17:10		
35	330	0:30	AIR					71	0	72:10	1	Z
			AIR/O ₂					21	0	22:10		
35	360	0:30	AIR					88	0	89:10	1	
			AIR/O ₂					25	0	26:10		
35	420	0:30	AIR					134	0	135:10	1	
			AIR/O ₂					32	0	33:10		
35	480	0:30	AIR					173	0	174:10	1.5	
			AIR/O ₂					41	0	47:10		
35	540	0:30	AIR					228	0	229:10	1.5	
			AIR/O ₂					48	0	54:10		
35	600	0:30	AIR					277	0	278:10	2	
			AIR/O ₂					56	0	62:10		
35	660	0:30	AIR					314	0	315:10	2.5	
			AIR/O ₂					66	0	77:10		
35	720	0:30	AIR					342	0	343:10	2.5	
			AIR/O ₂					74	0	85:10		

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
40 fsw	163	1:20	AIR					0	0	1:20	0	O
			AIR/O ₂					0	0	1:20		
40	170	0:40	AIR					6	0	7:20	0.5	O
			AIR/O ₂					5	0	6:20		
40	180	0:40	AIR					14	0	15:20	0.5	Z
			AIR/O ₂					8	0	9:20		
40	190	0:40	AIR					21	0	22:20	0.5	Z
			AIR/O ₂					10	0	11:20		
40	200	0:40	AIR					27	0	28:20	0.5	Z
			AIR/O ₂					12	0	13:20		
40	210	0:40	AIR					39	0	40:20	0.5	Z
			AIR/O ₂					14	0	15:20		
40	220	0:40	AIR					52	0	53:20	0.5	Z
			AIR/O ₂					15	0	16:20		
40	230	0:40	AIR					64	0	65:20	1	Z
			AIR/O ₂					19	0	20:20		
40	240	0:40	AIR					75	0	76:20	1	Z
			AIR/O ₂					22	0	23:20		
40	270	0:40	AIR					101	0	102:20	1	Z
			AIR/O ₂					29	0	30:20		
40	300	0:40	AIR					128	0	129:20	1.5	
			AIR/O ₂					36	0	42:20		
40	330	0:40	AIR					160	0	161:20	1.5	
			AIR/O ₂					41	0	47:20		
40	360	0:40	AIR					184	0	185:20	1.5	
			AIR/O ₂					47	0	53:20		
40	420	0:40	AIR					248	0	249:20	2	
			AIR/O ₂					59	0	65:20		
40	480	0:40	AIR					321	0	322:20	2.5	
			AIR/O ₂					71	0	82:20		
40	540	0:40	AIR					372	0	373:20	3	
			AIR/O ₂					83	0	94:20		
45 fsw	125	1:30	AIR					0	0	1:30	0	N
			AIR/O ₂					0	0	1:30		
45	130	0:50	AIR					2	0	3:30	0.5	O
			AIR/O ₂					4	0	5:30		
45	140	0:50	AIR					14	0	15:30	0.5	O
			AIR/O ₂					8	0	9:30		
45	150	0:50	AIR					25	0	26:30	0.5	Z
			AIR/O ₂					11	0	12:30		
45	160	0:50	AIR					34	0	35:30	0.5	Z
			AIR/O ₂					14	0	15:30		
45	170	0:50	AIR					41	0	42:30	0.5	Z
			AIR/O ₂					17	0	18:30		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
45	180	0:50	AIR					59	0	60:30	1	Z
			AIR/O ₂					20	0	21:30		
45	190	0:50	AIR					75	0	76:30	1	Z
			AIR/O ₂					22	0	23:30		
45	200	0:50	AIR					89	0	90:30	1	Z
			AIR/O ₂					26	0	27:30		
45	210	0:50	AIR					101	0	102:30	1	Z
			AIR/O ₂					30	0	31:30		
45	220	0:50	AIR					112	0	113:30	1	Z
			AIR/O ₂					33	0	34:30		
45	230	0:50	AIR					121	0	122:30	1.5	Z
			AIR/O ₂					36	0	42:30		
45	240	0:50	AIR					130	0	131:30	1.5	Z
			AIR/O ₂					40	0	46:30		
45	270	0:50	AIR					173	0	174:30	1.5	
			AIR/O ₂					48	0	54:30		
45	300	0:50	AIR					206	0	207:30	2	
			AIR/O ₂					54	0	60:30		
45	330	0:50	AIR					243	0	244:30	2.5	
			AIR/O ₂					64	0	70:30		
45	360	0:50	AIR					288	0	289:30	2.5	
			AIR/O ₂					72	0	83:30		
50 fsw	92	1:40	AIR					0	0	1:40	0	M
			AIR/O ₂					0	0	1:40		
50	95	1:00	AIR					2	0	3:40	0.5	M
			AIR/O ₂					4	0	5:40		
50	100	1:00	AIR					4	0	5:40	0.5	N
			AIR/O ₂					5	0	6:40		
50	110	1:00	AIR					8	0	9:40	0.5	O
			AIR/O ₂					7	0	8:40		
50	120	1:00	AIR					21	0	22:40	0.5	O
			AIR/O ₂					10	0	11:40		
50	130	1:00	AIR					34	0	35:40	0.5	Z
			AIR/O ₂					15	0	16:40		
50	140	1:00	AIR					45	0	46:40	1	Z
			AIR/O ₂					19	0	20:40		
50	150	1:00	AIR					56	0	57:40	1	Z
			AIR/O ₂					22	0	23:40		
50	160	1:00	AIR					78	0	79:40	1	Z
			AIR/O ₂					26	0	27:40		
50	170	1:00	AIR					96	0	97:40	1	Z
			AIR/O ₂					29	0	30:40		
50	180	1:00	AIR					111	0	112:40	1	Z
			AIR/O ₂					33	0	34:40		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
50	190	1:00	AIR					125	0	126:40	1.5	Z
			AIR/O ₂					38	0	44:40		
50	200	1:00	AIR					136	0	137:40	1.5	Z
			AIR/O ₂					42	0	48:40		
50	210	1:00	AIR					147	0	148:40	1.5	
			AIR/O ₂					46	0	52:40		
50	220	1:00	AIR					166	0	167:40	2	
			AIR/O ₂					50	0	56:40		
50	230	1:00	AIR					183	0	184:40	2	
			AIR/O ₂					53	0	59:40		
50	240	1:00	AIR					198	0	199:40	2	
			AIR/O ₂					56	0	62:40		
50	270	1:00	AIR					236	0	237:40	2.5	
			AIR/O ₂					65	0	71:40		
50	300	1:00	AIR					285	0	286:40	2.5	
			AIR/O ₂					77	0	88:40		
50	330	1:00	AIR					345	0	346:40	3	
			AIR/O ₂					86	0	97:40		
55 fsw	74	1:50	AIR					0	0	1:50	0	L
			AIR/O ₂					0	0	1:50		
55	75	1:10	AIR					1	0	2:50	0.5	L
			AIR/O ₂					4	0	5:50		
55	80	1:10	AIR					4	0	5:50	0.5	M
			AIR/O ₂					5	0	6:50		
55	85	1:10	AIR					7	0	8:50	0.5	M
			AIR/O ₂					7	0	8:50		
55	90	1:10	AIR					10	0	11:50	0.5	N
			AIR/O ₂					8	0	9:50		
55	95	1:10	AIR					12	0	13:50	0.5	N
			AIR/O ₂					9	0	10:50		
55	100	1:10	AIR					17	0	18:50	0.5	O
			AIR/O ₂					11	0	12:50		
55	110	1:10	AIR					34	0	35:50	0.5	O
			AIR/O ₂					15	0	16:50		
55	120	1:10	AIR					48	0	49:50	1	Z
			AIR/O ₂					20	0	21:50		
55	130	1:10	AIR					59	0	60:50	1	Z
			AIR/O ₂					25	0	26:50		
55	140	1:10	AIR					84	0	85:50	1	Z
			AIR/O ₂					29	0	30:50		
55	150	1:10	AIR					105	0	106:50	1	Z
			AIR/O ₂					33	0	34:50		
55	160	1:10	AIR					123	0	124:50	1.5	Z
			AIR/O ₂					37	0	43:50		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw) Stop Times (min)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
55	170	1:10	AIR					138	0	139:50	1.5	Z
			AIR/O ₂					43	0	49:50		
55	180	1:10	AIR					151	0	152:50	1.5	Z
			AIR/O ₂					48	0	54:50		
55	190	1:10	AIR					169	0	170:50	2	
			AIR/O ₂					53	0	59:50		
55	200	1:10	AIR					190	0	191:50	2	
			AIR/O ₂					57	0	63:50		
55	210	1:10	AIR					208	0	209:50	2	
			AIR/O ₂					61	0	67:50		
55	220	1:10	AIR					224	0	225:50	2.5	
			AIR/O ₂					65	0	71:50		
55	230	1:10	AIR					239	0	240:50	2.5	
			AIR/O ₂					69	0	80:50		
55	240	1:10	AIR					254	0	255:50	2.5	
			AIR/O ₂					72	0	83:50		
55	270	1:10	AIR					313	0	314:50	3	
			AIR/O ₂					86	0	97:50		
60 fsw	63	2:00	AIR					0	0	2:00	0	K
			AIR/O ₂					0	0	2:00		
60	65	1:20	AIR					2	0	4:00	0.5	L
			AIR/O ₂					4	0	6:00		
60	70	1:20	AIR					7	0	9:00	0.5	L
			AIR/O ₂					7	0	9:00		
60	75	1:20	AIR					10	0	12:00	0.5	M
			AIR/O ₂					8	0	10:00		
60	80	1:20	AIR					14	0	16:00	0.5	N
			AIR/O ₂					10	0	12:00		
60	85	1:20	AIR					17	0	19:00	0.5	N
			AIR/O ₂					12	0	14:00		
60	90	1:20	AIR					23	0	25:00	0.5	O
			AIR/O ₂					13	0	15:00		
60	95	1:20	AIR					33	0	35:00	0.5	O
			AIR/O ₂					15	0	17:00		
60	100	1:20	AIR					42	0	44:00	0.5	Z
			AIR/O ₂					18	0	20:00		
60	110	1:20	AIR					57	0	59:00	1	Z
			AIR/O ₂					24	0	26:00		
60	120	1:20	AIR					75	0	77:00	1	Z
			AIR/O ₂					29	0	31:00		
60	130	1:20	AIR					102	0	104:00	1.5	Z
			AIR/O ₂					34	0	36:00		
60	140	1:20	AIR					124	0	126:00	1.5	Z
			AIR/O ₂					38	0	45:00		

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Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
60	150	1:20	AIR					143	0	145:00	1.5	Z
			AIR/O ₂					44	0	51:00		
60	160	1:20	AIR					158	0	160:00	2	Z
			AIR/O ₂					51	0	58:00		
60	170	1:20	AIR					178	0	180:00	2	
			AIR/O ₂					56	0	63:00		
60	180	1:20	AIR					201	0	203:00	2	
			AIR/O ₂					62	0	69:00		
60	190	1:20	AIR					222	0	224:00	2.5	
			AIR/O ₂					67	0	79:00		
60	200	1:20	AIR					240	0	242:00	2.5	
			AIR/O ₂					71	0	83:00		
60	210	1:20	AIR					256	0	258:00	2.5	
			AIR/O ₂					76	0	88:00		
60	220	1:20	AIR					278	0	280:00	3	
			AIR/O ₂					80	0	92:00		
60	230	1:20	AIR					300	0	302:00	3	
			AIR/O ₂					85	0	97:00		
60	240	1:20	AIR					321	0	323:00	3	
			AIR/O ₂					91	0	103:00		
70 fsw	48	2:20	AIR					0	0	2:20	0	K
			AIR/O ₂					0	0	2:20		
70	50	1:40	AIR					2	0	4:20	0.5	K
			AIR/O ₂					4	0	6:20		
70	55	1:40	AIR					9	0	11:20	0.5	L
			AIR/O ₂					8	0	10:20		
70	60	1:40	AIR					14	0	16:20	0.5	M
			AIR/O ₂					11	0	13:20		
70	65	1:40	AIR					19	0	21:20	0.5	N
			AIR/O ₂					13	0	15:20		
70	70	1:40	AIR					24	0	26:20	0.5	N
			AIR/O ₂					16	0	18:20		
70	75	1:40	AIR					32	0	34:20	0.5	O
			AIR/O ₂					18	0	20:20		
70	80	1:40	AIR					44	0	46:20	1	O
			AIR/O ₂					20	0	22:20		
70	85	1:40	AIR					55	0	57:20	1	Z
			AIR/O ₂					23	0	25:20		
70	90	1:40	AIR					64	0	66:20	1	Z
			AIR/O ₂					27	0	29:20		
70	95	1:40	AIR					73	0	75:20	1	Z
			AIR/O ₂					31	0	33:20		
70	100	1:40	AIR					88	0	90:20	1.5	Z
			AIR/O ₂					34	0	36:20		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber	
				60	50	40	30	20	10		O ₂ Periods	Repetitive Group
70	110	1:40	AIR					120	0	122:20	1.5	Z
			AIR/O ₂					41	0	48:20		
70	120	1:40	AIR					145	0	147:20	1.5	Z
			AIR/O ₂					47	0	54:20		
70	130	1:40	AIR					167	0	169:20	2	Z
			AIR/O ₂					54	0	61:20		
70	140	1:40	AIR					189	0	191:20	2	
			AIR/O ₂					62	0	69:20		
70	150	1:40	AIR					219	0	221:20	2.5	
			AIR/O ₂					69	0	81:20		
70	160	1:20	AIR				1	243	0	246:20	2.5	
			AIR/O ₂				4	72	0	88:20		
70	170	1:20	AIR				2	265	0	269:20	3	
			AIR/O ₂				4	78	0	94:20		
70	180	1:20	AIR				4	288	0	294:20	3	
			AIR/O ₂				5	83	0	100:20		
70	190	1:20	AIR				5	316	0	323:20	3	
			AIR/O ₂				6	87	0	105:20		
70	200	1:20	AIR				9	345	0	356:20	3.5	
			AIR/O ₂				8	92	0	117:20		
70	210	1:20	AIR				13	378	0	393:20	3.5	
			AIR/O ₂				10	97	0	124:20		
80 fsw	39	2:40	AIR					0	0	2:40	0	J
			AIR/O ₂					0	0	2:40		
80	40	2:00	AIR					1	0	3:40	0.5	J
			AIR/O ₂					4	0	6:40		
80	45	2:00	AIR					10	0	12:40	0.5	K
			AIR/O ₂					8	0	10:40		
80	50	2:00	AIR					17	0	19:40	0.5	M
			AIR/O ₂					12	0	14:40		
80	55	2:00	AIR					24	0	26:40	0.5	M
			AIR/O ₂					16	0	18:40		
80	60	2:00	AIR					30	0	32:40	1	N
			AIR/O ₂					19	0	21:40		
80	65	2:00	AIR					40	0	42:40	1	O
			AIR/O ₂					22	0	24:40		
80	70	2:00	AIR					54	0	56:40	1	O
			AIR/O ₂					25	0	27:40		
80	75	2:00	AIR					67	0	69:40	1	Z
			AIR/O ₂					28	0	30:40		
80	80	2:00	AIR					77	0	79:40	1	Z
			AIR/O ₂					33	0	35:40		
80	85	2:00	AIR					93	0	95:40	1.5	Z
			AIR/O ₂					37	0	44:40		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
80	90	2:00	AIR					114	0	116:40	1.5	Z
			AIR/O ₂					42	0	49:40		
80	95	2:00	AIR					131	0	133:40	1.5	Z
			AIR/O ₂					46	0	53:40		
80	100	1:40	AIR				1	147	0	150:40	2	Z
			AIR/O ₂				4	45	0	56:40		
80	110	1:40	AIR				6	171	0	179:40	2	Z
			AIR/O ₂				6	51	0	64:40		
80	120	1:40	AIR				10	199	0	211:40	2.5	
			AIR/O ₂				8	59	0	79:40		
80	130	1:40	AIR				14	231	0	247:40	2.5	
			AIR/O ₂				10	66	0	88:40		
80	140	1:40	AIR				17	258	0	277:40	3	
			AIR/O ₂				12	73	0	97:40		
80	150	1:40	AIR				19	285	0	306:40	3	
			AIR/O ₂				13	79	0	104:40		
80	160	1:40	AIR				21	318	0	341:40	3.5	
			AIR/O ₂				14	85	0	116:40		
80	170	1:40	AIR				27	354	0	383:40	3.5	
			AIR/O ₂				17	90	0	124:40		
90 fsw	33	3:00	AIR					0	0	3:00	0	J
			AIR/O ₂					0	0	3:00		
90	35	2:20	AIR					4	0	7:00	0.5	J
			AIR/O ₂					5	0	8:00		
90	40	2:20	AIR					14	0	17:00	0.5	L
			AIR/O ₂					10	0	13:00		
90	45	2:20	AIR					23	0	26:00	0.5	M
			AIR/O ₂					15	0	18:00		
90	50	2:20	AIR					31	0	34:00	1	N
			AIR/O ₂					20	0	23:00		
90	55	2:20	AIR					39	0	42:00	1	O
			AIR/O ₂					24	0	27:00		
90	60	2:20	AIR					56	0	59:00	1	O
			AIR/O ₂					27	0	30:00		
90	65	2:20	AIR					70	0	73:00	1	Z
			AIR/O ₂					31	0	34:00		
90	70	2:20	AIR					83	0	86:00	1.5	Z
			AIR/O ₂					35	0	38:00		
90	75	2:20	AIR					103	0	106:00	1.5	Z
			AIR/O ₂					41	0	49:00		
90	80	2:00	AIR				5	125	0	133:00	1.5	Z
			AIR/O ₂				6	40	0	54:00		
90	85	2:00	AIR				9	142	0	154:00	2	Z
			AIR/O ₂				8	43	0	59:00		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
90	90	2:00	AIR				13	157	0	173:00	2	Z
			AIR/O ₂				10	45	0	63:00		
90	95	2:00	AIR				16	171	0	190:00	2	Z
			AIR/O ₂				11	49	0	68:00		
90	100	2:00	AIR				19	184	0	206:00	2.5	
			AIR/O ₂				13	52	0	73:00		
90	110	2:00	AIR				25	224	0	252:00	2.5	
			AIR/O ₂				16	61	0	90:00		
90	120	1:40	AIR			1	28	256	0	288:00	3	
			AIR/O ₂			1	18	69	0	101:00		
90	130	1:40	AIR			5	28	291	0	327:00	3.5	
			AIR/O ₂			5	17	79	0	119:00		
90	140	1:40	AIR			8	28	329	0	368:00	3.5	
			AIR/O ₂			8	17	87	0	130:00		
100 fsw	29	3:20	AIR					0	0	3:20	0	J
			AIR/O ₂					0	0	3:20		
100	30	2:40	AIR					3	0	6:20	0.5	J
			AIR/O ₂					5	0	8:20		
100	35	2:40	AIR					15	0	18:20	0.5	L
			AIR/O ₂					11	0	14:20		
100	40	2:40	AIR					26	0	29:20	0.5	M
			AIR/O ₂					17	0	20:20		
100	45	2:40	AIR					36	0	39:20	1	N
			AIR/O ₂					22	0	25:20		
100	50	2:40	AIR					47	0	50:20	1	O
			AIR/O ₂					27	0	30:20		
100	55	2:40	AIR					65	0	68:20	1	Z
			AIR/O ₂					31	0	34:20		
100	60	2:40	AIR					81	0	84:20	1.5	Z
			AIR/O ₂					36	0	38:20		
100	65	2:20	AIR				5	98	0	106:20	1.5	Z
			AIR/O ₂				6	35	0	49:20		
100	70	2:20	AIR				11	123	0	137:20	1.5	Z
			AIR/O ₂				9	38	0	55:20		
100	75	2:20	AIR				16	143	0	162:20	2	Z
			AIR/O ₂				11	42	0	61:20		
100	80	2:20	AIR				21	160	0	184:20	2	Z
			AIR/O ₂				14	45	0	67:20		
100	85	2:20	AIR				26	174	0	203:20	2.5	Z
			AIR/O ₂				16	48	0	72:20		
100	90	2:00	AIR			2	28	196	0	229:20	2.5	
			AIR/O ₂			2	17	53	0	85:20		
100	95	2:00	AIR			5	28	220	0	256:20	2.5	
			AIR/O ₂			5	18	59	0	95:20		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
100	100	2:00	AIR			9	27	241	0	280:20	3	
			AIR/O ₂			9	17	65	0	104:20		
100	110	2:00	AIR			14	28	277	0	322:20	3	
			AIR/O ₂			14	17	76	0	120:20		
100	120	2:00	AIR			19	28	323	0	373:20	3.5	
			AIR/O ₂			19	17	85	0	139:20		
110 fsw	25	3:40	AIR					0	0	3:40	0	I
			AIR/O ₂					0	0	3:40		
110	30	3:00	AIR					14	0	17:40	0.5	K
			AIR/O ₂					10	0	13:40		
110	35	3:00	AIR					27	0	30:40	0.5	M
			AIR/O ₂					17	0	20:40		
110	40	3:00	AIR					39	0	42:40	1	N
			AIR/O ₂					23	0	26:40		
110	45	3:00	AIR					50	0	53:40	1	O
			AIR/O ₂					29	0	32:40		
110	50	3:00	AIR					71	0	74:40	1.5	Z
			AIR/O ₂					34	0	37:40		
110	55	2:40	AIR			5	85	0	93:40	1.5	Z	
			AIR/O ₂			6	33	0	47:40			
110	60	2:40	AIR			13	111	0	127:40	1.5	Z	
			AIR/O ₂			10	35	0	53:40			
110	65	2:40	AIR			20	135	0	158:40	2	Z	
			AIR/O ₂			13	39	0	60:40			
110	70	2:40	AIR			26	155	0	184:40	2	Z	
			AIR/O ₂			16	43	0	67:40			
110	75	2:20	AIR		4	28	172	0	207:40	2.5	Z	
			AIR/O ₂		4	17	47	0	76:40			
110	80	2:20	AIR		9	28	199	0	239:40	2.5		
			AIR/O ₂		9	17	54	0	93:40			
110	85	2:20	AIR		13	28	226	0	270:40	2.5		
			AIR/O ₂		13	18	60	0	104:40			
110	90	2:20	AIR		17	28	248	0	296:40	3		
			AIR/O ₂		17	18	66	0	114:40			
110	95	2:20	AIR		21	28	268	0	320:40	3		
			AIR/O ₂		21	18	72	0	124:40			
110	100	2:20	AIR		25	28	294	0	350:40	3.5		
			AIR/O ₂		25	17	79	0	139:40			
110	110	2:00	AIR	5	25	28	352	0	413:40	3.5		
			AIR/O ₂	5	25	18	89	0	155:40			

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber	
				Stop Times (min)							O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
120 fsw	22	4:00	AIR					0	0	4:00	0	I
			AIR/O ₂					0	0	4:00		
120	25	3:20	AIR					8	0	12:00	0.5	J
			AIR/O ₂					7	0	11:00		
120	30	3:20	AIR					24	0	28:00	0.5	L
			AIR/O ₂					16	0	20:00		
120	35	3:20	AIR					38	0	42:00	1	N
			AIR/O ₂					23	0	27:00		
120	40	3:20	AIR					51	0	55:00	1	O
			AIR/O ₂					30	0	34:00		
120	45	3:20	AIR					72	0	76:00	1.5	Z
			AIR/O ₂					36	0	45:00		
120	50	3:00	AIR				9	86	0	99:00	1.5	Z
			AIR/O ₂				8	33	0	50:00		
120	55	3:00	AIR				19	116	0	139:00	1.5	Z
			AIR/O ₂				13	35	0	57:00		
120	60	3:00	AIR				27	141	0	172:00	2	Z
			AIR/O ₂				17	39	0	65:00		
120	65	2:40	AIR			6	28	164	0	202:00	2	Z
			AIR/O ₂			6	17	45	0	77:00		
120	70	2:40	AIR			12	28	189	0	233:00	2.5	
			AIR/O ₂			12	18	50	0	94:00		
120	75	2:40	AIR			18	28	220	0	270:00	2.5	
			AIR/O ₂			18	17	59	0	108:00		
120	80	2:40	AIR			24	27	246	0	301:00	3	
			AIR/O ₂			24	17	66	0	121:00		
120	85	2:20	AIR	3	25	28	269	0	329:00	3		
			AIR/O ₂	3	25	18	73	0	133:00			
120	90	2:20	AIR	7	25	28	302	0	366:00	3.5		
			AIR/O ₂	7	25	18	79	0	148:00			
130 fsw	20	4:20	AIR					0	0	4:20	0	I
			AIR/O ₂					0	0	4:20		
130	25	3:40	AIR					17	0	21:20	0.5	K
			AIR/O ₂					12	0	16:20		
130	30	3:40	AIR					34	0	38:20	1	M
			AIR/O ₂					21	0	25:20		
130	35	3:40	AIR					49	0	53:20	1	N
			AIR/O ₂					29	0	33:20		
130	40	3:20	AIR				3	67	0	74:20	1.5	Z
			AIR/O ₂				5	31	0	45:20		
130	45	3:20	AIR				12	84	0	100:20	1.5	Z
			AIR/O ₂				9	33	0	51:20		
130	50	3:20	AIR				22	116	0	142:20	2	Z
			AIR/O ₂				14	35	0	58:20		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber	
				60	50	40	30	20	10		O ₂ Periods	Repetitive Group
130	55	3:00	AIR			4	28	145	0	181:20	2	Z
			AIR/O ₂			4	17	40	0	70:20		
130	60	3:00	AIR			12	28	169	0	213:20	2	Z
			AIR/O ₂			12	17	46	0	84:20		
130	65	3:00	AIR			19	28	202	0	253:20	2.5	
			AIR/O ₂			19	18	53	0	104:20		
130	70	2:40	AIR	1	25	28	234	0	292:20	3		
			AIR/O ₂	1	25	18	62	0	120:20			
130	75	2:40	AIR	7	25	28	262	0	326:20	3		
			AIR/O ₂	7	25	17	71	0	134:20			
130	80	2:40	AIR	12	25	28	296	0	365:20	3.5		
			AIR/O ₂	12	25	18	78	0	152:20			
140 fsw	17	4:40	AIR					0	0	4:40	0	I
			AIR/O ₂					0	0	4:40		
140	20	4:00	AIR					7	0	11:40	0.5	J
			AIR/O ₂					7	0	11:40		
140	25	4:00	AIR					26	0	30:40	0.5	L
			AIR/O ₂					17	0	21:40		
140	30	4:00	AIR					44	0	48:40	1	N
			AIR/O ₂					26	0	30:40		
140	35	3:40	AIR			4	59	0	67:40	1.5	O	
			AIR/O ₂			5	29	0	38:40			
140	40	3:40	AIR			11	80	0	95:40	1.5	Z	
			AIR/O ₂			9	33	0	51:40			
140	45	3:20	AIR		3	20	112	0	139:40	1.5	Z	
			AIR/O ₂		3	14	34	0	60:40			
140	50	3:20	AIR		7	27	145	0	183:40	2	Z	
			AIR/O ₂		7	17	39	0	72:40			
140	55	3:20	AIR		16	28	171	0	219:40	2	Z	
			AIR/O ₂		16	17	46	0	88:40			
140	60	3:00	AIR	2	23	27	209	0	265:40	2.5		
			AIR/O ₂	2	23	17	56	0	112:40			
140	65	3:00	AIR	7	25	28	244	0	308:40	3		
			AIR/O ₂	7	25	17	66	0	129:40			
140	70	3:00	AIR	14	25	28	276	0	347:40	3		
			AIR/O ₂	14	25	17	75	0	145:40			
140	75	3:00	AIR	20	25	28	316	0	393:40	3.5		
			AIR/O ₂	20	25	17	82	0	163:40			

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				110	100	90	80	70	60	50	40	30	20	10			
150 fsw	15	5:00	AIR										0	0	5:00	0	H
			AIR/O ₂										0	0	5:00		
150	20	4:20	AIR										14	0	19:00	0.5	K
			AIR/O ₂										11	0	16:00		
150	25	4:20	AIR										35	0	40:00	1	M
			AIR/O ₂										22	0	27:00		
150	30	4:00	AIR									3	51	0	59:00	1	O
			AIR/O ₂									5	26	0	36:00		
150	35	4:00	AIR									11	72	0	88:00	1.5	Z
			AIR/O ₂									9	31	0	50:00		
150	40	3:40	AIR								4	18	101	0	128:00	1.5	Z
			AIR/O ₂								4	12	33	0	59:00		
150	45	3:40	AIR								10	24	140	0	179:00	2	Z
			AIR/O ₂								10	16	38	0	74:00		
150	50	3:20	AIR							3	15	28	169	0	220:00	2	Z
			AIR/O ₂							3	15	17	45	0	90:00		
150	55	3:20	AIR							6	22	27	211	0	271:00	2.5	
			AIR/O ₂							6	22	17	56	0	116:00		
150	60	3:20	AIR							11	26	27	248	0	317:00	3	
			AIR/O ₂							11	26	17	67	0	136:00		
150	65	3:00	AIR						1	18	25	28	286	0	363:00	3	
			AIR/O ₂						1	18	25	18	75	0	152:00		
160 fsw	13	5:20	AIR										0	0	5:20	0	H
			AIR/O ₂										0	0	5:20		
160	15	4:40	AIR										3	0	8:20	0.5	I
			AIR/O ₂										5	0	10:20		
160	20	4:40	AIR										22	0	27:20	0.5	L
			AIR/O ₂										15	0	20:20		
160	25	4:20	AIR									3	41	0	49:20	1	N
			AIR/O ₂									5	21	0	31:20		
160	30	4:00	AIR								1	8	59	0	73:20	1.5	O
			AIR/O ₂								1	7	29	0	47:20		
160	35	4:00	AIR								4	14	84	0	107:20	1.5	Z
			AIR/O ₂								4	10	33	0	57:20		
160	40	4:00	AIR								12	20	130	0	167:20	2	Z
			AIR/O ₂								12	13	38	0	73:20		
160	45	3:40	AIR							5	12	28	163	0	213:20	2	Z
			AIR/O ₂							5	12	18	43	0	88:20		
160	50	3:40	AIR							10	19	27	207	0	268:20	2.5	
			AIR/O ₂							10	19	17	55	0	116:20		
160	55	3:20	AIR						2	12	25	28	248	0	320:20	3	
			AIR/O ₂						2	12	25	17	67	0	138:20		
160	60	3:20	AIR						5	18	25	28	291	0	372:20	3.5	
			AIR/O ₂						5	18	25	17	77	0	157:20		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group	
				110	100	90	80	70	60	50	40	30	20	10				
170 fsw	12	5:40	AIR											0	0	5:40	0	H
			AIR/O ₂										0	0	5:40			
170	15	5:00	AIR										6	0	11:40	0.5	J	
			AIR/O ₂									7	0	12:40				
170	20	4:40	AIR									1	29	0	35:40	0.5	L	
			AIR/O ₂								4	14	0	23:40				
170	25	4:20	AIR								1	6	46	0	58:40	1	N	
			AIR/O ₂								1	6	24	0	36:40			
170	30	4:20	AIR								5	10	72	0	92:40	1.5	Z	
			AIR/O ₂								5	9	29	0	53:40			
170	35	4:00	AIR							2	9	16	113	0	145:40	1.5	Z	
			AIR/O ₂							2	9	11	35	0	67:40			
170	40	4:00	AIR							6	12	24	154	0	201:40	2	Z	
			AIR/O ₂							6	12	15	42	0	85:40			
170	45	4:00	AIR							12	15	28	193	0	253:40	2.5		
			AIR/O ₂							12	15	18	51	0	111:40			
170	50	3:40	AIR						5	11	23	28	242	0	314:40	3		
			AIR/O ₂						5	11	23	17	65	0	136:40			
170	55	3:40	AIR						9	15	25	28	286	0	368:40	3.5		
			AIR/O ₂						9	15	25	18	76	0	158:40			
180 fsw	11	6:00	AIR											0	0	6:00	0	H
			AIR/O ₂										0	0	6:00			
180	15	5:20	AIR										11	0	17:00	0.5	J	
			AIR/O ₂									9	0	15:00				
180	20	5:00	AIR									4	33	0	43:00	1	M	
			AIR/O ₂								5	17	0	28:00				
180	25	4:40	AIR								4	7	53	0	70:00	1	O	
			AIR/O ₂								4	7	26	0	43:00			
180	30	4:20	AIR							2	6	14	83	0	111:00	1.5	Z	
			AIR/O ₂							2	6	10	32	0	61:00			
180	35	4:20	AIR							5	12	19	137	0	179:00	2	Z	
			AIR/O ₂							5	12	13	39	0	80:00			
180	40	4:00	AIR						2	10	13	27	174	0	232:00	2	Z	
			AIR/O ₂						2	10	13	17	46	0	99:00			
180	45	4:00	AIR						7	11	19	28	231	0	302:00	3		
			AIR/O ₂						7	11	19	17	62	0	132:00			
180	50	3:40	AIR					1	11	12	25	28	275	0	358:00	3		
			AIR/O ₂					1	11	12	25	17	75	0	157:00			
180	55	3:40	AIR					5	10	19	26	28	335	0	429:00	3.5		
			AIR/O ₂					5	10	19	26	17	86	0	184:00			

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber		
				110	100	90	80	Stop Times (min)				30	20	10		O ₂ Periods	Repetitive Group	
								70	60	50	40							
190 fsw	10	6:20	AIR											0	0	6:20	0	H
			AIR/O ₂										0	0	6:20			
190	15	5:40	AIR											17	0	23:20	0.5	K
			AIR/O ₂									12	0	18:20				
190	20	5:00	AIR								1	7	37	0	51:20	1	N	
			AIR/O ₂						1	7	19	0	33:20					
190	25	4:40	AIR							2	6	8	67	0	89:20	1.5	Z	
			AIR/O ₂						2	6	7	28	0	49:20				
190	30	4:40	AIR							6	8	14	111	0	145:20	1.5	Z	
			AIR/O ₂						6	8	10	36	0	71:20				
190	35	4:20	AIR						3	8	12	22	160	0	211:20	2	Z	
			AIR/O ₂						3	8	12	15	44	0	93:20			
190	40	4:20	AIR						7	11	15	28	210	0	277:20	2.5		
			AIR/O ₂						7	11	15	17	56	0	122:20			
190	45	4:00	AIR					2	11	11	23	28	261	0	342:20	3		
			AIR/O ₂						2	11	11	23	17	71	0			151:20
190	50	4:00	AIR					7	11	15	26	28	321	0	414:20	3.5		
			AIR/O ₂						7	11	15	26	17	84	0			181:20
200 fsw	9	6:40	AIR										0	0	6:40	0	G	
			AIR/O ₂									0	0	6:40				
200	10	6:00	AIR										2	0	8:40	0.5	H	
			AIR/O ₂								4	0	10:40					
200	15	5:40	AIR									2	22	0	30:40	0.5	L	
			AIR/O ₂								4	11	0	21:40				
200	20	5:20	AIR								5	6	42	0	59:40	1	N	
			AIR/O ₂								5	6	22	0	39:40			
200	25	5:00	AIR							5	6	10	78	0	105:40	1.5	Z	
			AIR/O ₂						5	6	8	30	0	60:40				
200	30	4:40	AIR						4	5	11	17	136	0	179:40	2	Z	
			AIR/O ₂						4	5	11	12	40	0	83:40			
200	35	4:20	AIR					1	6	10	12	25	179	0	239:40	2.5		
			AIR/O ₂						1	6	10	12	16	49	0			105:40
200	40	4:20	AIR					3	10	11	18	28	242	0	318:40	3		
			AIR/O ₂						3	10	11	18	17	66	0			141:40
200	45	4:20	AIR					8	11	12	25	28	300	0	390:40	3.5		
			AIR/O ₂						8	11	12	25	17	80	0			174:40
210 fsw	8	7:00	AIR										0	0	7:00	0	G	
			AIR/O ₂									0	0	7:00				
210	10	6:20	AIR										5	0	12:00	0.5	I	
			AIR/O ₂								6	0	13:00					
210	15	6:00	AIR									5	25	0	37:00	0.5	L	
			AIR/O ₂								6	12	0	25:00				

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				110	100	90	80	70	60	50	40	30	20	10			
210	20	5:20	AIR							2	6	6	50	0	71:00	1	O
			AIR/O ₂							2	6	6	25	0	46:00		
210	25	5:00	AIR						2	6	6	13	94	0	128:00	1.5	Z
			AIR/O ₂						2	6	6	10	32	0	68:00		
210	30	4:40	AIR					2	5	6	12	20	157	0	209:00	2	Z
			AIR/O ₂					2	5	6	12	14	43	0	94:00		
210	35	4:40	AIR					5	6	11	14	28	213	0	284:00	2.5	
			AIR/O ₂					5	6	11	14	17	57	0	127:00		
210	40	4:20	AIR				2	6	10	12	21	28	271	0	357:00	3	
			AIR/O ₂				2	6	10	12	21	18	73	0	159:00		
210	45	4:20	AIR				4	10	10	16	25	28	347	0	447:00	3.5	
			AIR/O ₂				4	10	10	16	25	17	89	0	193:00		
220 fsw	7	7:20	AIR										0	0	7:20	0	G
			AIR/O ₂										0	0	7:20		
220	10	6:40	AIR										8	0	15:20	0.5	I
			AIR/O ₂										7	0	14:20		
220	15	6:00	AIR								1	7	29	0	44:20	1	M
			AIR/O ₂								1	7	14	0	29:20		
220	20	5:40	AIR							5	6	6	63	0	87:20	1	Z
			AIR/O ₂							5	6	6	27	0	51:20		
220	25	5:20	AIR						5	6	7	14	119	0	158:20	1.5	Z
			AIR/O ₂						5	6	7	10	37	0	77:20		
220	30	5:00	AIR					5	5	8	12	24	174	0	235:20	2	Z
			AIR/O ₂					5	5	8	12	15	48	0	105:20		
220	35	4:40	AIR				3	4	9	11	17	28	243	0	322:20	3	
			AIR/O ₂				3	4	9	11	17	18	65	0	144:20		
220	40	4:20	AIR			1	4	8	11	11	25	28	311	0	406:20	3.5	
			AIR/O ₂			1	4	8	11	11	25	18	81	0	181:20		
230 fsw	7	7:40	AIR										0	0	7:40	0	G
			AIR/O ₂										0	0	7:40		
230	10	7:00	AIR										10	0	17:40	0.5	J
			AIR/O ₂										9	0	16:40		
230	15	6:20	AIR								4	6	34	0	51:40	1	N
			AIR/O ₂								4	7	16	0	34:40		
230	20	5:40	AIR						2	5	7	7	74	0	102:40	1.5	Z
			AIR/O ₂						2	5	7	7	29	0	62:40		
230	25	5:20	AIR					3	5	6	9	17	141	0	188:40	2	Z
			AIR/O ₂					3	5	6	9	12	41	0	88:40		
230	30	5:00	AIR				3	4	5	11	12	27	201	0	270:40	2.5	
			AIR/O ₂				3	4	5	11	12	17	54	0	123:40		
230	35	4:40	AIR			1	5	5	10	11	21	28	270	0	358:40	3	
			AIR/O ₂			1	5	5	10	11	21	17	74	0	161:40		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				110	100	90	80	70	60	50	40	30	20	10			
230	40	4:40	AIR			3	6	9	11	15	25	28	358	0	462:40	4	
			AIR/O ₂			3	6	9	11	15	25	17	92	0	200:40		
240 fsw																	
	6	8:00	AIR										0	0	8:00	0	G
			AIR/O ₂										0	0	8:00		
240	10	7:00	AIR									1	12	0	21:00	0.5	J
			AIR/O ₂									4	6	0	18:00		
240	15	6:20	AIR							1	6	6	37	0	58:00	1	N
			AIR/O ₂							1	6	6	20	0	41:00		
240	20	6:00	AIR						5	5	6	10	83	0	117:00	1.5	Z
			AIR/O ₂						5	5	6	8	31	0	68:00		
240	25	5:20	AIR				1	5	5	5	12	20	159	0	215:00	2	Z
			AIR/O ₂				1	5	5	5	12	14	44	0	99:00		
240	30	5:00	AIR			1	4	5	6	12	15	27	231	0	309:00	3	
			AIR/O ₂			1	4	5	6	12	15	17	62	0	140:00		
240	35	5:00	AIR			4	4	7	11	11	24	28	306	0	403:00	3.5	
			AIR/O ₂			4	4	7	11	11	24	18	80	0	182:00		
250 fsw																	
	6	8:20	AIR										0	0	8:20	0	G
			AIR/O ₂										0	0	8:20		
250	10	7:20	AIR									2	15	0	25:20	0.5	K
			AIR/O ₂									4	7	0	19:20		
250	15	6:40	AIR							3	6	7	41	0	65:20	1	O
			AIR/O ₂							3	6	7	21	0	45:20		
250	20	6:00	AIR					2	5	6	6	11	106	0	144:20	1.5	Z
			AIR/O ₂					2	5	6	6	9	35	0	76:20		
250	25	5:40	AIR				4	4	5	7	12	24	174	0	238:20	2	Z
			AIR/O ₂				4	4	5	7	12	16	47	0	108:20		
250	30	5:20	AIR			4	4	4	9	11	19	28	257	0	344:20	3	
			AIR/O ₂			4	4	4	9	11	19	17	70	0	156:20		
250	35	5:00	AIR		2	4	5	9	10	14	25	28	346	0	451:20	3.5	
			AIR/O ₂		2	4	5	9	10	14	25	18	88	0	198:20		
260 fsw																	
	5	8:40	AIR										0	0	8:40	0	G
			AIR/O ₂										0	0	8:40		
260	10	7:40	AIR									3	19	0	30:40	0.5	K
			AIR/O ₂									5	9	0	22:40		
260	15	6:40	AIR						1	5	6	7	53	0	80:40	1	O
			AIR/O ₂						1	5	6	7	23	0	50:40		
260	20	6:20	AIR					5	5	5	6	16	126	0	171:40	2	Z
			AIR/O ₂					5	5	5	6	11	38	0	83:40		
260	25	5:40	AIR			2	4	5	5	8	13	28	200	0	273:40	2.5	
			AIR/O ₂			2	4	5	5	8	13	17	54	0	126:40		
260	30	5:20	AIR		2	4	4	5	10	12	22	28	284	0	379:40	3.5	
			AIR/O ₂		2	4	4	5	10	12	22	17	77	0	171:40		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				110	100	90	80	70	60	50	40	30	20	10			
270 fsw	5	9:00	AIR										0	0	9:00	0	G
			AIR/O ₂										0	0	9:00		
270	10	7:40	AIR								2	4	23	0	38:00	0.5	L
			AIR/O ₂								2	5	11	0	27:00		
270	15	7:00	AIR						3	5	6	7	64	0	94:00	1	Z
			AIR/O ₂						3	5	6	7	26	0	56:00		
270	20	6:20	AIR				2	5	5	6	7	19	144	0	197:00	2	Z
			AIR/O ₂				2	5	5	6	7	13	41	0	93:00		
270	25	6:00	AIR			4	5	4	5	11	15	28	227	0	308:00	2.5	
			AIR/O ₂			4	5	4	5	11	15	17	61	0	141:00		
270	30	5:20	AIR	1	3	4	5	6	11	12	25	28	319	0	423:00	3.5	
			AIR/O ₂	1	3	4	5	6	11	12	25	17	84	0	192:00		
280 fsw	5	9:20	AIR										0	0	9:20	0	G
			AIR/O ₂										0	0	9:20		
280	10	8:00	AIR								3	5	26	0	43:20	1	L
			AIR/O ₂								3	6	13	0	31:20		
280	15	7:00	AIR					1	4	6	6	6	75	0	107:20	1.5	Z
			AIR/O ₂					1	4	6	6	6	29	0	61:20		
280	20	6:40	AIR				5	4	5	6	9	22	160	0	220:20	2	Z
			AIR/O ₂				5	4	5	6	9	14	45	0	102:20		
280	25	6:00	AIR		2	4	5	4	6	12	18	28	250	0	338:20	3	
			AIR/O ₂		2	4	5	4	6	12	18	18	67	0	155:20		
280	30	5:40	AIR	3	4	4	4	8	11	15	26	27	362	0	473:20	4	
			AIR/O ₂	3	4	4	4	8	11	15	26	17	93	0	209:20		
290 fsw	4	9:40	AIR										0	0	9:40	0	G
			AIR/O ₂										0	0	9:40		
290	5	9:00	AIR										2	0	11:40	0.5	H
			AIR/O ₂										4	0	13:40		
290	10	8:00	AIR							1	3	7	28	0	48:40	1	M
			AIR/O ₂							1	3	7	14	0	34:40		
290	15	7:20	AIR					2	5	6	6	7	84	0	119:40	1.5	Z
			AIR/O ₂					2	5	6	6	7	31	0	71:40		
290	20	6:40	AIR			3	4	4	5	6	11	25	174	0	241:40	2	Z
			AIR/O ₂			3	4	4	5	6	11	16	47	0	110:40		
290	25	6:00	AIR	1	4	4	4	4	8	12	22	28	273	0	369:40	3	
			AIR/O ₂	1	4	4	4	4	8	12	22	17	75	0	170:40		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				110	100	90	80	70	60	50	40	30	20	10			
300 fsw	4	10:00	AIR										0	0	10:00	0	G
			AIR/O ₂										0	0	10:00		
300	5	9:20	AIR										4	0	14:00	0.5	H
			AIR/O ₂										5	0	15:00		
300	10	8:20	AIR							2	4	7	32	0	55:00	1	N
			AIR/O ₂							2	4	7	16	0	39:00		
300	15	7:20	AIR				1	3	6	5	6	9	102	0	142:00	1.5	Z
			AIR/O ₂				1	3	6	5	6	8	35	0	79:00		
300	20	6:40	AIR		1	4	4	5	5	6	13	28	197	0	273:00	2.5	
			AIR/O ₂		1	4	4	5	5	6	13	17	53	0	128:00		
300	25	6:20	AIR	3	4	4	4	4	10	12	25	28	304	0	408:00	3.5	
			AIR/O ₂	3	4	4	4	4	10	12	25	18	80	0	189:00		

Air VVal18M

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Air VVal18M

Table F.4

VVal-18M Air Decompression Main Table:

Last Allowed In-Water Decompression Stop at 10 fsw with AIR, 20 fsw with AIR/O₂

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
30 fsw	371	1:00	AIR					0	0	1:00	0	Z
			AIR/O ₂					0	0	1:00		
30	420	0:40	AIR					9	0	10:00	0.5	Z
			AIR/O ₂					8	0	9:00		
30	480	0:40	AIR					17	0	18:00	0.5	Z
			AIR/O ₂					12	0	13:00		
30	540	0:40	AIR					27	0	28:00	0.5	
			AIR/O ₂					17	0	18:00		
30	600	0:40	AIR					36	0	37:00	1	
			AIR/O ₂					22	0	23:00		
30	660	0:40	AIR					43	0	44:00	1	
			AIR/O ₂					25	0	26:00		
30	720	0:40	AIR					53	0	54:00	1	
			AIR/O ₂					30	0	31:00		
35 fsw	232	1:10	AIR					0	0	1:10	0	Z
			AIR/O ₂					0	0	1:10		
35	240	0:50	AIR					2	0	3:10	0.5	Z
			AIR/O ₂					5	0	6:10		
35	270	0:50	AIR					12	0	13:10	0.5	Z
			AIR/O ₂					10	0	11:10		
35	300	0:50	AIR					23	0	24:10	0.5	Z
			AIR/O ₂					16	0	17:10		
35	330	0:50	AIR					32	0	33:10	1	Z
			AIR/O ₂					21	0	22:10		
35	360	0:50	AIR					39	0	40:10	1	Z
			AIR/O ₂					25	0	26:10		
35	420	0:50	AIR					55	0	56:10	1	
			AIR/O ₂					32	0	33:10		
35	480	0:50	AIR					70	0	71:10	1.5	
			AIR/O ₂					41	0	47:10		
35	540	0:50	AIR					85	0	86:10	1.5	
			AIR/O ₂					48	0	54:10		
35	600	0:50	AIR					103	0	104:10	2	
			AIR/O ₂					56	0	62:10		
35	660	0:50	AIR					121	0	122:10	2.5	
			AIR/O ₂					66	0	77:10		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
35	720	0:50	AIR AIR/O ₂						135 74 0	136:10 85:10	2.5	
40 fsw	163	1:20	AIR AIR/O ₂					0	0	1:20 1:20	0	O
	170	1:00	AIR AIR/O ₂					5	0	3 6:20	0.5	O
40	180	1:00	AIR AIR/O ₂					7 8 0	0	8:20 9:20	0.5	Z
40	190	1:00	AIR AIR/O ₂					11 10 0	0	12:20 11:20	0.5	Z
40	200	1:00	AIR AIR/O ₂					15 12 0	0	16:20 13:20	0.5	Z
40	210	1:00	AIR AIR/O ₂					18 14 0	0	19:20 15:20	0.5	Z
40	220	1:00	AIR AIR/O ₂					23 15 0	0	24:20 16:20	0.5	Z
40	230	1:00	AIR AIR/O ₂					28 19 0	0	29:20 20:20	1	Z
40	240	1:00	AIR AIR/O ₂					33 22 0	0	34:20 23:20	1	Z
40	270	1:00	AIR AIR/O ₂					47 29 0	0	48:20 30:20	1	Z
40	300	1:00	AIR AIR/O ₂					58 36 0	0	59:20 42:20	1.5	Z
40	330	1:00	AIR AIR/O ₂					68 41 0	0	69:20 47:20	1.5	
40	360	1:00	AIR AIR/O ₂					81 47 0	0	82:20 53:20	1.5	
40	420	1:00	AIR AIR/O ₂					103 59 0	0	104:20 65:20	2	
40	480	1:00	AIR AIR/O ₂					125 71 0	0	126:20 82:20	2.5	
40	540	1:00	AIR AIR/O ₂					151 83 0	0	152:20 94:20	3	
40	600	1:00	AIR AIR/O ₂					174 96 0	0	175:20 112:20	3.5	
40	660	1:00	AIR AIR/O ₂					193 106 0	0	194:20 122:20	3.5	
40	720	0:40	AIR AIR/O ₂					5 115 0	205	211:20 131:20	4	

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber	
				Stop Times (min)							O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
45 fsw	125	1:30	AIR AIR/O ₂					0 0	1:30 1:30	0	O	
	45	130	1:10	AIR AIR/O ₂				1 4	2:30 5:30	0.5	O	
	45	140	1:10	AIR AIR/O ₂				8 8	9:30 9:30	0.5	O	
	45	150	1:10	AIR AIR/O ₂				14 11	15:30 12:30	0.5	O	
	45	160	1:10	AIR AIR/O ₂				19 14	20:30 15:30	0.5	Z	
	45	170	1:10	AIR AIR/O ₂				25 17	26:30 18:30	0.5	Z	
	45	180	1:10	AIR AIR/O ₂				29 20	30:30 21:30	1	Z	
	45	190	1:10	AIR AIR/O ₂				34 22	35:30 23:30	1	Z	
	45	200	1:10	AIR AIR/O ₂				40 26	41:30 27:30	1	Z	
	45	210	1:10	AIR AIR/O ₂				47 30	48:30 31:30	1	Z	
	45	220	1:10	AIR AIR/O ₂				53 33	54:30 34:30	1	Z	
	45	230	1:10	AIR AIR/O ₂				59 36	60:30 42:30	1.5	Z	
	45	240	1:10	AIR AIR/O ₂				65 40	66:30 46:30	1.5	Z	
	45	270	1:10	AIR AIR/O ₂				80 48	81:30 54:30	1.5	Z	
	45	300	1:10	AIR AIR/O ₂				94 54	95:30 60:30	2		
	45	330	1:10	AIR AIR/O ₂				110 64	111:30 70:30	2.5		
	45	360	0:50	AIR AIR/O ₂				2 72	124 83:30	2.5		
	50 fsw	92	1:40	AIR AIR/O ₂					0 0	1:40 1:40	0	M
		50	95	1:20	AIR AIR/O ₂				1 4	2:40 5:40	0.5	M
		50	100	1:20	AIR AIR/O ₂				4 5	5:40 6:40	0.5	M

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
50	110	1:20	AIR						7	8:40	0.5	N
			AIR/O ₂					7	0	8:40		
50	120	1:20	AIR						11	12:40	0.5	O
			AIR/O ₂					10	0	11:40		
50	130	1:20	AIR						20	21:40	0.5	O
			AIR/O ₂					15	0	16:40		
50	140	1:20	AIR						27	28:40	1	Z
			AIR/O ₂					19	0	20:40		
50	150	1:20	AIR						34	35:40	1	Z
			AIR/O ₂					22	0	23:40		
50	160	1:20	AIR						40	41:40	1	Z
			AIR/O ₂					26	0	27:40		
50	170	1:20	AIR						46	47:40	1	Z
			AIR/O ₂					29	0	30:40		
50	180	1:20	AIR						53	54:40	1	Z
			AIR/O ₂					33	0	34:40		
50	190	1:20	AIR						61	62:40	1.5	Z
			AIR/O ₂					38	0	44:40		
50	200	1:20	AIR						69	70:40	1.5	Z
			AIR/O ₂					42	0	48:40		
50	210	1:20	AIR						77	78:40	1.5	Z
			AIR/O ₂					46	0	52:40		
50	220	1:20	AIR						84	85:40	2	Z
			AIR/O ₂					50	0	56:40		
50	230	1:00	AIR					1	89	91:40	2	Z
			AIR/O ₂					53	0	59:40		
50	240	1:00	AIR					4	93	98:40	2	Z
			AIR/O ₂					56	0	62:40		
50	270	1:00	AIR					11	106	118:40	2.5	
			AIR/O ₂					65	0	71:40		
50	300	1:00	AIR					17	121	139:40	2.5	
			AIR/O ₂					77	0	88:40		
50	330	1:00	AIR					28	130	159:40	3	
			AIR/O ₂					86	0	97:40		
50	360	1:00	AIR					37	144	182:40	3.5	
			AIR/O ₂					95	0	106:40		
55	74	1:50	AIR						0	1:50	0	L
			AIR/O ₂					0	0	1:50		
55	75	1:50	AIR						1	1:50	0.5	L
			AIR/O ₂					4	0	5:50		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)							Total Ascent Time (min:sec)	Chamber	
				Stop Times (min)								O ₂ Periods	Repetitive Group
				60	50	40	30	20	10				
55	80	1:30	AIR					4	5:50	0.5	L		
			AIR/O ₂				5	0	6:50				
55	85	1:30	AIR					7	8:50	0.5	M		
			AIR/O ₂				7	0	8:50				
55	90	1:30	AIR					10	11:50	0.5	M		
			AIR/O ₂				8	0	9:50				
55	95	1:30	AIR					12	13:50	0.5	N		
			AIR/O ₂				9	0	10:50				
55	100	1:30	AIR					15	16:50	0.5	N		
			AIR/O ₂				11	0	12:50				
55	110	1:30	AIR					20	21:50	0.5	O		
			AIR/O ₂				15	0	16:50				
55	120	1:30	AIR					30	31:50	1	O		
			AIR/O ₂				20	0	21:50				
55	130	1:30	AIR					38	39:50	1	Z		
			AIR/O ₂				25	0	26:50				
55	140	1:30	AIR					47	48:50	1	Z		
			AIR/O ₂				29	0	30:50				
55	150	1:30	AIR					54	55:50	1	Z		
			AIR/O ₂				33	0	34:50				
55	160	1:30	AIR					61	62:50	1.5	Z		
			AIR/O ₂				37	0	43:50				
55	170	1:30	AIR					70	71:50	1.5	Z		
			AIR/O ₂				43	0	49:50				
55	180	1:10	AIR					2	79	82:50	1.5	Z	
			AIR/O ₂				48	0	54:50				
55	190	1:10	AIR					7	84	92:50	2	Z	
			AIR/O ₂				53	0	59:50				
55	200	1:10	AIR					12	88	101:50	2	Z	
			AIR/O ₂				57	0	63:50				
55	210	1:10	AIR					16	92	109:50	2	Z	
			AIR/O ₂				61	0	67:50				
55	220	1:10	AIR					19	97	117:50	2.5	Z	
			AIR/O ₂				65	0	71:50				
55	230	1:10	AIR					23	100	124:50	2.5		
			AIR/O ₂				69	0	80:50				
55	240	1:10	AIR					26	107	134:50	2.5		
			AIR/O ₂				72	0	83:50				
55	270	1:10	AIR					35	124	160:50	3		
			AIR/O ₂				86	0	97:50				
55	300	1:10	AIR					49	135	185:50	3.5		
			AIR/O ₂				97	0	113:50				

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber		
				Stop Times (min)							O ₂ Periods	Repetitive Group	
				60	50	40	30	20	10				
60 fsw	55	330	1:10	AIR					60	152	213:50	4	
				AIR/O ₂					109	0	125:50		
	55	360	1:10	AIR					70	170	241:50	4	
				AIR/O ₂					121	0	137:50		
		63	2:00	AIR					0		2:00	0	K
				AIR/O ₂					0	0	2:00		
	60	65	1:40	AIR					2		4:00	0.5	L
				AIR/O ₂					4	0	6:00		
	60	70	1:40	AIR					6		8:00	0.5	L
				AIR/O ₂					7	0	9:00		
	60	75	1:40	AIR					10		12:00	0.5	M
				AIR/O ₂					8	0	10:00		
	60	80	1:40	AIR					14		16:00	0.5	M
				AIR/O ₂					10	0	12:00		
	60	85	1:40	AIR					18		20:00	0.5	N
				AIR/O ₂					12	0	14:00		
	60	90	1:40	AIR					21		23:00	0.5	N
				AIR/O ₂					13	0	15:00		
	60	95	1:40	AIR					24		26:00	0.5	O
				AIR/O ₂					15	0	17:00		
60	100	1:40	AIR					26		28:00	0.5	O	
			AIR/O ₂					18	0	20:00			
60	110	1:40	AIR					37		39:00	1	O	
			AIR/O ₂					24	0	26:00			
60	120	1:40	AIR					48		50:00	1	Z	
			AIR/O ₂					29	0	31:00			
60	130	1:20	AIR					3	54	59:00	1.5	Z	
			AIR/O ₂					34	0	36:00			
60	140	1:20	AIR					5	61	68:00	1.5	Z	
			AIR/O ₂					38	0	45:00			
60	150	1:20	AIR					7	69	78:00	1.5	Z	
			AIR/O ₂					44	0	51:00			
60	160	1:20	AIR					10	78	90:00	2	Z	
			AIR/O ₂					51	0	58:00			
60	170	1:20	AIR					16	84	102:00	2	Z	
			AIR/O ₂					56	0	63:00			
60	180	1:20	AIR					22	88	112:00	2	Z	
			AIR/O ₂					62	0	69:00			
60	190	1:20	AIR					27	93	122:00	2.5	Z	
			AIR/O ₂					67	0	79:00			
60	200	1:20	AIR					32	97	131:00	2.5	Z	
			AIR/O ₂					71	0	83:00			

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
60	210	1:20	AIR					36	103	141:00	2.5	
			AIR/O ₂					76	0	88:00		
60	220	1:20	AIR					40	110	152:00	3	
			AIR/O ₂					80	0	92:00		
60	230	1:20	AIR					44	116	162:00	3	
			AIR/O ₂					85	0	97:00		
60	240	1:20	AIR					47	123	172:00	3	
			AIR/O ₂					91	0	103:00		
60	270	1:20	AIR					64	136	202:00	3.5	
			AIR/O ₂					105	0	122:00		
60	300	1:20	AIR					79	154	235:00	4	
			AIR/O ₂					118	0	135:00		
60	330	1:00	AIR				4	88	175	269:00	4.5	
			AIR/O ₂				5	128	0	155:00		
60	360	1:00	AIR				8	96	193	299:00	5	
			AIR/O ₂				7	141	0	170:00		
70 fsw	48	2:20	AIR					0	0	2:20	0	K
			AIR/O ₂					0	0	2:20		
70	50	2:00	AIR						2	4:20	0.5	K
			AIR/O ₂					4	0	6:20		
70	55	2:00	AIR					9		11:20	0.5	L
			AIR/O ₂					8	0	10:20		
70	60	2:00	AIR						15	17:20	0.5	L
			AIR/O ₂					11	0	13:20		
70	65	2:00	AIR						20	22:20	0.5	M
			AIR/O ₂					13	0	15:20		
70	70	2:00	AIR						26	28:20	0.5	M
			AIR/O ₂					16	0	18:20		
70	75	2:00	AIR						30	32:20	0.5	N
			AIR/O ₂					18	0	20:20		
70	80	2:00	AIR						35	37:20	1	N
			AIR/O ₂					20	0	22:20		
70	85	1:40	AIR					3	35	40:20	1	O
			AIR/O ₂					23	0	25:20		
70	90	1:40	AIR					7	37	46:20	1	O
			AIR/O ₂					27	0	29:20		
70	95	1:40	AIR					10	41	53:20	1	Z
			AIR/O ₂					31	0	33:20		
70	100	1:40	AIR					12	46	60:20	1.5	Z
			AIR/O ₂					34	0	36:20		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)							Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				Stop Times (min)									
				60	50	40	30	20	10				
70	110	1:40	AIR					17	54	73:20	1.5	Z	
			AIR/O ₂					41	0	48:20			
70	120	1:40	AIR					21	61	84:20	1.5	Z	
			AIR/O ₂					47	0	54:20			
70	130	1:40	AIR					25	73	100:20	2	Z	
			AIR/O ₂					54	0	61:20			
70	140	1:40	AIR					31	82	115:20	2	Z	
			AIR/O ₂					62	0	69:20			
70	150	1:40	AIR					39	87	128:20	2.5	Z	
			AIR/O ₂					69	0	81:20			
70	160	1:20	AIR				1	46	92	141:20	2.5	Z	
			AIR/O ₂				4	72	0	88:20			
70	170	1:20	AIR				2	52	98	154:20	3		
			AIR/O ₂				4	78	0	94:20			
70	180	1:20	AIR				4	57	107	170:20	3		
			AIR/O ₂				5	83	0	100:20			
70	190	1:20	AIR				5	61	115	183:20	3		
			AIR/O ₂				6	87	0	105:20			
70	200	1:20	AIR				9	62	124	197:20	3.5		
			AIR/O ₂				8	92	0	117:20			
70	210	1:20	AIR				13	67	128	210:20	3.5		
			AIR/O ₂				10	97	0	124:20			
70	220	1:20	AIR				18	71	136	227:20	4		
			AIR/O ₂				12	102	0	131:20			
80 fsw	39	2:40	AIR					0		2:40	0	J	
			AIR/O ₂					0	0	2:40			
80	40	2:20	AIR					1		3:40	0.5	J	
			AIR/O ₂					4	0	6:40			
80	45	2:20	AIR					10		12:40	0.5	K	
			AIR/O ₂					8	0	10:40			
80	50	2:20	AIR					18		20:40	0.5	L	
			AIR/O ₂					12	0	14:40			
80	55	2:20	AIR					26		28:40	0.5	M	
			AIR/O ₂					16	0	18:40			
80	60	2:20	AIR					33		35:40	1	M	
			AIR/O ₂					19	0	21:40			
80	65	2:00	AIR					4	35	41:40	1	N	
			AIR/O ₂					22	0	24:40			
80	70	2:00	AIR					9	35	46:40	1	O	
			AIR/O ₂					25	0	27:40			

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
80	75	2:00	AIR					14	35	51:40	1	O
			AIR/O ₂					28	0	30:40		
80	80	2:00	AIR					18	38	58:40	1	Z
			AIR/O ₂					33	0	35:40		
80	85	2:00	AIR					22	43	67:40	1.5	Z
			AIR/O ₂					37	0	44:40		
80	90	2:00	AIR					26	47	75:40	1.5	Z
			AIR/O ₂					42	0	49:40		
80	95	2:00	AIR					29	51	82:40	1.5	Z
			AIR/O ₂					46	0	53:40		
80	100	1:40	AIR				1	31	56	90:40	2	Z
			AIR/O ₂				4	45	0	56:40		
80	110	1:40	AIR				6	31	72	111:40	2	Z
			AIR/O ₂				6	51	0	64:40		
80	120	1:40	AIR				10	34	84	130:40	2.5	Z
			AIR/O ₂				8	59	0	79:40		
80	130	1:40	AIR				14	41	91	148:40	2.5	Z
			AIR/O ₂				10	66	0	88:40		
80	140	1:40	AIR				17	48	96	163:40	3	
			AIR/O ₂				12	73	0	97:40		
80	150	1:40	AIR				19	54	107	182:40	3	
			AIR/O ₂				13	79	0	104:40		
80	160	1:40	AIR				21	61	116	200:40	3.5	
			AIR/O ₂				14	85	0	116:40		
80	170	1:40	AIR				27	63	125	217:40	3.5	
			AIR/O ₂				17	90	0	124:40		
80	180	1:40	AIR				33	68	132	235:40	4	
			AIR/O ₂				20	96	0	133:40		
80	190	1:40	AIR				40	72	142	256:40	4.5	
			AIR/O ₂				23	101	0	141:40		
90 fsw	33	3:00	AIR					0	0	3:00	0	J
			AIR/O ₂					0	0	3:00		
90	35	2:40	AIR					3	0	6:00	0.5	J
			AIR/O ₂					5	0	8:00		
90	40	2:40	AIR					14	0	17:00	0.5	K
			AIR/O ₂					10	0	13:00		
90	45	2:40	AIR					25	0	28:00	0.5	L
			AIR/O ₂					15	0	18:00		
90	50	2:40	AIR					34	0	37:00	1	M
			AIR/O ₂					20	0	23:00		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber	
				Stop Times (min)							O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
90	55	2:20	AIR					7	35	45:00	1	N
			AIR/O ₂					24	0	27:00		
90	60	2:20	AIR					14	35	52:00	1	N
			AIR/O ₂					27	0	30:00		
90	65	2:20	AIR					20	35	58:00	1	O
			AIR/O ₂					31	0	34:00		
90	70	2:20	AIR					26	36	65:00	1.5	Z
			AIR/O ₂					35	0	38:00		
90	75	2:20	AIR					31	41	75:00	1.5	Z
			AIR/O ₂					41	0	49:00		
90	80	2:00	AIR				5	31	47	86:00	1.5	Z
			AIR/O ₂				6	40	0	54:00		
90	85	2:00	AIR				9	31	53	96:00	2	Z
			AIR/O ₂				8	43	0	59:00		
90	90	2:00	AIR				13	31	63	110:00	2	Z
			AIR/O ₂				10	45	0	63:00		
90	95	2:00	AIR				16	31	72	122:00	2	Z
			AIR/O ₂				11	49	0	68:00		
90	100	2:00	AIR				19	31	80	133:00	2.5	Z
			AIR/O ₂				13	52	0	73:00		
90	110	2:00	AIR				25	37	90	155:00	2.5	Z
			AIR/O ₂				16	61	0	90:00		
90	120	1:40	AIR			1	28	45	97	174:00	3	
			AIR/O ₂			1	18	69	0	101:00		
90	130	1:40	AIR			5	28	53	110	199:00	3.5	
			AIR/O ₂			5	17	79	0	119:00		
90	140	1:40	AIR			8	28	61	120	220:00	3.5	
			AIR/O ₂			8	17	87	0	130:00		
90	150	1:40	AIR			11	33	67	129	243:00	4	
			AIR/O ₂			11	20	93	0	142:00		
90	160	1:40	AIR			13	40	72	140	268:00	4	
			AIR/O ₂			13	23	100	0	154:00		
100 fsw	29	3:20	AIR					0		3:20	0	J
			AIR/O ₂					0	0	3:20		
100	30	3:00	AIR					3		6:20	0.5	J
			AIR/O ₂					5	0	8:20		
100	35	3:00	AIR					16		19:20	0.5	K
			AIR/O ₂					11	0	14:20		
100	40	3:00	AIR					28		31:20	0.5	L
			AIR/O ₂					17	0	20:20		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)							Total Ascent Time (min:sec)	Chamber	
				Stop Times (min)								O ₂ Periods	Repetitive Group
				60	50	40	30	20	10				
100	45	2:40	AIR					4	35	42:20	1	M	
			AIR/O ₂					22	0	25:20			
100	50	2:40	AIR					13	35	51:20	1	N	
			AIR/O ₂					27	0	30:20			
100	55	2:40	AIR					22	35	60:20	1	O	
			AIR/O ₂					31	0	34:20			
100	60	2:40	AIR					29	36	68:20	1.5	O	
			AIR/O ₂					36	0	38:20			
100	65	2:20	AIR				5	31	39	78:20	1.5	Z	
			AIR/O ₂				6	35	0	49:20			
100	70	2:20	AIR				11	31	46	91:20	1.5	Z	
			AIR/O ₂				9	38	0	55:20			
100	75	2:20	AIR				16	31	54	104:20	2	Z	
			AIR/O ₂				11	42	0	61:20			
100	80	2:20	AIR				21	31	64	119:20	2	Z	
			AIR/O ₂				14	45	0	67:20			
100	85	2:20	AIR				26	31	74	134:20	2.5	Z	
			AIR/O ₂				16	48	0	72:20			
100	90	2:00	AIR			2	28	31	83	147:20	2.5	Z	
			AIR/O ₂			2	17	53	0	85:20			
100	95	2:00	AIR			5	28	35	90	161:20	2.5	Z	
			AIR/O ₂			5	18	59	0	95:20			
100	100	2:00	AIR			9	27	40	95	174:20	3	Z	
			AIR/O ₂			9	17	65	0	104:20			
100	110	2:00	AIR			14	28	49	107	201:20	3		
			AIR/O ₂			14	17	76	0	120:20			
100	120	2:00	AIR			19	28	58	120	228:20	3.5		
			AIR/O ₂			19	17	85	0	139:20			
100	130	2:00	AIR			23	31	67	129	253:20	4		
			AIR/O ₂			23	19	94	0	154:20			
100	140	1:40	AIR	1	25	38	75	141		283:20	4.5		
			AIR/O ₂	1	25	23	101	0	168:20				
110 fsw	25	3:40	AIR					0		3:40	0	I	
			AIR/O ₂					0	0	3:40			
110	30	3:20	AIR					14		17:40	0.5	K	
			AIR/O ₂					10	0	13:40			
110	35	3:20	AIR					29		32:40	0.5	L	
			AIR/O ₂					17	0	20:40			
110	40	3:00	AIR					6	36	45:40	1	M	
			AIR/O ₂					23	0	26:40			

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
110	45	3:00	AIR				17	36		56:40	1	N
			AIR/O ₂				29	0		32:40		
110	50	3:00	AIR					27	36	66:40	1.5	O
			AIR/O ₂				34	0		37:40		
110	55	2:40	AIR			5	31	35		74:40	1.5	Z
			AIR/O ₂			6	33	0		47:40		
110	60	2:40	AIR				13	31	42	89:40	1.5	Z
			AIR/O ₂				10	35	0	53:40		
110	65	2:40	AIR			20	31	49		103:40	2	Z
			AIR/O ₂			13	39	0		60:40		
110	70	2:40	AIR				26	31	61	121:40	2	Z
			AIR/O ₂				16	43	0	67:40		
110	75	2:20	AIR		4	28	31	73		139:40	2.5	Z
			AIR/O ₂		4	17	47	0		76:40		
110	80	2:20	AIR			9	28	31	84	155:40	2.5	Z
			AIR/O ₂			9	17	54	0	93:40		
110	85	2:20	AIR		13	28	35	92		171:40	2.5	Z
			AIR/O ₂		13	18	60	0		104:40		
110	90	2:20	AIR			17	28	40	97	185:40	3	Z
			AIR/O ₂			17	18	66	0	114:40		
110	95	2:20	AIR		21	28	45	105		202:40	3	
			AIR/O ₂		21	18	72	0		124:40		
110	100	2:20	AIR			25	28	50	113	219:40	3.5	
			AIR/O ₂			25	17	79	0	139:40		
110	110	2:00	AIR	5	25	28	63	125		249:40	3.5	
			AIR/O ₂	5	25	18	89	0		155:40		
110	120	2:00	AIR	10	25	35	73	138		284:40	4	
			AIR/O ₂	10	25	21	100	0		174:40		
110	130	2:00	AIR	14	25	44	80	155		321:40	4.5	
			AIR/O ₂	14	25	25	109	0		196:40		
110	140	2:00	AIR	17	26	51	86	173		356:40	5	
			AIR/O ₂	17	26	29	116	0		211:40		
120 fsw	22	4:00	AIR					0		4:00	0	I
			AIR/O ₂				0	0		4:00		
120	25	3:40	AIR					8		12:00	0.5	J
			AIR/O ₂				7	0		11:00		
120	30	3:40	AIR					25		29:00	0.5	K
			AIR/O ₂				16	0		20:00		
120	35	3:20	AIR					6	35	45:00	1	L
			AIR/O ₂				23	0		27:00		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
120	40	3:20	AIR				19	35		58:00	1	N
			AIR/O ₂				30	0		34:00		
120	45	3:20	AIR					31	35	70:00	1.5	O
			AIR/O ₂				36	0		45:00		
120	50	3:00	AIR				9	32	35	80:00	1.5	Z
			AIR/O ₂				8	33	0	50:00		
120	55	3:00	AIR				19	31	42	96:00	1.5	Z
			AIR/O ₂				13	35	0	57:00		
120	60	3:00	AIR				27	31	53	115:00	2	Z
			AIR/O ₂				17	39	0	65:00		
120	65	2:40	AIR			6	28	31	67	136:00	2	Z
			AIR/O ₂			6	17	45	0	77:00		
120	70	2:40	AIR			12	28	31	80	155:00	2.5	Z
			AIR/O ₂			12	18	50	0	94:00		
120	75	2:40	AIR			18	28	33	91	174:00	2.5	Z
			AIR/O ₂			18	17	59	0	108:00		
120	80	2:40	AIR			24	27	39	97	191:00	3	Z
			AIR/O ₂			24	17	66	0	121:00		
120	85	2:20	AIR	3	25	28	45	105		210:00	3	
			AIR/O ₂	3	25	18	73	0		133:00		
120	90	2:20	AIR	7	25	28	51	115		230:00	3.5	
			AIR/O ₂	7	25	18	79	0		148:00		
120	95	2:20	AIR	11	25	28	57	124		249:00	3.5	
			AIR/O ₂	11	25	17	86	0		158:00		
120	100	2:20	AIR	14	26	28	67	128		267:00	4	
			AIR/O ₂	14	26	17	94	0		170:00		
120	110	2:20	AIR	21	25	37	77	144		308:00	4.5	
			AIR/O ₂	21	25	22	104	0		196:00		
120	120	2:00	AIR	3	23	25	46	85	165	351:00	5	
			AIR/O ₂	3	23	25	27	113	0	215:00		
130 fsw	20	4:20	AIR					0		4:20	0	I
			AIR/O ₂				0	0		4:20		
130	25	4:00	AIR					18		22:20	0.5	K
			AIR/O ₂				12	0		16:20		
130	30	3:40	AIR				3	34		41:20	1	L
			AIR/O ₂				21	0		25:20		
130	35	3:40	AIR					17	35	56:20	1	M
			AIR/O ₂				29	0		33:20		
130	40	3:20	AIR				3	28	35	70:20	1.5	N
			AIR/O ₂				5	31	0	45:20		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
130	45	3:20	AIR				12	31	35	82:20	1.5	Z
			AIR/O ₂				9	33	0	51:20		
130	50	3:20	AIR				22	31	42	99:20	2	Z
			AIR/O ₂				14	35	0	58:20		
130	55	3:00	AIR			4	28	31	55	122:20	2	Z
			AIR/O ₂			4	17	40	0	70:20		
130	60	3:00	AIR			12	28	31	71	146:20	2	Z
			AIR/O ₂			12	17	46	0	84:20		
130	65	3:00	AIR			19	28	31	85	167:20	2.5	Z
			AIR/O ₂			19	18	53	0	104:20		
130	70	2:40	AIR	1	25	28	35	94	187:20	3	Z	
			AIR/O ₂	1	25	18	62	0	120:20			
130	75	2:40	AIR		7	25	28	42	103	209:20	3	
			AIR/O ₂		7	25	17	71	0	134:20		
130	80	2:40	AIR	12	25	28	49	114	232:20	3.5		
			AIR/O ₂	12	25	18	78	0	152:20			
130	85	2:40	AIR	17	25	28	56	124	254:20	3.5		
			AIR/O ₂	17	25	17	86	0	164:20			
130	90	2:40	AIR	21	26	28	67	128	274:20	4		
			AIR/O ₂	21	26	17	95	0	178:20			
130	95	2:20	AIR	2	23	26	32	74	138	299:20	4	
			AIR/O ₂	2	23	26	19	101	0	190:20		
130	100	2:20	AIR	6	23	25	38	79	148	323:20	4.5	
			AIR/O ₂	6	23	25	23	106	0	207:20		
130	110	2:20	AIR	12	23	25	49	87	172	372:20	5	
			AIR/O ₂	12	23	25	28	117	0	229:20		
140 fsw	17	4:40	AIR					0	4:40	0	I	
			AIR/O ₂				0	0	4:40			
140	20	4:20	AIR					6	10:40	0.5	J	
			AIR/O ₂				7	0	11:40			
140	25	4:00	AIR				2	26	32:40	0.5	K	
			AIR/O ₂				17	0	21:40			
140	30	4:00	AIR				12	35	51:40	1	M	
			AIR/O ₂				26	0	30:40			
140	35	3:40	AIR			4	24	35	67:40	1.5	N	
			AIR/O ₂			5	29	0	38:40			
140	40	3:40	AIR			11	31	35	81:40	1.5	O	
			AIR/O ₂			9	33	0	51:40			
140	45	3:20	AIR		3	20	31	41	99:40	1.5	Z	
			AIR/O ₂		3	14	34	0	60:40			

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)						Total Ascent Time (min:sec)	Chamber	
				Stop Times (min)							O ₂ Periods	Repetitive Group
				60	50	40	30	20	10			
140	50	3:20	AIR			7	27	31	55	124:40	2	Z
			AIR/O ₂			7	17	39	0	72:40		
140	55	3:20	AIR			16	28	31	72	151:40	2	Z
			AIR/O ₂			16	17	46	0	88:40		
140	60	3:00	AIR		2	23	27	32	87	175:40	2.5	Z
			AIR/O ₂		2	23	17	56	0	112:40		
140	65	3:00	AIR		7	25	28	37	97	198:40	3	Z
			AIR/O ₂		7	25	17	66	0	129:40		
140	70	3:00	AIR		14	25	28	45	108	224:40	3	
			AIR/O ₂		14	25	17	75	0	145:40		
140	75	3:00	AIR		20	25	28	52	120	249:40	3.5	
			AIR/O ₂		20	25	17	82	0	163:40		
140	80	2:40	AIR	2	24	25	28	63	128	274:40	4	
			AIR/O ₂	2	24	25	17	92	0	179:40		
140	85	2:40	AIR	7	23	26	31	73	136	300:40	4	
			AIR/O ₂	7	23	26	19	100	0	194:40		
140	90	2:40	AIR	12	23	25	38	79	147	328:40	4.5	
			AIR/O ₂	12	23	25	22	107	0	213:40		
140	95	2:40	AIR	16	23	25	43	84	162	357:40	4.5	
			AIR/O ₂	16	23	25	25	112	0	225:40		
140	100	2:40	AIR	19	24	25	48	89	174	383:40	5	
			AIR/O ₂	19	24	25	28	118	0	238:40		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total		Chamber	
				110	100	90	80	70	60	50	40	30	20	10	Ascent Time (min:sec)	O ₂ Periods	Repetitive Group	
140 fsw	17	4:40	AIR												0	4:40	0	I
			AIR/O ₂											0	0	4:40		
140	20	4:20	AIR												6	10:40	0.5	J
			AIR/O ₂											7	0	11:40		
140	25	4:00	AIR											2	26	32:40	0.5	K
			AIR/O ₂											17	0	21:40		
140	30	4:00	AIR											12	35	51:40	1	M
			AIR/O ₂											26	0	30:40		
140	35	3:40	AIR										4	24	35	67:40	1.5	N
			AIR/O ₂										5	29	0	38:40		
140	40	3:40	AIR										11	31	35	81:40	1.5	O
			AIR/O ₂										9	33	0	51:40		
140	45	3:20	AIR									3	20	31	41	99:40	1.5	Z
			AIR/O ₂									3	14	34	0	60:40		
140	50	3:20	AIR									7	27	31	55	124:40	2	Z
			AIR/O ₂									7	17	39	0	72:40		
140	55	3:20	AIR									16	28	31	72	151:40	2	Z
			AIR/O ₂									16	17	46	0	88:40		
140	60	3:00	AIR								2	23	27	32	87	175:40	2.5	Z
			AIR/O ₂									2	23	17	56	0		
140	65	3:00	AIR								7	25	28	37	97	198:40	3	Z
			AIR/O ₂									7	25	17	66	0		
140	70	3:00	AIR								14	25	28	45	108	224:40	3	
			AIR/O ₂									14	25	17	75	0		
140	75	3:00	AIR								20	25	28	52	120	249:40	3.5	
			AIR/O ₂									20	25	17	82	0		
140	80	2:40	AIR							2	24	25	28	63	128	274:40	4	
			AIR/O ₂									2	24	25	17	92		
140	85	2:40	AIR							7	23	26	31	73	136	300:40	4	
			AIR/O ₂									7	23	26	19	100		
140	90	2:40	AIR							12	23	25	38	79	147	328:40	4.5	
			AIR/O ₂									12	23	25	22	107		
140	95	2:40	AIR							16	23	25	43	84	162	357:40	4.5	
			AIR/O ₂									16	23	25	25	112		
140	100	2:40	AIR							19	24	25	48	89	174	383:40	5	
			AIR/O ₂									19	24	25	28	118		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				110	100	90	80	70	60	50	40	30	20	10			
150 fsw	15	5:00	AIR										0	0	5:00	0	H
			AIR/O ₂										0	0	5:00		
150	20	4:40	AIR										15	0	20:00	0.5	J
			AIR/O ₂										11	0	16:00		
150	25	4:20	AIR									6	32	0	43:00	1	L
			AIR/O ₂									22	0	0	27:00		
150	30	4:00	AIR									3	19	35	62:00	1	M
			AIR/O ₂									5	26	0	36:00		
150	35	4:00	AIR									11	27	35	78:00	1.5	O
			AIR/O ₂									9	31	0	50:00		
150	40	3:40	AIR								4	18	31	38	96:00	1.5	Z
			AIR/O ₂								4	12	33	0	59:00		
150	45	3:40	AIR							10	24	32	51	0	122:00	2	Z
			AIR/O ₂							10	16	38	0	0	74:00		
150	50	3:20	AIR						3	15	28	31	71	0	153:00	2	Z
			AIR/O ₂						3	15	17	45	0	0	90:00		
150	55	3:20	AIR						6	22	27	32	88	0	180:00	2.5	Z
			AIR/O ₂						6	22	17	56	0	0	116:00		
150	60	3:20	AIR						11	26	27	38	98	0	205:00	3	Z
			AIR/O ₂						11	26	17	67	0	0	136:00		
150	65	3:00	AIR					1	18	25	28	46	112	0	235:00	3	Z
			AIR/O ₂					1	18	25	18	75	0	0	152:00		
150	70	3:00	AIR					3	23	25	28	55	124	0	263:00	3.5	
			AIR/O ₂					3	23	25	18	84	0	0	173:00		
150	75	3:00	AIR					9	23	26	27	70	130	0	290:00	4	
			AIR/O ₂					9	23	26	17	97	0	0	192:00		
150	80	3:00	AIR					15	23	25	35	77	143	0	323:00	4.5	
			AIR/O ₂					15	23	25	21	104	0	0	208:00		
150	85	3:00	AIR					20	23	25	41	83	157	0	354:00	4.5	
			AIR/O ₂					20	23	25	24	111	0	0	228:00		
150	90	2:40	AIR				3	22	23	25	47	88	173	0	386:00	5	
			AIR/O ₂				3	22	23	25	27	118	0	0	243:00		
160 fsw	13	5:20	AIR										0	0	5:20	0	H
			AIR/O ₂										0	0	5:20		
160	15	5:00	AIR										3	0	8:20	0.5	I
			AIR/O ₂										5	0	10:20		
160	20	4:40	AIR									4	19	0	28:20	0.5	K
			AIR/O ₂									15	0	0	20:20		
160	25	4:20	AIR								3	10	34	0	52:20	1	M
			AIR/O ₂								5	21	0	0	31:20		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				110	100	90	80	70	60	50	40	30	20	10			
160	30	4:00	AIR								1	8	22	35	71:20	1.5	N
			AIR/O ₂								1	7	29	0	47:20		
160	35	4:00	AIR								4	14	30	36	89:20	1.5	Z
			AIR/O ₂								4	10	33	0	57:20		
160	40	4:00	AIR								12	20	31	46	114:20	2	Z
			AIR/O ₂								12	13	38	0	73:20		
160	45	3:40	AIR							5	12	28	31	67	148:20	2	Z
			AIR/O ₂							5	12	18	43	0	88:20		
160	50	3:40	AIR							10	19	27	31	87	179:20	2.5	Z
			AIR/O ₂							10	19	17	55	0	116:20		
160	55	3:20	AIR						2	12	25	28	37	98	207:20	3	Z
			AIR/O ₂						2	12	25	17	67	0	138:20		
160	60	3:20	AIR						5	18	25	28	47	113	241:20	3.5	
			AIR/O ₂						5	18	25	17	77	0	157:20		
160	65	3:20	AIR						8	23	25	28	58	125	272:20	3.5	
			AIR/O ₂						8	23	25	17	87	0	180:20		
160	70	3:20	AIR						15	23	25	29	72	134	303:20	4	
			AIR/O ₂						15	23	25	18	99	0	200:20		
160	75	3:00	AIR					2	19	23	26	36	80	147	338:20	4.5	
			AIR/O ₂					2	19	23	26	21	108	0	224:20		
160	80	3:00	AIR					6	21	23	25	44	86	165	375:20	5	
			AIR/O ₂					6	21	23	25	26	114	0	240:20		
170 fsw	12	5:40	AIR											0	5:40	0	H
			AIR/O ₂											0	5:40		
170	15	5:20	AIR											7	12:40	0.5	I
			AIR/O ₂											7	12:40		
170	20	4:40	AIR								1	7	23		36:40	0.5	K
			AIR/O ₂								4	14	0		23:40		
170	25	4:20	AIR								1	6	13	36	61:40	1	M
			AIR/O ₂								1	6	24	0	36:40		
170	30	4:20	AIR								5	10	25	35	80:40	1.5	O
			AIR/O ₂								5	9	29	0	53:40		
170	35	4:00	AIR							2	9	16	31	42	105:40	1.5	Z
			AIR/O ₂							2	9	11	35	0	67:40		
170	40	4:00	AIR							6	12	24	31	60	138:40	2	Z
			AIR/O ₂							6	12	15	42	0	85:40		
170	45	4:00	AIR							12	15	28	31	82	173:40	2.5	Z
			AIR/O ₂							12	15	18	51	0	111:40		
170	50	3:40	AIR						5	11	23	28	37	96	205:40	3	Z
			AIR/O ₂						5	11	23	17	65	0	136:40		

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)												Total Ascent Time (min:sec)	Chamber	
				Stop Times (min)													O ₂ Periods	Repetitive Group
				110	100	90	80	70	60	50	40	30	20	10				
170	55	3:40	AIR						9	15	25	28	47	111	240:40	3.5		
			AIR/O ₂						9	15	25	18	76	0	158:40			
170	60	3:20	AIR					2	10	22	25	28	59	125	276:40	3.5		
			AIR/O ₂				2	10	22	25	17	88	0	184:40				
170	65	3:20	AIR					4	15	23	25	30	74	135	311:40	4		
			AIR/O ₂				4	15	23	25	19	100	0	206:40				
170	70	3:20	AIR					7	19	23	25	38	82	151	350:40	4.5		
			AIR/O ₂				7	19	23	25	23	109	0	231:40				
170	75	3:20	AIR					11	22	23	25	46	88	171	391:40	5		
			AIR/O ₂				11	22	23	25	26	117	0	249:40				
180 fsw	11	6:00	AIR											0	6:00	0	H	
			AIR/O ₂										0	0	6:00			
180	15	5:20	AIR										2	9	17:00	0.5	J	
			AIR/O ₂										9	0	15:00			
180	20	5:00	AIR									4	8	27	45:00	1	L	
			AIR/O ₂									5	17	0	28:00			
180	25	4:40	AIR								4	7	18	35	70:00	1	N	
			AIR/O ₂								4	7	26	0	43:00			
180	30	4:20	AIR						2	6	14	28	35		91:00	1.5	Z	
			AIR/O ₂					2	6	10	32	0		61:00				
180	35	4:20	AIR							5	12	19	31	50	123:00	2	Z	
			AIR/O ₂						5	12	13	39	0	80:00				
180	40	4:00	AIR					2	10	13	27	31	74		163:00	2	Z	
			AIR/O ₂					2	10	13	17	46	0	99:00				
180	45	4:00	AIR						7	11	19	28	35	93	199:00	3	Z	
			AIR/O ₂					7	11	19	17	62	0	132:00				
180	50	3:40	AIR				1	11	12	25	28	45	108		236:00	3		
			AIR/O ₂				1	11	12	25	17	75	0	157:00				
180	55	3:40	AIR					5	10	19	26	28	57	124	275:00	3.5		
			AIR/O ₂					5	10	19	26	17	86	0	184:00			
180	60	3:40	AIR					8	13	23	25	30	73	135	313:00	4		
			AIR/O ₂					8	13	23	25	19	100	0	209:00			
180	65	3:20	AIR				1	10	18	23	26	38	82	153	357:00	4.5		
			AIR/O ₂				1	10	18	23	26	23	109	0	236:00			
180	70	3:20	AIR				3	13	21	23	25	47	89	174	401:00	5		
			AIR/O ₂				3	13	21	23	25	27	119	0	257:00			
190 fsw	10	6:20	AIR											0	6:20	0	H	
			AIR/O ₂										0	0	6:20			
190	15	5:40	AIR										5	12	23:20	0.5	J	
			AIR/O ₂										12	0	18:20			

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to		Gas Mix	Decompression Stops (fsw)												Total Ascent Time (min:sec)	Chamber	
		First Stop (min:sec)	Stop Times (min)													O ₂ Periods		Repetitive Group	
			110		100	90	80	70	60	50	40	30	20	10					
190	20	5:00	AIR									1	7	8	31	53:20	1	M	
			AIR/O ₂									1	7	19	0	33:20			
190	25	4:40	AIR								2	6	8	22	35	79:20	1.5	O	
			AIR/O ₂								2	6	7	28	0	49:20			
190	30	4:40	AIR								6	8	14	31	41	106:20	1.5	Z	
			AIR/O ₂								6	8	10	36	0	71:20			
190	35	4:20	AIR							3	8	12	22	31	64	146:20	2	Z	
			AIR/O ₂								3	8	12	15	44	0			93:20
190	40	4:20	AIR							7	11	15	28	31	88	186:20	2.5	Z	
			AIR/O ₂								7	11	15	17	56	0			122:20
190	45	4:00	AIR						2	11	11	23	28	42	102	225:20	3		
			AIR/O ₂						2	11	11	23	17	71	0	151:20			
190	50	4:00	AIR						7	11	15	26	28	53	122	268:20	3.5		
			AIR/O ₂						7	11	15	26	17	84	0	181:20			
190	55	3:40	AIR					2	9	11	23	25	29	72	133	310:20	4		
			AIR/O ₂						2	9	11	23	25	18	99	0			208:20
190	60	3:40	AIR					5	9	17	23	25	39	81	152	357:20	4.5		
			AIR/O ₂						5	9	17	23	25	23	109	0			237:20
190	65	3:40	AIR					7	11	21	24	25	47	89	174	404:20	5		
			AIR/O ₂						7	11	21	24	25	27	119	0			260:20
200 fsw	9	6:40	AIR												0	6:40	0	G	
			AIR/O ₂											0	0	6:40			
200	10	6:20	AIR												1	7:40	0.5	H	
			AIR/O ₂											4	0	10:40			
200	15	5:40	AIR										2	7	16	31:40	0.5	K	
			AIR/O ₂										4	11	0	21:40			
200	20	5:20	AIR									5	6	10	35	62:40	1	M	
			AIR/O ₂									5	6	22	0	39:40			
200	25	5:00	AIR								5	6	10	25	35	87:40	1.5	O	
			AIR/O ₂									5	6	8	30	0			60:40
200	30	4:40	AIR							4	5	11	17	31	49	123:40	2	Z	
			AIR/O ₂								4	5	11	12	40	0			83:40
200	35	4:20	AIR						1	6	10	12	25	32	77	169:40	2.5	Z	
			AIR/O ₂						1	6	10	12	16	49	0	105:40			
200	40	4:20	AIR						3	10	11	18	28	38	96	210:40	3	Z	
			AIR/O ₂						3	10	11	18	17	66	0	141:40			
200	45	4:20	AIR						8	11	12	25	28	50	115	255:40	3.5		
			AIR/O ₂						8	11	12	25	17	80	0	174:40			
200	50	4:00	AIR						3	10	11	19	25	68	129	299:40	4		
			AIR/O ₂						3	10	11	19	25	18	95	0			202:40
200	55	4:00	AIR						7	10	14	23	25	38	79	350:40	4.5		
			AIR/O ₂						7	10	14	23	25	22	107	0			234:40

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)											Total Ascent Time (min:sec)	Chamber	
				110	100	90	80	70	60	50	40	30	20	10		O ₂ Periods	Repetitive Group
200	60	3:40	AIR			2	9	9	21	23	25	47	89	172	403:40	5	
			AIR/O ₂			2	9	9	21	23	25	27	118	0	260:40		
210 fsw	8	7:00	AIR											0	7:00	0	G
			AIR/O ₂											0	7:00		
210	10	6:40	AIR											5	12:00	0.5	H
			AIR/O ₂										6	0	13:00		
210	15	6:00	AIR									5	7	20	39:00	0.5	L
			AIR/O ₂									6	12	0	25:00		
210	20	5:20	AIR							2	6	6	15	35	71:00	1	N
			AIR/O ₂							2	6	6	6	25	0		
210	25	5:00	AIR						2	6	6	13	28	39	101:00	1.5	Z
			AIR/O ₂						2	6	6	10	32	0	68:00		
210	30	4:40	AIR				2	5	6	12	20	31	62	145:00	2	Z	
			AIR/O ₂				2	5	6	12	14	43	0	94:00			
210	35	4:40	AIR				5	6	11	14	28	32	89	192:00	2.5	Z	
			AIR/O ₂				5	6	11	14	17	57	0	127:00			
210	40	4:20	AIR			2	6	10	12	21	28	46	106	238:00	3		
			AIR/O ₂			2	6	10	12	21	18	73	0	159:00			
210	45	4:20	AIR			4	10	10	16	25	28	61	125	286:00	3.5		
			AIR/O ₂			4	10	10	16	25	17	89	0	193:00			
210	50	4:20	AIR			9	10	10	23	25	35	77	141	337:00	4.5		
			AIR/O ₂			9	10	10	23	25	21	104	0	224:00			
210	55	4:00	AIR		4	9	10	17	23	26	46	86	168	396:00	5		
			AIR/O ₂		4	9	10	17	23	26	26	115	0	257:00			
220 fsw	7	7:20	AIR											0	7:20	0	H
			AIR/O ₂											0	7:20		
220	10	6:40	AIR										1	7	15:20	0.5	I
			AIR/O ₂										7	0	14:20		
220	15	6:00	AIR								1	7	7	23	45:20	1	L
			AIR/O ₂								1	7	14	0	29:20		
220	20	5:40	AIR							5	6	6	20	35	79:20	1	O
			AIR/O ₂							5	6	6	27	0	51:20		
220	25	5:20	AIR					5	6	7	14	31	44	114:20	1.5	Z	
			AIR/O ₂					5	6	7	10	37	0	77:20			
220	30	5:00	AIR				5	5	8	12	24	31	74	166:20	2	Z	
			AIR/O ₂				5	5	8	12	15	48	0	105:20			
220	35	4:40	AIR			3	4	9	11	17	28	39	96	214:20	3	Z	
			AIR/O ₂			3	4	9	11	17	18	65	0	144:20			
220	40	4:20	AIR		1	4	8	11	11	25	28	53	118	266:20	3.5		
			AIR/O ₂		1	4	8	11	11	25	18	81	0	181:20			

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to		Gas Mix	Decompression Stops (fsw)												Total		Chamber	
		First Stop (min:sec)			Stop Times (min)													Ascent Time (min:sec)	O ₂ Periods	Repetitive Group
					110	100	90	80	70	60	50	40	30	20	10					
220	45	4:20	AIR			2	8	9	11	19	25	32	72	134	319:20	4				
			AIR/O ₂			2	8	9	11	19	25	20	98	0	214:20					
220	50	4:20	AIR			5	9	10	14	23	25	43	84	158	378:20	4.5				
			AIR/O ₂			5	9	10	14	23	25	25	111	0	249:20					
230 fsw	7	7:40	AIR											0	7:40	0	G			
			AIR/O ₂										0	0	7:40					
230	10	7:00	AIR										2	9	18:40	0.5	I			
			AIR/O ₂										9	0	16:40					
230	15	6:20	AIR								4	6	8	28	53:40	1	M			
			AIR/O ₂							4	7	16	0	34:40						
230	20	5:40	AIR						2	5	7	7	23	35	86:40	1.5	O			
			AIR/O ₂						2	5	7	7	29	0	62:40					
230	25	5:20	AIR					3	5	6	9	17	31	52	130:40	2	Z			
			AIR/O ₂					3	5	6	9	12	41	0	88:40					
230	30	5:00	AIR					3	4	5	11	12	27	32	85	186:40	2.5	Z		
			AIR/O ₂					3	4	5	11	12	17	54	0	123:40				
230	35	4:40	AIR			1	5	5	10	11	21	28	46	105	239:40	3				
			AIR/O ₂			1	5	5	10	11	21	17	74	0	161:40					
230	40	4:40	AIR			3	6	9	11	15	25	28	64	127	295:40	4				
			AIR/O ₂			3	6	9	11	15	25	17	92	0	200:40					
230	45	4:20	AIR		1	5	9	9	11	23	25	39	79	147	355:40	4.5				
			AIR/O ₂		1	5	9	9	11	23	25	23	107	0	240:40					
230	50	4:20	AIR		2	9	8	10	18	23	25	51	89	177	419:40	5				
			AIR/O ₂		2	9	8	10	18	23	25	29	120	0	271:40					
240 fsw	6	8:00	AIR											0	8:00	0	G			
			AIR/O ₂										0	0	8:00					
240	10	7:00	AIR									1	5	8	22:00	0.5	J			
			AIR/O ₂									4	6	0	18:00					
240	15	6:20	AIR							1	6	6	8	32	61:00	1	M			
			AIR/O ₂							1	6	6	20	0	41:00					
240	20	6:00	AIR						5	5	6	10	26	37	97:00	1.5	Z			
			AIR/O ₂						5	5	6	8	31	0	68:00					
240	25	5:20	AIR				1	5	5	5	12	20	32	63	151:00	2	Z			
			AIR/O ₂				1	5	5	5	12	14	44	0	99:00					
240	30	5:00	AIR			1	4	5	6	12	15	27	37	93	208:00	3	Z			
			AIR/O ₂			1	4	5	6	12	15	17	62	0	140:00					
240	35	5:00	AIR			4	4	7	11	11	24	28	53	116	266:00	3.5				
			AIR/O ₂			4	4	7	11	11	24	18	80	0	182:00					
240	40	4:40	AIR		2	4	7	10	10	19	26	33	73	136	328:00	4				
			AIR/O ₂		2	4	7	10	10	19	26	20	100	0	221:00					
240	45	4:40	AIR		3	8	8	10	14	23	25	47	85	165	396:00	5				
			AIR/O ₂		3	8	8	10	14	23	25	27	113	0	259:00					

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)												Total Ascent Time (min:sec)	Chamber	
				110	100	90	80	70	60	50	40	30	20	10	O ₂ Periods		Repetitive Group	
250 fsw			AIR											0	8:20			
			AIR/O ₂											0	8:20			
	250	10	7:20	AIR								2	6	9	25:20	0.5	J	
			AIR/O ₂									4	7	0	19:20			
	250	15	6:40	AIR						3	6	7	9	35	68:20	1	N	
			AIR/O ₂							3	6	7	21	0	45:20			
	250	20	6:00	AIR					2	5	6	6	11	30	41	109:20	1.5	Z
			AIR/O ₂					2	5	6	6	9	35	0	76:20			
	250	25	5:40	AIR				4	4	5	7	12	24	32	74	170:20	2	Z
			AIR/O ₂				4	4	5	7	12	16	47	0	108:20			
250	30	5:20	AIR			4	4	4	9	11	19	28	42	100	229:20	3		
		AIR/O ₂			4	4	4	9	11	19	17	70	0	156:20				
250	35	5:00	AIR		2	4	5	9	10	14	25	28	62	125	292:20	3.5		
		AIR/O ₂		2	4	5	9	10	14	25	18	88	0	198:20				
250	40	4:40	AIR	1	3	5	9	10	10	22	26	39	80	148	361:20	4.5		
		AIR/O ₂	1	3	5	9	10	10	22	26	23	107	0	244:20				
260 fsw			AIR											0	8:40	0	H	
			AIR/O ₂											0	8:40			
	260	10	7:40	AIR								3	8	11	30:40	0.5	K	
			AIR/O ₂									5	9	0	22:40			
	260	15	6:40	AIR					1	5	6	7	13	36	76:40	1	N	
			AIR/O ₂						1	5	6	7	23	0	50:40			
	260	20	6:20	AIR					5	5	5	6	16	31	46	122:40	2	Z
			AIR/O ₂					5	5	5	6	11	38	0	83:40			
	260	25	5:40	AIR			2	4	5	5	8	13	28	31	85	189:40	2.5	Z
			AIR/O ₂			2	4	5	5	8	13	17	54	0	126:40			
260	30	5:20	AIR		2	4	4	5	10	12	22	28	48	110	253:40	3.5		
		AIR/O ₂		2	4	4	5	10	12	22	17	77	0	171:40				
260	35	5:00	AIR	1	4	4	6	10	10	18	25	32	71	133	322:40	4		
		AIR/O ₂	1	4	4	6	10	10	18	25	19	98	0	218:40				
260	40	5:00	AIR	3	4	7	8	10	14	23	25	47	85	165	399:40	5		
		AIR/O ₂	3	4	7	8	10	14	23	25	27	114	0	263:40				
270 fsw			AIR											0	9:00	0	G	
			AIR/O ₂											0	9:00			
	270	10	7:40	AIR								2	4	7	16	38:00	0.5	K
			AIR/O ₂									2	5	11	0	27:00		
	270	15	7:00	AIR						3	5	6	7	18	35	83:00	1	O
		AIR/O ₂							3	5	6	7	26	0	56:00			
270	20	6:20	AIR				2	5	5	6	7	19	31	54	138:00	2	Z	
		AIR/O ₂				2	5	5	6	7	13	41	0	93:00				

Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)												Total Ascent Time (min:sec)	Chamber	
				110	100	90	80	70	60	50	40	30	20	10	O ₂ Periods		Repetitive Group	
270	25	6:00	AIR			4	5	4	5	11	15	28	35	92	208:00	2.5	Z	
			AIR/O ₂			4	5	4	5	11	15	17	61	0	141:00			
	30	5:20	AIR	1	3	4	5	6	11	12	25	28	55	120	279:00	3.5		
			AIR/O ₂	1	3	4	5	6	11	12	25	17	84	0	192:00			
	35	5:20	AIR	3	4	4	8	10	10	21	25	38	77	144	353:00	4.5		
			AIR/O ₂	3	4	4	8	10	10	21	25	23	104	0	241:00			
	40	5:00	AIR	3	5	8	9	9	18	23	25	54	90	181	436:00	5		
			AIR/O ₂	3	5	8	9	9	18	23	25	31	122	0	284:00			
	280 fsw	5	9:20	AIR											0	9:20	0	G
				AIR/O ₂											0	0		
280	10	8:00	AIR								3	5	8	19	44:20	1	L	
			AIR/O ₂								3	6	13	0	31:20			
280	15	7:00	AIR					1	4	6	6	6	23	36	91:20	1.5	O	
			AIR/O ₂					1	4	6	6	6	29	0	61:20			
280	20	6:40	AIR				5	4	5	6	9	22	31	64	155:20	2	Z	
			AIR/O ₂				5	4	5	6	9	14	45	0	102:20			
280	25	6:00	AIR		2	4	5	4	6	12	18	28	41	97	226:20	3	Z	
			AIR/O ₂		2	4	5	4	6	12	18	18	67	0	155:20			
280	30	5:40	AIR	3	4	4	4	8	11	15	26	27	66	127	304:20	4		
			AIR/O ₂	3	4	4	4	8	11	15	26	17	93	0	209:20			
290 fsw	4	9:40	AIR											0	9:40	0	G	
			AIR/O ₂											0	0			9:40
	5	9:20	AIR											1	10:40	0.5	H	
			AIR/O ₂											4	0			13:40
	10	8:00	AIR							1	3	7	7	23	50:40	1	L	
			AIR/O ₂								1	3	7	14	0			34:40
	15	7:20	AIR					2	5	6	6	7	27	36	98:40	1.5	Z	
			AIR/O ₂					2	5	6	6	7	31	0	71:40			
	20	6:40	AIR			3	4	4	5	6	11	25	32	73	172:40	2	Z	
			AIR/O ₂			3	4	4	5	6	11	16	47	0	110:40			
25	6:00	AIR	1	4	4	4	4	8	12	22	28	46	107	249:40	3			
		AIR/O ₂	1	4	4	4	4	8	12	22	17	75	0	170:40				

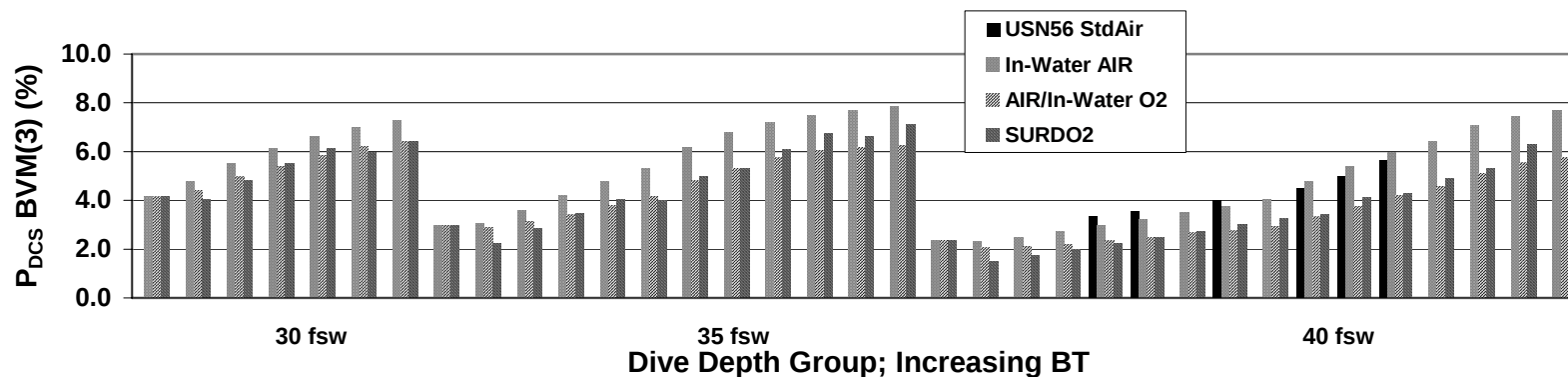
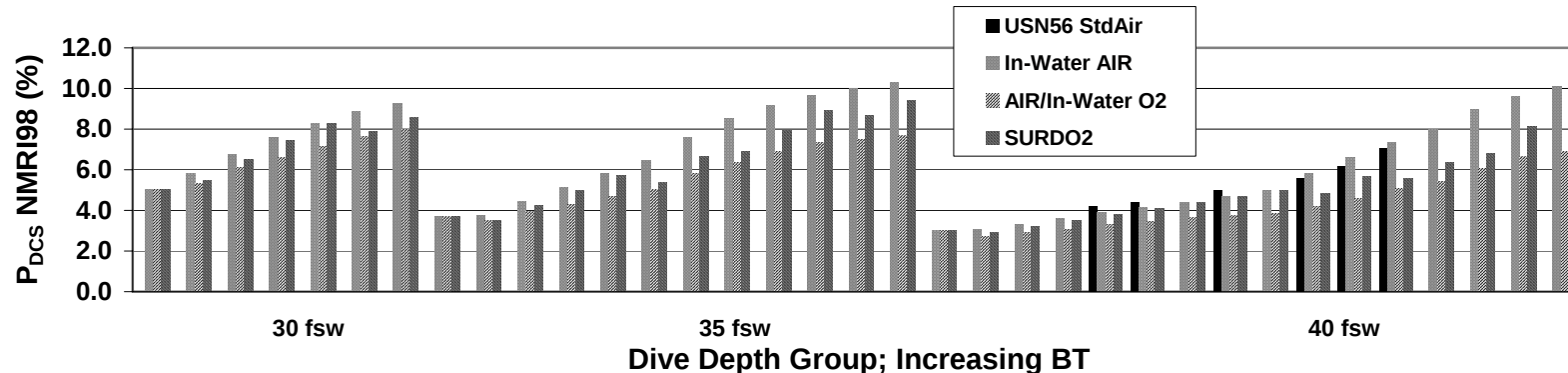
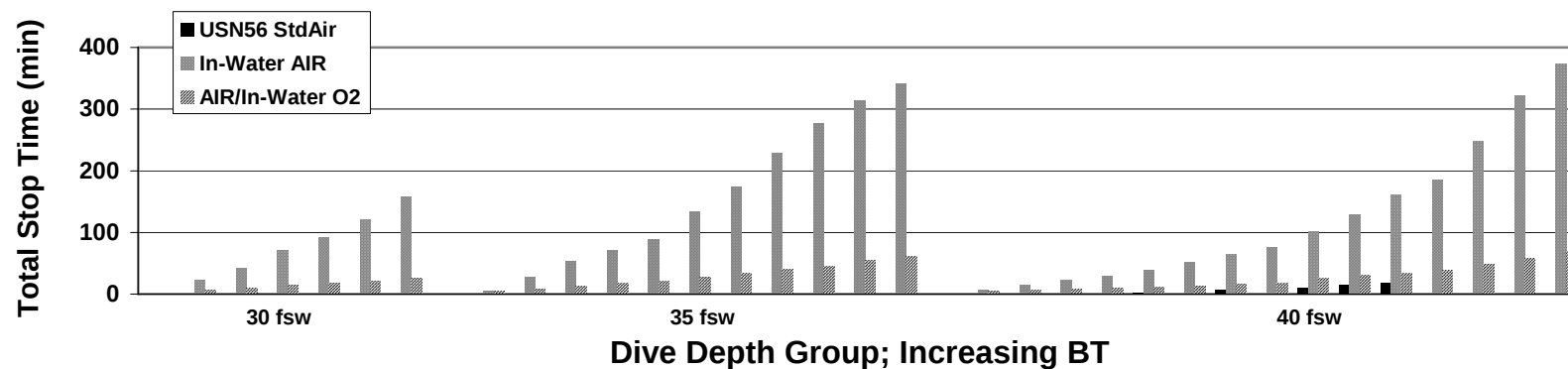
Air VVal18M

Depth (fsw)	Bottom Time (min)	Time to First Stop (min:sec)	Gas Mix	Decompression Stops (fsw)												Total Ascent Time (min:sec)	Chamber O ₂ Periods	Repetitive Group
				Stop Times (min)														
				110	100	90	80	70	60	50	40	30	20	10				
300 fsw	4	10:00	AIR											0	10:00	0	G	
			AIR/O ₂										0	0	10:00			
300	5	9:40	AIR											3	13:00	0.5	H	
			AIR/O ₂										5	0	15:00			
300	10	8:20	AIR						2	4	7	7	27	57:00	1	M		
			AIR/O ₂						2	4	7	16	0	39:00				
300	15	7:20	AIR				1	3	6	5	6	9	30	41	111:00	1.5	Z	
			AIR/O ₂				1	3	6	5	6	8	35	0	79:00			
300	20	6:40	AIR		1	4	4	5	5	6	13	28	31	84	191:00	2.5	Z	
			AIR/O ₂		1	4	4	5	5	6	13	17	53	0	128:00			
300	25	6:20	AIR	3	4	4	4	4	10	12	25	28	52	116	272:00	3.5		
			AIR/O ₂	3	4	4	4	4	10	12	25	18	80	0	189:00			

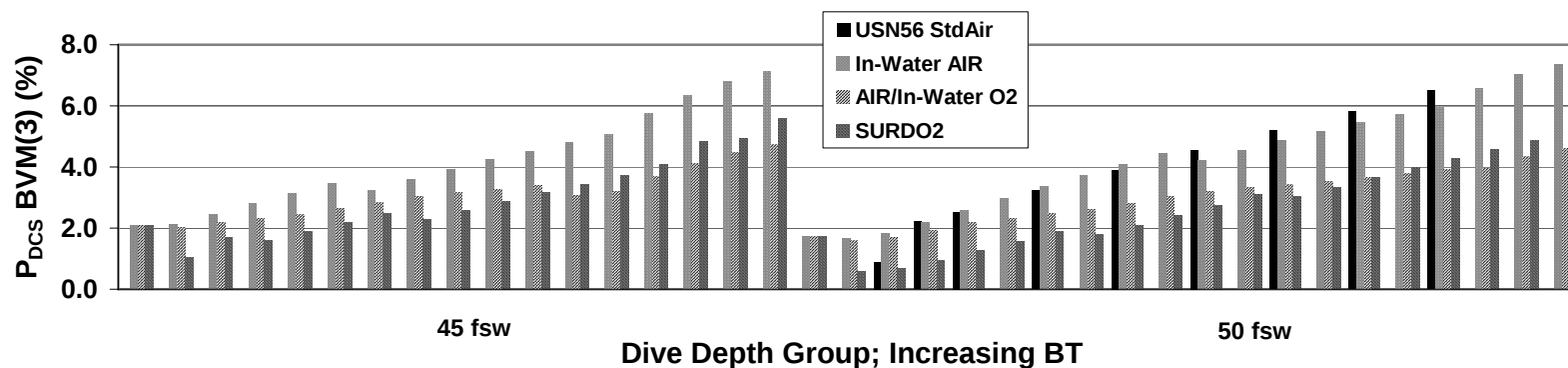
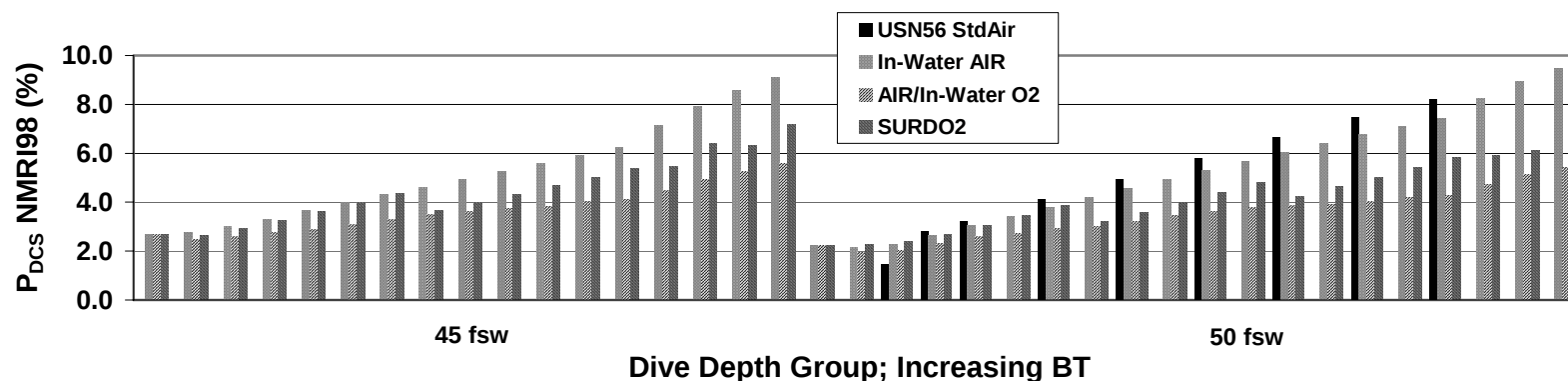
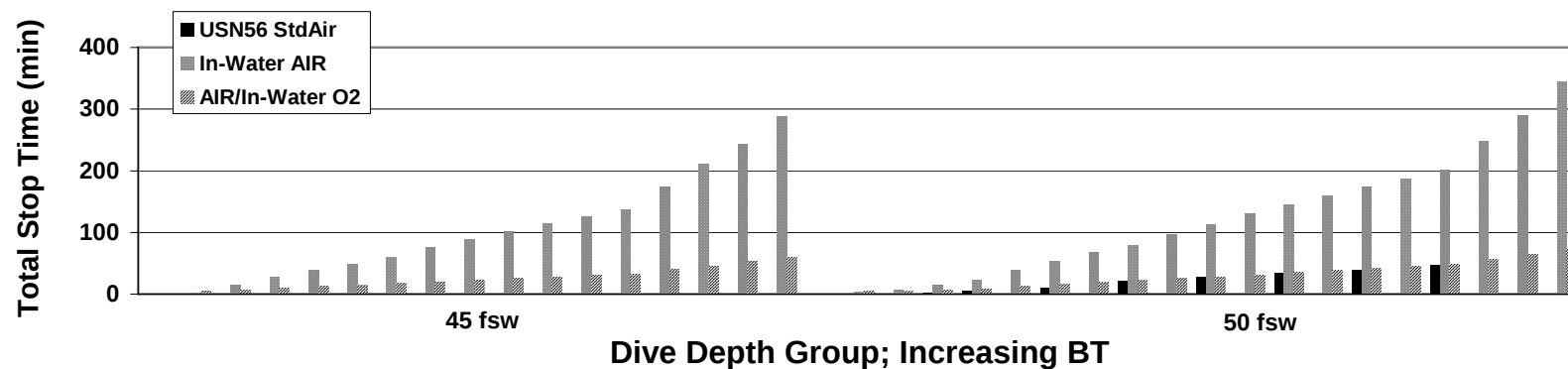
Air VVal18

**APPENDIX G. Total Stop Times and Estimated DCS Risks of VVal-18 and USN Air Decompression Schedules
Comparatively Illustrated by Dive Depth Group**

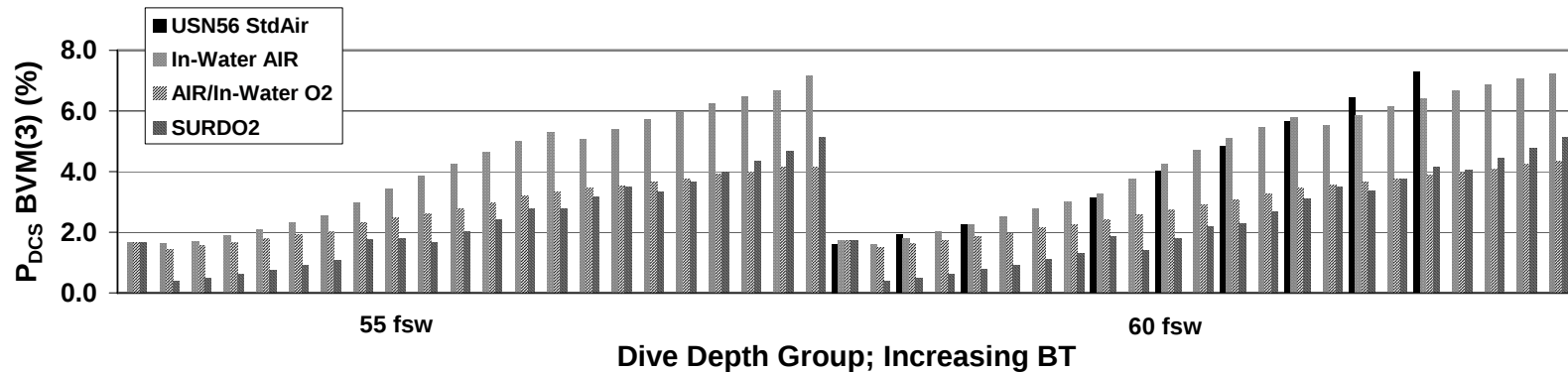
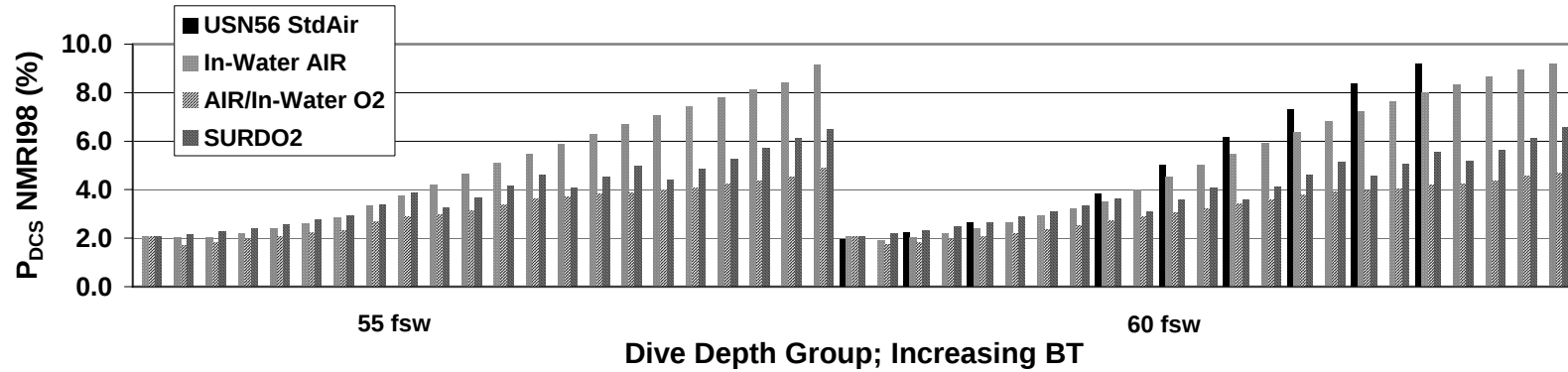
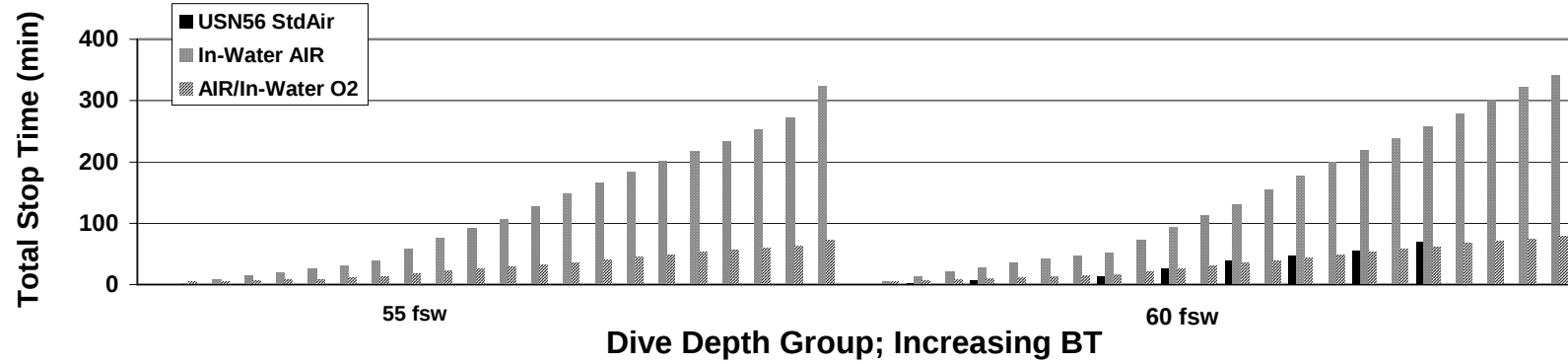
Air VVal18



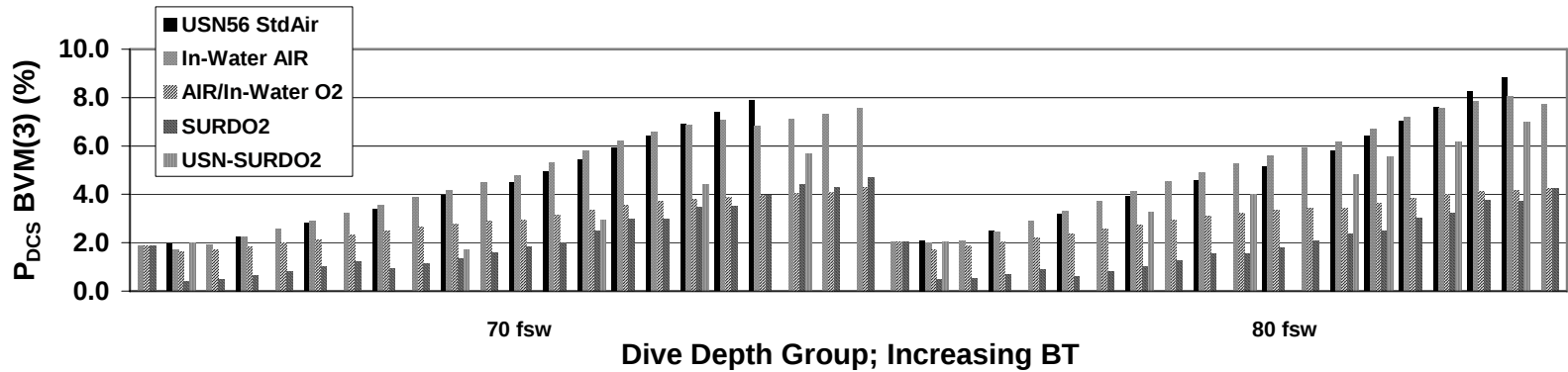
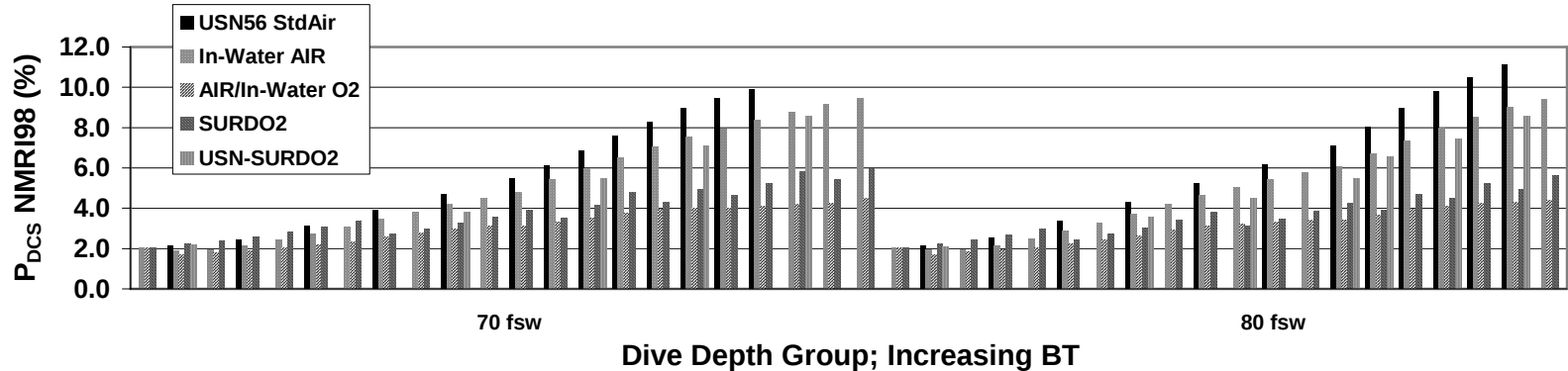
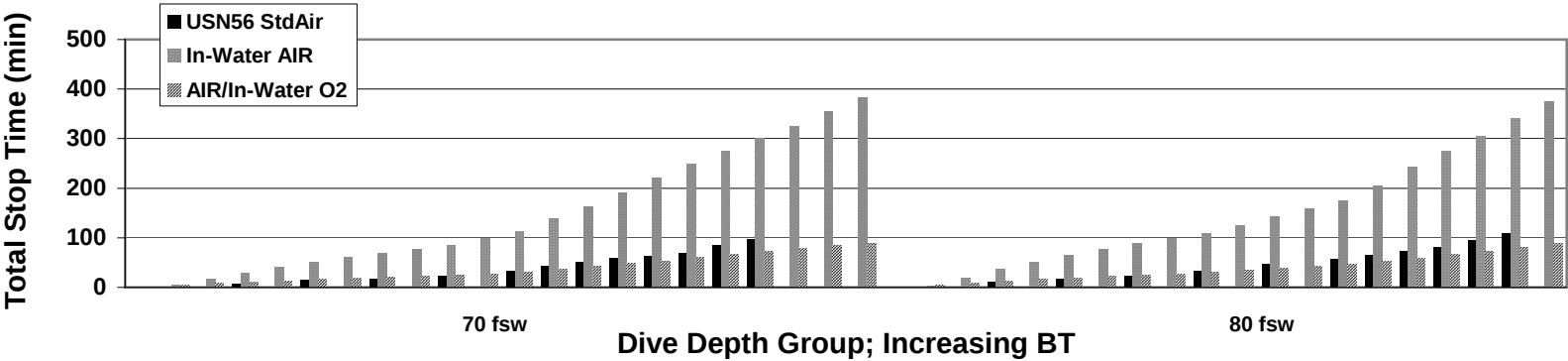
Air VVal18



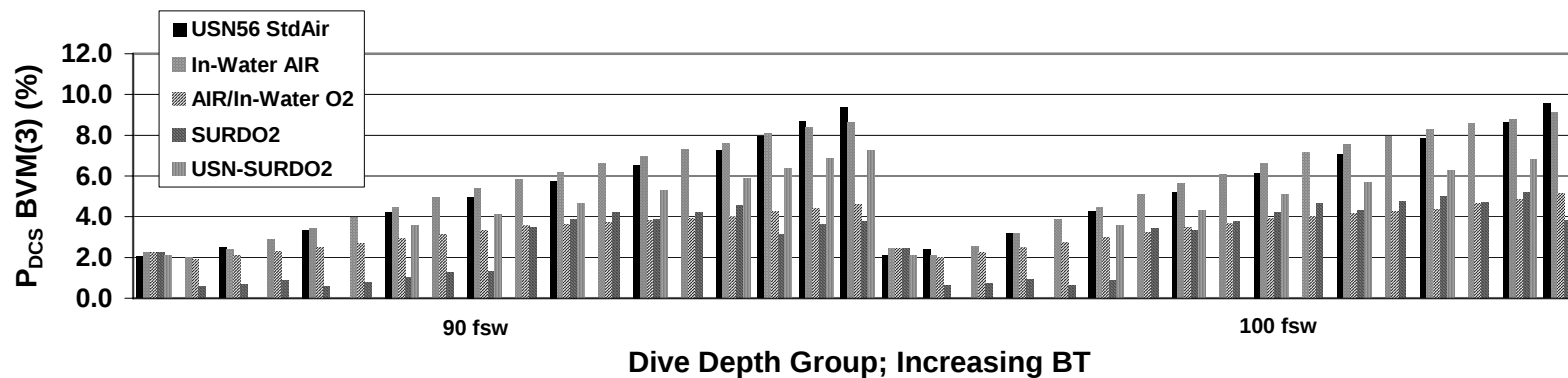
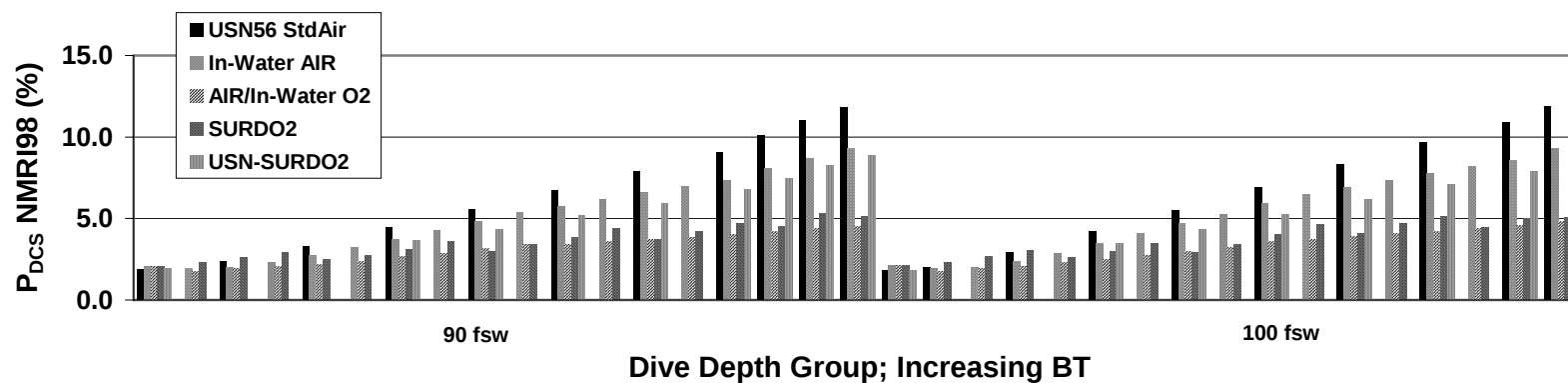
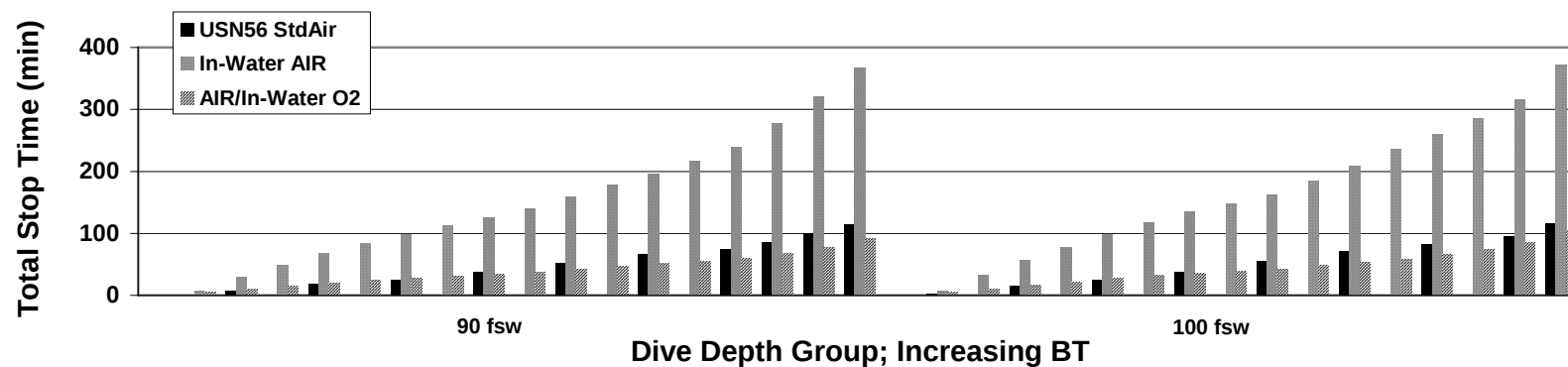
Air VVal18



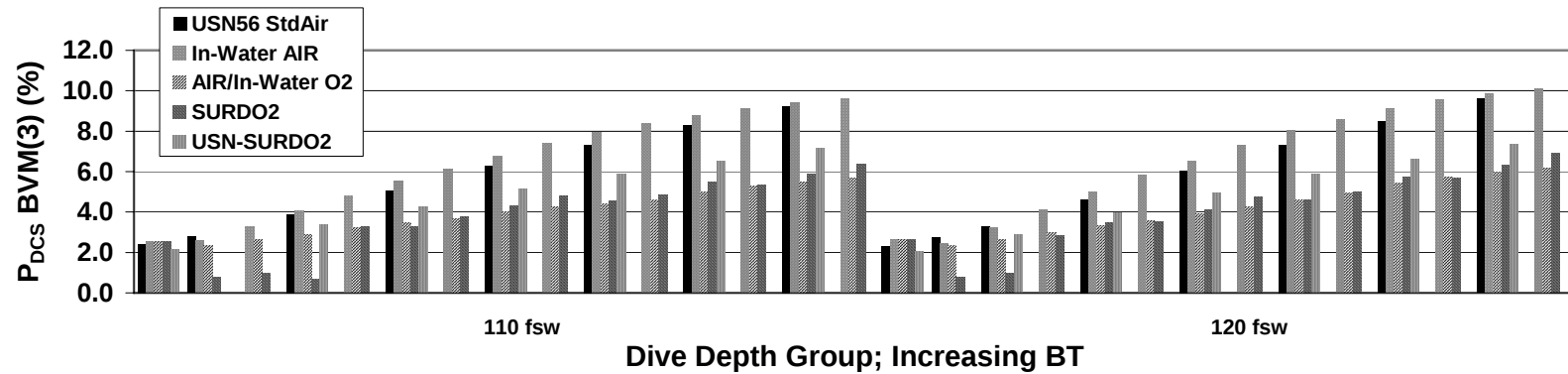
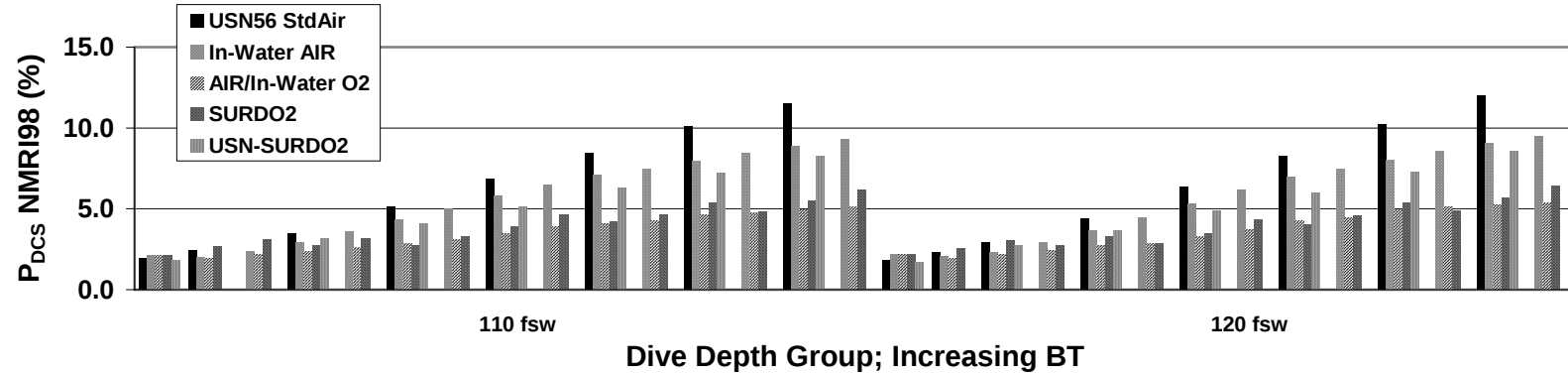
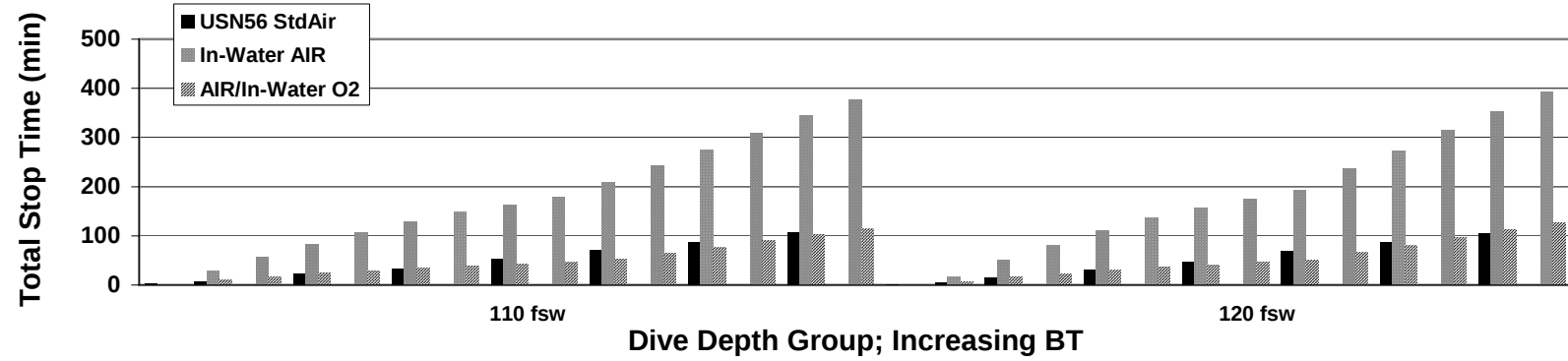
Air VVal18



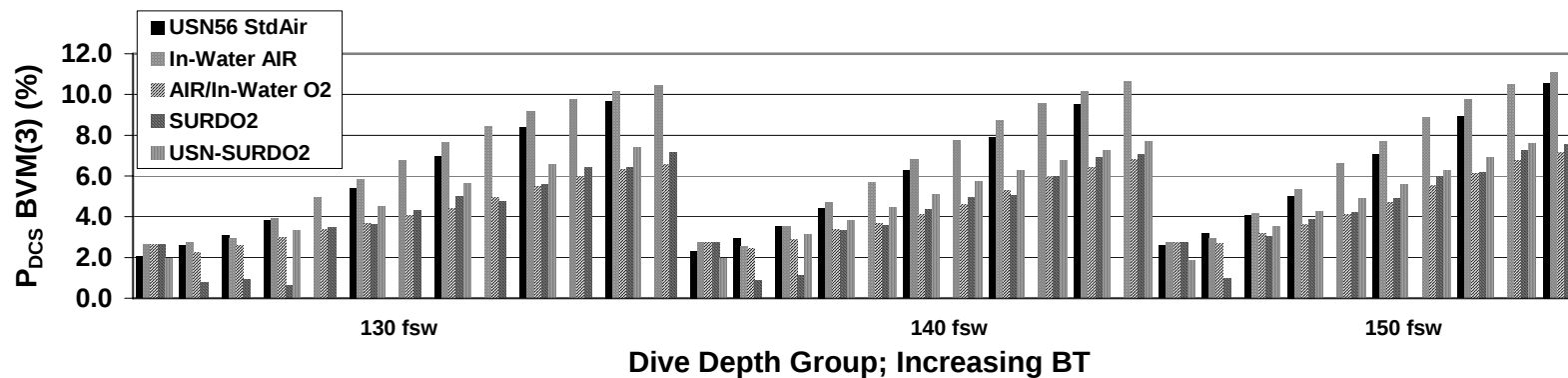
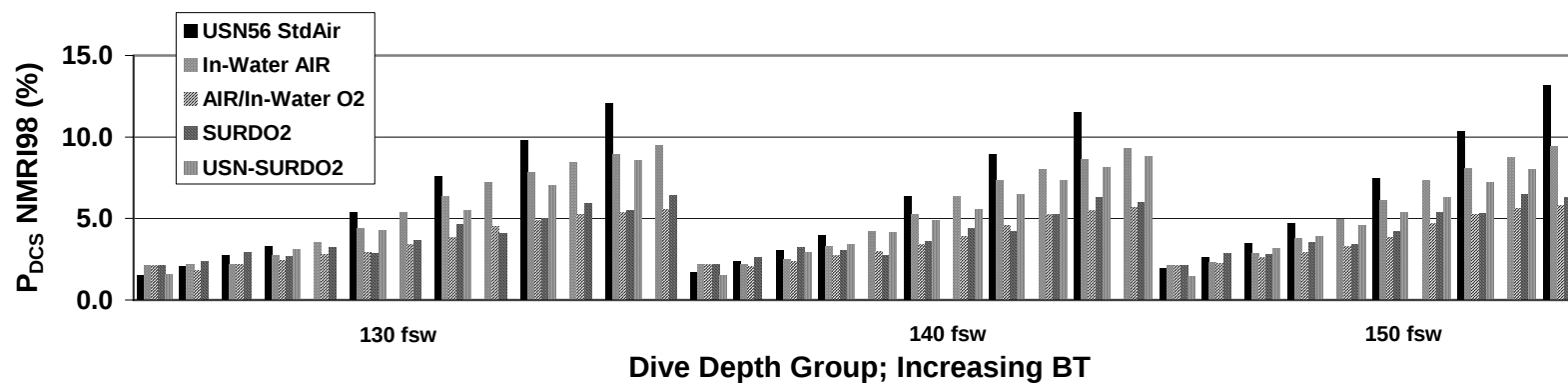
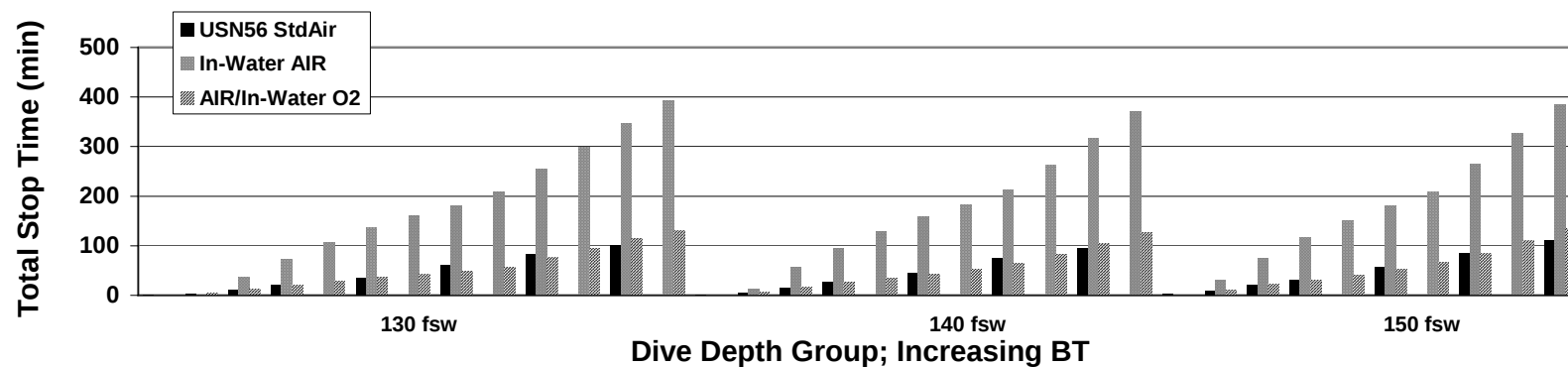
Air VVal18



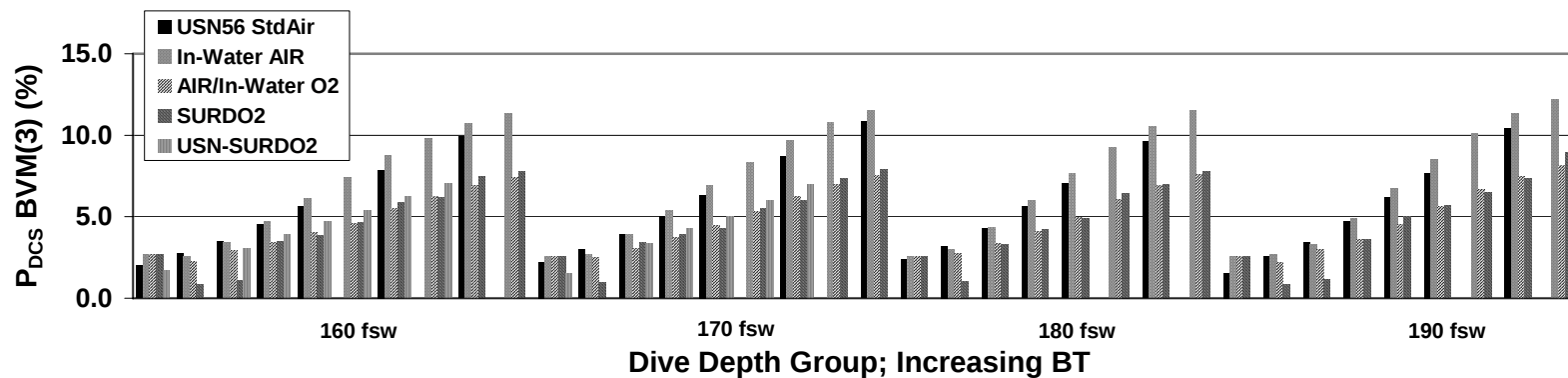
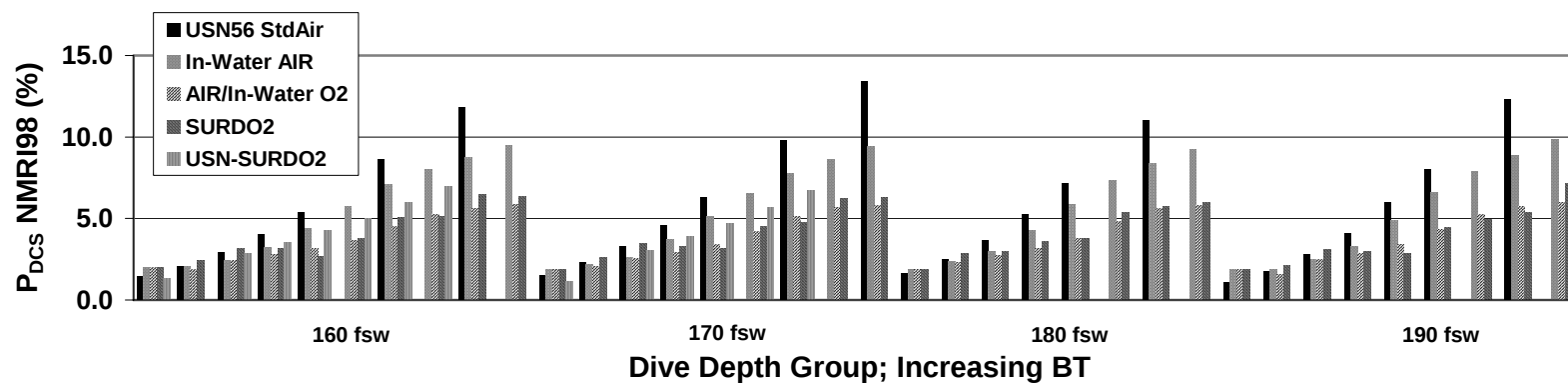
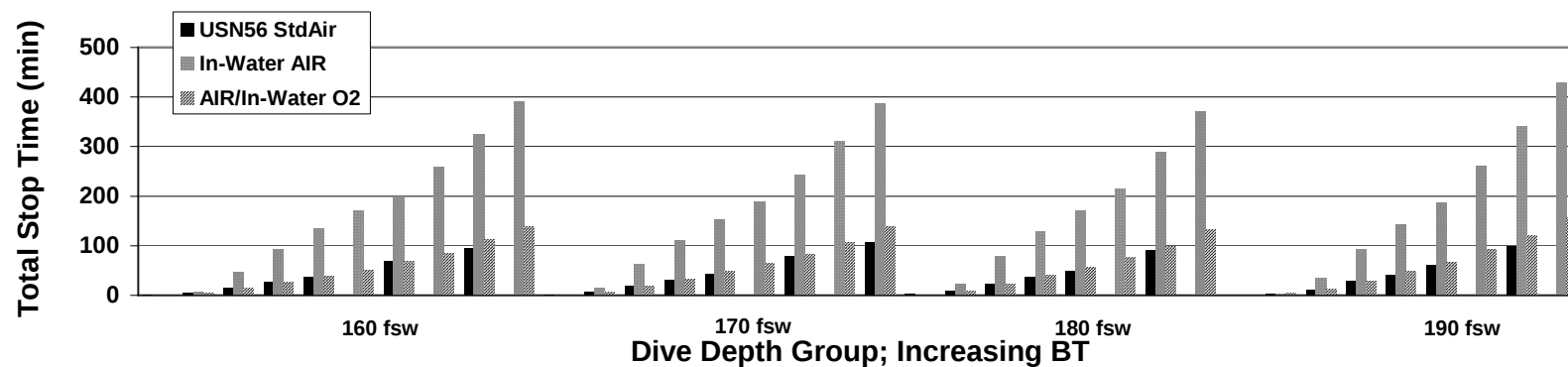
Air VVal18



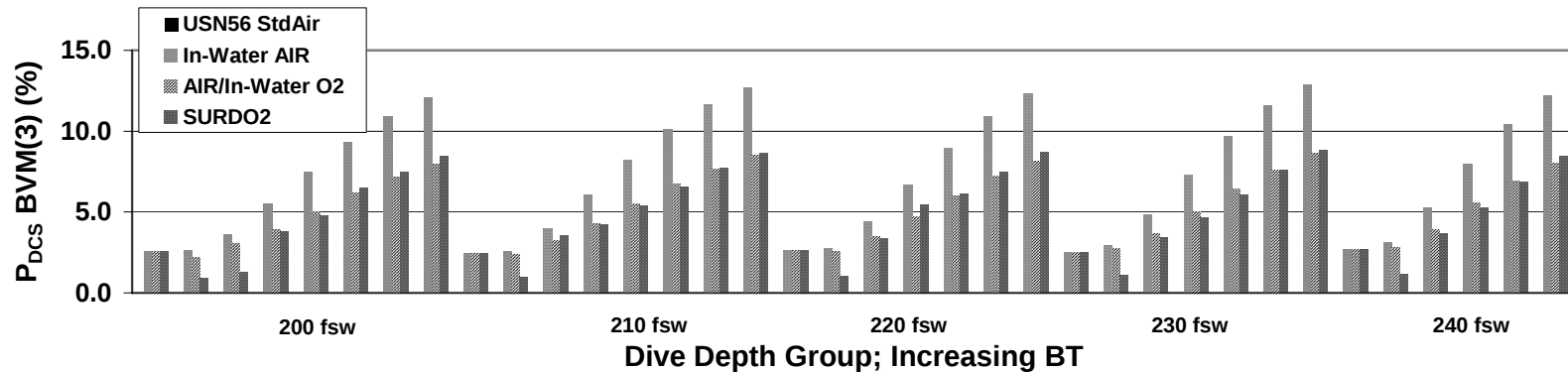
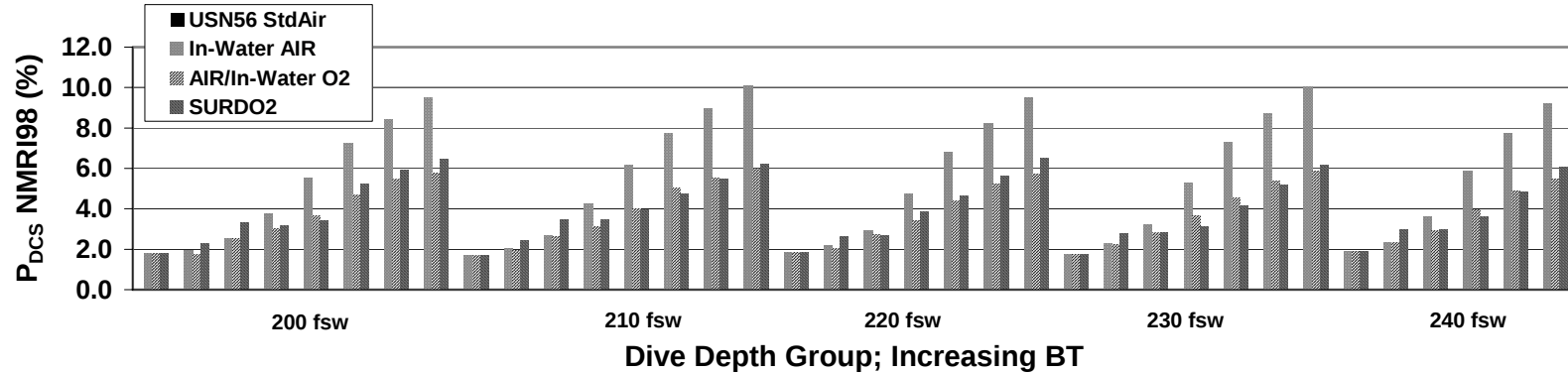
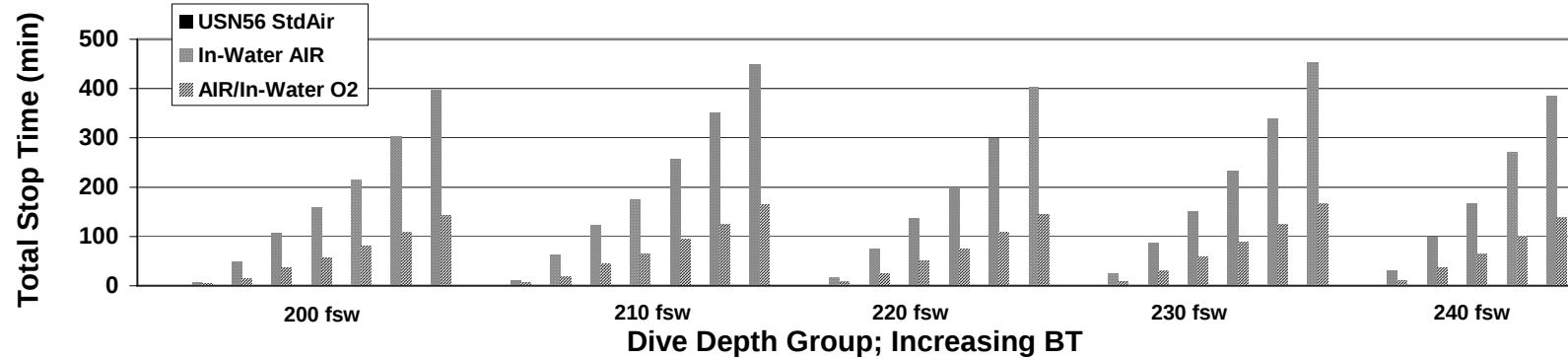
Air VVal18



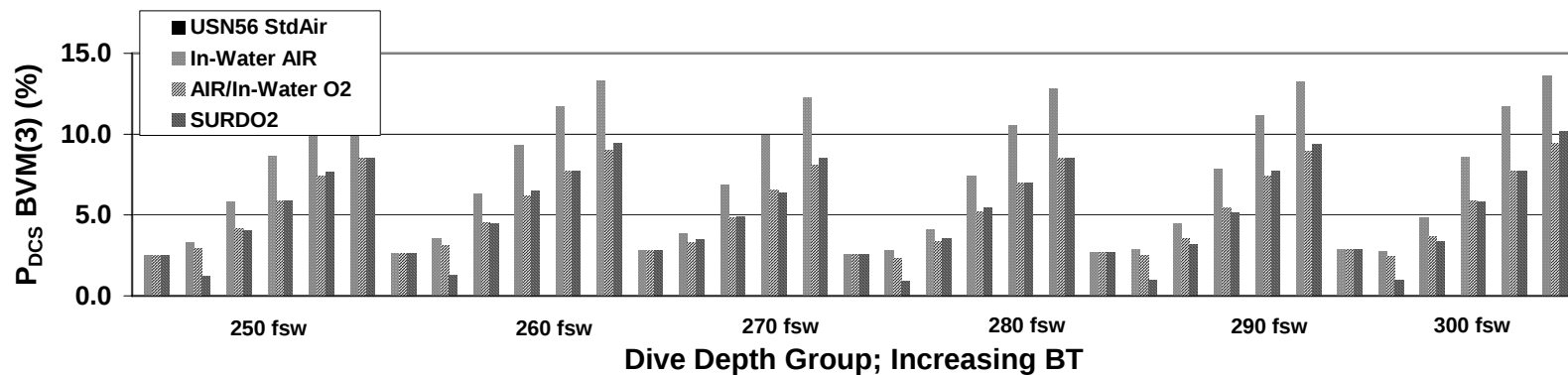
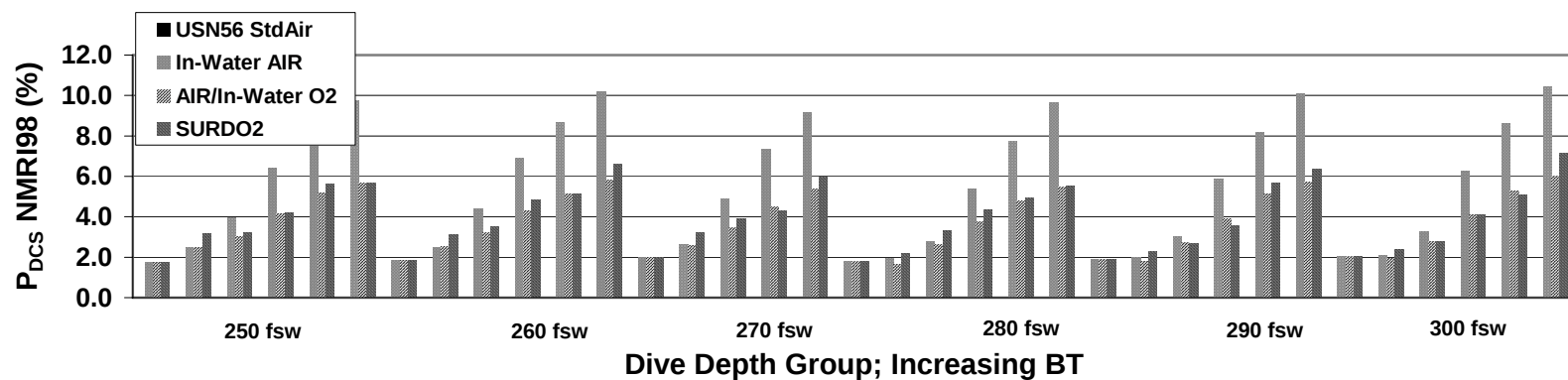
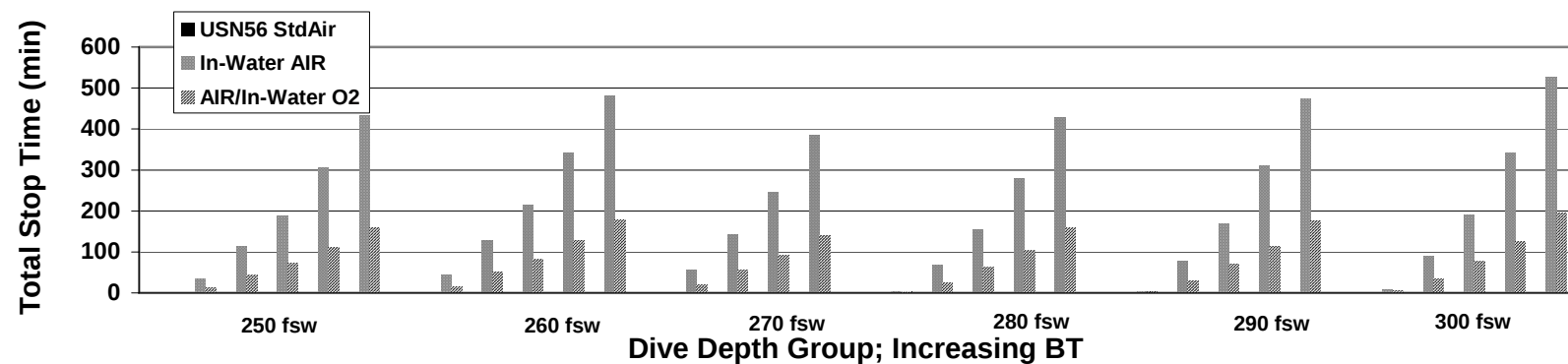
Air VVal18



Air VVal18



Air VVal18



Air VVal18

APPENDIX H. VVal-18 and USN Air Decompression Schedules Total Stop Times and Estimated DCS Risks

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18 AIR; 20 fsw Last Allowed In-Water Stop					VVal-18 AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98	
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
30/ 371						0	4.153	3.525 - 4.855	5.037	4.280 - 5.878	0	4.153	3.525-4.855	5.037	4.280 - 5.878
30/ 420						22	4.759	4.015 - 5.590	5.794	4.926 - 6.755	7	4.393	3.692-5.179	5.341	4.523 - 6.252
30/ 480						42	5.498	4.604 - 6.499	6.756	5.744 - 7.874	10	4.971	4.153-5.890	6.113	5.185 - 7.141
30/ 540						71	6.116	5.094 - 7.261	7.575	6.425 - 8.843	15	5.386	4.491-6.392	6.597	5.583 - 7.720
30/ 600						92	6.623	5.496 - 7.886	8.286	7.021 - 9.677	18	5.828	4.848-6.928	7.170	6.063 - 8.395
30/ 660						120	7.010	5.802 - 8.364	8.852	7.494 - 10.344	21	6.191	5.139-7.371	7.653	6.465 - 8.967
30/ 720						158	7.263	6.001 - 8.678	9.263	7.837 - 10.827	25	6.421	5.323-7.654	7.961	6.712 - 9.340
35/ 232						0	2.974	2.543 - 3.455	3.684	2.995 - 4.476	0	2.974	2.543-3.455	3.684	2.995 - 4.476
35/ 240						4	3.042	2.555 - 3.593	3.766	3.078 - 4.555	4	2.894	2.459-3.383	3.515	2.845 - 4.288
35/ 270						28	3.581	0.177 - 17.374	4.422	3.690 - 5.247	8	3.136	2.638-3.697	3.957	3.255 - 4.756
35/ 300						53	4.202	3.540 - 4.945	5.112	4.309 - 6.008	13	3.413	2.852-4.049	4.283	3.548 - 5.116
35/ 330						71	4.778	4.012 - 5.638	5.802	4.910 - 6.793	17	3.797	3.177-4.495	4.665	3.881 - 5.548
35/ 360						88	5.296	4.432 - 6.266	6.454	5.466 - 7.548	21	4.141	3.467-4.901	5.014	4.178 - 5.955
35/ 420						134	6.158	5.124 - 7.317	7.591	6.419 - 8.885	27	4.829	4.036-5.720	5.799	4.856 - 6.854
35/ 480						173	6.798	5.633 - 8.104	8.507	7.190 - 9.959	34	5.326	4.442-6.319	6.375	5.338 - 7.532
35/ 540						228	7.207	5.957 - 8.608	9.159	7.742 - 10.716	40	5.751	4.785-6.835	6.897	5.765 - 8.159
35/ 600						277	7.476	6.169 - 8.941	9.630	8.147 - 11.256	46	6.069	5.041-7.222	7.336	6.123 - 8.688
35/ 660						314	7.680	6.329 - 9.193	9.999	8.467 - 11.678	54	6.171	5.123-7.347	7.506	6.251 - 8.905
35/ 720						342	7.845	6.459 - 9.398	10.304	8.730 - 12.025	61	6.251	5.187-7.446	7.670	6.382 - 9.106
40/ 163						0	2.332	1.942 - 2.776	2.997	2.330 - 3.789	0	2.332	1.942-2.776	2.997	2.330 - 3.789
40/ 170						6	2.316	1.935 - 2.749	3.048	2.386 - 3.832	5	2.077	1.719-2.487	2.745	2.108 - 3.509
40/ 180						14	2.493	2.101 - 2.935	3.321	2.644 - 4.112	7	2.117	1.753-2.534	2.902	2.249 - 3.681
40/ 190						22	2.710	2.291 - 3.183	3.600	2.906 - 4.402	9	2.189	1.811-2.623	3.057	2.388 - 3.850
40/ 200	0	3.335	2.873 - 3.846	3.987	3.172 - 4.936	29	2.957	2.502 - 3.469	3.887	3.173 - 4.706	10	2.366	1.963-2.826	3.290	2.597 - 4.106
40/ 210	2	3.525	3.041 - 4.060	4.204	3.358 - 5.185	39	3.214	2.716 - 3.774	4.155	3.422 - 4.989	12	2.473	2.045-2.963	3.440	2.730 - 4.270
40/ 220						52	3.488	2.942 - 4.101	4.412	3.663 - 5.259	13	2.666	2.210-3.187	3.670	2.938 - 4.521
40/ 230	7	4.009	3.463 - 4.611	4.733	3.820 - 5.782	64	3.760	3.167 - 4.427	4.688	3.918 - 5.553	16	2.768	2.294-3.308	3.727	2.987 - 4.587
40/ 240						75	4.031	3.392 - 4.748	4.972	4.177 - 5.861	18	2.926	2.432-3.489	3.865	3.109 - 4.739

Air VVal18

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18 AIR; 20 fsw Last Allowed In-Water Stop					VVal-18 AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98	
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
40/ 270	11	4.498	3.889 - 5.169	5.322	4.343 - 6.436	101	4.759	3.991 - 5.620	5.821	4.927 - 6.815	25	3.320	2.772-3.941	4.166	3.369 - 5.082
40/ 300	15	4.968	4.287 - 5.718	5.899	4.858 - 7.073	128	5.401	4.514 - 6.395	6.616	5.608 - 7.733	30	3.762	3.148-4.454	4.601	3.749 - 5.575
40/ 330	19	5.660	4.858 - 6.544	6.769	5.636 - 8.035	160	5.946	4.953 - 7.058	7.333	6.211 - 8.572	34	4.209	3.523-4.981	5.088	4.176 - 6.125
40/ 360						185	6.405	5.321 - 7.620	7.969	6.747 - 9.316	39	4.564	3.818-5.403	5.415	4.488 - 6.459
40/ 420						248	7.070	5.849 - 8.438	8.964	7.589 - 10.476	49	5.116	4.271-6.065	6.045	5.031 - 7.183
40/ 480						321	7.434	5.195 - 10.185	9.602	8.138 - 11.206	58	5.564	4.635-6.608	6.625	5.513 - 7.870
40/ 540						373	7.694	5.424 - 10.465	10.074	8.547 - 11.743	69	5.746	4.782-6.828	6.899	5.727 - 8.212
45/ 125						0	2.079	1.672 - 2.556	2.700	2.071 - 3.457	0	2.079	1.672-2.556	2.700	2.071 - 3.457
45/ 130						2	2.127	1.720 - 2.602	2.746	2.108 - 3.512	4	2.031	1.628-2.504	2.472	1.866 - 3.211
45/ 140						15	2.454	2.033 - 2.934	3.003	2.353 - 3.772	7	2.179	1.772-2.651	2.618	1.989 - 3.381
45/ 150						27	2.798	2.354 - 3.298	3.317	2.647 - 4.100	10	2.326	1.907-2.809	2.759	2.104 - 3.549
45/ 160						38	3.128	2.654 - 3.660	3.647	2.952 - 4.449	13	2.463	2.042-2.944	2.894	2.212 - 3.714
45/ 170						48	3.450	2.930 - 4.031	3.984	3.256 - 4.816	15	2.652	2.218-3.144	3.103	2.388 - 3.958
45/ 180						59	3.247	2.736 - 3.822	4.311	3.554 - 5.170	17	2.846	2.397-3.353	3.309	2.563 - 4.196
45/ 190						75	3.587	3.021 - 4.223	4.612	3.837 - 5.487	19	3.030	2.563-3.555	3.512	2.738 - 4.428
45/ 200						89	3.915	3.296 - 4.611	4.938	4.138 - 5.834	22	3.153	2.669-3.696	3.626	2.830 - 4.565
45/ 210						102	4.228	3.556 - 4.981	5.270	4.441 - 6.194	25	3.270	2.768-3.833	3.733	2.918 - 4.694
45/ 220						114	4.520	3.798 - 5.330	5.601	4.739 - 6.561	28	3.381	2.867-3.957	3.835	3.002 - 4.815
45/ 230						126	4.799	4.027 - 5.664	5.928	5.026 - 6.927	30	3.062	2.552-3.641	4.017	3.162 - 5.019
45/ 240						137	5.060	4.240 - 5.978	6.246	5.303 - 7.290	33	3.198	2.669-3.797	4.108	3.238 - 5.125
45/ 270						173	5.759	4.807 - 6.826	7.137	6.065 - 8.319	40	3.675	3.077-4.350	4.485	3.585 - 5.528
45/ 300						210	6.328	5.263 - 7.520	7.913	6.721 - 9.225	46	4.122	3.453-4.875	4.942	3.988 - 6.037
45/ 330						243	6.789	5.630 - 8.086	8.578	7.284 - 9.999	53	4.459	3.733-5.274	5.274	4.318 - 6.359
45/ 360						288	7.118	5.891 - 8.493	9.097	7.726 - 10.600	60	4.739	3.965-5.609	5.575	4.606 - 6.670
50/ 92						0	1.722	1.300 - 2.239	2.223	1.695 - 2.863	0	1.722	1.300-2.239	2.223	1.695 - 2.863
50/ 95						3	1.670	1.258 - 2.176	2.151	1.633 - 2.783	4	1.587	1.179-2.093	1.921	1.431 - 2.527
50/ 100	0	0.886	0.604 - 1.261	1.425	0.935 - 2.092	7	1.833	1.403 - 2.357	2.296	1.754 - 2.951	5	1.703	1.293-2.204	2.047	1.533 - 2.679
50/ 110	3	2.209	1.759 - 2.739	2.737	2.109 - 3.490	15	2.196	1.760 - 2.707	2.653	2.066 - 3.352	7	1.936	1.510-2.446	2.310	1.745 - 2.999
50/ 120	5	2.531	2.079 - 3.051	3.113	2.420 - 3.938	22	2.568	2.126 - 3.075	3.057	2.419 - 3.808	9	2.174	1.732-2.694	2.586	1.968 - 3.334
50/ 130						38	2.974	2.498 - 3.511	3.419	2.755 - 4.189	13	2.314	1.884-2.812	2.715	2.061 - 3.508
50/ 140	10	3.238	2.754 - 3.780	3.953	3.125 - 4.921	53	3.363	2.848 - 3.941	3.799	3.102 - 4.599	16	2.496	2.041-3.021	2.912	2.212 - 3.760

Air VVal18

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18 AIR; 20 fsw Last Allowed In-Water Stop					VVal-18 AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)		
	TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98		
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
50/ 150						67	3.739	3.176 - 4.368	4.184	3.447 - 5.023	20	2.623	2.175-3.134	3.024	2.284 - 3.920
50/ 160	21	3.895	3.382 - 4.461	4.746	3.810 - 5.825	79	4.088	3.473 - 4.774	4.573	3.792 - 5.455	23	2.792	2.322-3.326	3.206	2.424 - 4.152
50/ 170						96	4.431	3.755 - 5.185	4.928	4.120 - 5.835	25	3.022	2.526-3.584	3.465	2.639 - 4.458
50/ 180	29	4.555	3.972 - 5.193	5.559	4.525 - 6.736	113	4.194	3.541 - 4.925	5.295	4.461 - 6.226	28	3.184	2.686-3.743	3.635	2.774 - 4.668
50/ 190						130	4.543	3.831 - 5.339	5.667	4.801 - 6.629	31	3.340	2.813-3.933	3.798	2.905 - 4.865
50/ 200	35	5.198	4.537 - 5.921	6.374	5.253 - 7.637	145	4.865	4.096 - 5.724	6.038	5.133 - 7.041	35	3.431	2.719-4.264	3.867	2.953 - 4.961
50/ 210						159	5.165	4.343 - 6.085	6.401	5.451 - 7.449	39	3.522	2.867-4.275	3.892	2.983 - 4.976
50/ 220	40	5.826	5.059 - 6.665	7.176	5.976 - 8.516	173	5.443	4.568 - 6.421	6.750	5.754 - 7.847	42	3.655	3.025-4.371	4.033	3.104 - 5.138
50/ 230						186	5.703	4.779 - 6.737	7.085	6.043 - 8.233	45	3.782	3.139-4.510	4.169	3.222 - 5.291
50/ 240	47	6.502	5.631 - 7.455	7.903	6.636 - 9.307	201	5.947	3.771 - 8.803	7.403	6.315 - 8.601	48	3.908	0.000-#####	4.298	3.337 - 5.434
50/ 270						248	6.557	5.464 - 7.779	8.252	7.035 - 9.586	56	3.937	3.307-4.645	4.738	3.739 - 5.902
50/ 300						289	7.031	5.841 - 8.363	8.955	7.635 - 10.399	64	4.334	3.639-5.114	5.131	4.142 - 6.267
50/ 330						345	7.338	6.083 - 8.741	9.466	8.075 - 10.985	73	4.612	3.870-5.445	5.401	4.457 - 6.468
55/ 74						0	1.666	0.042 - 11.540	2.081	1.595 - 2.670	0	1.666	0.042-11.540	2.081	1.595 - 2.670
55/ 75						1	1.636	1.185 - 2.206	2.017	1.542 - 2.592	4	1.438	1.020-1.975	1.703	1.274 - 2.233
55/ 80						8	1.686	1.244 - 2.237	2.043	1.567 - 2.620	5	1.569	1.130-2.127	1.835	1.382 - 2.392
55/ 85						14	1.883	1.432 - 2.431	2.205	1.710 - 2.800	7	1.657	1.215-2.212	1.924	1.456 - 2.496
55/ 90						20	2.094	1.642 - 2.631	2.394	1.877 - 3.008	8	1.794	1.354-2.333	2.075	1.576 - 2.682
55/ 95						25	2.312	1.845 - 2.862	2.609	2.065 - 3.251	9	1.937	1.486-2.483	2.234	1.702 - 2.879
55/ 100						30	2.529	2.053 - 3.080	2.837	2.264 - 3.507	11	2.028	1.571-2.577	2.332	1.775 - 3.006
55/ 110						39	2.963	2.468 - 3.524	3.325	2.690 - 4.059	13	2.307	1.842-2.854	2.670	2.042 - 3.427
55/ 120						58	3.416	2.874 - 4.027	3.758	3.084 - 4.528	17	2.482	2.012-3.028	2.863	2.177 - 3.691
55/ 130						75	3.852	3.276 - 4.494	4.205	3.481 - 5.024	22	2.603	2.115-3.168	2.966	2.226 - 3.867
55/ 140						91	4.257	3.621 - 4.966	4.646	3.870 - 5.520	26	2.765	2.278-3.323	3.135	2.337 - 4.109
55/ 150						106	4.640	3.928 - 5.434	5.076	4.249 - 6.003	29	2.978	2.481-3.542	3.374	2.518 - 4.417
55/ 160						127	4.986	4.183 - 5.885	5.473	4.620 - 6.423	32	3.180	2.655-3.774	3.607	2.698 - 4.711
55/ 170						147	5.309	4.433 - 6.291	5.883	4.999 - 6.862	36	3.339	2.771-3.984	3.703	2.778 - 4.823
55/ 180						166	5.074	4.291 - 5.947	6.292	5.368 - 7.312	40	3.466	2.701-4.373	3.831	2.871 - 4.995
55/ 190						184	5.400	4.557 - 6.340	6.691	5.720 - 7.759	45	3.528	2.862-4.297	3.866	2.882 - 5.061
55/ 200						201	5.705	4.805 - 6.708	7.073	6.053 - 8.193	49	3.648	2.975-4.422	3.976	2.969 - 5.197
55/ 210						217	5.981	5.028 - 7.043	7.436	6.367 - 8.609	53	3.752	3.079-4.521	4.079	3.055 - 5.316

Air VVal18

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18 AIR; 20 fsw Last Allowed In-Water Stop					VVal-18 AIR/In-Water O2					
	TOTAL					TOTAL					TOTAL					
	STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)			
	TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98			
	(min)	(%)	low	high		(min)	(%)	low	high		(min)	(%)	low-high	(%)	low - high	
55/ 220						233	6.234	5.232	7.353	7.780	6.662	56	3.908	3.222-4.689	4.258	3.215 - 5.512
55/ 230						253	6.461	5.413	7.630	8.096	6.933	60	3.996	3.287-4.803	4.347	3.297 - 5.605
55/ 240						272	6.666	5.576	7.880	8.390	7.184	63	4.136	3.405-4.968	4.514	3.451 - 5.778
55/ 270						323	7.172	4.985	9.873	9.153	7.839	73	4.133	3.484-4.861	4.868	3.893 - 5.995
60/ 63	0	1.613	1.152	2.202	2.057	0	1.723	1.245	2.329	2.070	1.591	0	1.723	1.245-2.329	2.070	1.591 - 2.648
60/ 65						4	1.582	1.123	2.171	1.910	1.460	4	1.509	1.057-2.095	1.722	1.297 - 2.245
60/ 70	2	1.919	1.417	2.543	2.313	13	1.784	1.322	2.357	2.014	1.560	6	1.626	1.164-2.214	1.825	1.389 - 2.357
60/ 75						21	2.018	1.532	2.611	2.190	1.721	8	1.741	1.272-2.330	1.938	1.484 - 2.488
60/ 80	7	2.236	1.734	2.839	2.672	28	2.260	1.763	2.854	2.411	1.918	10	1.855	1.372-2.454	2.057	1.580 - 2.634
60/ 85						35	2.515	2.006	3.112	2.655	2.135	12	1.973	1.500-2.550	2.181	1.675 - 2.793
60/ 90						41	2.765	2.260	3.346	2.923	2.371	13	2.134	1.649-2.716	2.373	1.826 - 3.033
60/ 95						47	3.010	2.495	3.596	3.200	2.614	15	2.243	1.753-2.826	2.504	1.922 - 3.206
60/ 100	14	3.131	2.599	3.735	3.772	52	3.255	2.729	3.848	3.490	2.867	16	2.403	1.917-2.974	2.707	2.080 - 3.460
60/ 110						72	3.769	3.188	4.419	4.006	3.328	21	2.579	2.079-3.162	2.892	2.193 - 3.738
60/ 120	26	4.006	3.446	4.626	4.907	93	4.246	3.608	4.957	4.507	3.770	26	2.736	2.226-3.325	3.061	2.287 - 4.006
60/ 130						112	4.691	3.985	5.478	4.999	4.199	31	2.888	2.354-3.504	3.213	2.366 - 4.255
60/ 140	39	4.836	4.225	5.504	6.001	130	5.096	4.291	5.995	5.473	4.617	35	3.081	2.529-3.714	3.431	2.513 - 4.562
60/ 150						154	5.462	4.564	6.469	5.915	5.030	39	3.281	2.163-4.755	3.593	2.639 - 4.765
60/ 160	48	5.648	3.161	9.152	7.095	177	5.788	4.821	6.873	6.363	5.441	43	3.459	2.624-4.466	3.787	2.778 - 5.026
60/ 170						199	5.512	4.675	6.442	6.802	5.834	48	3.563	2.833-4.417	3.883	2.833 - 5.177
60/ 180	56	6.444	5.654	7.301	8.141	219	5.848	4.949	6.846	7.224	6.205	53	3.666	2.964-4.476	3.967	2.886 - 5.300
60/ 190						239	6.148	5.192	7.210	7.622	6.551	58	3.750	3.043-4.565	4.041	2.939 - 5.400
60/ 200	70	7.286	6.366	8.284	8.952	257	6.420	5.409	7.543	7.996	6.875	62	3.885	3.158-4.721	4.191	3.067 - 5.568
60/ 210						278	6.662	5.603	7.839	8.340	7.171	67	3.958	3.190-4.845	4.212	3.121 - 5.539
60/ 220						300	6.875	5.311	8.700	8.653	7.442	71	4.070	2.236-6.741	4.347	3.248 - 5.675
60/ 230						322	7.067	5.926	8.336	8.939	7.688	74	4.242	3.440-5.163	4.555	3.442 - 5.890
60/ 240						342	7.236	6.061	8.544	9.202	7.916	78	4.337	3.516-5.279	4.676	3.578 - 5.981
70/ 48						0	1.870	0.031	14.103	2.056	1.590	0	1.870	0.031-14.103	2.056	1.590 - 2.616
70/ 50	0	1.953	1.429	2.608	2.284	4	1.697	0.021	14.093	1.898	1.453	4	1.615	0.351-4.926	1.719	1.304 - 2.226
70/ 55						17	1.928	0.548	5.006	1.967	1.527	8	1.715	0.412-4.930	1.782	1.369 - 2.283
70/ 60	8	2.262	1.716	2.928	2.556	29	2.242	0.775	5.142	2.159	1.712	11	1.851	0.499-4.963	1.884	1.461 - 2.393

Air VVal18

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18 AIR; 20 fsw Last Allowed In-Water Stop					VVal-18 AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98	
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
70/ 65						40	2.560	0.182 - 11.887	2.426	1.959 - 2.970	13	2.008	0.064-12.559	2.050	1.597 - 2.591
70/ 70	14	2.817	2.230 - 3.506	3.189	2.529 - 3.963	51	2.898	1.298 - 5.579	2.733	2.241 - 3.300	16	2.135	0.697-5.084	2.173	1.691 - 2.750
70/ 75						60	3.230	1.580 - 5.836	3.078	2.551 - 3.679	18	2.303	0.822-5.170	2.362	1.835 - 2.991
70/ 80	18	3.384	2.785 - 4.070	3.941	3.168 - 4.835	69	3.556	1.869 - 6.099	3.435	2.870 - 4.075	20	2.468	0.950-5.273	2.558	1.982 - 3.247
70/ 85						76	3.868	2.146 - 6.369	3.810	3.200 - 4.497	22	2.629	1.079-5.379	2.759	2.130 - 3.511
70/ 90	23	3.959	3.350 - 4.641	4.728	3.828 - 5.760	84	4.170	0.922 - 11.602	4.178	3.524 - 4.912	24	2.785	0.279-11.303	2.962	2.278 - 3.782
70/ 95						98	4.491	1.057 - 12.046	4.500	3.810 - 5.270	27	2.901	0.308-11.455	3.088	2.350 - 3.978
70/ 100	33	4.487	3.853 - 5.188	5.460	4.434 - 6.630	112	4.781	2.969 - 7.219	4.813	4.085 - 5.624	31	2.946	1.340-5.607	3.130	2.339 - 4.094
70/ 110	43	4.957	4.308 - 5.669	6.097	4.946 - 7.407	139	5.324	3.456 - 7.758	5.416	4.606 - 6.315	37	3.154	1.514-5.779	3.299	2.427 - 4.372
70/ 120	51	5.429	4.739 - 6.181	6.776	5.492 - 8.234	163	5.803	3.883 - 8.252	5.989	5.108 - 6.962	43	3.322	1.416-6.570	3.494	2.518 - 4.709
70/ 130	58	5.931	5.198 - 6.728	7.470	6.051 - 9.077	190	6.218	4.251 - 8.688	6.524	5.596 - 7.543	48	3.531	1.710-6.408	3.747	2.675 - 5.088
70/ 140	64	6.429	5.652 - 7.270	8.157	6.606 - 9.909	220	6.571	4.546 - 9.089	7.036	6.069 - 8.094	53	3.732	1.933-6.458	3.980	2.823 - 5.430
70/ 150	70	6.912	6.069 - 7.824	8.811	7.132 - 10.703	248	6.865	4.773 - 9.453	7.533	6.514 - 8.644	60	3.798	2.021-6.444	4.020	2.803 - 5.558
70/ 160	85	7.387	6.488 - 8.360	9.243	7.472 - 11.235	275	7.072	5.775 - 8.537	7.946	6.873 - 9.115	66	3.870	3.021-4.870	3.999	2.782 - 5.541
70/ 170	98	7.890	6.916 - 8.944	9.674	7.826 - 11.748	300	6.828	5.799 - 7.965	8.384	7.253 - 9.614	72	3.960	3.133-4.925	4.094	2.842 - 5.681
70/ 180						325	7.100	6.009 - 8.307	8.784	7.600 - 10.070	78	4.033	3.207-4.995	4.176	2.907 - 5.781
70/ 190						354	7.333	6.196 - 8.589	9.134	7.904 - 10.469	84	4.099	3.257-5.080	4.247	2.973 - 5.853
70/ 200						382	7.548	6.243 - 9.008	9.469	8.189 - 10.856	88	4.263	3.398-5.268	4.471	3.176 - 6.085
80/ 39						0	2.049	1.492 - 2.748	2.060	1.588 - 2.630	0	2.049	1.492-2.748	2.060	1.588 - 2.630
80/ 40	0	2.093	1.521 - 2.811	2.281	1.734 - 2.946	2	1.982	0.297 - 7.123	1.929	1.475 - 2.481	4	1.719	0.187-7.221	1.681	1.274 - 2.181
80/ 45						19	2.070	1.525 - 2.748	1.942	1.496 - 2.481	8	1.880	1.343-2.564	1.817	1.401 - 2.320
80/ 50	10	2.498	1.898 - 3.227	2.669	2.040 - 3.427	36	2.458	1.887 - 3.146	2.137	1.692 - 2.664	12	2.034	1.471-2.745	1.936	1.504 - 2.455
80/ 55						51	2.890	2.285 - 3.602	2.460	1.994 - 3.000	16	2.192	1.611-2.915	2.055	1.607 - 2.591
80/ 60	17	3.200	2.554 - 3.954	3.479	2.772 - 4.303	64	3.310	2.686 - 4.031	2.855	2.358 - 3.422	19	2.372	1.775-3.104	2.237	1.751 - 2.816
80/ 65						77	3.732	3.074 - 4.481	3.279	2.746 - 3.880	22	2.552	1.951-3.278	2.431	1.898 - 3.068
80/ 70	23	3.921	3.231 - 4.708	4.442	3.606 - 5.402	89	4.142	3.457 - 4.915	3.722	3.148 - 4.365	25	2.731	2.106-3.480	2.633	2.043 - 3.338
80/ 75						99	4.522	3.819 - 5.308	4.180	3.558 - 4.872	27	2.943	2.313-3.688	2.908	2.252 - 3.691
80/ 80	33	4.567	3.849 - 5.369	5.335	4.362 - 6.442	109	4.897	4.172 - 5.703	4.633	3.961 - 5.379	30	3.112	2.477-3.855	3.116	2.392 - 3.983
80/ 85						125	5.264	4.502 - 6.107	5.032	4.315 - 5.825	34	3.222	2.567-3.986	3.242	2.448 - 4.202
80/ 90	46	5.171	4.436 - 5.983	6.206	5.087 - 7.471	143	5.605	4.775 - 6.524	5.400	4.637 - 6.242	38	3.339	2.683-4.100	3.302	2.468 - 4.319
80/ 95						159	5.915	5.035 - 6.888	5.763	4.951 - 6.658	42	3.418	1.109-7.951	3.409	2.502 - 4.527

Air VVal18

Depth (fsw) /BT(min)	USN56 Standard Air						VVal-18 AIR; 20 fsw Last Allowed In-Water Stop						VVal-18 AIR/In-Water O2								
	TOTAL						TOTAL						TOTAL								
	STOP	P(DCS)		P(DCS)			STOP	P(DCS)		P(DCS)			STOP	P(DCS)		P(DCS)					
	TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98								
	(min)	(%)	low - high		(%)	low - high		(min)	(%)	low - high		(%)	low - high		(min)	(%)	low-high		(%)	low - high	
80/ 100	57	5.807	5.038	- 6.648	7.122	5.831 - 8.577		175	6.178	5.243	- 7.215	6.045	5.188 - 6.988		46	3.440	1.844	-5.820	3.409	2.436 - 4.629	
80/ 110	66	6.419	5.599	- 7.311	8.028	6.542 - 9.702		204	6.721	5.677	- 7.879	6.730	5.799 - 7.750		53	3.621	2.362	-5.288	3.655	2.541 - 5.071	
80/ 120	73	7.023	6.152	- 7.966	8.920	7.237 - 10.812		242	7.177	1.135	- 21.238	7.350	6.365 - 8.424		59	3.850	0.137	-20.003	3.953	2.710 - 5.544	
80/ 130	82	7.595	6.666	- 8.599	9.717	7.839 - 11.827		274	7.545	6.253	- 8.989	7.958	6.902 - 9.106		66	4.009	2.958	-5.294	4.081	2.773 - 5.762	
80/ 140	95	8.245	7.247	- 9.322	10.372	8.333 - 12.663		305	7.846	6.432	- 9.435	8.513	7.388 - 9.734		73	4.130	3.162	-5.284	4.233	2.837 - 6.038	
80/ 150	109	8.836	7.744	- 10.014	10.952	8.813 - 13.347		341	8.045	6.542	- 9.740	8.995	7.807 - 10.282		81	4.172	3.242	-5.270	4.272	2.822 - 6.161	
80/ 160								375	7.735	6.575	- 9.013	9.419	8.177 - 10.763		88	4.257	3.347	-5.324	4.375	2.886 - 6.317	
90/ 33	0	2.040	1.475	- 2.752	2.012	1.517 - 2.617		0	2.239	1.642	- 2.981	2.081	1.594 - 2.670		0	2.239	1.642	-2.981	2.081	1.594 - 2.670	
90/ 35								7	1.977	1.415	- 2.690	1.910	1.450 - 2.470		5	1.903	1.190	-2.894	1.742	1.320 - 2.259	
90/ 40	7	2.499	1.865	- 3.277	2.572	1.929 - 3.359		29	2.377	1.790	- 3.093	1.990	1.536 - 2.537		10	2.100	1.363	-3.099	1.902	1.470 - 2.424	
90/ 45								49	2.890	2.259	- 3.639	2.286	1.820 - 2.836		15	2.294	1.532	-3.302	2.042	1.588 - 2.587	
90/ 50	18	3.340	2.634	- 4.171	3.451	2.725 - 4.303		67	3.434	2.771	- 4.200	2.717	2.220 - 3.289		20	2.482	1.694	-3.510	2.177	1.698 - 2.748	
90/ 55								84	3.964	3.260	- 4.767	3.210	2.676 - 3.815		24	2.692	1.878	-3.733	2.373	1.848 - 3.000	
90/ 60	25	4.228	3.458	- 5.108	4.623	3.752 - 5.620		99	4.471	1.895	- 8.759	3.739	3.162 - 4.386		27	2.935	0.800	-7.587	2.643	2.056 - 3.342	
90/ 65								113	4.948	4.182	- 5.802	4.279	3.654 - 4.972		31	3.123	2.266	-4.189	2.858	2.202 - 3.644	
90/ 70	37	4.968	4.146	- 5.892	5.684	4.675 - 6.826		126	5.391	4.593	- 6.276	4.817	4.141 - 5.564		34	3.343	2.466	-4.419	3.144	2.409 - 4.025	
90/ 75								140	5.824	4.980	- 6.755	5.333	4.603 - 6.136		37	3.587	2.692	-4.673	3.372	2.586 - 4.312	
90/ 80	53	5.768	4.898	- 6.732	6.828	5.654 - 8.144		159	6.195	3.350	- 10.248	5.733	4.953 - 6.588		42	3.601	1.327	-7.760	3.396	2.519 - 4.468	
90/ 85								178	6.600	5.669	- 7.624	6.184	5.344 - 7.104		46	3.728	1.585	-7.348	3.590	2.617 - 4.791	
90/ 90	66	6.529	5.607	- 7.543	7.966	6.578 - 9.517		196	6.971	5.981	- 8.057	6.615	5.714 - 7.601		51	3.794	2.033	-6.408	3.688	2.620 - 5.026	
90/ 95								217	7.299	6.231	- 8.472	6.992	6.054 - 8.016		55	3.915	2.318	-6.147	3.854	2.696 - 5.318	
90/ 100	75	7.253	6.271	- 8.326	9.107	7.461 - 10.946		239	7.601	6.468	- 8.847	7.364	6.392 - 8.423		59	4.029	2.542	-6.026	4.009	2.761 - 5.599	
90/ 110	85	7.934	6.889	- 9.070	10.154	8.239 - 12.297		277	8.091	6.807	- 9.510	8.096	7.042 - 9.239		67	4.239	2.883	-5.978	4.222	2.855 - 5.980	
90/ 120	100	8.671	7.569	- 9.863	11.009	8.852 - 13.427		321	8.399	6.981	- 9.976	8.692	7.559 - 9.920		78	4.391	3.221	-5.822	4.379	2.901 - 6.300	
90/ 130	115	9.371	8.170	- 10.667	11.708	9.391 - 14.298		367	8.638	7.055	- 10.413	9.263	8.052 - 10.574		92	4.584	3.524	-5.841	4.537	3.001 - 6.534	
100/ 29	0	2.111	1.532	- 2.838	1.952	1.456 - 2.564		0	2.441	1.801	- 3.233	2.138	1.629 - 2.756		0	2.441	1.801	-3.233	2.138	1.629 - 2.756	
100/ 30	3	2.400	1.763	- 3.191	2.255	1.684 - 2.958		6	2.111	1.509	- 2.876	1.915	1.446 - 2.490		5	2.004	1.422	-2.746	1.733	1.304 - 2.260	
100/ 35								32	2.549	0.024	- 19.924	2.001	1.531 - 2.570		11	2.243	0.010	-20.798	1.922	1.478 - 2.457	
100/ 40	15	3.184	2.470	- 4.034	3.125	2.402 - 3.990		56	3.179	2.505	- 3.972	2.351	1.862 - 2.929		17	2.481	1.820	-3.302	2.088	1.618 - 2.652	
100/ 45								78	3.841	3.107	- 4.686	2.865	2.337 - 3.474		22	2.745	2.040	-3.612	2.287	1.777 - 2.897	
100/ 50	24	4.257	3.424	- 5.218	4.426	3.550 - 5.437		98	4.473	3.692	- 5.358	3.456	2.883 - 4.105		27	2.985	2.240	-3.892	2.503	1.940 - 3.177	

Air VVal18

Depth (fsw) /BT(min)	USN56 Standard Air						VVal-18 AIR; 20 fsw Last Allowed In-Water Stop						VVal-18 AIR/In-Water O2					
	TOTAL						TOTAL						TOTAL					
	STOP	P(DCS)		P(DCS)			STOP	P(DCS)		P(DCS)			STOP	P(DCS)		P(DCS)		
	TIME	BVM(3)			NMRI98		TIME	BVM(3)			NMRI98		TIME	BVM(3)			NMRI98	
	(min)	(%)	low	high	(%)	low - high	(min)	(%)	low	high	(%)	low - high	(min)	(%)	low-high	(%)	low - high	
100/ 55							117	5.067	4.252	5.980	4.073	3.453	4.766	32	3.204	2.423-4.150	2.728	2.095 - 3.489
100/ 60	37	5.177	4.246	6.233	5.718	4.695 - 6.875	134	5.633	4.763	6.601	4.700	4.028	5.443	36	3.484	2.661-4.470	2.956	2.275 - 3.772
100/ 65							148	6.095	5.191	7.095	5.269	4.545	6.065	39	3.669	2.822-4.680	3.223	2.448 - 4.159
100/ 70	56	6.158	5.136	7.302	7.110	5.923 - 8.434	162	6.633	5.685	7.675	5.911	5.122	6.774	42	3.927	3.054-4.958	3.608	2.724 - 4.675
100/ 75							184	7.146	6.154	8.232	6.455	5.600	7.387	48	4.027	1.582-8.305	3.739	2.742 - 4.962
100/ 80	71	7.063	5.959	8.287	8.505	7.079 - 10.088	209	7.575	6.521	8.728	6.926	6.004	7.932	53	4.147	2.039-7.409	3.933	2.820 - 5.317
100/ 85							235	7.962	6.834	9.197	7.356	6.394	8.403	58	4.267	2.361-7.024	4.108	2.883 - 5.649
100/ 90	83	7.847	6.660	9.154	9.784	8.057 - 11.705	260	8.261	7.040	9.602	7.739	6.737	8.828	66	4.361	2.633-6.735	4.183	2.875 - 5.849
100/ 95							285	8.558	7.258	9.986	8.167	7.114	9.309	75	4.660	2.990-6.867	4.396	3.071 - 6.066
100/ 100	96	8.644	7.389	10.016	11.009	8.959 - 13.293	316	8.790	7.420	10.298	8.555	7.448	9.755	85	4.868	3.340-6.806	4.576	3.194 - 6.316
100/ 110	116	9.545	8.216	10.991	11.957	9.621 - 14.564	372	9.126	7.567	10.858	9.267	8.061	10.571	104	5.153	3.858-6.708	4.824	3.347 - 6.685
110/ 25	3	2.423	1.783	3.215	2.127	1.572 - 2.816	0	2.541	1.875	3.364	2.140	1.627	2.763	0	2.541	1.875-3.364	2.140	1.627 - 2.763
110/ 30	7	2.791	2.068	3.681	2.612	1.954 - 3.417	28	2.570	1.933	3.348	2.016	1.535	2.600	10	2.330	1.690-3.131	1.952	1.469 - 2.544
110/ 35							57	3.301	2.591	4.138	2.356	1.851	2.956	17	2.619	1.923-3.481	2.158	1.621 - 2.816
110/ 40	23	3.895	3.066	4.867	3.727	2.902 - 4.702	83	4.073	3.296	4.967	2.938	2.383	3.581	24	2.883	2.130-3.810	2.338	1.733 - 3.085
110/ 45							107	4.822	3.986	5.767	3.618	3.011	4.307	29	3.200	2.380-4.202	2.625	1.942 - 3.468
110/ 50	34	5.064	4.069	6.209	5.321	4.307 - 6.481	129	5.525	4.625	6.531	4.334	3.678	5.065	35	3.459	2.577-4.535	2.873	2.099 - 3.835
110/ 55							148	6.110	5.166	7.158	4.995	4.293	5.769	39	3.695	2.766-4.821	3.077	2.236 - 4.122
110/ 60	54	6.262	1.144	17.960	6.997	5.821 - 8.311	163	6.783	5.786	7.883	5.766	5.005	6.598	43	3.989	3.008-5.171	3.480	2.525 - 4.665
110/ 65							179	7.396	6.344	8.550	6.499	5.675	7.396	47	4.254	1.101-10.962	3.884	2.809 - 5.214
110/ 70	72	7.335	6.049	8.777	8.638	7.226 - 10.200	209	7.959	6.849	9.172	7.061	6.161	8.040	53	4.415	1.889-8.603	4.108	2.902 - 5.619
110/ 75							243	8.383	7.204	9.671	7.488	6.515	8.545	65	4.618	2.423-7.869	4.258	2.976 - 5.875
110/ 80	87	8.270	6.866	9.833	10.196	8.473 - 12.099	275	8.801	7.545	10.173	7.977	6.945	9.098	77	5.018	2.961-7.858	4.629	3.282 - 6.305
110/ 85							309	9.144	7.793	10.622	8.453	7.349	9.651	90	5.294	3.363-7.843	4.757	3.384 - 6.460
110/ 90	106	9.243	3.088	19.581	11.588	9.522 - 13.872	344	9.388	7.937	10.982	8.891	7.720	10.159	102	5.497	3.760-7.691	4.939	3.501 - 6.727
110/ 95							376	9.599	8.079	11.271	9.304	8.074	10.636	114	5.684	4.093-7.632	5.103	3.610 - 6.959
120/ 22	2	2.316	1.693	3.095	1.917	1.399 - 2.566	0	2.647	1.956	3.500	2.184	1.651	2.835	0	2.647	1.956-3.500	2.184	1.651 - 2.835
120/ 25	6	2.750	2.033	3.633	2.422	1.799 - 3.188	16	2.434	1.804	3.210	2.073	1.558	2.704	7	2.320	1.677-3.130	1.961	1.466 - 2.571
120/ 30	14	3.296	2.529	4.215	3.025	2.259 - 3.960	50	3.211	2.495	4.061	2.307	1.773	2.951	16	2.639	1.932-3.518	2.175	1.634 - 2.840
120/ 35							81	4.114	3.307	5.047	2.913	2.321	3.606	23	3.000	2.208-3.977	2.450	1.834 - 3.205
120/ 40	30	4.630	3.647	5.778	4.474	3.517 - 5.595	110	5.004	4.115	6.012	3.671	3.017	4.417	30	3.337	2.452-4.427	2.714	2.017 - 3.570

Air VVal18

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18 AIR; 20 fsw Last Allowed In-Water Stop					VVal-18 AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98	
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
120/ 45						136	5.807	4.844 - 6.885	4.439	3.730 - 5.234	36	3.588	2.628-4.769	2.854	2.098 - 3.787
120/ 50	46	6.051	4.842 - 7.439	6.444	5.283 - 7.755	156	6.523	5.497 - 7.663	5.273	4.508 - 6.119	41	3.923	2.879-5.204	3.281	2.414 - 4.349
120/ 55						174	7.306	6.211 - 8.513	6.151	5.323 - 7.057	46	4.246	3.126-5.613	3.717	2.727 - 4.932
120/ 60	69	7.320	5.894 - 8.941	8.322	6.962 - 9.829	193	8.020	6.850 - 9.303	6.980	6.086 - 7.951	50	4.581	1.460-10.551	4.233	3.113 - 5.601
120/ 65						236	8.588	7.359 - 9.931	7.470	6.487 - 8.541	66	4.925	2.303-9.037	4.450	3.273 - 5.885
120/ 70	87	8.472	3.919 - 15.245	10.210	8.557 - 12.029	273	9.132	2.408 - 21.496	8.021	6.978 - 9.153	80	5.440	0.733-17.827	4.929	3.689 - 6.420
120/ 75						314	9.544	8.157 - 11.058	8.547	7.432 - 9.757	97	5.738	3.558-8.641	5.121	3.808 - 6.704
120/ 80	105	9.609	7.873 - 11.546	11.974	9.933 - 14.217	353	9.870	8.401 - 11.476	9.050	7.861 - 10.339	112	6.006	3.956-8.638	5.244	3.892 - 6.874
120/ 85						392	10.082	8.513 - 11.803	9.484	8.223 - 10.849	127	6.196	4.343-8.490	5.379	3.970 - 7.082
130/ 19	1	2.051	1.455 - 2.811	1.614	1.141 - 2.223	0	2.653	1.956 - 3.515	2.141	1.606 - 2.797	0	2.653	1.956-3.515	2.141	1.606 - 2.797
130/ 20	4	2.623	1.939 - 3.467	2.122	1.547 - 2.842	1	2.728	2.025 - 3.593	2.156	1.607 - 2.833	4	2.253	1.545-3.177	1.812	1.336 - 2.407
130/ 25	10	3.106	2.361 - 4.005	2.780	2.066 - 3.658	36	2.935	2.237 - 3.777	2.205	1.652 - 2.883	12	2.603	1.899-3.480	2.168	1.624 - 2.836
130/ 30	21	3.819	2.959 - 4.840	3.366	2.531 - 4.378	72	3.933	3.121 - 4.881	2.747	2.134 - 3.477	21	2.996	2.197-3.985	2.455	1.841 - 3.207
130/ 35						106	4.969	4.052 - 6.015	3.557	2.868 - 4.355	29	3.397	2.478-4.534	2.760	2.059 - 3.618
130/ 40	35	5.423	4.263 - 6.773	5.391	4.283 - 6.671	136	5.820	4.811 - 6.957	4.384	3.628 - 5.241	36	3.689	2.664-4.960	2.921	2.157 - 3.862
130/ 45						160	6.762	5.666 - 7.982	5.364	4.538 - 6.283	42	4.074	2.930-5.492	3.384	2.504 - 4.464
130/ 50	61	6.983	5.515 - 8.673	7.505	6.208 - 8.956	181	7.669	6.478 - 8.984	6.355	5.458 - 7.341	48	4.421	0.809-13.274	3.856	2.845 - 5.092
130/ 55						208	8.429	1.997 - 20.942	7.189	6.218 - 8.248	57	4.964	0.478-18.489	4.489	3.404 - 5.789
130/ 60	84	8.375	6.519 - 10.515	9.721	8.175 - 11.423	254	9.151	7.818 - 10.608	7.818	6.757 - 8.975	76	5.499	2.627-9.907	4.871	3.734 - 6.219
130/ 65						298	9.731	8.327 - 11.262	8.413	7.304 - 9.618	95	6.000	3.393-9.639	5.266	4.065 - 6.680
130/ 70	101	9.695	7.622 - 12.058	11.910	9.975 - 14.028	346	10.131	7.243 - 13.575	8.941	7.754 - 10.229	114	6.310	3.059-11.200	5.359	4.116 - 6.827
130/ 75						392	10.453	8.080 - 13.171	9.492	8.220 - 10.871	131	6.584	3.858-10.292	5.567	4.245 - 7.131
140/ 17	2	2.315	1.665 - 3.134	1.765	1.251 - 2.423	0	2.727	2.003 - 3.623	2.159	1.612 - 2.833	0	2.727	2.003-3.623	2.159	1.612 - 2.833
140/ 20	6	2.926	2.176 - 3.846	2.393	1.758 - 3.182	13	2.558	1.890 - 3.382	2.190	1.627 - 2.886	7	2.433	1.757-3.283	2.033	1.505 - 2.687
140/ 25	16	3.552	0.140 - 18.367	3.050	2.243 - 4.046	56	3.527	2.752 - 4.444	2.475	1.865 - 3.220	17	2.892	2.113-3.859	2.382	1.782 - 3.118
140/ 30	26	4.423	3.428 - 5.597	3.914	2.972 - 5.045	95	4.693	3.780 - 5.745	3.274	2.572 - 4.101	26	3.360	2.446-4.491	2.748	2.056 - 3.595
140/ 35						129	5.700	0.999 - 16.840	4.185	3.396 - 5.091	35	3.662	0.403-13.759	2.968	2.183 - 3.936
140/ 40	44	6.260	4.873 - 7.878	6.272	5.029 - 7.696	159	6.795	1.664 - 17.112	5.256	4.381 - 6.238	42	4.127	0.606-13.670	3.371	2.492 - 4.449
140/ 45						183	7.756	6.494 - 9.158	6.313	5.355 - 7.374	52	4.583	0.906-13.261	3.872	2.899 - 5.050
140/ 50	74	7.921	0.000 - 100.000	8.733	7.278 - 10.348	213	8.742	7.373 - 10.250	7.330	6.288 - 8.472	64	5.278	1.910-11.233	4.600	3.553 - 5.838
140/ 55						263	9.553	8.122 - 11.118	8.039	6.909 - 9.275	82	5.960	2.800-10.813	5.224	4.121 - 6.505

Air VVal18

Depth (fsw) /BT(min)	USN56 Standard Air						VVal-18 AIR; 20 fsw Last Allowed In-Water Stop						VVal-18 AIR/In-Water O2					
	TOTAL						TOTAL						TOTAL					
	STOP	P(DCS)		P(DCS)			STOP	P(DCS)		P(DCS)			STOP	P(DCS)		P(DCS)		
	TIME	BVM(3)		NMR198			TIME	BVM(3)		NMR198			TIME	BVM(3)		NMR198		
	(min)	(%)	low - high	(%)	low - high		(min)	(%)	low - high	(%)	low - high		(min)	(%)	low-high	(%)	low - high	
140/ 60	95	9.523	7.404 - 11.954	11.281	9.511 - 13.216		317	10.152	8.651 - 11.790	8.622	7.456 - 9.890		105	6.420	3.582-10.389	5.498	4.334 - 6.850	
140/ 65							370	10.634	9.055 - 12.356	9.258	8.006 - 10.617		126	6.812	4.177-10.305	5.658	4.438 - 7.077	
150/ 15	3	2.585	1.888 - 3.452	1.937	1.371 - 2.661		0	2.729	1.990 - 3.647	2.120	1.573 - 2.797		0	2.729	1.990-3.647	2.120	1.573 - 2.797	
150/ 20	9	3.170	2.328 - 4.209	2.590	1.884 - 3.470		30	2.942	2.230 - 3.803	2.282	1.678 - 3.033		11	2.680	1.954-3.584	2.221	1.648 - 2.929	
150/ 25	21	4.050	3.122 - 5.152	3.406	2.526 - 4.483		75	4.171	3.302 - 5.185	2.867	2.180 - 3.698		22	3.191	2.324-4.265	2.606	1.943 - 3.419	
150/ 30	32	5.025	1.707 - 11.110	4.545	3.478 - 5.814		116	5.342	4.329 - 6.501	3.788	2.996 - 4.716		31	3.602	2.570-4.894	2.929	2.163 - 3.872	
150/ 35							151	6.605	5.444 - 7.912	4.958	4.057 - 5.984		40	4.095	2.871-5.637	3.302	2.439 - 4.360	
150/ 40	57	7.066	1.304 - 19.827	7.193	5.822 - 8.748		180	7.719	6.408 - 9.182	6.124	5.122 - 7.245		53	4.709	3.280-6.507	3.848	2.906 - 4.983	
150/ 45							209	8.856	7.402 - 10.465	7.315	6.215 - 8.527		67	5.527	1.895-12.075	4.692	3.680 - 5.877	
150/ 50	86	8.925	6.798 - 11.399	10.035	8.412 - 11.822		265	9.758	8.231 - 11.436	8.073	6.881 - 9.381		85	6.143	2.775-11.401	5.258	4.179 - 6.507	
150/ 55							326	10.511	8.917 - 12.252	8.756	7.540 - 10.081		111	6.733	3.675-11.039	5.603	4.462 - 6.919	
150/ 60	110	10.575	8.045 - 13.494	12.716	10.716 - 14.892		385	11.056	9.390 - 12.871	9.453	8.152 - 10.866		135	7.170	4.352-10.911	5.776	4.577 - 7.163	
160/ 13	1	2.023	1.378 - 2.869	1.467	0.981 - 2.118		0	2.676	1.929 - 3.612	2.024	1.489 - 2.689		0	2.676	1.929-3.612	2.024	1.489 - 2.689	
160/ 15	5	2.790	2.044 - 3.715	2.048	1.456 - 2.802		7	2.597	1.795 - 3.631	2.047	1.508 - 2.719		5	2.285	1.627-3.122	1.882	1.373 - 2.522	
160/ 20	14	3.492	2.660 - 4.493	2.849	2.063 - 3.831		46	3.421	2.634 - 4.361	2.460	1.808 - 3.269		15	2.935	2.143-3.919	2.417	1.794 - 3.185	
160/ 25	27	4.540	3.483 - 5.795	3.854	2.880 - 5.035		93	4.706	1.160 - 12.297	3.241	2.478 - 4.158		26	3.391	0.486-11.645	2.760	2.036 - 3.655	
160/ 30	38	5.659	4.338 - 7.218	5.168	3.972 - 6.581		135	6.103	4.965 - 7.395	4.395	3.501 - 5.433		38	3.996	2.807-5.493	3.163	2.333 - 4.184	
160/ 35							171	7.425	6.109 - 8.903	5.716	4.696 - 6.870		51	4.615	3.192-6.414	3.651	2.737 - 4.761	
160/ 40	69	7.881	5.929 - 10.179	8.214	6.710 - 9.905		199	8.742	7.231 - 10.425	7.098	5.958 - 8.365		68	5.508	1.763-12.479	4.490	3.503 - 5.649	
160/ 45							259	9.826	8.133 - 11.703	7.995	6.762 - 9.355		84	6.230	2.594-12.126	5.227	4.161 - 6.460	
160/ 50	96	9.918	7.394 - 12.870	11.358	9.551 - 13.334		324	10.723	8.961 - 12.662	8.765	7.505 - 10.143		112	6.899	3.595-11.652	5.612	4.487 - 6.906	
160/ 55							390	11.320	9.566 - 13.234	9.499	8.162 - 10.954		139	7.428	4.372-11.536	5.864	4.688 - 7.216	
170/ 11	2	2.217	0.000 - 59.226	1.546	1.038 - 2.226		0	2.545	1.799 - 3.493	1.872	1.358 - 2.519		0	2.545	1.799-3.493	1.872	1.358 - 2.519	
170/ 15	7	2.999	2.197 - 3.992	2.216	1.578 - 3.026		15	2.663	1.965 - 3.525	2.203	1.612 - 2.941		7	2.520	1.815-3.406	2.080	1.521 - 2.780	
170/ 20	19	3.903	2.989 - 4.995	3.141	2.278 - 4.214		63	3.886	3.026 - 4.902	2.620	1.918 - 3.492		18	3.086	2.249-4.124	2.538	1.866 - 3.372	
170/ 25	32	5.030	0.055 - 30.434	4.319	3.229 - 5.637		111	5.372	4.313 - 6.588	3.703	2.853 - 4.715		32	3.711	2.640-5.054	2.921	2.138 - 3.892	
170/ 30	43	6.329	0.613 - 22.423	5.901	4.570 - 7.461		153	6.893	5.620 - 8.332	5.116	4.111 - 6.272		48	4.472	3.110-6.191	3.400	2.543 - 4.443	
170/ 35							188	8.304	6.798 - 9.993	6.550	5.403 - 7.842		64	5.315	1.187-14.334	4.195	3.240 - 5.326	
170/ 40	79	8.738	6.446 - 11.452	9.281	7.634 - 11.119		243	9.673	8.019 - 11.507	7.757	6.495 - 9.158		83	6.261	2.444-12.637	5.097	4.063 - 6.294	
170/ 45							311	10.756	8.993 - 12.695	8.618	7.304 - 10.061		107	7.014	3.429-12.324	5.661	4.553 - 6.931	
170/ 50	107	10.855	7.925 - 14.300	12.725	10.719 - 14.908		387	11.499	9.666 - 13.504	9.447	8.087 - 10.930		139	7.547	4.277-12.021	5.796	4.636 - 7.129	

Air VVal18

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18 AIR; 20 fsw Last Allowed In-Water Stop					VVal-18 AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)		
	TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98		
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
180/ 10	3	2.402	1.685 - 3.321	1.643	1.102 - 2.366	0	2.576	1.810 - 3.554	1.870	1.351 - 2.525	0	2.576	1.810-3.554	1.870	1.351 - 2.525
180/ 15	9	3.208	0.000 - 46.063	2.410	1.711 - 3.300	23	2.958	2.219 - 3.859	2.372	1.726 - 3.180	9	2.757	2.000-3.701	2.291	1.681 - 3.050
180/ 20	23	4.299	0.253 - 19.094	3.434	2.503 - 4.586	78	4.353	0.832 - 12.860	2.967	2.197 - 3.912	22	3.328	0.808-9.044	2.751	2.023 - 3.651
180/ 25	37	5.606	1.156 - 15.545	4.876	3.666 - 6.328	128	6.029	0.925 - 18.556	4.287	3.340 - 5.403	41	4.099	0.242-18.381	3.146	2.322 - 4.159
180/ 30	50	7.022	2.151 - 15.922	6.687	5.229 - 8.380	170	7.663	6.223 - 9.292	5.823	4.703 - 7.103	57	4.942	3.376-6.931	3.756	2.837 - 4.863
180/ 35						215	9.244	4.836 - 15.385	7.309	6.041 - 8.730	77	6.088	1.229-16.850	4.796	3.786 - 5.972
180/ 40	90	9.594	2.898 - 21.192	10.339	8.557 - 12.312	288	10.547	7.088 - 14.784	8.367	6.985 - 9.900	98	6.932	2.444-14.669	5.607	4.512 - 6.862
180/ 45						371	11.528	8.016 - 15.734	9.253	7.887 - 10.747	132	7.613	3.268-14.388	5.798	4.651 - 7.115
190/ 9	0	1.559	0.000 - 42.224	1.149	0.699 - 1.799	0	2.567	1.789 - 3.566	1.842	1.321 - 2.503	0	2.567	1.789-3.566	1.842	1.321 - 2.503
190/ 10	4	2.558	1.811 - 3.508	1.704	1.137 - 2.462	2	2.681	1.915 - 3.647	1.848	1.311 - 2.535	4	2.213	1.456-3.226	1.594	1.141 - 2.171
190/ 15	11	3.440	2.487 - 4.624	2.633	1.883 - 3.579	35	3.312	2.514 - 4.275	2.487	1.795 - 3.357	12	2.977	2.167-3.984	2.466	1.812 - 3.276
190/ 20	28	4.704	3.559 - 6.074	3.786	2.764 - 5.046	93	4.904	3.883 - 6.091	3.307	2.467 - 4.332	28	3.617	2.595-4.890	2.852	2.083 - 3.808
190/ 25	41	6.183	4.638 - 8.025	5.510	4.175 - 7.098	143	6.719	5.413 - 8.207	4.875	3.828 - 6.098	49	4.542	3.142-6.314	3.419	2.548 - 4.481
190/ 30	60	7.680	5.633 - 10.128	7.448	5.872 - 9.261	186	8.502	6.885 - 10.325	6.576	5.338 - 7.983	67	5.633	0.788-18.113	4.305	3.326 - 5.464
190/ 35						260	10.114	8.293 - 12.141	7.891	6.519 - 9.424	92	6.697	2.676-13.285	5.223	4.162 - 6.450
190/ 40	100	10.418	7.412 - 14.006	11.480	9.559 - 13.591	341	11.356	9.395 - 13.521	8.903	7.522 - 10.422	120	7.445	3.666-12.991	5.707	4.561 - 7.026
190/ 45						428	12.213	10.148 - 14.479	9.881	8.412 - 11.485	157	8.168	4.630-12.973	5.990	4.789 - 7.370
200/ 8						0	2.531	1.743 - 3.550	1.786	1.274 - 2.440	0	2.531	1.743-3.550	1.786	1.274 - 2.440
200/ 10						6	2.650	0.000 - 53.378	1.929	1.401 - 2.594	5	2.218	0.000-41.286	1.751	1.256 - 2.380
200/ 15						49	3.612	0.107 - 19.947	2.511	1.792 - 3.422	15	3.045	0.043-20.730	2.513	1.830 - 3.365
200/ 20						107	5.473	4.357 - 6.762	3.775	2.852 - 4.889	36	3.929	2.794-5.349	2.997	2.193 - 3.994
200/ 25						158	7.464	6.012 - 9.113	5.538	4.387 - 6.870	57	5.027	3.464-6.999	3.679	2.769 - 4.780
200/ 30						215	9.330	5.507 - 14.363	7.239	5.899 - 8.752	80	6.208	1.458-16.092	4.698	3.674 - 5.899
200/ 35						302	10.909	8.948 - 13.085	8.429	6.968 - 10.059	108	7.193	3.212-13.334	5.459	4.347 - 6.742
200/ 40						396	12.049	9.948 - 14.364	9.501	8.053 - 11.088	143	7.967	4.177-13.326	5.774	4.588 - 7.142
210/ 7						0	2.455	1.668 - 3.485	1.709	1.206 - 2.357	0	2.455	1.668-3.485	1.709	1.206 - 2.357
210/ 10						11	2.565	1.866 - 3.436	2.060	1.491 - 2.775	6	2.363	1.659-3.264	1.919	1.380 - 2.601
210/ 15						62	3.945	3.052 - 5.003	2.672	1.902 - 3.645	19	3.240	2.351-4.345	2.620	1.893 - 3.531
210/ 20						122	6.059	4.831 - 7.470	4.224	3.220 - 5.424	44	4.276	2.998-5.884	3.136	2.301 - 4.167
210/ 25						175	8.187	6.568 - 10.025	6.167	4.944 - 7.569	65	5.488	3.718-7.735	4.017	3.085 - 5.125
210/ 30						257	10.131	6.977 - 13.962	7.724	6.317 - 9.307	94	6.738	2.222-14.789	5.003	3.964 - 6.208

Air VVal18

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18 AIR; 20 fsw Last Allowed In-Water Stop					VVal-18 AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98	
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
210/ 35						350	11.641	8.416 - 15.431	8.937	7.518 - 10.501	125	7.677	3.172-14.817	5.542	4.410 - 6.848
210/ 40						448	12.676	9.901 - 15.806	10.071	8.530 - 11.757	165	8.512	4.481-14.160	5.992	4.757 - 7.417
220/ 7						0	2.635	1.815 - 3.696	1.854	1.319 - 2.539	0	2.635	1.815-3.696	1.854	1.319 - 2.539
220/ 10						17	2.735	2.000 - 3.647	2.185	1.574 - 2.957	8	2.534	1.796-3.471	2.055	1.483 - 2.777
220/ 15						74	4.372	3.404 - 5.513	2.930	2.108 - 3.960	24	3.478	2.520-4.666	2.741	1.982 - 3.690
220/ 20						136	6.696	0.721 - 22.716	4.766	3.672 - 6.061	51	4.703	0.172-23.045	3.420	2.534 - 4.503
220/ 25						196	8.945	7.179 - 10.942	6.783	5.457 - 8.296	74	6.005	1.367-15.835	4.399	3.410 - 5.566
220/ 30						298	10.897	8.870 - 13.154	8.209	6.734 - 9.864	109	7.244	3.128-13.686	5.253	4.170 - 6.507
220/ 35						402	12.292	10.046 - 14.777	9.491	8.000 - 11.131	145	8.163	4.147-13.911	5.704	4.498 - 7.102
230/ 6						0	2.511	1.700 - 3.575	1.737	1.222 - 2.401	0	2.511	1.700-3.575	1.737	1.222 - 2.401
230/ 10						24	2.936	2.170 - 3.878	2.300	1.647 - 3.126	9	2.731	1.957-3.705	2.240	1.621 - 3.017
230/ 15						86	4.804	3.771 - 6.011	3.228	2.354 - 4.310	30	3.672	2.640-4.956	2.816	2.041 - 3.783
230/ 20						151	7.284	3.899 - 12.065	5.300	4.185 - 6.595	58	5.044	1.896-10.540	3.666	2.827 - 4.666
230/ 25						232	9.679	7.801 - 11.791	7.281	5.959 - 8.772	88	6.402	2.238-13.695	4.557	3.634 - 5.627
230/ 30						339	11.597	4.153 - 23.248	8.725	7.327 - 10.268	124	7.613	1.821-19.096	5.358	4.300 - 6.574
230/ 35						452	12.877	10.481 - 15.526	10.027	8.485 - 11.715	167	8.651	4.671-14.153	5.848	4.662 - 7.214
240/ 6						0	2.676	1.835 - 3.766	1.874	1.331 - 2.567	0	2.676	1.835-3.766	1.874	1.331 - 2.567
240/ 10						30	3.110	2.313 - 4.085	2.321	1.635 - 3.197	10	2.788	2.021-3.746	2.303	1.656 - 3.118
240/ 15						99	5.287	0.418 - 20.642	3.596	2.699 - 4.683	37	3.924	0.110-21.475	2.909	2.173 - 3.809
240/ 20						166	7.970	1.966 - 19.625	5.857	4.691 - 7.196	65	5.553	0.705-18.509	3.936	3.091 - 4.929
240/ 25						270	10.397	8.394 - 12.641	7.719	6.334 - 9.274	100	6.915	2.712-13.830	4.889	3.936 - 5.985
240/ 30						385	12.203	9.897 - 14.763	9.222	7.789 - 10.797	139	8.056	3.876-14.203	5.475	4.373 - 6.744
250/ 5						0	2.494	1.676 - 3.569	1.724	1.206 - 2.394	0	2.494	1.676-3.569	1.724	1.206 - 2.394
250/ 10						35	3.315	0.003 - 33.169	2.464	1.730 - 3.401	12	2.939	0.080-17.462	2.461	1.774 - 3.323
250/ 15						113	5.790	4.588 - 7.180	3.977	3.023 - 5.121	44	4.160	2.927-5.710	2.995	2.248 - 3.905
250/ 20						188	8.627	6.898 - 10.589	6.400	5.157 - 7.820	74	5.864	3.950-8.295	4.124	3.254 - 5.141
250/ 25						305	11.087	8.964 - 13.458	8.202	6.809 - 9.754	112	7.388	3.146-14.053	5.193	4.197 - 6.333
250/ 30						432	12.773	10.344 - 15.467	9.736	8.234 - 11.382	158	8.538	4.373-14.450	5.659	4.523 - 6.966
260/ 5						0	2.648	1.793 - 3.766	1.848	1.308 - 2.541	0	2.648	1.793-3.766	1.848	1.308 - 2.541
260/ 10						44	3.516	2.664 - 4.543	2.501	1.755 - 3.456	15	3.140	2.286-4.200	2.536	1.840 - 3.407
260/ 15						127	6.328	1.724 - 15.319	4.420	3.388 - 5.647	50	4.491	0.683-14.496	3.210	2.420 - 4.168

Air VVal18

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18 AIR; 20 fsw Last Allowed In-Water Stop					VVal-18 AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98	
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
260/ 20						214	9.292	6.045 - 13.374	6.885	5.580 - 8.365	83	6.191	1.543-15.637	4.304	3.417 - 5.336
260/ 25						343	11.717	9.287 - 14.450	8.687	7.305 - 10.212	127	7.705	3.385-14.362	5.153	4.128 - 6.334
260/ 30						482	13.266	10.698 - 16.115	10.195	8.639 - 11.896	178	9.011	4.830-14.787	5.835	4.678 - 7.163
270/ 5						0	2.799	1.928 - 3.921	1.984	1.417 - 2.705	0	2.799	1.928-3.921	1.984	1.417 - 2.705
270/ 10						55	3.823	2.919 - 4.906	2.638	1.842 - 3.656	20	3.275	2.384-4.379	2.586	1.852 - 3.511
270/ 15						141	6.866	3.153 - 12.551	4.880	3.796 - 6.154	56	4.836	1.477-11.342	3.455	2.651 - 4.417
270/ 20						246	9.930	7.558 - 12.676	7.323	5.983 - 8.834	93	6.539	2.230-14.141	4.509	3.595 - 5.569
270/ 25						385	12.268	9.897 - 14.906	9.156	7.762 - 10.685	140	8.100	3.837-14.410	5.377	4.300 - 6.617
280/ 4						0	2.552	1.721 - 3.642	1.782	1.252 - 2.464	0	2.552	1.721-3.642	1.782	1.252 - 2.464
280/ 5						2	2.824	1.976 - 3.907	1.917	1.338 - 2.665	4	2.334	1.501-3.464	1.661	1.172 - 2.289
280/ 10						67	4.116	3.166 - 5.245	2.782	1.969 - 3.812	25	3.356	2.418-4.526	2.622	1.902 - 3.520
280/ 15						154	7.422	4.746 - 10.870	5.360	4.226 - 6.678	62	5.226	2.620-9.145	3.736	2.913 - 4.708
280/ 20						280	10.565	8.519 - 12.857	7.743	6.369 - 9.283	104	6.974	2.750-13.898	4.799	3.849 - 5.895
280/ 25						429	12.802	10.266 - 15.626	9.635	8.171 - 11.238	159	8.513	4.257-14.621	5.483	4.383 - 6.749
290/ 4						0	2.695	1.840 - 3.806	1.903	1.351 - 2.607	0	2.695	1.840-3.806	1.903	1.351 - 2.607
290/ 5						4	2.853	1.998 - 3.943	1.987	1.425 - 2.700	4	2.490	1.633-3.636	1.809	1.283 - 2.481
290/ 10						77	4.480	3.484 - 5.654	3.026	2.174 - 4.094	29	3.529	2.538-4.762	2.729	1.997 - 3.637
290/ 15						170	7.836	6.300 - 9.580	5.842	4.659 - 7.203	69	5.453	3.791-7.534	3.904	3.066 - 4.889
290/ 20						310	11.173	8.857 - 13.784	8.191	6.833 - 9.699	114	7.411	3.074-14.303	5.118	4.118 - 6.267
290/ 25						473	13.262	10.662 - 16.148	10.085	8.554 - 11.760	177	8.965	4.731-14.860	5.708	4.543 - 7.052
300/ 4						0	2.840	1.961 - 3.972	2.035	1.457 - 2.768	0	2.840	1.961-3.972	2.035	1.457 - 2.768
300/ 5						8	2.759	1.848 - 3.956	2.074	1.495 - 2.804	5	2.413	1.556-3.571	1.927	1.374 - 2.632
300/ 10						88	4.857	1.220 - 12.535	3.279	2.391 - 4.376	34	3.693	0.539-12.453	2.779	2.050 - 3.678
300/ 15						190	8.551	6.832 - 10.503	6.276	5.043 - 7.686	77	5.874	3.977-8.276	4.077	3.226 - 5.072
300/ 20						343	11.731	9.453 - 14.272	8.640	7.265 - 10.157	126	7.725	3.450-14.263	5.261	4.220 - 6.458
300/ 25						527	13.607	10.900 - 16.613	10.432	8.868 - 12.140	194	9.454	5.148-15.329	5.998	4.779 - 7.402

Air VVal18

USN-SURDO2								VVal-18 SURDO2								
Depth (fsw)								Depth (fsw)								
/BT(min)	P(DCS) BVM(3)			P(DCS) NMRI98				/BT(min)	P(DCS) BVM(3)			P(DCS) NMRI98				
	(%)	low	- high	(%)	low	- high	(%)		low	- high	(%)	low	- high			
30/ 371								30/ 371	4.153	3.525	-	4.855	5.037	4.280	-	5.878
30/ 420								30/ 420	4.034	3.388	-	4.760	5.474	4.669	-	6.364
30/ 480								30/ 480	4.805	4.037	-	5.666	6.481	5.571	-	7.479
30/ 540								30/ 540	5.499	4.610	-	6.493	7.412	6.392	-	8.525
30/ 600								30/ 600	6.119	5.116	-	7.240	8.262	7.135	-	9.490
30/ 660								30/ 660	5.945	4.975	-	7.029	7.888	6.726	-	9.165
30/ 720								30/ 720	6.411	5.352	-	7.593	8.552	7.306	-	9.916
35/ 232								35/ 232	2.974	2.543	-	3.455	3.684	2.995	-	4.476
35/ 240								35/ 240	2.250	1.827	-	2.741	3.532	2.789	-	4.404
35/ 270								35/ 270	2.861	2.372	-	3.419	4.256	3.469	-	5.156
35/ 300								35/ 300	3.463	2.900	-	4.099	4.989	4.158	-	5.925
35/ 330								35/ 330	4.047	3.402	-	4.771	5.719	4.836	-	6.701
35/ 360								35/ 360	3.990	3.354	-	4.705	5.354	4.403	-	6.432
35/ 420								35/ 420	4.984	4.190	-	5.872	6.644	5.584	-	7.822
35/ 480								35/ 480	5.324	4.471	-	6.277	6.911	5.688	-	8.286
35/ 540								35/ 540	6.086	5.094	-	7.193	7.955	6.624	-	9.436
35/ 600								35/ 600	6.765	5.643	-	8.018	8.905	7.466	-	10.495
35/ 660								35/ 660	6.622	5.528	-	7.843	8.665	7.212	-	10.279
35/ 720								35/ 720	7.132	5.937	-	8.466	9.405	7.862	-	11.110
40/ 163								40/ 163	2.332	1.942	-	2.776	2.997	2.330	-	3.789
40/ 170								40/ 170	1.492	1.142	-	1.918	2.913	2.152	-	3.851
40/ 180								40/ 180	1.735	1.360	-	2.182	3.190	2.400	-	4.149
40/ 190								40/ 190	1.983	1.584	-	2.452	3.477	2.661	-	4.455
40/ 200								40/ 200	2.234	1.811	-	2.726	3.773	2.932	-	4.768
40/ 210								40/ 210	2.488	2.039	-	3.005	4.074	3.211	-	5.084
40/ 220								40/ 220	2.743	2.267	-	3.286	4.379	3.495	-	5.405
40/ 230								40/ 230	2.997	2.493	-	3.571	4.688	3.784	-	5.728
40/ 240								40/ 240	3.252	2.716	-	3.858	4.999	4.074	-	6.054
40/ 270								40/ 270	3.424	2.867	-	4.053	4.813	3.801	-	5.990
40/ 300								40/ 300	4.113	3.461	-	4.845	5.674	4.610	-	6.885

Air VVal18

USN-SURDO2								VVal-18 SURDO2							
Depth (fsw)								Depth (fsw)							
/BT(min)		P(DCS)			P(DCS)			/BT(min)		P(DCS)			P(DCS)		
		BVM(3)			NMRI98					BVM(3)			NMRI98		
		(%)	low	-	high	(%)	low	-	high			(%)	low	-	high
40/ 330								40/ 330 4.286 3.608 - 5.046 5.596 4.417 - 6.964							
40/ 360								40/ 360 4.887 4.114 - 5.753 6.375 5.137 - 7.788							
40/ 420								40/ 420 5.328 4.479 - 6.276 6.816 5.515 - 8.295							
40/ 480								40/ 480 6.289 5.265 - 7.433 8.125 6.691 - 9.729							
40/ 540								40/ 540 6.524 5.455 - 7.717 8.394 6.917 - 10.045							
45/ 125								45/ 125 2.079 1.672 - 2.556 2.700 2.071 - 3.457							
45/ 130								45/ 130 1.050 0.632 - 1.657 2.639 1.887 - 3.588							
45/ 140								45/ 140 1.684 0.198 - 6.869 2.946 2.145 - 3.940							
45/ 150								45/ 150 1.598 1.233 - 2.041 3.275 2.429 - 4.309							
45/ 160								45/ 160 1.890 1.497 - 2.356 3.620 2.734 - 4.691							
45/ 170								45/ 170 2.188 1.766 - 2.680 3.979 3.054 - 5.081							
45/ 180								45/ 180 2.490 2.038 - 3.011 4.347 3.387 - 5.477							
45/ 190								45/ 190 2.294 1.860 - 2.799 3.646 2.612 - 4.937							
45/ 200								45/ 200 2.578 2.133 - 3.086 3.983 2.923 - 5.283							
45/ 210								45/ 210 2.863 2.369 - 3.426 4.326 3.242 - 5.635							
45/ 220								45/ 220 3.149 2.623 - 3.746 4.674 3.568 - 5.992							
45/ 230								45/ 230 3.434 2.873 - 4.069 5.026 3.897 - 6.353							
45/ 240								45/ 240 3.719 3.120 - 4.393 5.379 4.229 - 6.717							
45/ 270								45/ 270 4.082 3.432 - 4.811 5.439 4.183 - 6.921							
45/ 300								45/ 300 4.847 2.590 - 8.148 6.417 5.097 - 7.937							
45/ 330								45/ 330 4.926 4.145 - 5.799 6.313 4.991 - 7.840							
45/ 360								45/ 360 5.594 4.699 - 6.595 7.195 5.799 - 8.782							
50/ 92								50/ 92 1.722 1.300 - 2.239 2.223 1.695 - 2.863							
50/ 95								50/ 95 0.564 0.345 - 0.882 2.247 1.587 - 3.090							
50/ 100								50/ 100 0.685 0.433 - 1.042 2.381 1.688 - 3.263							
50/ 110								50/ 110 0.956 0.660 - 1.347 2.691 1.931 - 3.648							
50/ 120								50/ 120 1.254 0.921 - 1.674 3.048 2.222 - 4.072							
50/ 130								50/ 130 1.575 1.208 - 2.020 3.437 2.549 - 4.523							
50/ 140								50/ 140 1.908 1.509 - 2.380 3.850 2.904 - 4.992							
50/ 150								50/ 150 1.778 1.371 - 2.268 3.218 2.163 - 4.596							
50/ 160								50/ 160 2.098 1.675 - 2.595 3.597 2.500 - 4.993							

Air VVal18

USN-SURDO2								VVal-18 SURDO2							
Depth (fsw)								Depth (fsw)							
/BT(min)		P(DCS)			P(DCS)			/BT(min)		P(DCS)			P(DCS)		
		BVM(3)			NMRI98					BVM(3)			NMRI98		
		(%)	low	-	high	(%)	low	-	high			(%)	low	-	high
50/ 170								50/ 170							
50/ 180								50/ 180							
50/ 190								50/ 190							
50/ 200								50/ 200							
50/ 210								50/ 210							
50/ 220								50/ 220							
50/ 230								50/ 230							
50/ 240								50/ 240							
50/ 270								50/ 270							
50/ 300								50/ 300							
50/ 330								50/ 330							
55/ 74								55/ 74							
55/ 75								55/ 75							
55/ 80								55/ 80							
55/ 85								55/ 85							
55/ 90								55/ 90							
55/ 95								55/ 95							
55/ 100								55/ 100							
55/ 110								55/ 110							
55/ 120								55/ 120							
55/ 130								55/ 130							
55/ 140								55/ 140							
55/ 150								55/ 150							
55/ 160								55/ 160							
55/ 170								55/ 170							
55/ 180								55/ 180							
55/ 190								55/ 190							
55/ 200								55/ 200							
55/ 210								55/ 210							
55/ 220								55/ 220							
55/ 230								55/ 230							

Air VVal18

USN-SURDO2									VVal-18 SURDO2										
Depth (fsw)									Depth (fsw)										
/BT(min)		P(DCS) BVM(3)			P(DCS) NMRI98				/BT(min)		P(DCS) BVM(3)			P(DCS) NMRI98					
		(%)	low	-	high	(%)	low	-	high			(%)	low	-	high	(%)	low	-	high
55/ 240										55/ 240	4.673	3.927	-	5.508	6.127	4.826	-	7.634	
55/ 270										55/ 270	5.122	4.304	-	6.037	6.482	5.175	-	7.981	
60/ 63										60/ 63	1.723	1.245	-	2.329	2.070	1.591	-	2.648	
60/ 65										60/ 65	0.379	0.181	-	0.730	2.197	1.613	-	2.924	
60/ 70										60/ 70	0.483	0.257	-	0.849	2.326	1.692	-	3.119	
60/ 75										60/ 75	0.614	0.359	-	1.000	2.478	1.802	-	3.322	
60/ 80										60/ 80	0.763	0.479	-	1.168	2.661	1.940	-	3.560	
60/ 85										60/ 85	0.926	0.615	-	1.349	2.871	2.101	-	3.824	
60/ 90										60/ 90	1.107	0.772	-	1.545	3.101	2.283	-	4.109	
60/ 95										60/ 95	1.295	0.939	-	1.748	3.349	2.482	-	4.411	
60/ 100										60/ 100	1.856	0.278	-	6.717	3.611	2.696	-	4.725	
60/ 110										60/ 110	1.402	1.023	-	1.881	3.074	1.998	-	4.510	
60/ 120										60/ 120	1.792	1.375	-	2.298	3.556	2.479	-	4.924	
60/ 130										60/ 130	2.202	1.747	-	2.739	4.080	3.007	-	5.389	
60/ 140										60/ 140	2.289	1.826	-	2.832	3.597	2.461	-	5.056	
60/ 150										60/ 150	2.690	2.189	-	3.268	4.093	2.933	-	5.536	
60/ 160										60/ 160	3.098	2.554	-	3.719	4.605	3.408	-	6.059	
60/ 170										60/ 170	3.510	2.920	-	4.180	5.129	3.894	-	6.600	
60/ 180										60/ 180	3.367	2.793	-	4.019	4.581	3.353	-	6.082	
60/ 190										60/ 190	3.756	3.134	-	4.458	5.070	3.811	-	6.579	
60/ 200										60/ 200	4.145	3.473	-	4.901	5.563	4.271	-	7.087	
60/ 210										60/ 210	4.063	3.401	-	4.809	5.177	3.954	-	6.626	
60/ 220										60/ 220	4.425	3.712	-	5.226	5.638	4.381	-	7.110	
60/ 230										60/ 230	4.785	4.017	-	5.645	6.101	4.811	-	7.595	
60/ 240										60/ 240	5.141	4.317	-	6.065	6.564	5.239	-	8.082	
70/ 48										70/ 48	1.870	0.031	-	14.103	2.056	1.590	-	2.616	
70/ 50	2.007	1.473	-	2.672	2.206	1.704	-	2.811		70/ 50	0.405	0.176	-	0.838	2.221	1.677	-	2.885	
70/ 55										70/ 55	0.494	0.242	-	0.927	2.404	1.802	-	3.142	
70/ 60										70/ 60	0.628	0.345	-	1.073	2.589	1.927	-	3.403	
70/ 65										70/ 65	0.800	0.485	-	1.260	2.812	2.095	-	3.691	
70/ 70										70/ 70	1.000	0.654	-	1.476	3.079	2.302	-	4.027	

Air VVal18

USN-SURDO2									VVal-18 SURDO2								
Depth (fsw)									Depth (fsw)								
/BT(min) P(DCS) BVM(3) (%) low - high P(DCS) NMRI98 (%) low - high									/BT(min) P(DCS) BVM(3) (%) low - high P(DCS) NMRI98 (%) low - high								
70/ 75									70/ 75	1.219	0.844	-	1.710	3.379	2.540	-	4.398
70/ 80									70/ 80	0.930	0.582	-	1.423	2.711	1.708	-	4.085
70/ 85									70/ 85	1.132	0.756	-	1.639	2.972	2.035	-	4.182
70/ 90	1.731	1.335	-	2.210	3.823	2.907	-	4.921	70/ 90	1.348	0.947	-	1.868	3.265	2.358	-	4.394
70/ 95									70/ 95	1.577	1.152	-	2.110	3.585	2.654	-	4.722
70/ 100									70/ 100	1.815	1.369	-	2.363	3.922	2.929	-	5.127
70/ 110									70/ 110	2.009	1.545	-	2.568	3.499	2.403	-	4.905
70/ 120	2.944	2.420	-	3.545	5.483	4.361	-	6.779	70/ 120	2.490	1.985	-	3.084	4.126	2.984	-	5.537
70/ 130									70/ 130	2.988	2.435	-	3.626	4.790	3.605	-	6.212
70/ 140									70/ 140	2.972	2.421	-	3.608	4.325	3.149	-	5.771
70/ 150	4.423	3.713	-	5.220	7.105	5.717	-	8.686	70/ 150	3.453	2.850	-	4.140	4.949	3.732	-	6.407
70/ 160									70/ 160	3.512	2.902	-	4.206	4.644	3.495	-	6.024
70/ 170									70/ 170	3.968	3.303	-	4.720	5.230	4.044	-	6.625
70/ 180	5.683	4.769	-	6.704	8.565	6.920	-	10.422	70/ 180	4.426	3.699	-	5.245	5.823	4.595	-	7.246
70/ 190									70/ 190	4.272	3.567	-	5.068	5.428	4.313	-	6.717
70/ 200									70/ 200	4.702	3.936	-	5.564	5.986	4.838	-	7.298
80/ 39									80/ 39	2.049	1.492	-	2.748	2.060	1.588	-	2.630
80/ 40	2.043	1.485	-	2.745	2.077	1.601	-	2.650	80/ 40	0.476	0.000	-	69.794	2.210	1.697	-	2.830
80/ 45									80/ 45	0.539	0.249	-	1.056	2.449	1.870	-	3.149
80/ 50									80/ 50	0.682	0.360	-	1.201	2.690	2.038	-	3.481
80/ 55									80/ 55	0.880	0.082	-	4.271	2.959	2.242	-	3.827
80/ 60									80/ 60	0.621	0.303	-	1.166	2.457	1.541	-	3.719
80/ 65									80/ 65	0.809	0.452	-	1.359	2.704	1.807	-	3.885
80/ 70	3.274	2.578	-	4.094	3.567	2.749	-	4.542	80/ 70	1.026	0.635	-	1.585	3.017	2.208	-	4.018
80/ 75									80/ 75	1.269	0.846	-	1.837	3.385	2.532	-	4.422
80/ 80									80/ 80	1.530	1.080	-	2.110	3.785	2.852	-	4.911
80/ 85	4.005	3.265	-	4.853	4.497	3.614	-	5.517	80/ 85	1.549	1.097	-	2.129	3.099	2.078	-	4.434
80/ 90									80/ 90	1.811	1.335	-	2.405	3.459	2.452	-	4.726
80/ 95									80/ 95	2.085	1.586	-	2.693	3.846	2.815	-	5.112
80/ 100	4.821	4.008	-	5.737	5.467	4.423	-	6.661	80/ 100	2.368	1.845	-	2.993	4.255	3.160	-	5.584
70/ 110	5.545	4.671	-	6.520	6.529	5.247	-	7.994	70/ 110	2.472	1.940	-	3.104	3.929	2.831	-	5.291

Air VVal18

USN-SURDO2								VVal-18 SURDO2									
Depth (fsw)	P(DCS)				P(DCS)				Depth (fsw)	P(DCS)				P(DCS)			
/BT(min)	BVM(3)				NMRI98				/BT(min)	BVM(3)				NMRI98			
	(%)	low	-	high	(%)	low	-	high		(%)	low	-	high	(%)	low	-	high
80/ 120									80/ 120	3.032	2.449	-	3.708	4.711	3.515	-	6.155
80/ 130	6.162	5.231	-	7.193	7.419	5.917	-	9.134	80/ 130	3.207	2.607	-	3.899	4.480	3.453	-	5.697
80/ 140									80/ 140	3.753	3.094	-	4.504	5.225	4.113	-	6.521
80/ 150	6.999	5.929	-	8.182	8.581	6.819	-	10.587	80/ 150	3.731	3.075	-	4.480	4.941	3.883	-	6.175
80/ 160									80/ 160	4.253	3.532	-	5.069	5.635	4.499	-	6.942
90/ 33	2.100	1.527	-	2.820	1.955	1.494	-	2.514	90/ 33	2.239	1.642	-	2.981	2.081	1.594	-	2.670
90/ 35									90/ 35	0.561	0.239	-	1.166	2.304	1.783	-	2.928
90/ 40									90/ 40	0.652	0.309	-	1.248	2.599	2.003	-	3.315
90/ 45									90/ 45	0.846	0.463	-	1.442	2.902	2.222	-	3.720
90/ 50									90/ 50	0.574	0.243	-	1.199	2.475	1.579	-	3.695
90/ 55									90/ 55	0.764	0.389	-	1.382	2.746	1.945	-	3.761
90/ 60	3.569	2.794	-	4.484	3.665	2.863	-	4.612	90/ 60	1.000	0.584	-	1.619	3.124	2.365	-	4.043
90/ 65									90/ 65	1.270	0.818	-	1.895	3.570	2.719	-	4.592
90/ 70	4.106	3.287	-	5.054	4.347	3.519	-	5.297	90/ 70	1.340	0.880	-	1.966	2.957	2.031	-	4.152
90/ 75									90/ 75	3.488	2.501	-	4.722	3.382	2.462	-	4.520
90/ 80	4.665	3.813	-	5.636	5.162	4.165	-	6.307	90/ 80	3.855	2.861	-	5.065	3.854	2.857	-	5.069
90/ 85									90/ 85	4.224	3.220	-	5.423	4.355	3.266	-	5.668
90/ 90	5.306	4.397	-	6.329	5.910	4.796	-	7.178	90/ 90	3.844	2.056	-	6.497	3.703	2.690	-	4.955
90/ 95									90/ 95	4.192	2.337	-	6.868	4.189	2.992	-	5.680
90/ 100	5.869	4.924	-	6.925	6.768	5.455	-	8.263	90/ 100	4.540	2.627	-	7.226	4.705	3.421	-	6.280
90/ 110	6.343	5.355	-	7.439	7.483	5.975	-	9.203	90/ 110	3.129	2.525	-	3.828	4.544	3.490	-	5.793
90/ 120	6.857	5.822	-	8.000	8.248	6.553	-	10.182	90/ 120	3.627	3.066	-	4.256	5.292	4.079	-	6.721
90/ 130	7.279	6.177	-	8.495	8.857	6.990	-	10.989	90/ 130	3.761	3.190	-	4.398	5.098	4.025	-	6.345
100/ 29	2.106	1.531	-	2.826	1.818	1.373	-	2.364	100/ 29	2.441	1.801	-	3.233	2.138	1.629	-	2.756
100/ 30									100/ 30	0.619	0.258	-	1.305	2.308	1.797	-	2.919
100/ 35									100/ 35	0.728	0.342	-	1.402	2.661	2.067	-	3.370
100/ 40									100/ 40	0.947	0.518	-	1.617	3.026	2.337	-	3.849
100/ 45									100/ 45	0.638	0.267	-	1.341	2.619	1.743	-	3.776
100/ 50	3.582	2.747	-	4.581	3.470	2.723	-	4.350	100/ 50	0.862	0.442	-	1.549	2.990	2.288	-	3.833
100/ 55									100/ 55	3.442	2.534	-	4.558	3.480	2.681	-	4.432
100/ 60	4.299	3.392	-	5.359	4.334	3.521	-	5.267	100/ 60	3.322	2.321	-	4.594	2.933	2.082	-	4.008

Air VVal18

USN-SURDO2								VVal-18 SURDO2											
Depth (fsw)								Depth (fsw)											
/BT(min)		P(DCS)			P(DCS)			/BT(min)		P(DCS)			P(DCS)						
		BVM(3)			NMRI98					BVM(3)			NMRI98						
		(%)	low	-	high	(%)	low	-	high			(%)	low	-	high				
100/ 65										100/ 65		3.754	2.727	-	5.025	3.436	2.552	-	4.515
100/ 70		5.073	4.101	-	6.187	5.235	4.316	-	6.274	100/ 70		4.200	3.170	-	5.439	4.000	3.014	-	5.189
100/ 75										100/ 75		4.644	3.589	-	5.890	4.624	3.543	-	5.907
100/ 80		5.693	4.672	-	6.848	6.188	5.051	-	7.477	100/ 80		4.315	2.039	-	7.904	4.062	2.902	-	5.506
100/ 85										100/ 85		4.729	2.327	-	8.406	4.681	3.419	-	6.224
100/ 90		6.266	5.201	-	7.460	7.086	5.715	-	8.644	100/ 90		4.989	2.635	-	8.444	5.096	3.774	-	6.695
100/ 95										100/ 95		4.708	2.868	-	7.212	4.435	3.430	-	5.622
100/ 100		6.802	5.689	-	8.042	7.915	6.308	-	9.748	100/ 100		5.173	3.332	-	7.587	5.008	3.932	-	6.264
100/ 110		7.356	6.188	-	8.651	8.775	6.937	-	10.872	100/ 110		3.810	3.253	-	4.431	5.038	4.034	-	6.195
110/ 25		2.143	1.556	-	2.880	1.777	1.331	-	2.327	110/ 25		2.541	1.875	-	3.364	2.140	1.627	-	2.763
110/ 30										110/ 30		0.771	0.039	-	4.925	2.651	2.083	-	3.324
110/ 35										110/ 35		0.986	0.520	-	1.730	3.082	2.422	-	3.862
110/ 40		3.386	2.532	-	4.425	3.173	2.542	-	3.908	110/ 40		0.662	0.263	-	1.444	2.717	1.963	-	3.659
110/ 45										110/ 45		3.286	2.341	-	4.473	3.174	2.457	-	4.028
110/ 50		4.244	3.276	-	5.392	4.092	3.279	-	5.033	110/ 50		3.271	2.228	-	4.619	2.716	1.880	-	3.793
110/ 55										110/ 55		3.780	2.715	-	5.105	3.253	2.404	-	4.296
110/ 60		5.152	4.081	-	6.395	5.133	4.201	-	6.192	110/ 60		4.294	3.204	-	5.614	3.896	2.915	-	5.083
110/ 65										110/ 65		4.825	3.693	-	6.169	4.648	3.519	-	6.000
110/ 70		5.894	4.747	-	7.206	6.260	5.099	-	7.578	110/ 70		4.571	1.808	-	9.325	4.200	2.929	-	5.806
110/ 75										110/ 75		4.866	2.279	-	8.925	4.657	3.340	-	6.286
110/ 80		6.539	5.353	-	7.878	7.225	5.817	-	8.826	110/ 80		5.474	2.983	-	9.044	5.366	3.990	-	7.023
110/ 85										110/ 85		5.344	3.288	-	8.107	4.804	3.722	-	6.078
110/ 90		7.180	3.705	-	12.185	8.239	6.575	-	10.132	110/ 90		5.873	3.811	-	8.547	5.477	4.302	-	6.845
110/ 95										110/ 95		6.398	4.330	-	9.006	6.151	4.888	-	7.607
120/ 22		2.047	1.473	-	2.773	1.662	1.228	-	2.202	120/ 22		2.647	1.956	-	3.500	2.184	1.651	-	2.835
120/ 25										120/ 25		0.777	0.333	-	1.600	2.549	1.994	-	3.210
120/ 30		2.907	2.096	-	3.920	2.747	2.187	-	3.404	120/ 30		0.967	0.481	-	1.773	3.045	2.384	-	3.827
120/ 35										120/ 35		2.857	1.928	-	4.069	2.749	2.033	-	3.631
120/ 40		3.957	2.883	-	5.280	3.661	2.909	-	4.539	120/ 40		3.450	2.450	-	4.708	3.261	2.534	-	4.124
120/ 45										120/ 45		3.516	2.433	-	4.899	2.845	2.063	-	3.822
120/ 50		4.925	3.787	-	6.273	4.913	3.986	-	5.974	120/ 50		4.116	2.975	-	5.526	3.503	2.630	-	4.562

Air VVal18

USN-SURDO2								VVal-18 SURDO2									
Depth (fsw)	P(DCS)				P(DCS)				Depth (fsw)	P(DCS)				P(DCS)			
/BT(min)	BVM(3)				NMRI98				/BT(min)	BVM(3)				NMRI98			
	(%)	low	-	high	(%)	low	-	high		(%)	low	-	high	(%)	low	-	high
120/ 55									120/ 55	4.729	3.540	-	6.160	4.341	3.297	-	5.589
120/ 60	5.876	4.653	-	7.291	5.965	4.914	-	7.152	120/ 60	4.580	1.477	-	10.482	4.037	2.849	-	5.528
120/ 65									120/ 65	4.987	2.184	-	9.529	4.553	3.333	-	6.045
120/ 70	6.636	5.313	-	8.150	7.279	5.989	-	8.728	120/ 70	5.710	0.817	-	18.176	5.368	4.085	-	6.891
120/ 75									120/ 75	5.683	3.408	-	8.772	4.893	3.824	-	6.145
120/ 80	7.340	5.944	-	8.923	8.543	6.966	-	10.314	120/ 80	6.317	4.016	-	9.322	5.674	4.501	-	7.029
120/ 85									120/ 85	6.917	4.606	-	9.843	6.434	5.181	-	7.863
130/ 19	1.969	1.404	-	2.688	1.567	1.141	-	2.104	130/ 19	2.653	1.956	-	3.515	2.141	1.606	-	2.797
130/ 20									130/ 20	0.750	0.051	-	4.258	2.332	1.810	-	2.958
130/ 25									130/ 25	0.918	0.420	-	1.795	2.883	2.247	-	3.639
130/ 30	3.339	2.444	-	4.444	3.073	2.420	-	3.843	130/ 30	0.623	0.199	-	1.581	2.675	1.903	-	3.653
130/ 35									130/ 35	3.456	2.432	-	4.751	3.217	2.495	-	4.076
130/ 40	4.494	3.374	-	5.843	4.244	3.393	-	5.230	130/ 40	3.621	2.499	-	5.056	2.861	2.099	-	3.803
130/ 45									130/ 45	4.314	3.106	-	5.808	3.639	2.710	-	4.770
130/ 50	5.650	4.374	-	7.147	5.486	4.529	-	6.567	130/ 50	5.010	3.717	-	6.571	4.624	3.578	-	5.859
130/ 55									130/ 55	4.741	0.388	-	18.747	4.103	2.968	-	5.507
130/ 60	6.555	5.100	-	8.250	7.050	5.870	-	8.369	130/ 60	5.572	2.583	-	10.226	4.986	3.799	-	6.398
130/ 65									130/ 65	6.408	3.449	-	10.623	5.925	4.680	-	7.367
130/ 70	7.411	5.825	-	9.239	8.536	7.075	-	10.162	130/ 70	6.423	3.104	-	11.412	5.479	4.356	-	6.776
130/ 75									130/ 75	7.167	4.139	-	11.289	6.409	5.180	-	7.811
140/ 17	1.949	1.376	-	2.682	1.531	1.103	-	2.076	140/ 17	2.727	2.003	-	3.623	2.159	1.612	-	2.833
140/ 20									140/ 20	0.860	0.355	-	1.811	2.596	2.012	-	3.294
140/ 25	3.114	2.234	-	4.217	2.881	2.260	-	3.616	140/ 25	1.098	0.541	-	2.022	3.238	2.508	-	4.107
140/ 30	3.796	2.793	-	5.026	3.426	2.668	-	4.326	140/ 30	3.313	2.282	-	4.636	3.062	2.364	-	3.896
140/ 35	4.450	3.303	-	5.841	4.152	3.294	-	5.152	140/ 35	3.575	2.421	-	5.067	2.754	1.991	-	3.708
140/ 40	5.105	3.842	-	6.617	4.842	3.899	-	5.926	140/ 40	4.355	3.101	-	5.916	3.598	2.677	-	4.722
140/ 45	5.746	4.366	-	7.382	5.536	4.559	-	6.640	140/ 45	4.960	3.691	-	6.491	4.383	3.400	-	5.542
140/ 50	6.259	4.746	-	8.049	6.467	5.389	-	7.673	140/ 50	5.040	1.886	-	10.560	4.216	3.120	-	5.551
140/ 55	6.781	5.151	-	8.701	7.309	6.112	-	8.641	140/ 55	5.977	2.788	-	10.891	5.243	4.086	-	6.598
140/ 60	7.275	5.545	-	9.303	8.119	6.785	-	9.599	140/ 60	6.900	3.692	-	11.454	6.275	5.066	-	7.654
140/ 65	7.702	5.900	-	9.805	8.809	7.340	-	10.438	140/ 65	7.055	4.264	-	10.770	5.973	4.796	-	7.322

Air VVal18

USN-SURDO2									VVal-18 SURDO2										
Depth (fsw)									Depth (fsw)										
/BT(min)		P(DCS) BVM(3)			P(DCS) NMRI98				/BT(min)		P(DCS) BVM(3)			P(DCS) NMRI98					
		(%)	low	-	high	(%)	low	-	high			(%)	low	-	high	(%)	low	-	high
150/ 15		1.864	1.299	-	2.595	1.448	1.027	-	1.988	150/ 15		2.729	1.990	-	3.647	2.120	1.573	-	2.797
150/ 20										150/ 20		0.979	0.429	-	1.971	2.875	2.220	-	3.659
150/ 25		3.514	2.549	-	4.709	3.182	2.469	-	4.030	150/ 25		3.025	2.013	-	4.357	2.794	2.099	-	3.640
150/ 30		4.271	3.140	-	5.654	3.918	3.071	-	4.914	150/ 30		3.865	2.726	-	5.298	3.513	2.715	-	4.462
150/ 35		4.924	3.674	-	6.431	4.554	3.636	-	5.617	150/ 35		4.228	2.960	-	5.824	3.368	2.471	-	4.473
150/ 40		5.612	4.183	-	7.327	5.381	4.424	-	6.466	150/ 40		4.891	3.583	-	6.485	4.177	3.227	-	5.303
150/ 45		6.273	4.666	-	8.196	6.282	5.233	-	7.456	150/ 45		5.953	4.478	-	7.711	5.401	4.379	-	6.569
150/ 50		6.933	5.177	-	9.020	7.212	6.066	-	8.484	150/ 50		6.157	0.191	-	28.902	5.272	4.145	-	6.584
150/ 55		7.603	5.729	-	9.812	8.009	6.774	-	9.372	150/ 55		7.278	3.799	-	12.253	6.487	5.301	-	7.828
150/ 60										150/ 60		7.542	4.487	-	11.623	6.289	5.056	-	7.698
160/ 13		1.727	1.177	-	2.451	1.323	0.917	-	1.854	160/ 13		2.676	1.929	-	3.612	2.024	1.489	-	2.689
160/ 15										160/ 15		0.859	0.075	-	4.294	2.405	1.846	-	3.080
160/ 20		3.070	2.176	-	4.198	2.822	2.189	-	3.577	160/ 20		1.107	0.097	-	5.386	3.173	2.436	-	4.058
160/ 25		3.888	1.011	-	10.070	3.506	2.701	-	4.465	160/ 25		3.469	2.371	-	4.883	3.149	2.418	-	4.024
160/ 30		4.722	3.411	-	6.335	4.250	3.334	-	5.326	160/ 30		3.870	2.724	-	5.314	2.693	1.997	-	3.549
160/ 35		5.392	3.973	-	7.108	4.999	4.054	-	6.080	160/ 35		4.671	3.371	-	6.272	3.790	2.881	-	4.881
160/ 40		6.219	4.571	-	8.205	5.959	4.938	-	7.108	160/ 40		5.856	4.347	-	7.669	5.083	4.086	-	6.229
160/ 45		7.047	5.204	-	9.250	6.956	5.855	-	8.178	160/ 45		6.179	2.577	-	12.021	5.133	4.028	-	6.422
160/ 50										160/ 50		7.437	3.695	-	12.905	6.486	5.317	-	7.807
160/ 55										160/ 55		7.798	4.509	-	12.242	6.375	5.135	-	7.790
170/ 11		1.530	1.004	-	2.245	1.166	0.780	-	1.687	170/ 11		2.545	1.799	-	3.493	1.872	1.358	-	2.519
170/ 15										170/ 15		0.948	0.374	-	2.057	2.619	2.006	-	3.357
170/ 20		3.383	2.420	-	4.589	3.060	2.352	-	3.907	170/ 20		3.401	2.367	-	4.719	3.488	2.659	-	4.484
170/ 25		4.284	0.527	-	15.084	3.903	3.021	-	4.949	170/ 25		3.924	2.795	-	5.335	3.283	2.517	-	4.202
170/ 30		4.989	3.611	-	6.680	4.690	3.722	-	5.813	170/ 30		4.265	3.037	-	5.796	3.172	2.332	-	4.209
170/ 35		6.037	0.958	-	18.350	5.655	4.632	-	6.814	170/ 35		5.473	3.997	-	7.267	4.493	3.539	-	5.609
170/ 40		6.979	5.083	-	9.264	6.701	5.607	-	7.922	170/ 40		6.024	2.480	-	11.827	4.726	3.663	-	5.978
170/ 45										170/ 45		7.352	3.460	-	13.195	6.212	5.065	-	7.514
170/ 50										170/ 50		7.910	4.415	-	12.708	6.296	5.066	-	7.700
180/ 10										180/ 10		2.576	1.810	-	3.554	1.870	1.351	-	2.525
180/ 15										180/ 15		1.043	0.433	-	2.179	2.844	2.171	-	3.655

Air VVal18

USN-SURDO2								VVal-18 SURDO2									
Depth (fsw)								Depth (fsw)									
/BT(min)	P(DCS)			P(DCS)				/BT(min)	P(DCS)			P(DCS)					
	BVM(3)			NMRI98					BVM(3)			NMRI98					
	(%)	low	-	high	(%)	low	-	high		(%)	low	-	high	(%)	low	-	high
180/ 20									180/ 20	3.317	2.213	-	4.762	2.971	2.266	-	3.822
180/ 25									180/ 25	4.193	0.276	-	18.132	3.589	2.801	-	4.520
180/ 30									180/ 30	4.901	3.516	-	6.608	3.768	2.869	-	4.846
180/ 35									180/ 35	6.401	2.334	-	13.391	5.342	4.329	-	6.499
180/ 40									180/ 40	7.009	2.440	-	14.917	5.729	4.604	-	7.020
180/ 45									180/ 45	7.771	3.366	-	14.596	5.975	4.762	-	7.372
190/ 9									190/ 9	2.567	1.789	-	3.566	1.842	1.321	-	2.503
190/ 10									190/ 10	0.841	0.273	-	2.089	2.145	1.618	-	2.789
190/ 15									190/ 15	1.144	0.499	-	2.305	3.082	2.341	-	3.977
190/ 20									190/ 20	3.639	2.570	-	4.986	2.980	2.271	-	3.835
190/ 25									190/ 25	5.019	0.885	-	15.054	2.871	2.213	-	3.658
190/ 30									190/ 30	5.688	4.119	-	7.601	4.442	3.484	-	5.565
190/ 35									190/ 35	6.514	2.688	-	12.712	4.958	3.883	-	6.214
190/ 40									190/ 40	7.363	3.636	-	12.831	5.388	4.211	-	6.764
190/ 45									190/ 45	8.941	4.928	-	14.418	7.128	5.825	-	8.597
200/ 8									200/ 8	2.531	1.743	-	3.550	1.786	1.274	-	2.440
200/ 10									200/ 10	0.900	0.306	-	2.167	2.292	1.731	-	2.976
200/ 15									200/ 15	1.253	0.576	-	2.423	3.332	2.517	-	4.318
200/ 20									200/ 20	3.810	2.722	-	5.169	3.179	2.445	-	4.058
200/ 25									200/ 25	4.778	3.396	-	6.495	3.398	2.534	-	4.451
200/ 30									200/ 30	6.517	2.905	-	12.157	5.248	4.220	-	6.429
200/ 35									200/ 35	7.451	3.223	-	14.039	5.901	4.756	-	7.211
200/ 40									200/ 40	8.452	4.370	-	14.225	6.461	5.196	-	7.907
210/ 7									210/ 7	2.455	1.668	-	3.485	1.709	1.206	-	2.357
210/ 10									210/ 10	0.962	0.343	-	2.239	2.447	1.849	-	3.177
210/ 15									210/ 15	3.567	2.488	-	4.937	3.437	2.567	-	4.495
210/ 20									210/ 20	4.237	3.042	-	5.719	3.434	2.686	-	4.317
210/ 25									210/ 25	5.406	3.873	-	7.292	3.981	3.089	-	5.036
210/ 30									210/ 30	6.545	2.209	-	14.231	4.750	3.713	-	5.966
210/ 35									210/ 35	7.693	3.227	-	14.719	5.497	4.318	-	6.868
210/ 40									210/ 40	8.639	4.766	-	13.941	6.210	5.006	-	7.586

Air VVal18

USN-SURDO2								VVal-18 SURDO2													
Depth (fsw)								Depth (fsw)													
/BT(min)		P(DCS)			P(DCS)			/BT(min)		P(DCS)			P(DCS)								
		BVM(3)			NMRI98					BVM(3)			NMRI98								
		(%)	low	-	high	(%)	low	-	high			(%)	low	-	high			(%)	low	-	high
220/	7									220/	7	2.635	1.815	-	3.696	1.854	1.319	-	2.539		
220/	10									220/	10	1.030	0.384	-	2.317	2.612	1.971	-	3.394		
220/	15									220/	15	3.347	2.336	-	4.634	2.683	2.037	-	3.464		
220/	20									220/	20	5.442	0.218	-	25.099	3.844	3.057	-	4.762		
220/	25									220/	25	6.121	4.401	-	8.222	4.649	3.684	-	5.770		
220/	30									220/	30	7.432	3.147	-	14.178	5.600	4.490	-	6.876		
220/	35									220/	35	8.711	4.339	-	14.979	6.494	5.201	-	7.974		
230/	6									230/	6	2.511	1.700	-	3.575	1.737	1.222	-	2.401		
230/	10									230/	10	1.094	0.000	-	43.229	2.784	2.097	-	3.621		
230/	15									230/	15	3.408	2.396	-	4.688	2.809	2.124	-	3.640		
230/	20									230/	20	4.666	1.649	-	10.142	3.116	2.458	-	3.891		
230/	25									230/	25	6.080	2.286	-	12.551	4.133	3.249	-	5.171		
230/	30									230/	30	7.582	1.698	-	19.549	5.160	4.088	-	6.403		
230/	35									230/	35	8.840	5.035	-	13.960	6.175	4.980	-	7.540		
240/	6									240/	6	2.676	1.835	-	3.766	1.874	1.331	-	2.567		
240/	10									240/	10	1.164	0.473	-	2.462	2.966	2.227	-	3.866		
240/	15									240/	15	3.673	0.079	-	21.686	2.968	2.230	-	3.866		
240/	20									240/	20	5.255	0.612	-	18.209	3.592	2.867	-	4.436		
240/	25									240/	25	6.840	2.705	-	13.627	4.838	3.898	-	5.919		
240/	30									240/	30	8.461	4.024	-	14.980	6.048	4.879	-	7.382		
250/	5									250/	5	2.494	1.676	-	3.569	1.724	1.206	-	2.394		
250/	10									250/	10	1.245	0.140	-	5.346	3.158	2.363	-	4.127		
250/	15									250/	15	4.032	2.803	-	5.589	3.197	2.421	-	4.134		
250/	20									250/	20	5.848	4.192	-	7.877	4.201	3.391	-	5.135		
250/	25									250/	25	7.638	3.155	-	14.747	5.644	4.643	-	6.776		
250/	30									250/	30	8.524	4.669	-	13.825	5.687	4.540	-	7.007		
260/	5									260/	5	2.648	1.793	-	3.766	1.848	1.308	-	2.541		
260/	10									260/	10	1.263	0.602	-	2.378	3.104	2.277	-	4.125		
260/	15									260/	15	4.460	0.653	-	14.630	3.522	2.713	-	4.487		
260/	20									260/	20	6.488	3.359	-	11.029	4.850	3.992	-	5.823		
260/	25									260/	25	7.705	3.447	-	14.213	5.129	4.103	-	6.313		

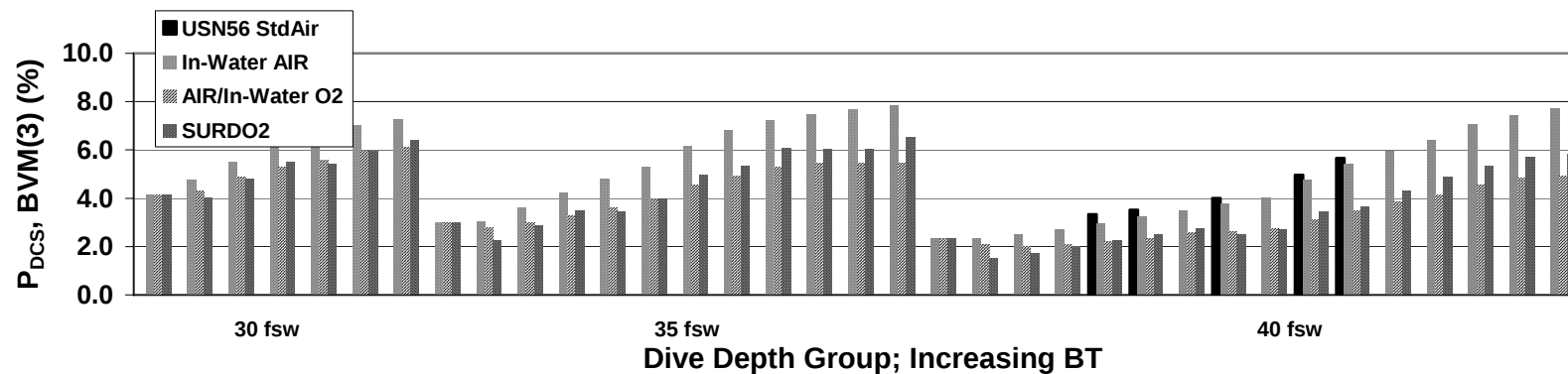
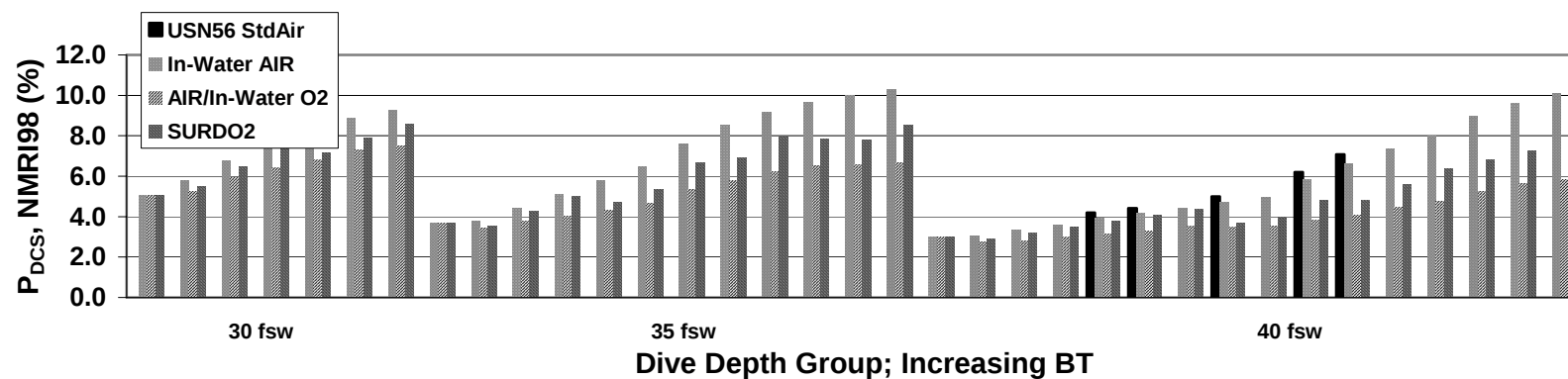
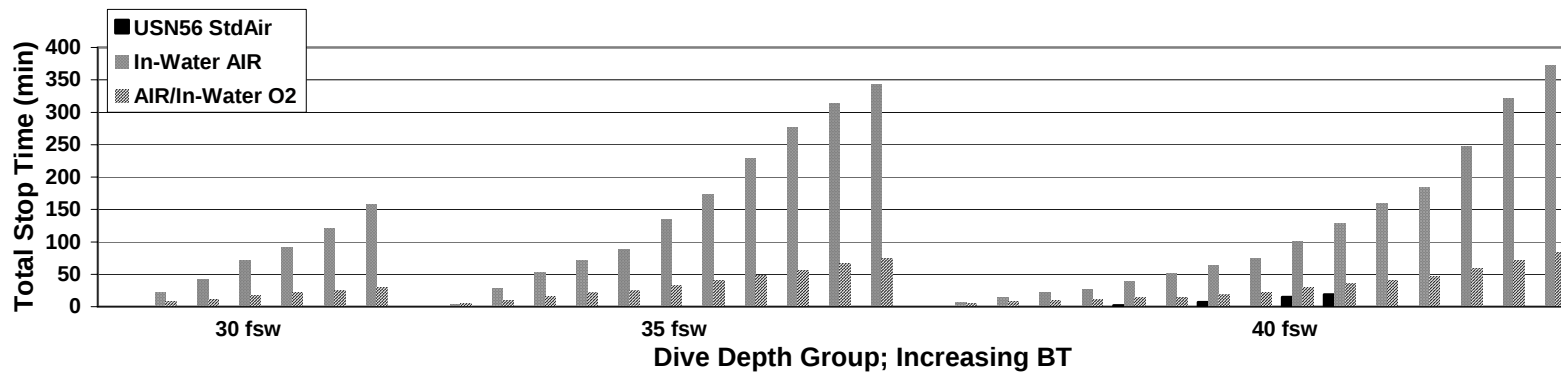
Air VVal18

USN-SURDO2										VVal-18 SURDO2									
Depth (fsw)					Depth (fsw)					Depth (fsw)					Depth (fsw)				
/BT(min)		P(DCS) BVM(3)			/BT(min)		P(DCS) NMRI98			/BT(min)		P(DCS) BVM(3)			/BT(min)		P(DCS) NMRI98		
		(%)	low	- high			(%)	low	- high			(%)	low	- high			(%)	low	- high
260/ 30					260/ 30		9.470	5.321	- 15.050	6.576		5.335	- 7.987		260/ 30		6.576	5.335	- 7.987
270/ 5					270/ 5		2.799	1.928	- 3.921	1.984		1.417	- 2.705		270/ 5		1.984	1.417	- 2.705
270/ 10					270/ 10		3.500	2.510	- 4.736	3.224		2.388	- 4.248		270/ 10		3.224	2.388	- 4.248
270/ 15					270/ 15		4.916	1.538	- 11.368	3.899		3.013	- 4.950		270/ 15		3.899	3.013	- 4.950
270/ 20					270/ 20		6.333	2.208	- 13.576	4.269		3.420	- 5.252		270/ 20		4.269	3.420	- 5.252
270/ 25					270/ 25		8.502	3.963	- 15.228	5.950		4.839	- 7.215		270/ 25		5.950	4.839	- 7.215
280/ 4					280/ 4		2.552	1.721	- 3.642	1.782		1.252	- 2.464		280/ 4		1.782	1.252	- 2.464
280/ 5					280/ 5		0.916	0.000	- 30.444	2.175		1.616	- 2.865		280/ 5		2.175	1.616	- 2.865
280/ 10					280/ 10		3.571	2.554	- 4.843	3.330		2.432	- 4.440		280/ 10		3.330	2.432	- 4.440
280/ 15					280/ 15		5.425	2.846	- 9.201	4.334		3.349	- 5.500		280/ 15		4.334	3.349	- 5.500
280/ 20					280/ 20		7.017	2.736	- 14.062	4.941		4.028	- 5.983		280/ 20		4.941	4.028	- 5.983
280/ 25					280/ 25		8.497	4.521	- 14.043	5.528		4.388	- 6.846		280/ 25		5.528	4.388	- 6.846
290/ 4					290/ 4		2.695	1.840	- 3.806	1.903		1.351	- 2.607		290/ 4		1.903	1.351	- 2.607
290/ 5					290/ 5		0.950	0.306	- 2.360	2.284		1.700	- 3.004		290/ 5		2.284	1.700	- 3.004
290/ 10					290/ 10		3.187	2.200	- 4.455	2.655		1.977	- 3.488		290/ 10		2.655	1.977	- 3.488
290/ 15					290/ 15		5.154	3.721	- 6.912	3.573		2.881	- 4.374		290/ 15		3.573	2.881	- 4.374
290/ 20					290/ 20		7.720	3.065	- 15.224	5.667		4.685	- 6.775		290/ 20		5.667	4.685	- 6.775
290/ 25					290/ 25		9.353	5.174	- 15.021	6.356		5.103	- 7.790		290/ 25		6.356	5.103	- 7.790
300/ 4					300/ 4		2.840	1.961	- 3.972	2.035		1.457	- 2.768		300/ 4		2.035	1.457	- 2.768
300/ 5					300/ 5		0.991	0.333	- 2.392	2.401		1.789	- 3.154		300/ 5		2.401	1.789	- 3.154
300/ 10					300/ 10		3.378	0.376	- 12.798	2.769		2.033	- 3.681		300/ 10		2.769	2.033	- 3.681
300/ 15					300/ 15		5.798	3.887	- 8.233	4.076		3.321	- 4.941		300/ 15		4.076	3.321	- 4.941
300/ 20					300/ 20		7.690	3.448	- 14.168	5.067		4.048	- 6.244		300/ 20		5.067	4.048	- 6.244
300/ 25					300/ 25		10.197	5.769	- 16.085	7.169		5.814	- 8.704		300/ 25		7.169	5.814	- 8.704

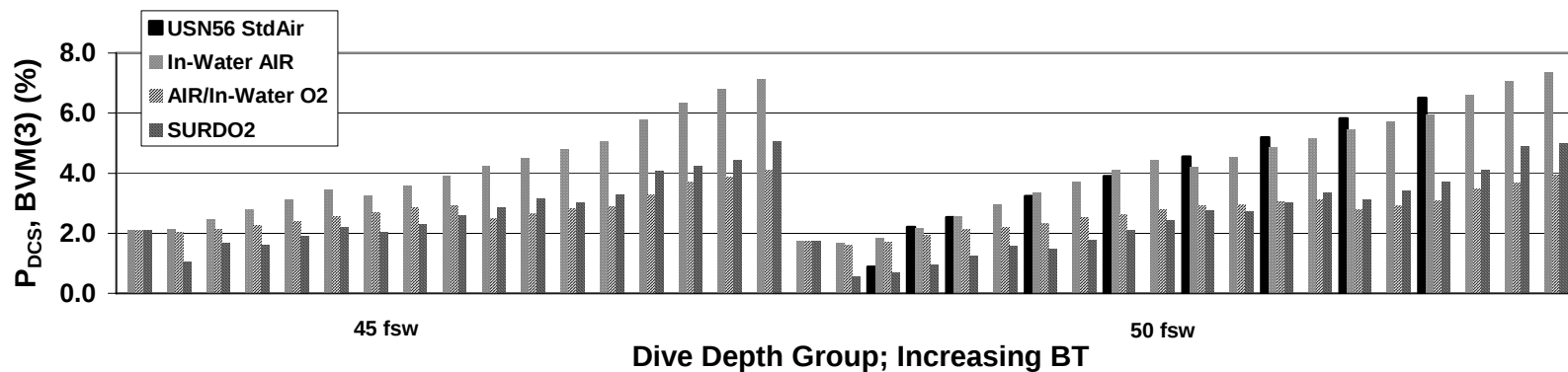
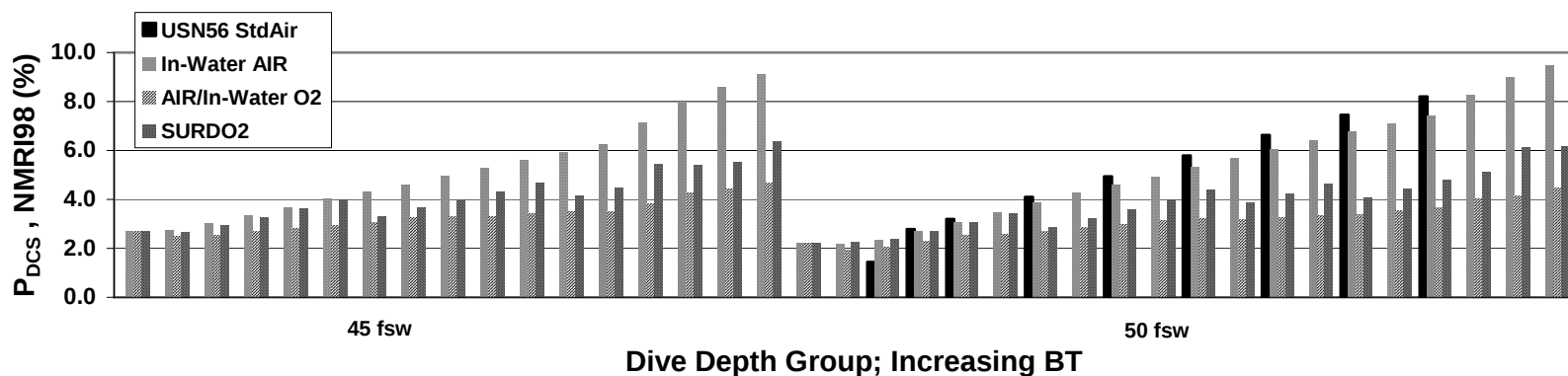
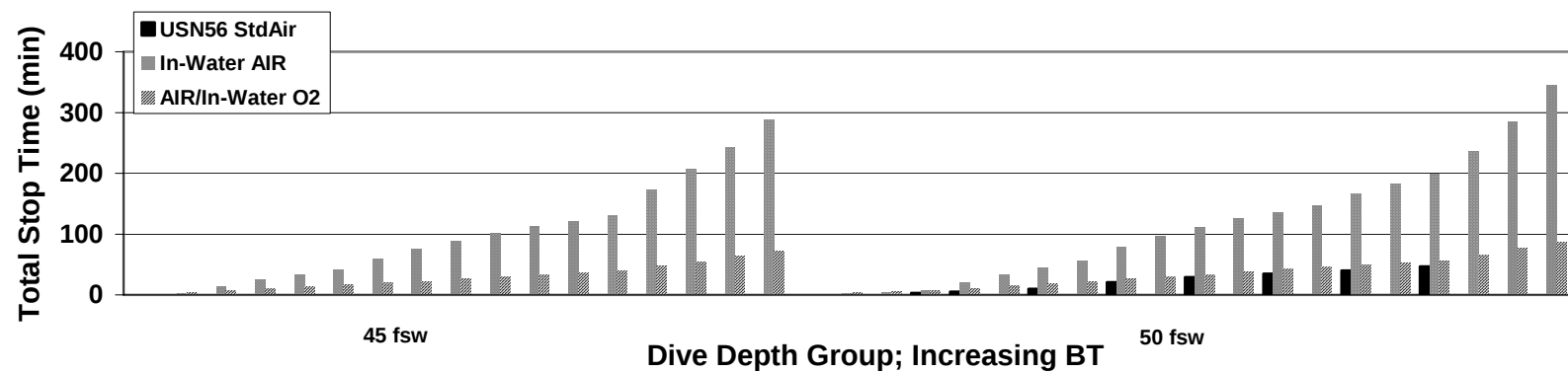
Air VVal18M

**APPENDIX I. Total Stop Times and Estimated DCS Risks of VVal-18M and USN Air Decompression Schedules
Comparatively Illustrated by Dive Depth Group
(Air Schedules with 20 fsw Last Allowed In-Water Stop)**

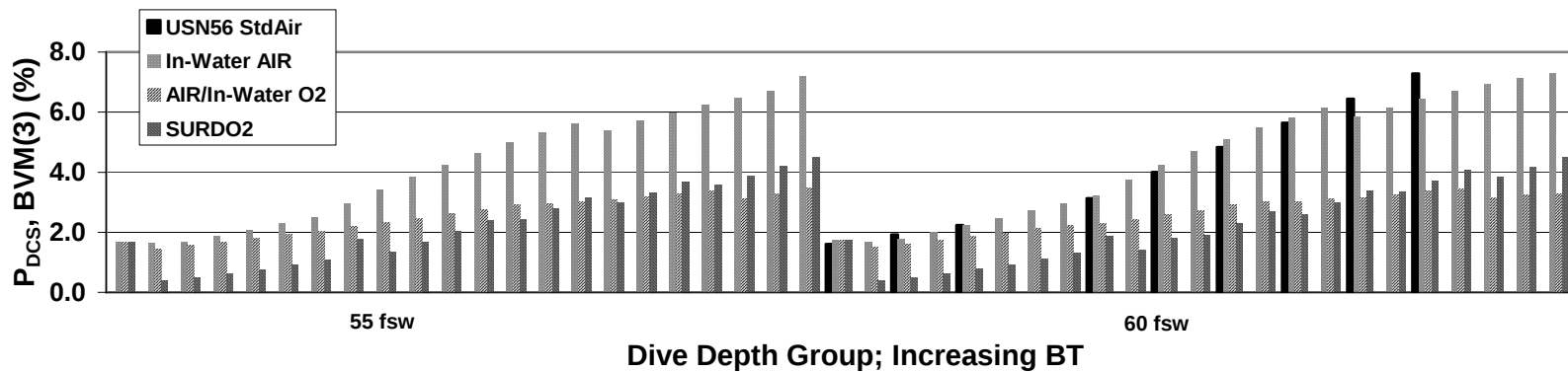
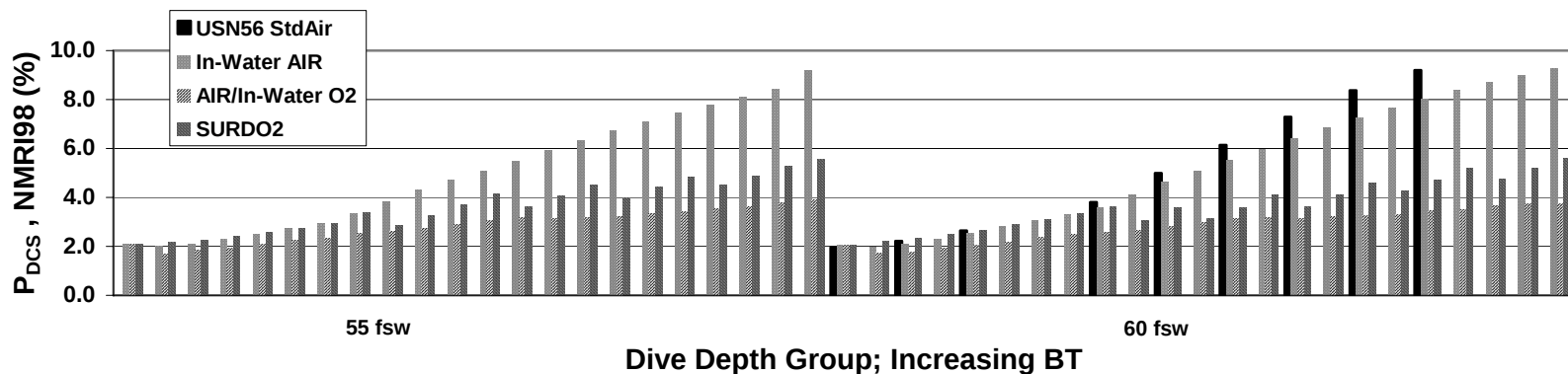
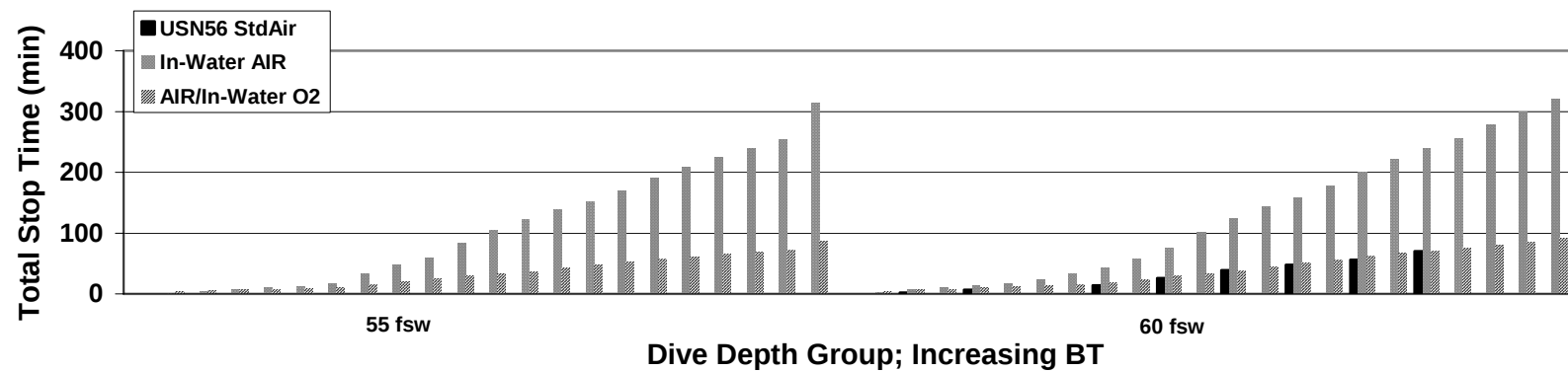
Air VVal18M



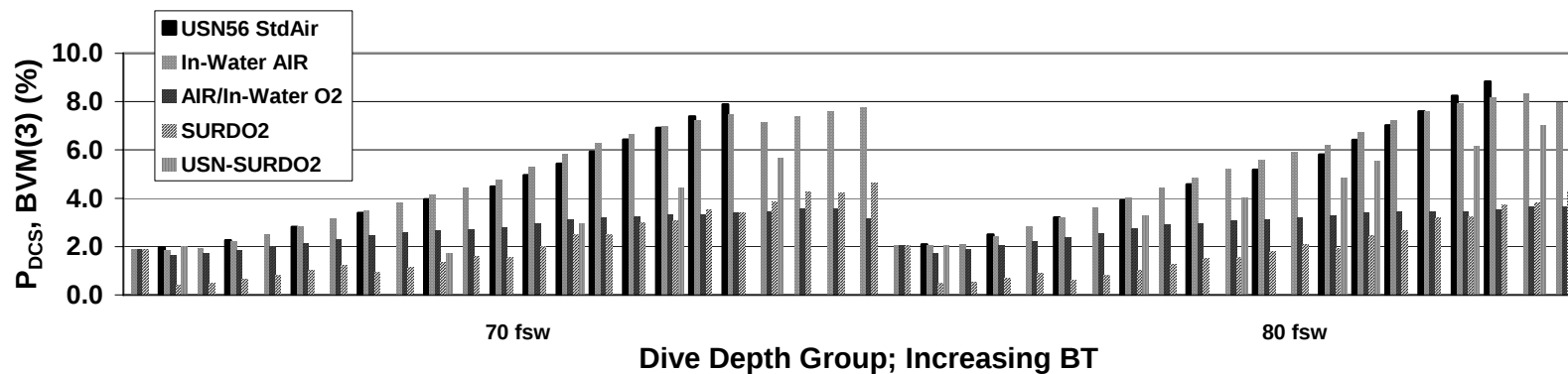
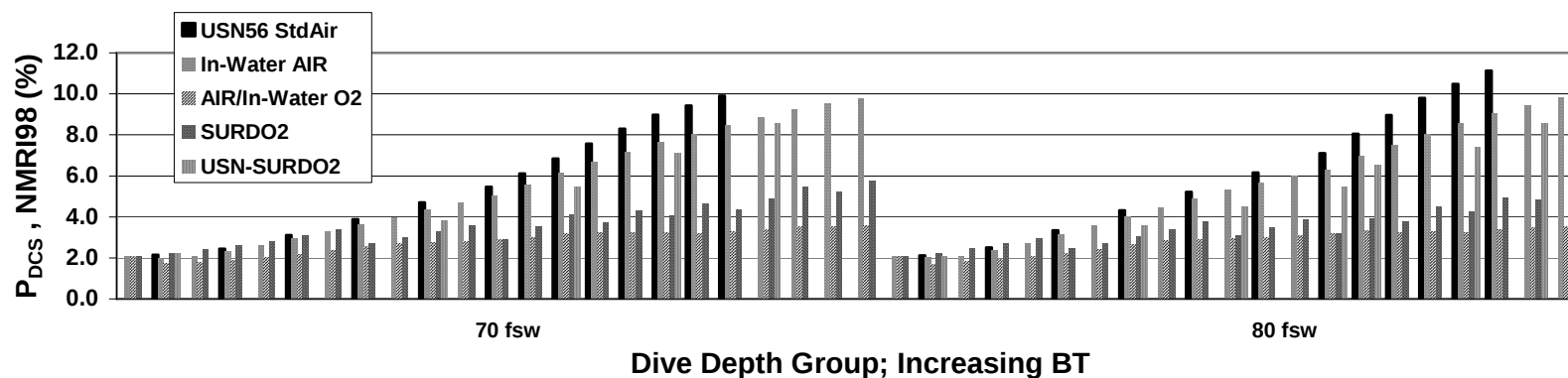
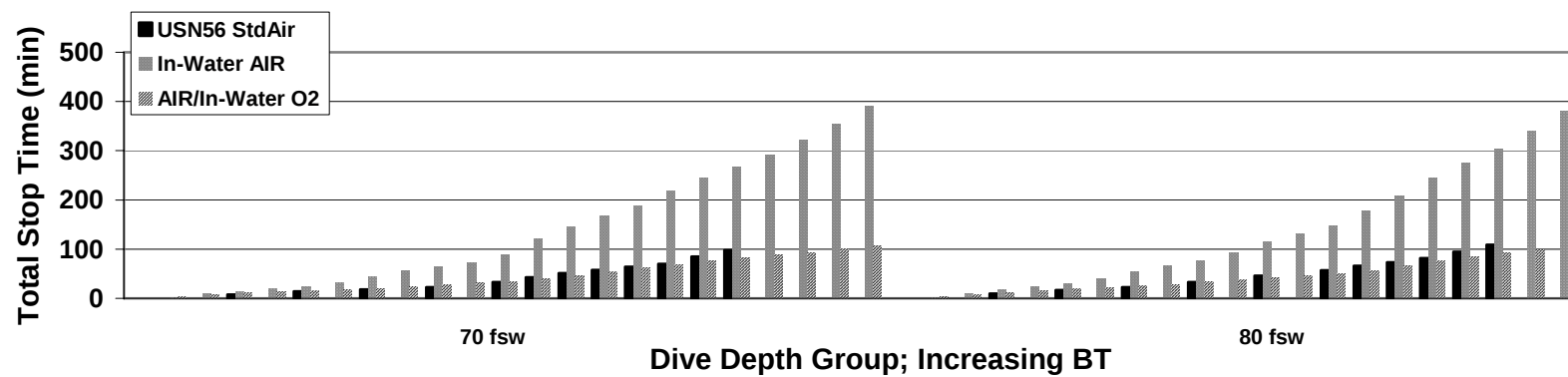
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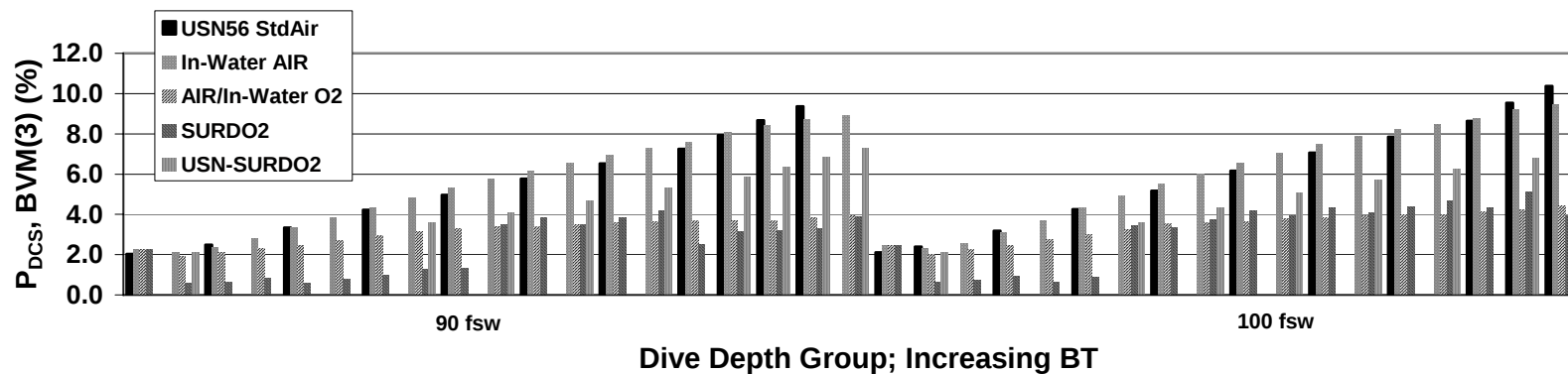
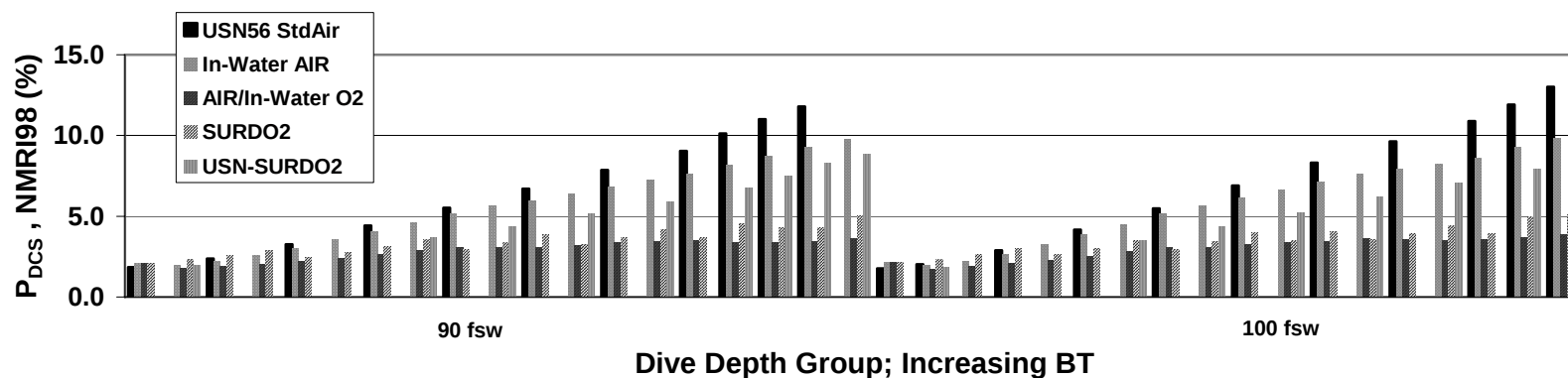
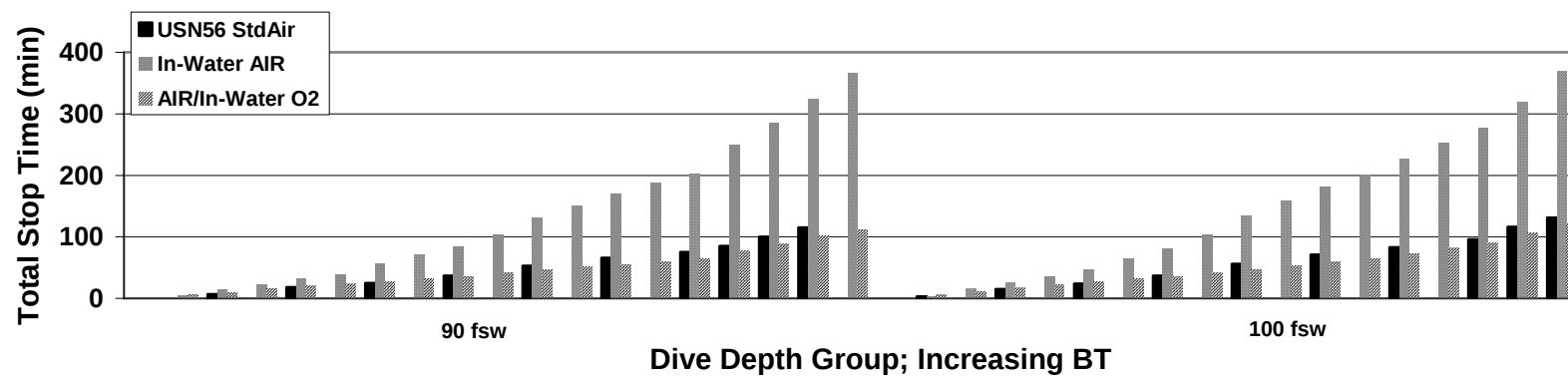
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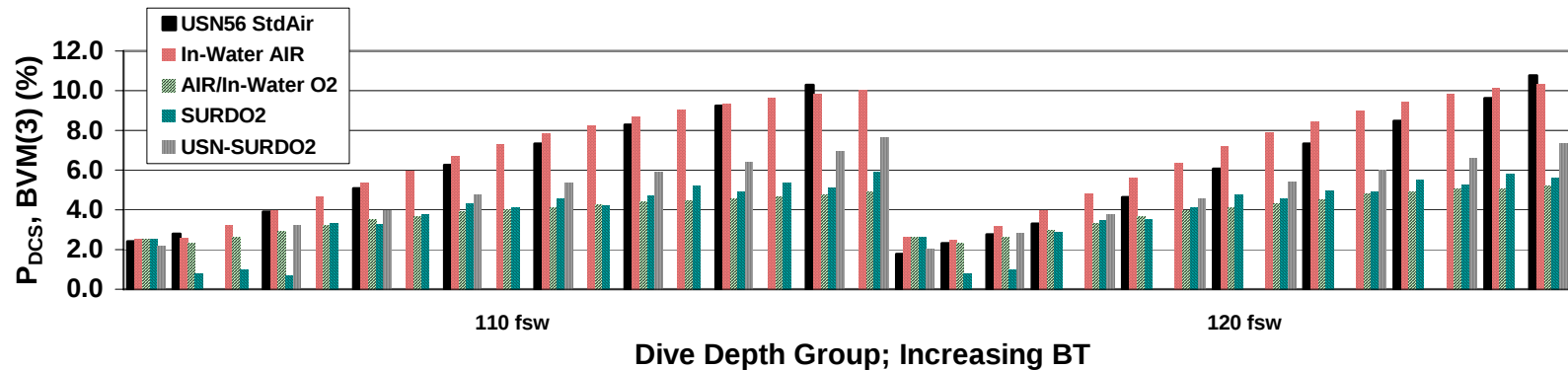
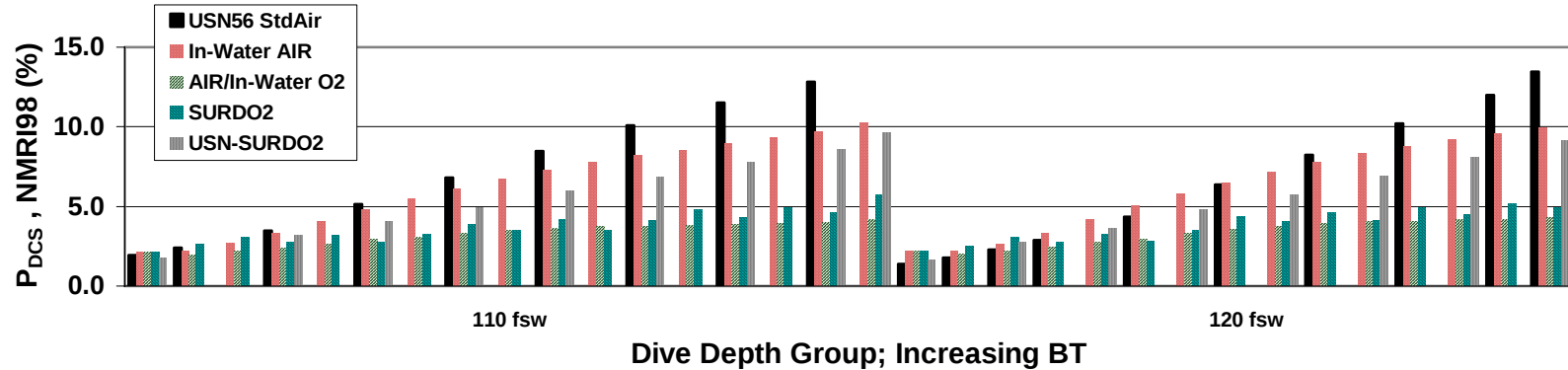
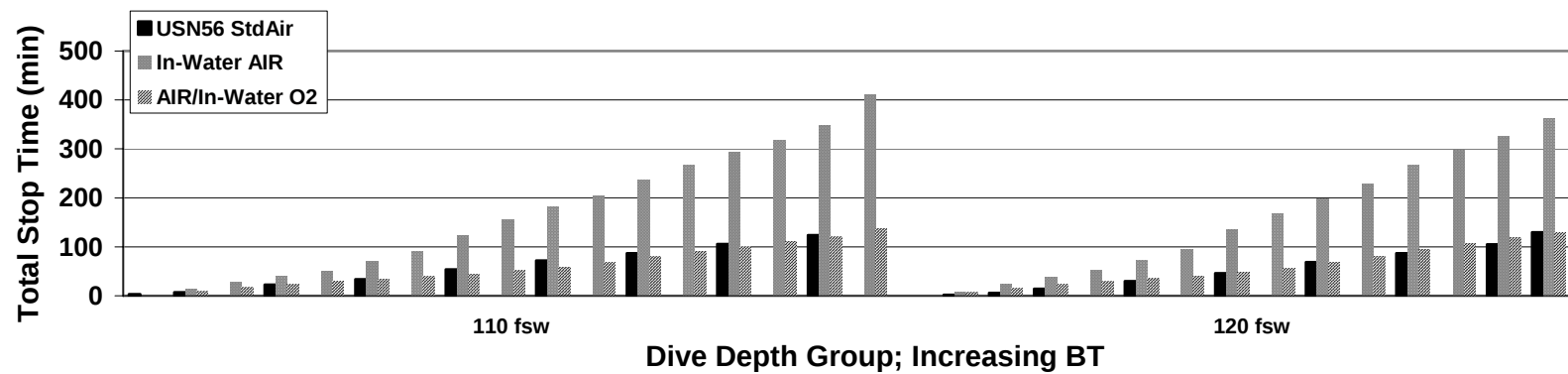
Air VVal18M



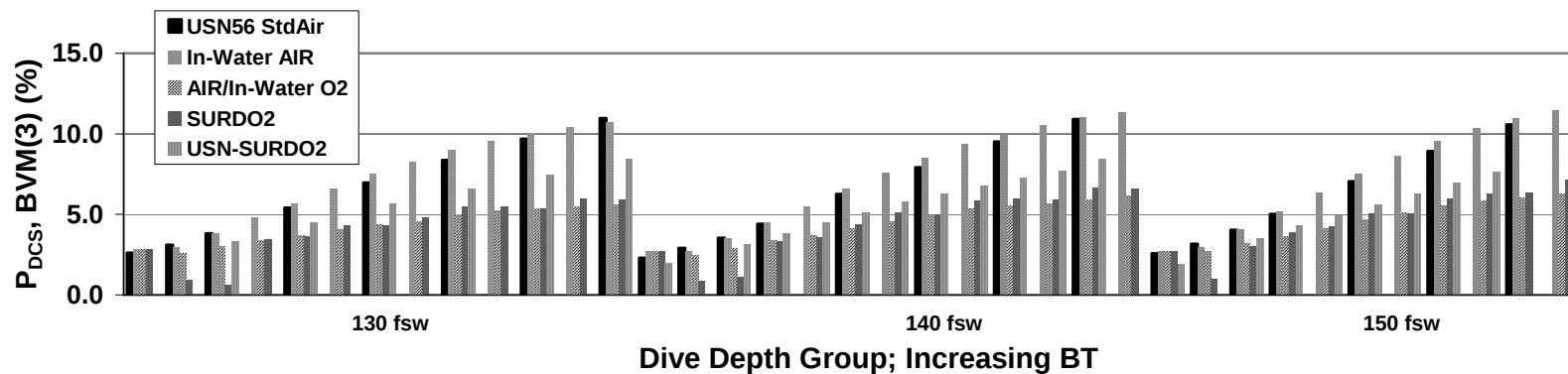
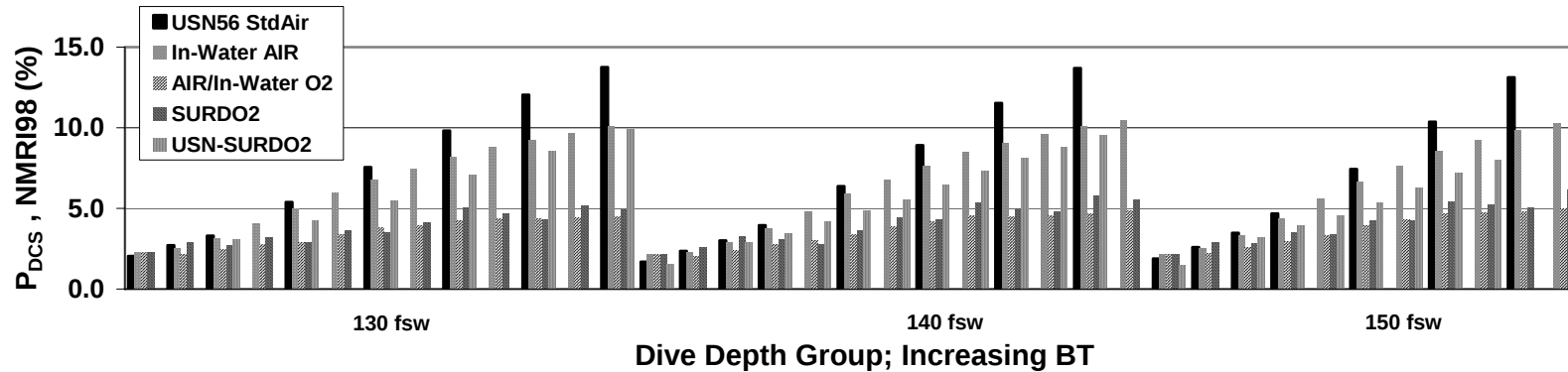
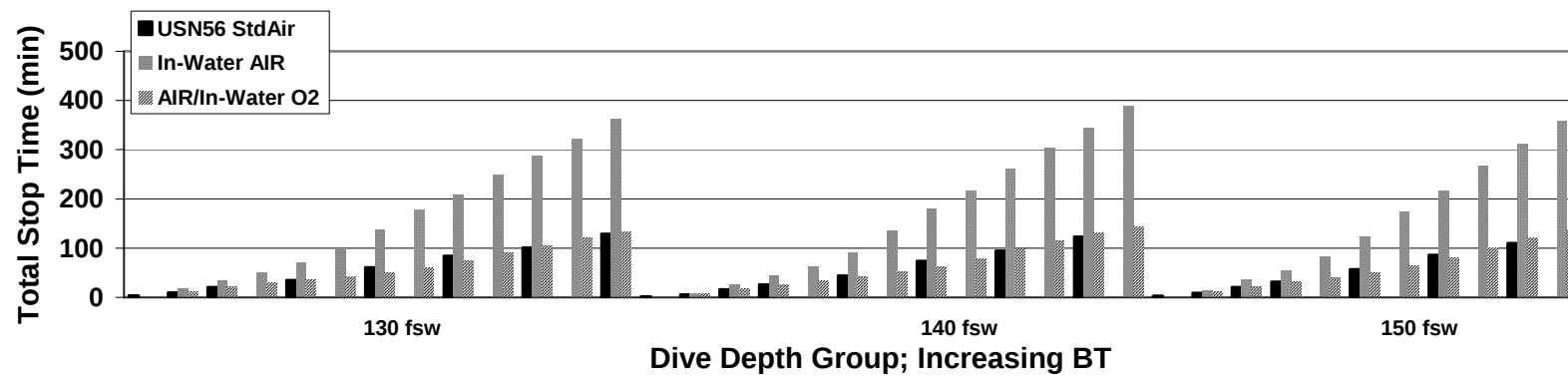
Air VVal18M



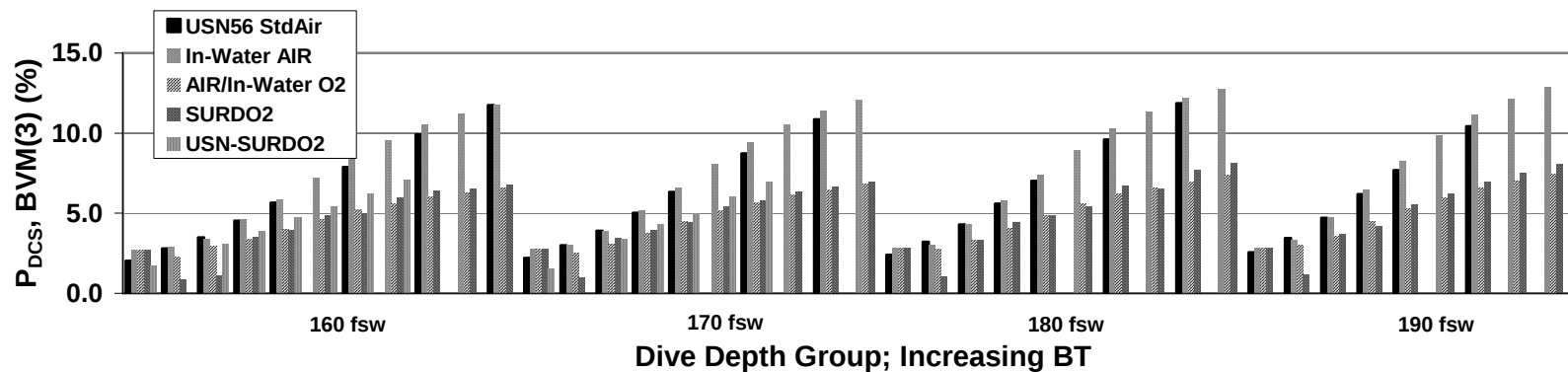
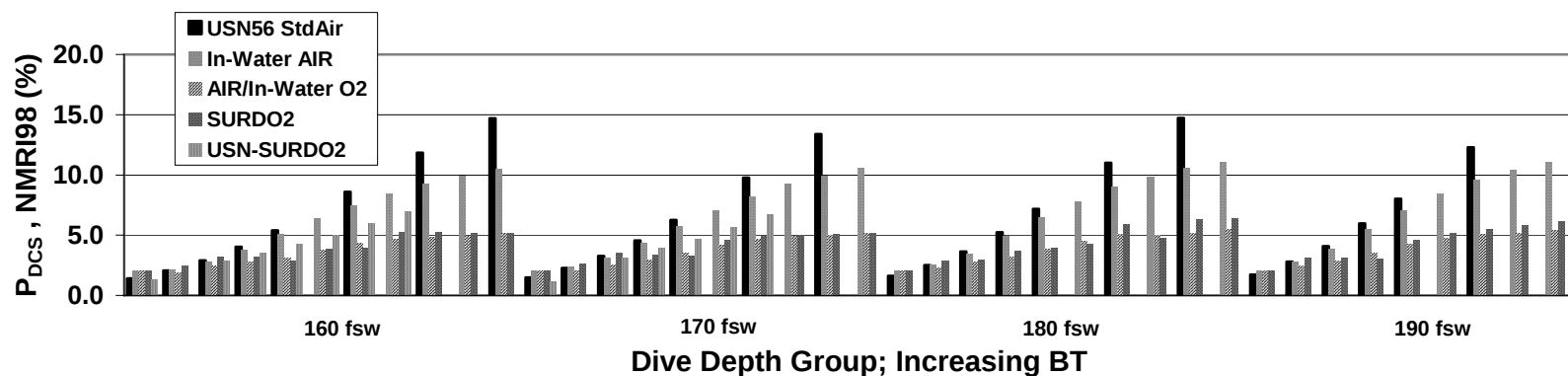
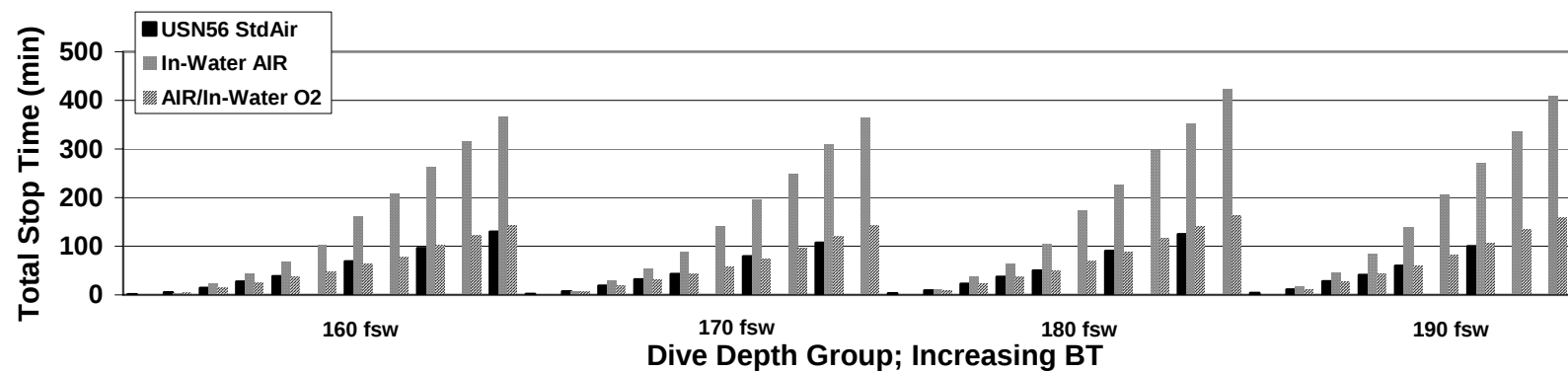
Air VVal18M



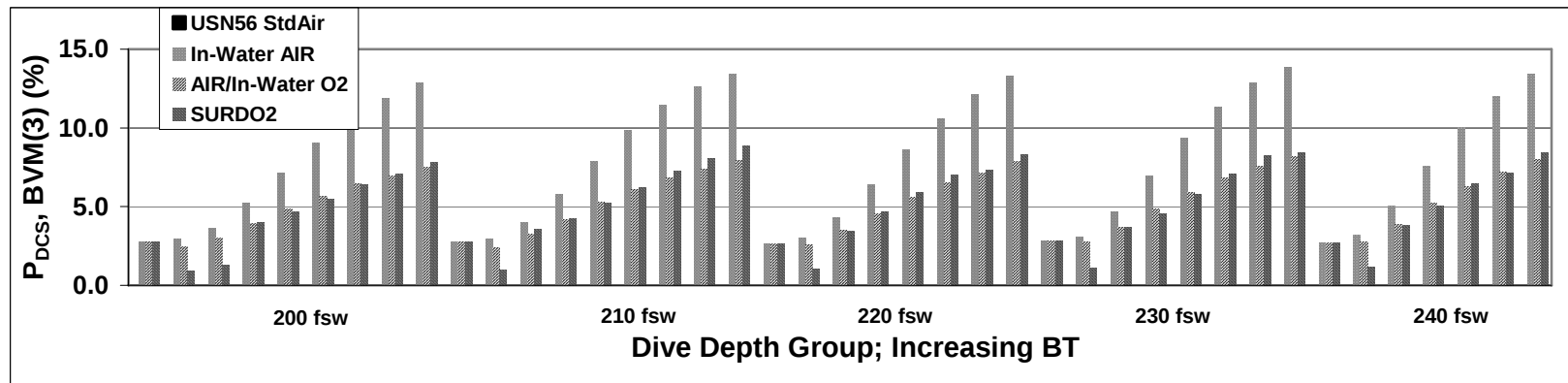
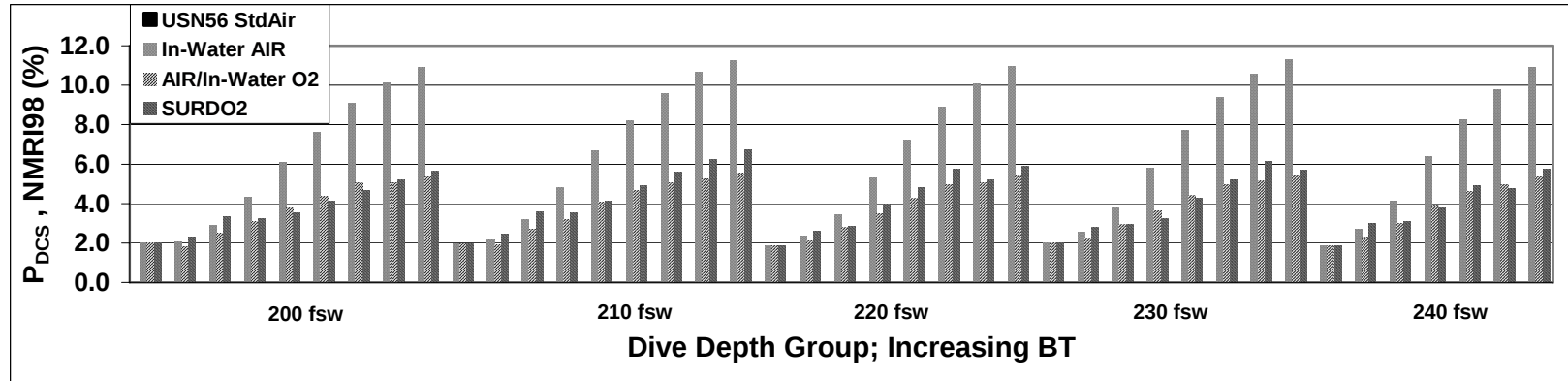
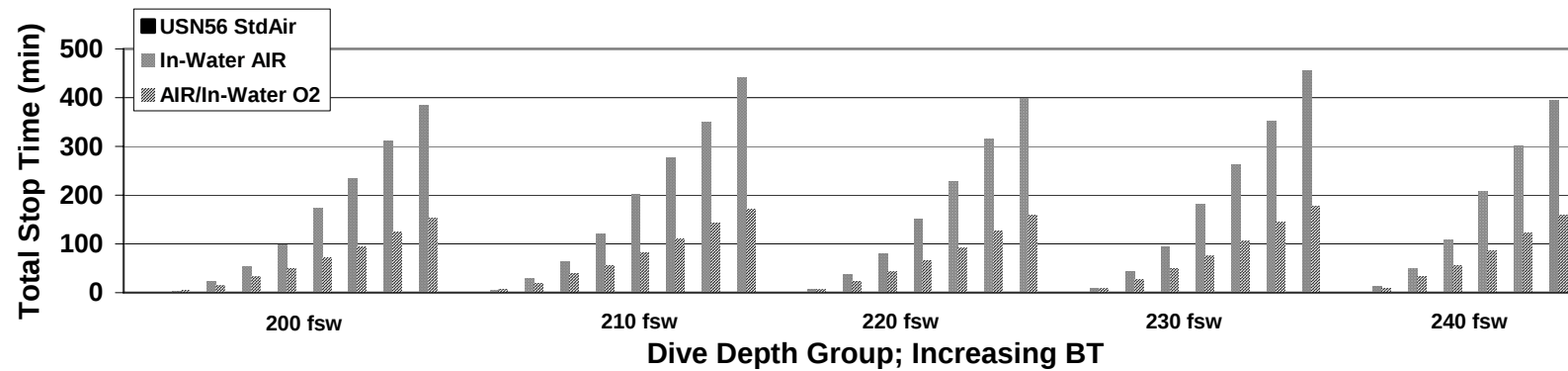
Air VVal18M



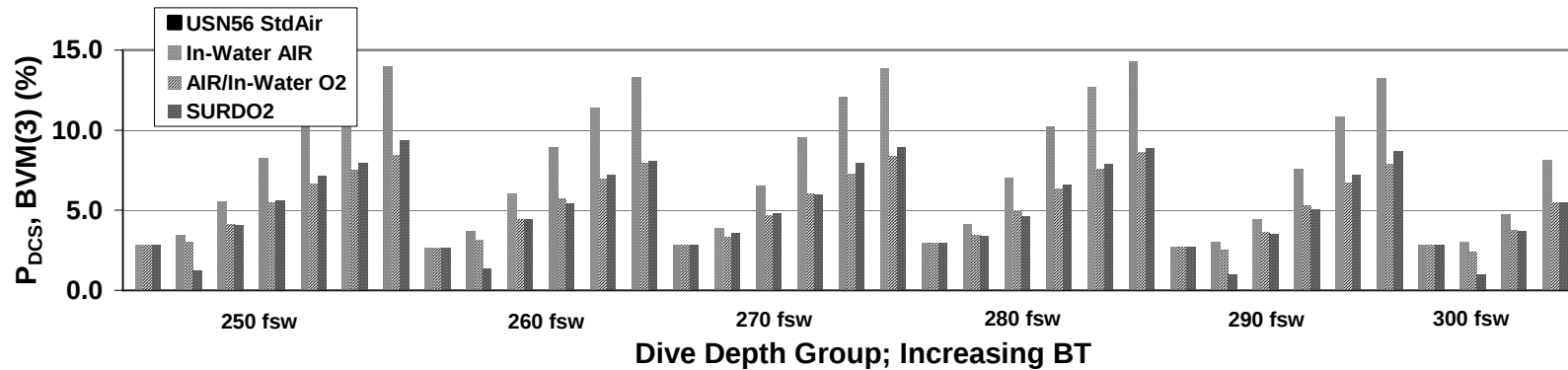
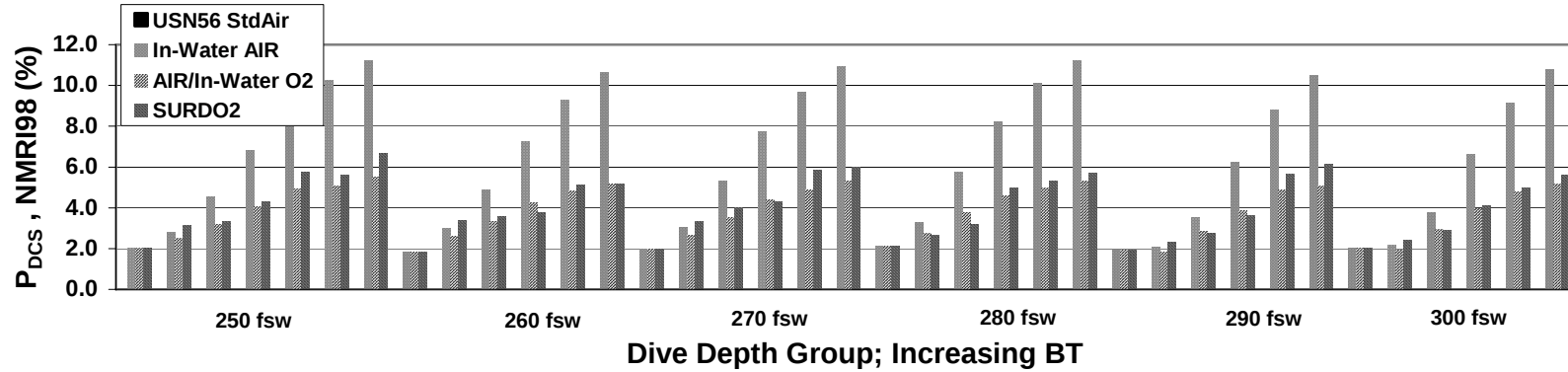
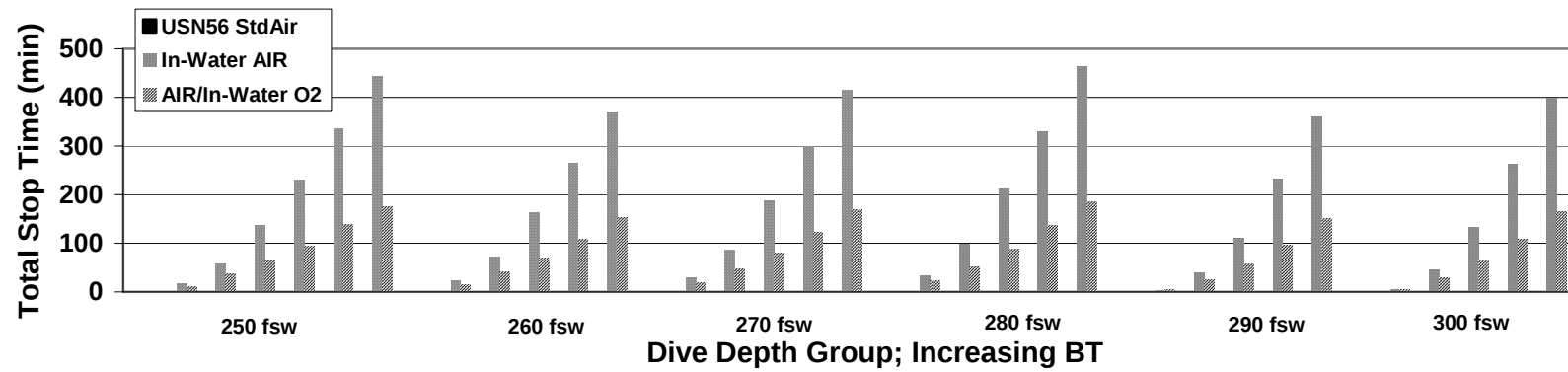
Air VVal18M



Air VVal18M



Air VVal18M



Air VVal18M

APPENDIX J. VVal-18M and USN Air Decompression Schedules Total Stop Times and Estimated DCS Risks

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18M AIR; 20 fsw Last Allowed In-Water Stop					VVal-18M AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98	
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
30/ 371						0	4.153	3.525 - 4.855	5.037	4.280 - 5.878	0	4.153	3.525-4.855	5.037	4.280 - 5.878
30/ 420						22	4.759	4.015 - 5.590	5.794	4.926 - 6.755	8	4.314	3.619-5.095	5.251	4.441 - 6.154
30/ 480						42	5.498	4.604 - 6.499	6.756	5.744 - 7.874	12	4.858	4.060-5.755	5.929	5.018 - 6.941
30/ 540						71	6.116	5.094 - 7.261	7.575	6.425 - 8.843	17	5.271	4.397-6.252	6.413	5.417 - 7.519
30/ 600						92	6.623	5.496 - 7.886	8.286	7.021 - 9.677	22	5.590	4.656-6.639	6.802	5.731 - 7.990
30/ 660						120	7.010	5.802 - 8.364	8.852	7.494 - 10.344	25	5.948	4.944-7.074	7.283	6.132 - 8.559
30/ 720						158	7.263	6.001 - 8.678	9.263	7.837 - 10.827	30	6.114	5.078-7.278	7.504	6.304 - 8.835
35/ 232						0	2.974	2.543 - 3.455	3.684	2.995 - 4.476	0	2.974	2.543-3.455	3.684	2.995 - 4.476
35/ 240						4	3.042	2.555 - 3.593	3.766	3.078 - 4.555	5	2.781	2.351-3.264	3.432	2.772 - 4.195
35/ 270						28	3.581	0.177 - 17.374	4.422	3.690 - 5.247	10	2.978	2.487-3.536	3.786	3.100 - 4.570
35/ 300						53	4.202	3.540 - 4.945	5.112	4.309 - 6.008	16	3.266	2.725-3.878	4.024	3.308 - 4.840
35/ 330						71	4.778	4.012 - 5.638	5.802	4.910 - 6.793	21	3.593	3.005-4.257	4.316	3.557 - 5.178
35/ 360						88	5.296	4.432 - 6.266	6.454	5.466 - 7.548	25	3.931	3.291-4.653	4.664	3.863 - 5.569
35/ 420						134	6.158	5.124 - 7.317	7.591	6.419 - 8.885	32	4.552	3.808-5.388	5.361	4.467 - 6.365
35/ 480						173	6.798	5.633 - 8.104	8.507	7.190 - 9.959	41	4.927	4.116-5.838	5.762	4.792 - 6.852
35/ 540						228	7.207	5.957 - 8.608	9.159	7.742 - 10.716	48	5.282	4.406-6.265	6.234	5.180 - 7.417
35/ 600						277	7.476	6.169 - 8.941	9.630	8.147 - 11.256	56	5.473	4.561-6.497	6.519	5.410 - 7.763
35/ 660						314	7.680	6.329 - 9.193	9.999	8.467 - 11.678	66	5.452	4.544-6.472	6.545	5.421 - 7.807
35/ 720						342	7.845	6.459 - 9.398	10.304	8.730 - 12.025	74	5.466	4.555-6.488	6.641	5.503 - 7.917
40/ 163						0	2.332	1.942 - 2.776	2.997	2.330 - 3.789	0	2.332	1.942-2.776	2.997	2.330 - 3.789
40/ 170						6	2.316	1.935 - 2.749	3.048	2.386 - 3.832	5	2.077	1.719-2.487	2.745	2.108 - 3.509
40/ 180						14	2.493	2.101 - 2.935	3.321	2.644 - 4.112	8	2.018	1.661-2.429	2.824	2.181 - 3.594
40/ 190						21	2.716	2.297 - 3.189	3.606	2.910 - 4.411	10	2.105	1.730-2.538	2.978	2.317 - 3.763
40/ 200	0	3.335	2.873 - 3.846	4.205	3.412 - 5.117	27	2.957	2.504 - 3.466	3.899	3.181 - 4.722	12	2.214	1.815-2.675	3.128	2.450 - 3.930
40/ 210	2	3.525	3.041 - 4.060	4.419	3.607 - 5.348	39	3.214	2.716 - 3.774	4.155	3.422 - 4.989	14	2.351	1.929-2.838	3.275	2.580 - 4.093
40/ 220						52	3.488	2.942 - 4.101	4.412	3.663 - 5.259	15	2.559	2.111-3.072	3.502	2.784 - 4.341
40/ 230	7	4.009	3.463 - 4.611	4.997	4.138 - 5.968	64	3.760	3.167 - 4.427	4.688	3.918 - 5.553	19	2.631	2.174-3.153	3.476	2.754 - 4.320
40/ 240						75	4.031	3.392 - 4.748	4.972	4.177 - 5.861	22	2.741	2.271-3.278	3.528	2.796 - 4.385
40/ 270	15	4.968	4.287 - 5.718	6.196	5.240 - 7.257	101	4.759	3.991 - 5.620	5.821	4.927 - 6.815	29	3.126	2.605-3.717	3.827	3.055 - 4.725

Air VVal18M

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18M AIR; 20 fsw Last Allowed In-Water Stop					VVal-18M AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)		
	TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98		
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
40/ 300	19	5.660	4.858 - 6.544	7.081	6.047 - 8.218	128	5.401	4.514 - 6.395	6.616	5.608 - 7.733	36	3.478	2.907-4.123	4.064	3.289 - 4.955
40/ 330						160	5.946	4.953 - 7.058	7.333	6.211 - 8.572	41	3.854	3.226-4.562	4.466	3.656 - 5.389
40/ 360						184	6.407	5.322 - 7.622	7.971	6.748 - 9.318	47	4.133	3.460-4.890	4.758	3.920 - 5.709
40/ 420						248	7.070	5.849 - 8.438	8.964	7.589 - 10.476	59	4.556	3.811-5.393	5.255	4.342 - 6.286
40/ 480						321	7.434	5.195 - 10.185	9.602	8.138 - 11.206	71	4.820	4.029-5.709	5.623	4.643 - 6.728
40/ 540						372	7.698	5.428 - 10.470	10.079	8.551 - 11.749	83	4.934	4.122-5.847	5.851	4.834 - 6.998
45/ 125						0	2.079	1.672 - 2.556	2.700	2.071 - 3.457	0	2.079	1.672-2.556	2.700	2.071 - 3.457
45/ 130						2	2.127	1.720 - 2.602	2.746	2.108 - 3.512	4	2.031	1.628-2.504	2.472	1.866 - 3.211
45/ 140						14	2.451	2.029 - 2.934	3.010	2.357 - 3.783	8	2.128	1.731-2.589	2.544	1.925 - 3.297
45/ 150						25	2.793	2.351 - 3.291	3.330	2.654 - 4.119	11	2.273	1.858-2.754	2.683	2.036 - 3.466
45/ 160						34	3.120	2.650 - 3.646	3.671	2.966 - 4.486	14	2.409	1.982-2.901	2.816	2.142 - 3.631
45/ 170						41	3.439	2.942 - 3.992	4.027	3.287 - 4.874	17	2.543	2.112-3.033	2.944	2.242 - 3.790
45/ 180						59	3.247	2.736 - 3.822	4.311	3.554 - 5.170	20	2.680	2.230-3.191	3.066	2.339 - 3.941
45/ 190						75	3.587	3.021 - 4.223	4.612	3.837 - 5.487	22	2.860	2.407-3.372	3.263	2.507 - 4.169
45/ 200						89	3.915	3.296 - 4.611	4.938	4.138 - 5.834	26	2.925	2.449-3.464	3.293	2.521 - 4.220
45/ 210						101	4.225	3.554 - 4.977	5.271	4.442 - 6.197	30	2.497	2.059-3.000	3.318	2.531 - 4.263
45/ 220						112	4.515	3.794 - 5.324	5.603	4.740 - 6.564	33	2.643	2.187-3.164	3.419	2.615 - 4.382
45/ 230						121	4.789	4.019 - 5.652	5.931	5.029 - 6.932	36	2.807	2.330-3.350	3.483	2.686 - 4.434
45/ 240						130	5.052	4.235 - 5.968	6.250	5.308 - 7.294	40	2.888	2.401-3.442	3.496	2.692 - 4.456
45/ 270						173	5.759	4.807 - 6.826	7.137	6.065 - 8.319	48	3.276	2.737-3.887	3.829	3.004 - 4.799
45/ 300						206	6.333	5.267 - 7.526	7.919	6.726 - 9.231	54	3.706	3.103-4.386	4.288	3.454 - 5.250
45/ 330						243	6.789	5.630 - 8.086	8.578	7.284 - 9.999	64	3.875	3.245-4.584	4.417	3.609 - 5.340
45/ 360						288	7.118	5.891 - 8.493	9.097	7.726 - 10.600	72	4.098	3.433-4.847	4.674	3.844 - 5.616
50/ 92						0	1.722	1.300 - 2.239	2.223	1.695 - 2.863	0	1.722	1.300-2.239	2.223	1.695 - 2.863
50/ 95						2	1.685	1.156 - 2.381	2.180	1.656 - 2.818	4	1.587	1.179-2.093	1.921	1.431 - 2.527
50/ 100	0	0.886	0.604 - 1.261	1.443	1.049 - 1.941	4	1.831	1.405 - 2.346	2.329	1.776 - 2.998	5	1.703	1.293-2.204	2.047	1.533 - 2.679
50/ 110	3	2.209	1.759 - 2.739	2.784	2.147 - 3.548	8	2.178	1.741 - 2.690	2.710	2.098 - 3.442	7	1.936	1.510-2.446	2.310	1.745 - 2.999
50/ 120	5	2.531	2.079 - 3.051	3.203	2.496 - 4.041	21	2.566	2.116 - 3.081	3.064	2.423 - 3.819	10	2.124	1.693-2.630	2.514	1.905 - 3.253
50/ 130						34	2.963	2.491 - 3.497	3.446	2.771 - 4.229	15	2.211	1.776-2.720	2.567	1.927 - 3.349
50/ 140	10	3.238	2.754 - 3.780	4.101	3.264 - 5.075	45	3.346	2.842 - 3.910	3.851	3.135 - 4.673	19	2.338	1.897-2.851	2.683	2.001 - 3.519
50/ 150						56	3.722	3.177 - 4.329	4.254	3.496 - 5.117	22	2.515	2.060-3.040	2.867	2.138 - 3.758

Air VVal18M

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18M AIR; 20 fsw Last Allowed In-Water Stop					VVal-18M AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)		
	TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98		
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
50/ 160	21	3.895	3.382 - 4.461	4.939	3.996 - 6.021	78	4.087	3.474 - 4.771	4.579	3.797 - 5.463	26	2.628	2.160-3.166	2.966	2.200 - 3.907
50/ 170						96	4.431	3.755 - 5.185	4.928	4.120 - 5.835	29	2.798	2.313-3.353	3.137	2.332 - 4.123
50/ 180	29	4.555	3.972 - 5.193	5.789	4.748 - 6.967	111	4.188	3.536 - 4.917	5.300	4.463 - 6.235	33	2.899	1.926-4.183	3.221	2.387 - 4.244
50/ 190						125	4.532	3.822 - 5.325	5.675	4.804 - 6.643	38	2.953	2.309-3.716	3.184	2.356 - 4.201
50/ 200	35	5.198	4.537 - 5.921	6.634	5.506 - 7.898	136	4.849	4.084 - 5.704	6.049	5.138 - 7.058	42	3.039	2.448-3.725	3.256	2.409 - 4.296
50/ 210						147	5.149	4.329 - 6.066	6.413	5.460 - 7.465	46	3.118	2.531-3.796	3.323	2.461 - 4.379
50/ 220	40	5.826	5.059 - 6.665	7.460	6.253 - 8.800	166	5.440	4.374 - 6.664	6.755	5.760 - 7.853	50	2.779	2.314-3.309	3.385	2.518 - 4.444
50/ 230						183	5.703	4.778 - 6.736	7.088	6.046 - 8.235	53	2.934	2.449-3.485	3.520	2.634 - 4.596
50/ 240	47	6.502	5.631 - 7.455	8.205	6.932 - 9.609	198	5.948	3.772 - 8.804	7.406	6.318 - 8.603	56	3.083	1.967-4.590	3.650	2.757 - 4.728
50/ 270						236	6.577	5.480 - 7.804	8.272	7.055 - 9.608	65	3.480	2.920-4.112	4.019	3.163 - 5.022
50/ 300						285	7.042	5.849 - 8.376	8.965	7.644 - 10.412	77	3.667	3.079-4.329	4.153	3.383 - 5.036
50/ 330						345	7.338	6.083 - 8.741	9.466	8.075 - 10.985	86	3.918	3.291-4.623	4.471	3.670 - 5.383
55/ 74						0	1.666	0.042 - 11.540	2.081	1.595 - 2.670	0	1.666	0.042-11.540	2.081	1.595 - 2.670
55/ 75						1	1.636	1.185 - 2.206	2.017	1.542 - 2.592	4	1.438	1.020-1.975	1.703	1.274 - 2.233
55/ 80						4	1.687	1.241 - 2.244	2.093	1.601 - 2.690	5	1.569	1.130-2.127	1.835	1.382 - 2.392
55/ 85						7	1.868	1.413 - 2.425	2.275	1.752 - 2.903	7	1.657	1.215-2.212	1.924	1.456 - 2.496
55/ 90						10	2.069	1.605 - 2.625	2.483	1.929 - 3.145	8	1.794	1.354-2.333	2.075	1.576 - 2.682
55/ 95						12	2.278	1.806 - 2.834	2.718	2.128 - 3.419	9	1.937	1.486-2.483	2.234	1.702 - 2.879
55/ 100						17	2.492	2.011 - 3.053	2.940	2.323 - 3.666	11	2.028	1.571-2.577	2.332	1.775 - 3.006
55/ 110						34	2.949	2.449 - 3.518	3.361	2.711 - 4.114	15	2.207	1.746-2.753	2.526	1.913 - 3.270
55/ 120						48	3.392	2.872 - 3.975	3.826	3.128 - 4.625	20	2.328	1.861-2.876	2.638	1.970 - 3.456
55/ 130						59	3.823	3.274 - 4.434	4.313	3.557 - 5.171	25	2.446	1.963-3.011	2.736	2.011 - 3.633
55/ 140						84	4.250	3.618 - 4.954	4.692	3.906 - 5.578	29	2.604	2.109-3.178	2.898	2.114 - 3.871
55/ 150						105	4.640	3.929 - 5.432	5.082	4.253 - 6.012	33	2.758	2.244-3.353	3.051	2.214 - 4.092
55/ 160						123	4.988	4.213 - 5.854	5.489	4.628 - 6.448	37	2.913	1.861-4.335	3.155	2.297 - 4.218
55/ 170						138	5.321	4.464 - 6.281	5.907	5.010 - 6.901	43	2.942	2.275-3.740	3.132	2.246 - 4.241
55/ 180						151	5.624	4.693 - 6.669	6.321	5.383 - 7.357	48	3.011	2.383-3.749	3.179	2.268 - 4.324
55/ 190						169	5.384	4.544 - 6.321	6.711	5.734 - 7.787	53	3.071	2.455-3.791	3.219	2.292 - 4.386
55/ 200						190	5.700	4.801 - 6.702	7.085	6.063 - 8.206	57	3.186	2.548-3.931	3.331	2.387 - 4.512
55/ 210						208	5.983	5.030 - 7.045	7.446	6.377 - 8.619	61	3.287	2.624-4.061	3.436	2.482 - 4.624
55/ 220						224	6.241	5.237 - 7.361	7.791	6.674 - 9.016	65	3.380	2.710-4.158	3.537	2.577 - 4.723

Air VVal18M

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18M AIR; 20 fsw Last Allowed In-Water Stop					VVal-18M AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98	
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
55/ 230						239	6.479	5.427 - 7.652	8.118	6.954 - 9.392	69	3.118	2.619-3.681	3.611	2.741 - 4.658
55/ 240						254	6.697	5.601 - 7.919	8.424	7.215 - 9.746	72	3.281	2.760-3.867	3.782	2.923 - 4.803
55/ 270						313	7.200	5.010 - 9.903	9.182	7.863 - 10.621	86	3.470	2.923-4.086	3.928	3.162 - 4.815
60/ 63	0	1.613	1.152 - 2.202	1.966	1.513 - 2.513	0	1.723	1.245 - 2.329	2.070	1.591 - 2.648	0	1.723	1.245-2.329	2.070	1.591 - 2.648
60/ 65						2	1.669	1.194 - 2.274	1.969	1.507 - 2.530	4	1.509	1.057-2.095	1.722	1.297 - 2.245
60/ 70	2	1.919	1.417 - 2.543	2.219	1.709 - 2.834	7	1.777	1.296 - 2.380	2.084	1.605 - 2.661	7	1.587	1.123-2.183	1.777	1.353 - 2.293
60/ 75						10	1.995	1.509 - 2.590	2.301	1.789 - 2.913	8	1.741	1.272-2.330	1.938	1.484 - 2.488
60/ 80	7	2.236	1.734 - 2.839	2.646	2.059 - 3.344	14	2.224	1.722 - 2.827	2.538	1.994 - 3.183	10	1.855	1.372-2.454	2.057	1.580 - 2.634
60/ 85						17	2.464	1.958 - 3.059	2.807	2.225 - 3.491	12	1.973	1.500-2.550	2.181	1.675 - 2.793
60/ 90						23	2.712	2.210 - 3.291	3.065	2.455 - 3.777	13	2.134	1.649-2.716	2.373	1.826 - 3.033
60/ 95						33	2.969	2.462 - 3.546	3.305	2.677 - 4.030	15	2.243	1.753-2.826	2.504	1.922 - 3.206
60/ 100	14	3.131	2.599 - 3.735	3.806	3.030 - 4.709	42	3.226	2.701 - 3.821	3.563	2.912 - 4.310	18	2.304	1.804-2.899	2.564	1.950 - 3.307
60/ 110						57	3.734	3.175 - 4.359	4.111	3.399 - 4.920	24	2.426	1.928-3.013	2.668	1.983 - 3.510
60/ 120	26	4.006	3.446 - 4.626	4.999	4.040 - 6.098	75	4.218	3.617 - 4.884	4.632	3.862 - 5.500	29	2.579	2.070-3.173	2.829	2.067 - 3.775
60/ 130						102	4.685	3.978 - 5.472	5.068	4.253 - 5.981	34	2.727	2.189-3.355	2.975	2.140 - 4.020
60/ 140	39	4.836	4.225 - 5.504	6.146	5.016 - 7.428	124	5.097	4.327 - 5.954	5.511	4.639 - 6.484	38	2.930	1.560-5.001	3.144	2.267 - 4.238
60/ 150						143	5.475	4.621 - 6.426	5.960	5.053 - 6.967	44	3.002	2.221-3.961	3.185	2.256 - 4.357
60/ 160	48	5.648	3.161 - 9.152	7.286	5.995 - 8.736	158	5.826	4.894 - 6.867	6.419	5.468 - 7.470	51	3.008	2.326-3.824	3.135	2.173 - 4.366
60/ 170						178	6.127	5.099 - 7.280	6.845	5.859 - 7.929	56	3.108	2.434-3.906	3.231	2.236 - 4.506
60/ 180	56	6.444	5.654 - 7.301	8.369	6.937 - 9.965	201	5.841	4.943 - 6.839	7.252	6.226 - 8.376	62	3.151	2.474-3.950	3.241	2.232 - 4.538
60/ 190						222	6.153	5.196 - 7.216	7.646	6.573 - 8.821	67	3.245	2.541-4.079	3.292	2.307 - 4.541
60/ 200	70	7.286	6.366 - 8.284	9.201	7.665 - 10.903	240	6.435	5.422 - 7.562	8.024	6.901 - 9.251	71	3.371	2.646-4.224	3.443	2.443 - 4.700
60/ 210						256	6.694	5.629 - 7.879	8.382	7.210 - 9.660	76	3.430	2.684-4.313	3.513	2.532 - 4.734
60/ 220						278	6.918	5.348 - 8.749	8.701	7.484 - 10.028	80	3.154	0.000-99.995	3.655	2.715 - 4.801
60/ 230						300	7.119	5.968 - 8.400	8.993	7.735 - 10.364	85	3.249	2.745-3.816	3.723	2.842 - 4.779
60/ 240						321	7.294	6.106 - 8.615	9.261	7.966 - 10.671	91	3.283	2.774-3.855	3.726	2.911 - 4.688
70/ 48						0	1.870	0.031 - 14.103	2.056	1.590 - 2.616	0	1.870	0.031-14.103	2.056	1.590 - 2.616
70/ 50	0	1.953	1.429 - 2.608	2.147	1.660 - 2.733	2	1.834	0.032 - 13.720	1.965	1.507 - 2.518	4	1.615	0.351-4.926	1.719	1.304 - 2.226
70/ 55						9	1.923	0.542 - 5.019	2.070	1.597 - 2.641	8	1.715	0.412-4.930	1.782	1.369 - 2.283
70/ 60	8	2.262	1.716 - 2.928	2.453	1.906 - 3.106	14	2.213	0.751 - 5.137	2.320	1.816 - 2.919	11	1.851	0.499-4.963	1.884	1.461 - 2.393
70/ 65						19	2.505	0.164 - 11.999	2.622	2.082 - 3.257	13	2.008	0.064-12.559	2.050	1.597 - 2.591

Air VVal18M

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18M AIR; 20 fsw Last Allowed In-Water Stop					VVal-18M AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)		
	TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98	
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
70/ 70	14	2.817	2.230 - 3.506	3.112	2.464 - 3.873	24	2.817	1.232 - 5.515	2.962	2.383 - 3.636	16	2.135	0.697-5.084	2.173	1.691 - 2.750
70/ 75						32	3.143	1.508 - 5.759	3.301	2.690 - 4.004	18	2.303	0.822-5.170	2.362	1.835 - 2.991
70/ 80	18	3.384	2.785 - 4.070	3.887	3.122 - 4.773	44	3.480	1.802 - 6.033	3.624	2.992 - 4.344	20	2.468	0.950-5.273	2.558	1.982 - 3.247
70/ 85						55	3.809	2.098 - 6.306	3.967	3.305 - 4.715	23	2.580	1.040-5.343	2.688	2.064 - 3.439
70/ 90	23	3.959	3.350 - 4.641	4.700	3.813 - 5.717	64	4.121	0.891 - 11.597	4.329	3.629 - 5.117	27	2.635	0.233-11.290	2.742	2.068 - 3.562
70/ 95						73	4.440	1.041 - 11.947	4.689	3.947 - 5.520	31	2.698	0.242-11.458	2.788	2.061 - 3.684
70/ 100	33	4.487	3.853 - 5.188	5.462	4.459 - 6.604	88	4.744	2.950 - 7.156	4.994	4.222 - 5.854	34	2.791	1.209-5.499	2.900	2.117 - 3.873
70/ 110	43	4.957	4.308 - 5.669	6.119	5.003 - 7.383	120	5.315	3.465 - 7.722	5.559	4.723 - 6.487	41	2.939	0.993-6.738	2.985	2.124 - 4.072
70/ 120	51	5.429	4.739 - 6.181	6.848	5.615 - 8.239	145	5.814	3.913 - 8.232	6.126	5.209 - 7.141	47	3.105	1.337-6.117	3.171	2.210 - 4.398
70/ 130	58	5.931	5.198 - 6.728	7.578	6.227 - 9.094	167	6.256	4.301 - 8.704	6.664	5.669 - 7.762	54	3.199	1.476-6.015	3.255	2.211 - 4.608
70/ 140	64	6.429	5.652 - 7.270	8.295	6.830 - 9.932	189	6.653	4.655 - 9.121	7.168	6.136 - 8.300	62	3.226	1.522-5.975	3.239	2.138 - 4.692
70/ 150	70	6.912	6.069 - 7.824	8.975	7.402 - 10.729	219	6.967	4.911 - 9.490	7.614	6.565 - 8.760	69	3.305	1.590-6.037	3.248	2.140 - 4.710
70/ 160	85	7.387	6.488 - 8.360	9.436	7.785 - 11.272	244	7.222	5.981 - 8.612	8.034	6.944 - 9.222	76	3.295	2.506-4.246	3.201	2.077 - 4.701
70/ 170	98	7.890	6.916 - 8.944	9.902	8.182 - 11.811	267	7.454	6.101 - 8.976	8.455	7.316 - 9.693	82	3.385	2.578-4.354	3.303	2.160 - 4.819
70/ 180						292	7.149	6.051 - 8.362	8.855	7.664 - 10.147	88	3.451	2.636-4.429	3.395	2.249 - 4.901
70/ 190						321	7.395	6.248 - 8.664	9.208	7.972 - 10.550	93	3.571	2.726-4.586	3.552	2.401 - 5.044
70/ 200						354	7.598	6.407 - 8.916	9.523	8.243 - 10.911	100	3.566	2.683-4.634	3.552	2.596 - 4.731
70/ 210						391	7.749	5.551 - 10.408	9.782	8.466 - 11.207	107	3.171	2.691-3.708	3.578	2.691 - 4.651
80/ 39						0	2.049	1.492 - 2.748	2.060	1.588 - 2.630	0	2.049	1.492-2.748	2.060	1.588 - 2.630
80/ 40	0	2.093	1.521 - 2.811	2.116	1.632 - 2.699	1	2.043	0.327 - 7.095	2.009	1.542 - 2.573	4	1.719	0.187-7.221	1.681	1.274 - 2.181
80/ 45						10	2.070	1.514 - 2.766	2.069	1.585 - 2.655	8	1.880	1.343-2.564	1.817	1.401 - 2.320
80/ 50	10	2.498	1.898 - 3.227	2.516	1.950 - 3.193	17	2.423	1.842 - 3.128	2.347	1.833 - 2.960	12	2.034	1.471-2.745	1.936	1.504 - 2.455
80/ 55						24	2.814	2.208 - 3.532	2.712	2.160 - 3.359	16	2.192	1.611-2.915	2.055	1.607 - 2.591
80/ 60	17	3.200	2.554 - 3.954	3.340	2.654 - 4.142	30	3.203	2.573 - 3.936	3.143	2.545 - 3.834	19	2.372	1.775-3.104	2.237	1.751 - 2.816
80/ 65						40	3.613	2.967 - 4.351	3.573	2.941 - 4.293	22	2.552	1.951-3.278	2.431	1.898 - 3.068
80/ 70	23	3.921	3.231 - 4.708	4.319	3.498 - 5.262	54	4.035	3.372 - 4.783	3.990	3.334 - 4.731	25	2.731	2.106-3.480	2.633	2.043 - 3.338
80/ 75						67	4.436	3.765 - 5.184	4.427	3.736 - 5.199	28	2.895	2.271-3.633	2.837	2.184 - 3.621
80/ 80	33	4.567	3.849 - 5.369	5.222	4.269 - 6.305	77	4.826	4.124 - 5.604	4.889	4.151 - 5.709	33	2.963	2.331-3.710	2.895	2.176 - 3.771
80/ 85						93	5.211	4.486 - 6.008	5.290	4.515 - 6.147	37	3.089	2.428-3.870	2.958	2.199 - 3.888
80/ 90	46	5.171	4.436 - 5.983	6.156	5.074 - 7.375	114	5.576	4.809 - 6.418	5.633	4.827 - 6.522	42	3.127	1.003-7.364	2.995	2.165 - 4.032
80/ 95						131	5.905	5.075 - 6.817	5.992	5.142 - 6.928	46	3.211	1.675-5.549	3.096	2.194 - 4.236

Air VVal18M

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18M AIR; 20 fsw Last Allowed In-Water Stop					VVal-18M AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)		
	TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98		
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
80/ 100	57	5.807	5.038 - 6.648	7.106	5.880 - 8.481	148	6.202	5.339 - 7.150	6.291	5.397 - 7.274	49	3.280	1.900-5.252	3.169	2.202 - 4.405
80/ 110	66	6.419	5.599 - 7.311	8.044	6.658 - 9.590	177	6.732	5.746 - 7.819	6.930	5.941 - 8.017	57	3.403	2.271-4.882	3.326	2.227 - 4.761
80/ 120	73	7.023	6.152 - 7.966	8.969	7.427 - 10.683	209	7.218	1.166 - 21.182	7.493	6.436 - 8.650	67	3.426	0.081-20.187	3.243	2.087 - 4.793
80/ 130	82	7.595	6.666 - 8.599	9.797	8.103 - 11.676	245	7.593	6.386 - 8.930	8.009	6.932 - 9.182	76	3.443	2.528-4.568	3.261	2.029 - 4.949
80/ 140	95	8.245	7.247 - 9.322	10.490	8.671 - 12.504	275	7.915	6.579 - 9.403	8.537	7.412 - 9.759	85	3.445	2.554-4.534	3.257	1.977 - 5.037
80/ 150	109	8.836	7.744 - 10.014	11.127	9.195 - 13.262	304	8.168	6.737 - 9.768	9.026	7.847 - 10.302	92	3.538	2.653-4.612	3.386	2.063 - 5.218
80/ 160						339	8.332	6.785 - 10.073	9.447	8.218 - 10.774	99	3.633	2.698-4.773	3.469	2.173 - 5.230
80/ 170						381	7.972	3.233 - 15.504	9.808	8.533 - 11.186	107	3.630	0.223-16.512	3.500	2.210 - 5.246
90/ 33	0	2.040	1.475 - 2.752	1.849	1.408 - 2.386	0	2.239	1.642 - 2.981	2.081	1.594 - 2.670	0	2.239	1.642-2.981	2.081	1.594 - 2.670
90/ 35						4	2.122	1.477 - 2.954	1.963	1.492 - 2.536	5	1.903	1.190-2.894	1.742	1.320 - 2.259
90/ 40	7	2.499	1.865 - 3.277	2.375	1.814 - 3.053	14	2.367	1.771 - 3.099	2.188	1.676 - 2.807	10	2.100	1.363-3.099	1.902	1.470 - 2.424
90/ 45						23	2.827	2.189 - 3.589	2.554	2.003 - 3.207	15	2.294	1.532-3.302	2.042	1.588 - 2.587
90/ 50	18	3.340	2.634 - 4.171	3.257	2.568 - 4.068	31	3.321	2.644 - 4.111	3.035	2.435 - 3.733	20	2.482	1.694-3.510	2.177	1.698 - 2.748
90/ 55						39	3.815	3.105 - 4.631	3.578	2.928 - 4.324	24	2.692	1.878-3.733	2.373	1.848 - 3.000
90/ 60	25	4.228	3.458 - 5.108	4.429	3.584 - 5.401	56	4.334	1.780 - 8.668	4.076	3.402 - 4.835	27	2.935	0.800-7.587	2.643	2.056 - 3.342
90/ 65						70	4.828	4.070 - 5.676	4.619	3.907 - 5.412	31	3.123	2.266-4.189	2.858	2.202 - 3.644
90/ 70	37	4.968	4.146 - 5.892	5.529	4.545 - 6.642	83	5.295	4.511 - 6.163	5.171	4.413 - 6.010	35	3.294	2.422-4.367	3.071	2.337 - 3.956
90/ 75						103	5.765	4.949 - 6.663	5.647	4.855 - 6.519	41	3.385	2.502-4.469	3.069	2.283 - 4.033
90/ 80	53	5.768	4.898 - 6.732	6.702	5.572 - 7.967	130	6.151	3.313 - 10.206	5.970	5.154 - 6.864	46	3.390	0.841-9.101	3.085	2.208 - 4.185
90/ 85						151	6.557	5.659 - 7.541	6.397	5.532 - 7.343	51	3.467	1.776-6.055	3.191	2.221 - 4.428
90/ 90	66	6.529	5.607 - 7.543	7.870	6.567 - 9.319	170	6.925	5.961 - 7.981	6.813	5.893 - 7.818	55	3.581	2.043-5.790	3.361	2.299 - 4.729
90/ 95						187	7.262	6.259 - 8.359	7.215	6.236 - 8.283	60	3.645	2.247-5.559	3.439	2.293 - 4.938
90/ 100	75	7.253	6.271 - 8.326	9.040	7.540 - 10.701	203	7.579	6.520 - 8.736	7.597	6.561 - 8.727	65	3.700	2.403-5.418	3.504	2.277 - 5.133
90/ 110	85	7.934	6.889 - 9.070	10.120	8.422 - 11.996	249	8.064	6.853 - 9.396	8.149	7.065 - 9.328	77	3.680	2.557-5.106	3.387	2.079 - 5.188
90/ 120	100	8.671	7.569 - 9.863	11.018	9.144 - 13.084	285	8.441	7.130 - 9.886	8.721	7.592 - 9.945	88	3.703	2.675-4.978	3.399	2.003 - 5.370
90/ 130	115	9.371	8.170 - 10.667	11.796	9.773 - 14.023	324	8.727	7.290 - 10.319	9.268	8.084 - 10.547	101	3.815	2.786-5.082	3.436	2.055 - 5.367
90/ 140						365	8.920	7.364 - 10.654	9.756	8.515 - 11.094	112	3.929	2.927-5.145	3.589	2.180 - 5.536
100/ 29	0	2.111	1.532 - 2.838	1.778	1.340 - 2.316	0	2.441	1.801 - 3.233	2.138	1.629 - 2.756	0	2.441	1.801-3.233	2.138	1.629 - 2.756
100/ 30	3	2.400	1.763 - 3.191	2.032	1.537 - 2.637	3	2.322	1.674 - 3.136	1.980	1.495 - 2.573	5	2.004	1.422-2.746	1.733	1.304 - 2.260
100/ 35						15	2.540	0.023 - 19.930	2.230	1.696 - 2.879	11	2.243	0.010-20.798	1.922	1.478 - 2.457
100/ 40	15	3.184	2.470 - 4.034	2.890	2.233 - 3.676	26	3.102	2.418 - 3.913	2.656	2.075 - 3.346	17	2.481	1.820-3.302	2.088	1.618 - 2.652

Air VVal18M

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18M AIR; 20 fsw Last Allowed In-Water Stop					VVal-18M AIR/In-Water O2									
	TOTAL					TOTAL					TOTAL									
	STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)							
	TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98							
	(min)	(%)	low	high	(%)	low	high	(min)	(%)	low	high	(%)	low	high	(min)	(%)	low-high	(%)	low	high
100/ 45								36	3.702	2.959	4.565	3.229	2.590	3.971	22	2.745	2.040-3.612	2.287	1.777	2.897
100/ 50	24	4.257	3.424	5.218	4.174	3.339	5.142	47	4.301	3.506	5.210	3.870	3.177	4.661	27	2.985	2.240-3.892	2.503	1.940	3.177
100/ 55								65	4.907	4.073	5.849	4.487	3.762	5.300	31	3.249	2.465-4.195	2.792	2.158	3.550
100/ 60	37	5.177	4.246	6.233	5.493	4.504	6.615	81	5.499	4.619	6.481	5.136	4.368	5.988	36	3.512	2.685-4.504	3.092	2.377	3.949
100/ 65								103	5.995	5.088	7.000	5.647	4.853	6.521	41	3.570	2.727-4.580	3.075	2.298	4.023
100/ 70	56	6.158	5.136	7.302	6.904	5.759	8.183	134	6.552	5.612	7.586	6.133	5.315	7.028	47	3.665	1.278-8.149	3.216	2.328	4.321
100/ 75								159	7.055	6.069	8.134	6.638	5.770	7.584	53	3.768	1.777-6.945	3.337	2.339	4.604
100/ 80	71	7.063	5.959	8.287	8.321	6.983	9.801	181	7.486	6.466	8.600	7.131	6.203	8.140	59	3.830	2.060-6.451	3.439	2.330	4.876
100/ 85								200	7.888	6.804	9.071	7.613	6.620	8.692	64	3.944	2.283-6.297	3.603	2.388	5.195
100/ 90	83	7.847	6.660	9.154	9.631	8.072	11.351	226	8.202	7.060	9.450	7.930	6.883	9.068	72	4.002	2.446-6.134	3.539	2.290	5.202
100/ 95								253	8.482	7.271	9.806	8.247	7.158	9.429	82	3.994	2.619-5.800	3.487	2.177	5.271
100/ 100	96	8.644	7.389	10.016	10.900	9.115	12.862	277	8.752	7.488	10.132	8.589	7.485	9.784	91	4.116	2.834-5.747	3.580	2.221	5.437
100/ 110	116	9.545	8.216	10.991	11.906	9.930	14.072	319	9.190	7.781	10.737	9.278	8.112	10.536	107	4.225	3.080-5.631	3.675	2.229	5.672
100/ 120	131	10.383	8.965	11.918	13.009	10.829	15.392	370	9.441	7.894	11.149	9.848	8.621	11.169	121	4.409	3.292-5.760	3.847	2.387	5.833
110/ 25	3	2.423	1.783	3.215	1.940	1.462	2.526	0	2.541	1.875	3.364	2.140	1.627	2.763	0	2.541	1.875-3.364	2.140	1.627	2.763
110/ 30	7	2.791	2.068	3.681	2.422	1.854	3.107	14	2.575	1.922	3.376	2.227	1.697	2.868	10	2.330	1.690-3.131	1.952	1.469	2.544
110/ 35								27	3.227	2.503	4.087	2.676	2.097	3.363	17	2.619	1.923-3.481	2.158	1.621	2.816
110/ 40	23	3.895	3.066	4.867	3.502	2.774	4.354	39	3.925	3.128	4.852	3.328	2.690	4.066	23	2.920	2.164-3.848	2.386	1.781	3.130
110/ 45								50	4.627	3.751	5.630	4.095	3.400	4.882	29	3.200	2.380-4.202	2.625	1.942	3.468
110/ 50	34	5.064	4.069	6.209	5.126	4.242	6.124	71	5.348	4.408	6.412	4.814	4.094	5.613	34	3.503	2.617-4.580	2.937	2.165	3.889
110/ 55								90	5.950	4.954	7.068	5.489	4.743	6.306	39	3.695	2.766-4.821	3.077	2.236	4.122
110/ 60	54	6.262	1.144	17.960	6.815	5.811	7.921	124	6.663	5.637	7.800	6.090	5.330	6.916	45	3.890	2.916-5.068	3.328	2.367	4.537
110/ 65								155	7.281	6.221	8.446	6.679	5.877	7.547	52	4.001	1.518-8.428	3.483	2.395	4.878
110/ 70	72	7.335	6.049	8.777	8.461	7.303	9.723	181	7.829	6.722	9.041	7.265	6.407	8.191	59	4.103	1.967-7.457	3.612	2.397	5.203
110/ 75								204	8.263	7.113	9.516	7.782	6.859	8.778	68	4.260	2.284-7.170	3.774	2.471	5.493
110/ 80	87	8.270	6.866	9.833	10.073	8.728	11.529	236	8.691	7.481	10.009	8.200	7.206	9.272	80	4.402	2.595-6.916	3.750	2.409	5.538
110/ 85								267	9.045	7.786	10.414	8.567	7.506	9.712	91	4.479	2.845-6.656	3.781	2.364	5.702
110/ 90	106	9.243	3.088	19.581	11.513	9.964	13.183	293	9.346	8.022	10.789	8.955	7.855	10.140	101	4.584	3.077-6.525	3.877	2.394	5.900
110/ 95								317	9.619	8.239	11.122	9.345	8.201	10.576	111	4.678	3.275-6.438	3.958	2.421	6.064
110/ 100	124	10.275	8.706	11.992	12.824	11.036	14.750	347	9.812	8.369	11.388	9.677	8.491	10.952	121	4.776	3.408-6.470	3.978	2.449	6.063
110/ 110								410	10.011	8.421	11.757	10.235	8.969	11.595	137	4.882	3.641-6.377	4.140	2.543	6.318

Air VVal18M

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18M AIR; 20 fsw Last Allowed In-Water Stop					VVal-18M AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)		
	TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98		
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
120/ 22	0	1.793	1.251 - 2.494	1.398	1.004 - 1.899	0	2.647	1.956 - 3.500	2.184	1.651 - 2.835	0	2.647	1.956-3.500	2.184	1.651 - 2.835
120/ 25	2	2.316	1.693 - 3.095	1.784	1.314 - 2.369	8	2.477	1.826 - 3.282	2.199	1.658 - 2.861	7	2.320	1.677-3.130	1.961	1.466 - 2.571
120/ 30	6	2.750	2.033 - 3.633	2.303	1.743 - 2.986	24	3.163	2.434 - 4.035	2.623	2.012 - 3.357	16	2.639	1.932-3.518	2.175	1.634 - 2.840
120/ 35	14	3.296	2.529 - 4.215	2.887	2.210 - 3.701	38	3.972	3.137 - 4.948	3.321	2.632 - 4.130	23	3.000	2.208-3.977	2.450	1.834 - 3.205
120/ 40						51	4.797	3.852 - 5.887	4.184	3.417 - 5.062	30	3.337	2.452-4.427	2.714	2.017 - 3.570
120/ 45	30	4.630	3.647 - 5.778	4.370	3.484 - 5.398	72	5.624	4.585 - 6.805	5.039	4.228 - 5.946	36	3.693	2.721-4.886	2.973	2.211 - 3.906
120/ 50						95	6.339	5.225 - 7.595	5.815	4.979 - 6.736	41	3.923	2.879-5.204	3.281	2.414 - 4.349
120/ 55	46	6.051	4.842 - 7.439	6.360	5.286 - 7.563	135	7.163	6.015 - 8.438	6.484	5.645 - 7.398	48	4.134	1.026-10.904	3.563	2.566 - 4.804
120/ 60						168	7.866	6.676 - 9.176	7.169	6.293 - 8.116	56	4.278	1.725-8.656	3.740	2.603 - 5.185
120/ 65	69	7.320	5.894 - 8.941	8.251	7.013 - 9.612	198	8.428	7.193 - 9.781	7.769	6.839 - 8.772	68	4.495	2.178-8.086	3.905	2.680 - 5.470
120/ 70						229	8.978	2.369 - 21.177	8.341	7.349 - 9.410	80	4.782	0.460-17.951	4.059	2.780 - 5.695
120/ 75	87	8.472	3.919 - 15.245	10.200	8.771 - 11.751	266	9.414	8.087 - 10.857	8.770	7.712 - 9.908	94	4.894	2.923-7.601	4.093	2.727 - 5.870
120/ 80						297	9.800	8.415 - 11.307	9.197	8.075 - 10.405	107	5.042	3.248-7.397	4.190	2.747 - 6.084
120/ 85	105	9.609	7.873 - 11.546	12.009	10.352 - 13.797	325	10.090	8.648 - 11.659	9.582	8.422 - 10.829	119	5.048	3.400-7.156	4.158	2.648 - 6.172
120/ 90	130	10.755	8.917 - 12.785	13.471	11.571 - 15.516	362	10.310	8.807 - 11.947	9.920	8.718 - 11.211	129	5.216	3.623-7.215	4.269	2.740 - 6.297
130/ 20	4	2.623	1.939 - 3.467	2.044	1.527 - 2.681	0	2.794	2.068 - 3.686	2.279	1.717 - 2.966	0	2.794	2.068-3.686	2.279	1.717 - 2.966
130/ 25	10	3.106	2.361 - 4.005	2.711	2.048 - 3.516	17	2.932	2.222 - 3.792	2.492	1.872 - 3.250	12	2.603	1.899-3.480	2.168	1.624 - 2.836
130/ 30	21	3.819	2.959 - 4.840	3.306	2.516 - 4.257	34	3.820	2.987 - 4.803	3.147	2.433 - 3.998	21	2.996	2.197-3.985	2.455	1.841 - 3.207
130/ 35						49	4.765	3.788 - 5.899	4.077	3.258 - 5.027	29	3.397	2.478-4.534	2.760	2.059 - 3.618
130/ 40	35	5.423	4.263 - 6.773	5.391	4.318 - 6.627	70	5.659	4.547 - 6.936	4.973	4.084 - 5.981	36	3.689	2.664-4.960	2.921	2.157 - 3.862
130/ 45						96	6.559	5.342 - 7.939	5.949	5.022 - 6.980	42	4.074	2.930-5.492	3.384	2.504 - 4.464
130/ 50	61	6.983	5.515 - 8.673	7.552	6.270 - 8.982	138	7.496	6.223 - 8.919	6.737	5.806 - 7.757	49	4.374	1.038-11.718	3.778	2.765 - 5.025
130/ 55						177	8.245	1.914 - 20.715	7.436	6.475 - 8.480	61	4.572	0.369-18.285	3.941	2.815 - 5.345
130/ 60	84	8.375	6.519 - 10.515	9.819	8.323 - 11.458	209	8.965	7.590 - 10.477	8.194	7.180 - 9.289	75	4.954	2.366-8.965	4.258	3.044 - 5.769
130/ 65						249	9.552	8.141 - 11.093	8.759	7.690 - 9.910	90	5.200	2.803-8.670	4.339	3.057 - 5.945
130/ 70	101	9.695	7.622 - 12.058	12.054	10.299 - 13.956	288	10.025	7.034 - 13.628	9.210	8.080 - 10.427	106	5.316	2.245-10.350	4.337	2.960 - 6.095
130/ 75						322	10.423	8.084 - 13.098	9.672	8.482 - 10.951	120	5.457	2.912-9.145	4.438	2.982 - 6.314
130/ 80	129	10.980	8.863 - 13.347	13.766	11.763 - 15.926	361	10.727	8.361 - 13.422	10.054	8.835 - 11.363	133	5.591	3.099-9.124	4.472	2.981 - 6.402
140/ 17	2	2.315	1.665 - 3.134	1.692	1.221 - 2.289	0	2.727	2.003 - 3.623	2.159	1.612 - 2.833	0	2.727	2.003-3.623	2.159	1.612 - 2.833
140/ 20	6	2.926	2.176 - 3.846	2.369	1.770 - 3.104	7	2.722	1.901 - 3.773	2.288	1.705 - 3.007	7	2.433	1.757-3.283	2.033	1.505 - 2.687
140/ 25	16	3.552	0.140 - 18.367	3.017	2.249 - 3.958	26	3.469	2.671 - 4.420	2.853	2.149 - 3.709	17	2.892	2.113-3.859	2.382	1.782 - 3.118

Air VVal18M

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18M AIR; 20 fsw Last Allowed In-Water Stop					VVal-18M AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)			STOP	P(DCS)	P(DCS)		
	TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98			TIME	BVM(3)	NMRI98		
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
140/ 30	26	4.423	3.428 - 5.597	3.958	3.025 - 5.074	44	4.514	3.552 - 5.640	3.769	2.936 - 4.755	26	3.360	2.446-4.491	2.748	2.056 - 3.595
140/ 35						63	5.509	0.417 - 21.574	4.788	3.841 - 5.881	34	3.701	0.419-13.739	3.026	2.239 - 3.992
140/ 40	44	6.260	4.873 - 7.878	6.374	5.108 - 7.824	91	6.560	1.501 - 17.078	5.889	4.875 - 7.029	42	4.127	0.606-13.670	3.371	2.492 - 4.449
140/ 45						135	7.589	6.208 - 9.144	6.752	5.729 - 7.883	51	4.547	0.950-12.858	3.831	2.843 - 5.037
140/ 50	74	7.921	0.000 - 100.000	8.923	7.396 - 10.622	179	8.517	7.077 - 10.117	7.607	6.557 - 8.753	63	4.884	1.837-10.225	4.190	3.082 - 5.544
140/ 55						215	9.343	7.834 - 11.007	8.458	7.357 - 9.651	79	5.313	2.472-9.746	4.538	3.339 - 6.000
140/ 60	95	9.523	7.404 - 11.954	11.531	9.724 - 13.504	261	9.988	8.442 - 11.682	9.025	7.876 - 10.268	98	5.533	2.915-9.349	4.488	3.224 - 6.050
140/ 65						304	10.524	8.932 - 12.263	9.563	8.354 - 10.867	115	5.677	3.307-8.947	4.545	3.176 - 6.266
140/ 70	123	10.928	8.572 - 13.601	13.695	11.614 - 15.947	343	10.990	9.346 - 12.780	10.052	8.793 - 11.408	131	5.865	3.657-8.792	4.657	3.199 - 6.508
140/ 75						389	11.292	9.613 - 13.118	10.438	9.158 - 11.812	144	6.121	4.001-8.852	4.862	3.354 - 6.768
150/ 15	3	2.585	1.888 - 3.452	1.896	1.387 - 2.534	0	2.729	1.990 - 3.647	2.120	1.573 - 2.797	0	2.729	1.990-3.647	2.120	1.573 - 2.797
150/ 20	9	3.170	2.328 - 4.209	2.597	1.909 - 3.450	14	2.960	2.230 - 3.848	2.548	1.889 - 3.361	11	2.680	1.954-3.584	2.221	1.648 - 2.929
150/ 25	21	4.050	3.122 - 5.152	3.481	2.600 - 4.553	35	4.053	3.151 - 5.117	3.313	2.508 - 4.285	22	3.191	2.324-4.265	2.606	1.943 - 3.419
150/ 30	32	5.025	1.707 - 11.110	4.689	3.598 - 5.983	54	5.183	4.056 - 6.501	4.379	3.418 - 5.510	31	3.602	2.570-4.894	2.929	2.163 - 3.872
150/ 35						83	6.346	5.032 - 7.859	5.591	4.528 - 6.806	40	4.095	2.871-5.637	3.302	2.439 - 4.360
150/ 40	57	7.066	1.304 - 19.827	7.446	5.980 - 9.115	123	7.510	6.043 - 9.178	6.663	5.552 - 7.905	49	4.698	3.264-6.504	3.927	2.957 - 5.096
150/ 45						174	8.616	7.068 - 10.349	7.613	6.481 - 8.859	64	5.108	1.787-11.100	4.311	3.234 - 5.609
150/ 50	86	8.925	6.798 - 11.399	10.369	8.570 - 12.362	215	9.539	7.892 - 11.368	8.521	7.336 - 9.814	80	5.541	2.415-10.564	4.677	3.503 - 6.092
150/ 55						266	10.309	8.623 - 12.166	9.211	7.981 - 10.545	101	5.838	2.956-10.109	4.698	3.450 - 6.218
150/ 60	110	10.575	8.045 - 13.494	13.136	11.001 - 15.464	312	10.951	9.204 - 12.866	9.829	8.542 - 11.219	121	6.049	3.431-9.696	4.762	3.407 - 6.439
150/ 65						358	11.431	9.643 - 13.384	10.294	8.963 - 11.728	137	6.287	3.801-9.622	4.952	3.493 - 6.769
160/ 13	1	2.023	1.378 - 2.869	1.409	0.978 - 1.973	0	2.676	1.929 - 3.612	2.024	1.489 - 2.689	0	2.676	1.929-3.612	2.024	1.489 - 2.689
160/ 15	5	2.790	2.044 - 3.715	2.058	1.500 - 2.757	3	2.853	2.095 - 3.789	2.134	1.567 - 2.840	5	2.285	1.627-3.122	1.882	1.373 - 2.522
160/ 20	14	3.492	2.660 - 4.493	2.922	2.146 - 3.882	22	3.399	2.597 - 4.362	2.814	2.078 - 3.721	15	2.935	2.143-3.919	2.417	1.794 - 3.185
160/ 25	27	4.540	3.483 - 5.795	4.027	3.017 - 5.247	44	4.612	1.130 - 12.106	3.752	2.840 - 4.849	26	3.391	0.486-11.645	2.760	2.036 - 3.655
160/ 30	38	5.659	4.338 - 7.218	5.399	4.140 - 6.886	68	5.862	4.577 - 7.360	5.051	3.967 - 6.315	37	3.983	2.801-5.472	3.089	2.265 - 4.106
160/ 35						102	7.181	5.665 - 8.926	6.388	5.197 - 7.741	47	4.615	3.171-6.447	3.739	2.796 - 4.883
160/ 40	69	7.881	5.929 - 10.179	8.598	6.909 - 10.511	162	8.495	6.874 - 10.324	7.427	6.225 - 8.762	63	5.203	1.621-12.006	4.296	3.256 - 5.541
160/ 45						208	9.561	7.728 - 11.621	8.459	7.199 - 9.843	78	5.596	2.231-11.238	4.681	3.519 - 6.077
160/ 50	96	9.918	7.394 - 12.870	11.836	9.736 - 14.155	263	10.503	8.603 - 12.617	9.272	7.966 - 10.695	101	6.054	2.875-10.904	4.809	3.581 - 6.291
160/ 55						315	11.209	9.331 - 13.276	9.920	8.558 - 11.397	123	6.279	3.388-10.399	4.864	3.529 - 6.501

Air VVal18M

Depth (fsw) /BT(min)	USN56 Standard Air						VVal-18M AIR; 20 fsw Last Allowed In-Water Stop						VVal-18M AIR/In-Water O2					
	TOTAL						TOTAL						TOTAL					
	STOP	P(DCS)		P(DCS)			STOP	P(DCS)		P(DCS)			STOP	P(DCS)		P(DCS)		
	TIME	BVM(3)		NMR198			TIME	BVM(3)		NMR198			TIME	BVM(3)		NMR198		
	(min)	(%)	low - high	(%)	low - high		(min)	(%)	low - high	(%)	low - high		(min)	(%)	low-high	(%)	low - high	
160/ 60	130	11.744	8.809 - 15.134	14.696	12.244 - 17.362		367	11.775	9.842 - 13.894	10.458	9.048 - 11.983		142	6.587	3.860-10.297	5.102	3.664 - 6.873	
170/ 12	2	2.217	0.000 - 59.226	1.506	1.042 - 2.112		0	2.747	1.975 - 3.715	2.062	1.512 - 2.750		0	2.747	1.975-3.715	2.062	1.512 - 2.750	
170/ 15	7	2.999	2.197 - 3.992	2.268	1.641 - 3.055		6	2.974	2.138 - 4.021	2.354	1.733 - 3.125		7	2.520	1.815-3.406	2.080	1.521 - 2.780	
170/ 20	19	3.903	2.989 - 4.995	3.287	2.410 - 4.369		30	3.856	2.968 - 4.912	3.090	2.270 - 4.101		18	3.086	2.249-4.124	2.538	1.866 - 3.372	
170/ 25	32	5.030	0.055 - 30.434	4.567	3.412 - 5.960		53	5.149	2.519 - 9.160	4.298	3.266 - 5.533		31	3.722	2.644-5.074	2.975	2.171 - 3.972	
170/ 30	43	6.329	0.613 - 22.423	6.266	4.825 - 7.956		87	6.609	5.151 - 8.304	5.742	4.552 - 7.116		43	4.448	3.072-6.193	3.516	2.624 - 4.601	
170/ 35							140	8.082	6.416 - 9.986	7.003	5.745 - 8.420		57	5.147	0.880-15.571	4.191	3.184 - 5.397	
170/ 40	79	8.738	6.446 - 11.452	9.784	7.843 - 11.974		196	9.391	7.575 - 11.436	8.180	6.866 - 9.635		75	5.676	2.085-11.923	4.670	3.552 - 6.005	
170/ 45							248	10.512	8.575 - 12.672	9.232	7.853 - 10.743		96	6.167	2.727-11.592	4.906	3.697 - 6.354	
170/ 50	107	10.855	7.925 - 14.300	13.383	10.963 - 16.047		309	11.351	9.339 - 13.577	9.939	8.509 - 11.497		121	6.478	3.309-11.108	4.990	3.679 - 6.581	
170/ 55							363	12.054	9.961 - 14.359	10.595	9.106 - 12.209		143	6.796	3.809-10.944	5.168	3.745 - 6.910	
180/ 11	3	2.402	1.685 - 3.321	1.630	1.156 - 2.238		0	2.792	1.998 - 3.790	2.075	1.517 - 2.773		0	2.792	1.998-3.790	2.075	1.517 - 2.773	
180/ 15	9	3.208	0.000 - 46.063	2.521	1.833 - 3.380		11	3.006	2.244 - 3.936	2.577	1.891 - 3.428		9	2.757	2.000-3.701	2.291	1.681 - 3.050	
180/ 20	23	4.299	0.253 - 19.094	3.653	2.665 - 4.871		37	4.294	0.496 - 15.454	3.451	2.544 - 4.565		22	3.334	0.812-9.046	2.750	2.022 - 3.651	
180/ 25	37	5.606	1.156 - 15.545	5.239	3.934 - 6.802		64	5.765	0.817 - 18.388	4.907	3.762 - 6.264		37	4.078	0.237-18.383	3.226	2.370 - 4.280	
180/ 30	50	7.022	2.151 - 15.922	7.172	5.545 - 9.066		105	7.392	5.744 - 9.303	6.456	5.151 - 7.954		50	4.857	3.278-6.880	3.851	2.882 - 5.026	
180/ 35							173	8.956	7.130 - 11.031	7.722	6.371 - 9.234		69	5.577	1.762-12.708	4.517	3.439 - 5.803	
180/ 40	90	9.594	2.898 - 21.192	11.009	8.822 - 13.462		226	10.292	5.794 - 16.281	8.967	7.529 - 10.554		88	6.212	1.541-15.719	5.064	3.869 - 6.481	
180/ 45							296	11.343	7.725 - 15.724	9.805	8.319 - 11.431		116	6.562	2.448-13.535	4.995	3.715 - 6.541	
180/ 50	125	11.872	8.524 - 15.814	14.720	12.026 - 17.675		352	12.183	9.934 - 14.673	10.585	9.031 - 12.277		141	6.944	3.705-11.548	5.179	3.791 - 6.868	
180/ 55							423	12.736	10.439 - 15.269	11.044	9.524 - 12.686		163	7.373	4.199-11.714	5.459	3.998 - 7.234	
190/ 10	4	2.558	1.811 - 3.508	1.719	1.208 - 2.379		0	2.812	2.003 - 3.833	2.061	1.499 - 2.766		0	2.812	2.003-3.833	2.061	1.499 - 2.766	
190/ 15	11	3.440	2.487 - 4.624	2.806	2.038 - 3.762		17	3.326	2.514 - 4.307	2.798	2.042 - 3.738		12	2.977	2.167-3.984	2.466	1.812 - 3.276	
190/ 20	28	4.704	3.559 - 6.074	4.087	2.984 - 5.442		45	4.733	3.195 - 6.703	3.853	2.846 - 5.084		27	3.597	2.571-4.880	2.890	2.103 - 3.870	
190/ 25	41	6.183	4.638 - 8.025	5.987	4.516 - 7.736		83	6.439	4.960 - 8.172	5.441	4.209 - 6.888		43	4.473	3.073-6.252	3.523	2.608 - 4.642	
190/ 30	60	7.680	5.633 - 10.128	8.032	6.217 - 10.135		139	8.216	6.424 - 10.279	7.055	5.688 - 8.611		60	5.298	0.973-15.519	4.208	3.178 - 5.445	
190/ 35							205	9.815	7.800 - 12.097	8.399	6.947 - 10.018		82	5.981	2.201-12.510	4.723	3.581 - 6.089	
190/ 40	100	10.418	7.412 - 14.006	12.306	9.857 - 15.041		271	11.122	8.919 - 13.592	9.547	8.017 - 11.233		106	6.581	2.874-12.418	5.045	3.799 - 6.536	
190/ 45							336	12.143	9.804 - 14.747	10.428	8.826 - 12.180		135	7.015	3.519-12.133	5.185	3.834 - 6.819	
190/ 50							408	12.871	10.443 - 15.560	11.016	9.408 - 12.764		160	7.478	4.061-12.258	5.425	3.991 - 7.161	
200/ 9							0	2.787	1.966 - 3.829	2.016	1.461 - 2.714		0	2.787	1.966-3.829	2.016	1.461 - 2.714	

Air VVal18M

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18M AIR; 20 fsw Last Allowed In-Water Stop					VVal-18M AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98	
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
200/ 10						2	2.909	0.000 - 50.954	2.048	1.459 - 2.799	4	2.433	0.000-48.758	1.790	1.283 - 2.434
200/ 15						24	3.632	0.113 - 19.796	2.913	2.094 - 3.941	15	3.045	0.043-20.730	2.513	1.830 - 3.365
200/ 20						53	5.231	4.004 - 6.684	4.330	3.224 - 5.671	33	3.916	2.766-5.361	3.065	2.237 - 4.091
200/ 25						99	7.126	5.475 - 9.054	6.098	4.762 - 7.653	49	4.876	3.301-6.889	3.794	2.832 - 4.963
200/ 30						173	9.029	5.164 - 14.209	7.612	6.176 - 9.235	72	5.662	1.199-15.512	4.383	3.304 - 5.679
200/ 35						233	10.644	8.409 - 13.175	9.104	7.541 - 10.842	94	6.459	2.563-12.892	5.038	3.827 - 6.481
200/ 40						312	11.894	9.490 - 14.589	10.096	8.465 - 11.890	125	6.917	3.237-12.493	5.057	3.748 - 6.640
200/ 45						384	12.854	10.302 - 15.696	10.903	9.202 - 12.764	153	7.501	3.852-12.744	5.350	3.952 - 7.041
210/ 8						0	2.732	1.908 - 3.787	1.947	1.400 - 2.638	0	2.732	1.908-3.787	1.947	1.400 - 2.638
210/ 10						5	2.950	2.110 - 4.008	2.161	1.571 - 2.901	6	2.363	1.659-3.264	1.919	1.380 - 2.601
210/ 15						30	3.963	3.018 - 5.096	3.171	2.284 - 4.277	18	3.244	2.347-4.360	2.701	1.971 - 3.610
210/ 20						64	5.767	4.405 - 7.376	4.791	3.589 - 6.236	39	4.185	2.903-5.809	3.203	2.334 - 4.281
210/ 25						121	7.868	6.053 - 9.978	6.669	5.252 - 8.306	56	5.253	3.467-7.561	4.065	3.044 - 5.300
210/ 30						202	9.825	5.885 - 14.951	8.222	6.699 - 9.937	82	6.109	1.526-15.439	4.688	3.550 - 6.051
210/ 35						277	11.423	7.968 - 15.557	9.592	7.954 - 11.409	110	6.819	2.447-14.316	5.031	3.775 - 6.537
210/ 40						350	12.634	9.574 - 16.134	10.640	8.906 - 12.545	142	7.372	3.373-13.453	5.265	3.894 - 6.922
210/ 45						440	13.449	10.289 - 17.033	11.230	9.547 - 13.062	171	7.942	3.931-13.770	5.560	4.101 - 7.322
220/ 7						0	2.635	1.815 - 3.696	1.854	1.319 - 2.539	0	2.635	1.815-3.696	1.854	1.319 - 2.539
220/ 10						8	2.994	2.075 - 4.171	2.336	1.697 - 3.135	7	2.557	1.815-3.499	2.098	1.514 - 2.835
220/ 15						37	4.300	3.271 - 5.531	3.427	2.459 - 4.635	22	3.467	2.498-4.675	2.813	2.029 - 3.796
220/ 20						80	6.357	0.396 - 25.346	5.293	4.010 - 6.820	44	4.533	0.066-27.047	3.498	2.569 - 4.641
220/ 25						151	8.606	6.651 - 10.867	7.196	5.717 - 8.891	65	5.591	1.206-15.216	4.298	3.222 - 5.596
220/ 30						228	10.605	8.290 - 13.242	8.884	7.262 - 10.702	93	6.525	2.457-13.395	4.953	3.749 - 6.390
220/ 35						315	12.136	9.550 - 15.048	10.086	8.360 - 11.995	127	7.139	3.214-13.177	5.059	3.749 - 6.644
220/ 40						399	13.272	9.987 - 17.028	10.979	9.171 - 12.966	159	7.856	3.608-14.255	5.412	4.006 - 7.108
230/ 7						0	2.817	1.962 - 3.911	2.007	1.441 - 2.722	0	2.817	1.962-3.911	2.007	1.441 - 2.722
230/ 10						10	3.090	2.189 - 4.228	2.539	1.843 - 3.410	9	2.731	1.957-3.705	2.240	1.621 - 3.017
230/ 15						44	4.667	3.558 - 5.989	3.753	2.714 - 5.041	27	3.708	2.662-5.009	2.940	2.132 - 3.947
230/ 20						95	6.956	3.801 - 11.386	5.801	4.462 - 7.378	50	4.869	1.967-9.779	3.636	2.725 - 4.740
230/ 25						181	9.331	7.234 - 11.743	7.700	6.208 - 9.392	76	5.888	1.789-13.617	4.411	3.375 - 5.645
230/ 30						263	11.320	4.011 - 22.861	9.374	7.719 - 11.217	106	6.840	1.331-18.906	4.942	3.763 - 6.344

Air VVal18M

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18M AIR; 20 fsw Last Allowed In-Water Stop					VVal-18M AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98	
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
230/ 35						351	12.830	10.041 - 15.971	10.567	8.768 - 12.555	144	7.548	3.535-13.567	5.177	3.838 - 6.794
230/ 40						455	13.825	10.812 - 17.203	11.269	9.532 - 13.163	178	8.206	4.184-13.950	5.465	4.014 - 7.223
240/ 6						0	2.676	1.835 - 3.766	1.874	1.331 - 2.567	0	2.676	1.835-3.766	1.874	1.331 - 2.567
240/ 10						13	3.210	2.390 - 4.213	2.674	1.916 - 3.629	10	2.788	2.021-3.746	2.303	1.656 - 3.118
240/ 15						50	5.061	0.262 - 22.367	4.118	3.000 - 5.492	33	3.881	0.066-23.673	2.995	2.174 - 4.017
240/ 20						109	7.585	5.763 - 9.724	6.373	4.951 - 8.032	55	5.215	3.449-7.493	3.934	2.968 - 5.098
240/ 25						207	10.061	7.807 - 12.642	8.243	6.651 - 10.045	86	6.279	2.135-13.648	4.630	3.508 - 5.973
240/ 30						301	12.005	9.363 - 14.996	9.795	8.043 - 11.747	122	7.174	3.048-13.688	4.974	3.714 - 6.491
240/ 35						395	13.436	10.440 - 16.812	10.908	9.022 - 12.991	159	8.022	3.805-14.266	5.353	3.956 - 7.041
250/ 6						0	2.848	1.976 - 3.966	2.021	1.448 - 2.749	0	2.848	1.976-3.966	2.021	1.448 - 2.749
250/ 10						17	3.428	0.003 - 33.644	2.825	2.012 - 3.851	11	2.986	0.046-20.093	2.508	1.808 - 3.388
250/ 15						57	5.516	4.186 - 7.096	4.542	3.325 - 6.030	37	4.134	2.883-5.715	3.178	2.297 - 4.277
250/ 20						136	8.247	6.299 - 10.519	6.809	5.333 - 8.518	63	5.483	3.544-8.011	4.071	3.071 - 5.276
250/ 25						230	10.752	8.312 - 13.543	8.859	7.208 - 10.713	95	6.657	2.418-13.912	4.927	3.801 - 6.258
250/ 30						336	12.666	9.840 - 15.863	10.252	8.461 - 12.238	138	7.514	3.354-13.898	5.044	3.785 - 6.554
250/ 35						443	13.977	10.793 - 17.565	11.190	9.393 - 13.159	175	8.412	4.087-14.710	5.501	4.090 - 7.197
260/ 5						0	2.648	1.793 - 3.766	1.848	1.308 - 2.541	0	2.648	1.793-3.766	1.848	1.308 - 2.541
260/ 10						22	3.682	2.774 - 4.778	2.990	2.124 - 4.083	14	3.122	2.264-4.189	2.624	1.897 - 3.535
260/ 15						72	6.006	1.482 - 15.287	4.885	3.621 - 6.415	42	4.398	0.606-14.785	3.335	2.437 - 4.444
260/ 20						163	8.915	6.279 - 12.109	7.267	5.776 - 8.976	70	5.743	1.294-15.292	4.255	3.268 - 5.429
260/ 25						265	11.422	8.692 - 14.559	9.264	7.578 - 11.151	108	6.928	2.618-14.136	4.834	3.700 - 6.179
260/ 30						371	13.279	10.253 - 16.700	10.646	8.795 - 12.695	153	7.903	3.630-14.336	5.186	3.886 - 6.746
270/ 5						0	2.799	1.928 - 3.921	1.984	1.417 - 2.705	0	2.799	1.928-3.921	1.984	1.417 - 2.705
270/ 10						29	3.872	2.904 - 5.043	3.052	2.146 - 4.202	18	3.300	2.395-4.424	2.654	1.899 - 3.604
270/ 15						85	6.503	2.101 - 14.465	5.329	4.012 - 6.901	47	4.642	0.852-13.839	3.524	2.634 - 4.605
270/ 20						188	9.561	6.685 - 13.042	7.729	6.197 - 9.472	79	6.032	1.645-14.661	4.390	3.389 - 5.575
270/ 25						299	12.054	9.222 - 15.288	9.656	7.913 - 11.599	122	7.251	2.938-14.200	4.890	3.715 - 6.291
270/ 30						414	13.823	10.621 - 17.442	10.925	9.051 - 12.994	168	8.329	3.905-14.884	5.296	3.925 - 6.951
280/ 5						0	2.955	2.062 - 4.095	2.131	1.533 - 2.887	0	2.955	2.062-4.095	2.131	1.533 - 2.887
280/ 10						34	4.125	3.084 - 5.385	3.284	2.317 - 4.506	22	3.442	2.490-4.624	2.744	1.971 - 3.715
280/ 15						98	7.034	4.233 - 10.772	5.766	4.395 - 7.390	52	4.971	2.336-9.089	3.743	2.840 - 4.828

Air VVal18M

Depth (fsw) /BT(min)	USN56 Standard Air					VVal-18M AIR; 20 fsw Last Allowed In-Water Stop					VVal-18M AIR/In-Water O2				
	TOTAL					TOTAL					TOTAL				
	STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)		STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98		TIME	BVM(3)		NMRI98	
	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low - high	(%)	low - high	(min)	(%)	low-high	(%)	low - high
280/ 20						211	10.200	7.582 - 13.262	8.243	6.631 - 10.070	88	6.347	2.028-14.225	4.575	3.520 - 5.825
280/ 25						329	12.655	9.697 - 16.022	10.084	8.264 - 12.109	136	7.561	3.237-14.318	4.964	3.747 - 6.418
280/ 30						464	14.273	10.899 - 18.088	11.192	9.421 - 13.130	185	8.595	4.134-15.105	5.310	3.907 - 7.012
290/ 4						0	2.695	1.840 - 3.806	1.903	1.351 - 2.607	0	2.695	1.840-3.806	1.903	1.351 - 2.607
290/ 5						2	2.983	2.109 - 4.090	2.068	1.453 - 2.857	4	2.490	1.633-3.636	1.809	1.283 - 2.481
290/ 10						39	4.404	3.334 - 5.686	3.504	2.480 - 4.793	25	3.599	2.587-4.858	2.843	2.050 - 3.836
290/ 15						110	7.571	2.857 - 15.360	6.247	4.800 - 7.948	57	5.277	1.257-13.844	3.874	2.939 - 4.998
290/ 20						232	10.810	8.181 - 13.846	8.780	7.093 - 10.682	96	6.704	2.333-14.320	4.867	3.770 - 6.160
290/ 25						360	13.234	10.135 - 16.751	10.512	8.644 - 12.586	151	7.893	3.537-14.526	5.073	3.788 - 6.619
300/ 4						0	2.840	1.961 - 3.972	2.035	1.457 - 2.768	0	2.840	1.961-3.972	2.035	1.457 - 2.768
300/ 5						4	3.016	2.139 - 4.124	2.149	1.547 - 2.910	5	2.413	1.556-3.571	1.927	1.374 - 2.632
300/ 10						45	4.715	0.207 - 22.095	3.780	2.702 - 5.125	29	3.748	0.052-23.984	2.946	2.152 - 3.930
300/ 15						132	8.131	6.169 - 10.428	6.645	5.145 - 8.395	64	5.456	3.522-7.982	3.952	2.992 - 5.106
300/ 20						263	11.412	8.784 - 14.414	9.150	7.438 - 11.072	108	6.962	2.611-14.258	4.780	3.672 - 6.091
300/ 25						398	13.732	10.491 - 17.405	10.779	8.875 - 12.889	164	8.282	3.770-15.060	5.192	3.858 - 6.802

Air VVal18M

USN-SURDO2								VVal-18M SURDO2															
Depth (fsw)								Depth (fsw)															
/BT(min)		P(DCS)			P(DCS)			/BT(min)		P(DCS)			P(DCS)										
		BVM(3)			NMRI98					BVM(3)			NMRI98										
		(%)	low	-	high	(%)	low	-	high	(%)	low	-	high	(%)	low	-	high						
30/ 371								30/ 371								4.153	3.525	-	4.855	5.037	4.280	-	5.878
30/ 420								30/ 420								4.034	3.388	-	4.760	5.474	4.669	-	6.364
30/ 480								30/ 480								4.805	4.037	-	5.666	6.481	5.571	-	7.479
30/ 540								30/ 540								5.499	4.610	-	6.493	7.412	6.392	-	8.525
30/ 600								30/ 600								5.419	4.545	-	6.397	7.154	6.080	-	8.338
30/ 660								30/ 660								5.945	4.975	-	7.029	7.888	6.726	-	9.165
30/ 720								30/ 720								6.411	5.352	-	7.593	8.552	7.306	-	9.916
35/ 232								35/ 232								2.974	2.543	-	3.455	3.684	2.995	-	4.476
35/ 240								35/ 240								2.250	1.827	-	2.741	3.532	2.789	-	4.404
35/ 270								35/ 270								2.861	2.372	-	3.419	4.256	3.469	-	5.156
35/ 300								35/ 300								3.463	2.900	-	4.099	4.989	4.158	-	5.925
35/ 330								35/ 330								3.461	2.898	-	4.096	4.687	3.781	-	5.728
35/ 360								35/ 360								3.990	3.354	-	4.705	5.354	4.403	-	6.432
35/ 420								35/ 420								4.984	4.190	-	5.872	6.644	5.584	-	7.822
35/ 480								35/ 480								5.324	4.471	-	6.277	6.911	5.688	-	8.286
35/ 540								35/ 540								6.086	5.094	-	7.193	7.955	6.624	-	9.436
35/ 600								35/ 600								6.046	5.063	-	7.144	7.845	6.486	-	9.363
35/ 660								35/ 660								6.022	5.043	-	7.115	7.799	6.428	-	9.334
35/ 720								35/ 720								6.505	5.434	-	7.700	8.501	7.045	-	10.121
40/ 163								40/ 163								2.332	1.942	-	2.776	2.997	2.330	-	3.789
40/ 170								40/ 170								1.492	1.142	-	1.918	2.913	2.152	-	3.851
40/ 180								40/ 180								1.735	1.360	-	2.182	3.190	2.400	-	4.149
40/ 190								40/ 190								1.983	1.584	-	2.452	3.477	2.661	-	4.455
40/ 200								40/ 200								2.234	1.811	-	2.726	3.773	2.932	-	4.768
40/ 210								40/ 210								2.488	2.039	-	3.005	4.074	3.211	-	5.084
40/ 220								40/ 220								2.743	2.267	-	3.286	4.379	3.495	-	5.405
40/ 230								40/ 230								2.485	2.036	-	3.002	3.676	2.731	-	4.829
40/ 240								40/ 240								2.720	2.247	-	3.262	3.957	2.994	-	5.114
40/ 270								40/ 270								3.424	2.867	-	4.053	4.813	3.801	-	5.990
40/ 300								40/ 300								3.662	3.074	-	4.324	4.803	3.676	-	6.140

Air VVal18M

USN-SURDO2								VVal-18M SURDO2										
Depth (fsw)								Depth (fsw)										
/BT(min)		P(DCS) BVM(3)			P(DCS) NMRI98			/BT(min)		P(DCS) BVM(3)			P(DCS) NMRI98					
		(%)	low	-	high	(%)	low	-	high			(%)	low	-	high			
40/ 330										40/ 330	4.286	3.608	-	5.046	5.596	4.417	-	6.964
40/ 360										40/ 360	4.887	4.114	-	5.753	6.375	5.137	-	7.788
40/ 420										40/ 420	5.328	4.479	-	6.276	6.816	5.515	-	8.295
40/ 480										40/ 480	5.710	4.793	-	6.733	7.260	5.910	-	8.785
40/ 540										40/ 540	5.819	4.883	-	6.864	7.423	6.091	-	8.920
45/ 125										45/ 125	2.079	1.672	-	2.556	2.700	2.071	-	3.457
45/ 130										45/ 130	1.050	0.632	-	1.657	2.639	1.887	-	3.588
45/ 140										45/ 140	1.684	0.198	-	6.869	2.946	2.145	-	3.940
45/ 150										45/ 150	1.598	1.233	-	2.041	3.275	2.429	-	4.309
45/ 160										45/ 160	1.890	1.497	-	2.356	3.620	2.734	-	4.691
45/ 170										45/ 170	2.188	1.766	-	2.680	3.979	3.054	-	5.081
45/ 180										45/ 180	2.014	1.607	-	2.493	3.318	2.312	-	4.599
45/ 190										45/ 190	2.294	1.860	-	2.799	3.646	2.612	-	4.937
45/ 200										45/ 200	2.578	2.133	-	3.086	3.983	2.923	-	5.283
45/ 210										45/ 210	2.863	2.369	-	3.426	4.326	3.242	-	5.635
45/ 220										45/ 220	3.149	2.623	-	3.746	4.674	3.568	-	5.992
45/ 230										45/ 230	3.030	2.518	-	3.612	4.134	2.959	-	5.595
45/ 240										45/ 240	3.295	2.751	-	3.910	4.458	3.262	-	5.921
45/ 270										45/ 270	4.082	3.432	-	4.811	5.439	4.183	-	6.921
45/ 300										45/ 300	4.228	2.144	-	7.396	5.411	4.157	-	6.891
45/ 330										45/ 330	4.426	3.725	-	5.211	5.523	4.294	-	6.963
45/ 360										45/ 360	5.055	4.253	-	5.952	6.351	5.049	-	7.850
50/ 92										50/ 92	1.722	1.300	-	2.239	2.223	1.695	-	2.863
50/ 95										50/ 95	0.564	0.345	-	0.882	2.247	1.587	-	3.090
50/ 100										50/ 100	0.685	0.433	-	1.042	2.381	1.688	-	3.263
50/ 110										50/ 110	0.956	0.660	-	1.347	2.691	1.931	-	3.648
50/ 120										50/ 120	1.254	0.921	-	1.674	3.048	2.222	-	4.072
50/ 130										50/ 130	1.575	1.208	-	2.020	3.437	2.549	-	4.523
50/ 140										50/ 140	1.467	1.106	-	1.913	2.860	1.853	-	4.210
50/ 150										50/ 150	1.778	1.371	-	2.268	3.218	2.163	-	4.596
50/ 160										50/ 160	2.098	1.675	-	2.595	3.597	2.500	-	4.993

Air VVal18M

USN-SURDO2								VVal-18M SURDO2									
Depth (fsw)		P(DCS)			P(DCS)			Depth (fsw)		P(DCS)			P(DCS)				
/BT(min)	P(DCS) BVM(3)				NMRI98				/BT(min)	P(DCS) BVM(3)				NMRI98			
	(%)	low	-	high	(%)	low	-	high		(%)	low	-	high	(%)	low	-	high
50/ 170									50/ 170	2.426	1.972	-	2.953	3.991	2.859	-	5.399
50/ 180									50/ 180	2.759	2.288	-	3.298	4.396	3.231	-	5.818
50/ 190									50/ 190	2.717	2.233	-	3.272	3.872	2.650	-	5.437
50/ 200									50/ 200	3.030	2.512	-	3.620	4.251	3.002	-	5.815
50/ 210									50/ 210	3.344	2.789	-	3.973	4.636	3.362	-	6.201
50/ 220									50/ 220	3.114	2.586	-	3.714	4.083	2.867	-	5.614
50/ 230									50/ 230	3.406	2.844	-	4.043	4.442	3.203	-	5.973
50/ 240									50/ 240	3.698	3.098	-	4.374	4.805	3.541	-	6.341
50/ 270									50/ 270	4.087	3.434	-	4.821	5.106	3.884	-	6.560
50/ 300									50/ 300	4.874	4.100	-	5.740	6.123	4.819	-	7.635
50/ 330									50/ 330	4.974	4.185	-	5.858	6.185	4.946	-	7.608
55/ 74									55/ 74	1.666	0.042	-	11.540	2.081	1.595	-	2.670
55/ 75									55/ 75	0.385	0.196	-	0.705	2.151	1.547	-	2.916
55/ 80									55/ 80	0.490	0.273	-	0.831	2.264	1.622	-	3.076
55/ 85									55/ 85	0.611	0.366	-	0.974	2.403	1.723	-	3.261
55/ 90									55/ 90	0.751	0.348	-	1.460	2.566	1.846	-	3.471
55/ 95									55/ 95	0.901	0.604	-	1.301	2.748	1.987	-	3.699
55/ 100									55/ 100	1.061	0.758	-	1.452	2.946	2.144	-	3.942
55/ 110									55/ 110	1.771	0.007	-	18.333	3.382	2.499	-	4.465
55/ 120									55/ 120	1.321	0.964	-	1.772	2.841	1.814	-	4.231
55/ 130									55/ 130	1.665	1.273	-	2.143	3.248	2.161	-	4.673
55/ 140									55/ 140	2.026	1.600	-	2.532	3.684	2.540	-	5.145
55/ 150									55/ 150	2.399	1.938	-	2.937	4.142	2.944	-	5.637
55/ 160									55/ 160	2.428	1.964	-	2.967	3.642	2.424	-	5.234
55/ 170									55/ 170	2.785	2.285	-	3.360	4.075	2.849	-	5.621
55/ 180									55/ 180	3.147	2.608	-	3.761	4.519	3.284	-	6.037
55/ 190									55/ 190	2.978	2.472	-	3.554	4.000	2.809	-	5.501
55/ 200									55/ 200	3.318	2.759	-	3.953	4.417	3.206	-	5.907
55/ 210									55/ 210	3.658	3.057	-	4.337	4.840	3.610	-	6.324
55/ 220									55/ 220	3.561	2.972	-	4.227	4.485	3.328	-	5.889
55/ 230									55/ 230	3.877	3.248	-	4.587	4.882	3.699	-	6.295

Air VVal18M

USN-SURDO2									VVal-18M SURDO2								
Depth (fsw)									Depth (fsw)								
/BT(min) P(DCS) BVM(3) low - high									/BT(min) P(DCS) BVM(3) low - high								
P(DCS) NMRI98 (%) low - high									P(DCS) NMRI98 (%) low - high								
55/ 240									55/ 240	4.192	3.519	-	4.949	5.282	4.072	-	6.708
55/ 270									55/ 270	4.492	3.775	-	5.297	5.563	4.394	-	6.918
60/ 63									60/ 63	1.723	1.245	-	2.329	2.070	1.591	-	2.648
60/ 65									60/ 65	0.379	0.181	-	0.730	2.197	1.613	-	2.924
60/ 70									60/ 70	0.483	0.257	-	0.849	2.326	1.692	-	3.119
60/ 75									60/ 75	0.614	0.359	-	1.000	2.478	1.802	-	3.322
60/ 80									60/ 80	0.763	0.479	-	1.168	2.661	1.940	-	3.560
60/ 85									60/ 85	0.926	0.615	-	1.349	2.871	2.101	-	3.824
60/ 90									60/ 90	1.107	0.772	-	1.545	3.101	2.283	-	4.109
60/ 95									60/ 95	1.295	0.939	-	1.748	3.349	2.482	-	4.411
60/ 100									60/ 100	1.856	0.278	-	6.717	3.611	2.696	-	4.725
60/ 110									60/ 110	1.402	1.023	-	1.881	3.074	1.998	-	4.510
60/ 120									60/ 120	1.792	1.375	-	2.298	3.556	2.479	-	4.924
60/ 130									60/ 130	1.899	1.472	-	2.412	3.125	1.997	-	4.646
60/ 140									60/ 140	2.289	1.826	-	2.832	3.597	2.461	-	5.056
60/ 150									60/ 150	2.690	2.189	-	3.268	4.093	2.933	-	5.536
60/ 160									60/ 160	2.597	2.105	-	3.167	3.634	2.475	-	5.127
60/ 170									60/ 170	2.980	2.450	-	3.588	4.102	2.908	-	5.594
60/ 180									60/ 180	3.367	2.793	-	4.019	4.581	3.353	-	6.082
60/ 190									60/ 190	3.337	2.767	-	3.985	4.265	3.107	-	5.688
60/ 200									60/ 200	3.700	3.092	-	4.386	4.718	3.528	-	6.152
60/ 210									60/ 210	4.063	3.401	-	4.809	5.177	3.954	-	6.626
60/ 220									60/ 220	3.837	3.205	-	4.550	4.755	3.639	-	6.079
60/ 230									60/ 230	4.176	3.498	-	4.938	5.185	4.037	-	6.531
60/ 240									60/ 240	4.513	3.786	-	5.328	5.618	4.435	-	6.989
70/ 48									70/ 48	1.870	0.031	-	14.103	2.056	1.590	-	2.616
70/ 50	2.007	1.473	-	2.672	2.206	1.704	-	2.811	70/ 50	0.405	0.176	-	0.838	2.221	1.677	-	2.885
70/ 55									70/ 55	0.494	0.242	-	0.927	2.404	1.802	-	3.142
70/ 60									70/ 60	0.628	0.345	-	1.073	2.589	1.927	-	3.403
70/ 65									70/ 65	0.800	0.485	-	1.260	2.812	2.095	-	3.691
70/ 70									70/ 70	1.000	0.654	-	1.476	3.079	2.302	-	4.027

Air VVal18M

USN-SURDO2									VVal-18M SURDO2								
Depth (fsw)	P(DCS)				P(DCS)				Depth (fsw)	P(DCS)				P(DCS)			
/BT(min)	BVM(3)				NMRI98				/BT(min)	BVM(3)				NMRI98			
	(%)	low	-	high	(%)	low	-	high		(%)	low	-	high	(%)	low	-	high
70/ 75									70/ 75	1.219	0.844	-	1.710	3.379	2.540	-	4.398
70/ 80									70/ 80	0.930	0.582	-	1.423	2.711	1.708	-	4.085
70/ 85									70/ 85	1.132	0.756	-	1.639	2.972	2.035	-	4.182
70/ 90	1.464	1.083	-	1.939	3.684	2.752	-	4.815	70/ 90	1.348	0.947	-	1.868	3.265	2.358	-	4.394
70/ 95									70/ 95	1.577	1.152	-	2.110	3.585	2.654	-	4.722
70/ 100									70/ 100	1.551	1.130	-	2.083	2.917	1.883	-	4.308
70/ 110									70/ 110	2.009	1.545	-	2.568	3.499	2.403	-	4.905
70/ 120	2.647	2.153	-	3.220	5.244	4.021	-	6.690	70/ 120	2.490	1.985	-	3.084	4.126	2.984	-	5.537
70/ 130									70/ 130	2.501	1.994	-	3.095	3.724	2.579	-	5.183
70/ 140									70/ 140	2.972	2.421	-	3.608	4.325	3.149	-	5.771
70/ 150	3.998	3.348	-	4.730	6.710	5.216	-	8.448	70/ 150	3.059	2.499	-	3.703	4.071	2.954	-	5.449
70/ 160									70/ 160	3.512	2.902	-	4.206	4.644	3.495	-	6.024
70/ 170									70/ 170	3.412	2.814	-	4.095	4.331	3.272	-	5.602
70/ 180	5.134	4.313	-	6.051	8.025	6.254	-	10.069	70/ 180	3.842	3.193	-	4.577	4.875	3.779	-	6.167
70/ 190									70/ 190	4.272	3.567	-	5.068	5.428	4.313	-	6.717
70/ 200									70/ 200	4.227	3.528	-	5.015	5.238	4.212	-	6.416
70/ 210									70/ 210	4.629	3.873	-	5.478	5.759	4.690	-	6.974
80/ 39									80/ 39	2.049	1.492	-	2.748	2.060	1.588	-	2.630
80/ 40	2.043	1.485	-	2.745	2.077	1.601	-	2.650	80/ 40	0.476	0.000	-	69.794	2.210	1.697	-	2.830
80/ 45									80/ 45	0.539	0.249	-	1.056	2.449	1.870	-	3.149
80/ 50									80/ 50	0.682	0.360	-	1.201	2.690	2.038	-	3.481
80/ 55									80/ 55	0.880	0.082	-	4.271	2.959	2.242	-	3.827
80/ 60									80/ 60	0.621	0.303	-	1.166	2.457	1.541	-	3.719
80/ 65									80/ 65	0.809	0.452	-	1.359	2.704	1.807	-	3.885
80/ 70	3.076	2.372	-	3.918	3.469	2.636	-	4.472	80/ 70	1.026	0.635	-	1.585	3.017	2.208	-	4.018
80/ 75									80/ 75	1.269	0.846	-	1.837	3.385	2.532	-	4.422
80/ 80									80/ 80	1.530	1.080	-	2.110	3.785	2.852	-	4.911
80/ 85	3.699	2.971	-	4.544	4.348	3.368	-	5.507	80/ 85	1.549	1.097	-	2.129	3.099	2.078	-	4.434
80/ 90									80/ 90	1.811	1.335	-	2.405	3.459	2.452	-	4.726
80/ 95									80/ 95	2.085	1.586	-	2.693	3.846	2.815	-	5.112
80/ 100	4.407	3.608	-	5.319	5.207	4.059	-	6.552	80/ 100	1.938	1.451	-	2.537	3.212	2.176	-	4.557

Air VVal18M

USN-SURDO2								VVal-18M SURDO2									
Depth (fsw)	P(DCS)				P(DCS)			Depth (fsw)	P(DCS)				P(DCS)				
/BT(min)	BVM(3)				NMRI98			/BT(min)	BVM(3)			NMRI98					
	(%)	low	-	high	(%)	low	-	high		(%)	low	-	high	(%)	low	-	high
70/ 110									70/ 110	2.472	1.940	-	3.104	3.929	2.831	-	5.291
80/ 120									80/ 120	2.673	2.123	-	3.318	3.767	2.780	-	4.974
80/ 130	5.548	4.606	-	6.608	6.971	5.310	-	8.923	80/ 130	3.207	2.607	-	3.899	4.480	3.453	-	5.697
80/ 140									80/ 140	3.215	2.614	-	3.908	4.261	3.278	-	5.428
80/ 150	6.259	4.761	-	8.028	8.009	6.066	-	10.287	80/ 150	3.731	3.075	-	4.480	4.941	3.883	-	6.175
80/ 160									80/ 160	3.810	3.144	-	4.568	4.844	3.856	-	5.989
80/ 170									80/ 170	4.300	3.573	-	5.122	5.486	4.441	-	6.680
90/ 33	2.100	1.527	-	2.820	1.955	1.494	-	2.514	90/ 33	2.239	1.642	-	2.981	2.081	1.594	-	2.670
90/ 35									90/ 35	0.561	0.239	-	1.166	2.304	1.783	-	2.928
90/ 40									90/ 40	0.652	0.309	-	1.248	2.599	2.003	-	3.315
90/ 45									90/ 45	0.846	0.463	-	1.442	2.902	2.222	-	3.720
90/ 50									90/ 50	0.574	0.243	-	1.199	2.475	1.579	-	3.695
90/ 55									90/ 55	0.764	0.389	-	1.382	2.746	1.945	-	3.761
90/ 60	3.373	2.605	-	4.288	3.582	2.811	-	4.490	90/ 60	1.000	0.584	-	1.619	3.124	2.365	-	4.043
90/ 65									90/ 65	1.270	0.818	-	1.895	3.570	2.719	-	4.592
90/ 70	3.810	3.002	-	4.758	4.225	3.295	-	5.320	90/ 70	1.340	0.880	-	1.966	2.957	2.031	-	4.152
90/ 75									90/ 75	3.488	2.501	-	4.722	3.382	2.462	-	4.520
90/ 80	4.278	3.435	-	5.251	4.967	3.833	-	6.306	90/ 80	3.855	2.861	-	5.065	3.854	2.857	-	5.069
90/ 85									90/ 85	3.495	1.785	-	6.118	3.260	2.281	-	4.505
90/ 90	4.828	3.921	-	5.866	5.619	4.363	-	7.090	90/ 90	3.844	2.056	-	6.497	3.703	2.690	-	4.955
90/ 95									90/ 95	4.192	2.337	-	6.868	4.189	2.992	-	5.680
90/ 100	5.315	4.373	-	6.382	6.406	4.929	-	8.139	90/ 100	2.509	1.956	-	3.168	3.661	2.757	-	4.755
90/ 110	5.693	2.606	-	10.517	7.041	5.344	-	9.040	90/ 110	3.129	2.525	-	3.828	4.544	3.490	-	5.793
90/ 120	6.136	4.045	-	8.818	7.735	5.832	-	9.976	90/ 120	3.206	1.845	-	5.161	4.292	3.287	-	5.489
90/ 130	6.473	4.719	-	8.594	8.263	6.167	-	10.736	90/ 130	3.290	2.776	-	3.867	4.257	3.343	-	5.330
90/ 140									90/ 140	3.900	3.312	-	4.557	5.053	4.058	-	6.197
100/ 29	2.106	1.531	-	2.826	1.818	1.373	-	2.364	100/ 29	2.441	1.801	-	3.233	2.138	1.629	-	2.756
100/ 30									100/ 30	0.619	0.258	-	1.305	2.308	1.797	-	2.919
100/ 35									100/ 35	0.728	0.342	-	1.402	2.661	2.067	-	3.370
100/ 40									100/ 40	0.947	0.518	-	1.617	3.026	2.337	-	3.849
100/ 45									100/ 45	0.638	0.267	-	1.341	2.619	1.743	-	3.776

Air VVal18M

USN-SURDO2									VVal-18M SURDO2								
Depth (fsw)	P(DCS)				P(DCS)				Depth (fsw)	P(DCS)				P(DCS)			
/BT(min)	BVM(3)				NMRI98				/BT(min)	BVM(3)				NMRI98			
	(%)	low	-	high	(%)	low	-	high		(%)	low	-	high	(%)	low	-	high
100/ 50	3.398	2.568	-	4.402	3.407	2.679	-	4.264	100/ 50	0.862	0.442	-	1.549	2.990	2.288	-	3.833
100/ 55									100/ 55	3.442	2.534	-	4.558	3.480	2.681	-	4.432
100/ 60	4.009	2.741	-	5.633	4.231	3.313	-	5.308	100/ 60	3.322	2.321	-	4.594	2.933	2.082	-	4.008
100/ 65									100/ 65	3.754	2.727	-	5.025	3.436	2.552	-	4.515
100/ 70	4.674	3.705	-	5.800	5.026	3.984	-	6.235	100/ 70	4.200	3.170	-	5.439	4.000	3.014	-	5.189
100/ 75									100/ 75	3.904	1.763	-	7.393	3.474	2.477	-	4.723
100/ 80	5.184	4.172	-	6.347	5.891	4.588	-	7.413	100/ 80	4.315	2.039	-	7.904	4.062	2.902	-	5.506
100/ 85									100/ 85	4.092	2.234	-	6.807	3.570	2.692	-	4.631
100/ 90	5.649	4.608	-	6.832	6.697	5.122	-	8.547	100/ 90	4.406	2.534	-	7.048	3.913	2.963	-	5.055
100/ 95									100/ 95	4.674	2.796	-	7.257	4.430	3.357	-	5.714
100/ 100	6.073	3.495	-	9.634	7.432	5.587	-	9.610	100/ 100	4.304	2.715	-	6.432	3.937	3.017	-	5.034
100/ 110	6.537	4.346	-	9.323	8.206	6.105	-	10.689	100/ 110	5.087	3.468	-	7.143	4.964	3.885	-	6.228
100/ 120	7.035	3.967	-	11.269	8.758	6.581	-	11.311	100/ 120	3.947	3.372	-	4.586	5.081	4.100	-	6.206
110/ 25	2.143	1.556	-	2.880	1.777	1.331	-	2.327	110/ 25	2.541	1.875	-	3.364	2.140	1.627	-	2.763
110/ 30									110/ 30	0.771	0.039	-	4.925	2.651	2.083	-	3.324
110/ 35									110/ 35	0.986	0.520	-	1.730	3.082	2.422	-	3.862
110/ 40	3.245	2.399	-	4.283	3.155	2.515	-	3.904	110/ 40	0.662	0.263	-	1.444	2.717	1.963	-	3.659
110/ 45									110/ 45	3.286	2.341	-	4.473	3.174	2.457	-	4.028
110/ 50	3.983	3.022	-	5.136	4.025	3.130	-	5.081	110/ 50	3.271	2.228	-	4.619	2.716	1.880	-	3.793
110/ 55									110/ 55	3.780	2.715	-	5.105	3.253	2.404	-	4.296
110/ 60	4.763	3.702	-	6.010	4.950	3.911	-	6.159	110/ 60	4.294	3.204	-	5.614	3.896	2.915	-	5.083
110/ 65									110/ 65	4.094	1.568	-	8.564	3.500	2.346	-	5.003
110/ 70	5.376	4.242	-	6.693	5.977	4.660	-	7.514	110/ 70	4.571	1.808	-	9.325	4.200	2.929	-	5.806
110/ 75									110/ 75	4.230	2.156	-	7.372	3.498	2.524	-	4.710
110/ 80	5.893	4.734	-	7.222	6.835	5.225	-	8.726	110/ 80	4.698	2.582	-	7.752	4.130	2.988	-	5.540
110/ 85									110/ 85	5.206	3.044	-	8.198	4.799	3.453	-	6.460
110/ 90	6.416	2.614	-	12.622	7.748	5.844	-	9.989	110/ 90	4.885	2.613	-	8.202	4.324	3.247	-	5.621
110/ 95									110/ 95	5.352	3.154	-	8.375	4.935	3.738	-	6.364
110/ 100	6.950	3.873	-	11.227	8.596	6.545	-	10.986	110/ 100	5.096	3.279	-	7.481	4.628	3.640	-	5.782
110/ 110	7.631	5.055	-	10.884	9.657	7.368	-	12.308	110/ 110	5.911	4.063	-	8.229	5.719	4.581	-	7.025
120/ 22	2.047	1.473	-	2.773	1.662	1.228	-	2.202	120/ 22	2.647	1.956	-	3.500	2.184	1.651	-	2.835

Air VVal18M

USN-SURDO2									VVal-18M SURDO2								
Depth (fsw)	P(DCS)				P(DCS)				Depth (fsw)	P(DCS)				P(DCS)			
/BT(min)	BVM(3)				NMR198				/BT(min)	BVM(3)				NMR198			
	(%)	low	-	high	(%)	low	-	high		(%)	low	-	high	(%)	low	-	high
120/ 25									120/ 25	0.777	0.333	-	1.600	2.549	1.994	-	3.210
120/ 30	2.831	2.024	-	3.847	2.762	2.201	-	3.420	120/ 30	0.967	0.481	-	1.773	3.045	2.384	-	3.827
120/ 35									120/ 35	2.857	1.928	-	4.069	2.749	2.033	-	3.631
120/ 40	3.757	2.785	-	4.943	3.647	2.843	-	4.597	120/ 40	3.450	2.450	-	4.708	3.261	2.534	-	4.124
120/ 45									120/ 45	3.516	2.433	-	4.899	2.845	2.063	-	3.822
120/ 50	4.582	3.458	-	5.930	4.803	3.772	-	6.006	120/ 50	4.116	2.975	-	5.526	3.503	2.630	-	4.562
120/ 55									120/ 55	4.729	3.540	-	6.160	4.341	3.297	-	5.589
120/ 60	5.383	4.180	-	6.794	5.718	4.535	-	7.086	120/ 60	4.580	1.477	-	10.482	4.037	2.849	-	5.528
120/ 65									120/ 65	4.938	1.945	-	10.057	4.594	3.345	-	6.125
120/ 70	6.008	4.714	-	7.511	6.919	5.444	-	8.621	120/ 70	4.898	0.467	-	18.355	4.135	2.898	-	5.693
120/ 75									120/ 75	5.493	3.065	-	8.928	4.917	3.553	-	6.594
120/ 80	6.574	3.272	-	11.455	8.071	6.262	-	10.164	120/ 80	5.273	3.329	-	7.849	4.494	3.353	-	5.874
120/ 85									120/ 85	5.777	3.792	-	8.337	5.183	3.858	-	6.780
120/ 90	7.349	3.511	-	13.070	9.132	7.152	-	11.398	120/ 90	5.591	3.639	-	8.126	4.904	3.863	-	6.117
130/ 20									130/ 20	2.794	2.068	-	3.686	2.279	1.717	-	2.966
130/ 25									130/ 25	0.918	0.420	-	1.795	2.883	2.247	-	3.639
130/ 30	3.223	2.334	-	4.327	3.089	2.439	-	3.853	130/ 30	0.623	0.199	-	1.581	2.675	1.903	-	3.653
130/ 35									130/ 35	3.456	2.432	-	4.751	3.217	2.495	-	4.076
130/ 40	4.221	3.115	-	5.570	4.202	3.282	-	5.283	130/ 40	3.621	2.499	-	5.056	2.861	2.099	-	3.803
130/ 45									130/ 45	4.314	3.106	-	5.808	3.639	2.710	-	4.770
130/ 50	5.217	3.966	-	6.705	5.297	4.253	-	6.499	130/ 50	4.306	1.153	-	10.897	3.500	2.425	-	4.874
130/ 55									130/ 55	4.817	0.403	-	18.861	4.142	2.989	-	5.568
130/ 60	5.968	4.547	-	7.649	6.739	5.410	-	8.256	130/ 60	5.449	2.209	-	10.854	5.058	3.824	-	6.533
130/ 65									130/ 65	5.492	2.828	-	9.428	4.672	3.390	-	6.247
130/ 70	6.665	2.885	-	12.635	8.101	6.433	-	10.005	130/ 70	5.360	2.296	-	10.345	4.320	3.155	-	5.749
130/ 75									130/ 75	5.991	3.278	-	9.844	5.163	3.796	-	6.822
130/ 80	7.596	3.692	-	13.346	9.337	7.473	-	11.445	130/ 80	5.893	3.239	-	9.657	4.945	3.887	-	6.179
140/ 17	1.949	1.376	-	2.682	1.531	1.103	-	2.076	140/ 17	2.727	2.003	-	3.623	2.159	1.612	-	2.833
140/ 20									140/ 20	0.860	0.355	-	1.811	2.596	2.012	-	3.294
140/ 25	3.032	2.156	-	4.137	2.897	2.280	-	3.625	140/ 25	1.098	0.541	-	2.022	3.238	2.508	-	4.107
140/ 30	3.635	2.642	-	4.862	3.461	2.667	-	4.408	140/ 30	3.313	2.282	-	4.636	3.062	2.364	-	3.896

Air VVal18M

USN-SURDO2									VVal-18M SURDO2								
Depth (fsw)	P(DCS)				P(DCS)				Depth (fsw)	P(DCS)				P(DCS)			
/BT(min)	BVM(3)				NMRI98				/BT(min)	BVM(3)				NMRI98			
	(%)	low	-	high	(%)	low	-	high		(%)	low	-	high	(%)	low	-	high
140/ 35	4.201	3.068	-	5.591	4.135	3.224	-	5.209	140/ 35	3.575	2.421	-	5.067	2.754	1.991	-	3.708
140/ 40	4.773	3.532	-	6.277	4.759	3.747	-	5.941	140/ 40	4.355	3.101	-	5.916	3.598	2.677	-	4.722
140/ 45	5.317	3.967	-	6.941	5.360	4.316	-	6.559	140/ 45	5.083	3.793	-	6.637	4.426	3.431	-	5.601
140/ 50	5.749	4.269	-	7.527	6.225	5.054	-	7.558	140/ 50	4.968	1.533	-	11.566	4.290	3.156	-	5.675
140/ 55	6.179	4.585	-	8.090	6.998	5.672	-	8.503	140/ 55	5.811	2.313	-	11.653	5.345	4.129	-	6.776
140/ 60	6.571	2.252	-	14.171	7.738	6.238	-	9.439	140/ 60	5.940	2.995	-	10.307	5.003	3.732	-	6.533
140/ 65	6.907	3.113	-	12.763	8.351	6.683	-	10.246	140/ 65	5.892	3.513	-	9.124	4.770	3.439	-	6.408
140/ 70	7.561	3.109	-	14.646	9.001	7.313	-	10.897	140/ 70	6.649	4.166	-	9.906	5.757	4.299	-	7.504
140/ 75									140/ 75	6.607	4.254	-	9.649	5.535	4.385	-	6.866
150/ 15	1.864	1.299	-	2.595	1.448	1.027	-	1.988	150/ 15	2.729	1.990	-	3.647	2.120	1.573	-	2.797
150/ 20									150/ 20	0.979	0.429	-	1.971	2.875	2.220	-	3.659
150/ 25	3.396	2.440	-	4.589	3.206	2.531	-	3.999	150/ 25	3.025	2.013	-	4.357	2.794	2.099	-	3.640
150/ 30	4.062	2.944	-	5.443	3.933	3.046	-	4.983	150/ 30	3.865	2.726	-	5.298	3.513	2.715	-	4.462
150/ 35	4.616	3.381	-	6.125	4.497	3.526	-	5.634	150/ 35	4.228	2.960	-	5.824	3.368	2.471	-	4.473
150/ 40	5.210	3.803	-	6.925	5.217	4.226	-	6.350	150/ 40	5.032	3.700	-	6.649	4.243	3.271	-	5.397
150/ 45	5.763	4.200	-	7.660	6.039	4.927	-	7.301	150/ 45	5.065	1.569	-	11.749	4.231	3.130	-	5.573
150/ 50	6.325	4.608	-	8.402	6.889	5.652	-	8.282	150/ 50	5.979	2.255	-	12.337	5.385	4.197	-	6.776
150/ 55	6.872	2.879	-	13.250	7.584	6.230	-	9.106	150/ 55	6.244	3.038	-	11.059	5.205	3.948	-	6.702
150/ 60									150/ 60	6.322	3.691	-	9.919	5.067	3.717	-	6.709
150/ 65									150/ 65	7.144	4.378	-	10.796	6.158	4.691	-	7.890
160/ 13	1.727	1.177	-	2.451	1.323	0.917	-	1.854	160/ 13	2.676	1.929	-	3.612	2.024	1.489	-	2.689
160/ 15									160/ 15	0.859	0.075	-	4.294	2.405	1.846	-	3.080
160/ 20	3.014	1.862	-	4.602	2.838	2.212	-	3.582	160/ 20	1.107	0.097	-	5.386	3.173	2.436	-	4.058
160/ 25	3.728	0.881	-	10.165	3.560	2.725	-	4.559	160/ 25	3.469	2.371	-	4.883	3.149	2.418	-	4.024
160/ 30	4.461	3.183	-	6.049	4.236	3.279	-	5.369	160/ 30	3.919	2.701	-	5.471	2.826	2.102	-	3.714
160/ 35	5.016	3.629	-	6.717	4.861	3.900	-	5.970	160/ 35	4.831	3.504	-	6.459	3.862	2.925	-	4.990
160/ 40	5.726	4.117	-	7.697	5.727	4.673	-	6.926	160/ 40	4.985	1.532	-	11.625	3.960	2.901	-	5.260
160/ 45	6.423	1.659	-	15.902	6.623	5.469	-	7.920	160/ 45	5.964	2.010	-	13.074	5.264	4.093	-	6.638
160/ 50									160/ 50	6.393	2.932	-	11.734	5.205	3.964	-	6.679
160/ 55									160/ 55	6.546	3.692	-	10.507	5.151	3.809	-	6.774
160/ 60									160/ 60	6.768	4.034	-	10.446	5.168	4.047	-	6.477

Air VVal18M

USN-SURDO2									VVal-18M SURDO2								
Depth (fsw)									Depth (fsw)								
/BT(min) P(DCS) BVM(3)									/BT(min) P(DCS) BVM(3)								
(%) low - high									(%) low - high								
170/ 12	1.530	1.004	-	2.245	1.166	0.780	-	1.687	170/ 12	2.747	1.975	-	3.715	2.062	1.512	-	2.750
170/ 15									170/ 15	0.948	0.374	-	2.057	2.619	2.006	-	3.357
170/ 20	3.292	2.333	-	4.500	3.078	2.425	-	3.848	170/ 20	3.401	2.367	-	4.719	3.488	2.659	-	4.484
170/ 25	4.080	0.450	-	15.047	3.945	3.025	-	5.042	170/ 25	3.943	2.779	-	5.408	3.376	2.575	-	4.338
170/ 30	4.675	3.320	-	6.361	4.625	3.629	-	5.792	170/ 30	4.398	3.135	-	5.970	3.263	2.397	-	4.331
170/ 35	5.597	0.750	-	18.293	5.464	4.433	-	6.640	170/ 35	5.382	3.880	-	7.224	4.610	3.610	-	5.783
170/ 40	6.404	4.560	-	8.664	6.398	5.282	-	7.654	170/ 40	5.799	1.891	-	12.957	4.868	3.738	-	6.207
170/ 45									170/ 45	6.321	2.742	-	12.002	4.990	3.769	-	6.450
170/ 50									170/ 50	6.617	3.583	-	10.914	5.070	3.742	-	6.680
170/ 55									170/ 55	6.973	4.027	-	10.992	5.183	4.029	-	6.538
180/ 11									180/ 11	2.792	1.998	-	3.790	2.075	1.517	-	2.773
180/ 15									180/ 15	1.043	0.433	-	2.179	2.844	2.171	-	3.655
180/ 20									180/ 20	3.317	2.213	-	4.762	2.971	2.266	-	3.822
180/ 25									180/ 25	4.391	0.338	-	17.955	3.666	2.834	-	4.654
180/ 30									180/ 30	4.863	3.452	-	6.615	3.893	2.948	-	5.028
180/ 35									180/ 35	5.411	1.652	-	12.575	4.256	3.179	-	5.560
180/ 40									180/ 40	6.713	1.570	-	17.267	5.880	4.681	-	7.262
180/ 45									180/ 45	6.514	2.556	-	13.075	4.775	3.490	-	6.343
180/ 50									180/ 50	7.714	4.249	-	12.513	6.252	4.841	-	7.903
180/ 55									180/ 55	8.101	4.767	-	12.552	6.381	4.976	-	8.017
190/ 10									190/ 10	2.812	2.003	-	3.833	2.061	1.499	-	2.766
190/ 15									190/ 15	1.144	0.499	-	2.305	3.082	2.341	-	3.977
190/ 20									190/ 20	3.684	2.541	-	5.144	3.126	2.360	-	4.053
190/ 25									190/ 25	4.156	2.912	-	5.725	2.984	2.153	-	4.022
190/ 30									190/ 30	5.524	3.919	-	7.509	4.622	3.605	-	5.818
190/ 35									190/ 35	6.219	2.011	-	13.877	5.112	3.966	-	6.459
190/ 40									190/ 40	6.970	2.937	-	13.384	5.514	4.258	-	6.991
190/ 45									190/ 45	7.523	3.965	-	12.571	5.842	4.468	-	7.463
190/ 50									190/ 50	8.066	4.562	-	12.836	6.129	4.747	-	7.746
200/ 9									200/ 9	2.787	1.966	-	3.829	2.016	1.461	-	2.714
200/ 10									200/ 10	0.900	0.306	-	2.167	2.292	1.731	-	2.976

Air VVal18M

USN-SURDO2								VVal-18M SURDO2											
Depth (fsw)								Depth (fsw)											
/BT(min)		P(DCS)			P(DCS)			/BT(min)		P(DCS)			P(DCS)						
		BVM(3)			NMRI98					BVM(3)			NMRI98						
		(%)	low	-	high	(%)	low	-	high			(%)	low	-	high	(%)	low	-	high
200/ 15										200/ 15	1.253	0.576	-	2.423	3.332	2.517	-	4.318	
200/ 20										200/ 20	3.999	2.874	-	5.397	3.254	2.490	-	4.170	
200/ 25										200/ 25	4.658	2.996	-	6.852	3.539	2.633	-	4.644	
200/ 30										200/ 30	5.489	1.107	-	15.407	4.128	3.065	-	5.419	
200/ 35										200/ 35	6.394	2.513	-	12.838	4.658	3.471	-	6.091	
200/ 40										200/ 40	7.102	3.547	-	12.309	5.201	3.873	-	6.800	
200/ 45										200/ 45	7.822	4.237	-	12.821	5.649	4.337	-	7.195	
210/ 8										210/ 8	2.732	1.908	-	3.787	1.947	1.400	-	2.638	
210/ 10										210/ 10	0.962	0.343	-	2.239	2.447	1.849	-	3.177	
210/ 15										210/ 15	3.574	2.463	-	4.995	3.596	2.700	-	4.681	
210/ 20										210/ 20	4.244	3.027	-	5.759	3.528	2.722	-	4.489	
210/ 25										210/ 25	5.249	2.037	-	10.745	4.128	3.147	-	5.301	
210/ 30										210/ 30	6.229	1.430	-	16.294	4.892	3.759	-	6.234	
210/ 35										210/ 35	7.266	2.551	-	15.353	5.600	4.331	-	7.090	
210/ 40										210/ 40	8.071	3.876	-	14.244	6.223	4.818	-	7.866	
210/ 45										210/ 45	8.853	4.596	-	14.833	6.754	5.253	-	8.499	
220/ 7										220/ 7	2.635	1.815	-	3.696	1.854	1.319	-	2.539	
220/ 10										220/ 10	1.030	0.384	-	2.317	2.612	1.971	-	3.394	
220/ 15										220/ 15	3.431	2.299	-	4.908	2.859	2.130	-	3.751	
220/ 20										220/ 20	4.666	0.071	-	27.358	3.963	3.042	-	5.062	
220/ 25										220/ 25	5.878	3.980	-	8.282	4.817	3.752	-	6.067	
220/ 30										220/ 30	7.010	2.284	-	15.425	5.762	4.549	-	7.168	
220/ 35										220/ 35	7.326	3.529	-	12.966	5.202	3.882	-	6.789	
220/ 40										220/ 40	8.306	4.060	-	14.482	5.900	4.510	-	7.541	
230/ 7										230/ 7	2.817	1.962	-	3.911	2.007	1.441	-	2.722	
230/ 10										230/ 10	1.094	0.000	-	43.229	2.784	2.097	-	3.621	
230/ 15										230/ 15	3.659	2.582	-	5.017	2.938	2.225	-	3.800	
230/ 20										230/ 20	4.552	1.746	-	9.458	3.247	2.430	-	4.242	
230/ 25										230/ 25	5.766	1.658	-	13.729	4.243	3.243	-	5.436	
230/ 30										230/ 30	7.099	1.366	-	19.598	5.208	4.033	-	6.589	
230/ 35										230/ 35	8.237	4.044	-	14.330	6.132	4.753	-	7.743	

Air VVal18M

USN-SURDO2								VVal-18M SURDO2											
Depth (fsw)								Depth (fsw)											
/BT(min)		P(DCS)			P(DCS)			/BT(min)		P(DCS)			P(DCS)						
		BVM(3)			NMRI98					BVM(3)			NMRI98						
		(%)	low	-	high	(%)	low	-	high			(%)	low	-	high	(%)	low	-	high
230/ 40										230/ 40		8.425	4.753	-	13.412	5.708	4.463	-	7.160
240/ 6										240/ 6		2.676	1.835	-	3.766	1.874	1.331	-	2.567
240/ 10										240/ 10		1.164	0.473	-	2.462	2.966	2.227	-	3.866
240/ 15										240/ 15		3.814	0.050	-	24.528	3.092	2.323	-	4.025
240/ 20										240/ 20		5.048	3.516	-	6.970	3.761	2.872	-	4.826
240/ 25										240/ 25		6.454	1.968	-	14.779	4.930	3.820	-	6.237
240/ 30										240/ 30		7.113	3.304	-	12.888	4.743	3.477	-	6.287
240/ 35										240/ 35		8.404	4.260	-	14.321	5.746	4.387	-	7.352
250/ 6										250/ 6		2.848	1.976	-	3.966	2.021	1.448	-	2.749
250/ 10										250/ 10		1.245	0.140	-	5.346	3.158	2.363	-	4.127
250/ 15										250/ 15		4.059	0.268	-	17.659	3.333	2.550	-	4.271
250/ 20										250/ 20		5.585	3.876	-	7.724	4.318	3.361	-	5.446
250/ 25										250/ 25		7.145	2.239	-	15.998	5.736	4.620	-	7.015
250/ 30										250/ 30		7.944	3.761	-	14.149	5.591	4.314	-	7.093
250/ 35										250/ 35		9.321	4.757	-	15.743	6.695	5.221	-	8.406
260/ 5										260/ 5		2.648	1.793	-	3.766	1.848	1.308	-	2.541
260/ 10										260/ 10		1.319	0.585	-	2.615	3.357	2.501	-	4.401
260/ 15										260/ 15		4.392	0.594	-	14.872	3.590	2.754	-	4.590
260/ 20										260/ 20		5.402	1.303	-	14.052	3.750	2.841	-	4.843
260/ 25										260/ 25		7.184	2.631	-	14.866	5.102	3.984	-	6.411
260/ 30										260/ 30		8.053	3.948	-	14.035	5.155	3.979	-	6.541
270/ 5										270/ 5		2.799	1.928	-	3.921	1.984	1.417	-	2.705
270/ 10										270/ 10		3.553	2.474	-	4.925	3.311	2.442	-	4.377
270/ 15										270/ 15		4.783	0.929	-	13.870	3.997	3.122	-	5.027
270/ 20										270/ 20		5.966	1.493	-	15.106	4.310	3.370	-	5.416
270/ 25										270/ 25		7.946	3.040	-	15.945	5.871	4.681	-	7.241
270/ 30										270/ 30		8.900	4.425	-	15.304	5.997	4.638	-	7.590
280/ 5										280/ 5		2.955	2.062	-	4.095	2.131	1.533	-	2.887
280/ 10										280/ 10		3.345	2.268	-	4.740	2.636	1.974	-	3.447
280/ 15										280/ 15		4.622	2.128	-	8.588	3.201	2.453	-	4.099
280/ 20										280/ 20		6.572	1.842	-	15.639	4.962	3.942	-	6.145

Air VVal18M

USN-SURDO2										VVal-18M SURDO2									
Depth (fsw)										Depth (fsw)									
/BT(min)		P(DCS) BVM(3)			P(DCS) NMRI98					/BT(min)		P(DCS) BVM(3)			P(DCS) NMRI98				
		(%)	low	-	high	(%)	low	-	high			(%)	low	-	high	(%)	low	-	high
280/	25									280/	25	7.867	3.587	-	14.336	5.315	4.093	-	6.755
280/	30									280/	30	8.872	4.783	-	14.515	5.684	4.426	-	7.154
290/	4									290/	4	2.695	1.840	-	3.806	1.903	1.351	-	2.607
290/	5									290/	5	0.950	0.306	-	2.360	2.284	1.700	-	3.004
290/	10									290/	10	3.513	2.441	-	4.879	2.766	2.055	-	3.640
290/	15									290/	15	5.057	1.107	-	13.838	3.632	2.810	-	4.609
290/	20									290/	20	7.187	2.134	-	16.501	5.671	4.597	-	6.896
290/	25									290/	25	8.646	4.062	-	15.399	6.136	4.827	-	7.653
300/	4									300/	4	2.840	1.961	-	3.972	2.035	1.457	-	2.768
300/	5									300/	5	0.991	0.333	-	2.392	2.401	1.789	-	3.154
300/	10									300/	10	3.661	0.008	-	31.287	2.914	2.164	-	3.834
300/	15									300/	15	5.500	3.797	-	7.640	4.116	3.224	-	5.164
300/	20									300/	20	7.156	2.613	-	14.834	4.954	3.881	-	6.210
300/	25									300/	25	8.659	4.206	-	15.122	5.606	4.333	-	7.101

Air VVal18M

Appendix K. Total Stop Times and Estimated DCS Risks for VVal-18M Air Decompression Schedules with 10 fsw Last Allowed In-Water Stop

Depth (fsw) /BT (min)	VVal-18M AIR; 10 fsw Last Allowed In-Water Stop				
	TOTAL				
	STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98	
	(min)	(%)	low-high	(%)	low - high
30/ 373	0	4.184	3.572-4.863	5.075	4.314 - 5.920
30/ 420	9	4.735	4.024-5.526	5.716	4.875 - 6.646
30/ 480	17	5.435	4.598-6.366	6.621	5.663 - 7.675
30/ 540	27	5.880	4.901-6.976	7.367	6.302 - 8.537
30/ 600	36	6.452	5.360-7.675	8.070	6.881 - 9.374
30/ 660	43	6.979	5.782-8.319	8.738	7.447 - 10.151
30/ 720	53	7.412	6.129-8.849	9.262	7.885 - 10.769
35/ 233	0	2.991	2.558-3.474	3.709	3.019 - 4.503
35/ 240	2	3.071	2.625-3.569	3.779	3.085 - 4.576
35/ 270	12	3.643	3.128-4.214	4.419	3.677 - 5.256
35/ 300	23	4.156	3.565-4.810	5.035	4.244 - 5.919
35/ 330	32	4.640	3.968-5.384	5.636	4.789 - 6.575
35/ 360	39	5.102	4.348-5.937	6.225	5.318 - 7.227
35/ 420	55	6.042	5.123-7.062	7.235	6.203 - 8.367
35/ 480	70	6.898	5.808-8.108	8.220	7.015 - 9.541
35/ 540	85	7.645	6.398-9.030	9.124	7.782 - 10.592
35/ 600	103	8.112	6.715-9.671	9.848	8.385 - 11.447
35/ 660	121	8.676	7.162-10.363	10.465	8.893 - 12.180
35/ 720	135	9.191	7.568-11.000	11.066	9.388 - 12.896
40/ 164	0	2.361	1.974-2.800	3.027	2.357 - 3.823
40/ 170	3	2.421	2.032-2.863	3.071	2.396 - 3.872
40/ 180	7	2.664	2.254-3.125	3.339	2.635 - 4.167
40/ 190	11	2.905	2.477-3.383	3.621	2.890 - 4.472
40/ 200	15	3.150	2.701-3.649	3.902	3.145 - 4.775
40/ 210	18	3.391	2.920-3.912	4.192	3.410 - 5.088
40/ 220	23	3.612	3.118-4.157	4.454	3.651 - 5.368
40/ 230	28	3.826	3.301-4.405	4.709	3.887 - 5.641
40/ 240	33	4.033	3.480-4.643	4.958	4.117 - 5.907
40/ 270	47	4.618	3.974-5.329	5.674	4.778 - 6.674
40/ 300	58	5.172	4.430-5.992	6.372	5.416 - 7.429
40/ 330	68	5.804	4.963-6.733	7.025	6.008 - 8.142
40/ 360	81	6.400	5.447-7.452	7.581	6.483 - 8.786
40/ 420	103	7.514	6.337-8.817	8.832	7.548 - 10.236
40/ 480	125	8.485	7.097-10.022	9.956	8.510 - 11.531
40/ 540	151	9.129	7.556-10.879	10.847	9.254 - 12.579
40/ 600	174	9.886	8.150-11.815	11.665	9.930 - 13.550
40/ 660	193	10.566	8.680-12.659	12.447	10.577 - 14.476
40/ 720	210	11.054	9.037-13.294	13.054	11.061 - 15.214
45/ 127	0	2.138	1.728-2.616	2.771	2.131 - 3.541
45/ 130	1	2.200	1.783-2.685	2.813	2.165 - 3.590
45/ 140	8	2.404	1.988-2.879	3.047	2.361 - 3.864

Air VVal18M

Depth (fsw) /BT (min)	VVal-18M AIR; 10 fsw Last Allowed In-Water Stop				
	TOTAL				
	STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98	
	(min)	(%)	low-high	(%)	low - high
45/ 150	14	2.677	2.251-3.158	3.373	2.645 - 4.233
45/ 160	19	2.963	2.521-3.458	3.712	2.942 - 4.612
45/ 170	25	3.232	2.778-3.736	4.038	3.232 - 4.974
45/ 180	29	3.517	3.033-4.053	4.384	3.539 - 5.355
45/ 190	34	3.782	3.278-4.338	4.711	3.834 - 5.714
45/ 200	40	4.031	3.492-4.625	5.017	4.111 - 6.047
45/ 210	47	4.263	3.694-4.889	5.299	4.369 - 6.351
45/ 220	53	4.493	3.890-5.157	5.584	4.629 - 6.659
45/ 230	59	4.714	4.082-5.409	5.858	4.880 - 6.954
45/ 240	65	4.924	4.247-5.670	6.120	5.121 - 7.236
45/ 270	80	5.593	4.816-6.449	6.894	5.832 - 8.068
45/ 300	94	6.388	5.478-7.388	7.608	6.473 - 8.856
45/ 330	110	7.112	6.059-8.270	8.329	7.095 - 9.683
45/ 360	126	7.761	6.567-9.078	9.008	7.685 - 10.456
50/ 93	0	1.754	1.332-2.269	2.258	1.723 - 2.906
50/ 95	1	1.785	1.349-2.320	2.261	1.725 - 2.912
50/ 100	4	1.851	1.425-2.365	2.352	1.792 - 3.031
50/ 110	7	2.177	1.739-2.692	2.735	2.106 - 3.490
50/ 120	11	2.510	2.069-3.015	3.144	2.449 - 3.969
50/ 130	20	2.818	2.368-3.326	3.517	2.768 - 4.398
50/ 140	27	3.135	2.674-3.650	3.910	3.106 - 4.849
50/ 150	34	3.448	2.957-3.995	4.299	3.443 - 5.291
50/ 160	40	3.762	3.252-4.325	4.693	3.786 - 5.736
50/ 170	46	4.060	3.529-4.643	5.076	4.123 - 6.166
50/ 180	53	4.340	3.771-4.964	5.434	4.440 - 6.565
50/ 190	61	4.600	3.997-5.261	5.762	4.732 - 6.927
50/ 200	69	4.855	4.209-5.564	6.074	5.012 - 7.270
50/ 210	77	5.088	4.412-5.830	6.369	5.279 - 7.592
50/ 220	84	5.319	4.604-6.104	6.664	5.546 - 7.914
50/ 230	90	5.552	4.792-6.386	6.920	5.777 - 8.194
50/ 240	97	5.849	0.989-17.450	7.159	5.998 - 8.449
50/ 270	117	6.789	5.829-7.843	7.969	6.725 - 9.343
50/ 300	138	7.619	6.486-8.865	8.822	7.478 - 10.298
50/ 330	158	8.376	7.070-9.817	9.669	8.242 - 11.228
50/ 360	181	9.008	7.556-10.611	10.352	8.843 - 11.996
55/ 75	0	1.696	1.242-2.266	2.115	1.623 - 2.711
55/ 80	4	1.731	1.280-2.291	2.131	1.629 - 2.739
55/ 85	7	1.894	1.439-2.449	2.314	1.777 - 2.962
55/ 90	10	2.075	1.612-2.631	2.520	1.946 - 3.208
55/ 95	12	2.259	1.789-2.813	2.748	2.134 - 3.480
55/ 100	15	2.445	1.975-2.991	2.977	2.325 - 3.750
55/ 110	20	2.824	2.332-3.387	3.465	2.734 - 4.325
55/ 120	30	3.187	1.135-7.052	3.912	3.112 - 4.844
55/ 130	38	3.538	3.038-4.095	4.375	3.506 - 5.382
55/ 140	47	3.877	3.349-4.461	4.816	3.882 - 5.891

Air VVal18M

Depth (fsw) /BT (min)	VVal-18M AIR; 10 fsw Last Allowed In-Water Stop				
	TOTAL				
	STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98	
	(min)	(%)	low-high	(%)	low - high
55/ 150	54	4.219	3.664-4.830	5.268	4.269 - 6.410
55/ 160	61	4.551	3.956-5.205	5.703	4.644 - 6.908
55/ 170	70	4.845	4.222-5.526	6.090	4.980 - 7.347
55/ 180	81	5.065	4.402-5.792	6.351	5.205 - 7.647
55/ 190	91	5.348	4.640-6.124	6.678	5.500 - 8.003
55/ 200	100	5.648	4.893-6.475	7.016	5.807 - 8.371
55/ 210	108	5.987	5.184-6.866	7.348	6.108 - 8.732
55/ 220	116	6.341	5.478-7.286	7.657	6.388 - 9.068
55/ 230	123	6.721	5.792-7.738	7.983	6.679 - 9.430
55/ 240	133	7.038	6.060-8.108	8.260	6.924 - 9.739
55/ 270	159	7.957	6.785-9.244	9.208	7.776 - 10.782
55/ 300	184	8.779	7.422-10.271	10.111	8.602 - 11.759
55/ 330	212	9.455	7.927-11.140	10.827	9.244 - 12.549
55/ 360	240	10.038	8.362-11.889	11.444	9.784 - 13.244
60/ 63	0	1.723	1.250-2.318	2.069	1.590 - 2.648
60/ 65	2	1.726	1.248-2.330	2.013	1.541 - 2.585
60/ 70	6	1.822	1.346-2.414	2.150	1.653 - 2.749
60/ 75	10	2.020	1.532-2.614	2.358	1.825 - 2.997
60/ 80	14	2.222	1.719-2.825	2.591	2.019 - 3.272
60/ 85	18	2.434	1.922-3.037	2.841	2.228 - 3.567
60/ 90	21	2.647	2.136-3.240	3.112	2.454 - 3.887
60/ 95	24	2.856	2.345-3.444	3.392	2.689 - 4.216
60/ 100	26	3.084	0.032-22.157	3.689	2.937 - 4.565
60/ 110	37	3.483	2.956-4.073	4.215	3.381 - 5.180
60/ 120	48	3.867	3.321-4.473	4.731	3.816 - 5.784
60/ 130	57	4.203	3.623-4.843	5.167	4.178 - 6.300
60/ 140	66	4.581	3.981-5.240	5.669	4.605 - 6.883
60/ 150	76	4.936	4.292-5.643	6.137	5.003 - 7.424
60/ 160	88	5.261	4.584-6.002	6.548	5.357 - 7.895
60/ 170	100	5.576	4.852-6.367	6.937	5.698 - 8.332
60/ 180	110	5.917	5.151-6.752	7.332	6.047 - 8.773
60/ 190	120	6.291	5.468-7.188	7.696	6.370 - 9.179
60/ 200	129	6.702	5.813-7.673	8.054	6.688 - 9.576
60/ 210	139	7.089	6.138-8.128	8.389	6.981 - 9.954
60/ 220	150	7.442	4.788-10.851	8.718	7.272 - 10.322
60/ 230	160	7.800	6.695-9.009	9.076	7.592 - 10.716
60/ 240	170	8.131	6.970-9.401	9.430	7.913 - 11.103
60/ 270	200	9.041	7.657-10.561	10.418	8.828 - 12.157
60/ 300	233	9.775	8.212-11.496	11.184	9.531 - 12.982
60/ 330	267	10.395	8.665-12.302	11.780	10.062 - 13.642
60/ 360	297	11.017	9.133-13.096	12.423	10.652 - 14.336
70/ 48	0	1.864	1.341-2.527	2.055	1.589 - 2.615
70/ 50	2	1.889	1.369-2.544	2.017	1.549 - 2.582
70/ 55	9	1.999	1.468-2.660	2.156	1.660 - 2.754
70/ 60	15	2.249	1.701-2.917	2.401	1.869 - 3.037

Air VVal18M

Depth (fsw) /BT (min)	VVal-18M AIR; 10 fsw Last Allowed In-Water Stop				
	TOTAL				
	STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98	
	(min)	(%)	low-high	(%)	low - high
70/ 65	20	2.515	1.957-3.181	2.697	2.120 - 3.379
70/ 70	26	2.785	2.208-3.464	3.013	2.390 - 3.744
70/ 75	30	3.052	2.472-3.725	3.367	2.691 - 4.155
70/ 80	35	3.324	2.732-4.000	3.726	2.996 - 4.570
70/ 85	38	3.537	0.784-9.991	4.010	3.232 - 4.909
70/ 90	44	3.799	0.699-11.594	4.365	3.540 - 5.312
70/ 95	51	4.077	0.833-11.786	4.715	3.841 - 5.712
70/ 100	58	4.327	2.577-6.751	5.059	4.134 - 6.111
70/ 110	71	4.827	3.043-7.205	5.741	4.712 - 6.906
70/ 120	82	5.305	3.490-7.653	6.412	5.273 - 7.696
70/ 130	98	5.705	3.863-8.040	6.959	5.724 - 8.348
70/ 140	113	6.097	4.226-8.430	7.474	6.150 - 8.960
70/ 150	126	6.505	4.605-8.839	7.982	6.577 - 9.556
70/ 160	139	6.958	6.086-7.904	8.407	6.929 - 10.059
70/ 170	152	7.436	6.485-8.469	8.815	7.271 - 10.537
70/ 180	168	7.867	6.819-9.007	9.193	7.595 - 10.970
70/ 190	181	8.299	7.170-9.528	9.636	7.980 - 11.474
70/ 200	195	8.718	7.502-10.045	10.073	8.373 - 11.952
70/ 210	208	9.131	7.829-10.552	10.514	8.781 - 12.422
70/ 220	225	9.482	8.093-10.999	10.842	9.090 - 12.765
80/ 39	0	2.046	1.489-2.744	2.060	1.588 - 2.629
80/ 40	1	2.067	1.509-2.765	2.044	1.573 - 2.612
80/ 45	10	2.168	1.607-2.860	2.178	1.668 - 2.794
80/ 50	18	2.491	1.900-3.206	2.457	1.908 - 3.114
80/ 55	26	2.822	2.208-3.549	2.805	2.208 - 3.510
80/ 60	33	3.157	0.940-7.742	3.206	2.555 - 3.966
80/ 65	39	3.409	2.753-4.169	3.526	2.829 - 4.336
80/ 70	44	3.771	3.107-4.529	3.990	3.238 - 4.854
80/ 75	49	4.133	3.452-4.901	4.472	3.663 - 5.395
80/ 80	56	4.485	3.793-5.257	4.938	4.072 - 5.921
80/ 85	65	4.813	4.102-5.603	5.376	4.452 - 6.417
80/ 90	73	5.132	4.410-5.928	5.817	4.832 - 6.924
80/ 95	80	5.434	4.696-6.245	6.258	5.206 - 7.438
80/ 100	88	5.711	4.949-6.545	6.631	5.512 - 7.884
70/ 110	109	6.178	5.376-7.052	7.297	6.060 - 8.679
80/ 120	128	6.664	0.917-20.942	7.952	6.594 - 9.467
80/ 130	146	7.192	6.288-8.173	8.558	7.090 - 10.192
80/ 140	161	7.819	6.840-8.877	9.148	7.570 - 10.903
80/ 150	180	8.340	7.291-9.475	9.640	7.963 - 11.502
80/ 160	198	8.840	7.699-10.075	10.161	8.397 - 12.116
80/ 170	215	9.354	2.505-21.813	10.709	8.874 - 12.737
80/ 180	233	9.815	8.456-11.291	11.193	9.306 - 13.271
80/ 190	254	10.217	8.755-11.806	11.570	9.648 - 13.679
90/ 33	0	2.238	1.638-2.986	2.080	1.594 - 2.669
90/ 35	3	2.264	1.300-3.674	2.055	1.567 - 2.648

Air VVal18M

Depth (fsw) /BT (min)	VVal-18M AIR; 10 fsw Last Allowed In-Water Stop				
	TOTAL				
	STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98	
	(min)	(%)	low-high	(%)	low - high
90/ 40	14	2.479	1.865-3.230	2.323	1.777 - 2.985
90/ 45	25	2.881	0.053-18.850	2.676	2.081 - 3.386
90/ 50	34	3.310	2.619-4.121	3.129	2.474 - 3.900
90/ 55	42	3.622	2.901-4.459	3.508	2.806 - 4.325
90/ 60	49	4.081	1.567-8.526	4.060	3.302 - 4.930
90/ 65	55	4.532	3.754-5.411	4.650	3.829 - 5.582
90/ 70	62	4.964	4.162-5.862	5.240	4.355 - 6.237
90/ 75	72	5.372	4.547-6.290	5.790	4.840 - 6.852
90/ 80	83	5.701	2.900-9.849	6.240	5.233 - 7.364
90/ 85	93	6.077	5.204-7.040	6.763	5.688 - 7.959
90/ 90	107	6.398	5.509-7.373	7.199	6.060 - 8.463
90/ 95	119	6.704	5.793-7.700	7.634	6.420 - 8.979
90/ 100	130	7.004	6.064-8.029	8.058	6.766 - 9.489
90/ 110	152	7.612	6.633-8.674	8.836	7.397 - 10.429
90/ 120	171	8.317	7.276-9.443	9.532	7.941 - 11.292
90/ 130	196	8.951	7.822-10.169	10.113	8.398 - 12.009
90/ 140	217	9.559	8.334-10.881	10.786	8.947 - 12.817
90/ 150	240	10.138	8.798-11.587	11.395	9.466 - 13.519
90/ 160	265	10.644	9.194-12.212	11.885	9.887 - 14.079
100/ 29	0	2.435	1.796-3.226	2.137	1.628 - 2.755
100/ 30	3	2.413	1.774-3.205	2.048	1.549 - 2.656
100/ 35	16	2.678	2.028-3.466	2.372	1.803 - 3.062
100/ 40	28	3.174	2.464-4.017	2.795	2.164 - 3.549
100/ 45	39	3.593	2.828-4.493	3.203	2.513 - 4.017
100/ 50	48	4.091	3.282-5.027	3.809	3.059 - 4.678
100/ 55	57	4.638	3.783-5.615	4.472	3.661 - 5.397
100/ 60	65	5.181	4.276-6.205	5.174	4.293 - 6.167
100/ 65	75	5.619	4.672-6.684	5.780	4.838 - 6.833
100/ 70	88	6.106	5.124-7.201	6.418	5.418 - 7.529
100/ 75	101	6.564	5.544-7.697	7.030	5.961 - 8.212
100/ 80	116	6.955	5.913-8.106	7.578	6.437 - 8.835
100/ 85	131	7.324	6.254-8.500	8.087	6.869 - 9.427
100/ 90	144	7.642	6.544-8.847	8.541	7.237 - 9.977
100/ 95	158	7.992	6.873-9.214	8.995	7.609 - 10.520
100/ 100	171	8.433	7.289-9.677	9.437	7.968 - 11.051
100/ 110	198	9.273	8.057-10.589	10.231	8.592 - 12.031
100/ 120	225	9.996	8.698-11.398	11.020	9.219 - 12.999
100/ 130	250	10.678	9.271-12.195	11.801	9.856 - 13.934
100/ 140	280	11.238	9.726-12.870	12.345	10.294 - 14.591
110/ 25	0	2.545	1.885-3.359	2.140	1.626 - 2.764
110/ 30	14	2.736	2.063-3.555	2.378	1.820 - 3.052
110/ 35	29	3.312	2.567-4.198	2.838	2.214 - 3.581
110/ 40	42	3.774	2.952-4.744	3.310	2.631 - 4.104
110/ 45	53	4.414	3.523-5.446	4.017	3.285 - 4.855
110/ 50	63	5.067	4.097-6.179	4.805	4.021 - 5.685

Air VVal18M

Depth (fsw) /BT (min)	VVal-18M AIR; 10 fsw Last Allowed In-Water Stop				
	TOTAL				
	STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98	
	(min)	(%)	low-high	(%)	low - high
110/ 55	71	5.626	4.583-6.813	5.566	4.731 - 6.492
110/ 60	86	6.247	5.137-7.500	6.331	5.464 - 7.282
110/ 65	100	6.815	5.649-8.123	7.089	6.177 - 8.080
110/ 70	118	7.306	6.093-8.659	7.743	6.783 - 8.781
110/ 75	136	7.697	6.455-9.076	8.298	7.280 - 9.396
110/ 80	152	8.129	6.851-9.541	8.893	7.803 - 10.067
110/ 85	168	8.586	7.279-10.023	9.438	8.268 - 10.699
110/ 90	182	9.106	7.777-10.559	9.978	8.715 - 11.338
110/ 95	199	9.599	8.237-11.081	10.428	9.069 - 11.894
110/ 100	216	10.049	8.649-11.569	10.886	9.426 - 12.463
110/ 110	246	10.855	9.372-12.459	11.818	10.155 - 13.616
110/ 120	281	11.592	10.019-13.288	12.575	10.747 - 14.552
110/ 130	318	12.207	10.533-14.011	13.143	11.174 - 15.273
110/ 140	353	12.723	10.955-14.628	13.632	11.541 - 15.896
120/ 22	0	2.647	1.956-3.500	2.184	1.652 - 2.834
120/ 25	8	2.705	1.979-3.607	2.310	1.748 - 2.993
120/ 30	25	3.298	2.535-4.209	2.812	2.154 - 3.603
120/ 35	41	3.858	2.991-4.885	3.324	2.591 - 4.193
120/ 40	54	4.595	3.633-5.715	4.120	3.312 - 5.054
120/ 45	66	5.355	4.286-6.586	5.023	4.145 - 6.017
120/ 50	76	6.012	4.840-7.352	5.907	4.968 - 6.954
120/ 55	92	6.741	5.466-8.189	6.811	5.830 - 7.891
120/ 60	111	7.376	6.022-8.904	7.637	6.612 - 8.754
120/ 65	132	7.880	6.462-9.471	8.322	7.251 - 9.483
120/ 70	151	8.406	7.105-10.432	9.035	7.902 - 10.258
120/ 75	170	8.913	7.410-10.580	9.686	8.481 - 10.984
120/ 80	187	9.533	7.990-11.235	10.317	9.026 - 11.706
120/ 85	206	10.088	8.507-11.822	10.833	9.442 - 12.329
120/ 90	226	10.612	9.000-12.374	11.373	9.877 - 12.983
120/ 95	245	11.108	9.461-12.900	11.927	10.322 - 13.655
120/ 100	263	11.570	9.890-13.393	12.463	10.756 - 14.300
120/ 110	304	12.386	10.634-14.278	13.285	11.392 - 15.325
120/ 120	347	13.026	11.193-15.000	13.858	11.801 - 16.079
130/ 20	0	2.788	2.063-3.679	2.280	1.717 - 2.969
130/ 25	18	3.116	2.369-4.017	2.668	2.014 - 3.463
130/ 30	37	3.828	2.968-4.847	3.195	2.434 - 4.111
130/ 35	52	4.577	3.574-5.756	4.037	3.174 - 5.049
130/ 40	66	5.401	4.261-6.726	4.950	3.993 - 6.050
130/ 45	78	6.234	4.943-7.723	6.045	5.007 - 7.214
130/ 50	95	7.072	5.651-8.695	7.096	5.993 - 8.316
130/ 55	118	7.743	6.180-10.156	7.960	6.811 - 9.218
130/ 60	142	8.399	6.775-10.235	8.799	7.605 - 10.097
130/ 65	163	8.982	7.287-10.887	9.611	8.349 - 10.976
130/ 70	183	9.636	8.517-13.473	10.335	8.995 - 11.781
130/ 75	205	10.337	9.815-13.259	10.983	9.560 - 12.515

Air VVal18M

Depth (fsw) /BT (min)	VVal-18M AIR; 10 fsw Last Allowed In-Water Stop				
	TOTAL				
	STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98	
	(min)	(%)	low-high	(%)	low - high
130/ 80	228	10.961	8.403-13.894	11.614	10.089 - 13.254
130/ 85	250	11.545	8.970-14.472	12.258	10.623 - 14.016
130/ 90	270	12.098	4.682-23.290	12.898	11.154 - 14.771
130/ 95	295	12.545	10.615-14.643	13.333	11.491 - 15.313
130/ 100	319	13.000	11.045-15.118	13.768	11.827 - 15.854
130/ 110	368	13.734	11.723-15.903	14.445	12.318 - 16.736
140/ 17	0	2.723	1.998-3.623	2.161	1.613 - 2.837
140/ 20	6	2.959	2.200-3.889	2.407	1.800 - 3.152
140/ 25	28	3.574	2.748-4.558	2.944	2.193 - 3.863
140/ 30	47	4.353	3.376-5.506	3.768	2.888 - 4.819
140/ 35	63	5.278	0.344-21.754	4.746	3.741 - 5.919
140/ 40	77	6.249	1.301-17.026	5.960	4.838 - 7.236
140/ 45	95	7.172	5.639-8.941	7.097	5.889 - 8.449
140/ 50	120	8.010	6.323-9.945	8.164	6.894 - 9.565
140/ 55	147	8.771	6.958-10.837	9.118	7.796 - 10.562
140/ 60	171	9.432	7.530-11.586	9.985	8.591 - 11.499
140/ 65	194	10.225	8.243-12.450	10.826	9.357 - 12.414
140/ 70	220	11.032	8.995-13.297	11.553	9.998 - 13.228
140/ 75	245	11.720	9.636-14.022	12.301	10.638 - 14.090
140/ 80	270	12.348	10.213-14.696	12.986	11.218 - 14.886
140/ 85	296	12.930	10.776-15.286	13.597	11.727 - 15.606
140/ 90	324	13.456	11.283-15.821	14.090	12.121 - 16.205
140/ 95	353	13.887	11.697-16.262	14.482	12.410 - 16.708
140/ 100	379	14.291	12.068-16.695	14.875	12.698 - 17.216
150/ 15	0	2.729	1.991-3.647	2.123	1.574 - 2.802
150/ 20	15	3.192	2.416-4.131	2.707	2.018 - 3.551
150/ 25	38	4.014	2.910-5.377	3.357	2.508 - 4.390
150/ 30	57	4.987	3.839-6.345	4.339	3.329 - 5.540
150/ 35	73	6.057	4.682-7.668	5.638	4.476 - 6.980
150/ 40	91	7.126	5.507-9.011	6.936	5.649 - 8.392
150/ 45	117	8.131	6.320-10.222	8.175	6.802 - 9.702
150/ 50	148	8.966	6.988-11.238	9.197	7.760 - 10.779
150/ 55	175	9.751	7.645-12.154	10.227	8.710 - 11.882
150/ 60	200	10.692	8.469-13.206	11.188	9.589 - 12.921
150/ 65	230	11.544	9.241-14.124	11.962	10.272 - 13.788
150/ 70	258	12.317	9.944-14.956	12.811	11.013 - 14.748
150/ 75	285	13.044	10.636-15.703	13.616	11.717 - 15.657
150/ 80	318	13.666	11.236-16.333	14.186	12.194 - 16.324
150/ 85	349	14.207	11.759-16.881	14.702	12.604 - 16.955
150/ 90	381	14.686	12.220-17.368	15.100	12.897 - 17.465
160/ 14	0	2.854	2.083-3.812	2.210	1.636 - 2.919
160/ 15	3	2.938	2.171-3.883	2.214	1.624 - 2.948
160/ 20	23	3.501	2.668-4.502	2.876	2.109 - 3.827
160/ 25	47	4.461	1.032-12.067	3.762	2.802 - 4.929
160/ 30	66	5.621	4.311-7.166	5.036	3.882 - 6.397

Air VVal18M

Depth (fsw) /BT (min)	VVal-18M AIR; 10 fsw Last Allowed In-Water Stop				
	TOTAL				
	STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98	
	(min)	(%)	low-high	(%)	low - high
160/ 35	84	6.846	5.237-8.735	6.516	5.190 - 8.039
160/ 40	109	8.035	6.149-10.233	7.962	6.513 - 9.591
160/ 45	143	8.998	6.844-11.505	9.138	7.599 - 10.846
160/ 50	174	9.923	7.583-12.626	10.292	8.665 - 12.077
160/ 55	202	10.943	8.517-13.705	11.337	9.620 - 13.207
160/ 60	236	11.929	9.388-14.794	12.237	10.433 - 14.192
160/ 65	267	12.812	10.204-15.725	13.195	11.283 - 15.257
160/ 70	298	13.612	10.922-16.597	14.051	12.035 - 16.219
160/ 75	333	14.295	11.590-17.273	14.676	12.563 - 16.945
160/ 80	370	14.875	12.154-17.856	15.172	12.958 - 17.549
170/ 12	0	2.753	1.981-3.720	2.066	1.514 - 2.755
170/ 15	7	3.115	2.309-4.104	2.450	1.810 - 3.242
170/ 20	31	3.829	2.895-4.952	3.147	2.288 - 4.213
170/ 25	56	4.958	2.355-9.004	4.277	3.192 - 5.591
170/ 30	75	6.313	4.782-8.124	5.820	4.520 - 7.341
170/ 35	100	7.654	5.799-9.833	7.386	5.909 - 9.070
170/ 40	133	8.856	6.690-11.387	8.850	7.246 - 10.645
170/ 45	168	9.916	7.504-12.718	10.151	8.438 - 12.044
170/ 50	200	11.012	8.422-13.986	11.323	9.512 - 13.307
170/ 55	235	12.156	9.399-15.288	12.377	10.463 - 14.459
170/ 60	271	13.139	10.126-16.551	13.384	11.366 - 15.566
170/ 65	306	14.028	10.934-17.499	14.316	12.197 - 16.598
170/ 70	345	14.797	11.671-18.275	15.018	12.801 - 17.402
170/ 75	386	15.444	12.294-18.925	15.553	13.235 - 18.043
180/ 11	0	2.791	1.997-3.791	2.080	1.521 - 2.778
180/ 15	11	3.233	2.396-4.259	2.603	1.888 - 3.497
180/ 20	39	4.193	0.453-15.504	3.484	2.536 - 4.657
180/ 25	64	5.541	0.714-18.385	4.886	3.678 - 6.335
180/ 30	85	7.059	5.296-9.148	6.619	5.167 - 8.304
180/ 35	117	8.468	6.333-10.982	8.317	6.684 - 10.169
180/ 40	157	9.702	5.093-16.076	9.739	7.977 - 11.705
180/ 45	193	10.888	6.960-15.800	11.105	9.223 - 13.180
180/ 50	230	12.178	9.252-15.529	12.276	10.278 - 14.460
180/ 55	269	13.314	10.229-16.809	13.440	11.329 - 15.733
180/ 60	307	14.323	11.124-17.915	14.498	12.279 - 16.894
180/ 65	351	15.169	2.159-39.560	15.231	12.919 - 17.721
180/ 70	395	15.890	12.494-19.655	15.844	13.428 - 18.442
190/ 10	0	2.806	1.998-3.826	2.065	1.503 - 2.771
190/ 15	17	3.449	2.600-4.477	2.824	2.048 - 3.791
190/ 20	47	4.592	3.062-6.570	3.871	2.815 - 5.174
190/ 25	73	6.157	4.620-7.988	5.508	4.172 - 7.096
190/ 30	100	7.794	5.797-10.162	7.441	5.849 - 9.274
190/ 35	140	9.255	6.850-12.090	9.115	7.342 - 11.114
190/ 40	180	10.537	7.775-13.773	10.669	8.741 - 12.811
190/ 45	219	11.996	8.947-15.521	12.019	9.965 - 14.277

Air VVal18M

Depth (fsw) /BT (min)	VVal-18M AIR; 10 fsw Last Allowed In-Water Stop				
	TOTAL				
	STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98	
	(min)	(%)	low-high	(%)	low - high
190/ 50	262	13.290	10.024-17.021	13.289	11.105 - 15.670
190/ 55	304	14.435	11.023-18.289	14.455	12.162 - 16.939
190/ 60	351	15.421	11.929-19.326	15.341	12.951 - 17.920
190/ 65	398	16.241	12.683-20.191	16.050	13.548 - 18.743
200/ 9	0	2.781	1.959-3.825	2.021	1.463 - 2.725
200/ 10	1	3.010	2.168-4.062	2.184	1.579 - 2.945
200/ 15	25	3.633	0.113-19.806	2.950	2.102 - 4.019
200/ 20	56	5.048	3.806-6.535	4.314	3.157 - 5.731
200/ 25	81	6.804	5.066-8.876	6.245	4.772 - 7.982
200/ 30	117	8.544	4.582-14.046	8.208	6.484 - 10.180
200/ 35	163	10.037	7.354-13.201	9.904	7.992 - 12.051
200/ 40	204	11.525	8.450-15.118	11.521	9.445 - 13.820
200/ 45	249	13.052	9.692-16.922	12.927	10.703 - 15.366
200/ 50	293	14.379	10.784-18.472	14.297	11.938 - 16.862
200/ 55	344	15.523	11.804-19.708	15.319	12.863 - 17.974
200/ 60	397	16.444	12.631-20.699	16.062	13.503 - 18.820
210/ 8	0	2.731	1.908-3.784	1.954	1.403 - 2.652
210/ 10	5	3.104	2.263-4.147	2.263	1.646 - 3.034
210/ 15	32	3.907	2.955-5.052	3.197	2.280 - 4.349
210/ 20	64	5.548	4.154-7.217	4.778	3.512 - 6.317
210/ 25	94	7.485	5.517-9.834	6.910	5.312 - 8.780
210/ 30	138	9.270	5.181-14.795	8.920	7.072 - 11.025
210/ 35	185	10.843	7.001-15.627	10.733	8.680 - 13.028
210/ 40	231	12.561	8.845-16.956	12.306	10.085 - 14.760
210/ 45	279	14.096	10.107-18.732	13.854	11.469 - 16.463
210/ 50	330	15.420	11.238-20.212	15.138	12.630 - 17.859
210/ 55	389	16.512	12.447-21.081	15.982	13.378 - 18.795
220/ 8	0	2.933	2.071-4.028	2.127	1.538 - 2.867
220/ 10	8	3.204	2.332-4.286	2.388	1.721 - 3.227
220/ 15	38	4.215	3.178-5.462	3.461	2.454 - 4.729
220/ 20	72	6.088	0.329-25.399	5.347	3.968 - 7.009
220/ 25	107	8.156	5.960-10.778	7.643	5.914 - 9.651
220/ 30	159	10.004	7.233-13.294	9.660	7.688 - 11.893
220/ 35	207	11.763	8.487-15.614	11.508	9.323 - 13.943
220/ 40	259	13.555	9.514-18.311	13.133	10.760 - 15.746
220/ 45	312	15.129	11.059-19.793	14.687	12.168 - 17.432
220/ 50	371	16.403	12.125-21.249	15.811	13.168 - 18.674
230/ 7	0	2.822	1.968-3.915	2.014	1.448 - 2.730
230/ 10	11	3.310	2.382-4.469	2.549	1.820 - 3.470
230/ 15	46	4.546	3.428-5.888	3.771	2.689 - 5.124
230/ 20	79	6.646	3.487-11.192	5.932	4.456 - 7.692
230/ 25	123	8.825	6.397-11.724	8.320	6.504 - 10.409
230/ 30	179	10.709	3.619-22.228	10.382	8.292 - 12.738
230/ 35	232	12.742	9.164-16.928	12.219	9.907 - 14.786
230/ 40	288	14.556	10.543-19.188	13.987	11.479 - 16.738

Air VVal18M

Depth (fsw) /BT (min)	VVal-18M AIR; 10 fsw Last Allowed In-Water Stop				
	TOTAL				
	STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98	
	(min)	(%)	low-high	(%)	low - high
230/ 45	348	16.104	11.793-21.015	15.396	12.753 - 18.269
230/ 50	412	17.337	12.812-22.439	16.436	13.657 - 19.441
240/ 6	0	2.676	0.000-57.622	1.882	1.336 - 2.581
240/ 10	14	3.333	2.468-4.393	2.648	1.879 - 3.623
240/ 15	53	4.904	0.225-22.503	4.109	2.944 - 5.557
240/ 20	89	7.238	5.297-9.568	6.536	4.958 - 8.400
240/ 25	143	9.500	6.825-12.697	8.934	7.003 - 11.146
240/ 30	200	11.518	8.184-15.471	11.075	8.864 - 13.557
240/ 35	258	13.660	9.781-18.184	12.975	10.529 - 15.683
240/ 40	320	15.509	11.202-20.458	14.713	12.095 - 17.575
240/ 45	388	17.000	12.392-22.232	15.982	13.221 - 18.980
250/ 6	0	2.843	1.973-3.960	2.030	1.454 - 2.760
250/ 10	17	3.498	0.000-40.518	2.826	1.997 - 3.878
250/ 15	60	5.323	3.970-6.949	4.515	3.246 - 6.083
250/ 20	101	7.831	5.698-10.388	7.142	5.442 - 9.139
250/ 25	162	10.147	7.238-13.620	9.614	7.575 - 11.938
250/ 30	221	12.436	8.842-16.673	11.784	9.451 - 14.393
250/ 35	284	14.581	10.389-19.452	13.759	11.172 - 16.614
250/ 40	353	16.422	11.830-21.676	15.392	12.652 - 18.380
260/ 6	0	3.016	0.000-36.684	2.185	1.580 - 2.945
260/ 10	22	3.664	2.750-4.770	3.010	2.124 - 4.134
260/ 15	68	5.761	1.329-15.177	4.913	3.566 - 6.564
260/ 20	114	8.446	5.606-12.006	7.766	5.975 - 9.851
260/ 25	181	10.808	7.530-14.750	10.252	8.099 - 12.693
260/ 30	245	13.307	9.415-17.878	12.430	9.984 - 15.156
260/ 35	314	15.525	11.073-20.665	14.452	11.793 - 17.372
260/ 40	391	17.287	12.413-22.841	15.915	13.102 - 18.976
270/ 5	0	2.798	1.928-3.921	1.995	1.424 - 2.721
270/ 10	29	3.831	2.859-5.011	3.097	2.157 - 4.296
270/ 15	74	6.223	1.883-14.352	5.417	3.985 - 7.152
270/ 20	129	9.043	5.922-12.959	8.350	6.463 - 10.533
270/ 25	199	11.541	8.056-15.707	10.898	8.645 - 13.440
270/ 30	270	14.174	10.008-19.045	13.132	10.565 - 15.983
270/ 35	344	16.366	11.605-21.848	15.100	12.310 - 18.159
270/ 40	427	18.124	12.935-24.020	16.481	13.523 - 19.697
280/ 5	0	2.960	0.001-33.453	2.142	1.541 - 2.900
280/ 10	35	4.063	3.018-5.332	3.313	2.313 - 4.585
280/ 15	82	6.715	3.892-10.573	5.893	4.376 - 7.716
280/ 20	146	9.633	6.628-13.298	8.942	6.948 - 11.237
280/ 25	217	12.355	8.634-16.778	11.548	9.168 - 14.226
280/ 30	295	15.019	10.585-20.181	13.867	11.164 - 16.859
280/ 35	379	17.176	12.159-22.927	15.645	12.756 - 18.804
290/ 4	0	2.698	1.842-3.810	1.913	1.362 - 2.616
290/ 5	1	3.085	2.179-4.232	2.210	1.581 - 3.007
290/ 10	41	4.316	3.238-5.616	3.520	2.460 - 4.866

Air VVal18M

Depth (fsw) /BT (min)	VVal-18M AIR; 10 fsw Last Allowed In-Water Stop				
	TOTAL				
	STOP	P(DCS)		P(DCS)	
	TIME	BVM(3)		NMRI98	
	(min)	(%)	low-high	(%)	low - high
290/ 15	89	7.229	2.592-15.118	6.423	4.808 - 8.347
290/ 20	163	10.211	7.123-13.935	9.544	7.437 - 11.958
290/ 25	240	13.164	9.248-17.783	12.157	9.659 - 14.957
290/ 30	322	15.865	7.391-27.221	14.504	11.725 - 17.566
290/ 35	414	17.972	12.690-24.003	16.153	13.165 - 19.415
300/ 4	0	2.840	1.963-3.968	2.048	1.467 - 2.786
300/ 5	3	3.174	2.270-4.307	2.273	1.624 - 3.096
300/ 10	47	4.596	0.181-22.259	3.794	2.673 - 5.205
300/ 15	101	7.723	5.594-10.283	6.925	5.207 - 8.960
300/ 20	181	10.794	7.595-14.622	10.094	7.892 - 12.605
300/ 25	262	13.930	9.749-18.846	12.782	10.182 - 15.686
300/ 30	351	16.638	11.682-22.357	15.114	12.211 - 18.306