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DCIEM DIVING MANUAL

PART 2

HELIUM-OXYGEN SURFACE-SUPPLIED DECOMPRESSION PROCEDURES and TABLES

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SECTION 1

INTRODUCTION

1. BACKGROUND

The DCIEM Helium/Oxygen 84/16 Decompression Tables were developed by the Experimental Diving Unit of the Defence and Civil Institute of Environmental Medicine (DCIEM) for the Canadian Forces during the period June 1986 through March 1991. The aim of the programme was to develop a Helium/Oxygen (HeO_2) decompression model that would improve the operational efficiency and safety of deep HeO_2 mixed gas diving, and provide tables and procedures for the Canadian Forces and subsequently, for Allied Forces. The development programme was also conducted jointly with the United States Navy and Royal Navy under the ABCA-10 (Navy) Information Exchange Programme.

Over the development process, 21 experimental validation dive series (totalling 1471 manned exposures) were conducted at the DCIEM Diving Research Facility and one procedural technical evaluation was conducted at sea. As in the case of the development of the DCIEM/Canadian Forces Air Tables, the Doppler ultrasonic bubble detector was used to monitor dive subjects, establish an acceptable decompression stress criterion and assess the severity of the decompression stress generated by these tables. Manned validation was conducted at the short moderate, normal and exceptional exposure limits of the model for both In-water and surface decompression with oxygen tables. Ultimately, an abort table and emergency decompression table were also developed. Manned validation of the emergency table, to be used in the case of loss of oxygen, were found to be fully satisfactory. Procedures for the use of all the tables providing simplicity of operations and parallelling and complementing the DCIEM Air Diving Tables and Procedures were developed.

The model, tables and procedures have significantly reduced the probability of in-water central nervous system (CNS) oxygen toxicity and concurrently, have reduced the probability and severity of decompression sickness to 2% within the normal limits and less than 4% in the exceptional exposure limit. Further, the utilization of air decompression techniques reduces the consumption of helium gas and improves diver communications.

The DCIEM Helium/Oxygen, 84/16 Decompression Tables provides a methodology to negate nitrogen-induced narcosis, provides deep diving operations with significant flexibility and allows for the substantial extension of depth/bottom time limits outside that of the existing DCIEM Air Tables (see Figure 2-1).

2. DESCRIPTION OF TABLES

The DCIEM HeO_2 Decompression Tables consists of four distinct tables.

Table 6. Abort Table
Table 7. In-Water Oxygen Decompression Table
Table 8. Surface Decompression with Oxygen; and
Table 9. Emergency Decompression.

Appendix A contains these tables in feet of seawater (fsw) and Appendix B contains these tables in metres of seawater (msw). Depths to 330 fsw (100 msw) are covered. In the procedures described here for the use of the tables, all depths will be given in both fsw and msw.

The decompression schedules for all tables are given in 10 fsw (3 msw) increments. For Tables 7, 8 and 9 each depth segment to and including 300 fsw (90 msw) is divided into two sections by a double line corresponding to the **Normal Exposure Limit**. Dive profiles below this line and all dives deeper than 300 fsw (90 msw) are considered **Exceptional Exposures**. Figure 2-1 shows these limits and how they compare to the DCIEM Air Diving Limits.

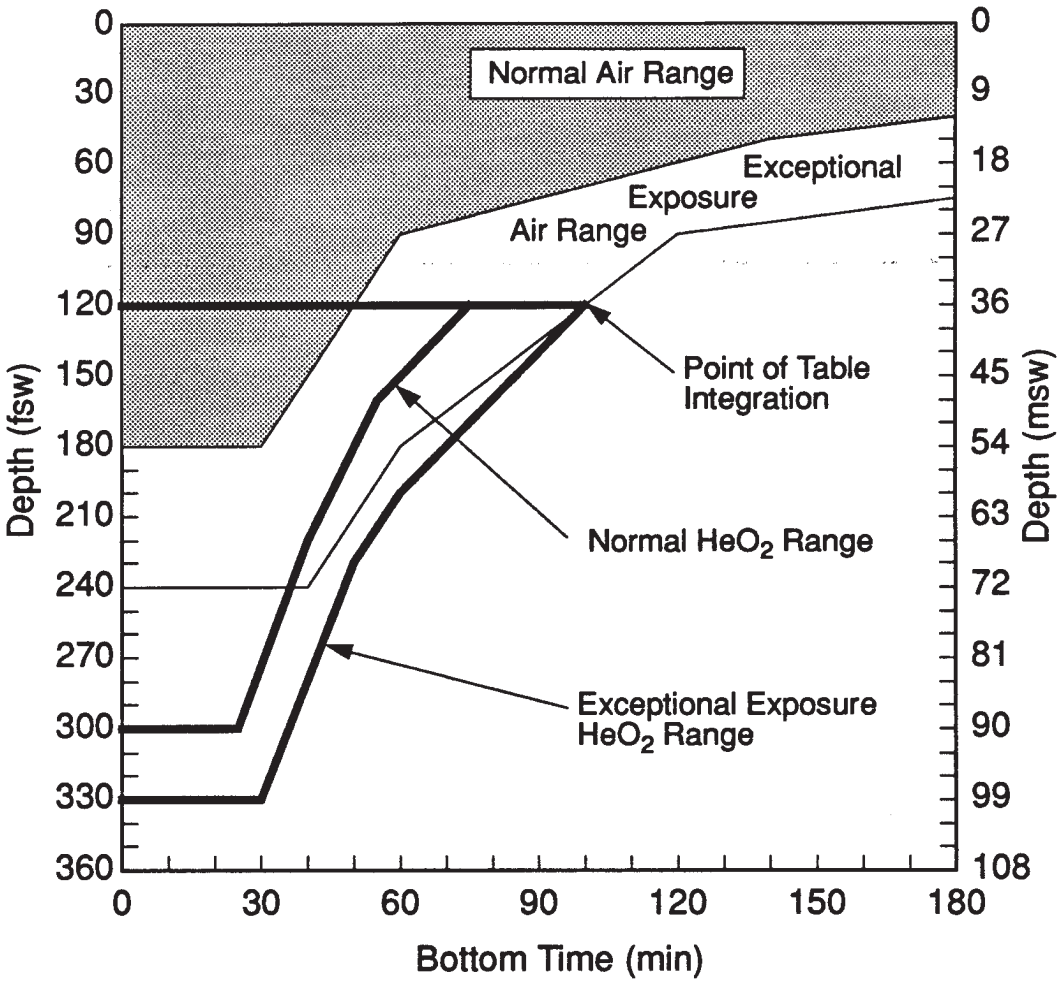

Figure 2-1. HeO_2 Diving Limits

The tables were designed using a 84% helium and 16% oxygen breathing gas mixture with a partial pressure of oxygen (ppO2) limit of 1.6 ATA at the depth of the Normal Diving Limit and 1.8 ATA at the Exceptional Exposure Limit. HeO_2 is used from the surface to the bottom, while on the bottom and during travel to the first stop. The tables can be used for any HeO_2 mixture where the percentage of O_2 is 16.0% or greater, subject to a depth/time limitation based on O_2 toxicity (ppO_2 while on the bottom not to exceed the operational limit of 1.6 ATA for 30 minutes).

Air is used for all in-water stops from the first stop to 30 fsw (9 msw). At 30 fsw (9 msw), there is the option of in-water oxygen decompression (Table 7) or in-water oxygen combined with surface decompression with oxygen (SurD O_2) (Table 8). In case of a loss of O_2 or oxygen toxicity problems, Table 9 for emergency decompression gives the option of using air at the 30 fsw (9 msw) stop and continuing decompression with in-water air, surface decompression with oxygen, or surface decompression with air.

3. DEFINITION 0F TERMS

a. ***Ascent Rate***
A specified rate of travel that a diver should maintain while ascending. For the DCIEM HeO_2 Diving Tables, the ascent rate is 60 ± 10 fsw/min (18 msw ± 3 msw/min). *(NOTE: In the context of the Definitions/Rules and Procedures of the 84/16 HeO_2 Decompression "fsw/min" equals "fpm" and "msw/min" equals "mpm".)*

b. ***Descent Rate***
The maximum rate of travel allowed in descending to the bottom. For the DCIEM HeO_2 diving tables, the maximum descent rate is 60 fpm (18 mpm).

c. ***Bottom Time (BT)***
The total elapsed time from when the diver leaves the surface to the time (next whole minute) that the diver begins ascent.

d. ***Decompression Schedule***
The specific decompression procedure for a given combination of depth and bottom time as listed in a decompression table; it is normally indicated as maximum depth (fsw)or(msw) /bottom time (min).

e. ***Decompression Stop***
Specific length of time which a diver must spend at a specified depth to allow for the elimination of sufficient inert gas for the diver to safely ascend to the next decompression stop or the surface.

f. ***Depth***
The maximum depth attained, measured in fsw (msw).

g. ***Point of Interruption***
The time at which normal decompression was interrupted as a result of an emergency procedure, i.e., loss of breathing gas, O_2 symptom. Once the situation allows the return to normal decompression procedures, *re-enter the table where the interruption occurred.*

h. ***Recorded Time***
Record of event times placed on the dive chart record sheet in hours, minutes, and seconds.

i. ***Repetitive Dive***
Any dive conducted within 18 hours of a previous dive. No repetitive dives are allowed except as outlined under the combined bottom time/maximum depth option.

j. ***Single Dive***
Any dive conducted more than 18 hours after the previous dive.

k. ***Stop Time***
The tabulated time of a decompression stop commences at the time of leaving the previous stop and ceases when the

required time for that stop, as indicated by the tables, has been completed; except in the cases of breathing gas switches [at the first air stop and the switch to oxygen at 30 fsw(9 msw)], where the stop time will not commence until the diver has reached the specified depth and has been confirmed to be breathing the new gas mixture.

l. ***Surface Interval - SurD O_2***
When using the DCIEM 84/16 HeO_2 Decompression Table "Surface Decompression with Oxygen", the Surface Interval consists of the time from the diver leaving the 30 fsw (9 msw) stop to arriving at the 40 fsw (12 msw) Recompression Chamber (RCC) stop. The maximum time allowed is 7 minutes. *(SurD O_2 Surface Interval Time is included in the Total Decompression Time of the Dive.)*

m. ***Total Decompression Time in the Tables***
This time is a GUIDE ONLY and includes the sum of all ascent times, stop times, O_2 periods, air breaks and surface interval times.

Notes (ascent time):

a. Tabulated ascent time from the bottom to the first stop at 60 fpm (18 mpm) is rounded to the next whole minute and is included in the printed Total Decompression Time for that profile. Additionally, it appears within the tables as MAX time to first stop.

b. Tabulated ascent time from the 40 fsw (12 msw) air stop to the 30 fsw (9 msw) O_2 stop and from the 30 fsw (9 msw) O_2 stop to the surface at 60 fpm (18 mpm) is combined, rounded to 1 minute and is included in the printed Total Decompression Time for that profile.

SECTION 2

DECOMPRESSION PROCEDURES

1. OPERATIONAL PROCEDURES

The procedures parallel, as closely as possible, the operational procedures and definitions of the DCIEM Air Tables. All In-Water Oxygen Decompression, Surface Decompression with Oxygen, and Emergency Decompression profiles contain identical decompression stops from the first stop to and including the 40 fsw (12 msw) stop. These tables use a series of breathing gas mixtures composed of helium/oxygen, normal compressed air and 100 percent oxygen. Each gas is utilized independently for a specified depth and time period as called for by the tables.

2. ABORT TABLE (TABLE 6)

An Abort Dive Table, contained in Table 6, is provided for dives that do not attain a depth greater than 120 fsw (36 msw). It provides a No Decompression capability up to 120 fsw (36 msw)/5 min, where the diver may ascend directly to the surface without a decompression stop at a rate of 60 ± 10 fpm (18 ± 3 mpm) while breathing 84/16 HeO_2 mixed gas.

Table 6 also provides an abort capability for depths less than or equal to 120 fsw (36 msw) where decompression may be required. Decompression stops, where required in the Abort Table, are AIR STOPS.

In all cases of depths greater than 120 fsw (36 msw), an appropriate 84/16 HeO_2 Decompression Table In-Water Oxygen (Table 7) or SurD O_2 (Table 8) is to be used.

3. IN-WATER OXYGEN DECOMPRESSION (TABLE 7)

The In-Water Oxygen Decompression Table is contained in Table 7. HeO_2 is used from the surface to the bottom, while on the bottom and during travel to the first stop. At the first stop, the breathing gas is switched to air and air is used for all in-water stops to 30 fsw (9 msw). At 30 fsw (9 msw), the breathing gas is switched to O_2 and the diver breathes O_2 until the decompression requirements are completed. Five-minute air breaks are taken after every 30 minutes on O_2.

The In-Water Oxygen Decompression procedure for HeO_2 dives is as follows:

a. descend at 60 fpm (18 mpm) or slower on HeO_2;

b. ascend at 60 ± 10 fpm (18 ± 3 mpm) on HeO_2;

c. upon arrival at the first stop depth, switch to air, ventilate until confirmed on air, and then begin first stop;

d. remain on air until arrival at 30 fsw (9 msw) stop; stop time includes ascent time to each stop;

e. upon arrival at the 30 fsw (9 msw) O_2 stop, switch to O_2, ventilate until confirmed on oxygen;

f. remain on O_2 for the duration of the stop with 30 minute O_2/5 minute air break cycle(s) as designated;

g. each air break cycle of 5 minutes is indicated by an asterisk (*). The stop time indicated for the 30 fsw (9 msw) O_2 Stop is O_2 time ONLY. Therefore the time for each designated Air Break must be added to the 30 fsw (9 msw) TOTAL Stop time; and

h. On completion of the 30 fsw (9 msw) stop, travel to the surface is on the breathing medium in use.

Notes for O_2 Stop:

(l) Divers are not ventilated at air breaks. Gas to the breathing umbilical is simply switched to the required breathing medium for the designated time,

(2) 5-minute air breaks are part of the required decompression and therefore, are included in total decompression time.

(3) When the O2 stop time is a multiple of 30 minute, a 5-minute air break may or may not be required before ascent to the surface.

Figure 2-2 shows an In-Water Oxygen Decompression dive to 140 fsw for 39 minutes (Example 1).

4. SURFACE DECOMPRESSION WITH OXYGEN (TABLE 8)

The Surface Decompression with Oxygen table is contained in Table 8. The descent to depth and the initial ascent to the end of the 40 fsw (12 msw) decompression stop are identical to that for the In-Water Oxygen Decompression Table. At 30 fsw (9 msw), the breathing gas is switched to O_2 and the diver breathes O_2 until the end of the specified decompression time. The diver ascends to the surface, switches to air, and is then recompressed back down to 40 fsw (12 msw) on O_2 in a recompression chamber (RCC) to complete the decompression requirements on O_2. The time from leaving the 30 fsw (9 msw) in-water stop to the time of reaching 12 msw in the RCC should not exceed 7 minutes. After each 30 minute period on O_2 at the 30 fsw (9 msw) stop and in the RCC, 5 minute air breaks are taken.

The Surface Decompression with Oxygen procedure for HeO_2 dives is as follows:

a. ascend and decompress as for In-Water Oxygen Decompression to the completion of the in-water 40 fsw (12 msw) stop;

b. upon arrival at the 30 fsw (9 msw) in-water decompression stop, switch to O_2, ventilate until confirmed on O_2;

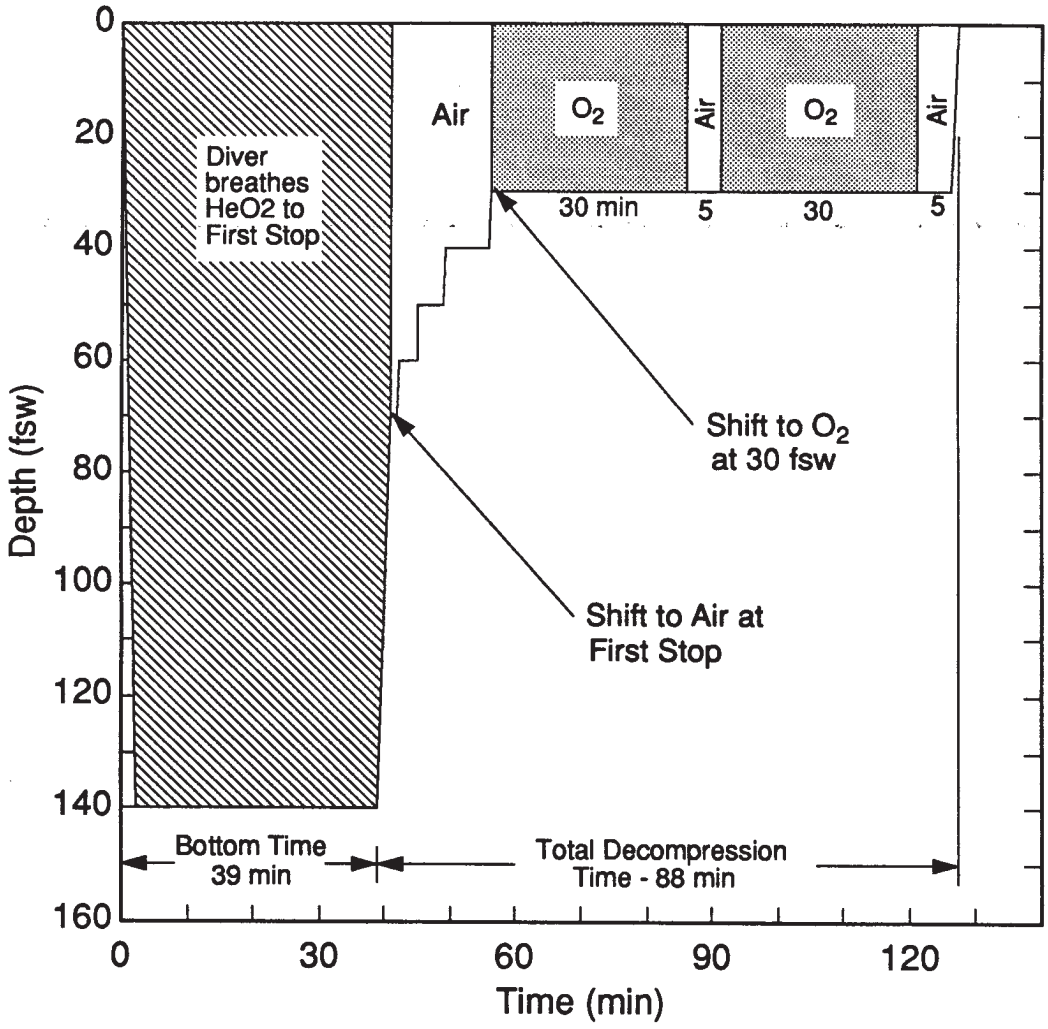

Figure 2-2. In-Water O_2 Decompression Dive to 140 fsw/39 min (Example 1)

Dive	140 fsw/39 min
Decompression schedule	140 fsw/40 min from Table 7
Decompression Stops 70 fsw - 1 min on air 60 fsw - 3 min on air 50 fsw - 4 min on air 40 fsw - 7 min on air	Ascend to 70 fsw on HeO2 at 60 ± 10 fpm. Maximum time available to first stop is 2 min.
30 fsw -60 min on O2 + two 5-min air breaks*	
* Travel to the surface on breathing medium in use (i.e., air)	

c. remain on O_2 for the duration of the specified stop with a 5 minute air break after 30 minutes on O_2 if required;

d. ascend to the surface at 60 ± 10 fpm (18 ± 3 mpm) and recompress on O_2 to 40 fsw (12 msw) in the RCC. The Surface Interval - SurD O_2 is the time from leaving the 30 fsw (9 msw) water stop to reaching the 40 fsw (12 msw) RCC stop. This time must not exceed 7 minutes;[1]

e. remain on O_2 at 40 fsw (12 msw) for the tabulated stop time with 5-minute air breaks after every 30 minutes on O_2 (the asterisk "*" following the O_2 stop times in the tables represent the number of air breaks); and

f. ascend to the surface on the breathing medium used (one min is included in the Decompression Time column as a *guide only*).

Figure 2-3 shows a Surface Decompression with Oxygen dive to 188 fsw/15 min (Example 2).

5. EMERGENCY DECOMPRESSION (TABLE 9)

The Emergency Decompression Table, in case of loss of O_2 or oxygen toxicity, provides the following decompression options: in-water emergency air decompression from the 30 fsw (9 msw) stop to the surface, SurD O_2 in a chamber upon completion of the 30 fsw (9 msw) in-water stop on air, and SurD Air decompression in a chamber upon completion of the 30 fsw (9 msw) in-water stop. These three decompression options are all contained in Table 9.

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1. The maximum Surface Interval (SI) - SurD O_2 of 7 minutes was chosen to enhance the operability of the procedure and to reduce the chances of "omitted decompression" during operations. Extensive experimentation using the full 7 minute SI has proven this procedure safe. **In operational use, the SI should be kept to a minimum.**

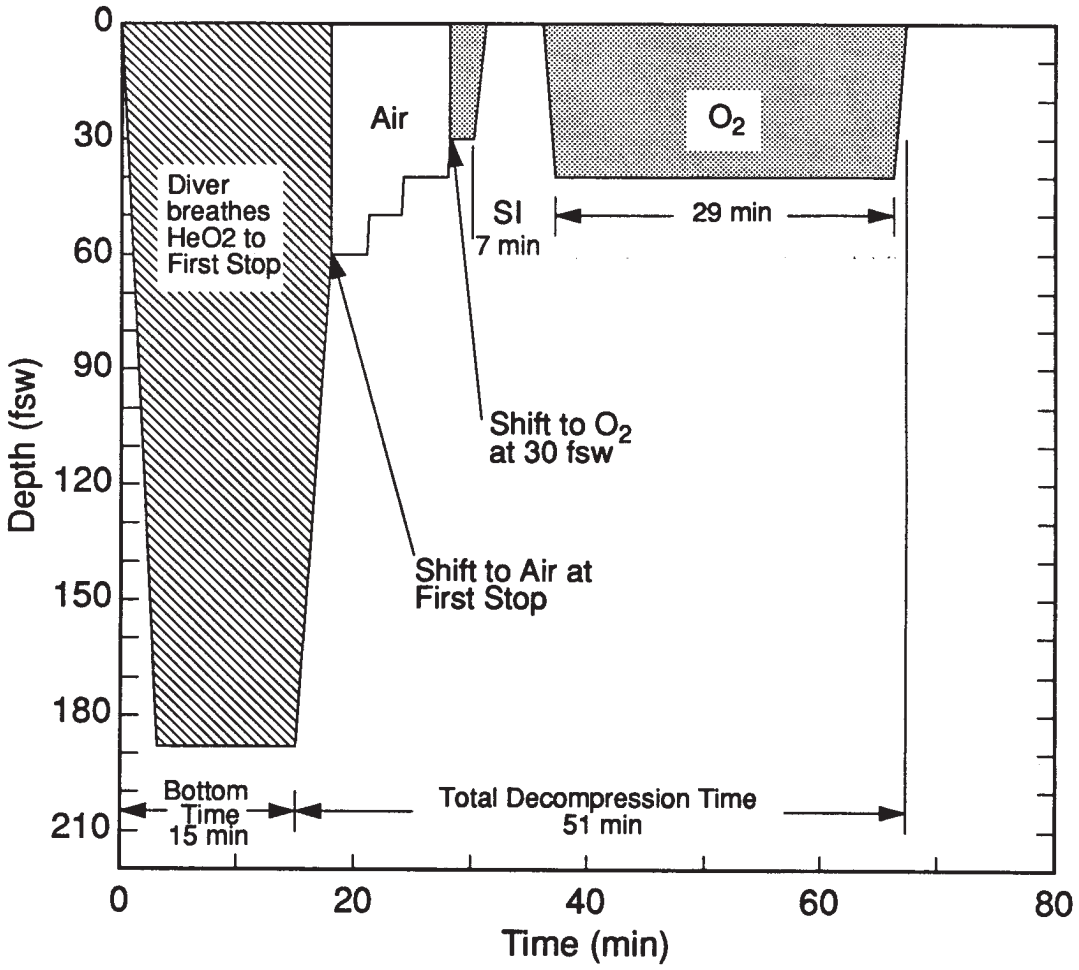

Figure 2-3. SurD O_2 Decompression Dive to 188 fsw/ 15 min (Example 2)

Dive	188 fsw/15 min
Decompression schedule	190 fsw/15 min from Table 8
Decompression Stops 60 fsw - 3 min on air 50 fsw - 3 min on air 40 fsw - 4 min on air 30 fsw - 2 min on O2*	Ascend to 60 fsw on HeO2 at 60 ± 10 fpm. Maximum time available to first stop is 3 min.
Surface - Time from 30 fsw to reaching 40 fsw in RCC is 7 min	
40 fsw - 29 min on O2 in RCC*	
* Travel to the surface on breathing medium in use	

Decompression up to and including the 40 fsw (12 msw) air decompression stop is in accordance with the In-Water Oxygen and the Surface Decompression with Oxygen Tables. The in-water decompression stop at 30 fsw (9 msw) is conducted on air for twice the length of the O2 decompression time normally required from the SurD O_2 table (Table 8). If a 5-minute air break was required, as found in the SurD O_2 tables at 30 fsw (9 msw), this time is also included.

a. **In-Water Air Decompression**
On completion of the 30 fsw (9 msw) air stop, ascend on air to the 20 and 10 fsw (6 and 3 msw) stops and remain at these stops for the prescribed times. Figure 2-4 (Example 3) shows a dive to 160 fsw for 120 min using in-water air decompression.

b. **Surface Decompression with Oxygen in RCC**
On completion of the 30 fsw (9 msw) in-water air stop, ascend to the surface for surface decompression on O_2 as in Table 8. Figure 2-5 (Example 4) shows the same dive from Example 3 carried out as Emergency SurD O_2. (Note: the 40 fsw (12 msw) RCC decompression time is identical to that from Table 8.)

c. **Surface Decompression with Air in RCC**
On completion of the 30 fsw (9 msw) in-water air stop, ascend to the surface as for normal SurD O_2. Descend on air to 40 fsw (12 msw) in the RCC and conduct the prescribed decompression stops at 40, 30, 20, and 10 fsw (12, 9, 6, and 3 msw). Figure 2-6 (Example 5) shows the same dive from Example 3 carried out as Emergency SurD Air. (Note: the 40 fsw (12 msw) stop time is the same as the 40 fsw/12 msw in-water stop in Tables 7 and 8. The 30, 20, and 10 fsw (9, 6, and 3 msw) stop times are the same as for emergency in-water air decompression.)

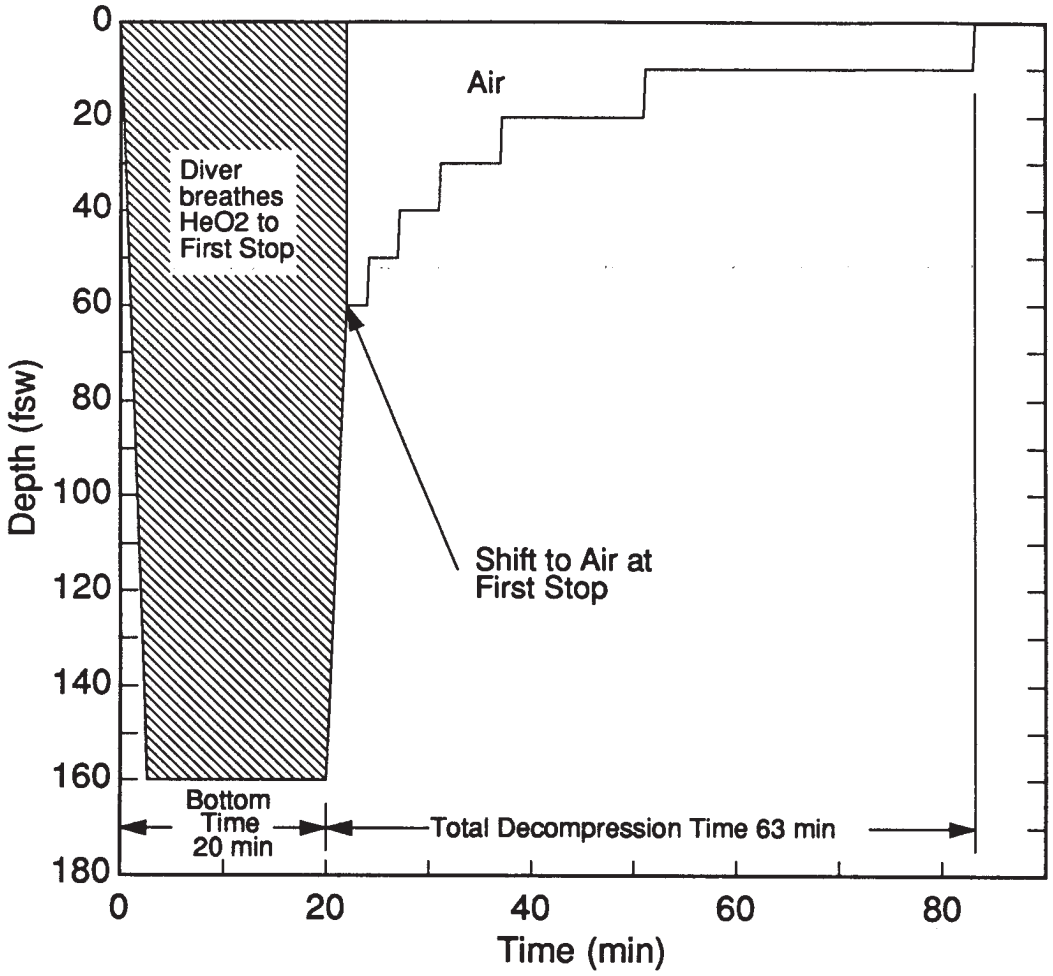

Figure 2-4. In-Water Emergency Air Decompression Dive to 160 fsw/20 min (Example 3)

Dive	160 fsw/20 min
Decompression schedule	160 fsw/20 min from Table 9
Decompression Stops 60 fsw - 2 min on air 50 fsw - 3 min on air 40 fsw - 4 min on air	Ascend to 60 fsw on HeO2 at 60 ± 10 fpm. Maximum time available to first stop is 3 min. Decompression stops for 60 - 40 fsw from Table 7 or 8.
30 fsw - 6 min on air	From Table 9, "Air" Column
20 fsw -14 min on air 10 fsw -32 min on air	From Table 9, In-Water Stop Times

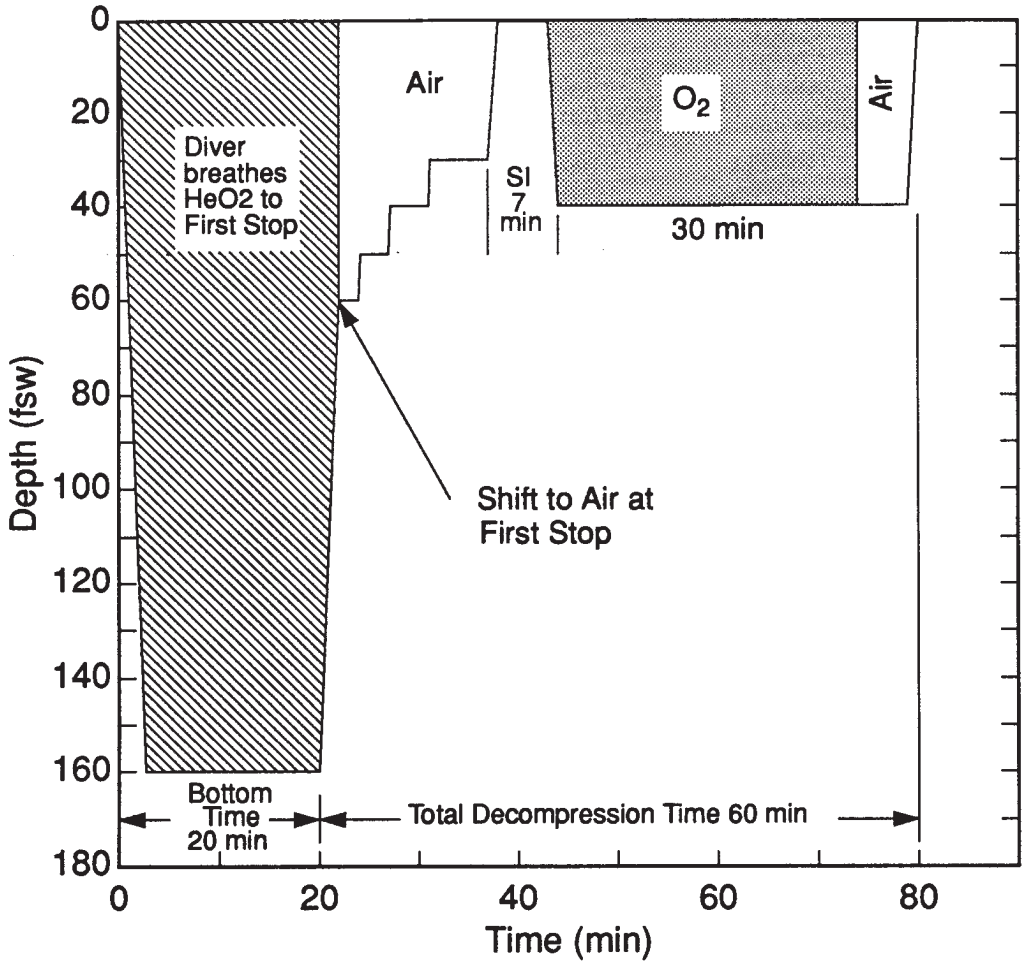

Figure 2-5. Emergency SurD O_2 Decompression Dive to 160 fsw/20 min (Example 4)

Dive	160 fsw/20 min
Decompression schedule	160 fsw/20min from Table 9
Decompression Stops 60 fsw - 2 min on air 50 fsw - 3 min on air 40 fsw - 4 min on air	Ascend to 60 fsw on HeO2 at 60 ± 10 fpm. Maximum time available to first stop is 3 min. Decompression stops for 60 - 40 fsw from Table 7 or 8.
30 fsw - 6 min on air	From Table 9, "Air" Column
Surface - Time from 30 fsw to reaching 40 fsw in RCC is 7 min	
40 fsw - 30 min O2+ 5-min air break* (from RCC O2 Section in Table 9)	
* Travel to the surface on breathing medium in use (i.e., air)	

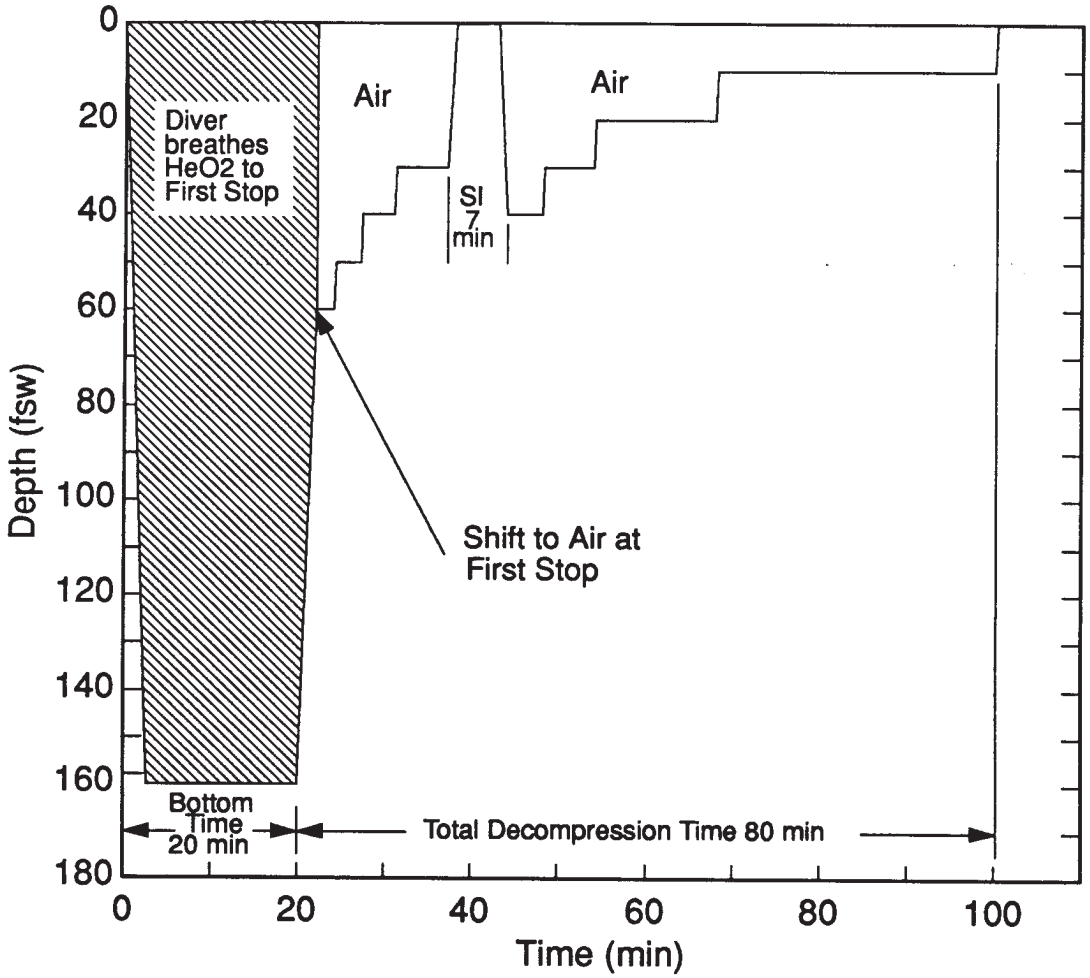

Figure 2-6. Emergency SurD Air Decompression Dive to 160 fsw/20 min (Example 5)

Dive	160 fsw/20 min
Decompression schedule	160 fsw/20min from Table 9
Decompression Stops 60 fsw - 2 min on air 50 fsw - 3 min on air 40 fsw - 4 min on air	Ascend to 60 fsw on HeO2 at 60 ± 10 fpm. Maximum time available to first stop is 3 min. Decompression stops for 60 - 40 fsw from Table 7 or 8.
30 fsw - 6 min on air	From Table 9, "Air" Column
Surface - Time from 30 fsw to reaching 40 fsw in RCC is 7 min	
40 fsw - 4 min on air 30 fsw - 6 min on air 20 fsw - 14 min on air 10 fsw - 32 min on air	From RCC Air Section in Table 9

The Emergency Decompression Table's primary use is to get the diver out of the water after the completion of an extended stop on air 30 fsw (9 msw)) and then repressurize in an RCC to 40 fsw (12 msw), As the preferred method is SurD O_2, only the SurD O_2 option was tested by DCIEM during the validation trials.

Guidelines for using the Emergency Decompression Tables for different dive scenarios are described in Section 3: General Procedures. A flow chart to assist in the use of emergency procedures is presented in Figure 2-7.

6. REPETITIVE DIVING AND COMBINED BOTTOM TIME/MAXIMUM DEPTH OPTION

Normal Repetitive Diving Procedures for HeO_2 dives have not been implemented in this manual. Until HeO_2 Repetitive Dive Schedules are validated, the **combined bottom time/maximum depth option** can be used to conduct Repetitive Dives.

In the event of an aborted HeO_2 dive or in the case of dives where bottom times have not reached the Normal Limit, the diver may dive again on the 84/16 HeO_2 tables within 18 hours and is exempt from the repetitive dive restriction. In this case, the bottom time(s) of the aborted/or previous short dive(s) must be added to the bottom time of the next dive to calculate an appropriate decompression schedule. The diver shall be decompressed in accordance with both the maximum depth attained during any of the dives and total of all bottom times. However, based on thermal considerations, it is recommended that the total of the combined bottom times should not exceed the normal operational limits of the selected decompression schedule.

Note:

In this option all dives are combined and are considered a single dive.

HEO_2 EMERGENCY FLOW CHART

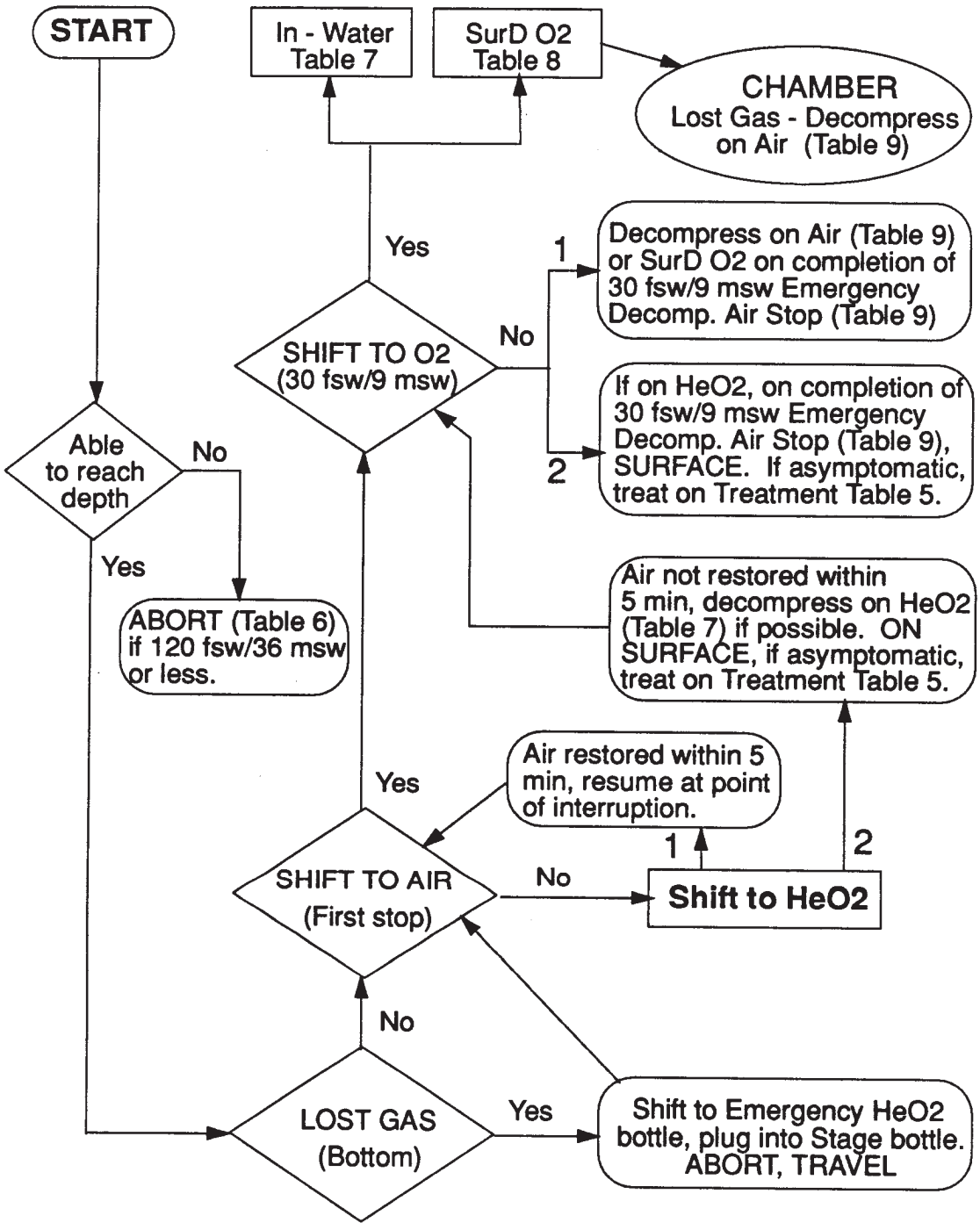

Figure 2-7. HeO_2 Emergency Flow Chart

SECTION 3

GENERAL PROCEDURES

1. GASES

a. HELIUM/OXYGEN (HeO_2) GAS MIXTURES

HeO_2 is used from the surface to the bottom, while on the bottom, and during ascent to the first stop. The tables were designed for an 84% helium/16% oxygen breathing gas mixture. Any HeO_2 mixture where the percentage (%) of O_2 is 16.0% or greater, subject to a depth/time limitation based on O_2 toxicity (ppO_2 while on the bottom not to exceed the operational limit of 1.6 ATA for 30 minutes) can be used. However, a caveat is provided where gases up to 16.5% O_2 content can be utilized to the normal bottom time limit. Profiles in excess of the normal operational limit for a HeO_2 84/16 mix, as contained within these tables, have been validated; refer to Para. 2, General Procedures, for additional information on bottom time limits.

b. AIR

(1) upon arrival at the first stop, switch to air, ventilate until confirmed on air; and

(2) remain on air until arrival at 30 fsw (9 msw) stop.

c. OXYGEN

(1) upon arrival at the 30 fsw (9 msw) O_2 stop, switch to O_2 ventilate until confirmed on oxygen; and

(2) remain on O_2 for the duration of the stop with 30 minute O_2/5-minute air break cycle(s) as designated.

(3) Each Air Break cycle of 5 minutes is indicated by an asterisk (*). The stop time indicated for the 30 fsw (9 msw) O_2 Stop is O_2 time ONLY. Therefore the time for each designated Air Break must be added to the 30 fsw (9 msw) TOTAL Stop time.

Notes for O_2 Stop:

(l) Divers are not ventilated at air breaks. Gas to the breathing umbilical is simply switched to the required breathing medium for the designated time,

(2) On completion of the 30 fsw (9 msw) stop, travel to the surface is on the breathing medium in use,

(3) 5-minute air breaks are part of the required decompression and therefore, are included in total decompression time.

2. BOTTOM TIME LIMITING LINES;

a. NORMAL EXPOSURE LIMIT

Normal operational limit dives are based on profiles where the maximum ppO_2 of the dive while on the bottom does not exceed a value of 1.6 ATA for 30 minutes or where the total in-water time of the dive does not exceed a maximum of approximately 3 hours 30 minutes. However, for operational considerations, the normal limit is extended to include dives to 300 fsw (90 msw) for 25 minutes. Additionally, dives utilizing gas mixtures not exceeding an O_2 content of 16.5% are considered to fall within the normal limits (inclusive of 300 fsw (90 msw)/25 min).

b. EXCEPTIONAL EXPOSURE LIMIT

Exceptional exposure dives are based on profiles where the maximum normal limit ppO_2 is exceeded or where the total in-water time exceeds that of the normal limit (maximum bottom ppO_2 value of 1.8 ATA for 30 minutes, total in-water time does not exceed a maximum of 4 hours 30 minutes).

3. TRAVEL RATES

a. the ascent rate is 60 ± 10 fpm (18 ± 3 mpm);

b. the descent rate is a maximum of 60 fpm (18 mpm); and

c. in RCC SurD O_2 operations, an ascent/descent rate of 60 fpm (18 mpm) is recommended.

4. STOP TIMES/TRAVEL TIMES

a. **Stop Time**
Stop time includes travel time from the previous stop, except when a gas switch occurs at the first stop (air) and 30 fsw (9 msw) stop (O_2);

b. **Time to First Stop**
The time to first stop, as contained in the tables, is provided as a guide only. It indicates the maximum computed time available for the diver to reach the first stop, based on the expiration of an exact bottom time increment,

c. **First Stop - Decompression Time**
Travel time from the bottom and the time from arrival at the first stop to confirmation that the switch to air is complete is not included in the first stop decompression time. (*Note: Gas switching time is dead time.*)

d. **30 fsw (9 msw) O_2 Stop - Decompression Time**
Travel time from 40 fsw (12 msw) and time from arrival at the 30 fsw (9 msw) O_2 stop to confirmation that the switch to O_2 is complete is not included in the 30 fsw (9 msw) O_2 stop decompression time. *(Note: Gas switching time is dead time.)*

5. DELAYS (NORMAL DECOMPRESSION)

a. delay in reaching the first stop (MAXIMUM TIME to First Stop exceeded by more than 30 seconds) is added to the bottom time and the appropriate decompression schedule selected; and

b. any delay in leaving an air stop is considered to be valid decompression time and can be subtracted from the next shallower air stop only. Does not apply to the 30 fsw (9 msw) O_2 stop.

6. OXYGEN TOXICITY AT O_2 STOP (IN-WATER AND RCC)

a. **O_2 SYMPTOMS**

(1) stop, switch to air, ventilate,

(2) wait for symptoms to subside,

(3) wait 15 minutes,

(4) resume O_2 at point of interruption, OR

(5) **In-Water:**

if in-water O_2 requirements from Table 8 have been met, SurD O_2 on Table 8 after symptoms have completely subsided, OR

(6) immediately switch to air and decompress in accordance with Emergency Decompression Table 9;

(a) On completion of the 30 fsw (9 msw) air stop of the Emergency Decompression Table, SurD O_2 may be performed,

(b) All previous 30 fsw (9 msw) air/O_2 time can be subtracted from the 30 fsw (9 msw) and shallower Emergency Decompression Air Stops;

(7) if O_2 breathing is resumed and O_2 symptoms recur, switch to air and decompress as per Item (5),

(8) **In RCC**

Decompress in accordance with applicable Emergency Decompression Table commencing at 40 fsw (12 msw) Previous Air/O_2 times at the 40 fsw (12 msw) stop in the chamber can be subtracted from the 40 fsw (12 msw) and shallower Emergency Decompression Air Stops.

b. **O_2 CONVULSION**

(l) stop, switch to air, ventilate,

(2) stabilize (the diver is not brought to the surface while convulsing):

(a) **In-Water:**

If in-water O_2 requirements from Table 8 have been met, SurD O_2 on Table 8 after convulsion has completely subsided, OR immediately switch to air and decompress in accordance with Emergency Decompression Table 9, surface diver carefully to reduce risk of embolism. Treat for possible embolism if uncertainty exists.

(b) **In RCC:**

Complete decompression in accordance with the applicable Emergency Decompression Table 9, commencing at 40 fsw (12 msw). Previous air/O_2 times at the 40 fsw (12 msw) stop in the chamber is good time and can be subtracted from the 40 fsw (12 msw) and shallower Emergency Decompression Air Stops.

7. LOSS OF O_2 (IN-WATER AND RCC)

a. **IN-WATER**

(1) switch to air

(2) re-establish O_2, resume O_2 at point of interruption,

(3) if oxygen cannot be restored and in-water O_2 requirements from Table 8 have been met, SurD on Table 8, OR

(4) immediately switch to air and decompress in accordance with Emergency Decompression Table 9 or (if O_2 available to RCC) on completion of the 30 fsw (9 msw) Emergency Decompression Air Stop, may SurD O_2,

(5) all previous 30 fsw (9 msw) air/O_2 time can be subtracted from 30 fsw (9 msw) and shallower Emergency Decompression Air stops.

b. **IN RCC**

If no success in re-establishing O_2 decompress in accordance with the applicable Emergency Decompression Table 9 commencing at 40 fsw (12 msw). Previous Air/O_2 time at the 40 fsw (12 msw) stop in the chamber is good time and can be subtracted from the 40 fsw (12 msw) and shallower Emergency Decompression Air stops.

8. SURD O_2 RCC TIME

a. the diver descends breathing O_2 to the RCC stop of 40 fsw (12 msw);

b. 40 fsw (12 msw) O_2 stop time commences on arrival at 40 fsw (12 msw);

c. at 40 fsw (12 msw) the diver remains on O_2 for the duration of the stop with 30 minute O_2/5 minute air break cycle(s) as designated; and

d. on completion of the stop the diver ascends to the surface on the breathing medium in use.

9. SURFACE INTERVAL - VIOLATION OF 7 MINUTE SURFACE INTERVAL AND OMITTED DECOMPRESSION (Diver shows NO symptoms)

a. if the 7 minute surface interval is exceeded or omitted decompression occurs, commence Treatment Table 5 if the total time of omitted decompression is less than 30 minutes; OR;

b. If the total omitted decompression is greater or equal to 30 minutes commence Treatment Table 6.

10. OMITTED DECOMPRESSION (FIRST STOP)

In the event that the **FIRST** decompression stop **ONLY** is passed, remain at the next stop and *shift to AIR.* Once confirmed on AIR, commence the stop time by **adding** the missed stop time and the present stop time. If **more** than the first stop was missed, decompress in accordance with Para. 9.

11. LOST GAS AT DEPTH (HELIUM/OXYGEN, AIR)/UNABLE TO SWITCH GASES

a. LOST HELIUM/OXYGEN

In the event of the loss of Helium/Oxygen the diver switches to emergency Helium/Oxygen (backpack, stage mount), the dive is aborted, the diver travels to the first stop and switches to air;

b. LOST AIR

In the event of the loss of air, the diver switches to emergency Helium/Oxygen (backpack, stage mount) until air is restored or for a maximum of 5 minutes. If air is restored within 5 minutes, resume normal decompression on air at the point of interruption. If air is not restored within 5 minutes, continue decompression on Helium/ Oxygen in accordance with Table 7 if possible. If air is

restored prior to the 30 fsw (9 msw) O_2 stop, shift diver to air. Upon surfacing, if asymptomatic conduct Treatment Table 5 for omitted decompression. If symptomatic treat as appropriate for decompression sickness;

c. **UNABLE TO SWITCH TO AIR AT FIRST STOP**

If unable to complete a switch to air at first stop, the diver may remain on Helium/Oxygen at the first stop for a maximum of 5 minutes; if air is restored within the 5 minute time interval resume normal decompression on air at the point of interruption. If air is not restored within 5 minutes, continue decompression on Helium/Oxygen in accordance with Table 7 if possible. If air is restored prior to the 30 fsw (9 msw) O_2 stop, shift diver to air. Upon surfacing if asymptomatic conduct Treatment Table 5 for omitted decompression. If symptomatic treat as appropriate for decompression sickness;

d. **UNABLE TO SWITCH TO O_2 AT 30 FSW (9 MSW)**

If unable to complete a switch to O_2, decompress in accordance with Emergency Decompression Table 9 or (if O_2 available to RCC) on completion of the 30 fsw (9 msw) Emergency Decompression Air Stop, may SurD O_2.

12. EXAMPLES OF EMERGENCY OPTIONS

Examples of dive profiles with emergency scenarios and options are given below (for depths in fsw). These examples illustrate multiple options as shown in the flow chart in Figure 2-7.

Example 12.1 - Delay on descent

Planned dive: 200 fsw/10 min	SurD O_2 (Table 8) - 200 fsw/10 min calls for
	50 fsw - 3 min air 40 - 4 min air 30 - 2 min O2
	RCC 40 fsw - 19 min O_2

Situation:	Ear problem at 96 fsw on descent
Reaction:	Come up 5 fsw, try to clear. If able to clear, continue the dive. If unable to clear, ABORT, decompress on 100 fsw schedule (Table 6).

Example 12.2 - Unable to switch to air at first stop

Planned dive: 180 fsw/20 min	In-water O2 (Table 7) - 180 fsw/20 min calls for
	70 fsw - 2 min air 60 - 3 50 - 3 40 - 4 30 - 32 min O_2 + 5 min air
Situation:	Air not available at first stop
Reaction: (Para. 11(c))	Remain at the first stop (70 fsw) for 5 minutes maximum. If air is still not available, remain on HeO_2 and complete all stops in accordance with the profile. At 30 fsw, shift to O_2 for 32 minutes with a 5-minute air break. Upon reaching the surface, if the diver is asymptomatic, commence Treatment Table 5 for omitted decompression.

Example 12.3 - Loss of O_2 in water

Planned dive: 160 fsw/35 min	SurD O_2 (Table 8) - 160 fsw/35 min calls for
	70 fsw - 3 min air 60 - 3 50 - 5 40 - 7 30 - 10 min O_2
	RCC 40 fsw - 61 min O_2 + two 5-min air breaks
Situation:	Lost O_2 at minute 7 in water
Reaction: (Para. 7a)	Shift to air; if unable to resume O_2 breathing, shift to Emergency Decompression Table (Table 9). Remain at 30 fsw for a total of 20 minutes (O_2 time is good time). Surface, recompress to 40 fsw in RCC for 61 minutes of O_2 plus two air breaks. Travel on breathing medium in use.

Example 12.4 - Delay during decompression/O2 symptoms in water

Planned dive: 210 fsw/30 min	In-Water O_2 (Table 7) - 210 fsw/30 min calls for
	100 fsw - 1 min air 90 - 2 80 - 3 70 - 3 60 - 3 50 - 6 40 - 10 30 - 75 min O_2 + two 5-min air breaks
Situation 1:	Delay at 70 fsw for 4 minutes
Reaction 1: (Para. 5b)	At minute 7 of the 70 fsw stop, subtract the excess 4 minutes from the next stop ONLY; therefore, travel to 50 fsw and complete 6 minute stop.
Situation 2:	O_2 symptom in water at minute 20 at 30 fsw
Reaction 2: (Para. 6a)	At minute 20 on O_2, shift to air.
	Option 1: Wait until symptoms have completely subsided; wait 15 minutes, resume at point of interruption (Table 7), OR
	Option 2: If in-water O_2 requirements from Table 8 have been met, SurD on Table 8 after symptoms have completely subsided, OR
	Option 3: Decompress on air in accordance with Table 9 (all previous 30 fsw air/O_2 time can be subtracted from 30 fsw and shallower Emergency Decompression air stops). Alternatively, may also elect to SurD on completion of 30 fsw emergency air stop.

13. DECOMPRESSION STRESS DURING SURFACE INTERVAL

During the Surface Interval (SI) of a surface decompression with oxygen profile, the required decompression has been intentionally violated. At the completion of the SI, the diver is repressurised in a chamber to a depth of 40 fsw (12 msw), deeper

than called for by the decompression model, and held at depth breathing intermittent oxygen for longer than called for by the decompression model. The diver is given additional decompression during the chamber phase of the SurD O_2 profile to compensate for the increased stress of the SI.

During the SI the diver is exposed to a higher level of decompression stress than would be encountered if in-water decompression had been executed. Therefore, the diver may experience signs and/or symptoms of decompression stress. Manned validation has indicated that when symptoms do occur during the SI, they are almost always very mild and late. In addition, the symptoms usually completely resolve during the press to 40 fsw (12 msw) in the chamber. The experimental dives also demonstrated that the divers who experienced SI symptoms had the same incidence of DCS after the completion of the dive as those divers who did not experience signs or symptoms during the SI. During the table development process, the pre-surface interval decompression was adjusted to reduce the occurrence of SI problems.

Therefore, during SurD O_2 diving, when all signs and symptoms of SI stress have completely resolved by the time the diver is confirmed on oxygen at 40 fsw (12 msw), the decompression profile is to be completed as planned.

When the signs and symptoms of SI stress have not completely resolved by the time the diver is confirmed on oxygen at 40 fsw (12 msw), it should be treated as decompression sickness. The diver must be immediately pressed to 60 fsw (18 msw), a Treatment Table 6 initiated, and the Diving Medical Officer contacted.

14. FLYING AFTER HELIUM/OXYGEN DIVING

a. After No-Decompression Helium/Oxygen (HeO_2) diving a Minimum Surface Interval of 12 Hours is required before flying.

b. After HeO_2 Decompression dives where total dive time is less than or equal to 2 hours, a Minimum Surface Interval of 24 Hours is required before flying.

c. After HeO_2 Decompression dives where total dive time exceeds 2 Hours a Minimum Surface Interval of 48 Hours is required before flying.

ACKNOWLEDGEMENTS

The development of the DCIEM/Canadian Forces HeO2 decompression tables was a joint development project under the ABCA-10 Information Exchange Program. The work was done at DCIEM under a tasking from the Department of National Defence. Both the US Navy and the Royal Navy provided consultation on the model, validation and procedures and provided dive subjects for the trials.

Many individuals and groups contributed to the development, evaluation, and production of these tables and procedures. These include the medical, technical and operational staff of the Experimental Diving Unit at DCIEM, both civilian and military, and other technical support staff from other sections of DCIEM. Other individuals from outside of DCIEM also provided input, including Canadian Forces divers from the Fleet Diving Units. Particular thanks go to the dive subjects from DCIEM, the Canadian Forces, US Navy, Royal Navy, Seneca College, and the Canadian Underwater Training Centre who participated in the dive trials and the DCIEM Doppler technicians who spent many hours listening to bubbles.

APPENDIX A

DCIEM HEO_2 DIVING TABLES

(FEET)

TABLE 6

HEO_2 ABORT

(FEET)

TABLE 6 : HEO_2 - ABORT TABLE (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to 1st Stop (min)	Stop Times (min) at Different Depths								Decom. Time (min)
			Air								
			80	70	60	50	40	30	20	10	
30	55	1	-	-	-	-	-	-	-	-	1
40	20	1	-	-	-	-	-	-	-	-	1
	30	1	-	-	-	-	-	-	-	3	4
	40	1	-	-	-	-	-	-	-	12	13
50	13	1	-	-	-	-	-	-	-	-	1
	20	1	-	-	-	-	-	-	-	4	5
	30	1	-	-	-	-	-	-	-	12	13
60	10	1	-	-	-	-	-	-	-	-	1
	20	1	-	-	-	-	-	-	-	7	8
	25	1	-	-	-	-	-	-	2	13	16
	30	1	-	-	-	-	-	-	3	16	20
70	8	2	-	-	-	-	-	-	-	-	2
	12	1	-	-	-	-	-	-	-	5	6
	20	1	-	-	-	-	-	-	3	11	15
	30	1	-	-	-	-	-	-	6	19	26
80	6	2	-	-	-	-	-	-	-	-	2
	10	2	-	-	-	-	-	-	-	6	8
	15	1	-	-	-	-	-	-	3	7	11
	20	1	-	-	-	-	-	-	5	14	20
	25	1	-	-	-	-	-	-	7	18	26
90	5	2	-	-	-	-	-	-	-	-	2
	10	2	-	-	-	-	-	-	-	8	10
	15	2	-	-	-	-	-	-	5	10	17
	20	1	-	-	-	-	-	2	6	16	25
100	5	2	-	-	-	-	-	-	-	-	2
	10	2	-	-	-	-	-	-	3	7	12
	15	2	-	-	-	-	-	2	5	13	22
110	5	2	-	-	-	-	-	-	-	-	2
	10	2	-	-	-	-	-	-	4	7	13
	15	2	-	-	-	-	-	3	6	14	25
120	5	2	-	-	-	-	-	-	-	-	2
	10	2	-	-	-	-	-	-	6	7	15

(Dated 91-04-10)

TABLE 7

IN-WATER OXYGEN DECOMPRESSION

(FEET)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths												Decom. Time (min)
			Air										O_2		
			140	130	120	110	100	90	80	70	60	50	40	30	
120	10	2	-	-	-	-	-	-	-	-	-	-	-	7	10
	20	2	-	-	-	-	-	-	-	-	-	-	3	22	28
	30	2	-	-	-	-	-	-	-	-	-	2	4	30*	44
	40	2	-	-	-	-	-	-	-	-	-	4	5	47*	64
	50	1	-	-	-	-	-	-	-	-	2	4	7	60**	85
	60	1	-	-	-	-	-	-	-	-	3	4	11	72**	102
	70	1	-	-	-	-	-	-	-	-	3	7	13	82**	117
	75	1	-	-	-	-	-	-	-	-	4	9	13	85**	123
	80	1	-	-	-	-	-	-	-	-	4	11	13	89**	129
	90	1	-	-	-	-	-	-	-	1	4	14	18	90***	144
	100	1	-	-	-	-	-	-	-	2	8	13	24	90***	154
130	10	2	-	-	-	-	-	-	-	-	-	-	-	7	10
	20	2	-	-	-	-	-	-	-	-	-	1	4	24	32
	30	2	-	-	-	-	-	-	-	-	1	3	4	31*	47
	40	2	-	-	-	-	-	-	-	-	2	4	5	55*	74
	50	2	-	-	-	-	-	-	-	-	3	5	9	67**	97
	60	1	-	-	-	-	-	-	-	1	4	6	12	79**	114
	70	1	-	-	-	-	-	-	-	2	4	10	13	88**	129
	80	1	-	-	-	-	-	-	-	3	4	13	17	90***	144
	90	1	-	-	-	-	-	-	-	3	10	11	25	91***	157
	95	1	-	-	-	-	-	-	-	4	11	11	28	92***	163
140	10	2	-	-	-	-	-	-	-	-	-	-	-	10	13
	15	2	-	-	-	-	-	-	-	-	-	-	3	20	26
	20	2	-	-	-	-	-	-	-	-	-	3	3	26	35
	30	2	-	-	-	-	-	-	-	-	2	4	4	38*	56
	40	2	-	-	-	-	-	-	-	1	3	4	7	60**	88
	50	2	-	-	-	-	-	-	-	2	4	4	12	73**	108
	60	2	-	-	-	-	-	-	-	3	4	9	12	85**	126
	65	2	-	-	-	-	-	-	-	3	4	11	13	90**	134
	70	1	-	-	-	-	-	-	1	3	5	12	14	90***	142
	80	1	-	-	-	-	-	-	1	4	9	11	24	91***	157
	90	1	-	-	-	-	-	-	2	4	12	15	28	94***	172

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths												Decom. Time (min)
			Air											O_2	
			140	130	120	110	100	90	80	70	60	50	40	30	
150	10	2	-	-	-	-	-	-	-	-	-	-	1	13	17
	15	2	-	-	-	-	-	-	-	-	-	2	3	22	30
	20	2	-	-	-	-	-	-	-	-	1	3	4	28	39
	25	2	-	-	-	-	-	-	-	-	2	4	4	31*	49
	30	2	-	-	-	-	-	-	-	1	3	4	4	46*	66
	35	2	-	-	-	-	-	-	-	2	3	4	6	58*	81
	40	2	-	-	-	-	-	-	-	2	4	4	9	63**	95
	45	2	-	-	-	-	-	-	-	3	4	4	11	72**	107
	50	2	-	-	-	-	-	-	1	3	4	6	12	80**	119
	55	2	-	-	-	-	-	-	1	4	4	8	12	86**	128
	60	2	-	-	-	-	-	-	2	3	4	11	13	90***	141
	70	2	-	-	-	-	-	-	3	3	8	11	21	92***	156
	80	2	-	-	-	-	-	-	3	4	11	14	28	95***	173
	85	1	-	-	-	-	-	1	3	7	10	17	30	96***	181
160	10	2	-	-	-	-	-	-	-	-	-	-	2	15	20
	15	2	-	-	-	-	-	-	-	-	-	3	3	23	32
	20	2	-	-	-	-	-	-	-	-	2	3	4	30	42
	25	2	-	-	-	-	-	-	-	1	3	3	4	36*	55
	30	2	-	-	-	-	-	-	-	2	3	4	5	52*	74
	35	2	-	-	-	-	-	-	-	3	3	5	7	60**	91
	40	2	-	-	-	-	-	-	1	3	4	4	10	70**	105
	45	2	-	-	-	-	-	-	2	3	4	6	11	79**	118
	50	2	-	-	-	-	-	-	2	4	4	8	12	86**	129
	55	2	-	-	-	-	-	-	3	3	5	10	13	90***	142
	60	2	-	-	-	-	-	1	3	3	7	10	15	91***	148
	70	2	-	-	-	-	-	2	3	4	10	11	27	95***	170
	80	2	-	-	-	-	-	2	4	8	9	19	31	98***	189

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths												Decom. Time (min)
			Air											O_2	
			140	130	120	110	100	90	80	70	60	50	40	30	
170	10	3	-	-	-	-	-	-	-	-	-	-	3	16	23
	15	2	-	-	-	-	-	-	-	-	1	3	4	25	36
	20	2	-	-	-	-	-	-	-	1	2	4	4	30*	49
	25	2	-	-	-	-	-	-	-	2	3	4	4	43*	64
	30	2	-	-	-	-	-	-	1	3	3	4	6	59*	84
	35	2	-	-	-	-	-	-	2	3	3	4	9	66**	100
	40	2	-	-	-	-	-	-	3	3	3	6	10	76**	114
	45	2	-	-	-	-	-	1	3	3	4	7	12	84**	127
	50	2	-	-	-	-	-	1	3	3	5	9	13	90***	142
	55	2	-	-	-	-	-	2	3	3	7	10	15	91***	149
	60	2	-	-	-	-	-	2	3	4	8	11	21	94***	161
	65	2	-	-	-	-	-	3	3	5	9	11	28	96***	173
	70	2	-	-	-	-	-	3	4	6	10	15	30	97***	183
	75	2	-	-	-	-	1	3	3	9	9	21	33	98***	195
180	5	3	-	-	-	-	-	-	-	-	-	-	-	6	10
	10	3	-	-	-	-	-	-	-	-	-	1	3	18	26
	15	2	-	-	-	-	-	-	-	-	2	3	4	27	39
	20	2	-	-	-	-	-	-	-	2	3	3	4	32*	52
	25	2	-	-	-	-	-	-	1	3	3	4	3	50*	72
	30	2	-	-	-	-	-	-	2	3	3	4	8	60**	93
	35	2	-	-	-	-	-	1	2	3	4	4	10	72**	109
	40	2	-	-	-	-	-	2	2	3	4	7	11	82**	124
	45	2	-	-	-	-	-	2	3	3	4	9	12	90**	136
	50	2	-	-	-	-	-	3	3	3	6	10	15	90***	148
	55	2	-	-	-	-	1	3	3	4	7	11	20	94***	161
	60	2	-	-	-	-	1	3	3	5	9	11	28	96***	174
	65	2	-	-	-	-	2	3	3	7	9	16	31	98***	187
	70	2	-	-	-	-	2	3	4	8	10	21	35	99***	200

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths												Decom. Time (min)
			Air											O_2	
			140	130	120	110	100	90	80	70	60	50	40	30	
190	5	3	-	-	-	-	-	-	-	-	-	-	-	6	10
	10	3	-	-	-	-	-	-	-	-	-	2	3	19	28
	15	3	-	-	-	-	-	-	-	-	3	3	4	28	42
	20	2	-	-	-	-	-	-	1	2	3	3	4	35*	56
	25	2	-	-	-	-	-	-	2	3	3	3	6	55*	80
	30	2	-	-	-	-	-	1	3	2	4	3	9	65**	100
	35	2	-	-	-	-	-	2	3	3	3	6	10	77**	117
	40	2	-	-	-	-	1	2	3	3	3	9	11	87**	132
	45	2	-	-	-	-	1	3	3	3	6	9	14	90***	147
	50	2	-	-	-	-	2	2	3	4	8	9	19	94***	159
	55	2	-	-	-	-	2	3	3	5	9	11	26	97***	174
	60	2	-	-	-	-	3	3	3	7	9	15	32	98***	188
	65	2	-	-	-	1	2	3	4	8	10	21	36	99***	202
200	5	3	-	-	-	-	-	-	-	-	-	-	-	6	10
	10	3	-	-	-	-	-	-	-	-	-	2	4	20	30
	15	3	-	-	-	-	-	-	-	1	3	3	4	30	45
	20	2	-	-	-	-	-	-	2	2	3	4	3	41*	63
	25	2	-	-	-	-	-	1	2	3	3	3	7	60**	92
	30	2	-	-	-	-	-	2	3	3	3	4	10	71**	109
	35	2	-	-	-	-	1	2	3	3	3	8	10	82**	125
	40	2	-	-	-	-	2	2	3	3	5	9	12	90***	144
	45	2	-	-	-	-	2	3	3	3	7	10	16	93***	155
	50	2	-	-	-	1	2	3	3	5	8	10	25	96***	171
	55	2	-	-	-	1	3	3	3	6	9	13	32	99***	187
	60	2	-	-	-	2	2	3	4	8	9	21	36	100***	203

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths												Decom. Time (min)
			Air											O_2	
			140	130	120	110	100	90	80	70	60	50	40	30	
210	5	3	-	-	-	-	-	-	-	-	-	-	-	7	11
	10	3	-	-	-	-	-	-	-	-	1	3	3	22	33
	15	3	-	-	-	-	-	-	-	2	3	3	4	30*	51
	20	3	-	-	-	-	-	-	2	3	3	3	4	47*	71
	25	2	-	-	-	-	-	2	2	3	4	2	9	60**	95
	30	2	-	-	-	-	1	2	3	3	3	6	10	75**	116
	35	2	-	-	-	-	2	2	3	3	4	8	12	87**	134
	40	2	-	-	-	1	2	3	3	3	6	9	15	90***	150
	45	2	-	-	-	2	2	3	3	4	7	11	21	96***	167
	50	2	-	-	-	2	2	3	4	5	9	12	30	98***	183
	55	2	-	-	-	3	2	3	4	7	9	19	37	99***	201
220	5	4	-	-	-	-	-	-	-	-	-	-	-	7	12
	10	3	-	-	-	-	-	-	-	-	2	2	4	23	35
	15	3	-	-	-	-	-	-	1	2	3	3	4	30*	52
	20	3	-	-	-	-	-	1	3	2	3	3	5	52*	78
	25	2	-	-	-	-	1	2	3	2	3	4	9	66**	103
	30	2	-	-	-	-	2	2	3	3	3	7	10	80**	123
	35	2	-	-	-	1	2	3	3	3	4	9	13	90***	146
	40	2	-	-	-	2	2	3	3	3	7	10	18	94***	160
	45	2	-	-	1	2	2	3	3	5	8	11	27	98***	178
	50	2	-	-	1	2	3	3	3	7	9	16	35	100***	197
	55	2	-	-	2	2	3	3	5	7	10	24	41	101***	216
230	5	4	-	-	-	-	-	-	-	-	-	-	-	8	13
	10	3	-	-	-	-	-	-	-	-	2	3	4	24	37
	15	3	-	-	-	-	-	-	2	2	3	3	3	33*	55
	20	3	-	-	-	-	-	2	2	3	3	3	6	57*	85
	25	3	-	-	-	-	2	2	3	3	2	5	9	71**	111
	30	2	-	-	-	1	2	3	2	3	3	8	11	85**	131
	35	2	-	-	-	2	2	3	3	2	7	8	15	90***	150
	40	2	-	-	1	2	3	2	3	4	8	10	22	97***	170
	45	2	-	-	2	2	2	3	3	7	8	13	33	99***	190
	50	2	-	-	2	3	2	3	5	7	9	21	40	100***	210

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths												Decom. Time (min)
			Air											O_2	
			140	130	120	110	100	90	80	70	60	50	40	30	
240	5	4	-	-	-	-	-	-	-	-	-	-	-	8	13
	10	3	-	-	-	-	-	-	-	1	2	3	4	25	39
	15	3	-	-	-	-	-	1	2	2	3	3	3	36*	59
	20	3	-	-	-	-	1	2	2	3	3	3	7	60**	95
	25	3	-	-	-	1	2	2	3	3	2	6	10	75**	118
	30	3	-	-	-	2	2	3	2	3	4	9	12	89**	140
	35	2	-	-	1	2	3	2	3	3	7	9	18	93***	159
	40	2	-	-	2	2	3	2	3	5	8	12	27	98***	180
	45	2	-	1	2	2	3	3	3	7	9	17	38	100***	203
250	10	3	-	-	-	-	-	-	-	1	3	3	4	26	41
	15	3	-	-	-	-	-	1	2	3	3	3	3	40*	64
	20	3	-	-	-	-	2	2	2	3	3	3	8	61**	98
	25	3	-	-	-	2	2	2	3	2	3	7	10	80**	125
	30	3	-	-	1	2	2	3	3	2	6	8	14	90***	150
	35	2	-	1	1	2	3	2	3	4	7	10	22	96***	169
	40	2	-	1	2	2	3	3	2	7	8	13	34	99***	192
	45	2	-	2	2	2	3	2	6	7	9	22	41	101***	215
260	10	4	-	-	-	-	-	-	-	2	2	3	4	28	44
	15	3	-	-	-	-	-	2	2	3	3	3	3	45*	70
	20	3	-	-	-	1	2	2	2	3	3	3	9	65**	104
	25	3	-	-	1	2	2	2	3	2	3	8	11	84**	132
	30	3	-	1	1	2	2	3	2	3	7	8	16	91***	155
	35	3	-	1	2	2	3	2	3	5	7	12	26	98***	180
	40	2	1	1	2	3	2	3	4	6	9	16	39	100***	204
270	10	4	-	-	-	-	-	-	1	2	2	3	4	29	46
	15	3	-	-	-	-	1	2	2	3	3	2	5	49*	76
	20	3	-	-	-	2	2	2	2	3	3	4	9	70**	111
	25	3	-	-	2	2	2	2	3	2	4	8	12	88**	139
	30	3	-	1	2	2	2	3	2	4	7	9	18	94***	163
	35	3	1	1	2	2	3	2	3	6	8	13	31	99***	190
	40	3	2	1	2	2	3	2	5	7	10	20	42	101***	216

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths														Decom. Time (min)
			Air													O_2	
			160	150	140	130	120	110	100	90	80	70	60	50	40	30	
280	10	4	-	-	-	-	-	-	-	-	1	2	3	3	3	30*	52
	15	3	-	-	-	-	-	-	2	2	2	2	3	3	6	53*	82
	20	3	-	-	-	-	1	2	2	2	2	3	2	6	9	74**	117
	25	3	-	-	-	1	2	2	2	2	3	2	5	8	13	90***	149
	30	3	-	-	1	1	2	2	2	3	2	5	7	10	22	96***	172
	35	3	-	-	2	1	2	2	3	2	4	6	8	15	36	100***	200
	40	3	-	1	1	2	2	3	2	3	6	7	11	24	44	103***	228
290	10	4	-	-	-	-	-	-	-	-	2	2	3	3	3	30*	53
	15	3	-	-	-	-	-	1	1	2	3	2	3	3	6	57*	87
	20	3	-	-	-	-	2	1	2	2	3	2	3	7	9	78**	123
	25	3	-	-	-	2	1	2	2	3	2	3	6	8	15	90***	153
	30	3	-	-	1	2	2	2	2	3	2	5	8	11	26	98***	181
	35	3	-	1	1	2	2	2	3	2	5	6	9	18	40	101***	211
300	10	4	-	-	-	-	-	-	-	1	2	2	2	4	3	30*	54
	15	4	-	-	-	-	-	1	2	2	2	3	2	4	7	60**	98
	20	3	-	-	-	1	1	2	2	2	3	2	3	7	11	81**	129
	25	3	-	-	1	1	2	2	2	3	2	3	7	8	17	92***	159
	30	3	-	1	1	2	2	2	2	2	3	6	8	13	31	99***	191
	35	3	-	2	1	2	2	2	2	3	5	7	10	22	42	103***	222
310	10	4	-	-	-	-	-	-	-	1	2	2	3	3	3	31*	55
	15	4	-	-	-	-	-	2	2	2	2	3	2	3	9	60**	100
	20	3	-	-	-	1	2	2	2	2	2	3	3	8	11	85**	135
	25	3	-	-	2	1	2	2	2	2	3	3	7	10	19	94***	166
	30	3	-	1	2	2	2	2	2	2	4	6	8	15	35	101***	201
	35	3	1	1	2	2	2	2	2	3	6	7	12	26	44	104***	233

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths														Decom. Time (min)
			Air													O_2	
			160	150	140	130	120	110	100	90	80	70	60	50	40	30	
320	10	4	-	-	-	-	-	-	-	2	2	2	3	3	3	34*	59
	15	4	-	-	-	-	1	2	1	2	3	2	3	3	9	63**	104
	20	3	-	-	1	1	2	2	2	2	2	3	4	8	12	86**	141
	25	3	-	1	1	2	2	2	2	2	2	5	7	10	23	96***	174
	30	3	1	1	2	2	1	3	2	2	4	7	9	17	39	102***	211
330	10	4	-	-	-	-	-	-	-	2	2	2	3	3	3	36*	61
	15	4	-	-	-	-	2	1	2	2	2	3	2	5	9	67**	110
	20	4	-	-	1	2	1	2	2	3	2	2	5	8	13	90***	151
	25	3	-	2	1	2	1	2	3	2	2	6	7	11	27	98***	183
	30	3	1	2	1	2	2	2	2	2	6	6	10	20	42	102***	219

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8

SURFACE DECOMPRESSION

WITH OXYGEN (FEET)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths												Surface Interval	Chamber O_2	Decom. Time (min)
			In-Water Stops											O_2			
			Air														
			140	130	120	110	100	90	80	70	60	50	40	30		40	
120	20	2	-	-	-	-	-	-	-	-	-	-	3	2	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	21	36
	30	2	-	-	-	-	-	-	-	-	-	2	4	4		30*	54
	40	2	-	-	-	-	-	-	-	-	-	4	5	8		50*	81
	50	1	-	-	-	-	-	-	-	-	2	4	7	11		60**	103
	60	1	-	-	-	-	-	-	-	-	3	4	11	12		71**	120
	70	1	-	-	-	-	-	-	-	-	3	7	13	19		73**	134
	75	1	-	-	-	-	-	-	-	-	4	9	13	29		71**	145
	80	1	-	-	-	-	-	-	-	-	4	11	13	30*		71**	153
	90	1	-	-	-	-	-	-	-	1	4	14	18	35*		74**	170
	100	1	-	-	-	-	-	-	-	2	8	13	24	36*		76**	183
130	15	2	-	-	-	-	-	-	-	-	-	-	2	2		17	31
	20	2	-	-	-	-	-	-	-	-	-	1	4	2		23	40
	30	2	-	-	-	-	-	-	-	-	1	3	4	5		35*	63
	40	2	-	-	-	-	-	-	-	-	2	4	5	10		56*	91
	50	2	-	-	-	-	-	-	-	-	3	5	9	11		67**	114
	60	1	-	-	-	-	-	-	-	1	4	6	12	16		74**	132
	70	1	-	-	-	-	-	-	-	2	4	10	13	30		73**	151
	80	1	-	-	-	-	-	-	-	3	4	13	17	30*		77**	168
	90	1	-	-	-	-	-	-	-	3	10	11	25	37*		76**	186
	95	1	-	-	-	-	-	-	-	4	11	11	28	38*		77**	193
140	15	2	-	-	-	-	-	-	-	-	-	-	3	2		19	34
	20	2	-	-	-	-	-	-	-	-	-	3	3	3		25	44
	30	2	-	-	-	-	-	-	-	-	2	4	4	8		41*	74
	40	2	-	-	-	-	-	-	-	1	3	4	7	10		60**	104
	50	2	-	-	-	-	-	-	-	2	4	4	12	12		73**	126
	60	2	-	-	-	-	-	-	-	3	4	9	12	27		74**	148
	65	2	-	-	-	-	-	-	-	3	4	11	13	30*		73**	158
	70	1	-	-	-	-	-	-	1	3	5	12	14	30*		77**	166
	80	1	-	-	-	-	-	-	1	4	9	11	24	37*		77**	187
	90	1	-	-	-	-	-	-	2	4	12	15	28	39*		78**	202

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths: In-Water Stops: Air 140	130	120	110	100	90	80	70	60	50	40	O_2 30	Surface Interval	Chamber O_2 40	Decom. Time (min)
150	10	2	-	-	-	-	-	-	-	-	-	-	1	2	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	12	25
	15	2	-	-	-	-	-	-	-	-	-	2	3	2		21	38
	20	2	-	-	-	-	-	-	-	-	1	3	4	2		29	49
	25	2	-	-	-	-	-	-	-	-	2	4	4	6		34*	65
	30	2	-	-	-	-	-	-	-	1	3	4	4	9		48*	84
	35	2	-	-	-	-	-	-	-	2	3	4	6	10		60*	100
	40	2	-	-	-	-	-	-	-	2	4	4	9	11		64**	114
	45	2	-	-	-	-	-	-	-	3	4	4	11	12		72**	126
	50	2	-	-	-	-	-	-	1	3	4	6	12	15		76**	136
	55	2	-	-	-	-	-	-	1	4	4	8	12	27		75**	150
	60	2	-	-	-	-	-	-	2	3	4	11	13	30*		74**	161
	70	2	-	-	-	-	-	-	3	3	8	11	21	37*		77**	184
	80	2	-	-	-	-	-	-	3	4	11	14	28	39*		79**	202
	85	1	-	-	-	-	-	1	3	7	10	17	30	40*		79**	211
160	10	2	-	-	-	-	-	-	-	-	-	-	2	2		14	28
	15	2	-	-	-	-	-	-	-	-	-	3	3	2		23	41
	20	2	-	-	-	-	-	-	-	-	2	3	4	3		30*	57
	25	2	-	-	-	-	-	-	-	1	3	3	4	6		39*	73
	30	2	-	-	-	-	-	-	-	2	3	4	5	9		54*	92
	35	2	-	-	-	-	-	-	-	3	3	5	7	10		61**	109
	40	2	-	-	-	-	-	-	1	3	4	4	10	12		70**	124
	45	2	-	-	-	-	-	-	2	3	4	6	11	13		78**	137
	50	2	-	-	-	-	-	-	2	4	4	8	12	26		76**	152
	55	2	-	-	-	-	-	-	3	3	5	10	13	30*		75**	164
	60	2	-	-	-	-	-	1	3	3	7	10	15	32*		78**	173
	70	2	-	-	-	-	-	2	3	4	10	11	27	39*		79**	199
	80	2	-	-	-	-	-	2	4	8	9	19	31	40*		81**	218

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths													Decom. Time (min)
			In-Water Stops											Surface Interval	Chamber O_2	
			Air										O_2			
			140	130	120	110	100	90	80	70	60	50	40	30		40	
170	10	3	-	-	-	-	-	-	-	-	-	-	3	2	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	15	30
	15	2	-	-	-	-	-	-	-	-	1	3	4	2		25	45
	20	2	-	-	-	-	-	-	-	1	2	4	4	5		30*	61
	25	2	-	-	-	-	-	-	-	2	3	4	4	6		46*	82
	30	2	-	-	-	-	-	-	1	3	3	4	6	10		60*	102
	35	2	-	-	-	-	-	-	2	3	3	4	9	11		67**	119
	40	2	-	-	-	-	-	-	3	3	3	6	10	13		75**	133
	45	2	-	-	-	-	-	1	3	3	4	7	12	25		76**	151
	50	2	-	-	-	-	-	1	3	3	5	9	13	30*		75**	164
	55	2	-	-	-	-	-	2	3	3	7	10	15	31*		79**	175
	60	2	-	-	-	-	-	2	3	4	8	11	21	38*		79**	191
	65	2	-	-	-	-	-	3	3	5	9	11	28	39*		80**	203
	70	2	-	-	-	-	-	3	4	6	10	15	30	40*		81**	214
	75	2	-	-	-	-	1	3	3	9	9	21	33	40*		82**	225
180	10	3	-	-	-	-	-	-	-	-	-	1	3	2		16	32
	15	2	-	-	-	-	-	-	-	-	2	3	4	2		27	48
	20	2	-	-	-	-	-	-	-	2	3	3	4	6		34*	67
	25	2	-	-	-	-	-	-	1	3	3	4	3	10		51*	90
	30	2	-	-	-	-	-	-	2	3	3	4	8	10		61**	111
	35	2	-	-	-	-	-	1	2	3	4	4	10	12		72**	128
	40	2	-	-	-	-	-	2	2	3	4	7	11	21		77**	147
	45	2	-	-	-	-	-	2	3	3	4	9	12	30		76**	159
	50	2	-	-	-	-	-	3	3	3	6	10	15	30*		80**	175
	55	2	-	-	-	-	1	3	3	4	7	11	20	39*		78**	191
	60	2	-	-	-	-	1	3	3	5	9	11	28	39*		80**	204
	65	2	-	-	-	-	2	3	3	7	9	16	31	40*		82**	218
	70	2	-	-	-	-	2	3	4	8	10	21	35	39*		84**	231

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths													Chamber O_2	Decom. Time (min)
			In-Water Stops												Surface Interval		
			Air											O_2			
			140	130	120	110	100	90	80	70	60	50	40	30		40	
190	10	3	-	-	-	-	-	-	-	-	-	2	3	2	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	18	36
	15	3	-	-	-	-	-	-	-	-	3	3	4	2		29	51
	20	2	-	-	-	-	-	-	1	2	3	3	4	7		39*	74
	25	2	-	-	-	-	-	-	2	3	3	3	6	10		56*	98
	30	2	-	-	-	-	-	1	3	2	4	3	9	11		66**	119
	35	2	-	-	-	-	-	2	3	3	3	6	10	13		77**	137
	40	2	-	-	-	-	1	2	3	3	3	9	11	27		76**	155
	45	2	-	-	-	-	1	3	3	3	6	9	14	30*		78**	172
	50	2	-	-	-	-	2	2	3	4	8	9	19	38*		79**	189
	55	2	-	-	-	-	2	3	3	5	9	11	26	40*		80**	204
	60	2	-	-	-	-	3	3	3	7	9	15	32	40*		82**	219
	65	2	-	-	-	1	2	3	4	8	10	21	36	39*		85**	234
200	10	3	-	-	-	-	-	-	-	-	-	2	4	2		19	38
	15	3	-	-	-	-	-	-	-	1	3	3	4	3		30*	59
	20	2	-	-	-	-	-	-	2	2	3	4	3	8		45*	82
	25	2	-	-	-	-	-	1	2	3	3	3	7	10		60**	109
	30	2	-	-	-	-	-	2	3	3	3	4	10	12		70**	127
	35	2	-	-	-	-	1	2	3	3	3	8	10	22		77**	149
	40	2	-	-	-	-	2	2	3	3	5	9	12	30*		76**	167
	45	2	-	-	-	-	2	3	3	3	7	10	16	37*		79**	185
	50	2	-	-	-	1	2	3	3	5	8	10	25	39*		81**	202
	55	2	-	-	-	1	3	3	3	6	9	13	32	40*		83**	218
	60	2	-	-	-	2	2	3	4	8	9	21	36	40*		84**	234
210	10	3	-	-	-	-	-	-	-	-	1	3	3	2		21	41
	15	3	-	-	-	-	-	-	-	2	3	3	4	4		30*	62
	20	3	-	-	-	-	-	-	2	3	3	3	4	9		49*	88
	25	2	-	-	-	-	-	2	2	3	4	2	9	10		62**	114
	30	2	-	-	-	-	1	2	3	3	3	6	10	13		75**	136
	35	2	-	-	-	-	2	2	3	3	4	8	12	26		78**	158
	40	2	-	-	-	1	2	3	3	3	6	9	15	34*		80**	181
	45	2	-	-	-	2	2	3	3	4	7	11	21	39*		80**	197
	50	2	-	-	-	2	2	3	4	5	9	12	30	40*		82**	214
	55	2	-	-	-	3	2	3	4	7	9	19	37	39*		85**	233

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths													Decom. Time (min)
			In-Water Stops											Surface Interval	Chamber O_2	
			Air										O_2			
			140	130	120	110	100	90	80	70	60	50	40	30		40	
220	10	3	-	-	-	-	-	-	-	-	2	2	4	2	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	22	43
	15	3	-	-	-	-	-	-	1	2	3	3	4	5		32*	66
	20	3	-	-	-	-	-	1	3	2	3	3	5	10		53*	95
	25	2	-	-	-	-	1	2	3	2	3	4	9	11		67**	122
	30	2	-	-	-	-	2	2	3	3	3	7	10	19		79**	148
	35	2	-	-	-	1	2	3	3	3	4	9	13	30		78**	166
	40	2	-	-	-	2	2	3	3	3	7	10	18	37*		80**	190
	45	2	-	-	1	2	2	3	3	5	8	11	27	40*		82**	209
	50	2	-	-	1	2	3	3	3	7	9	16	35	40*		84**	228
	55	2	-	-	2	2	3	3	5	7	10	24	41	39*		88**	249
230	10	3	-	-	-	-	-	-	-	-	2	3	4	2		24	46
	15	3	-	-	-	-	-	-	2	2	3	3	3	7		34*	70
	20	3	-	-	-	-	-	2	2	3	3	3	6	10		58*	103
	25	3	-	-	-	-	2	2	3	3	2	5	9	12		71**	129
	30	2	-	-	-	1	2	3	2	3	3	8	11	23		79**	155
	35	2	-	-	-	2	2	3	3	2	7	8	15	34*		80**	181
	40	2	-	-	1	2	3	2	3	4	8	10	22	39*		81**	200
	45	2	-	-	2	2	2	3	3	7	8	13	33	40*		84**	222
	50	2	-	-	2	3	2	3	5	7	9	21	40	39*		87**	243
240	10	3	-	-	-	-	-	-	-	1	2	3	4	2		25	48
	15	3	-	-	-	-	-	1	2	2	3	3	3	8		38*	76
	20	3	-	-	-	-	1	2	2	3	3	3	7	10		60**	112
	25	3	-	-	-	1	2	2	3	3	2	6	10	13		75**	137
	30	3	-	-	-	2	2	3	2	3	4	9	12	27		79**	163
	35	2	-	-	1	2	3	2	3	3	7	9	18	36*		81**	190
	40	2	-	-	2	2	3	2	3	5	8	12	27	40*		82**	211
	45	2	-	1	2	2	3	3	3	7	9	17	38	39*		87**	236

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths: In-Water Stops: Air 160	150	140	130	120	110	100	90	80	70	60	50	40	O_2 30	Surface Interval	Chamber O_2 40	Decom. Time (min)
250	10	3	-	-	-	-	-	-	-	-	-	1	3	3	4	2	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	27	51
	15	3	-	-	-	-	-	-	-	1	2	3	3	3	3	9		42*	82
	20	3	-	-	-	-	-	-	2	2	2	3	3	3	8	11		62**	117
	25	3	-	-	-	-	-	2	2	2	3	2	3	7	10	18		80**	150
	30	3	-	-	-	-	1	2	2	3	3	2	6	8	14	31*		81**	178
	35	2	-	-		1	1	2	3	2	3	4	7	10	22	38*		82**	200
	40	2	-	-		1	2	2	3	3	2	7	8	13	34	39*		85**	224
	45	2	-	-		2	2	2	3	2	6	7	9	22	41	39*		89**	249
260	10	4	-	-	-	-	-	-	-	-	-	2	2	3	4	2		29	53
	15	3	-	-	-	-	-	-	-	2	2	3	3	3	3	9		47*	88
	20	3	-	-	-	-	-	1	2	2	2	3	3	3	9	11		66**	123
	25	3	-	-	-	-	1	2	2	2	3	2	3	8	11	21		80**	156
	30	3	-	-	-	1	1	2	2	3	2	3	7	8	16	34*		81**	185
	35	3	-	-	-	1	2	2	3	2	3	5	7	12	26	39*		83**	210
	40	2	-	-	1	1	2	3	2	3	4	6	9	16	39	39*		87**	237
270	10	4	-	-	-	-	-	-	-	-	1	2	2	3	4	2		30*	60
	15	3	-	-	-	-	-	-	1	2	2	3	3	2	5	9		52*	95
	20	3	-	-	-	-	-	2	2	2	2	3	3	4	9	12		70**	130
	25	3	-	-	-	-	2	2	2	2	3	2	4	8	12	25		80**	163
	30	3	-	-	-	1	2	2	2	3	2	4	7	9	18	36*		82**	194
	35	3	-	-	1	1	2	2	3	2	3	6	8	13	31	39*		85**	221
	40	3	-	-	2	1	2	2	3	2	5	7	10	20	42	39*		89**	249
280	10	4	-	-	-	-	-	-	-	-	1	2	3	3	3	4		30	58
	15	3	-	-	-	-	-	-	2	2	2	2	3	3	6	9		56*	101
	20	3	-	-	-	-	1	2	2	2	2	3	2	6	9	13		73**	136
	25	3	-	-	-	1	2	2	2	2	3	2	5	8	13	28		81**	170
	30	3	-	-	1	1	2	2	2	3	2	5	7	10	22	38*		83**	204
	35	3	-	-	2	1	2	2	3	2	4	6	8	15	36	39*		87**	233
	40	3	-	1	1	2	2	3	2	3	6	7	11	24	44	39*		90***	265

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (FEET)

Depth (fsw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths: In-Water Stops: Air: 160	150	140	130	120	110	100	90	80	70	60	50	40	O_2 30	Surface Interval	Chamber O_2 40	Decom. Time (min)
290	10	4	-	-	-	-	-	-	-	-	2	2	3	3	3	4	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	30*	64
	15	3	-	-	-	-	-	1	1	2	3	2	3	3	6	10		59*	106
	20	3	-	-	-	-	2	1	2	2	3	2	3	7	9	17		79**	148
	25	3	-	-	-	2	1	2	2	3	2	3	6	8	15	31*		82**	183
	30	3	-	-	1	2	2	2	2	3	2	5	8	11	26	39*		84**	213
	35	3	-	1	1	2	2	2	3	2	5	6	9	18	40	39*		89**	245
300	10	4	-	-	-	-	-	-	-	1	2	2	2	4	3	5		30*	66
	15	4	-	-	-	-	-	1	2	2	2	3	2	4	7	10		60**	114
	20	3	-	-	-	1	1	2	2	2	3	2	3	7	11	16		81**	154
	25	3	-	-	1	1	2	2	2	3	2	3	7	8	17	34*		82**	190
	30	3	-	1	1	2	2	2	2	2	3	6	8	13	31	39*		85**	223
	35	3	-	2	1	2	2	2	2	3	5	7	10	22	42	39*		90**	255
310	10	4	-	-	-	-	-	-	-	1	2	2	3	3	3	6		32*	69
	15	4	-	-	-	-	-	2	2	2	2	3	2	3	9	10		62**	119
	20	3	-	-	-	1	2	2	2	2	2	3	3	8	11	21		82**	160
	25	3	-	-	2	1	2	2	2	2	3	3	7	10	19	36*		83**	198
	30	3	-	1	2	2	2	2	2	2	4	6	8	15	35	39*		87**	233
	35	3	1	1	2	2	2	2	2	3	6	7	12	26	44	39*		90***	270
320	10	4	-	-	-	-	-	-	-	2	2	2	3	3	3	7		35*	74
	15	4	-	-	-	-	1	2	1	2	3	2	3	3	9	11		64**	123
	20	3	-	-	1	1	2	2	2	2	2	3	4	8	12	24		82**	166
	25	3	-	1	1	2	2	2	2	2	2	5	7	10	23	37*		84**	206
	30	3	1	1	2	2	1	3	2	2	4	7	9	17	39	39*		89**	244
330	10	4	-	-	-	-	-	-	-	2	2	2	3	3	3	7		38*	77
	15	4	-	-	-	-	2	1	2	2	2	3	2	5	9	11		68**	129
	20	4	-	-	1	2	1	2	2	3	2	2	5	8	13	27		82**	171
	25	3	-	2	1	2	1	2	3	2	2	6	7	11	27	38*		85**	215
	30	3	1	2	1	2	2	2	2	2	6	6	10	20	42	39*		90**	253

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9

EMERGENCY DECOMPRESSION

(FEET)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)		Air	In-Water			Recompression Chamber							
				Air		Dec. Time (min)	Surf. Int.	O_2	Dec. Time (min)	Surf. Int.	Air			Dec. Time (min)
			30	20	10			40			40	30	20	10	
120	20	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	4	7	21	37	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	21	38	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	3	4	7	21	51
	30		8	16	35	67		30*	58		4	8	16	35	86
	40		16	18	65	110		50*	89		5	16	18	65	138
	50		22	27	82	145		60**	114		7	22	27	82	181
	60		24	44	86	173		71**	132		11	24	44	86	215
	70		38	57	85	204		73**	153		13	38	57	85	262
	75		58	60	85	230		71**	174		13	58	60	85	308
	80		65	63	85	242		71**	183		13	65	63	85	327
	90		75	65	87	265		74**	205		18	75	65	87	365
	100		77	65	88	278		76**	219		24	77	65	88	386
130	15		4	5	18	31		17	33		2	4	5	18	44
	20		4	9	22	42		23	42		4	4	9	22	57
	30		12	15	45	82		35*	69		4	12	15	45	105
	40		20	21	74	128		56*	101		5	20	21	74	160
	50		22	37	85	163		67**	125		9	22	37	85	201
	60		32	55	86	197		74**	148		12	32	55	86	248
	70		60	63	87	240		73**	181		13	60	63	87	320
	80		65	65	88	256		77**	198		17	65	65	88	345
	90		79	64	90	283		76**	223		25	79	64	90	394
	95		81	65	90	291		77**	231		28	81	65	90	407
140	15		4	5	20	34		19	36		3	4	5	20	48
	20		6	11	24	49		25	47		3	6	11	24	65
	30		16	17	55	100		41*	82		4	16	17	55	127
	40		20	26	82	145		60**	114		7	20	26	82	179
	50		24	48	86	182		73**	138		12	24	48	86	225
	60		54	62	87	233		74**	175		12	54	62	87	305
	65		65	65	87	250		73**	188		13	65	65	87	334
	70		65	65	89	255		77**	196		14	65	65	89	341
	80		79	65	91	285		77**	224		24	79	65	91	395
	90		83	65	93	303		78**	241		28	83	65	93	421

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)		In-Water Air	In-Water Air	In-Water Air	In-Water Dec. Time (min)	Recompression Chamber Surf. Int.	Recompression Chamber O_2	Recompression Chamber Dec. Time (min)	Recompression Chamber Surf. Int.	Recompression Chamber Air	Recompression Chamber Air	Recompression Chamber Air	Recompression Chamber Air	Recompression Chamber Dec. Time (min)
			30	20	10			40			40	30	20	10	
150	10	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	4	5	13	25	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	12	27	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	1	4	5	13	37
	15		4	7	20	38		21	40		3	4	7	20	52
	20		4	12	28	54		29	51		4	4	12	28	69
	25		12	15	45	84		34*	71		4	12	15	45	107
	30		18	18	65	115		48*	93		4	18	18	65	144
	35		20	25	78	140		60*	110		6	20	25	78	173
	40		22	34	85	162		64**	125		9	22	34	85	200
	45		24	46	87	181		72**	138		11	24	46	87	223
	50		30	56	87	201		76**	151		12	30	56	87	250
	55		54	63	87	235		75**	177		12	54	63	87	308
	60		65	65	89	254		74**	191		13	65	65	89	339
	70		79	65	91	283		77**	221		21	79	65	91	389
	80		83	65	94	304		79**	241		28	83	65	94	422
	85		85	66	95	315		79**	251		30	85	66	95	437
160	10		4	5	15	28		14	30		2	4	5	15	41
	15		4	9	21	42		23	43		3	4	9	21	56
	20		6	14	32	63		30*	60		4	6	14	32	80
	25		16	16	54	99		39*	81		4	16	16	54	126
	30		18	21	73	128		54*	101		5	18	21	73	158
	35		20	30	84	154		61**	119		7	20	30	84	188
	40		24	43	87	178		70**	136		10	24	43	87	219
	45		26	55	87	196		78**	150		11	26	55	87	240
	50		52	63	88	235		76**	178		12	52	63	88	306
	55		65	65	89	255		75**	194		13	65	65	89	340
	60		69	66	90	266		78**	205		15	69	66	90	357
	70		83	66	94	302		79**	238		27	83	66	94	418
	80		85	66	98	324		81**	258		31	85	66	98	447

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)		Air	In-Water			Recompression Chamber							
				Air		Dec. Time (min)	Surf. Int.	O_2	Dec. Time (min)	Surf. Int.	Air			Dec. Time (min)
			30	20	10			40			40	30	20	10	
170	10	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	4	5	16	31	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	15	32	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	3	4	5	16	45
	15		4	10	23	47		25	47		4	4	10	23	62
	20		10	14	40	77		30*	66		4	10	14	40	98
	25		16	17	63	111		46*	90		4	16	17	63	138
	30		20	26	79	144		60*	112		6	20	26	79	177
	35		22	38	86	169		67**	130		9	22	38	86	207
	40		26	52	87	192		75**	146		10	26	52	87	235
	45		50	62	88	232		76**	176		12	50	62	88	301
	50		65	65	90	256		75**	194		13	65	65	90	341
	55		67	66	91	266		79**	206		15	67	66	91	355
	60		81	66	93	291		79**	229		21	81	66	93	400
	65		83	66	95	305		80**	242		28	83	66	95	423
	70		85	66	97	318		81**	254		30	85	66	97	440
	75		85	67	100	333		82**	265		33	85	67	100	458
180	10		4	5	17	33		16	34		3	4	5	17	47
	15		4	11	26	52		27	50		4	4	11	26	67
	20		12	15	47	88		34*	73		4	12	15	47	111
	25		20	20	71	127		51*	100		3	20	20	71	157
	30		20	31	83	156		61**	121		8	20	31	83	191
	35		24	46	87	183		72**	140		10	24	46	87	224
	40		42	59	88	220		77**	168		11	42	59	88	280
	45		60	65	90	250		76**	189		12	60	65	90	329
	50		65	66	92	265		80**	205		15	65	66	92	352
	55		83	66	94	294		78**	230		20	83	66	94	404
	60		83	66	96	307		80**	243		28	83	66	96	425
	65		85	67	99	324		82**	258		31	85	67	99	447
	70		83	68	101	337		84**	270		35	83	68	101	462

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)		In-Water Air			In-Water Dec. Time (min)	Recompression Chamber Surf. Int.	Recompression Chamber O_2	Recompression Chamber Dec. Time (min)	Recompression Chamber Surf. Int.	Recompression Chamber Air				Recompression Chamber Dec. Time (min)
			30	20	10			40			40	30	20	10	
190	10	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	4	4	19	35	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	18	38	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	3	4	4	19	49
	15		4	13	28	58		29	53		4	4	13	28	72
	20		14	16	55	100		39*	81		4	14	16	55	125
	25		20	23	77	139		56*	108		6	20	23	77	172
	30		22	38	86	170		66**	130		9	22	38	86	208
	35		26	54	88	197		77**	150		10	26	54	88	240
	40		54	63	90	241		76**	182		11	54	63	90	313
	45		65	66	92	264		78**	202		14	65	66	92	350
	50		81	67	93	290		79**	227		19	81	67	93	397
	55		85	67	96	309		80**	244		26	85	67	96	427
	60		85	67	100	326		82**	259		32	85	67	100	450
	65		83	68	103	341		85**	273		36	83	68	103	467
200	10		4	4	20	37		19	40		4	4	4	20	52
	15		6	14	32	66		30*	62		4	6	14	32	82
	20		16	17	62	111		45*	90		3	16	17	62	137
	25		20	28	81	150		60**	119		7	20	28	81	184
	30		24	45	88	184		70**	139		10	24	45	88	225
	35		44	59	89	224		77**	171		10	44	59	89	285
	40		65	65	91	259		76**	197		12	65	65	91	343
	45		79	67	93	285		79**	222		16	79	67	93	387
	50		83	67	96	305		81**	241		25	83	67	96	420
	55		85	68	99	324		83**	258		32	85	68	99	448
	60		85	69	103	344		84**	274		36	85	69	103	472
210	10		4	6	20	40		21	43		3	4	6	20	54
	15		8	14	38	75		30*	66		4	8	14	38	94
	20		18	19	68	123		49*	97		4	18	19	68	152
	25		20	34	84	162		62**	124		9	20	34	84	198
	30		26	52	88	196		75**	149		10	26	52	88	239
	35		52	63	90	241		78**	184		12	52	63	90	312
	40		73	66	93	276		80**	215		15	73	66	93	371
	45		83	67	96	301		80**	236		21	83	67	96	412
	50		85	67	100	321		82**	254		30	85	67	100	443
	55		83	69	103	341		85**	272		37	83	69	103	468

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)		Air	In-Water			Recompression Chamber							
				Air		Dec. Time (min)	Surf. Int.	O_2	Dec. Time (min)	Surf. Int.	Air			Dec. Time (min)
			30	20	10			40			40	30	20	10	
220	10	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	4	8	21	44	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	22	45	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	4	4	8	21	59
	15		10	14	44	84		32*	71		4	10	14	44	105
	20		20	22	74	136		53*	105		5	20	22	74	168
	25		22	40	86	174		67**	133		9	22	40	86	212
	30		38	57	89	216		79**	167		10	38	57	89	271
	35		60	65	92	257		78**	196		13	60	65	92	337
	40		79	67	95	291		80**	227		18	79	67	95	395
	45		85	67	99	315		82**	249		27	85	67	99	434
	50		85	68	103	337		84**	268		35	85	68	103	464
	55		83	70	107	359		88**	288		41	83	70	107	490
230	10		4	9	22	47		24	48		4	4	9	22	62
	15		14	15	50	95		34*	77		3	14	15	50	119
	20		20	25	79	146		58*	113		6	20	25	79	179
	25		24	46	88	187		71**	141		9	24	46	88	226
	30		46	61	91	233		79**	178		11	46	61	91	297
	35		73	66	94	277		80**	215		15	73	66	94	372
	40		83	67	97	304		81**	239		22	83	67	97	416
	45		85	69	101	330		84**	262		33	85	69	101	455
	50		83	70	106	353		87**	282		40	83	70	106	483
240	10		4	10	24	51		25	50		4	4	10	24	66
	15		16	16	56	105		38*	84		3	16	16	56	131
	20		20	29	82	155		60**	122		7	20	29	82	189
	25		26	52	89	199		75**	150		10	26	52	89	241
	30		54	64	92	250		79**	190		12	54	64	92	323
	35		77	67	95	289		81**	226		18	77	67	95	391
	40		85	68	99	318		82**	251		27	85	68	99	437
	45		83	70	105	345		87**	275		38	83	70	105	473

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)		Air	In-Water			Recompression Chamber							
				Air		Dec. Time (min)	Surf. Int.	O_2	Dec. Time (min)	Surf. Int.	Air			Dec. Time (min)
			30	20	10			40			40	30	20	10	
250	10	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	4	11	26	55	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	27	53	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	4	4	11	26	70
	15		18	17	62	115		42*	91		3	18	17	62	143
	20		22	34	85	167		62**	128		8	22	34	85	204
	25		36	57	89	216		80**	168		10	36	57	89	269
	30		67	65	94	270		81**	209		14	67	65	94	357
	35		81	67	98	303		82**	238		22	81	67	98	413
	40		83	69	102	331		85**	263		34	83	69	102	455
	45		83	71	108	360		89**	288		41	83	71	108	491
260	10		4	12	27	58		29	55		4	4	12	27	73
	15		18	19	67	123		47*	97		3	18	19	67	151
	20		22	39	87	176		66**	134		9	22	39	87	214
	25		42	61	91	231		80**	177		11	42	61	91	291
	30		73	67	95	283		81**	219		16	73	67	95	378
	35		83	68	100	317		83**	249		26	83	68	100	433
	40		83	70	106	347		87**	276		39	83	70	106	476
270	10		4	13	30	63		30*	62		4	4	13	30	78
	15		18	21	72	132		52*	104		5	18	21	72	162
	20		24	46	88	188		70**	142		9	24	46	88	228
	25		50	63	92	245		80**	188		12	50	63	92	314
	30		77	67	97	294		82**	230		18	77	67	97	396
	35		83	69	102	329		85**	260		31	83	69	102	450
	40		83	71	109	362		89**	288		42	83	71	109	494
280	10		8	14	33	71		30	62		3	8	14	33	89
	15		18	24	76	141		56*	110		6	18	24	76	172
	20		26	51	89	198		73**	149		9	26	51	89	240
	25		56	65	93	257		81**	198		13	56	65	93	333
	30		81	67	99	307		83**	242		22	81	67	99	417
	35		83	70	105	342		87**	272		36	83	70	105	468
	40		83	73	112	377		90***	304		44	83	73	112	511

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (FEET)

Depth (fsw)	Bottom Time (min)		Air	In-Water			Recompression Chamber							
				Air		Dec. Time (min)	Surf. Int.	O_2	Dec. Time (min)	Surf. Int.	Air			Dec. Time (min)
			30	20	10			40			40	30	20	10	
290	10	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	8	14	37	76	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	30*	68	Time from leaving the 30 fsw in-water stop to reaching the 40 fsw chamber stop must not exceed 7 minutes	3	8	14	37	94
	15		20	26	80	150		59*	116		6	20	26	80	183
	20		34	54	90	212		79**	165		9	34	54	90	262
	25		67	66	95	275		82**	214		15	67	66	95	364
	30		83	68	101	319		84**	252		26	83	68	101	435
	35		83	71	108	356		89**	284		40	83	71	108	486
300	10		10	15	41	84		30*	71		3	10	15	41	104
	15		20	30	82	159		60**	124		7	20	30	82	193
	20		36	58	91	222		81**	172		11	36	58	91	276
	25		73	67	96	287		82**	224		17	73	67	96	384
	30		83	69	104	332		85**	262		31	83	69	104	453
	35		83	72	111	369		90**	294		42	83	72	111	501
310	10		12	14	46	90		32*	75		3	12	14	46	112
	15		20	34	85	168		62**	129		9	20	34	85	204
	20		42	61	92	234		82**	181		11	42	61	92	294
	25		77	67	99	299		83**	234		19	77	67	99	402
	30		83	70	106	343		87**	272		35	83	70	106	468
	35		83	74	113	383		90***	309		44	83	74	113	517
320	10		14	15	51	99		35*	81		3	14	15	51	123
	15		22	38	86	176		64**	134		9	22	38	86	214
	20		48	63	93	246		82**	190		12	48	63	93	313
	25		79	68	100	309		84**	243		23	79	68	100	418
	30		83	72	108	356		89**	283		39	83	72	108	485
330	10		14	16	54	103		38*	84		3	14	16	54	127
	15		22	42	88	184		68**	140		9	22	42	88	222
	20		54	65	94	258		82**	198		13	54	65	94	331
	25		81	69	102	321		85**	253		27	81	69	102	436
	30		83	72	111	367		90**	292		42	83	72	111	499

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

APPENDIX B

DCIEM HEO_2 DIVING TABLES

(METRES)

TABLE 6

HEO_2 ABORT

(METRES)

TABLE 6: HEO_2 - ABORT TABLE (METRES)

Depth (msw)	Bottom Time (min)	Max Time to 1st Stop (min)	Stop Times (min) at Different Depths (msw)								Decom. Time (min)
			Air								
			24	21	18	15	12	9	6	3	
9	55	1	-	-	-	-	-	-	-	-	1
12	20	1	-	-	-	-	-	-	-	-	1
	30	1	-	-	-	-	-	-	-	3	4
	40	1	-	-	-	-	-	-	-	12	13
15	13	1	-	-	-	-	-	-	-	-	1
	20	1	-	-	-	-	-	-	-	4	5
	30	1	-	-	-	-	-	-	-	12	13
18	10	1	-	-	-	-	-	-	-	-	1
	20	1	-	-	-	-	-	-	-	7	8
	25	1	-	-	-	-	-	-	2	13	16
	30	1	-	-	-	-	-	-	3	16	20
21	8	2	-	-	-	-	-	-	-	-	2
	12	1	-	-	-	-	-	-	-	5	6
	20	1	-	-	-	-	-	-	3	11	15
	30	1	-	-	-	-	-	-	6	19	26
24	6	2	-	-	-	-	-	-	-	-	2
	10	2	-	-	-	-	-	-	-	6	8
	15	1	-	-	-	-	-	-	3	7	11
	20	1	-	-	-	-	-	-	5	14	20
	25	1	-	-	-	-	-	-	7	18	26
27	5	2	-	-	-	-	-	-	-	-	2
	10	2	-	-	-	-	-	-	-	8	10
	15	2	-	-	-	-	-	-	5	10	17
	20	1	-	-	-	-	-	2	6	16	25
30	5	2	-	-	-	-	-	-	-	-	2
	10	2	-	-	-	-	-	-	3	7	12
	15	2	-	-	-	-	-	2	5	13	22
33	5	2	-	-	-	-	-	-	-	-	2
	10	2	-	-	-	-	-	-	4	7	13
	15	2	-	-	-	-	-	3	6	14	25
36	5	2	-	-	-	-	-	-	-	-	2
	10	2	-	-	-	-	-	-	6	7	15
(Dated 91-04-10)											

TABLE 7

IN-WATER OXYGEN DECOMPRESSION

(METRES)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)												Decom. Time (min)
			Air											O_2	
			42	39	36	33	30	27	24	21	18	15	12	9	
36	10	2	-	-	-	-	-	-	-	-	-	-	-	6	9
	20	2	-	-	-	-	-	-	-	-	-	-	3	21	27
	30	2	-	-	-	-	-	-	-	-	-	2	4	30*	44
	40	2	-	-	-	-	-	-	-	-	-	4	4	45*	61
	50	1	-	-	-	-	-	-	-	-	1	4	7	60**	84
	60	1	-	-	-	-	-	-	-	-	2	5	11	70**	100
	70	1	-	-	-	-	-	-	-	-	3	7	13	80**	115
	75	1	-	-	-	-	-	-	-	-	4	8	13	84**	121
	80	1	-	-	-	-	-	-	-	-	4	11	13	87**	127
	90	1	-	-	-	-	-	-	-	1	4	13	17	90***	142
	100	1	-	-	-	-	-	-	-	2	7	13	23	90***	152
39	10	2	-	-	-	-	-	-	-	-	-	-	-	7	10
	20	2	-	-	-	-	-	-	-	-	-	1	4	23	31
	30	2	-	-	-	-	-	-	-	-	1	3	4	30*	46
	40	2	-	-	-	-	-	-	-	-	2	4	5	53*	72
	50	2	-	-	-	-	-	-	-	-	3	4	10	65**	95
	60	1	-	-	-	-	-	-	-	1	4	5	13	77**	112
	70	1	-	-	-	-	-	-	-	2	4	10	12	86**	126
	80	1	-	-	-	-	-	-	-	3	4	13	16	90***	143
	90	1	-	-	-	-	-	-	-	3	9	12	24	90***	155
	95	1	-	-	-	-	-	-	-	4	10	12	27	90***	160
42	10	2	-	-	-	-	-	-	-	-	-	-	-	9	12
	15	2	-	-	-	-	-	-	-	-	-	-	3	19	25
	20	2	-	-	-	-	-	-	-	-	-	2	4	25	34
	30	2	-	-	-	-	-	-	-	-	2	4	4	37*	55
	40	2	-	-	-	-	-	-	-	1	3	4	7	60*	83
	50	2	-	-	-	-	-	-	-	2	4	4	11	72**	106
	60	2	-	-	-	-	-	-	-	3	4	8	12	84**	124
	65	2	-	-	-	-	-	-	-	3	4	11	12	88**	131
	70	1	-	-	-	-	-	-	1	3	5	11	14	90***	141
	80	1	-	-	-	-	-	-	1	4	9	11	23	90***	155
	90	1	-	-	-	-	-	-	2	4	12	14	28	92***	169

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)												Decom. Time (min)
			Air										O_2		
			42	39	36	33	30	27	24	21	18	15	12	9	
45	10	2	-	-	-	-	-	-	-	-	-	-	1	12	16
	15	2	-	-	-	-	-	-	-	-	-	1	4	21	29
	20	2	-	-	-	-	-	-	-	-	1	3	4	27	38
	25	2	-	-	-	-	-	-	-	-	2	4	4	30*	48
	30	2	-	-	-	-	-	-	-	1	3	3	4	44*	63
	35	2	-	-	-	-	-	-	-	2	3	4	6	57*	80
	40	2	-	-	-	-	-	-	-	2	4	4	8	62**	93
	45	2	-	-	-	-	-	-	-	3	4	4	11	70**	105
	50	2	-	-	-	-	-	-	1	3	4	6	11	78**	116
	55	2	-	-	-	-	-	-	1	3	4	9	11	84**	125
	60	2	-	-	-	-	-	-	2	3	4	10	13	89**	134
	70	2	-	-	-	-	-	-	2	4	8	11	19	90***	152
	80	2	-	-	-	-	-	-	3	4	11	13	28	93***	170
	85	1	-	-	-	-	-	1	3	6	11	16	29	94***	177
48	10	2	-	-	-	-	-	-	-	-	-	-	2	14	19
	15	2	-	-	-	-	-	-	-	-	-	2	4	23	32
	20	2	-	-	-	-	-	-	-	-	2	3	4	30	42
	25	2	-	-	-	-	-	-	-	1	3	3	4	34*	53
	30	2	-	-	-	-	-	-	-	2	3	4	4	51*	72
	35	2	-	-	-	-	-	-	-	3	3	4	8	60**	91
	40	2	-	-	-	-	-	-	1	3	4	3	11	68**	103
	45	2	-	-	-	-	-	-	2	3	4	6	10	77**	115
	50	2	-	-	-	-	-	-	2	4	3	9	11	84**	126
	55	2	-	-	-	-	-	-	3	3	4	10	13	89**	135
	60	2	-	-	-	-	-	1	3	3	7	10	14	90***	146
	70	2	-	-	-	-	-	1	4	3	10	11	26	93***	166
	80	2	-	-	-	-	-	2	4	7	10	18	30	96***	185

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)												Decom. Time (min)
			Air											O_2	
			42	39	36	33	30	27	24	21	18	15	12	9	
51	10	3	-	-	-	-	-	-	-	-	-	-	3	16	23
	15	2	-	-	-	-	-	-	-	-	1	3	3	25	35
	20	2	-	-	-	-	-	-	-	1	2	4	4	30*	49
	25	2	-	-	-	-	-	-	-	2	3	4	3	41*	61
	30	2	-	-	-	-	-	-	1	3	3	4	6	57*	82
	35	2	-	-	-	-	-	-	2	3	3	4	9	64**	98
	40	2	-	-	-	-	-	-	2	4	3	6	10	74**	112
	45	2	-	-	-	-	-	1	2	4	4	7	11	83**	125
	50	2	-	-	-	-	-	1	3	3	5	9	12	89**	135
	55	2	-	-	-	-	-	2	3	3	7	9	15	90***	147
	60	2	-	-	-	-	-	2	3	4	8	10	21	92***	158
	65	2	-	-	-	-	-	3	3	4	10	11	27	94***	170
	70	2	-	-	-	-	-	3	3	7	9	15	30	95***	180
	75	2	-	-	-	-	1	3	3	8	10	19	33	96***	191
54	5	3	-	-	-	-	-	-	-	-	-	-	-	5	9
	10	3	-	-	-	-	-	-	-	-	-	1	3	17	25
	15	2	-	-	-	-	-	-	-	-	2	3	4	26	38
	20	2	-	-	-	-	-	-	-	2	3	3	4	30*	50
	25	2	-	-	-	-	-	-	1	3	3	3	4	48*	70
	30	2	-	-	-	-	-	-	2	3	3	4	7	60**	92
	35	2	-	-	-	-	-	1	2	3	4	4	10	70**	107
	40	2	-	-	-	-	-	1	3	3	4	7	10	80**	121
	45	2	-	-	-	-	-	2	3	3	4	9	12	88**	134
	50	2	-	-	-	-	-	3	3	3	6	10	14	90***	147
	55	2	-	-	-	-	1	2	3	4	8	10	20	92***	158
	60	2	-	-	-	-	1	3	3	5	9	11	26	95***	171
	65	2	-	-	-	-	2	3	3	7	9	15	30	97***	184
	70	2	-	-	-	-	2	3	3	9	9	21	34	97***	196

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)												Decom. Time (min)
			Air											O_2	
			42	39	36	33	30	27	24	21	18	15	12	9	
57	5	3	-	-	-	-	-	-	-	-	-	-	-	6	10
	10	3	-	-	-	-	-	-	-	-	-	2	3	19	28
	15	3	-	-	-	-	-	-	-	-	3	3	4	28	42
	20	2	-	-	-	-	-	-	-	3	3	3	4	34*	55
	25	2	-	-	-	-	-	-	2	3	3	3	6	53*	78
	30	2	-	-	-	-	-	1	2	3	4	3	9	63**	98
	35	2	-	-	-	-	-	2	3	3	3	6	10	75**	115
	40	2	-	-	-	-	-	3	3	3	3	9	11	85**	130
	45	2	-	-	-	-	1	3	3	3	5	9	14	90***	146
	50	2	-	-	-	-	2	2	3	4	7	10	18	92***	156
	55	2	-	-	-	-	2	3	3	5	8	11	25	95***	170
	60	2	-	-	-	-	3	3	3	7	8	15	30	97***	184
	65	2	-	-	-	1	2	3	4	8	9	21	35	97***	198
60	5	3	-	-	-	-	-	-	-	-	-	-	-	6	10
	10	3	-	-	-	-	-	-	-	-	-	2	4	20	30
	15	3	-	-	-	-	-	-	-	1	3	3	4	29	44
	20	2	-	-	-	-	-	-	1	3	3	3	4	39*	61
	25	2	-	-	-	-	-	1	2	3	3	3	7	59*	86
	30	2	-	-	-	-	-	2	3	2	4	4	10	68**	106
	35	2	-	-	-	-	1	2	3	3	3	7	11	80**	123
	40	2	-	-	-	-	2	2	3	3	5	8	13	89**	138
	45	2	-	-	-	-	2	3	3	3	7	9	16	91***	152
	50	2	-	-	-	1	2	3	3	4	8	11	23	95***	168
	55	2	-	-	-	1	3	3	3	6	9	12	31	97***	183
	60	2	-	-	-	2	2	3	4	8	9	19	36	98***	199

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)												Decom. Time (min)
			Air											O_2	
			42	39	36	33	30	27	24	21	18	15	12	9	
63	5	3	-	-	-	-	-	-	-	-	-	-	-	7	11
	10	3	-	-	-	-	-	-	-	-	1	2	4	21	32
	15	3	-	-	-	-	-	-	-	2	3	3	4	30*	51
	20	3	-	-	-	-	-	-	2	3	3	3	4	45*	69
	25	2	-	-	-	-	-	2	2	3	3	3	8	60**	94
	30	2	-	-	-	-	1	2	3	3	3	5	10	74**	114
	35	2	-	-	-	-	2	2	3	3	3	9	11	85**	131
	40	2	-	-	-	1	2	3	2	3	6	9	15	90***	149
	45	2	-	-	-	1	3	2	3	4	8	10	20	94***	163
	50	2	-	-	-	2	2	3	3	6	8	12	29	97***	180
	55	2	-	-	-	2	3	3	3	8	9	18	35	98***	197
66	5	4	-	-	-	-	-	-	-	-	-	-	-	7	12
	10	3	-	-	-	-	-	-	-	-	1	3	4	22	34
	15	3	-	-	-	-	-	-	1	2	3	3	4	30*	52
	20	3	-	-	-	-	-	1	2	3	3	3	5	50*	76
	25	2	-	-	-	-	1	2	3	2	3	4	9	63**	100
	30	2	-	-	-	-	2	2	3	3	3	7	10	78**	121
	35	2	-	-	-	1	2	3	2	3	5	9	12	89**	139
	40	2	-	-	-	2	2	3	3	2	8	9	17	92***	156
	45	2	-	-	1	2	2	3	3	5	8	11	25	96***	174
	50	2	-	-	1	2	3	3	3	7	9	15	34	98***	193
	55	2	-	-	2	2	3	3	5	7	10	23	39	99***	211
69	5	4	-	-	-	-	-	-	-	-	-	-	-	7	12
	10	3	-	-	-	-	-	-	-	-	2	3	3	24	36
	15	3	-	-	-	-	-	-	2	2	3	3	3	32*	54
	20	3	-	-	-	-	-	2	2	3	3	3	6	55*	83
	25	3	-	-	-	-	2	2	2	3	3	5	9	68**	108
	30	2	-	-	-	1	2	3	2	3	3	8	11	83**	129
	35	2	-	-	-	2	2	3	3	2	6	9	14	90***	149
	40	2	-	-	1	2	2	3	3	4	8	10	21	95***	167
	45	2	-	-	2	2	2	3	3	6	8	13	31	98***	186
	50	2	-	-	2	2	3	3	4	8	9	20	38	99***	206

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)												Decom. Time (min)
			Air											O_2	
			42	39	36	33	30	27	24	21	18	15	12	9	
72	5	4	-	-	-	-	-	-	-	-	-	-	-	8	13
	10	3	-	-	-	-	-	-	-	1	2	3	4	25	39
	15	3	-	-	-	-	-	1	2	2	3	3	3	35*	58
	20	3	-	-	-	-	1	2	2	3	3	3	7	59*	89
	25	3	-	-	-	1	2	2	3	3	2	6	9	73**	115
	30	3	-	-	-	2	2	2	3	3	4	8	12	87**	137
	35	2	-	-	1	2	2	3	3	2	8	9	16	91***	155
	40	2	-	-	2	2	2	3	3	5	8	11	26	97***	177
	45	2	-	1	2	2	3	3	3	7	9	15	37	99***	199
75	10	3	-	-	-	-	-	-	-	1	3	3	3	26	40
	15	3	-	-	-	-	-	1	2	3	3	3	3	38*	62
	20	3	-	-	-	-	2	2	2	3	3	3	8	60**	97
	25	3	-	-	-	2	2	2	3	2	3	7	10	78**	123
	30	3	-	-	1	2	2	3	3	2	5	9	13	90***	149
	35	3	-	-	2	2	2	3	3	4	7	10	20	94***	166
	40	2	-	1	2	2	3	3	2	7	8	13	32	98***	189
	45	2	-	2	2	2	3	2	5	7	10	20	40	100***	211
78	10	4	-	-	-	-	-	-	-	2	2	3	4	27	43
	15	3	-	-	-	-	-	2	2	3	3	2	4	43*	68
	20	3	-	-	-	1	2	2	2	3	3	3	9	63**	102
	25	3	-	-	1	2	2	2	3	2	3	8	10	82**	129
	30	3	-	-	2	2	2	3	2	3	6	9	15	90***	153
	35	3	-	1	2	2	2	3	2	6	7	11	24	96***	175
	40	2	1	1	2	2	3	2	4	7	8	16	37	99***	200
81	10	4	-	-	-	-	-	-	-	2	3	3	3	29	45
	15	3	-	-	-	-	1	2	2	2	4	2	5	47*	74
	20	3	-	-	-	2	1	3	2	3	2	5	9	67**	108
	25	3	-	-	2	1	3	2	3	2	4	8	11	86**	136
	30	3	-	1	2	2	2	3	2	3	7	9	18	92***	160
	35	3	1	1	2	2	3	2	3	6	8	12	30	97***	186
	40	3	1	2	2	2	3	2	5	7	9	19	41	100***	212

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)														Decom. Time (min)
			Air													O_2	
			48	45	42	39	36	33	30	27	24	21	18	15	12	9	
84	10	4	-	-	-	-	-	-	-	-	1	2	3	3	3	30	47
	15	3	-	-	-	-	-	-	2	1	3	2	3	3	5	51*	79
	20	3	-	-	-	-	1	1	2	2	3	2	3	6	9	71**	114
	25	3	-	-	-	1	2	1	2	3	2	3	5	8	12	89**	142
	30	3	-	-	1	1	2	2	2	3	2	4	7	10	21	94***	168
	35	3	-	-	1	2	2	2	3	2	3	7	8	14	35	98***	196
	40	3	-	1	1	2	2	2	3	2	6	7	11	23	43	101***	223
87	10	4	-	-	-	-	-	-	-	-	2	2	3	3	3	30*	53
	15	3	-	-	-	-	-	1	1	2	2	3	3	3	6	55*	85
	20	3	-	-	-	-	1	2	2	2	3	2	3	6	10	75**	120
	25	3	-	-	-	2	1	2	2	3	2	3	5	9	14	90***	152
	30	3	-	-	1	2	2	2	2	2	3	5	7	11	25	96***	177
	35	3	-	1	1	2	2	2	3	2	4	7	9	17	39	99***	207
90	10	4	-	-	-	-	-	-	-	-	2	2	3	3	3	30*	53
	15	4	-	-	-	-	-	1	2	2	2	3	2	3	7	59*	91
	20	3	-	-	-	1	1	2	2	2	3	2	3	7	10	79**	126
	25	3	-	-	1	1	2	2	2	3	2	3	6	9	16	90***	156
	30	3	-	1	1	2	2	2	2	2	3	6	7	13	29	98***	187
	35	3	-	2	1	2	2	2	2	3	5	7	10	21	41	101***	218
93	10	4	-	-	-	-	-	-	-	1	2	2	3	3	3	30*	54
	15	4	-	-	-	-	-	2	1	2	3	3	2	3	8	60**	99
	20	3	-	-	-	1	2	2	2	2	2	3	3	8	10	83**	132
	25	3	-	-	2	1	2	2	2	2	2	4	7	9	19	92***	163
	30	3	-	1	2	2	1	3	2	2	3	7	8	14	34	99***	197
	35	3	1	1	2	2	2	2	2	3	6	7	11	25	43	102***	228

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 7: HEO_2 - IN-WATER OXYGEN DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)														Decom. Time (min)
			Air												O_2		
			48	45	42	39	36	33	30	27	24	21	18	15	12	9	
96	10	4	-	-	-	-	-	-	-	2	1	3	2	3	4	32*	57
	15	4	-	-	-	-	1	1	2	2	3	2	3	3	9	61**	102
	20	3	-	-	1	1	2	2	2	2	2	3	4	7	12	86**	138
	25	3	-	1	1	2	2	2	2	2	2	5	7	10	21	95***	171
	30	3	1	1	2	2	1	3	2	2	4	6	9	17	37	100***	206
100	10	4	-	-	-	-	-	-	1	1	2	3	3	2	4	35*	61
	15	4	-	-	-	-	2	1	2	2	2	3	2	5	9	65**	108
	20	4	-	-	1	2	1	2	2	3	2	2	6	7	13	90**	146
	25	3	-	2	1	2	2	2	2	2	2	6	7	11	27	97***	182
	30	3	2	1	2	2	2	2	2	2	5	7	10	21	41	101***	219

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8

SURFACE DECOMPRESSION

WITH OXYGEN (METRES)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)												Surface Interval	Chamber O_2	Decom. Time (min)
			In-Water Stops														
			Air										O_2				
			42	39	36	33	30	27	24	21	18	15	12	9		12	
36	20	2	-	-	-	-	-	-	-	-	-	-	3	2	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minute	20	35
	30	2	-	-	-	-	-	-	-	-	-	2	4	3		30*	53
	40	2	-	-	-	-	-	-	-	-	-	4	4	9		46*	77
	50	1	-	-	-	-	-	-	-	-	1	4	7	11		60**	102
	60	1	-	-	-	-	-	-	-	-	2	5	11	12		69**	118
	70	1	-	-	-	-	-	-	-	-	3	7	13	18		72**	132
	75	1	-	-	-	-	-	-	-	-	4	8	13	27		72**	143
	80	1	-	-	-	-	-	-	-	-	4	11	13	30		72**	149
	90	1	-	-	-	-	-	-	-	1	4	13	17	34*		74**	167
	100	1	-	-	-	-	-	-	-	2	7	13	23	35*		75**	179
39	15	2	-	-	-	-	-	-	-	-	-	-	2	2		16	30
	20	2	-	-	-	-	-	-	-	-	-	1	4	2		23	40
	30	2	-	-	-	-	-	-	-	-	1	3	4	6		33*	61
	40	2	-	-	-	-	-	-	-	-	2	4	5	10		54*	89
	50	2	-	-	-	-	-	-	-	-	3	4	10	11		64**	111
	60	1	-	-	-	-	-	-	-	1	4	5	13	14		74**	130
	70	1	-	-	-	-	-	-	-	2	4	10	12	29		73**	149
	80	1	-	-	-	-	-	-	-	3	4	13	16	30*		75**	165
	90	1	-	-	-	-	-	-	-	3	9	12	24	35*		76**	183
	95	1	-	-	-	-	-	-	-	4	10	12	27	36*		77**	190
42	15	2	-	-	-	-	-	-	-	-	-	-	3	2		18	33
	20	2	-	-	-	-	-	-	-	-	-	2	4	2		25	43
	30	2	-	-	-	-	-	-	-	-	2	4	4	7		40*	72
	40	2	-	-	-	-	-	-	-	1	3	4	7	10		60**	104
	50	2	-	-	-	-	-	-	-	2	4	4	11	12		71**	123
	60	2	-	-	-	-	-	-	-	3	4	8	12	26		73**	145
	65	2	-	-	-	-	-	-	-	3	4	11	12	30		74**	153
	70	1	-	-	-	-	-	-	1	3	5	11	14	30*		75**	163
	80	1	-	-	-	-	-	-	1	4	9	11	23	36*		76**	184
	90	1	-	-	-	-	-	-	2	4	12	14	28	37*		78**	199

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)												Surface Interval	Chamber O_2	Decom. Time (min)
			In-Water Stops											O_2			
			Air														
			42	39	36	33	30	27	24	21	18	15	12	9		12	
45	10	2	-	-	-	-	-	-	-	-	-	-	1	2	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minute	11	24
	15	2	-	-	-	-	-	-	-	-	-	1	4	2		20	37
	20	2	-	-	-	-	-	-	-	-	1	3	4	2		28	48
	25	2	-	-	-	-	-	-	-	-	2	4	4	6		32*	63
	30	2	-	-	-	-	-	-	-	1	3	3	4	9		46*	81
	35	2	-	-	-	-	-	-	-	2	3	4	6	10		58*	98
	40	2	-	-	-	-	-	-	-	2	4	4	8	11		62**	111
	45	2	-	-	-	-	-	-	-	3	4	4	11	12		70**	124
	50	2	-	-	-	-	-	-	1	3	4	6	11	14		76**	134
	55	2	-	-	-	-	-	-	1	3	4	9	11	26		74**	147
	60	2	-	-	-	-	-	-	2	3	4	10	13	30*		72**	158
	70	2	-	-	-	-	-	-	2	4	8	11	19	36*		77**	181
	80	2	-	-	-	-	-	-	3	4	11	13	28	37*		79**	199
	85	1	-	-	-	-	-	1	3	6	11	16	29	38*		80**	208
48	10	2	-	-	-	-	-	-	-	-	-	-	2	2		13	27
	15	2	-	-	-	-	-	-	-	-	-	2	4	2		22	40
	20	2	-	-	-	-	-	-	-	-	2	3	4	3		30	52
	25	2	-	-	-	-	-	-	-	1	3	3	4	7		38*	71
	30	2	-	-	-	-	-	-	-	2	3	4	4	10		52*	90
	35	2	-	-	-	-	-	-	-	3	3	4	8	10		60**	108
	40	2	-	-	-	-	-	-	1	3	4	3	11	11		68**	121
	45	2	-	-	-	-	-	-	2	3	4	6	10	13		76**	134
	50	2	-	-	-	-	-	-	2	4	3	9	11	25		75**	149
	55	2	-	-	-	-	-	-	3	3	4	10	13	30		75**	158
	60	2	-	-	-	-	-	1	3	3	7	10	14	30*		78**	170
	70	2	-	-	-	-	-	1	4	3	10	11	26	38*		78**	195
	80	2	-	-	-	-	-	2	4	7	10	18	30	39*		81**	215

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)												Surface Interval	Chamber O_2	Decom. Time (min)
			In-Water Stops														
			Air											O_2			
			42	39	36	33	30	27	24	21	18	15	12	9		12	
51	10	3	-	-	-	-	-	-	-	-	-	-	3	2	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	14	29
	15	2	-	-	-	-	-	-	-	-	1	3	3	3		23	43
	20	2	-	-	-	-	-	-	-	1	2	4	4	4		30*	60
	25	2	-	-	-	-	-	-	-	2	3	4	3	9		43*	79
	30	2	-	-	-	-	-	-	1	3	3	4	6	10		58*	100
	35	2	-	-	-	-	-	-	2	3	3	4	9	11		64**	116
	40	2	-	-	-	-	-	-	2	4	3	6	10	13		73**	131
	45	2	-	-	-	-	-	1	2	4	4	7	11	23		76**	148
	50	2	-	-	-	-	-	1	3	3	5	9	12	30		75**	158
	55	2	-	-	-	-	-	2	3	3	7	9	15	30*		79**	173
	60	2	-	-	-	-	-	2	3	4	8	10	21	37*		78**	188
	65	2	-	-	-	-	-	3	3	4	10	11	27	38*		79**	200
	70	2	-	-	-	-	-	3	3	7	9	15	30	38*		81**	211
	75	2	-	-	-	-	1	3	3	8	10	19	33	38*		83**	222
54	10	3	-	-	-	-	-	-	-	-	-	1	3	2		16	32
	15	2	-	-	-	-	-	-	-	-	2	3	4	2		26	47
	20	2	-	-	-	-	-	-	-	2	3	3	4	6		32*	65
	25	2	-	-	-	-	-	-	1	3	3	3	4	9		50*	88
	30	2	-	-	-	-	-	-	2	3	3	4	7	10		60**	109
	35	2	-	-	-	-	-	1	2	3	4	4	10	12		69**	125
	40	2	-	-	-	-	-	1	3	3	4	7	10	20		77**	145
	45	2	-	-	-	-	-	2	3	3	4	9	12	28		76**	157
	50	2	-	-	-	-	-	3	3	3	6	10	14	30*		78**	172
	55	2	-	-	-	-	1	2	3	4	8	10	20	37*		78**	188
	60	2	-	-	-	-	1	3	3	5	9	11	26	38*		80**	201
	65	2	-	-	-	-	2	3	3	7	9	15	30	39*		81**	214
	70	2	-	-	-	-	2	3	3	9	9	21	34	38*		84**	228

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)												Surface Interval	Chamber O_2	Decom. Time (min)
			In-Water Stops														
			Air											O_2			
			42	39	36	33	30	27	24	21	18	15	12	9		12	
57	10	3	-	-	-	-	-	-	-	-	-	2	3	2	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	17	35
	15	3	-	-	-	-	-	-	-	-	3	3	4	2		29	51
	20	2	-	-	-	-	-	-	-	3	3	3	4	7		37*	72
	25	2	-	-	-	-	-	-	2	3	3	3	6	9		55*	96
	30	2	-	-	-	-	-	1	2	3	4	3	9	11		63**	116
	35	2	-	-	-	-	-	2	3	3	3	6	10	13		74**	134
	40	2	-	-	-	-	-	3	3	3	3	9	11	24		78**	154
	45	2	-	-	-	-	1	3	3	3	5	9	14	30*		76**	169
	50	2	-	-	-	-	2	2	3	4	7	10	18	37*		78**	186
	55	2	-	-	-	-	2	3	3	5	8	11	25	39*		79**	200
	60	2	-	-	-	-	3	3	3	7	8	15	30	39*		82**	215
	65	2	-	-	-	1	2	3	4	8	9	21	35	38*		84**	230
60	10	3	-	-	-	-	-	-	-	-	-	2	4	2		18	37
	15	3	-	-	-	-	-	-	-	1	3	3	4	3		30	54
	20	2	-	-	-	-	-	-	1	3	3	3	4	8		42*	79
	25	2	-	-	-	-	-	1	2	3	3	3	7	10		60*	104
	30	2	-	-	-	-	-	2	3	2	4	4	10	11		69**	125
	35	2	-	-	-	-	1	2	3	3	3	7	11	19		79**	148
	40	2	-	-	-	-	2	2	3	3	5	8	13	29		77**	162
	45	2	-	-	-	-	2	3	3	3	7	9	16	36*		78**	182
	50	2	-	-	-	1	2	3	3	4	8	11	23	38*		80**	198
	55	2	-	-	-	1	3	3	3	6	9	12	31	39*		82**	214
	60	2	-	-	-	2	2	3	4	8	9	19	36	38*		85**	231
63	10	3	-	-	-	-	-	-	-	-	1	2	4	2		20	40
	15	3	-	-	-	-	-	-	-	2	3	3	4	4		30*	62
	20	3	-	-	-	-	-	-	2	3	3	3	4	9		47*	86
	25	2	-	-	-	-	-	2	2	3	3	3	8	11		60**	112
	30	2	-	-	-	-	1	2	3	3	3	5	10	13		72**	132
	35	2	-	-	-	-	2	2	3	3	3	9	11	24		78**	155
	40	2	-	-	-	1	2	3	2	3	6	9	15	32*		80**	178
	45	2	-	-	-	1	3	2	3	4	8	10	20	38*		79**	193
	50	2	-	-	-	2	2	3	3	6	8	12	29	39*		82**	211
	55	2	-	-	-	2	3	3	3	8	9	18	35	38*		85**	229

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)												Surface Interval	Chamber O_2	Decom. Time (min)
			In-Water Stops														
			Air										O_2				
			42	39	36	33	30	27	24	21	18	15	12	9		12	
66	10	3	-	-	-	-	-	-	-	-	1	3	4	2	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	21	42
	15	3	-	-	-	-	-	-	1	2	3	3	4	5		30*	64
	20	3	-	-	-	-	-	1	2	3	3	3	5	9		52*	93
	25	2	-	-	-	-	1	2	3	2	3	4	9	11		64**	119
	30	2	-	-	-	-	2	2	3	3	3	7	10	17		79**	146
	35	2	-	-	-	1	2	3	2	3	5	9	12	26		76**	163
	40	2	-	-	-	2	2	3	3	2	8	9	17	36*		80**	187
	45	2	-	-	1	2	2	3	3	5	8	11	25	39*		81**	205
	50	2	-	-	1	2	3	3	3	7	9	15	34	39*		84**	225
	55	2	-	-	2	2	3	3	5	7	10	23	39	38*		87**	244
69	10	3	-	-	-	-	-	-	-	-	2	3	3	3		22	44
	15	3	-	-	-	-	-	-	2	2	3	3	3	7		32*	68
	20	3	-	-	-	-	-	2	2	3	3	3	6	10		56*	101
	25	3	-	-	-	-	2	2	2	3	3	5	9	12		68**	126
	30	2	-	-	-	1	2	3	2	3	3	8	11	21		79**	153
	35	2	-	-	-	2	2	3	3	2	6	9	14	32*		80**	178
	40	2	-	-	1	2	2	3	3	4	8	10	21	37*		81**	197
	45	2	-	-	2	2	2	3	3	6	8	13	31	39*		83**	217
	50	2	-	-	2	2	3	3	4	8	9	20	38	36*		87**	239
72	10	3	-	-	-	-	-	-	-	1	2	3	4	2		25	48
	15	3	-	-	-	-	-	1	2	2	3	3	3	8		36*	74
	20	3	-	-	-	-	1	2	2	3	3	3	7	10		60**	112
	25	3	-	-	-	1	2	2	3	3	2	6	9	13		72**	133
	30	3	-	-	-	2	2	2	3	3	4	8	12	25		79**	160
	35	2	-	-	1	2	2	3	3	2	8	9	16	35*		80**	186
	40	2	-	-	2	2	2	3	3	5	8	11	26	38*		83**	208
	45	2	-	1	2	2	3	3	3	7	9	15	37	38*		86**	231

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)														Surface Interval	Chamber O_2	Decom. Time (min)
			In-Water Stops																
			Air													O_2			
			48	45	42	39	36	33	30	27	24	21	18	15	12	9		12	
75	10	3			-	-	-	-	-	-	-	1	3	3	3	3	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	25	49
	15	3			-	-	-	-	-	1	2	3	3	3	3	8		41*	80
	20	3			-	-	-	-	2	2	2	3	3	3	8	11		60**	115
	25	3			-	-	-	2	2	2	3	2	3	7	10	17		78**	147
	30	3			-	-	1	2	2	3	3	2	5	9	13	30*		80**	175
	35	3			-	-	2	2	2	3	3	4	7	10	20	37*		81**	196
	40	2			-	1	2	2	3	3	2	7	8	13	32	38*		85**	221
	45	2			-	2	2	2	3	2	5	7	10	20	40	38*		88**	244
78	10	4			-	-	-	-	-	-	-	2	2	3	4	2		28	52
	15	3			-	-	-	-	-	2	2	3	3	2	4	9		45*	86
	20	3			-	-	-	1	2	2	2	3	3	3	9	11		64**	121
	25	3			-	-	1	2	2	2	3	2	3	8	10	19		81**	154
	30	3			-	-	2	2	2	3	2	3	6	9	15	32*		81**	183
	35	3			-	1	2	2	2	3	2	6	7	11	24	38*		83**	206
	40	2			1	1	2	2	3	2	4	7	8	16	37	38*		86**	232
81	10	4			-	-	-	-	-	-	-	2	3	3	3	3		29	55
	15	3			-	-	-	-	1	2	2	2	4	2	5	9		49*	92
	20	3			-	-	-	2	1	3	2	3	2	5	9	12		67**	127
	25	3			-	-	2	1	3	2	3	2	4	8	11	23		80**	160
	30	3			-	1	2	2	2	3	2	3	7	9	18	34*		82**	191
	35	3			1	1	2	2	3	2	3	6	8	12	30	38*		84**	217
	40	3			1	2	2	2	3	2	5	7	9	19	41	38*		88**	244
84	10	4	-	-	-	-	-	-	-	-	1	2	3	3	3	3		30	57
	15	3	-	-	-	-	-	-	2	1	3	2	3	3	5	10		53*	98
	20	3	-	-	-	-	1	1	2	2	3	2	3	6	9	12		71**	133
	25	3	-	-	-	1	2	1	2	3	2	3	5	8	12	26		81**	167
	30	3	-	-	1	1	2	2	2	3	2	4	7	10	21	36*		83**	200
	35	3	-	-	1	2	2	2	3	2	3	7	8	14	35	38*		86**	229
	40	3	-	1	1	2	2	2	3	2	6	7	11	23	43	38*		90**	256

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 8: HEO_2 - SURFACE DECOMPRESSION WITH OXYGEN (METRES)

Depth (msw)	Bottom Time (min)	Max Time to First Stop (min)	Stop Times (min) at Different Depths (msw)														Surface Interval	Chamber O_2	Decom. Time (min)
			In-Water Stops													O_2			
			Air																
			48	45	42	39	36	33	30	27	24	21	18	15	12	9		12	
87	10	4	-	-	-	-	-	-	-	-	2	2	3	3	3	4	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	30*	64
	15	3	-	-	-	-	-	1	1	2	2	3	3	3	6	10		57*	104
	20	3	-	-	-	-	1	2	2	2	3	2	3	6	10	16		77**	145
	25	3	-	-	-	2	1	2	2	3	2	3	5	9	14	30*		81**	180
	30	3	-	-	1	2	2	2	2	2	3	5	7	11	25	37*		84**	209
	35	3	-	1	1	2	2	2	3	2	4	7	9	17	39	37*		89**	241
90	10	4	-	-	-	-	-	-	-	-	2	2	3	3	3	5		30*	65
	15	4	-	-	-	-	-	1	2	2	2	3	2	3	7	10		60*	108
	20	3	-	-	-	1	1	2	2	2	3	2	3	7	10	18		79**	151
	25	3	-	-	1	1	2	2	2	3	2	3	6	9	16	32*		82**	187
	30	3	-	1	1	2	2	2	2	2	3	6	7	13	29	38*		85**	219
	35	3	-	2	1	2	2	2	2	3	5	7	10	21	41	38*		90**	252
93	10	4	-	-	-	-	-	-	-	1	2	2	3	3	3	6		30*	67
	15	4	-	-	-	-	-	2	1	2	3	3	2	3	8	10		60**	116
	20	3	-	-	-	1	2	2	2	2	2	3	3	8	10	19		82**	157
	25	3	-	-	2	1	2	2	2	2	2	4	7	9	19	34*		83**	195
	30	3	-	1	2	2	1	3	2	2	3	7	8	14	34	38*		86**	229
	35	3	1	1	2	2	2	2	2	3	6	7	11	25	43	38*		90***	266
96	10	4	-	-	-	-	-	-	-	-	2	1	3	2	3	4		33*	71
	15	4	-	-	-	-	1	1	2	2	3	2	3	3	9	10		63**	121
	20	3	-	-	1	1	2	2	2	2	2	3	4	7	12	22		82**	163
	25	3	-	1	1	2	2	2	2	2	2	5	7	10	21	36*		84**	203
	30	3	1	1	2	2	1	3	2	2	4	6	9	17	37	38*		88**	239
100	10	4	-	-	-	-	-	-	1	1	2	3	3	2	4	7		37*	77
	15	4	-	-	-	-	2	1	2	2	2	3	2	5	9	11		67**	128
	20	4	-	-	1	2	1	2	2	3	2	2	6	7	13	26		82**	170
	25	3	-	2	1	2	2	2	2	2	2	6	7	11	27	37*		85**	214
	30	3	2	1	2	2	2	2	2	2	5	7	10	21	41	38*		90**	253

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9

EMERGENCY DECOMPRESSION

(METRES)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)		Air	In-Water			Recompression Chamber							
				Air		Dec. Time (min)	Surf. Int.	O_2	Dec. Time (min)	Surf. Int.	Air			Dec. Time (min)
			9	6	3			12			12	9	6	3	
36	20	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	4	7	20	36	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	20	37	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	3	4	7	20	50
	30		6	15	33	62		30*	56		4	6	15	33	79
	40		18	18	61	107		46*	86		4	18	18	61	136
	50		22	26	79	140		60**	113		7	22	26	79	176
	60		24	42	84	169		69**	130		11	24	42	84	211
	70		36	55	84	199		72**	150		13	36	55	84	255
	75		54	59	84	223		72**	170		13	54	59	84	297
	80		60	61	84	234		72**	179		13	60	61	84	314
	90		73	65	84	258		74**	201		17	73	65	84	355
	100		75	63	86	270		75**	214		23	75	63	86	375
39	15		4	5	17	30		16	32		2	4	5	17	43
	20		4	9	21	41		23	42		4	4	9	21	56
	30		12	15	42	79		33*	67		4	12	15	42	102
	40		20	20	72	125		54*	99		5	20	20	72	157
	50		22	35	83	159		64**	122		10	22	35	83	198
	60		28	53	85	190		74**	144		13	28	53	85	238
	70		58	61	85	233		73**	178		12	58	61	85	310
	80		65	64	86	252		75**	195		16	65	64	86	340
	90		75	64	87	275		76**	218		24	75	64	87	381
	95		77	64	88	283		77**	226		27	77	64	88	394
42	15		4	5	19	33		18	35		3	4	5	19	47
	20		4	11	23	46		25	45		4	4	11	23	61
	30		14	16	52	94		40*	79		4	14	16	52	119
	40		20	26	79	142		60**	114		7	20	26	79	176
	50		24	45	85	177		71**	135		11	24	45	85	219
	60		52	60	85	226		73**	171		12	52	60	85	296
	65		60	63	86	241		74**	183		12	60	63	86	319
	70		65	65	86	251		75**	193		14	65	65	86	337
	80		77	64	88	278		76**	220		23	77	64	88	385
	90		79	64	90	294		78**	236		28	79	64	90	408

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)		In-Water Air	In-Water Air		In-Water Dec. Time (min)	Recompression Chamber Surf. Int.	Recompression Chamber O_2	Recompression Chamber Dec. Time (min)	Recompression Chamber Surf. Int.	Recompression Chamber Air				Recompression Chamber Dec. Time (min)
			9	6	3			12			12	9	6	3	
45	10	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	4	6	12	25	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	11	26	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	1	4	6	12	37
	15		4	6	20	37		20	39		4	4	6	20	52
	20		4	13	26	53		28	50		4	4	13	26	68
	25		12	15	43	82		32*	69		4	12	15	43	105
	30		18	18	62	111		46*	90		4	18	18	62	140
	35		20	23	76	136		58*	108		6	20	23	76	169
	40		22	32	83	157		62**	122		8	22	32	83	194
	45		24	44	85	177		70**	136		11	24	44	85	219
	50		28	54	86	195		76**	148		11	28	54	86	241
	55		52	61	86	229		74**	173		11	52	61	86	299
	60		65	64	86	249		72**	188		13	65	64	86	334
	70		77	65	88	276		77**	217		19	77	65	88	378
	80		79	64	91	295		79**	236		28	79	64	91	408
	85		81	65	93	306		80**	246		29	81	65	93	423
48	10		4	5	14	27		13	29		2	4	5	14	40
	15		4	8	21	41		22	42		4	4	8	21	56
	20		6	14	30	61		30	55		4	6	14	30	78
	25		14	16	51	94		38*	78		4	14	16	51	119
	30		20	19	71	125		52*	100		4	20	19	71	156
	35		20	28	81	149		60**	118		8	20	28	81	184
	40		22	41	85	172		68**	132		11	22	41	85	212
	45		26	53	86	192		76**	147		10	26	53	86	235
	50		50	61	86	228		75**	174		11	50	61	86	296
	55		60	64	87	246		75**	188		13	60	64	87	326
	60		65	65	88	258		78**	200		14	65	65	88	344
	70		81	65	91	294		76**	233		26	81	65	91	407
	80		83	66	94	316		81**	254		30	83	66	94	436

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)		Air	In-Water			Recompression Chamber							
				Air		Dec. Time (min)	Surf. Int.	O_2	Dec. Time (min)	Surf. Int.	Air			Dec. Time (min)
			9	6	3			12			12	9	6	3	
51	10	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	4	5	15	30	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	14	31	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	3	4	5	15	44
	15		6	10	22	47		23	46		3	6	10	22	63
	20		8	14	37	72		30*	64		4	8	14	37	91
	25		18	17	60	109		43*	88		3	18	17	60	137
	30		20	24	77	140		58*	110		6	20	24	77	173
	35		22	36	84	165		64**	127		9	22	36	84	203
	40		26	50	86	189		73**	144		10	26	50	86	232
	45		46	59	87	223		76**	171		11	46	59	87	287
	50		60	64	88	247		75**	188		12	60	64	88	326
	55		65	65	89	260		79**	203		15	65	65	89	347
	60		79	65	90	284		78**	225		21	79	65	90	391
	65		81	65	93	299		79**	238		27	81	65	93	414
	70		81	65	95	310		81**	249		30	81	65	95	428
	75		81	66	97	323		83**	260		33	81	66	97	444
54	10		4	5	17	33		16	34		3	4	5	17	47
	15		4	11	24	50		26	49		4	4	11	24	65
	20		12	14	45	85		32*	71		4	12	14	45	108
	25		18	19	68	121		50*	97		4	18	19	68	150
	30		20	29	82	152		60**	119		7	20	29	82	186
	35		24	45	85	180		69**	137		10	24	45	85	221
	40		40	57	86	213		77**	165		10	40	57	86	270
	45		56	63	88	242		76**	185		12	56	63	88	317
	50		65	65	89	260		78**	202		14	65	65	89	346
	55		79	65	91	285		78**	225		20	79	65	91	391
	60		81	65	93	299		80**	239		26	81	65	93	413
	65		83	66	96	316		81**	253		30	83	66	96	436
	70		81	67	98	329		84**	266		34	81	67	98	451

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)		Air	In-Water			Recompression Chamber								
				Air		Dec. Time (min)	Surf. Int.	O_2	Dec. Time (min)	Surf. Int.	Air				Dec. Time (min)
			9	6	3			12			12	9	6	3	
57	10	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	4	4	18	34	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	17	37	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	3	4	4	18	48
	15		4	12	27	56		29	53		4	4	12	27	70
	20		14	16	51	96		37*	79		4	14	16	51	121
	25		18	22	74	133		55*	105		6	18	22	74	164
	30		22	36	84	166		63**	127		9	22	36	84	204
	35		26	52	86	193		74**	147		10	26	52	86	236
	40		48	61	88	231		78**	178		11	48	61	88	297
	45		65	65	89	259		76**	199		14	65	65	89	345
	50		79	65	91	283		78**	223		18	79	65	91	387
	55		83	66	93	301		79**	239		25	83	66	93	416
	60		83	66	96	316		82**	254		30	83	66	96	436
	65		81	67	99	332		84**	268		35	81	67	99	455
60	10		4	4	19	36		18	39		4	4	4	19	51
	15		6	13	31	64		30	57		4	6	13	31	80
	20		16	16	59	107		42*	87		4	16	16	59	134
	25		20	26	79	146		60*	114		7	20	26	79	180
	30		22	43	86	178		69**	136		10	22	43	86	217
	35		38	58	87	215		79**	167		11	38	58	87	271
	40		58	64	89	249		77**	191		13	58	64	89	327
	45		77	65	91	278		78**	218		16	77	65	91	378
	50		81	66	94	298		80**	236		23	81	66	94	409
	55		83	66	97	316		82**	253		31	83	66	97	437
	60		81	67	100	333		85**	269		36	81	67	100	457
63	10		4	6	20	40		20	42		4	4	6	20	55
	15		8	14	35	72		30*	66		4	8	14	35	91
	20		18	18	65	119		47*	95		4	18	18	65	148
	25		22	31	82	158		60**	123		8	22	31	82	195
	30		26	50	86	191		72**	145		10	26	50	86	234
	35		48	62	88	233		78**	179		11	48	62	88	299
	40		69	65	90	267		80**	210		15	69	65	90	358
	45		81	66	93	293		79**	231		20	81	66	93	401
	50		83	66	97	313		82**	250		29	83	66	97	432
	55		81	67	100	331		85**	267		35	81	67	100	454

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)		Air	In-Water			Recompression Chamber							
				Air		Dec. Time (min)	Surf. Int.	O_2	Dec. Time (min)	Surf. Int.	Air			Dec. Time (min)
			9	6	3			12			12	9	6	3	
66	10	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	4	8	20	43	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	21	44	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	4	4	8	20	58
	15		10	15	41	82		30*	69		4	10	15	41	103
	20		18	21	71	130		52*	102		5	18	21	71	160
	25		22	38	84	170		64**	130		9	22	38	84	208
	30		34	55	88	209		79**	163		10	34	55	88	260
	35		56	64	89	248		78**	191		12	56	64	89	323
	40		77	66	92	283		80**	223		17	77	66	92	384
	45		83	67	96	308		81**	244		25	83	67	96	423
	50		83	67	100	329		84**	264		34	83	67	100	453
	55		81	69	104	350		87**	282		39	81	69	104	477
69	10		6	9	21	47		22	47		3	6	9	21	63
	15		14	15	47	92		32*	75		3	14	15	47	116
	20		20	24	76	142		56*	111		6	20	24	76	175
	25		24	44	86	183		68**	138		9	24	44	86	222
	30		42	60	88	225		79**	174		11	42	60	88	285
	35		69	65	91	268		80**	210		14	69	65	91	358
	40		79	66	95	296		81**	234		21	79	66	95	403
	45		83	67	98	320		83**	256		31	83	67	98	441
	50		81	69	103	344		87**	277		38	81	69	103	470
72	10		4	10	23	50		25	50		4	4	10	23	65
	15		16	15	53	101		36*	82		3	16	15	53	127
	20		20	28	80	152		60**	122		7	20	28	80	186
	25		26	50	86	193		72**	146		9	26	50	86	234
	30		50	62	90	241		79**	185		12	50	62	90	310
	35		75	65	93	281		80**	221		16	75	65	93	379
	40		81	66	97	308		83**	246		26	81	66	97	422
	45		81	68	102	335		86**	269		37	81	68	102	460

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)		In-Water Air 9	In-Water Air 6	In-Water Air 3	In-Water Dec. Time (min)	Recompression Chamber Surf. Int.	Recompression Chamber O_2 12	Recompression Chamber Dec. Time (min)	Recompression Chamber Surf. Int.	Recompression Chamber Air 12	Recompression Chamber Air 9	Recompression Chamber Air 6	Recompression Chamber Air 3	Recompression Chamber Dec. Time (min)
75	10	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	6	11	24	54	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	25	52	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	3	6	11	24	70
	15		16	17	59	110		41*	88		3	16	17	59	136
	20		22	33	82	163		60**	126		8	22	33	82	200
	25		34	55	88	211		78**	164		10	34	55	88	262
	30		65	65	91	264		80**	205		13	65	65	91	348
	35		79	66	95	296		81**	233		20	79	66	95	402
	40		81	68	100	324		85**	259		32	81	68	100	444
	45		81	69	104	349		88**	282		40	81	69	104	477
78	10		4	12	26	57		28	54		4	4	12	26	72
	15		18	19	64	120		45*	95		4	18	19	64	149
	20		22	38	84	172		64**	132		9	22	38	84	210
	25		38	59	88	221		81**	173		10	38	59	88	276
	30		69	65	92	273		81**	215		15	69	65	92	364
	35		81	67	97	308		83**	244		24	81	67	97	420
	40		81	68	103	337		86**	270		37	81	68	103	462
81	10		6	12	29	62		29	58		3	6	12	29	78
	15		18	20	69	128		49*	101		5	18	20	69	158
	20		24	43	86	183		67**	139		9	24	43	86	223
	25		46	62	90	237		80**	183		11	46	62	90	301
	30		73	66	94	285		82**	225		18	73	66	94	383
	35		81	68	99	321		84**	255		30	81	68	99	439
	40		81	70	105	352		88**	282		41	81	70	105	481
84	10		6	13	32	67		30	60		3	6	13	32	83
	15		20	23	73	138		53*	108		5	20	23	73	170
	20		24	48	87	191		71**	145		9	24	48	87	231
	25		52	63	91	248		81**	193		12	52	63	91	319
	30		77	67	96	298		83**	236		21	77	67	96	403
	35		81	68	102	333		86**	267		35	81	68	102	456
	40		81	71	108	366		90**	294		43	81	71	108	497

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

TABLE 9: HEO_2 - EMERGENCY DECOMPRESSION (METRES)

Depth (msw)	Bottom Time (min)		Air	In-Water			Recompression Chamber							
				Air		Dec. Time (min)	Surf. Int.	O_2	Dec. Time (min)	Surf. Int.	Air			Dec. Time (min)
			9	6	3			12			12	9	6	3	
87	10	Decompression in accordance with In-Water Oxygen or Surface Decompression with Oxygen Tables	8	14	35	74	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	30*	68	Time from leaving the 9 msw in-water stop to reaching the 12 msw chamber stop must not exceed 7 minutes	3	8	14	35	92
	15		20	25	77	146		57*	114		6	20	25	77	179
	20		32	53	87	206		77**	161		10	32	53	87	255
	25		65	65	92	268		81**	210		14	65	65	92	354
	30		79	67	98	309		84**	246		25	79	67	98	420
	35		79	70	104	345		89**	278		39	79	70	104	470
90	10		10	14	38	79		30*	70		3	10	14	38	99
	15		20	29	79	154		60*	118		7	20	29	79	188
	20		36	57	88	217		79**	169		10	36	57	88	270
	25		69	65	94	278		82**	219		16	69	65	94	370
	30		81	68	100	322		85**	257		29	81	68	100	439
	35		81	71	107	360		90**	290		41	81	71	107	489
93	10		12	15	42	87		30*	73		3	12	15	42	109
	15		20	32	82	162		60**	126		8	20	32	82	197
	20		38	59	90	225		82**	176		10	38	59	90	280
	25		73	66	96	290		83**	229		19	73	66	96	389
	30		81	69	103	335		86**	267		34	81	69	103	457
	35		81	72	110	373		90***	304		43	81	72	110	504
96	10		12	15	47	93		33*	77		4	12	15	47	116
	15		20	36	84	170		63**	131		9	20	36	84	206
	20		44	62	91	238		82**	185		12	44	62	91	301
	25		77	67	97	301		84**	239		21	77	67	97	406
	30		81	70	105	346		88**	277		37	81	70	105	471
100	10		14	16	53	103		37*	84		4	14	16	53	128
	15		22	41	86	181		67**	139		9	22	41	86	219
	20		52	64	92	253		82**	196		13	52	64	92	325
	25		79	68	100	316		85**	251		27	79	68	100	429
	30		81	72	108	363		90**	291		41	81	72	108	492

Stop times include travel time from the previous stop except when a gas switch occurs.
Asterisk (*) indicates number of 5-minute air breaks required. (Dated 91-04-10)

APPENDIX C

WORKSHEETS

DIVER	Rank	Tender	Rank	**Date :**	
DIVER	Rank	Tender	Rank	Table Used	
SUPERVISOR	Rank	Schedule Used	O2%	Depth in FT	Bottom Time
Left surface (Clock Time)	Left bottom	Max Time to 1st Stop	Reached surface (Clock Time)		
Total decomp. time	Total time of dive	Repet Group	CHARTMAN (Print)	Rank	

REMARKS	STOPS IN FEET	STAND AIR TABLE	Decompression Time		EMERG AIR	Event Time	
			water	chamber		water	chamber
	10					L	
						S	
	20					L	
						S	
	30					L	
						S	
	40					L	
						S	
	50					L	
						S	
	60					L	
						S	
	70					L	
						S	
	80					L	
						S	
	90					L	
						S	
	100					L	
						S	
	110					L	
						S	
	120					L	
						S	
	130					L	
						S	
	140					L	
						S	
	150					L	
						S	
	160					L	
						S	
	170					L	
						S	

Purpose of Dive:	Supervisor (sign)	Chartman (sign)

DCIEM DIVE RECORD CHART IN FEET

DIVER	Rank	Tender	Rank	**Date**	
DIVER	Rank	Tender	Rank	Table Used	
SUPERVISOR	Rank	Schedule Used	O2%	Depth in MSW	Bottom Time
Left surface (Clock Time)	Left bottom	Max Time to 1st Stop	Reached surface (Clock Time)		
Total decomp. time	Total time of dive	Repet Group	CHARTMAN (Print)	Rank	

REMARKS	STOPS IN METERS	STAND AIR TABLE	Decompression Time		EMERG AIR	Event Time	
			water	chamber		water	chamber
	3					L	
						S	
	6					L	
						S	
	9					L	
						S	
	12					L	
						S	
	15					L	
						S	
	18					L	
						S	
	21					L	
						S	
	24					L	
						S	
	27					L	
						S	
	30					L	
						S	
	33					L	
						S	
	36					L	
						S	
	39					L	
						S	
	42					L	
						S	
	45					L	
						S	
	48					L	
						S	
	51					L	
						S	

Purpose of Dive:	Supervisor (sign)	Chartman (sign)

DCIEM - DIVE RECORD CHART IN METERS